



AALBORG UNIVERSITET

Fakultetskontoret for  
ENGINEERING, SUND og TECH

Dokument dato: 13. juni 2017

Dokumentansvarlig: Rikke Poulsen

**Akademisk Råd indkaldes hermed til møde nr. 20173 onsdag den 21. juni 2017  
kl. 12.30-16.00 NOVI, Niels Jernes Vej 10, mødelokale**

**Indkaldte:**

Mads Græsbøll Christensen, Eskild Holm Nielsen, Petar Popovski, Knud Erik Skouby, Thomas Bak, Arne Remmen, Henrik Lund, Claus Lassen, Bent Thomsen, Ivan Aaen, Stefania Serafin, Morten Meyer Rasmussen, Lukas Bjørn Leer Bysted, Kristoffer Holger Weithøft Lindstrøm, Jacob Kjærsgaard, Torben Larsen, Kirsten Nielsen, Tine Lykke Tindal Sørensen

**Afbud:**

**Referent:** Rikke Poulsen

**Gæster:** Signe Hernvig og evt. Dorte Hammershøi vedr. pkt. 6. Nickie Kate Hermansen, HR, vedr. pkt. 7. Betina Væversted, Økonomi, vedr. pkt. 8.

	Dagsordenpunkter
1.	<b>Godkendelse</b> A. Godkendelse af dagsorden for AR møde 20173 B. Godkendelse af referat af AR møde 20172  <b>Orientering</b>  <b>Bilag 20173-1</b>
2.	<b>Tildeling af ph.d.-grad til positivt bedømte ph.d.-afhandlinger fra:</b> A. M.Sc. Sabiha Ghellal, Institut for Arkitektur og Medieteknologi. Afhandlingens titel: "The Interpretative Role of an Experiencer – how to design for meaningful trans-media experiences by contrasting ambiguous vs. prescribed qualities". B. Cand.polyt. Esben Skov Laursen, Institut for Arkitektur og Medieteknologi. Afhandlingens titel: "Exploring the Collaboration between Industrial Designers and Engineering Designers in a Handover Situation". C. Cand.polyt. Jacob Bjerre Mikkelsen, Institut for Arkitektur og Medieteknologi. Afhandlingens titel: "Limfjordens Vande: Fortællinger om steder mellem vand og land". <b>Bilag 20173-2</b>
3.	<b>Indstilling vedr. Adjungeret Professor:</b>

	<p><b>A. Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. tildeling af titlen adjungeret professor ved Institut for Planlægning.</b>  <b>Bilag 20173-3</b></p>
4.	<p><b>Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. professorstillingen i:</b>  A. "Impact Assessment and Decision-Making" ved Institut for Planlægning (stilling 60222).  <b>Bilag 20173-4</b></p>
5.	<p><b>Indstillinger vedr. sammensætning af sagkyndige udvalg vedr. lektorstillingerne i:</b>  A. "Signal Processing and Scientific Computing" ved Institut for Elektroniske Systemer (stilling 42232)  B. "Small Antennas" ved Institut for Elektroniske Systemer (stilling 42233)  C. "Radio Propagation" ved Institut for Elektroniske Systemer (stilling 42234)  <b>Bilag 20173-5</b></p>
6. kl. 13.00	<p><b>Høring AAU Praksisudvalg</b>  v. Signe Hernvig, rektorsekretariatet, og Dorte Hammershøi, prof. Elektroniske Systemer (deltager vedrørende nedenstående pkt. 1)</p> <p>Direktionen har godkendt forslag fra det interim AAU Praksisudvalg om reorganisering af praksisudvalgsstrukturen på AAU.  Rektor beder akademisk råd om:</p> <ol style="list-style-type: none"> <li>1. at godkende, at der centralt fastlægges retningslinjer for behandling af sager om videnskabelig uredelighed (og tilfælde af tvivlsom forskningspraksis) i overensstemmelse med forslaget om reorganisering af praksisudvalgsstrukturen på AAU, herunder at rektor nedsætter et samlet praksisudvalg og i samarbejde med fakulteterne fastlægger procedurer for sagsbehandlingen.</li> <li>2. indstilling af et basis</li> <li>3. medlem og en suppleant til nedsættelsen af det nye samlede praksisudvalg for AAU</li> </ol> <p>Akademisk Råds medlemmer bedes overveje og gerne på forhånd kontakte mulige kandidater, således at der er konkrete forslag rådet kan overveje. Betingelserne for udpegelse fremgår af vedlagte sagsfremstilling.</p> <p><b>Bilag 20173-6</b></p>
7.	<p><b>Høring vedr. bedømmelsesregler ved adjungeringer</b>  v/Nickie Kate Hermansen, HR</p> <p>Jf. bekendtgørelse om tildeling af titlerne adjungeret professor og adjungeret lektor af skal universitetet fastsætte regler for faglig bedømmelse (§ 6).  Der er på den baggrund udarbejdet et udkast til fælles bedømmelsesregler ved adjungeringer af lektorer og professorer.</p> <p><b>Bilag 20173-7</b></p>
8.	<p><b>Økonomi – ny budgetmodel</b>  v/Betina Væversted, økonomi</p> <p>Forsatte drøftelser vedr. ny budgetmodel. Opdateret rammepapir vedlagt som bilag.</p> <p><b>Bilag 20173-8</b></p>

9.	<b>Meddelelser fra dekanen og/eller formanden</b>
10.	<b>Eventuelt</b>

#### **Til orientering**

- Fortegnelse over sager godkendt af dekanen siden sidst

OBS! Vedr. bedømmelsesudvalg: I de tilfælde hvor ansøgningsfristen ligger efter Akademisk Råds møde kontrolleres der efterfølgende for inhabilitet og sammensætning af udvalget (kvindelig bedømmer). Hvis der konstateres uregelmæssigheder, vil dekanen/formanden godkende nyt/nye medlemmer.



AALBORG UNIVERSITET

Fakultetskontoret for  
ENGINEERING, SUND og TECH

Dokument dato: 31. maj 2017

Dokumentansvarlig: Rikke Poulsen

**Akademisk Råd indkaldes hermed til møde nr. 20172 onsdag den 17. maj 2017  
kl. 12.30-16.00 NOVI, Niels Jernes Vej 10, mødelokale 1**

**Deltagere:**

Eskild Holm Nielsen, Knud Erik Skouby, Thomas Bak, Arne Remmen, Bent Thomsen, Ivan Aaen, Mads Græsbøll Christensen, Morten Meyer Rasmussen, Lukas Bjørn Leer Bysted, Kristoffer Holger Weithøft Lindstrøm, Jacob Kjærsgaard, Torben Larsen, Kirsten Nielsen, Tine Lykke Tindal Sørensen

**Afbud:** Petar Popovski, Henrik Lund, Claus Lassen, Stefania Serafin

**Referent:** Rikke Poulsen

**Gæster:** Lars Hvilsted Rasmussen og Stine Thidemann Faber (pkt. 10), Betina Væversted og Kristian Vagn Nielsen (pkt. 11), Mark Frahm Gammeljord

	Dagsordenpunkter
1.	<b>Godkendelse</b> A. Godkendelse af dagsorden for AR møde 20172 B. Godkendelse af referat af AR møde 20171  <b>Orientering</b>  <b>Til efterretning</b> C. Referat fra ph.d.-udvalgsmøde 2-2017 den 25. april 2017  <b>Bilag 20172-1</b>
Referat	Dagsorden og referat godkendt og referat fra ph.d udvalgsmøde taget til efterretning.
2.	<b>Valg af formand</b>
Referat	Mads Græsbøll Christensen blev valgt til formand.
3.	<b>Tildeling af ph.d.-grad til positivt bedømte ph.d.-afhandlinger fra:</b> A. M.Sc. Brian Matthew Bemman, Institut for Arkitektur og Medieteknologi. Afhandlingens titel": Computational Problems in Modeling Milton Babbitt's Compositional Process". B. Cand.polyt. Dnyaneshwar Shriranglal Mantri, Institut for Elektroniske Systemer. Afhandlingens titel": Energy Efficient Bandwidth Management in Wireless Sensor Network". C. Cand.polyt. Fredrik Moltu Johnsen, Institut for Planlægning. Afhandlingens titel": The development of a weighting method for use in life cycle assessments of amine

	<p>based post-combustion carbon capture and storage (CSS) in the Arctic region".</p> <p>D. Cand.polyt. Gissel Velarde, Institut for Arkitektur og Medieteknologi. Afhandlingens titel": Convolutional methods for music analysis".</p> <p>E. Cand.mag. Karin Topsø Larsen, Institut for Planlægning. Afhandlingens titel": Labour Learning – Investigating Challenged Localities Through a Geography of Vocational Education".</p> <p>F. M.Sc. Kjell Staffas, Institut for Planlægning. Afhandlingens titel": Developing Requisite Motivation in Engineering Studies. A study of a Master and Bachelor Program in Electronic Engineering at Uppsala University"</p> <p>G. Cand.polyt. Lucas Chavarría Giménez, Institut for Elektroniske Systemer. Afhandlingens titel": Mobility Management for Cellular Networks: From LTE Towards 5G".</p> <p>H. Cand.polyt. Neofytos Kaplanis, Institut for Elektroniske Systemer. Afhandlingens titel": Perception of Reverberation in Domestic and Automotive Environments".</p> <p>I. Cand.polyt. Rasmus Søgaard Lund, Institut for Planlægning. Afhandlingens titel": Heating strategies in a renewable energy transition".</p> <p>J. Cand.polyt. Tina Vestermann Olsen, Institut for Arkitektur og Medieteknologi. Afhandlingens titel": Timely Uses – a critical contribution to better practices of strategic and entrepreneurial temporary use".</p> <p>K. Cnad.scient. Zhengkui Zhang, Institut for Datalogi. Afhandlingens titel": Time and Cost Optimization of Cyber-Physical Systems by Distributed Reachability Analysis".</p> <p><b>Bilag 20172-3</b></p>
Referat	Alle afhandlinger godkendt.
4.	<p><b>Indstilling vedr. Adjungeret Professor/Adjungeret Lektor:</b></p> <p>A. Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. tildeling af titlen adjungeret professor ved Institut for Elektroniske Systemer.</p> <p>B. Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. tildeling af titlen adjungeret lektor ved Institut for Arkitektur og Medieteknologi.</p> <p><b>Bilag 20172-4</b></p>
Referat	Begge godkendt
5.	<p><b>Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. professorstillingen i:</b></p> <p>A. "Computer Science" ved Institut for Datalogi (stilling 50119)</p> <p><b>Bilag 20172-5</b></p>
Referat	Udvalget godkendt. Det bemærkes, at udvalget består af 6, hvilket er godkendt fra dekan/rektor med baggrund i, at der er en gammel tradition hos CS, for at have udvalg der dækker fagligheden bredt.
6.	<p><b>Indstillinger vedr. sammensætning af sagkyndigt udvalg vedr. lektorstillingen i:</b></p> <p>A. "Wireless Communication Systems and Networks" ved Institut for Elektroniske Systemer (stilling 42224)</p> <p><b>Bilag 20172-6</b></p>
Referat	Udvalget godkendt.
7.	<p><b>Indstillinger vedr. sammensætning af sagkyndigt udvalg vedr. adjunktstillingerne i:</b></p> <p>A. "Cirkulær økonomi og ecodesign" ved Institut for Planlægning (stilling 201712)</p> <p>B. "Computer Vision and Computer Graphics" ved Institut for Arkitektur og Medieteknologi (stilling 201713)</p> <p>C. "Energy Planning" ved Institut for Planlægning (stilling 201714)</p> <p><b>Bilag 20172-7</b></p>
Referat	Alle udvalg godkendt.
8.	<p><b>Indstillinger vedr. sammensætning af sagkyndige udvalg vedr. postdocstillingerne i:</b></p> <p>A. "Outcome Measures in adult hearing rehabilitation" ved Institut for Elektroniske Systemer (stilling P21709)</p> <p>B. "Alarm og pejlesystemer til personer med demens" ved Institut for Arkitektur og Medieteknologi (stilling P21714)</p> <p><b>Bilag 20172-8</b></p>
Referat	Begge udvalg godkendt. Knud Erik Skouby og Mads Græsbøll Christensen "sad uden-

	for" ved beslutningen ifht. henholdsvis pkt. a og b.
9.	<p><b>Serviceeftersyn af universitets vedtægt</b></p> <p>Akademisk råd bedes drøfte følgende:  Er der kompetencer/opgaver vedr. akademisk råd i den gældende vedtægt, som ikke bør fremgå af vedtægten, og hvorfor?  Er der kompetencer/opgaver vedr. akademisk råd, som ikke fremgår af den gældende vedtægt, men som bør fremgå, og hvorfor?</p> <p><b>Bilag 20172-9</b></p>
Referat	<p>I nr. 1, bør "godkende" udgå. I stedet bør det fremgå at AR bør involveres i udviklingen af strategien. I princippet kan det gøres ved at lade nr. 1 udgå, da det under nr. 2 fremgår, at AR skal udtale sig om centrale strategiske forsknings- og uddannelsesområder og planer for vidensudveksling.  Godkendelsen af en strategi er endvidere en ledelsesmæssig beslutning.</p> <p>Nr. 3: AR tager i dag ikke stilling til stillingsallokeringer. Det kan evt. ses for omfattet af nr. 2 om strategien.  I forhold til budgettet bør det i stedet fremgå at AR skal drøfte og udtale sig om principperne for budgettet.</p> <p>Nr. 4-5 følger af universitetsloven og efterfølgende fra delegationsinstruksen. (Der gøres dog opmærksom på at universitetsloven i henhold til nr. 4 bruger ordet indstiller i stedet for nedsætter).</p> <p>Nr. 6: Der er hos AR stor tilfredshed med at dette punkt er taget væk fra ledelsen.</p> <p>Nr. 7: AR er i dag ikke inddraget i sådanne opgaver.</p> <p>Ingen kommentarer til nr. 8 og 9.</p> <p>Det kunne overvejes at indføre et nr. 10 eller udvide nr. 9, således det fremgår at AR skal rådgive dekanen i opgaver der relaterer sig til forskning, uddannelse og vidensarbejde.</p> <p>Ved en revision af vedtægterne bør det overvejes at præcisere hvad der ligger i ordene udtale sig om/drøfte/indstille. Ligesom det bør overvejes, om de beføjelser AR har svarer til at AR efter vedtægten har ansvar for at udvikle og vedligeholde en høj akademisk standard.</p>
10.	<p><b>Præsentation af ligestillingsudvalget</b> v. SUND Dekan Lars Hvilsted Rasmussen og Stine Thidemann Faber, Lektor, Institut for kultur og globale studier og Videncenter for Køn, Ligestilling og Diversitet</p> <p>Debat og input fra AR til handleplan for ligestilling og diversitet.  (Punktet behandles uanset rækkefølge kl. 14.00-14.30)</p> <p><b>Bilag 20172-10</b></p>
Referat	<p>Lars Hvilsted Rasmussen præsenterede udvalget, og Stine Thidemann Faber holdt oplæg om hvordan ligestilling som begreb kan tænkes ind i academia.</p> <p>Nationalitet – det er ofte et problem at vi kræver at alle taler dansk. Dansk kan være en ret lukket kultur. Så hvordan vi indsluser nye internationale medarbejdere, kan også være et udviklingspunkt. Mentorordninger kunne være en mulighed. Det gælder også på studenterområdet.</p> <p>Særligt på IT området er vi på TECH enormt udfordret i forhold til rekruttering af kvinder, både i forhold til studentersammensætningen og i forhold til fastholdelsen i en akade-</p>

	<p>misk karriere.</p> <p>Det kan være en ide at inddrage de studerende, da de kan have andre vinkler, da de er fødekæden til kommende VIP ansættelser.</p> <p>På kvindeområdet, er det også en stor udfordring at det altid er de samme få kvinder der bliver bedt om at stille op som rollemodeller. Det er trættende og folk vil jo gerne bare forske.</p> <p>Ligestillingsudvalget kunne se på den succes man har fået andre steder også i udlandet.</p>
11.	<p><b>Økonomi</b> – ny budgetmodel, v/Kristian Vagn Nielsen og Betina Væversted, økonomi</p> <p>Introduktion og indledende drøftelser vedr. hovedprincipper til ny budgetmodel.</p>
	<p>Særskilt referetat vil blive eftersendt. Præsentationen ligges op sammen med dette referat.</p>
12.	<p><b>Meddelelser fra dekanen</b></p> <p><b>TECH strategi</b> TECH er i fuld gang med en strategisk ramme for fakultetet, som giver følgeskab til "Viden for Verden". Dekanaten har identificeret 4 programmer:</p> <ol style="list-style-type: none"> <li>1. Internationalisering</li> <li>2. Tvær-disciplinær forskning og uddannelse</li> <li>3. Vidensamarbejde</li> <li>4. Talent</li> </ol> <p>Lige for tiden er der gang i arbejdet med at samle arbejdsgrupper for hvert program, og det er arbejdsgruppernes opgave at komme med handleplaner og konkrete indsatser.</p> <p><b>Internationalisering</b></p> <ul style="list-style-type: none"> <li>• På internationalisering er der faktisk allerede iværksat 2 konkrete indsatser.</li> <li>• Post doc programme ( <ul style="list-style-type: none"> <li>○ 13 indkomne ansøgninger fordelt på de 4 TECH institutter (11 gik lige igennem – 5 kvinder og 6 mænd – 2 måtte uddybe deres ansøgning).</li> <li>○ Det forventes at flertallet starter i løbet af efteråret.</li> </ul> </li> <li>• Part Time Professor Programme <ul style="list-style-type: none"> <li>○ Professor call er udsendt med løbende frist. Der er allerede gang i ansættelsen af en 20% professor fra Holland på PLAN.</li> </ul> </li> <li>• Den langsigtede effekt af internationaliseringsindsatsen: <ul style="list-style-type: none"> <li>○ styrket forskningskvalitet</li> <li>○ øget hjemtag af international funding og prestigefulde bevillinger</li> <li>○ rekruttering af internationale talenter</li> <li>○ bedre rankingplaceringer</li> <li>○</li> </ul> </li> </ul> <p>KOMMENTAR: Det der giver bedst virkning er at forskerne ved det i god tid og at det varer i en længere årrække, så man kan undersøge netværk mm når man deltager i konferencer mm.</p> <p><b>Talentprogram: TECH program for særligt talentfulde studerende på kandidatniveau</b></p> <ul style="list-style-type: none"> <li>• Også inden for "Talent" er der igangsat en konkret indsats eller nærmere bestemt 3.</li> </ul>

- Programmet indeholder tre forskellige profiler: *forskerprofilen, innovatørprofilen og entreprenørprofilen*
- Pt. sammensættes en arbejdsgruppe for hver af profilerne, som skal definere indholdet i profilerne
- Det er planen, at grupperne bliver supporteret af SEA, Netværkscenteret og uddannelsessekretariatet ved EST
- Målsætningen er, at pr. 1.febr. 2018 skal de første talentfulde studerende tilbydes et forløb i en af profilerne

### **Samarbejde med eksterne partnere**

#### **Grundfos**

- Den 16. nov. 2016 var Grundfos og Fonden på inspirationstur på AAU
- Fonden har sidenhen udarbejdet en ny strategi, vi ser mange perspektiver og arbejdsmuligheder under pejlemærket "*Bestræbelserne på at skaffe sikkert og rent vand til alle*".
- **Den 15. maj 2017** var der besøg af en delegation fra Grundfos – jeg sidder sammen med Christian Rasmussen i ATV
- Det faglige fokus: data analyse, hvor de skal møde nøje udvalgte fagligmiljøer ud fra Grundfos specifikke ønsker
- Der er fire AAU institutter involveret i besøget (Datalogi, ES, CREATE, Matematik)
- Formål: at skabe yderligere samarbejds muligheder og netværk med Grundfos indenfor udvalgte faglige områder

#### **Aalborg Havn**

- TECH er ved at udarbejde en partnerskabsaftale med Aalborg Havn
- Formål: styrke og øge samarbejdet (der er allerede meget samarbejde med PLAN, men der er flere perspektiver især rettet mod ES)
- Vi er obs. på et bredt samarbejde internt på AAU, især med ENGINEERING
- Ideer: det digitale søkort i samarbejde med geodatastyrelsen.

#### **Lydmålersagen**

- Der er 3 dele i sagen: Bogudgivelsen og Heine Andersens kommende bog, fyringen af Henrik Møller, og så selve lydmåleren.
- Bogudgivelsen og Heine Andersens kommende bog
  - Den 10. maj udkom der en kritisk bog om vindmølleindustrien. Bogen beskyl-der Eskild Holm Nielsen og Børge Lindberg for at være i lommen på vindmølle-industrien, og for at have givet tidligere professor Henrik Møller mundkurv på, ligesom det påstås at Henrik Møller blev fyret på baggrund af sagen om lydmå-leren.
  - Bogen indeholder endvidere et efterskrift af Heine Andersen, hvor Aalborg Universitet beskyldes for at overtræde universitetslovens § 2, og knægte for-skernes ytringsfrihed.
    - Dette er langt mere alvorligt, og er noget vi aktivt vil gå ind i.
- Fyringen af Henrik Møller.
  - Er IKKE begrundet i hans arbejde eller udtalelser vedr. lydmåleren.
  - Der var tale om en større sparerunde, og Henrik Møller var en blandt 6 der blev afskediget på Elektroniske Systemer.



- Der er trods påstande om det modsatte tale om en frivillig fratrædelse som Henrik Møller selv har underskrevet og under bistand fra IDA.
- Da der er tale om en personale sag, kan vi ikke gå i detaljer med baggrunden for fyringen.
- Lydmåleren.
  - Henrik Møller udsendte en pressemeddelelse hvorved der opstod en forventning hos borgere om at de kunne låne udstyret.
  - Det forholder sig imidlertid sådan at man ikke blot kan udlåne udstyret. De målinger der foretages skal udlæses af forskere ved Elektroniske Systemer. Resultatet af målingen er endvidere kun vejledende, da der ikke er tale om akkrediteret udstyr, og da vi ellers ville være i konkurrence med kommercielle aktører på markedet. Derfor stiller vi krav om at udlån sker som led i et forskningsprojekt – som det fx er tilfældet nu, hvor den er udlånt til Holbæk Kommune med henblik på at målinger hos naboerne til Hagesholm Vindmøllepark.
  - Som det forholder sig nu, er der efter det til mig oplyste ikke forskere hos Elektroniske Systemer, der ønsker at bruge lydmåleren i deres forskningsprojekter.
  - Henrik Møller er blevet tilbudt at kommercialisere lydmåleren, hvilket han har sagt nej til.

Jeg vil gerne understrege at forskere har både ytringsfrihed og pligt til at ytre sig, hvilket jeg selvfølgelig støtter op om!

#### FTP

- Rafal Wisniewski, 2.574.928 kr.
- Troels Pedersen, 2.590.254 kr.
- Elisabeth de Carvalho, 5.876.179 kr.
- Ulrik Mathias Nyman, 1.890.704 kr.
- Jesper Jensen, 5.255.449 kr.

Navn	Beløb	Projekt
Rafal Wisniewski	2.574.928 kr.	
Troels Pedersen	2.590.254 kr.	
Elisabeth de Carvalho	5.876.179 kr.	
Ulrik Mathias Nyman	1.890.704 kr.	
Jesper Jensen	5.255.449 kr.	

#### Innovationsfonden – invitation til 2. runde

- Anders la Cour-Harbo, Automated emergency lander for small unmanned aircraft, 5.000.000
- Gert Frølund Pedersen, Modular Advanced Radio for Satellite Services, 27.835.625,00
- Thomas Baltzer Moeslund, Automated drone inspection of drain and sewer pipes, 12.535.000,00

13.	<b>Eventuelt</b>
Referat	<p>Der er mange sider – en stor del af det der er CV materiale. Vi ser på om der kan skæres CV'er til. De studerende opfordres til at tale med andre medlemmer af rådet om hvorledes man kan forberede sig til rådsmøderne uden at skulle læse hver en side.</p> <p>Sekretariatet sørger for at alt materiale bliver lagt ind på hjemmesiden, også det der eftersendes.</p> <p>Alle opfordres til at huske at melde tilbage hvorvidt man deltager eller ej, det er afgørende da vi ellers kan risikere at sidde med et råd der ikke er beslutningsdygtigt.</p>

## Særskilt referat fra Økonomi vedr. drøftelsen af ny budgetmodel på TECH Akademisk Råds møde den 17. maj 2017.

Til punktet var udsendt en beskrivelse af rammerne for TECH-budgetmodel 2018. På mødet var en kort præsentation af bl.a. hvilke karakteristika modellen skal understøtte:

- Enkel (genkendelige indtægtsparametre)
- Transparent (indtægtsstrømme, fællesfakultære aktiviteter og rekvisitionspraksis)
- Ingen negative incitamenter (ingen suboptimering, ingen parallelbygning af stillinger og investeringer)
- Omkostningseffektivitet (omkostninger placeret så decentralt som muligt)
- Budgetsikkerhed i budgetåret
- Flerårige disponeringsrammer inkl. tolerancebånd

I forhold til fordelingsmodellen for uddannelse var Akademisk Råd uenig i antagelsen om at ejerskabet for en uddannelse kan knyttes op på et institut. Akademisk råd kunne i stedet bakke op om en timeafregningsmodel ift. uddannelse, således at der finder en afregning af hver leveret time sted. Dermed forhindres silotankegangen og det fremmer de tværgående uddannelser og den tilknyttede faglighed. Det to-strengede system ønskes opretholdt.

Der var opbakning til at man i 2019 i gennemsnit maksimalt rekvirerer 80 timer pr. STÅ for derigennem at sikre muligheden for opregulering af afregningen svarende til den årlige lønstigning. Dermed undgås udhuling af afregningen af den leverede undervisning.

I forhold til elementerne bag forskningsfordelingsmodellen støttede Akademisk Råd op omkring BFI som ressourceudløsende faktor og om differentieringen mellem niveau 1 og 2 producerede BFI-point. Det blev pointeret at impact er utrolig vigtig, når vi taler publikationer. Det er vigtigt at institutter og forskningsgrupper har en publikationsstrategi og at der publiceres i de anerkendte tidsskrifter.

Der var endvidere også opbakning til at de to øvrige ressourceudløsende elementer i forskningsfordelingsmodellen er den eksterne projektsætning og den beregnede uddannelsesindtægt. Akademisk Råd anbefalede at budgetmodellen skal understøtte vores forskeres hjemtagelse af challenge-drevne projekter.

Samlet for modellen skal der skabes rum til strategiske satsninger på alle niveauer.



**AALBORG UNIVERSITY**  
DENMARK

**Department of Architecture,  
Design and Media Technology**  
Rendsburggade 14  
9000 Aalborg  
Denmark

Contact person:  
Lisbeth Dam  
Phone: +45 9940 3603  
E-mail: ldam@create.aau.dk

Date: 09-06-2017

Det Tekniske Fakultet for IT og Design  
Niels Jernes Vej 10  
Att.: Helene Ulrich Pedersen

### **Sabiha Ghellal – The Interpretative Role of an Experienter**

Hermed fremsendes bedømmelsesudvalgets indstilling vedr. Sabiha Ghellals ph.d. afhandling, som hun forsvarede fredag den 2. juni 2017. Af indstillingen fremgår, at bedømmelsesudvalget anbefaler, at Sabiha Ghellal bliver tildelt ph.d.-graden.

Instituttet indstiller hermed tildeling af ph.d.-graden til Sabiha Ghellal.

Med venlig hilsen

Lisbeth Dam

Bilag

## Final Assessment

of the PhD thesis entitled:

THE INTERPRETATIVE ROLE OF AN EXPERIENCER  
- *HOW TO DESIGN FOR MEANINGFUL TRANSMEDIA EXPERIENCES*  
BY CONTRASTING AMBIGUOUS VS. PRESCRIBED QUALITIES

Submitted by Sabiha Ghellal, M.Sc. in Technology Management

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design on December 9th, 2016:

- Professor Steve Benford, The University of Nottingham, Steve.Benford@nottingham.ac.uk
- Professor Staffan Björk, Gothenburg University, staffan.bjork@gu.se
- Associate Professor Henrik Schønau Fog (Chair), Aalborg University. hsf@create.aau.dk

Supervisor for the thesis has been Associate Professor, Ann Morrison, Aalborg University.

There was no co-supervisor for this thesis.

### Description of the thesis

The thesis address the challenges of describing, designing and evaluating transmedia experiences, i.e. experiences that mix different technological modalities, are thereby require designers to combine various mental models of creation and interdisciplinary experience design. The particular focus of the thesis is on how to design meaningful experiences that lead people to make deep interpretations and especially on how to balance between prescribed and ambiguous styles of experiences. The key contribution of the thesis is the Transmedia Experience Design Framework, distilled from both the literature and from the study of three practice-led case studies, that provides guidance as to the wide range of factors that might potentially affect this balance and hence the making of meaning. The thesis consists of a 100 pages extended summary and a collection of five papers upon which the thesis is based:

1. "Transmedia Perspective". Ghellal, Sabiha; Wiklund-Engblom, Annika; Obal, Damjan; Morrison, Ann, In: Artur Lugmayr and Cinzia Dal Zotto (eds.) Media Convergence Handbook, Springer-Verlag, 2016, <http://www.Springer.com/series/11520>, 2016. (printed)
2. "The Remediation of Nosferatu: exploring transmedia experiences". Ghellal, Sabiha; Morrison, Ann; Hassenzahl, Marc; Schaufler, Benjamin. In: Proceedings of the 2014 conference on Designing interactive systems (DIS). ACM, 2014. S. 617-626. (printed)
3. "The Roaring Hammock". Ghellal, Sabiha; Mussin, Nick; Morrison, Ann. Mensch und Computer 2015-Proceedings, 2015. (printed)
4. "The Fuzzy Front End of Experience Design – Considering Ambiguous and Prescribed Qualities". Ghellal, Sabiha. 2015 VVT Technology 209, ISSN-L 2242-1211 ISSN 2242-122X (Online) (printed)
5. "Get Milk: A Comparative Study Investigating Digitised Game Design Teaching Material". Ghellal, Sabiha; Morrison Ann; Schneider Tobias. Submitted to Designing Interactive Systems (DIS 2017), June 10-14, 2017, Edinburgh UK (submitted)



## Assessment of the thesis

The collection of the five associated papers gives various perspectives on the topics of the thesis:

- The first publication is the book chapter "Transmedia Perspective" that appeared in the Media Convergence Handbook (2016), which was published by Springer-Verlag, and edited by Artur Lugmayr and Cinzia Dal Zotto. Sabiha Ghellal is the first author of four and is the main contributor according to the co-author statements. The chapter addresses the challenge to provide a clear distinction between transmedia, convergence and divergence as separate, but intertwined concepts. The authors argue that the multifaceted and interdisciplinary nature of the transmedia concept necessitates respecting various interpretations of transmedia storytelling. By collecting and grouping the various perspectives that shape transmedia, the authors investigate various aspects of the concept. The result is a conceptual transmedia methodology model which the authors base on both traditional storytelling frameworks such as 'fictional universes' and user experience design theories as well as 20 international interviews including early adopters, scientific researchers, broadcasters, production experts as well as traditional storytellers. At an international interdisciplinary one-day workshop the findings were consolidated and the authors state that it showed that the wide array and differing perspectives that transmedia can entail often causes confusion from scientific, investigative and economic perspectives. The authors then discuss the complexities of transmedia, including Orchestration, Media Disruption as 'Divergent Convergence', Storyworld or Fictional Universe, Convergence Trends as Opportunities for Transmedia Design and finally Divergence Trends as Opportunities for Transmedia Design. In addition to the thorough literature review, several interesting cases are also analysed, such as "AUTHENTIC IN ALL CAPS", "Cloud Chamber" and the learning perspectives of Transmedia. Based on the above, the authors arrive at a "Conceptual Transmedia Methodology" model, where the goal is to combine multi-disciplinary perspectives into one common conceptual framework and they propose that "convergence, divergence and transmedia be understood and used as separate albeit intertwined situations." (p17) The model is useful to discuss content, design, production and perspectives of some elements of transmedia. However, as it is the intention of the authors to "contribute with the conceptual methodology to provide foundational work to assist understanding of this emerging participatory genre whatever its label may be" (p17) there is still much work to be done in the constant changing field of transmedia.
- The paper "The Remediation of Nosferatu: exploring transmedia experiences" appeared as a full paper at DIS 2014, a prestigious ACM conference which features high-quality blind peer reviewing. Sabiha Ghellal appears as the first author and the accompanying author statement makes it clear that she led the work presented here. The paper provides a clear and compelling account of the design and study of a transmedia experience. The framing in relation to the wider literature on transmedia and HCI is, in our view, very good. We also found the game itself to be provocative. There is a clear thread of argument that links the design of the game to notions of open and closed sub experiences, then broadening this out through a discussion of ambiguity to connect it all to the balancing of prescriptive versus ambiguous experiences. In short, there is a good level of analytic depth here and a clear link to the central thesis argument. We found that the paper raised several questions for us which it did not directly address. The most interesting concerns the tension between the linkage of the narrative (like hyperlinks between film clips) and their spatial arrangement in the real world. This is very cleverly managed in the design through a circular form with the climactic sub-experience at the centre. However, it felt that there might be some more design principles to be brought out here. To what extent do spatial constraints and affordance shape the way that the narrative is experienced and in particular, can they be used to balance prescriptive and ambiguous elements in some way? For example, if we arranged the outer circle so that every prescriptive sub-experience was framed by two open ones (and vice versa), would this lead to an overall experience where players naturally oscillate between the two modes - and would this be desirable? It seems to us there are some underlying design principles at play here that could be discussed further.



- The short paper "The Roaring Hammock" was presented at the Mensch und Computer conference in 2015. Short demo/poster papers are reviewed by "external experts" according to the call for participation of that conference. Sabiha Ghellal is listed as the first author and contributed with a majority of the work, according to the co-author statement. The Roaring Hammock is an transmedia installation experiment, which uses microcontrollers, sensors, audio and visual feedback to create an interactive holistic experience. By rocking or swinging, the participants can playfully influence the 1920s music through the movement of the hammock and become part of the installation by entering the 'magic circle' of the experience. The project investigates speculation by inviting participants to actively explore (through their own embodied actions) to figure out how the hammock works with a deliberate lack of instruction. For the participant the challenge is to move the hammock in a rhythm that will play the music at a pleasing speed. The more and the stronger participants swing, the faster the vinyl disc spins and the faster and higher-pitched the music gets. The paper focuses on describing the experience in detail, but it would also have been interesting to read about the results of the experiment and how the deliberate lack of instruction influenced the users' investigation and speculation. However with the short paper format, it would have been challenging to go into depth with the results.
- The paper "The Fuzzy Front End of Experience Design – Considering Ambiguous and Prescribed Qualities" is a position paper at the workshop "The Fuzzy Front End of Experience Design" which was part of NordiCHI' 14. Sabiha Ghellal is the sole author to the text and the workshop description states a peer-review process. The paper presents findings from analyzing gameplay experiences of the augmented reality game "The Remediation of Nosferatu" and introduces a distinction between ambiguous and prescribed qualities of experiences. The analysis of 12 "sub-experiences" of the game is mentioned and a majority of participants' reflections on their experiences with these is stated as fitting either ambiguous or prescribed qualities. While pointing out the distinction between ambiguous and prescribed qualities of experiences is interesting, an analysis of their different characteristics and suitability for various contexts would have been interesting (but difficult to fit in a position paper).
- The final paper "Mini-review of "Get Milk: A Comparative Study Investigating Digitised Game Design Teaching Material" is under review for DIS 2017 (the status of this paper is unclear at the writing of this assessment but isn't listed in the main program on the conference homepage). Sabiha Ghellal is first author of three for the paper. It is a full paper (9 pages) which reports on a study in which the computer-based learning game "Get Milk" was compared to paper-based learning material, the same material being represented in the game as text. The stated hypothesis explored is to see if it is possible to overcome previously reported challenges in teaching game design if the learning material is embedded in an imperfect game. Although repetitive, it describes in detail the setup and design of the game and experiment. Significant statistical evidence on the level  $p < 0.001$  is reported for more successfully applying theory as well as referencing literature for those that used "Get Milk". Based on interviews, the "Get Milk" game is also reported to let the students feel that they are more in control of their learning as well as providing concrete examples of the more abstract learning material. While the paper has structural issues and is unclear regarding what constitutes a learning game as well as if there is a difference between design lenses and gameplay design patterns, the idea of embedding game design knowledge in a consciously imperfect game is interesting.

#### *Content of the extended summary*

The three research questions of the thesis are clearly stated and well motivated and provide a good foundation for the subsequent research:

- a) What is the interpretative role of an experienter within a transmedia fictional universe and how can a designer shape this interpretative role?
- b) Which design concepts, methods, and frameworks are suitable and how can they be combined into one central transmedia experience design framework?
- c) How will a holistic experience that is shaped on several experience fragments influence the interpretative role of an experienter?



These are interesting and timely questions of relevance to the two fields of media design and Human-Computer Interaction. Indeed, one of the contributions of the thesis lies in a systematic and deep attempt to relate different lines of thinking from both of the fields – which have often remained quite separate up to this point. The thesis does a good job of addressing these questions in some depth. The first is mainly addressed through a wide-ranging interdisciplinary literature review, the findings of the three case studies and is embodied in the final design guidelines. The answer to the second is presented in the form of a Transmedia Design Matrix which comprehensively captures in one place the many factors that might affect meaningful transmedia experiences. The answer to the third question is largely to be found in the findings of the three case studies.

The State of the art and literature review chapters describe relevant concepts, models, and frameworks from previous research and through their inherent differences contrast them with each other implicitly. In addition, through her diagrams Sabiha Ghellal illustrates her positioning of previous work in relation to each other. The state of the art literature review is comprehensive and the thesis address the referenced publications in a critical manner when relevant. The diagrams are especially useful in summarising the key literature and turn out to be key building blocks of the subsequent framework. The link between the extended summary and the papers is strong and relevant. The papers are used as arguments to support the answers in a well integrated way. The thesis also makes good and relevant use of references to relate to previous work as well as having a good structure and using a language that is clear and easy to understand.

The methodology chosen for answering the research questions is exploratory through a three stage grounded theory approach and coding of answers from interviews and qualitative data gathering. The chosen methodology is appropriate according to the research questions. While the three case studies each draw on different methodologies, the subsequent reflection across them and especially the interview and workshop process in the final case study serve to draw them together nicely.

The experiments concerning the three research questions are conducted through three detailed case studies: The Remediation of Nosferatu: Exploring Transmedia Experiences, The Interactive Hammock: Investigating two Contrasting Tangible Interface Installations and Get Milk: A Comparative Study Investigating Digitised Game Design Teaching Material. The results of the experiments give valuable insights for addressing the research questions. There is an extensive body of practice-led work here involving substantial developments and deployments. The final teaching activity is interesting as it demonstrates a concrete use of the framework.

The research contributions are relevant and useful. The level of detail is high in a subject area that is multifaceted (Transmedia). The quality of the dissemination of the scientific results is good. The thesis includes some strong design-oriented publications here, especially the paper in the ACM Designing Interactive Systems which is a prestigious international conference that publishes archival papers following double-blind peer review of full manuscripts and with an acceptance rate of around 25%. The quality of the conclusions is high due to the comprehensive foundation in the literature review, 20 international interviews with experts in the field and the range of investigations through case studies. Furthermore, the explicit contrasting of ambiguous vs. prescribed qualities is an interesting contribution in the thesis, supporting designers to consciously position themselves in relation to these views on what types of experiences they aim to support through their designs.

The project objectives have been mostly met because of the multifaceted and ever evolving nature of the topic (transmedia). The author has become aware of the complexity of the topic through her exploratory work and mentions this herself. The conclusion illustrates this as well and also indicates where future research could go.

### *Contributions*

The major strength and contribution of the thesis is that it is a comprehensive attempt to get an overview of the multifaceted concept of Transmedia and to describe one central aspect of transmedia design: how to create meaningful experiences. The central argument about balancing prescriptive and ambiguous approaches to meaning making is novel and well made and has clearly been well received by the research community. The transmedia experience design matrix framework (TXDM) is also a novel contribution and usefully synthesises many different issues from the literature and studies. While not focused on a single issue, the framework will be





valuable as a comprehensive guide to designers as evidenced by its use in teaching. The thesis also includes a comprehensive, relevant literature review. The framework and models are developed by integrating semi-structured interviews with data from twenty international experts in the field and the results were later confirmed during a workshop at a conference. In addition multiple and deep practice-led investigations were conducted through three interesting and well used case studies.

The thesis has some weaknesses, though these are not critical flaws, either individually or in sum. One of these weaknesses is that transmedia is a very multifaceted topic and without specific limitations it may be challenging to cover the research and to make conclusions. The models do not address various delivery platforms and current "state of the art" VR and AR experiences are also not explicitly addressed in the current version of the models. The robustness of the models are not critically discussed nor is argumentation given as to what possible parts of the models were examined but not added. The research questions are not explicitly answered. Imprecise use of concepts, e.g. design guidelines are stated as findings in chapter 6 but it is unclear if the 3 sections (the first without a heading) are the guidelines, or if the subsections are guidelines, or if the details in the subsections are guidelines. Another unclarity concerns the Transmedia Experience Design Matrix which is referred to as a matrix, a framework, and a lens without making clear distinctions with what the difference is between these different concepts. These minor weaknesses does not affect our conclusion, but could usefully be addressed in future work and publications if the author wishes to use the material from the dissertation in another context.

### ***Oral presentation and discussion***

Date and place of the oral defence: 2nd of June 2017. Aalborg University, Aalborg. Denmark

At the oral defence, several topics were discussed, such as: The definition of Transmedia, the difference between framework, matrix and lenses, the practical use of the TXDM, Flow, Ambiguous, Prescribed interactions vs. Pre-scripted, Interactive storytelling, emergence and progression, meaning making, and grounded theory.

The oral presentation was coherent, interesting and informed the audience about the project through well-designed slides, videos and posters in a transmedia fashion. The approach behind the thesis and how the research questions were addressed and answered were presented and disseminated in a well-argued fashion. In particular, she showed in detail how her results could be practically applied and gave evidence of an insightful view on ambiguity. Although she did not clarify which specific definition she used, this was compensated by her describing the need to use different definitions for different contexts.

The shortcomings and weaknesses in the written thesis work were addressed in a reflective, well argued way, and proved her ability to conduct a scientific discussion.



### **Conclusions**

Overall, this is a good example of a design-oriented, practice-led and interdisciplinary thesis. Its results clearly speak to both the transmedia and HCI communities.

Due to the quality of the oral presentation, subsequent discussion, overall strengths of the thesis, depth of the literature review, extensive qualitative interviews, and detailed experiments based on her own initiated development of various transmedia artefacts and experiences, we hereby unanimously recommends that Sabiha Ghellal is awarded the PhD degree.

### **Signatures**

A black ink signature that appears to read 'SDBenford' in a cursive, stylized font.

Professor  
Steve Benford

A blue ink signature that appears to read 'Staffan Björk' in a cursive, stylized font.

Professor  
Staffan Björk

A blue ink signature that appears to read 'Henrik Schønau Fog' in a cursive, stylized font.

Associate Professor  
Henrik Schønau Fog



**AALBORG UNIVERSITY**  
DENMARK

Department of Architecture,  
Design and Media Technology  
Rendsburggade 14  
9000 Aalborg  
Denmark

Contact person:  
Lisbeth Dam  
Phone: +45 9940 3603  
E-mail: ldam@create.aau.dk

Date: 23-05-2017

Det Tekniske Fakultet for IT og Design  
Niels Jernes Vej 10  
Att.: Helene Ulrich Pedersen

**Esben Skov Laursen – Exploring the Collaboration between Industrial Designers and Engineering Designers  
in a Handover Situation**

Hermed fremsendes bedømmelsesudvalgets indstilling vedr. Esben Skov Laursens ph.d. afhandling, som han forsvarede mandag den 22. maj 2017. Af indstillingen fremgår, at bedømmelsesudvalget anbefaler, at Esben Skov Laursen bliver tildelt ph.d.-graden.

Instituttet indstiller hermed tildeling af ph.d.-graden til Esben Skov Laursen.

Med venlig hilsen

Lisbeth Dam

Bilag



**Assessment of the PhD thesis entitled:**

**EXPLORING THE COLLABORATION BETWEEN INDUSTRIAL DESIGNERS AND ENGINEERING DESIGNERS IN A HANDOVER SITUATION**

Submitted by Esben Skov Laursen, M.Sc. in Industrial Design

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design by 17.2.2017:

- Associate Professor Birgitte Geert Jensen Aarhus School of Architecture, email bgj@aarch.dk
- Senior Researcher Anders Wikstöm, SICS Swedish ICT Västerås email wikstrom@sics.se
- Professor MSO Nicola Morelli (chairman) Aalborg University, email nmor@create.aau.dk

Supervisor for the thesis has been Associate Professor Louise Møller Nielsen, Aalborg University.

**Description of the thesis**

Esben Skov Laursen's thesis is a monographic work focusing on a specific moment of the product design and development process: the handover between Industrial Designer and Engineering Designer.

While in some cases this moment is part of an integrated product design process, in many other cases this moment is specific and situated in time, and signs a break in the development process, in which Industrial Designer (ID) communicates the outcome of his/her work (in form of a more or less detailed concept, often using a PPT presentation) and puts it in the hands of the Engineering Designer (ED) who is supposed to develop the concept into a final product.

This moment is very critical, because the consistence of the final product with the concept proposed by the ID depends on the opportunities and capabilities of ID to communicate not only the measurable and tangible characteristic of the product, but also the underpinning logic, that could guide the ED in solving any dilemma emerging in the development phase.

The candidate explore the handout moment through two descriptive studies and one prescriptive study. Each descriptive study is based on the analysis of 6 cases, focusing on the handout situation, the first study focuses on the situation "as is", while the second study is a "lab study" in which 6 students projects are communicated to ED in two different situations: with (A) and without (B) the use of a frame generated in the prescriptive study.

**Assessment of the thesis**

The candidate consistently develops an observation strategy, using several cases, distributed in two descriptive studies.



In the first study the candidate analyses the situation "as is", by considering six cases. In such cases the handover situation is analysed using a framework that is consistently derived from the literature review in the first part.

The first study casts a light on the aspects of the communication during the handover between ID and ED, which are particularly challenging. Namely aspects related to the human perspective: while those aspects are often the focus of the ID activity, they are often overseen by the ED in the development process, where business- and technology-related aspects are given more relevance.

A prescriptive study after the first descriptive study is used to refine a frame that is used in a new descriptive study.

The framing proposed by the candidate is tested in a second descriptive study. This study also consists of 6 cases in which design projects are proposed to ED. In this case two situations are described: the first situation (A) in which a group of Engineering Designers will answer to some dilemmas about the development of the project without the help of any frame describing the underlying principles for the project and a second situation (B) in which the ED is illustrated the case with the help of the above mentioned framing.

This study aims at testing the validity of such a framing and its capability to facilitate the communication of the underpinning principles from the ID to ED.

Formulation of research questions or hypotheses

The research questions are correctly formulated in relation to the knowledge gap the candidate identified and consistently addressed in the development of the work.

State of the art including a critical approach to other researchers' results.

The first part of the work sets the theoretical ground for the PhD work. In this part the candidate clarifies the conceptual and cultural differences that determine the communication gap in specific handover situations.

This gap is mainly based on a conceptual distinction between Industrial Designer and Engineering Designer: the profile of the former refers to the culture of design, with all its humanistic and user-centred implications, whereas the profile of the latter is mainly linked to the engineering culture with its technical implications.

The choice of the candidate to distinguish between those two profiles is possibly not too efficient in logical terms, because it suggests a duality between the two profiles, that is not always confirmed by the facts. Indeed, this is also demonstrated by the outcome and the reflections of the second study, where it clearly appears that the ED are often able to interpret and build some insights into the underpinning principles of the ID, even though their priority and logical framework is often prioritizing technical and business related aspects. It could have probably been more effective to explain the handover gap through the duality between the two methodological approaches, the user-centred/humanistic approach and the technical/organisation-based approach.



### Methodology

The candidate develops a consistent methodological approach to analyse the cases, to frame the analysis and the investigation in its various studies and to test his hypothesis.

Although the candidate cannot clearly demonstrate the validity of his framing approach to improve the communication between ID and ED, the research design is valid and the methods are rigorous, in respect to the conceptual tools he proposes for the analysis of the studies.

The explanation of the second study, could have been clearer in explaining how framing actually happened and what were the roles of the different actors - students, supervisors from academia and engineering designers professionals. Is the designer with his visualizations, models and solid works renderings responsible for the product or is the designer only hired to visualize sketches? This could possibly be discussed in the oral defence.

Furthermore it is not clear why the candidate excluded visual representation as one part of the understanding of the handover situation. The literature suggests that some representation techniques, such as storyboarding are able to capture and communicate both meanings and functions. Even though briefing and handover situations are different, the use of visual representation supports the humanistic values (underpinning logic) needed to be communicated in handover situations. This could have been discussed in the thesis, but it will probably be discussed in the oral defence.

### Contribution to knowledge

The work proposed is addressing a gap that is commonly acknowledged, especially in professional life, but has not been explored in many academic studies. The characteristics of this gap are well articulated by the candidate, which describes the aspects of the communication between ID and ED and highlights the aspects and situations in which this gap is particularly relevant in the product design and development process.

### Quality of the conclusions and links with research questions.

In the conclusive section, the candidate is proposing a critical analysis of the results of his studies in respect to the initial research questions. The candidate is well aware that, because of the limitations of his study and the wide range of situations, the research questions cannot be fully answered. In particular, there is no definitive validation of the framing and further studies may be needed to validate and improve it. However, this framing is very clear, it is relevant in respect to the initial research questions and represents a very solid tool to articulate the communication between ID and ED in the handover situation.

### References

The candidate is using a solid reference background along the whole illustration of his work



AALBORG UNIVERSITY  
DENMARK

### Oral presentation and discussion

Date and place of the oral defense: 22.05.2017 Aalborg University, Aalborg.

### Conclusions

The presentation for the defense was very clear and used effective exemplifications and argumentations.

In the discussion of his thesis the PhD candidate demonstrated a very good awareness of the complexity of the situation of the handover between industrial designers and engineering designers. He was able to articulate his answers, problematize them and he was very well aware of the limitations of his work.

He also demonstrated a good capability to read, interpret and use his theoretical references, even though he was very aware of the limitation of his theoretical framework.

The committee challenged his methodological and theoretical approach and he was able to structure a discussion around it, also connecting different problematic aspects of his work, and proposing different perspectives regarding the ways the research was conducted.

The committee would encourage him to discuss the future perspective of his work in respect to aspects such as the social construction implications of the knowledge exchange among different professional and cultural contexts.

The committee unanimously recommends that Esben Skov Laursen is awarded the PhD degree.

22.05.2017.

Birgitte Geert Jensen

Anders Wiktröm

Nicola Morelli



**AALBORG UNIVERSITY**  
DENMARK

**Department of Architecture,  
Design and Media Technology**  
Rendsburggade 14  
9000 Aalborg  
Denmark

Contact person:  
Lisbeth Dam  
Phone: +45 9940 3603  
E-mail: ldam@create.aau.dk

Date: 09-06-2017

Det Tekniske Fakultet for IT og Design  
Niels Jernes Vej 10  
Att.: Bettina Wedde

### **Jacob Bjerre Mikkelsen – Limfjordens Vande: Fortællinger om steder mellem vand og land**

Hermed fremsendes bedømmelsesudvalgets indstilling vedr. Jacob Bjerre Mikkelsens ph.d. afhandling, som han forsvarede torsdag den 8. juni 2017. Af indstillingen fremgår, at bedømmelsesudvalget anbefaler, at Jacob Bjerre Mikkelsen bliver tildelt ph.d.-graden.

Instituttet indstiller hermed tildeling af ph.d.-graden til Jacob Bjerre Mikkelsen.

Med venlig hilsen

Lisbeth Dam

Bilag



## Assessment of the PhD thesis entitled:

### *Limfjordens Vande: Fortællinger om steder mellem vand og land*

Submitted by Jacob Bjerre Mikkelsen, M.Sc. in Urban Design

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design by February 2<sup>nd</sup> 2017.

- Member 1: Professor Jørgen Ole Bærenholdt, Roskilde University, Department of People and Technology P.O. Box 260, DK-4000 Roskilde, E-mail: [job@ruc.dk](mailto:job@ruc.dk)
- Member 2: Associate Professor Jonny Aspen, Oslo School of Architecture and Design (AHO), Institute of Urbanism and Landscape, St. Olavs Plass Postbox 6768, N-0130 Oslo, E-mail: [Jonny.Aspen@aho.no](mailto:Jonny.Aspen@aho.no)
- Member 3 (chairman): Associate Professor Lars Brorson Fich, Aalborg University, Department of Architecture, Design and Media Technology, Rendsburggade 14, DK-9000 Aalborg, E-mail: [lbf@create.aau.dk](mailto:lbf@create.aau.dk)

Supervisor for the thesis has been Professor Ole B. Jensen, Aalborg University, Department of Architecture, Design and Media Technology, Rendsburggade, 14 DK-9000 Aalborg.

Co-supervisor for the thesis has been Associate Professor Lea Holst Laursen, Aalborg University, Department of Architecture, Design and Media Technology, Rendsburggade 14 DK-9000 Aalborg.

## Description of the thesis

The Ph.D. thesis, which forms a monograph, is richly illustrated and 308 pages long, including references and an appendix. In addition is submitted a CD-ROM, containing videos, transcriptions of interviews and minutes from meetings with focus groups. The thesis is written in Danish.

Publications:

Mikkelsen, J.B., 2016. Limfjordens havnelandskaber - regionale strategier for havneomdannelsesprojekter i Limfjordsområdet i O.B. Jensen, S. Wind, T.V. Olsen & J.B. Mikkelsen (eds) (2016), *DESIGN RESEARCH EPISTEMOLOGIES II: Research in Architectural Design*, Aalborg: Department of Architecture, Design and Mediatechnology (A&D Files). Author and editor.

Mikkelsen, J.B., 2015. *Limfjordens Kystlandskaber: Årsrapport 1*. Aalborg: Department of Architecture, Design and Mediatechnology (A&D Files).



AALBORG UNIVERSITY  
DENMARK

Vestermann, T.V. & Mikkelsen, J.B., 2015. Regenerating Østre Havn: The Everyday of Temporary Use Strategies. I: C. Bech-Danielsen, M. Stender & S.S. Davidsson, eds., *Boundaries/Encounters/Connections: Papers presented at the Housing and Welfare Conference*. København, 7.-9. maj. København: SBI forlag. pp. 74-85. Available online: <http://sbi.dk/download/pdf/Boundaries-Encounters-Connections.pdf>. Peer reviewed.

Mikkelsen, J.B., Stevens, Q., Hills, C. & Mueller, F. (kommende udgivelse). Exploring how urban waterfronts can encourage visitors' active engagement with water through an interactive temporary design installation. Submitted to a journal and in review.

Mikkelsen, J.B. & Lange, I.G. (kommende udgivelse). Place in Transition - Exploring potentials of relocating and transforming disused oil rigs into public places. Presented at the 'Cosmobilities conference' and revised and submitted to a journal, in review.

Mikkelsen, J.B. (working paper). Framing the Experiment, paper for research seminar in relation to the conference 'The City and the Pragmatic Turn', University of Copenhagen. Unpublished working document.

## Summary of the thesis

Jacob Bjerre Mikkelsen has submitted an imposing and long thesis, reporting a diversity of research practices and design experiments around the waters of Limfjorden, Northern Jutland – but also in Melbourne, Australia.

Coming from Urban Design, the author has a broad approach analyzing and suggesting designs and interventions at multiple scales. The central idea is to approach Limfjorden with a gaze from the waterside. Furthermore, the author wishes to make use of a relational understanding of place, enacting multisensory approaches, and the ambition is to work in three epistemological scales: the body, the harbour and the region around Limfjorden, bound together through water, across administrative divisions.

The cities and their harbours around the fjord is challenged in three ways; by an aging population, by a decline in the transportation of goods by ship and by a decline in tourism, especially when it comes to sailing tourists (who in average also are getting older). Jacob Bjerre Mikkelsen (JBM) seeks as a point of departure to challenge both the urbanization of the harbours and the decline in functions that directly relate to the water, through exploring the possibilities of developing common strategies between the harbour cities around the fjord "from below". Water is regarded as the common denominator between the harbours, and the strategic emphasis is on the physical embodied experience of water as a multisensory element, while the harbours themselves are regarded as socio-spatial assemblages, constituted by local actors and tourists. Urban design is thus understood as the relation between people and things across scale.

JBM then presents his research questions, divided into a main question and three sub-questions (p. 37-38). The main research question is (in our translation):



- How can the harbour's place qualities and the water's potential as a unifying element to a greater extent be activated in conversion projects across the harbours of Limfjorden, and how can such a knowledge form the basis for future redevelopment projects in smaller seaside towns?

The three sub-questions are the following:

1. How can a holistic network-based understanding of place with water as the unifying element contribute to a holistic understanding and approach to the conversion of harbours in the Limfjorden region?
2. Which spatial and experiential qualities and potentials can be found in and across a selection of Limfjorden's harbours? How can these be illustrated through the project's mapping methods and spatial analysis?
3. How can design investigations and interventions be used to explore the potential of the harbour and the water at the edge between the local and the regional scale in conversion projects in smaller seaside towns?

Chapter 2 discusses the concept of place and mobility. JBM remarks, that as the Limfjorden is perceived as an entity and the harbours in it as a coherent network, mobility, and thereby sailing tourists, is a particularly interesting concept (p. 52). Thus a change in focus from the fjord and the challenges of its harbours and towns towards the viewpoint of a particular user group is becoming important. JBM further discusses Norberg-Schulz's concept of *genius loci*, which is contrasted to Koolhaas's concept of the generic city, and related concepts such as sedentariness versus nomadism. Like Cresswell JBM remarks that both a sedentarian place-bound and a nomadic approach is problematic. The argument is that a relational approach to urban design is needed for purposes of capturing the socio-spatial complexities in harbour contexts.

JBM argues that the emphasis should be on relations between harbours as actors in a network rather than on the individual harbour as a place. The concept of authenticity is also discussed, and it is remarked that it relates to power and authority, as certain meanings are attached to the qualities of place while others are suppressed (pp. 64-65). In the discussion of networks and the emphasis on relations between people and things, the concepts of affordances, understood as a series of possible acts and perceptions that is realized in an interaction between object, environment and the observed subject, and atmospheres, understood as something that is located between people and objects, is foregrounded.

The epistemological approach is based on the abductive logic of pragmatism and results in an iterative approach described as based on hypothesis testing. Using this approach as a strategy for "research through design" is discussed by comparing the pragmatism of Dewey and Lawson's description of design processes (p. 83). Also video ethnography, urban mapping-analyses and focus group interviews is introduced as tools.

Using video ethnography and urban mapping-analyses, the spatial and physical composition of a selection of ten harbours is analysed. Furthermore up to eight different types of areas are identified within each harbour (chapter 4). Based on interviews with different actors, chapter 5 is an analysis of the fragmentation of the harbour areas into diverse sub-types of areas, the difference between the different chosen harbours and the potential of collaboration between them. As representatives of the users, sailor



tourists are interviewed (chapter 6), and it is concluded that values such as the calmness, nature, the landscape and social life within the harbours etc. are appreciated features as well as the freedom to travel spontaneously. In that respect, the differences between the harbours is an important part of experiencing Limfjorden.

The analyses carried out throughout the previous chapters is translated into concrete design experiments in chapter 7, in terms of experiments carried out with the ferry OM:FORM in Aalborg harbour, suggestions for design interventions in all ten harbours and an experiment carried out during a stay at the RMIT in Melbourne. The conclusion of these investigations is then translated into a series of design principles for treating the harbour edge between water and land. In chapter 8, the diversity created by the themed design interventions in the different harbours and the overall network thereby created, forms the basis for creating theme based routes across the fjord.

### **Evaluation of strengths and weaknesses**

The strength of the PhD-project is its regional engagement with 10 municipalities around Limfjorden, where each municipality as a stakeholder has selected the harbour that is to be included in the research. The thesis is rich in the amount of materials and data researched, the number of stakeholders involved and the number of places and designs handled. On the other side, this broadness and richness has a cost, since a more focused approach might have led to richer and more original findings analytically speaking. Furthermore, it is difficult for the reader to follow exactly how the many bits of the rich material collected inform the suggested plans and designs. Finally, the thesis has an argument based in the potentials for making tourism at sea grow – in response to the actual decline of sailor tourism. Consequently the tourist practices among sailors are investigated, but unfortunately the actual investigation appears superficial and does not involve any concrete analysis of how multisensory tourist practices actually are performed at sea. The sailors were only interviewed when staying in the harbour, and the interviews were performed by assistants, and this might explain why much of the analysis of the 32 qualitative interviews in chapter 6 has a focus on *how many* did what and liked what. All in all there are few new findings on more qualitative and subjective aspects of tourists experiences. A central critique of the thesis is therefore that the analysis of tourist experiences is weak and that it is not clear in what ways this analysis has informed the design ideas in chapter 7.

The research questions (p. 37-38) are of the future-oriented type aiming at practical problem solution. Most questions therefore start with 'How can...' (Hvordan kan...), but interestingly most questions also end with posing questions about how new approaches to place, mapping and other kinds of knowledge can be used to make grounds for change. However, such processes of change are not studied within the frame of the thesis work. Thereby it becomes the author's own task to access and evaluate the potential effects of his own work, and this leads to the somehow self-confirming conclusions in chapter 9, which basically says that the author has succeeded in doing what he had planned. The thesis' research design in this way becomes a little introvert, and this is a pity given the large number of actors mobilized. In other words, one could ask, whose problems is it the author is designing solutions for? When such actors are not really approached for responses to the suggested design, it becomes clear that the 'Research through design'



approach is not fully implemented. Another, more traditional/academic approach could then have been to do comparisons with other cases of regional development and processes of change. Since the author wants to contribute to regional development, processes of change and tourism development, research traditions in such fields are relevant, but they are not referred to in the otherwise rich reference list.

Having said this, chapter 1 is rich in explaining the promising programme of the thesis, and chapter 2 on theory must be acknowledged for its approach to relational understandings of place and to socio-spatial assemblages. The author's discussion of different architectural approaches, related to Cresswell's and Massey's geographies of place (p. 52-58) is interesting. His more detailed discussion about different approaches to harbour areas, leading to thoughts about materiality and affordances for bodily practices at harbour edges ('*kanter*' in Danish), is also promising, however much of this is not followed up in later analytical chapters. Also, the methodology chapter (3) is promising with its interest in Dewey's pragmatism, abduction and ideas about 'Research through design'. Figure 3.1 (p. 82) gives a simple and inspiring expression of JBM whole approach, this is outstanding. Maybe symptomatic of this field of practice and research, the author follows Lawson (2004) in explaining the 'wicked' character of design problems: That they are rarely precisely defined.

There are only few critical issues about the theory and method chapters that ought to be discussed: The author uses both the concept of 'network' and 'flows' (for example p. 90), but why does he not make the distinction between them, otherwise made in the literature? The author also explains (like an architect) that design investigations take place when working at the design board, since he needs to draw to investigate – but he then adds that it is also necessary to 'try out and test' ('*afprøve og teste*' p. 101) with the actual users of the harbour. This is promising, but it is not really followed up in the following chapters.

The first analysis in chapter 4 starts by stating that video ethnography done from a kayak gives an impression of how 'towns are sensed by sailors...' (p. 116), but the problem is that the analysis conducted does not say much about what is experienced and how. The data collected is only used to produce sequences of images and a very descriptive text focusing on the physical landscapes of the harbours. The end result is a traditional mapping analysis where specific functions are defined and then applied on maps for each harbour. Furthermore, the mapping analysis has too many details (as in the printed version) to allow an easy reading and understanding of charts. The strong side of the work is the amount of detail in the description, but it is not clear what the mapping brings in terms of practices, performances and affordances, and in terms of where people interact and how they network, drift around and connect to other places. The amount of mapping is amazing, but mappings do not bring about any central or clear narratives, and this is odd, since narratives ('*fortællinger*') even is mentioned in the thesis' title. This makes chapter 4 imposing as well as frustrating to read, since the chapter seems to carry little inspiration from theories and methodologies presented in chapter 2 and 3. Mapping is related to physical functions and zones, and the actors and their modes of conduct, experiencing and sensing seem to belong to another sphere.

Chapter 5 describes how harbours become fragmented and are transformed. Harbours change from industrial purposes to become 'cultural environments' ('*kulturmiljø*' p. 159) and much of this could have been moved to the beginning of the thesis. Furthermore, it is interesting to hear about the growth of new



recreational practices, like kayaking (!), kite surfing, wind surfing, winter bathing and open water swimming, increasingly taking over from sailing – but the reader wonders what the consequence might be both for the general approach and for the design interventions. There are interesting references to critique of too generic, non-contextual, approaches (p. 165) – but the reader is not informed how this relates to the author's own design experiments and guidelines.

The investigation of tourist practices (chapter 6) has already been critiqued above. It does not really fulfill the ambitions stated, and it is surprising how compound references (like '(Ingold 1996, Ingold 2008, Fariás & Bender 2010)' p. 181 and twice p. 183) are attached to simple observations from data collection. These are not their observations! The analysis is not very strong and it is hardly a qualitative analysis.

Chapter 7 is dedicated to design investigations, first on board the Plagen ferry, from the OM:FORM project running in parallel with the PhD project but with other approaches. Interestingly, the author argues that interventions are 'transferable' because of the systematics used in chapter 4 – but how this relates to the critique of too generic approaches in chapter 5 is not clear. It is explained that the Aalborg based interventions with Plagen has inspired the design investigations for all of the ten harbours, as well as being based on mappings presented in chapter 4. All design investigations for the ten harbours are drawn and designed with much detail, building on interesting focus group interviews. And all interventions are also quite ambitious. It is however hard to see how much they can be said to unfold and enrich a gaze from the water. Many of them seem to be about facilitating tourist gazes from above, enacting views over water. A water urban space ('*et vandbyrum*') for Nykøbing Mors is an interesting intervention.

The suggested design interventions fluctuate between several design strategies that e.g. seem close to nostalgic contextualism or new nordic (Struer and Gjøll), classicist near symmetrical idealism (Nykøbing), self-referential Buckminster Fuller-like universalism of the Geodesic dome (Løgstør) or concepts creating narratives through movement in space (most evident in Hals). This should be seen as an advantage as it, following the strategy of research through design, should enable a discussion of these diverse strategies in relation to the introduced concepts of affordances, atmospheres and genius loci vs. the generic. This discussion is unfortunately almost completely lacking. Much the same goes for the possibility of confronting some of the actors with the actual design proposals. The reason might be that the focus is on the edge between land and water rather than on actual potentials for building interventions, leaving only a subordinate position in the argument to the interventions themselves. Contrary to many architects' practice, there is little use of built architectural references as cases, which might have given some idea of the potential effects of the interventions if actually built. Furthermore, narratives *in* designs themselves are not really touched upon, this could have opened up a discussion about the approach of post-modernist architecture vs. authenticity.

The ideas for regional planning of Limfjorden presented in chapter 8 suggests a selection of thematized routes, but there are no concrete routes or flows of visitors studied and suggested. In this way routes become abstract networks illustrating how place-specific findings and designs could work together, but they do not reflect on how people, locals and visitors, move (flow?) in practice, and this is surprising given earlier references to mobile methods. It is also surprising that examples of already existing routes (such as



AALBORG UNIVERSITY  
DENMARK

for example in Nationalpark Thy) are not taken into consideration. This might be because the project, which is well argued, only has a focus on harbours.

Thus, as mentioned above, the findings reported in the conclusion (chapter 9) therefore also look rather general. Every research question is thoroughly discussed, but it is difficult to envisage what the actual findings consist of. This is probably due to 'wicked' character of the 'how can...' research questions of the thesis, worth a further discussion.

## Conclusion

Jacob Bjerre Mikkelsen has submitted an imposing thesis presenting rich material ranging from theoretical readings to concrete designs. It is ambitious work and therefore it is only natural that the thesis leaves lacuna opening debates, as the ones raised above. The work follows an interesting and far-reaching idea about 'Narratives on places between water and land' (*Fortællinger om steder mellem vand og land* – the subtitle) letting the water of Limfjorden connect places. His work contributes to the field of urban and tourism design through its relational approach to place, and contributes to the regional development of the Limfjorden area through its amazing amounts of design ideas and proposals. At the defense Jacob Bjerre Mikkelsen presented his contribution in a lecture for 45 minutes. The following discussion documented his ability to discuss and further develop his approach with more nuance. Reflecting on his own work he was able to relate to the critique raised in a constructive manner, thereby demonstrating his ability to take part in an academic dialogue on an international level. Towards the end of the discussion, it became clear, that JBM's work might suggest a potential original contribution to a methodological approach, that might go beyond the approach suggested in the thesis. This could imply that JBM in the future might also contribute substantial to the methodological development of his field. In conclusion, the committee unanimously recommends Jacob Bjerre Mikkelsen is awarded the PhD degree.

Date 8. juni 2017



Jørgen Ole Bærenholdt



Jonny Aspen



Lars Brorson Fich (chair)



**AALBORG UNIVERSITET**

Det Tekniske Fakultet for IT og Design | HR-center  
Niels Jernes Vej 10  
9220 Aalborg

HR-afdelingen  
Nickie Kate Hermansen  
Telefon: 9940 7902  
Email: [nkh@adm.aau.dk](mailto:nkh@adm.aau.dk)

Dato: 23-05-2017

**Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. tildeling af titlen adjungeret professor ved Institut for Planlægning.**

**Kandidat vedr. tildeling af titlen adjungeret professor:**

Erik De Graaf

Bilag: Indstilling og CV

**Bedømmelsesudvalg:**

Lauri Malmi  
Professor  
Aalto University, School of Science, Department of Computer Science, Finland

Paola Valero  
Professor  
Aalborg University, PLAN & Department of Mathematics and Science Education, Stockholm University

Chair of committee  
Bettina Dahl Søndergaard  
Professor  
University of Bergen, Department of Mathematics & Associate Professor, Aalborg University, PLAN

Bilag: CV for de eksterne bedømmere





United Nations  
Educational, Scientific and  
Cultural Organization



AALBORG UNIVERSITY

Aalborg Centre for Problem Based Learning  
in Engineering Science and Sustainability  
under the auspices of UNESCO

[Eskild Holm Nielsen  
Dekan, TECH]

Aalborg University  
Vestre Havnepromenade 5 1.Floor  
9000 Aalborg, Denmark

Phone: +45 9940 3684  
E-mail: bdahls@plan.aau.dk

Date: 22-05-2017

## Appointment as Adjunct Professor of Erik de Graaff

Erik de Graaff (EdG) graduated at the University of Amsterdam in 1978, majoring in the psychology of work and organisation. Starting with his first job at the Research Institute of Applied Psychology in Amsterdam, his interest focused on learning and teaching in higher education. From 1978-1990, he was involved in developing the Problem Based curriculum of medicine and health sciences at the University of Limburg in Maastricht.

EdG has been an associate professor at the University of Delft, the Netherlands, where he has been leading the Section Education and Technology (EduTec) for a longer period. EdG has also been a visiting research professor at the University of Newcastle, Australia in 1995 and a guest professor at the Videncenter for Lærepædagogik (VCL) at Aalborg University in Denmark in 1999. In 2008 he became adjungeret (Adjunct) professor at the UNESCO Chair in Problem Based Learning in Engineering Education and in 2010 he became a Professor MSO here, which in 2014 got upgraded to a UNESCO centre of PBL. Thus EdG has three times before been assessed highly qualified for a professor position at Aalborg University.

EdG is one of the leading persons in the area of Engineering Education Research in Europe and is one of the driving forces for organizational development in this field, eg. by founding ALE (Active Learning in Education), as vice president in SEFI for a longer period and on the executive board for REES (Research in Engineering Education Society), EdG was the convenor for the SEFI annual conference in 2009. EdG is editor-in-chief for European Journal of Engineering Education, which is the central European journal in the areas of engineering education research.

EdG has supervised several PhD students in this area, has run several PhD courses in research methodology and scientific communication, the PBL Visitor Workshop for international visitors who wish to learn more about PBL, taught and taken part in the curriculum development of the MPBL (Master in PBL). EdG has contributed to the promotion of knowledge and understanding of higher education, particularly PBL, through more than 200 publications.

During his entire career, he has worked with problem based and project based learning. We have known him and the quality of his work during many years at AAU. He will continue to be a great benefit to the UNESCO centre with PhD supervision, master education and research. EdG is highly qualified for such a position.'

Sincerely

Godkendt d. 1-6-17  
  
Eskild Holm Nielsen  
dekan

Bettina Dahl Søndergaard, Head of Section

## Curriculum Vitae



### Personal information

**First name / Surname** Erik de Graaff  
**Address** Vestre Havnepromenade 5, room 1.214, 9000 Aalborg  
**Telephone(s)** +45 99408449 **Mobile:** +44 51558891  
**Fax(es)**  
**E-mail** [degraaff@plan.aau.dk](mailto:degraaff@plan.aau.dk)  
**Nationality** Nederlands  
**Date of birth** 21-04-1951  
**Gender** Male

### Desired employment / Occupational field

Aalborg University, Guest professor 1999-2005. Adjungeret professor since 2007. Professor (M.S.O) since 2011.

### Work experience

Professor, teaching and research tasks. Expertise: Problem-Based Learning; Faculty development; Communication skills; Curriculum development; Research methodology, Intercultural communication.

Dates	
	Delft University of Technology, 1-4-1990 until 2012, Associate professor, teaching, research and management tasks. Expertise: Problem-Based Learning; Faculty development; Communication skills; Curriculum development; Research methodology.
Occupation or position held	
Main activities and responsibilities	
Name and address of employer	Maastricht University, Department Educational Research and Development, 01 06 1979 / 1-4-1990.
Type of business or sector	Assistant professor, teaching, research and management tasks. Expertise: Problem-Based Learning and assessment; Faculty development; Communication skills
	Research Instituut voor de Toegepaste Psychologie (RITP), Amsterdam, 15 09 1977 until 01 06 1979. Project assistant, researcher

### Education and training

Dates	
	Postdoc training Innovation Manager, Academie voor Informatica, Universiteit van Amsterdam, 1990-1991.
Title of qualification awarded	PhD at the Rijksuniversiteit Limburg May 25 1989 thesis "Simulation of Initial Medical Problem-solving"; promotor Prof. dr. M.J. Drop, co-promotor Dr. H.J.M. van Berkel.
Principal subjects/occupational skills covered	Postdoctorale course Engels, Tolk-vertalersopleiding, Maastricht, 1987.
Name and type of organisation providing education and training	Training as bio-energetical anlysis therapist, Nederlands Instituut voor Bio-energetische Analyse (NIBA), 1984-1988. Post academic course "Onderzoek en ontwikkeling van het hoger onderwijs" (Research and development of Higher Education) CRWO, 1982-1983. Psychology at the Universiteit van Amsterdam, hoofdrichting Arbeids- en Organisatiepsychologie (Major Applied psychology), minor Didaxologie, Masters exam 1978. HBS-B aan het Amsterdams Lyceum, 1970

## PhD supervision and PhD committee membership

### Supervisor

Marcel Claessens, 29-6-1995 (Co-supervisor with Wim Jochems)  
Renate Klaassen, 4-12 2001 (Co-supervisor with Wim Veen)  
Ina Klaassens, 7-10-2003 (Co-supervisor with Paul Drewe)  
Gillian Saunders-Smits, 9-12-2008 (Co-supervisor with Zafer Gürdal)  
Mahyuddin bin Arsat, University of Aalborg, Denmark, 3 June 2014 (joint supervisor with Jette Egelund)  
Maartje van den Bogaard (joint supervisor with Alexander Verbraek)  
Prarthana Coffin, University of Aalborg, Denmark, 20 April 2015 (joint-supervisor with Anette Kolmos)  
Ron Ulseth, Aalborg University, 17 June 2016 (joint-supervisor with Anette Kolmos)  
Bart Johnson, Aalborg University, 17 June 2016 (joint-supervisor with Anette Kolmos)  
Vivian Dang, Delft University of Technology, 16 September 2016 (joint-supervisor with Alexander Verbraek).  
Kjell Staffas, Aalborg University, 16-3-2017 (joint-supervisor with Bettina Dahl)

### Member of PhD committee

A. Williams, University of Newcastle, Australia, July 2005  
Xiang-Yun Du, University of Aalborg, Denmark, April 2006  
Egon Moesby, University of Aalborg, Denmark,  
Joost de Winter, TU Delft, 27 January 2009  
Jordi Segalàs Coral, University of Barcelona, 2009  
Fons Dehing, University of Eindhoven, 3 July 2012 )  
Huichin Li, University of Aalborg, Denmark, 8 January 2013 (Chair)  
Sonia Gomez, University of Eindhoven, 22 April 2014  
Aida Guerra, University of Aalborg, Denmark, 4 June 2014 (Chair)  
Mohamad Temerzi Borhan, University of Aalborg, Denmark, 1 October 2014 (Chair)  
Vignia Servant, Erasmus University, Rotterdam, 18 November 2016

## Resumé

Erik de Graaff is trained as psychologist and holds a PhD in social sciences. He has been working with Problem Based learning (PBL) in Maastricht from 1979 till 1990. After completing his PhD he joined Delft University where he was appointed as associate professor in the field of educational innovation at the Faculty of Technology Policy and Management. Dr. de Graaff has been a visiting professor at the University of Newcastle, Australia in 1995 and several times a guest professor at Aalborg University in Denmark. The collaboration with Aalborg University resulted in an appointment as full professor at the department of Development and Planning in 2011. Dr. de Graaff is widely recognized as an international expert on PBL. He contributed to knowledge and understanding of higher engineering education with numerous publications and through active participation in professional organizations like SEFI, IGIP, IFEEES and ALE. He has published over 200 articles and papers and he has presented more than 70 keynotes and invited lectures on various topics related to PBL in higher education, like: Working with PBL, Management of change, Assessment and evaluation, Methods of applied research and Collaboration between university and industry. Since January 2008 he is Editor-in-Chief of the Europ

## Annex

List of publications

## Publikaties - E. de Graaff - Publications

## Tijdschrift artikelen / Journal contributions

1. De Graaff, E. (1979) Schoolkeuzelessen in de praktijk. *Beroepskeuze*, September 1979.
2. Galesloot, J.A.M., De Graaff, E., Verwijnen, M. and Imbos, T. (1981) Facts and beliefs on the issue multiple-choice testing vs. free-response tests in examinations of clinical competence. *Medical Education*, 15, 204-205.
3. Post, G.J., De Graaff, E. & Drop, M. J. (1986) Duur en numeriek rendement van de opleiding tot basisarts in Maastricht. *Nederlands Tijdschrift voor de Geneeskunde*, 130, 42, 1903-1905.
4. De Graaff, E., Post, G.J. & Drop, M. J. (1987) Validation of a new measure of clinical problem-solving. *Medical Education*, 21, 213-218.
5. De Graaff, E., Drop, M. J., Post, G.J. & De Roos, K.P. (1987) Carrièrevoorkeuren en entree op de arbeidsmarkt van Maastrichtse basisartsen. *Nederlands Tijdschrift voor de Geneeskunde*, 131, 38, 1677-1678.
6. De Graaff, E., Schreurs, M. L. en Winants, Y. (1987) Probleemgestuurd studeren moet je leren; - kennismaking met probleemgestuurd onderwijs in de gezondheids-wetenschappen. *Onderzoek van Onderwijs*, 16, 2, 22-26.
7. De Graaff, E. (1988) Simulation of Initial Medical Problem-solving: a test for the assessment of medical problem-solving. *Medical Teacher*, 10, 1, 49-55.
8. Post, G.J., De Graaff, E. and Drop, M. J. (1988) Efficiency of a Primary-Care Curriculum. *Annals of Community-Oriented Medical Education*, 1, 25-31.
9. De Graaff, E. & Peeters, T. (1989) Toetsen op basis van casuïstiek. *Onderzoek van Onderwijs*, 18, 2, 29-32.
10. De Graaff, E. (1989) A Test of Medical Problem-Solving Scored by Nurses and Physicians: The Handicap of Expertise. *Medical Education*, 23, 381-386.
11. De Graaff, E. Drop, M. J. & Van Berkel, H. J. M. (1989) Een Schriftelijke toets voor vaardigheid in het oplossen van medische problemen; -Simulatie van Initieel Medisch probleemoplossen (SIMP). *Bulletin Medisch Onderwijs*, 8. 88-93.
12. Van Berkel, H. J. M., E. de Graaff, J. Sprooten & H. G. Schmidt (1990) De eerste ervaringen met een geïndividualiseerde toets bestaande uit 600 vragen. *Tijdschrift voor Onderwijsresearch*, 15, 3.
13. Van der Vleuten, C.P.M., Norman, G. R. and De Graaff, E. (1991) Pitfalls in the Pursuit of Objectivity: Issues of Reliability. *Medical Education*, 25, 110-118.
14. Norman, G.R., Van der Vleuten, C. P. M. and De Graaff, E. (1991) Pitfalls in the Pursuit of Objectivity: Issues of Validity, Efficiency and Acceptance. *Medical Education*, 25, 119-126.
15. Frijns, P. & E. de Graaff (1993) Doceren of Faciliteren? *Velon*, 14, 2, 34-36.
16. Berkel, H. J. M. van, Frijns, P., Sprooten, J. and Graaff, E. de (1993) An outline for a curriculum assessment test. *Assessment and Evaluation in Higher Education*.
17. E. de Graaff & Frijns, P. (1994) Vragen met een vraagteken: overwegingen bij de keuze tussen open en gesloten vraagvormen. *Velon*, 15, 24-26.
18. Book review "How to gain most from problem based learning", by Don Woods. *PROBE*, Newsletter of the Australian problem-based learning network. No. 11. August 1994, p. 12.
19. H. K. Banerjee & E. de Graaff (1996) Problem-Based Learning in Architecture: Problems of Integration of Technical Disciplines. *European Journal of Engineering Education*, 21, 2, p. 185-195.
20. M. P. J. G. Claessens, E. de Graaff und W. M. G. Jochems (1997). Using the student questionnaire in implementing PBL-programme. *Zeitschrift für Hochschuldidaktik* 21-1/1997, p. 180-194.
21. Erik de Graaff & Rob Cowdroy (1997). Theory and Practice of Educational Innovation; Introduction of Problem-Based Learning in Architecture. *International Journal of Engineering Education*. Vol 13. no.3. 166-174.
22. R. G. Klaassen & E. de Graaff (2001) Facing innovation: preparing lecturers for English-medium instruction in a non-native context. *European Journal of Engineering Education* Vol. 26, No 3, 281-289.
23. Erik de Graaff & Wim Ravesteijn (2001) Training Complete Engineers: Global Enterprise and Engineering Education. *European Journal of Engineering Education* Vol. 26, No. 4, 419-427.
24. Graaff, Erik de & Kolmos, Anette (2003) Characteristics of problem-based learning. *International Journal of Engineering Education*. 19, 5, p. 657-662.
25. Vos, H & Graaff, E. de (2004) Developing Meta-cognition: a basis for active learning. *European journal of Engineering Education*. 29 (4) (pp. 543-548).
26. Graaff, E. de & Sheella Mierson (2005) The dance of educational Innovation. *Teaching in Higher Education*. Vol. 10. No 1. (p. 117-121).
27. Graaff, E. de (2005). Curriculum Innovation in Engineering Education through Active Learning. *Modern University Education*, 5(2005), 17-20.
28. Cowdroy, Rob & Erik de Graaff (2005) Assessing highly-creative ability. *Assessment & Evaluation in Higher Education*. Vol 30, No 5. October 2005, pp 507-518.
29. Graaff, E. de , Lemaitre, D , Le Prat, R. , & Böt, L. (2006). Editorial: Focusing on competence. *European journal of engineering education*, 31(1), 45-53.

30. Graaff, E. de , Ravesteijn, W & Kroesen, JO (2006). Engineering the future: the social necessity of communicative engineers. *European Journal of Engineering Education*, 31(1), 63-71.
31. Rompelman, O. & Graaff, E. de (2006). The engineering of engineering education: curriculum development from a designer's point of view. *European Journal of Engineering Education*, 31(2), 215-226.
32. Suanders-Smiths (2012) Assessment of Curriculum Quality through Alumni Research. *European Journal of Engineering Education*, 37(2), 133-142.
33. Fenzhi Zhang, Anette Kolmos and Erik de Graaff (2013) Conceptualizations on Innovation Competency in a Problem- and Project-Based Learning Curriculum: From an Activity Theory Perspective. *IJEE Vol. 29 Issue 1*, p.3-16.
34. Graaff, Erik de (2014) Research versus educational practice : positioning the European Journal of Engineering Education. *European Journal of Engineering Education*, Vol. 31, No. 1, 2014, p. 1-6.
35. Bøgelund, Pia and Graaff, Erik de (2016) The Road to Become a Legitimate Scholar: A Case Study of International PhD Students in Science and Engineering *International Journal of Doctoral Studies*, Accepted for publication 2016.
36. Malmi, Lauri, Tom Adawi, Ronald Curmi, Erik De Graaff, Gavin Duffy, Christian Kautz, Päivi Kinnunen & Bill Williams (2016). How authors did it – a methodological analysis of recent engineering education research papers in the European Journal of Engineering Education. *European Journal of Engineering Education* · June 2016
37. Graaff, Erik de (2016) The Transformation from Teaching to Facilitation : Experiences with Faculty Development Training. *International Journal of Engineering Education*, Vol. 32, No. 1(B), 2016, p. 396-401.
38. Christie, Michael & Erik de Graaff (2016) The philosophical and pedagogical underpinnings of Active Learning in Engineering Education. *European Journal of Engineering Education*. Published online: 28 Nov 2016
39. Arana Arexolaleiba, Nestor ; Guerra, Aida; Kolmos, Anette; de Graaff, Erik; Lima, Rui M Guest Editorial *International Journal of Engineering Education*, Vol. 33, No. 3, 2017, p. 940-041.

#### Boeken / books / editorials

1. Galesloot, J. A. M. & De Graaff, E. (1981) *Casuïstiek uit de huisartsen praktijk: - 40 praktijksituaties voor zelf-evaluatie*. Scheltema & Holkema, Utrecht/Antwerpen.
2. De Graaff, E. (1989) *Simulation of Initial Medical Problem-solving: Studies on a new measure for the assessment of medical problem-solving ability*. (proefschrift, Rijksuniversiteit Limburg, Maastricht). Haarlem: Thesis.
3. Erik de Graaff & Peter A. J. Bouhuijs (eds.) (1993) *Implementation of problem-based learning in higher education*. Amsterdam: Thesis Publishers.
4. Erik de Graaff, Anette Kolmos and Ole Vinther (2001) Editorial: Staff Development in Higher Education. *European Journal of Engineering Education* Vol. 26, No. 4, 325-328.
5. Graaff, Erik de, Fruchter, R.& Kolmos, Anette *Problem Based Learning in Engineering Education* (eds.) Vol.19. Theme issue of the *International Journal Of Engineering Education*. (2003).
6. Erik de Graaff Otto Rompelman (2004) Guest editors Theme issue: Assessment in Engineering Education. *European Journal of Engineering Education* Vol. 29. No. 2, (171-259).
7. H. H. C. M. Christiaans, A. L. A. Fraaij, E. de Graaff, Ch. F. Hendriks. (2004) *Methodologie van Technisch wetenschappelijk onderzoek*. Utrecht: Lemma (422 p).
8. Christensen, Hans Peter, Graaff, E. de, & Lemoult, Bernard (eds.). (2004). *Proceedings 4th International Workshop on Active Learning in Engineering Education*. Nantes, France: SEFI.
9. Graaff, E. de, & H. P. Christensen (eds.) (2004). Theme Issue Active Learning in Engineering Education. *European journal of Engineering Education* 29 (4).
10. Graaff, Erik de, Gillian N. Saunders-Smiths & Michael R. Nieweg (2005) *Research and Practice of Active Learning in Engineering Education*. Amsterdam: Pallas Publications.
11. Veen, E. van der, Graaff, E. de , & Andernach, J. A. (eds.). (2006). *Active learning at TU Delft*. Delft: TU Delft.
12. Lemaitre, D , Le Prat, R. , Graaff, E. de , & Bot, L. (eds.). (2006). *European Journal of Engineering Education*.
13. Erik de Graaff & Anette Kolmos (2007). *Management of Change; Implementation of Problem-Based and Project-Based Learning in Engineering*. Rotterdam / Taipei: Sense Publishers. 221p.
14. Andernach, J. A. Veen, E. van der, Graaff, E. de , & (eds.). (2007). *Activerend Onderwijs aan de TU Delft; negen goede voorbeelden belicht*. [Active learning at TU Delft; Focus on nine good practices]: Delft: TU Delft. 84 p.
15. Bogaard, MED van den (TPM Sect. Technology, Strategy & Entrepreneurship), Graaff, E de & Smits, GN (Ch. Aerospace Structures) (Eds.). (2009). Attracting young people to engenering: engineering is fun! Delft: Delft University of Technology.
16. Fink, FK & Graaff, E de (Eds.). (2009). *European Journal of Engineering Education* (34, 3). Oxon, UK: Taylor & Francis.
17. Du, Xiangyun , Graaff, E de & Kolmos, A (Eds.). (2009). *Research on PBL Practice in Engineering Education*. Rotterdam: Sense Publishers.
18. Kolmos, Anette, Erik de Graaff & Xiangyun Du (Guest Editors) Special Issue: Methodology for the study of PBL in Engineering Education. *International Journal of Engineering Education*, Vol 26-3 2010.

19. PBL across the disciplines: research into best practice; Proceedings from the 3rd International Research Symposium on PBL 2011. Editors: John Davies, Erik de Graaff and Anette Kolmos. Coventry Coventry University.
20. Khairiyah Mohd-Yusof, Mahyuddin Arsat, Mohamad Termizi Borhan, Erik de Graaff, Anette Kolmos, Fatin Aliah Phang (Eds.) PBL Across Cultures. Proceedings of the 4rd International Research Symposium on PBL 2013 Universiti Teknologi Malaysia, 2-3 July 2013. Aalborg University Press. Aalborg: 2013.
21. Graaff, Erik de; Farreras, Montse; Arexolaleiba, Nestor (Editors) 2015. Active Teachers - Active Students : Proceedings of the 13th International Workshop Active Learning in Engineering. Aalborg Universitetsforlag, 2015. 381 p.
22. Graaff, Erik de; Guerra, Aida; Kolmos, Anette; Arexolaleiba, Nestor (Editors) 2015 Global Research Community : Collaboration and Developments. Aalborg Universitetsforlag, 2015. 537 p.

### **Bijdragen aan boeken en proceedings / Contributions to books and proceedings**

1. Wesdorp, H. (red.) met Blok, H., De Graaff, E., Wolowitsj-Schelvis, A. & Zijlmans, S. (1979) *Studietoetsen en hun effecten op het onderwijs*. SVO-reeks, no. 15.'s Gravenhage: Staatsuitgeverij.
2. De Graaff, E. & Galesloot, J. A. M. (1982) De ontwikkeling van een toetsmethode voor 'medisch probleem-oplossen'. In: H.G. Schmidt (red) *Probleemgestuurd onderwijs*. Harlingen: Flevodruk.
3. De Graaff, E., Moust, J. H. C., Ronteltap, C. F. M. and Schmidt, H. G. (1982) Studiebeleving van Maastrichtse medische studenten. In: H.G. Schmidt (red.) *Probleemgestuurd onderwijs*. Harlingen: Flevodruk.
4. De Grave, W. S., De Volder, M. L., De Graaff, E. & Thung P.J. (1983) Peerevaluation in het hoger onderwijs: -literatuuroverzicht en vergelijking van drie methoden voor onderling beoordelen van inzet bij de studie. In: *Motivatie gemeten?* E. Roede & Th. Bergen (red.) SVO-reeks, 72. Harlingen: Flevodruk.
5. De Graaff, E. and Post, G. J. (1985) Farewell Maastricht: -the evaluation of ex-students after 6 years problem based education. In: *Tutorials in Problem based learning II*, W. S. de Grave, J. H. C. Moust, H. G. Schmidt (red.) Network of community-oriented educational institutions for the Health Sciences. Maastricht, Rijksuniversiteit Limburg, p. 239.
6. De Graaff, E. (met bijdrage van Claessens, H.F.A.) (1985) Motivatie van leerlingen. In: H. Schmidt (red.) *Vroegtijdig van school, - een thematische introductie tot de sociale wetenschappen*. Basiscursus Sociale Wetenschappen, Heerlen: Open Universiteit.
7. DeVries, M. W., Schmidt, H. G. and De Graaff, E. (1989) Dutch comparisons: the assessment of cognitive and motivational effects of problem-based learning. in: H.G. Schmidt, M. Lipkin, M. W. DeVries and J. M. Greep (eds.) *Education for tomorrow's doctors today*. New York: Springer-Verlag.
8. De Graaff, E. (1991) Bouwkunde onderwijs: Kunst of Kunde? In: *"Mag het een beetje scherper?"* Faculteit der Bouwkunde, Technische Universiteit Delft, 1991.
9. De Graaff, E. & T. Peeters (1993) Beoordelen met casus. In: Berkel, H. J. M. van & Bax, A. E. (red) *Beoordelen in het onderwijs*. Een handleiding voor het construeren van toetsen en het evalueren van leerdoelen en onderwijsvormen. Houten/Zaventem: Bohn, Stafleu & Van Loghum.
10. De Graaff, E. (1993) The principles of problem-based learning. In: Erik de Graaff & Peter A. J. Bouhuijs (eds.) *Implementation of problem-based learning in higher education*. Amsterdam: Thesis Publishers.
11. Bouhuijs, P. A. J. and De Graaff, E. (1993) The introduction of problem-based learning at the Faculty of Building Sciences. In: Erik de Graaff & Peter A. J. Bouhuijs (eds.) *Implementation of problem-based learning in higher education*. Amsterdam: Thesis Publishers.
12. De Graaff, E. and Bouhuijs, P. A. J. (1993) Management of educational change: a discussion of the implementation process at the Faculty of Building Sciences. In: Erik de Graaff & Peter A. J. Bouhuijs (eds.) *Implementation of problem-based learning in higher education*. Amsterdam: Thesis Publishers.
13. Frijns, P. H. A. M. and De Graaff, E. (1993) The assessment of study results in a problem-based curriculum. In: Erik de Graaff & Peter A. J. Bouhuijs (eds.) *Implementation of problem-based learning in higher education*. Amsterdam: Thesis Publishers.
14. Van der Woord, J. and E. de Graaff (1993) Changing Horses Mid-Course; The implementation of a problem-based curriculum at the department of building sciences of the Technical University Delft, Holland. In: P. A. J. Bouwhijs, H. J. Schmidt and H. J. M. van Berkel (eds.) *Problem-based learning as an educational strategy*. Maastricht: Network publications.
15. Van Berkel, Sprooten, J. and E. de Graaff (1993) An Individualized Assessment Test Consisting of 600 Items. In: P. A. J. Bouwhijs, H. J. Schmidt and H. J. M. van Berkel (eds.) *Problem-based learning as an educational strategy*. Maastricht: Network publications.
16. Westrik, J. and De Graaff, E. (1994) Development and management of the new PBL-based curriculum in Architecture. In: S. E. Chen, R. M. Cowdroy, A. J. Kingsland and M. J. Ostwald (eds.) *Reflections on Problem-based Learning*. Sydney: Australian Problem Based Learning Network.
17. De Graaff, E. and J. Westrik (1994) Innovation and adaptation: Searching for the balance between PBL and the traditions of design education. In: M. J. Ostwald and A. J. Kingsland (eds.) *Research and development in Problem Based Learning*. Sydney: Australian Problem Based Learning Network.

18. Marinissen, A. H. and De Graaff, E. (1994) The design of a new curriculum for design engineering. In: M. J. Ostwald and A. J. Kingsland (eds.) *Research and development in Problem Based Learning*. Sydney: Australian Problem Based Learning Network.
19. De Graaff, E. (1994) Problem-based learning in engineering education. In: Société Européenne pour la Formation des Ingénieurs and The Engineering College of Copenhagen (eds.) *Project-organized curricula in engineering education*. SEFI cahier no 4., Brussel: SEFI.
20. Frijns, P., De Graaff, E. and Klerks, M. (1994) Supervision and grading in design education. In K. L. Eldridge (ed.): *Beginnings in Architecture*. New York: ACSA press.
21. De Graaff, E. (1995) Essayvragen. In: *Medisch Onderwijs in de Praktijk*. J. C. M. Metz, A. J. J. A. Scherpenbier & C. P. M. van der Vleuten (red). Assen: Van Gorcum.
22. Menheere, S. C. M. and de Graaff, E. (1995) *The development of a curriculum for Project management and real estate management*. In: Wim H. Gijselaers, Dirk T. Tempelaar, Piet K. Keizer, Jos M. Blommaert, Eugene M. Bernard and Hans Kasper (eds.) *Educational Innovation in Economics and Business Administration; The case of Problem-Based Learning*. Dordrecht: Kluwer Academic Publishers, p. 324-330.
23. Graaff, E. de & Cowdroy, R. (1996). Models of Problem-Based Learning in Architecture. In: Paola Michialino (ed.). *Project et Pedagogie/Design and Project. Proceedings Summer University no. 1 Louvain la Neufe: AEEA/EAAE, 27-38*.
24. Graaff, E. de (1996). Studentmentoren bij de introductie van Probleem-gestuurd leren. Onderwijsonderzoek in Nederland en Vlaanderen 1996. *Proceedings van de Onderwijs Research Dagen 1996 te Tilburg*. Tilburg: Sectie Onderwijs- en Opleidingspsychologie, Katholieke Universiteit Brabant, 175.
40. F. Wille & E. de Graaff. Improvements in Project Organized Learning. (1997) In: S. Törnkvist (ed.) *Proceedings of the second international conference on Teaching Science for Technology at Tertiary Level*, Stockholm, 14-17 June 1997 .
41. E. de Graaff & P. Kruit. (1999) *Assessment of learning results in a problem-based physics course*. (geaccepteerd). Paper presented at the SEFI conference, April 22-23 1999, Delft, Holland. In : Joanna Daudt & Otto Rompelman (eds.) *What have they learned? Assessment of Students in Higher Education*. SEFI document No. 23. SEFI: Brussel.
42. E. de Graaff & P. Kruit (1999) *Enhancing student motivation in applied physics by means of a pbl module*. Paper presented at the 5th international PBL conference 99, Montreal, Canada, July 7-10 1999. *Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada*.
43. T. van Baten & E. de Graaff (1999) *Learning in project groups at the faculty of aerospace engineering*. Paper presented at the 5th international PBL conference 99, Montreal, Canada, July 7-10 1999. *Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada*.
44. E. de Graaff & Rob Cowdroy (1999) *Learning creative thinking: with particular reference to engineers*. Paper presented at the 5th international PBL conference 99, Montreal, Canada, July 7-10 1999. *Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada*.
45. E. de Graaff, M. W. Ertsen, W. Ravesteijn (1999) *Integration of social sciences in engineering studies*. Paper presented at the 5th international PBL conference 99, Montreal, Canada, July 7-10 1999. *Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada*.
46. M. J. Vellekoop, E. de Graaff (1999) *Integral first-year tutorial based on "learning by doing"*. Paper presented at the 5th international PBL conference 99, Montreal, Canada, July 7-10 1999. *Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada*.
47. Cowdroy, R, E. de Graaff & M. Crick (1999) *New competencies and consequences for PBL*. In: J. Conway and A. Williams (eds.). *Themes and Variations in PBL*. Refereed Proceedings of the 1999 Bi-annual PBL conference 7-10 July, Montreal, Canada
48. E. de Graaff, M. W. Ertsen & W. Ravesteijn (1999) *Integration of Social sciences in engineering studies*. In: Andres Hagström (ed.) *Engineering Education: Rediscovering the centre*. Proceeding of the 1999 Annual SEFI conference
49. E. de Graaff & J. Longmuss (1999) *Learning from project work: individual learning results versus learning in a group*. In: Andres Hagström (ed) *Engineering Education: Rediscovering the centre*. Proceeding of the 1999 Annual SEFI conference
50. M. W. Ertsen, W. Ravesteijn & E. de Graaff, (1999) *Design and social components in engineering studies*. In: Andres Hagström (ed) *Engineering Education: Rediscovering the centre*. Proceeding of the 1999 Annual SEFI conference.
51. Renate G. Klaassen, Joke Snippe & Erik de Graaff (1999), *Improving English-medium Instruction in Engineering Education*. In: Andres Hagström (ed.) *Engineering Education: Rediscovering the centre*. Proceeding of the 1999 Annual SEFI conference.
52. *How to enable a self regulating learning process- New teacher roles in engineering education*. Seminar Active learning in Engineering education, 29-1/1-2 2001, Caracas Venezuela.
53. Graaff, E. de & Ravesteijn, W.; *Engineering education: From competencies to training methods*. In: J. Michel (eds.) *The Many Facets of International of Engineers*. Annual SEFI Congress, Paris, 9-5-2000.

54. Graaff, E. de & Ravesteijn, W.; Global enterprise and the engineers' education: Shell and the demands on engineers of the future. In: J. Michel (eds.) *The Many Facets of International Education of Engineers Annual SEFI Congress, Paris, 9-5-2000.*
55. Klaassen, R.G. & Graaff, E. de; Learning Technical Content through a second language. In: *Learner-Centred Universities for the New Millennium. International University Teaching (Frankfurt am Main, 17-7-2000), College Park Maryland, USA, 2000, p. 503-508.*
56. Klaassen, R.G. & Graaff, E. de; Meeting the demands of a Changing Environment. In: J. Michel (eds.) *The Many Facets of International Education of Engineers. Annual SEFI Congress, Paris, 9-5-2000.*
57. Klaassen, Renate, Erik de Graaff and Csilla Buiting-Csikos (2000), Learning Technical Content through a Second language, 25th international conference on University Teaching "Learner-Centred Universities for the New Millennium", Frankfurt 17-20 July 2000, p.61, pp.503-508.
58. R. G. Klaassen & E. de Graaff (2000), Meeting the demands of a Changing Environment, In J. Michel (ed.), *The Many Facets of International Education of Engineers. Annual SEFI Congress, Paris, 9-5-2000.*
59. Erik de Graaff, Wim Thijs & Peter Wieringa (2001). *Research as Learning Paradigm.* Paper presented at the SEFI conference in Copenhagen 12-9/14-9. In: Ole Vinther & Palle Sørensen (eds.) *New Engineering Competencies - Changing the Paradigm, Copenhagen. SEFI publication.*
60. R.G. Klaassen & E. de Graaff (2001) *English-medium instruction Programmes; Creating a "Euro-snack" Production line.* Paper presented at the SEFI conference Copenhagen 12-9/14-9. In: Ole Vinther & Palle Sørensen (eds.) *New Engineering Competencies - Changing the Paradigm, Copenhagen: SEFI publication*
61. Ravesteijn, Wim & Graaff, Erik de (2002) *UTOPIAN ENGINEERING.* Paper presented at the SEFI 2002 conference in Florence. In: Claudio BORRI & Tor-Ulf WECK (eds.) *The Renaissance Engineer of Tomorrow.* Firenze: SEFI publication
62. Graaff, Erik de & Cowdroy, Rob (2002) *The Best Way To Rome; A Paradigm For The Assessment Of Excellent Student Performance .* In: Proceedings of the ASEE 2002 conference in Montreal.
63. Cowdroy, Rob; Williams, Anthony, DeGraaff, Erik & Mauffette, Yves (2002) *Resolving relevance, quality and quality assurance: a transitional criteria approach.* In: Allan Goody, Jan Herrington, Maria Northcote (eds.). *Quality Conversations: Proceedings of the 2002 Annual International Conference of Higher Education Research and Development Society of Australia.*
64. Erik de Graaff & Wim Ravesteijn (2003) Engineering For A Better World: The Meaning Of Utopian Thinking For Engineering Education, Proceedings of the Annual ASEE conference June 23-25 Nashville USA.
65. Gillian Saunders-Smits & Erik de Graaff (2003) The development of integrated professional skills in Aerospace engineering through problem-based learning in design projects. , Proceedings of the Annual ASEE conference June 23-25 Nashville USA.
66. U. Nienhuis, C. Dirkse & E. de Graaff (2003) CURRICULUM INNOVATION IN MARINE TECHNOLOGY. Annual EFI Conference 2003 , Porto September 7-10.
67. Toine Andernach, Erik de Graaff, Renate Klaassen, Geert Lameris & Marianne Vrijman (2003) A Qualification Programme for University Teachers in Engineering, Porto September 7-10.
68. Cowdroy, R & Graaff, E. de (2003) Assessing creative ability. In: Susan Shannon Evaluating and reporting at a distance: quality experiences with cost effective web supported evaluations Proceedings of the conference A Commitment to Quality. (pp. 1-10). Adelaide - Australia: University of South Australia.
69. Graaff, E. de, & Zandvoort, H (2004). Educating engineers for social responsibility. In J Nieto Nieto (ed.), *The XXI century, the golden opportunity for engineering education?* (pp. 131-134). Valencia: Centro de Formacion de Postgrado de la UVP.
70. Graaff, E. de (2004). A European perspective on Faculty development in Engineering Education. In: A. Kolmos et al (ed.), *Faculty Development in Nordic Engineering Education (IPN-series, 1, pp. 13-20).* Viborg a/s: Aalborg University Press.
71. Graaff, E. de (2004). The Impact of Assessment on the Problem-based Learning Process. In: Maggi Savin-Baden & Kay Wilkie (eds.), *Challenging Research in Problem-based Learning* (pp. 26-36). Glasgow: Society for Research into Higher Education & Open Univ.Press.
72. Graaff, E. de , & Andernach, J. A. (2006). Methods of Active Learning. In Veen, E. van de, Graaff, E. de, & Andernach, J.A.. (eds.), *Active learning at TU Delft* (pp. 30-33). Delft: TU Delft.
73. Rompelman, O , & Graaff, E. de (2006). Active learning and curriculum design. In Dominguez Urbano (ed.), *Innovative teaching and learning in engineering education* (pp. 37-47). Valladolid: Universidad de Valladolid.
74. Graaff, E. de, Andernach, J. A. , & Klaassen, R. G. (2006). Learning to teach, teaching to learn the impact of a didactic qualification programme on university teachers careers. In Jones, M., Krieger, A., Reichl, F., & Steiner, A. (eds.), *Proceedings of the 10th IACEE World Conference on Continuing Engineering Education* (pp. 1-6). Vienna: Vienna University.
75. Graaff, E. de , & Sjoer, E (2006). Positioning Educational Consultancy and Research in Engineering Education. In Proceedings of the 34th Annual SEFI Conference (pp. 98-101). Uppsala: Uppsala University.
76. Graaff, E. de (2006). Psychological aspects of learning and teaching in engineering education. In 35th international IGIP symposium Engineering Education priority for global development (pp. 27-32).



77. Graaff, E. de , & Borri, C. (2006). Research and Innovation of Engineering Education in Europe the contribution of SEFI. Proceedings of the 2006 JSEE Annual Conference (pp. 12-17).
78. Graaff, E. de , Andernach, J. A. , Klaassen, R. G. , & Veen, E. van der (2006). Teaching Competence for engineers. In SEFI 2006, 34th Annual Conference (pp. 1-6). Uppsala: SEFI.
79. Ravensteijn, W. , Graaff, E. de , Kroesen, J. O. & Wiersma, JWF (2006). The impact of Communication Skills in Engineering Education. In 35th International IGIP Symposium Engineering Education priority for global development (pp. 479-484).
80. Graaff, Erik de & Anette Kolmos (2007) History of Problem-Based and Project-based Learning. In: Erik de Graaff & Anette Kolmos (2007). Management of Change; Implementation of Problem-Based and Project-Based Learning in Engineering. Rotterdam / Taipei: Sense Publishers. p. 1-8.
81. Kolmos, Anette & Erik de Graaff (2007) Process of Changing to PBL. In: Erik de Graaff & Anette Kolmos (2007). Management of Change; Implementation of Problem-Based and Project-Based Learning in Engineering. Rotterdam / Taipei: Sense Publishers. p. 31-43.
82. Saunders-Smiths, Gillian N., Van den Bogaard, Maartje & De Graaff, Erik (2007) Teambuilding in International Design Projects. In: G. Moore & A. Hernandez (eds.) *Experience and Reflection on Active Learning in Engineering Education*. Proceedings of the 7<sup>th</sup> International ALE workshop, June 4-6, Toulouse, France. P. 71-78.
83. De Graaff, Erik (2007) Active Learning and Assessment of Learning Results. In: G. Moore & A. Hernandez (eds.) *Experience and Reflection on Active Learning in Engineering Education*. Proceedings of the 7<sup>th</sup> International ALE workshop, June 4-6, Toulouse, France. P. 127-131.
84. De Graaff, Erik, Ravesteijn, Wim, Wiersma, Erik & Kroesen, Otto (2007) Technology and Society: Assessment of Competencies. In L. Szentirmai & T.G. Patko (eds.) *Joining Forces in Engineering Education towards Excellence*. Proceedings of the SEFI and IGIP Joint Annual Conference, Miskolc, Hungary July 1-4 2007. P. 163-164.
85. G.N. Saunders, E de Graaff, MED van den Bogaard (2007) PEER Assessment and PEER review to support teamwork in engineering education. Paper presented at the Global Colloquium in Engineering Education, Istanbul Turkey.
86. Graaff, E de (2007). Innovation and designing of engineering education. In Hans-Bernhard Woyand (Ed.), *Engineering and Pedagogy - Teaching and Learning in Real and Virtual Worlds*, Wuppertal, Germany, P.1-6.
87. Erik de Graaff, Markku Markkula, Maria Demlova, Selahattin Kuru, Hannu Peltola (2007) Innovative Teaching and Learning methods. In: *Re-engineering Engineering Education in Europe*. Final Report of the Socrates Erasmus Thematic Network TREE: Teaching and Research in Engineering in Europe Claudio Borri and Francesco Maffioli (eds.) Florence: Firenze University Press.
88. Annette Kolmos, Selahattin Kuru, Hans Hensen, Taner Eskil, Luca Podesta, Fleming Fink, Erik de Graaff (2007) Problem-Based Learning; Report Tree Sig B5 On CD: *Re-engineering Engineering Education in Europe*. Final Report of the Socrates Erasmus Thematic Network TREE: Teaching and Research in Engineering in Europe Claudio Borri and Francesco Maffioli (eds.) Florence: Firenze University Press.
89. Erik de Graaff (2007) Active Learning; Report Tree Sig D9. On CD: *Re-engineering Engineering Education in Europe*. Final Report of the Socrates Erasmus Thematic Network TREE: Teaching and Research in Engineering in Europe Claudio Borri and Francesco Maffioli (eds.) Florence: Firenze University Press.
90. Graaff, E de & Bogaard, MED van den (2008). Dealing with Cultural Differences. In: Catalina.Ramirez Rafael Gomez (Ed.), *Designing and Implementing an Active and Equitable Engineering Education*. Proceedings of eighth workshop ALE 2008 pp. 116-122. Bogota: Universidad de Los Andes. Facultad de Ingenieria.
91. Graaff, E de (2008). How to Implement active learning? strategies for change. In Catlina.Ramirez Rafael Gomez (Ed.), *Designing and Implementing an active and equitable engineering education*. Proceedings of eighth international workshop ALE 2008 pp. 67-76. Bogota: Universidad de Los Andes. Facultad de Ingenieria.
92. Graaff, E de (2008). Implementation of PBL: piecemeal or all the way. In: Flemming K. Fink (Ed.), *Sefi 2008 36th Annual Conference Aalborg University – Denmark* pp. 1-5. Rotterdam: Sense Publishers.
93. Graaff, E de & Lohmann, R (2008). Advancing the global capacity for engineering education research (AGCEER): A year of international dialogue. In: Fleming K. Fink (Ed.), *Sefi 2008 36th Annual Conference- Denmark* pp. 1-3. Rotterdam: Sense Publishers.
94. Graaff, E de , Bogaard, MED van den & Smits, GN (2008). Peer Evaluation to Enhance Performance in Project Work. In: Solovyev (Ed.), *Engineering Competences- Traditions and innovations - Proceedings of the 37th International IGIP Symposium* pp. 1-7. Moscow: Moscow Automobile and Road Construction Institute State
95. Dong, Wei & Graaff, E. de (2009). Issues of implementing Problem Based Learning in an engineering curriculum. In M. van den Bogaard, E. de Graaff & G. Saunders-Smiths (Eds.), *Attracting young people to engineering: Engineering is fun!* (pp. 1-10). Delft: Delft University of Technology.
96. Graaff, E. de (2009). Educational Research and Design of the Virtual Learning Environment. In A. Pears & L. Malmi (Eds.), *International Conference on Computing Education Research* (pp. 1-4). Uppsala, Sweden: Uppsala Universitet.
97. Ravesteijn, W., Graaff, E de, Kroesen, J.O. & Wiersma, E. (2009). Balancing Basics and Specifics: Teaching Technology Dynamics to Engineering & Policy Analysis Students. In M van den Boogaard, E de Graaff & G Saunders-Smiths (Eds.), *Attracting young people to engineering*. Delft: Delft University of Technology (pp. 1-11).

98. Du, Xiangyun Graaff, E de & Kolmos, A. (2009). PBL - Diversity in research Questions and Methodologies. In Xiangyun Du, E. Graaff & A. Kolmos (Eds.), *Research on PBL Practice in Engineering Education* (pp. 1-7).
99. Kolmos, A., Graaff, E de & Du, Xiangyun (2009). Diversity of PBL - PBL Learning Principles and Models. In Xiangyun Du, E. Graaff & A. Kolmos (Eds.), *Research on PBL Practice in Engineering Education* (pp. 9-21). Rotterdam: Sense Publishers.
100. De Graaff, Erik, (2010) *Research on Engineering Education; the development of a field of applied research*. In Jerzy Rutkowski & Jerzy Mościński (eds) *Proceedings of the International Conference on Engineering Education ICEE-2010, July 18–22, 2010, Gliwice, Poland*.
101. Geerligs, Titus , Schmidt, Henk, Kokx, Irma, de Graaff, Erik and Berkel, Henk van (2014) *Creatieve toetsvormen*. In: *Toetsen in het hoger onderwijs*. Derde, geheel herziene druk. Henk van Berkel; Anneke Bax; Desirée Joosten-ten Brinke. (eds.) Houten: Springer Science+Business Media B.V., 2014. p. 101-111 (Docentenreeks).
102. Graaff, Erik de and Kolmos, Anette. (2014) *Innovation and Research on Engineering Education*. In *Handbook of Research on Educational Communications and Technology*. J. M. Spector; M. D. Merrill; J. Elen; M. J. Bishop. (eds.). New York : Springer Science+Business Media B.V., 2014. p. 565-571.
103. Kolmos, Anette and Graaff, Erik de. (2014) *Problem-Based and Project-Based Learning in Engineering Education Merging Models*. In: *Cambridge Handbook of Engineering Education Research*. Aditya Johri and Barbara M. Olds. (eds) Cambridge University Press, 2014. p. 141-161.
104. Erik de Graaff (2015) *Engineering Education and Engineering Education Research in Europe*. In: M. Abdulwahed, M.O. Hasna, J.E. Froyd (Eds.) *Advances in Engineering Education in the Middle East and North Africa*. Springer International Publishing Switzerland.
105. Guerra, Aida and Graaff, Erik de, (2015) *Development of a Global Network for PBL and Engineering Education*. In: *Global Research Community: Collaboration and Developments*. Graaff, Erik de; Guerra, Aida; Kolmos, Anette; Arexolaleiba, Nestor (Editors). Aalborg Universitetsforlag. p. 257-266.
106. Graaff, Erik de and Bøgelund, Pia. (2015) *Intercultural aspects in PhD supervision*. *Proceedings of Annual Conferences. SEFI: European Association for Engineering Education, 2015*.
107. Graaff, Erik de and Guerra, Aida (2015) *Problem Based Learning: The Aalborg Example: The visitors workshop at AAU*. In: *Active Teachers - Active Students : Proceedings of the 13th International Workshop Active Learning in Engineering*. Graaff, Erik de; Farreras, Montse; Arexolaleiba, Nestor (Editors), July 2015.
108. Bogaard, M.E.D. van den; E. de Graaff; A. Verbraeck (2015) *A study into first-year engineering education success using a rigorous mixed methods approach*. In:
109. *Proceedings of the REES conference: Translating Research into Practice*, Dublin 13th July to Wednesday 15th July 2015.
110. Graaff, Erik de (2015) *The Atlantic rift in Engineering Education Research Methodology*. In: *Proceedings of the REES conference: Translating Research into Practice*, Dublin 13th July to Wednesday 15th July 2015.
111. Graaff, Erik de and Jennifer Deboer *Capacity Building for Engineering Education*. In: *Proceedings of the 2015 International Conference on Interactive Collaborative Learning (ICL)*. Florence, Italy 20-24 September 2015. 113-116 4 p.
112. Graaff, Erik de; Holgaard, Jette Egelund; Bøgelund, Pia; Spliid, Claus Christian Monrad (2015) *When Students take the lead*. In: (Re)Discovering University Autonomy: The Global Market Paradox of Stakeholder and Educational Values in Higher Education. Romeo Turcan (ed.). Palgrave Macmillan, 2015.
113. Graaff, Erik de (2016) *Engineering Education and Engineering Education Research in Europe* In: *Advances in Engineering Education in the Middle East and North Africa*. Abdulwahed, Mahmoud, Hasna, Mazen O., Froyd, Jeffrey E. (Eds.), Springer, in press 2016, ISBN 978-3-319-15323-0

### **Paper presentaties en posters / Paper presentations and posters**

1. De Graaff, E. & Galesloot, J.A.M. (1981) *Effektiviteit van het Maastrichtse medisch onderwijs op somatisch gebied voor de Huisartsgeneeskunde*. Paper presentatie Onderwijsresearch Dagen 1981, Maastricht.
2. De Graaff, E. and Galesloot, J.A.M. (1981) *De ontwikkeling van een toetsmethode voor 'medisch probleem-oplossen'*. Paper Onderwijsresearch Dagen 1981, Maastricht.
3. De Graaff, E., Moust, J. H. C., Ronteltap, C. F. M. and Schmidt, H. G. (1981) *Studiebeleving van Maastrichtse medische studenten*. Paper Onderwijsresearch Dagen 1981, Maastricht.
4. De Graaff, E. (1987) *A Simple test for the Assessment of medical problem solving*. Paper presented at the International Symposium on Evaluation in Medical Education, Beer Sheva, may 25-28 1987.
5. Van Leeuwen, Y., De Graaff, E. and Drop, M. J. (1987) *The Construction of Simulation of Initial Medical problem-solving (SIMP)*. Workshop at the International Symposium on Evaluation in Medical Education, Beer Sheva, may 25 - 28 1987.
6. De Graaff, E. Van Leeuwen, Y. and Van der Vleuten, C. (1989) *Generalizability of a short case paper-and-pencil test (SIMP)*. Paper presented at the Third International Conference on Teaching and Assessment of Competence, Groningen, may 1989. Opgenomen in: W. Bender, R. J. Hiemstra, A. J. J. A. Scherpenbier and R. P. Zwierstra (eds.) *Teaching an Assessing Clinical Competence*. Groningen: BoekWerk Publications.

7. De Graaff, E. & P. H. A. M. Frijns (1990) *Measurement of medical problem-solving with paper cases*. Paper presented at the seventh international conference of the World Association for Case method Research and Application (WACRA), Enschede, april 1990. Opgenomen in: Hans E. Klein (ed.) *Problem solving with cases and simulations*. Waltham MA, USA: Bentley College Press.
8. De Graaff, E. (1990) *De organisatie van probleemgestuurd onderwijs aan de Faculteit der Bouwkunde, TU Delft*. Paper gepresenteerd op de Conferentie Praktijk Georiënteerd Onderwijs. Faculteit de Civiele Techniek, 27 april 1990.
9. Van der Woord, J. and E. de Graaff (1990) *Changing Horses Mid-Course; The Implementation Of A Problem-Based Curriculum at the Department of Building Sciences of the Technical University Delft, Holland*. Paper presented at the Second International Symposium on Problem-based Learning, Yogyakarta, Indonesia, October 7-12, 1990.
10. De Graaff, E. and P. Frijns (1990) *Teacher roles in a Problem-based curriculum*. Paper presented at the Second International Symposium on Problem-based Learning, Yogyakarta, Indonesia, october 7-12, 1990.
11. Van Berkel, H. J. M., J. Sprooten and E. de Graaff (1990) *An Individualized Assessment Test Consisting of 600 Items*. Paper presented at the Second International Symposium on Problem-based Learning, Yogyakarta, Indonesia, october 7-12 1990.
12. Crijnen, A. A. M., H. F. Kraan, G.J. Post, C. P. M. van der Vleuten, T. J. Imbos, J. Zuidweg and E. de Graaff (1990) *Measures of Medical Interviewing Skills: Convergent and Divergent Validity with other Medical Competencies*. Paper presented at the Second International Symposium on Problem-based Learning, Yogyakarta, Indonesia, October 7-12, 1990.
13. De Graaff, E. (1992) Introduction to the symposium *The development and Implementation of a Problem-Based Curriculum*. Paper presented at The European Conference on Educational Research (ECER) Enschede, the Netherlands, June 22-25 1992. Opgenomen in: Tj. Plomp, J. M Pieters and A. Feteris (eds.) *ECER Book of Summaries III*. Enschede: University of Twente.
14. De Graaff, E. and P. A. J. Bouhuijs (1992) *The Introduction of Problem-Based Learning at the department of Building Sciences*. Paper presented at The European Conference on Educational Research (ECER) Enschede, the Netherlands, June 22-25 1992. Opgenomen in: Tj. Plomp, J. M Pieters and A. Feteris (eds.) *ECER Book of Summaries III*. Enschede: University of Twente.
15. Frijns, P. and E. de Graaff (1992) *The Assessment of Study results in Relation to the Educational Methods*. Paper presented at The European Conference on Educational Research (ECER) Enschede, the Netherlands, June 22-25 1992. Opgenomen in: Tj. Plomp, J.M Pieters and A. Feteris (eds.) *ECER Book of Summaries III*. Enschede: University of Twente.
16. De Graaff, E. and J. van der Woord (1992) *Management of Educational Change: A Discussion of the Implementation Process at the department of Building Sciences*. Paper presented at The European Conference on Educational Research (ECER) Enschede, the Netherlands, june 22-25 1992. Opgenomen in: Tj. Plomp, J. M Pieters and A. Feteris (eds.) *ECER Book of Summaries III*. Enschede: University of Twente.
17. De Graaff, E. (1993) *Problem-based learning in engineering education*. Key-note lecture at the SEFI conference: Project-organized curricula in engineering education. Copenhagen, may 5-7 1993. Opgenomen in: O. Vinther (ed.) *Project-organized curricula in engineering education*. Copenhagen: The Engineering College of Copenhagen.
18. Frijns, P. H. A. M., De Graaff, E. and Klerks, M. (1993) *The effect of expertise of raters and structuring of scoring methods on grading in design education*. Presentation at the SEFI conference: Project-organized curricula in engineering education. Copenhagen, may 5-7 1993. Opgenomen in: O. Vinther (ed.) *Project-organized curricula in engineering education*. Copenhagen: The Engineering College of Copenhagen.
19. Frijns, P., De Graaff, E. and Klerks, M. (1993) *Supervision and grading in design education*. Presentation at the ACSA/EAAE-conference Beginnings in Architecture, Prague, may 11-15 1993.
20. De Graaff, E. and J. Westrik. (1993) *A New Curriculum for the Delft School of Architecture*. Poster presentation at the ACSA/EAAE-conference Beginnings in Architecture, Prague, may 11-15 1993.
21. De Graaff, E. & P. Frijns. (1993) *Probleemgestuurd leren en ontwerponderwijs*. Presentatie op de Onderwijs Research Dagen (ORD) in Maastricht, 26-28 mei 1993. Opgenomen in: H. Van Berkel (ed.) *Onderwijsonderzoek in Nederland en Vlaanderen 1993; Proceedings van de ORD 1993*. Houten/Zaventem: Bohn, Stafleu & Van Loghum.
22. Claessens, M. & E. de Graaff. (1993) De enquêtemethode als kwaliteits-bewakingsinstrument in een probleemgestuurd curriculum. Presentatie op de Onderwijs Research Dagen (ORD) in Maastricht, 26-28 mei 1993. Opgenomen in: H. Van Berkel (ed.) *Onderwijsonderzoek in Nederland en Vlaanderen 1993; Proceedings van de ORD 1993*. Houten/Zaventem: Bohn, Stafleu & Van Loghum.
23. De Graaff, E. & P. Bouhuijs (1993). *Vakspecifieke overwegingen bij casusconstructie*. Ronde tafel presentatie op de Onderwijs Research Dagen (ORD) in Maastricht, 26-28 mei 1993. Opgenomen in: H. Van Berkel (ed.) *Onderwijsonderzoek in Nederland en Vlaanderen 1993; Proceedings van de ORD 1993*. Houten/Zaventem: Bohn, Stafleu & Van Loghum.
24. Frijns, P. & E. de Graaff (1993) *Toetsen en beoordelen in de context van probleem-gestuurd leren*. Ronde tafel presentatie op de Onderwijs Research Dagen (ORD) in Maastricht, 26-28 mei 1993. Opgenomen in: H. Van Berkel (ed.) *Onderwijsonderzoek in Nederland en Vlaanderen 1993; Proceedings van de ORD 1993*. Houten/Zaventem: Bohn, Stafleu & Van Loghum.

25. Menheere, S. C. and de Graaff, E. (1993) *The development of a curriculum for Project management and real estate management*. Presentation at the conference on Educational Innovation in Economics and Business Administration (EDINEB): the Case of Problem-based Learning, Maastricht, the Netherlands, 9-10 december 1993.
26. Westrik, J. and De Graaff, E. (1994) *Development and management of the new PBL-based curriculum in Architecture*. Key note lecture presented at the conference Reflection and Consolidation Newcastle, Australia, 3-6 july 1994.
27. De Graaff, E. and J. Westrik (1994) *Innovation and adaptation: Searching for the balance between PBL and the traditions of design education*. Paper presented at the conference Reflection and Consolidation Newcastle, Australia, 3-6 july 1994.
28. Marinissen, A. H. and De Graaff, E. *The Design of a new Curriculum for Design Engineering*. Paper presented at the conference Reflection and Consolidation Newcastle, Australia, 3-6 July 1994.
29. Graaff, E. de (1995) *Models of Problem-based learning*. Paper presented at the fourth world conference on engineering education October 15-20 Saint Paul, Minnesota. Opgenomen in: E. Rex Krueger and F. A. Kulacki (eds.) *Restructuring Engineering Education for Meeting World Needs*. (Volume 1-4). Technology Based Engineering Education Consortium, The William C. Norris Institute, 1995.
30. Graaff, E. de (1995) *Theory and praxis of the introduction of problem-based learning*. Paper presented at the SEFI Seminar on Active and Productive Learning, november 1-3, Enschede. Opgenomen in: Willem van Woerden & Cees Terlouw (eds.) *Active and Productive Learning in Higher Education*, p. 31-18.
31. Graaff, E. de & Dijk, W. (1995) *Workshop: Problem-based learning*. SEFI Seminar on Active and Productive Learning, November 1-3, Enschede.
32. Erik de Graaff & Wendy Duncan-Hewitt (1996) *The influence of assessment on students behaviour; Towards a paradigm for assessment in process education*. Paper presented at the conference Problem Solving Across the Curriculum, Rochester, June 26-29 1996.
33. Erik de Graaff (1996) *Workshop bio-energetic analyses for teachers*. Presented at the conference Problem Solving Across the Curriculum, Rochester, June 26-29 1996.
34. E. de Graaff (1996) *Student mentoren bij de introductie van Probleem-gestuurd leren*. Paper gepresenteerd op de ORD,1996 in Tilburg.
35. E. de Graaff (1996) *Methods of assessment and students behaviour*. Presentation at the AEEA/EAAE Seminar "Evaluation des projects dans l'enseignement de l'architecture" in Drama, Greece, 31-7/10-8 1996.
36. D. Peeters & E. de Graaff (1996) *Evaluation of the Seminar*. Presentation at the AEEA/EAAE Seminar "Evaluation des projects dans l'enseignement de l'architecture", in Drama, Greece, 31-7/10-8 1996.
37. F. Wille & E. de Graaff. Improvements in Project Organized Learning. Paper presented at the second international conference on Teaching Science for Technology, Stockholm, 14-17 June 1997.
38. E. de Graaff. Quality Control versus continuous improvement. Paper presented at the SEFI Seminar "A tool to improve the Learning Process", Grimstad, Norway, 19-21 June 1997.
39. E. de Graaff. The dance of educational innovation: about the role of the teacher in a problem-based curriculum. Paper presented at the International conference 'Changing to PBL', London, United Kingdom, 10-13 September 1997.
40. E. de Graaff (1998) Implementatie van Probleem Gestuurd Onderwijs. Presentatie op het Nationaal Onderwijscongres, 14-10-998, Arnhem. Eindhoven: Studie centrum voor Bedrijf en Overheid, 17.
41. Erik de Graaff<sup>1</sup>, Santi Scimeca<sup>2</sup>, Wim Veen<sup>1</sup>& Marie-José Verkroost<sup>1</sup>. *Success and failures of an online course on problem-based learning*. Paper presented at the SEFI seminar on the impact of ICT on the Curriculum, Galway, Ireland, May 2-4 2001
42. E. de Graaff (2001) Workshop on "New Developments in Teaching and Learning in Engineering". SEFI conference Copenhagen 12-9/14-9. 2001
43. E. de Graaff (2001) *Cooperative learning and PBL*. Symposium Communities: Dare to share!, 19-10-2001 Delft.
44. Cowdroy, Rob; Williams, Anthony, De Graaff, Erik & Mauffette, Yves (2002) Resolving relevance, quality and quality assurance: a transitional criteria approach. Presented at the 2002 Annual International Conference of Higher Education Research and Development Society of Australia: Quality Conversations, 7-10 July, Perth, Australia Editors of the proceedings: Allan Goody, Jan Herrington, Maria Northcote.
45. Ravesteijn, Wim & Graaff, Erik de (2002) UTOPIAN ENGINEERING. Paper presented at the SEFI 2002 conference in Florence.
46. Graaff, Erik de & Cowdroy, Rob (2002) The Best Way To Rome; A Paradigm For The Assessment Of Excellent Student Performance . Proceedings of the ASEE 2002 conference in Montreal.
47. Erik de Graaff & Wim Ravesteijn (2003) Engineering For A Better World: The Meaning Of Utopian Thinking For Engineering Education, Proceedings of the Annual ASEE conference June 23-25 Nashville USA.
48. Gillian Saunders-Smiths & Erik de Graaff (2003) The development of integrated professional skills in Aerospace engineering through problem-based learning in design projects. , Proceedings of the Annual ASEE conference June 23-25 Nashville USA.
49. U. Nienhuis, C. Dirkse & E. de Graaff (2003) CURRICULUM INNOVATION IN MARINE TECHNOLOGY. Annual SEFI Conference 2003 , Porto September 7-10.

50. Toine Andernach, Erik de Graaff, Renate Klaassen, Geert Lameris & Marianne Vrijman (2003) A Qualification Programme for University Teachers in Engineering, Porto September 7-10.
51. Erik de Graaff. *Beyond Problem Based Learning - designing a stimulating learning environment for future engineers*. E4 colloquium Innovations in Engineering Education; Challenges, Concepts and Good Practice Berlin, 7th and 8th of May 2004.
52. De Graaff, Erik & Andre van Peppen (2005) *Focus op onderwijs: aansturing van grootschalige onderwijs-verbetering aan de TU Delft*. Workshop op de CRWO conferentie Adviseren op niveau. Nijmegen, 17 Maart 2005.
53. De Graaff, Erik (2005) *PBL in Architecture revisited*. Paper presented at the 11th European Conference for Research on Learning and Instruction.(EARLI) Integrating Multiple Perspectives on Effective Learning Environments, Nicosia, Cyprus. August 23-27 2005.
54. Ravesteijn, Wim, Erik de Graaff and Otto Kroesen (2005) *Competent to communicate technology: A new perspective on developing communicative skills in engineering education*. In: C. Simsek & Y. Yaman (eds.) Engineering at the crossroads of Civilizations. Proceedings of the Annual SEFI conference, Ankara 7-10 September 2005.
55. Andernach, Toine, Erik de Graaff, Renate Klaassen & Marianne Vrijman-van Putten (2005) *Intercultural communication in the engineering curriculum; a preparatory summer school for new foreign MSc-students*. In: C. Simsek & Y. Yaman (eds.) Engineering at the crossroads of Civilizations. Proceedings of the Annual SEFI conference, Ankara 7-10 September 2005.
56. Saunders-Smiths, Gillian & Erik de Graaff (2005) *Key features in the engineering curriculum: what can we learn from alumni research?* In: C. Simsek & Y. Yaman (eds.) Engineering at the crossroads of Civilizations. Proceedings of the Annual SEFI conference, Ankara 7-10 September 2005.
57. De Graaff, Erik (2005) *Curriculum Design And Competence Oriented Education In Engineering Education*. Keynote presentation at the 19th Chilean Engineering Education Congress. Pucon, Chile, 5-7 October 2005.
58. De Graaff, Erik & Maartje van den Bogaard (2007) *Orde houden*. Workshop op de jaarlijkse CRWO conferentie. Amsterdam, 11 Mei 2007.
59. Erik de Graaff. (2008)The first year experience. Paper presented at the second deans conference in Berlin.
60. Erik de Graaff. Wim Thijs & Peter Wieringa (2008) Research Skills in a Mechanical Engineering Curriculum. Presented at the Annual ASEE meeting.
61. Arsat, M.Jette Egelund Holgaard and Erik De Graaff (2011) Stand-alone and Interdisciplinary Course Design for Engineering Education for Sustainable Development. In: Eds. Jorge Bernardino and José Carlos Quadrado Proceedings SEFI 2011 Annual Conference, September 27-30, Lisbon, Portugal.
62. Cowdroy, Rob, Erik de Graaff and Anthony Williams (2011). Assessing individual performance within group design and group problem-solving learning environments. Research on Engineering Education Symposium; Book of Proceedings. Madrid: October 2011.
63. Erik De Graaff, Anette Kolmos and Lars Peter Jensen (2011). Staff development and student centred learning; the Staff Development Programme for Excellence in Teaching and Learning at ISEL Lisbon. In: PBL across the disciplines: research into best practice; Proceedings from the 3rd International Research Symposium on PBL 2011, Editors: John Davies, Erik de Graaff and Anette Kolmos. Coventry: Coventry University.
64. Arsat, M.Jette and Erik De Graaff (2011). Three Dimensional of Characterizing Courses for Sustainability in Engineering Education: Models, Approaches and Orientations. Presentation at the 3rd International Congress on Engineering Education, Kuala Lumpur.
65. Malmi, L, E. De Graaff, T. Adawi, R. Curmi, G. Duffy, C. Kauz, P. Kinnunen & B. Williams (2012) Developing a taxonomical classification of EER papers. Paper presented at the 34<sup>th</sup> Annual SEFI conference *Engineering Education 2020: Meet the Future*, Thessaloniki , Greece.
66. Tanveer Maken and Erik De Graaff (2012) *Learning experiences of engineering students related to cultural differences in group work*. Paper presented at the 40th SEFI Conference, 23-26 September 2012, Thessaloniki, Greece.
67. Tanveer Maken and Erik de Graaff. (2013) Adaptation of International Engineering Students in Project Based Learning Environment: A Transformative Learning Experience. Paper presented at the IEEE EDUCON 2013, Berlin, Germany from March 13-15, 2013.
68. Erik de Graaff (2013) From Teaching to Facilitation; *Experiences with Faculty Development Training*. Paper presented at the 4th International Research Symposium on Problem-Based Learning (IRSPBL) 2013. In: Khairiyah Mohd-Yusof, Mahyuddin Arsat, Mohamad Termizi Borhan, Erik de Graaff, Anette Kolmos, Fatin Aliah Phang (Eds.) PBL Across Cultures. Proceedings of the 4rd International Research Symposium on PBL 2013. Universiti Teknologi Malaysia, 2-3 July 2013. Aalborg University Press. Aalborg: 2013.
69. Hashim Mohamad and E. de Graaff. *The Effectiveness of Problem-based Learning Approach on Students' Skills in Technical Vocational Education and Training (TVET) Specifically on Part Programming Using a Computerized Numerical Control (CNC) Simulator*. Paper presented at the 4<sup>th</sup> International Research Symposium on Problem-Based Learning (IRSPBL) 2013.

## Overige publicaties / Other publications

1. De Graaff, E. (1978) *Een zelf-help beroepskeuze methode gericht op het verkrijgen van kennis over de persoonlijkheid van de cliënt zelf: de Self-directed Search*. (doctoraal scriptie) Universiteit van Amsterdam.
2. De Graaff, E. (1978) *Persoonlijkheidsveranderingen bij deelnemers aan een opleiding Rogeriaanse therapie: de methode van zelf-confrontatie als evaluatie-instrument*. (doctoraal werkstuk) Universiteit van Amsterdam.
3. De Graaff, E. (1979) *De invloed van schooltoetsen op het curriculum in basisonderwijs*. RITP, Amsterdam.
4. De Graaff, E. (1979) *De WEK-Motivatievragenlijst*. RITP, Amsterdam.
5. De Graaff, E. (1979) *Gebruikersevaluatie van de Haarlemse Keuzelessen*. RITP, Amsterdam.
6. Galesloot, J. A. M. & De Graaff, E. (1980) *Definiëring van het begrip "medisch probleemoplossen"*. DPG-SE rapport 13, Rijksuniversiteit Limburg, Maastricht.
7. De Graaff, E. (1980) *Gestandaardiseerde Patiëntensimulaties*. (bewerkte vertaling van "An introduction to Patient Games" by J. Maatsch) intern rapport DPG-SE no. 24., Rijksuniversiteit Limburg, Maastricht.
8. De Graaff, E. & Galesloot, J.A.M. (1981) *Konstruktie en afname van een toetsmethode voor praktische medische competentie*. Onderzoek van Onderwijs, 9, Rijksuniversiteit Limburg, Maastricht.
9. Sprooten, M. & De Graaff, E. (1982) *Een inventarisatie van verwachte effecten van het medisch onderwijs aan de Rijksuniversiteit Limburg*. Onderzoek van Onderwijs, 14, Rijksuniversiteit Limburg, Maastricht.
10. De Graaff, E. (1982) *De evaluatie van studieresultaten Sociale Gezondheidskunde: -analyse van een expeditiemodel in opbouw*. Onderzoek van Onderwijs, 16, Rijksuniversiteit Limburg, Maastricht.
11. De Grave, W. S., De Volder, M. L., De Graaff, E. & Thung P. J. (1982) *Peer-evaluation in het hoger onderwijs: -literatuuroverzicht en vergelijking van drie methoden voor onderling beoordelen van inzet bij de studie*. Onderzoek van Onderwijs, 20, Rijksuniversiteit Limburg, Maastricht.
12. De Graaff, E. (1983) *Evaluation of the Summer course Nursing Science*. (theorie en Onderzoek van de Verpleging). Rijksuniversiteit Limburg, Maastricht.
13. De Graaff, E. & Mercx, R. (1984) *Variatie in onderwijsvormen binnen probleemgestuurd onderwijs: -evaluatie van een experiment*. Technische Hogeschool Eindhoven, Eindhoven.
14. Post, G. J., Hellemons-Boode, B. P. S., Van der Heijden, P. F. A., De Graaff, E. & Drop, M. J. (1985) *Medische competentie: een vergelijking tussen verschillende meetinstrumenten*. Onderzoek van Onderwijs, 28, Rijksuniversiteit Limburg, Maastricht.
15. De Graaff, E., Schreurs, M. L. & Winants, Y. (1986) *Kennismaking met probleemgestuurd onderwijs in de gezondheidswetenschappen*. Onderzoek van Onderwijs, 31, Rijksuniversiteit Limburg, Maastricht.
16. Van Driel, J., de Graaf, E., de Jong, T. & van der Woord, J. (1991) *De Onderwijsgroep bij Bouwkunde*. Interne notitie Faculteit der Bouwkunde, ICOB/435.
17. De Graaff, E. & Frijns, P. (1991) *De ontwikkeling van het evaluatiesysteem van de Faculteit der Bouwkunde*. Faculteit der Bouwkunde, Werkverband Onderwijsontwikkeling en Evaluatie, Delft.
18. Claessens, M. J., van Driel, J., Frijns, P. & de Graaff, E. (1991) *Halfweg; Voortgangsrapportage en tussenstand van het eerste jaar blokonderwijs*. Faculteit der Bouwkunde, Werkverband Onderwijsontwikkeling en Evaluatie, Delft.
19. De Graaff, E. & Weeber, C. (1991) *Handleiding constructie modulen*. Faculteit der Bouwkunde, Werkverband Onderwijsontwikkeling en Evaluatie, Delft.
20. De Graaff, E. & van Driel, J. (1993) *De onderwijsvernieuwing bij bouwkunde; een onderwijskundige analyse*. Faculteit der Bouwkunde, Werkverband Onderwijsontwikkeling en Evaluatie, Delft.
21. Graaff, E. de (1996). *Adviesrapport Onderwijsorganisatie bij de Faculteit der Werktuigbouwkunde en Maritieme Techniek*. Technische Universiteit Delft, Faculteit WTM, 6 p.
22. Graaff, E. de (1996). *Evaluatie projectonderwijs THR*. Voortgangsrapportage. december 1996. Technische Universiteit Delft, 8 p.
23. Prof. dr. ir. Ch. F. Hendriks & Dr. E. de Graaff, m.m.v. Dr. R.F.M. Bakker. *Reader Onderzoekmethodologie Ctoz4030* Technische Universiteit Delft, Faculteit der Civiele Techniek en Geowetenschappen, 1998.
24. E. de Graaff *Reader Samenwerking en communicatie in projectgroepen*. Technische Universiteit Delft, Subfaculteit der Wijsbegeerte en technische Maatschappijwetenschappen, 1998.
25. Graaff, E. de; *Assessment and educational development*. Rapport aan: Aalborg Universiteit. Uitgave: Videncenter for Laereprocesser Aalborg Universitet, Denmark, Aalborg, Denemarken, 2000, 13 p. VCL-series no. 11.
26. E. de Graaff *Educating independent learners in a digital learning environment*. Expert report to the EU. Stratan Etan expertgroup, Brussels, 2002.
27. Erik de Graaf. *A Complete Curriculum In Engineering*. In: Otto Rompelman (ed) Liber Amicorum for Günter Heitmann. E4 colloquium Innovations in Engineering Education; Challenges, Concepts and Good Practice Berlin, 7th and 8th of May 2004.
28. Technology and Society. Reader for a course in Engineering and Policy Analysis (with Ravensteijn, W., Graaff, E. de, Kroesen, J. O. & Wiersma).
29. De Graaff, Erik & Maartje van den Bogaard (2007) *Orde houden [Order in the classroom]*. Workshop op de jaarlijkse CRWO conferentie. Amsterdam, 11 Mei 2007.

## Lezingen / Invited lectures and keynotes

1. *De Maastrichtse basisarts op de arbeidsmarkt*. Voordracht voor de Landelijke Belangenvereniging van Basisartsen. Maastricht, november 1986. Rijksuniversiteit Limburg, Maastricht.
2. Presentatie van het vernieuwde bouwkundeonderwijs op de onderwijsdag "*De docent centraal*", Delft, 22-10-1992.
3. *Probleemgestuurd onderwijs; ervaringen bij Bouwkunde in Delft en Geneeskunde in Maastricht*. Voordracht op het mini-symposium Onderwijsvormen. Faculteit der Scheikundige Technologie, Technische Universiteit Delft, 16 december 1992.
3. *Probleem-Gestuurd Leren in het Technisch Onderwijs*, Lezing HTO-Zwolle, 11 maart 1993.
4. *Probleemgestuurd leren*. Studiedag *Werktuigbouwkunde*. Hogeschool van Amsterdam. Delft. 3 november 1993.
5. Studiedag Onderwijsvernieuwing, Faculteit der Werktuigbouw en Maritieme techniek, 13-12-1996.
6. *Projectonderwijs en PGL*, Studiedag Praktisch werken binnen Civiele Techniek Civiel Technisch Project onderwijs 11-7 1996.
7. *Integratie van onderwijs met Probleem Gestuurd Leren*Voordracht op het seminar ACTIEF LEREN, Hoge school van Utrecht, Faculteit Natuur en Techniek, 2 april 1996.
8. *Probleem Gestuurd Leren Ontwerpen* Voordracht op de NAI studiedag *De didactiek van het ontwerponderwijs*, Rotterdam, 24 april 2000.
9. *The role of the facilitator in Problem Based Learning*, keynote presentation at the PBL 2000 conference in Linköping, Sept 17-20.
10. *Educating independent learners in a digital learning environment*. Presentation at the Stratan Etan expertgroup, Brussels, April 25-26 2002.
11. *What makes Problem-based learning effective?* Keynote presentation at the ALE symposium in Copenhagen June 3-7 2002.
12. *A EUROPEAN PERSPECTIVE ON FACULTY DEVELOPMENT* Keynote lecture at the Seminar Staff and Faculty development within Engineering Education in Scandinavia, 7th - 8th November 2002.
13. *Voortgangstoets en vooruitgang?* Inleiding op een studiedag van de HvA, 12-12 2002.
14. *Assessment Paradigm's and the development of Assessment Instruments*. Keynote lecture at the Joint seminar of the SEFI Curriculum Development Working Group (CDWG) and the SOCRATES Thematic Network E4 (Enhancing European Engineering Education, Valladolid, April 4 2003.
15. Management of Change; the balance between a top-down and a bottom-up approach in educational innovation. Keynote presentation at the Seminar on Educational Innovation UPC Barcelona, 02-02-05
16. The Case of Learning to Learn. keynote op de Loupe conference. Amsterdam, 20-5-2005
17. Keynote lecture at the XIX Chilean Congress of Engineering Education. Pucón Chili, October 5-7, 2005.
18. Invited speaker at the 1<sup>st</sup> European Convention of Deans of Engineering and Technology Schools on Present and Future Challenges for Engineering Education and Research in Europe Florence, 18-19 November 2005.
19. Keynote lecture at the 2006 JSEE Annual Conference, Kita-Kyushu, July 29 2006
20. Keynote lecture at the 35th International IGIP Symposium Engineering, Tallinn, Estonia, September 18-21 2006.
21. The Scientific Standard of Engineering Education Research. Invited Lecture at the first International Conference on Research in Engineering Education, July 23-24 2007 USA, Honolulu.
22. Keynote at the International Congress of University Teaching and Innovation: Consequences of Innovation in Teaching and Learning for Engineering Education in Europe. July 2-4 2007, Valladolid, Spain
23. Keynote European experience in engineering teachers training. 17-19 October 2007. Cartagena de Indias. Colombia
24. Invited lecture at the opening of the UNESCO PBL centre at Aalborg University: Engineering Education Research in Europe. September 7. 2007 Aalborg Denmark.
25. Keynote at the 2nd IGIP Regional Conference: Engineering and Pedagogy; Teaching and Learning in Real and Virtual Worlds: Innovation and Designing of Engineering Education September 13-15, 2007 Wuppertal, Germany.
26. Keynote at the Annual ELC-net Conference, E-learning campus Zurich: Shaping the Virtual Learning Environment. January 25. 2008. Zurich, Switzerland
27. Keynote at the Koli Calling Conference 2008 in Finland: "Educational Research and Design of the Virtual Learning Environment" 13-16th November 2009.
28. Research Methods for Engineering Education: a field of applied research not a discipline. Inaugural lecture as Adjungeret professor Aalborg University, 6-02-2009.
29. Competition in Engineering Education. What are the Criteria? Invited lecture at the International Symposium on Innovation and Assessment of Engineering Curricula, 15th – 17th may 2009, Valladolid (SPAIN).
30. Problem Based Learning in Engineering. Keynote lecture at the Internationale Konferenz Qualitätsdialog - Lehre und Lernen in der Ingenieurausbildung. Bonn, Deutschland, September 14-15 2009.
31. Non-technical skills as key competencies for future engineer; Looking for a balance between Physics, Mathematics and Social Sciences keynote at the International Conference on Physics Teaching in Engineering Education (PTEE), Wrocław, Poland, 10 - 12 September 2009.

32. Action plan EUGENE Line B : Promoting Research on Engineering Education in Europe. Anette Kolmos & Erik de Graaff. Presentation at the Kick-off meeting of the EU project EUGENE. Florence, Italy, 13-11-2009.
33. Idols of PBL, keynote presentation at the second International Research symposium on PBL. Melbourne, Australia, 3-4 December 2009.
34. Innovation in Engineering Education. Keynote lecture at Valencia Global 2010, Valencia, Spain, April 21-23 2010.
35. Reflection on Teaching and Learning in Engineering Education, Invited lecture at Uppsala University, Sweden, May 18 2010.
36. Research on Engineering Education; the development of a field of applied research. Keynote lecture at the International Conference on Engineering Education ICEE-2010, July 18–22, 2010.
37. International workshop of the National Confederation of the Industry – CNI, Sao Paulo, Brazil, August 25-27 2010.
38. BEST President's Meeting, Krakow, 11-17 November 2010
39. CLAIU-EU Conference: "The formation of the engineer- international models", Rome, 11-12 February 2011.
40. ECDEAST Workshop, Kaunas, Lithuania, 20-22 February 2011
41. The 2011 International Materials Education Symposium, Cambridge. April 7-8 2011
42. Conference of Research Outcomes for the Discipline of Applied Science Education in Taiwan, Taipei, May 13 2011.
43. Innovating the Engineering Curriculum, keynote in the Curriculum Development Track, Annual SAEFI conference, Lisbon: September 2011.
44. Chair panel discussion on Engineering Education Research at the EUGENE symposium Leuven, October 27-28 2011.
45. PBL as an educational philosophy; Implications of the underlying values and premises. Teachers Symposium. Heidelberg, June 23.
46. Problem Based Learning; an innovative educational method. Bologna Symposium, Hamburg, 8-9 December 2011.
47. The Aalborg PBL model; What does it look like to new students? Invited presentation at the pedagogic day Aalborg University, Aalborg, March 14 2012.
48. Curriculum Innovation and Changes in The Role of the Teachers. Keynote at the International Symposium on Innovation and Quality in Engineering Education. Valladolid, Spain. 26th - 28th de April 2012
49. EUGENE Line B: Engineering Education Research in Europe: State of the Art, Valencia may 16 2012.
50. Panel member at the roundtable discussion What is the level of a PhD thesis in EER at the Nordic Network meeting in Aalborg: Change in EE and Sustainability, May 23-25 2012.
51. Problem-Based Project-Organised Learning: The Aalborg Model And the Role of the Teacher. Keynote at the Day for Teaching Excellency - Fachhochschule Köln, June 15 2012
52. Active Learning in Engineering Education. Joint keynote lecture with Michael Christie at the International ALE Workshop, Copenhagen, June 20-22 2012.
53. Projects GOOD Lectures BAD, keynote at the International Symposium on Project Approaches in Engineering Education (PAEE) Sao Paulo, Brasilia, July 26-27 2012.
54. VARIETIES OF PBL: THE COMPONENTS OF SUCCESS. Invited presentation at WEEF Buenos Aires, Argentina, October 15-18 2012.
55. Problem- versus Project-Based; Learning in Engineering: Antagonist or Complementary Pedagogical Approaches. Keynote at the workshop "Project and Problem-based Engineering Education", November 22-23, 2012 in Darmstadt, Germany.
56. The Transformation Process from a Traditional Curriculum to Problem-Based and Project-Based Learning. Keynote presentation at the Conference on didactics in higher education, focusing on innovative projects and study courses – best practice examples on May 16th and 17th 2013 in Kiel, Germany.
57. Chairman of the Forum: Variations in PBL Models. International Research Symposium on Problem Based Learning, Kuala Lumpur, Malaysia, July 2-4.
58. Problem-Based Learning: The Aalborg Case. Erik de Graaff and Jette Egelund Holgaard. Keynote lecture at the International conference A QUEST TO (RE)DEFINE UNIVERSITY AUTONOMY, Chisinau, Moldova, 21-22 November, 2013.
59. Continuing the discourse on Active Learning. Erik de Graaff & Michael Christie. Keynote lecture at the 12<sup>th</sup> ALE conference, Caxias do Sul, Brasii. January 20-22 2014.
60. Team Learning in Engineering Education. Keynote presentation at CSEDU, Barcelona, Spain, 1-3 April.
61. Problem-based learning and problem solving in practice' Keynote presentation at INNOCASE, Gdansk University of Technology, Poland, 8 April.
62. Changes in Teacher Roles in PBL keynote presentation at the symposium Creating a global collaborative E/PBL research community: transforming curricula, Trinity College Dublin, Ireland, 29-30 May 2014.
63. An essay on the Active Learner in Engineering Education. Joint keynot with Michael Christie at the 13th International Workshop Active Learning in Engineering, San Sabastian, Spain, July 2015.
64. Shifting the educational paradigm: From Teaching to Learning, Presentation at the Kick-off meeting of the Project Introducing PBL in Moldova, Chisinau, November 18, 2015.



# PAOLA VALERO's CURRICULUM VITAE

## Personal information

Full Name: Paola Ximena Valero Dueñas  
Place of Birth: Bogotá, Colombia  
Date of Birth: September 2<sup>nd</sup>, 1971  
Citizenship: Danish  
Home Address: Nygårdsparken 3, 9260 Gistrup, Denmark  
Home Telephone: +45 35812630  
Main Office Address: Department of Mathematics and Science Education  
Stockholm University  
Svante Arrhenius Väg 20A, 114 18 Stockholm, Sweden  
Second Office Address: UNESCO Center of PBL in Engineering and Science  
Department of Planning and Development  
Vestre Havnepromenade 5, 9000 Aalborg, Denmark  
Office Telephone: +46 72 148 9394  
+45 96359782



## Summary

Paola Valero is Professor of Mathematics Education at the Department of Mathematics and Science Education, Faculty of Science, Stockholm University, Sweden. She is also part time Professor of Education in Mathematics and Science in the Knowledge Society at the Faculty of Engineering and Science at Aalborg University, Denmark. She earned her Ph.D. in Mathematics Education in 2003 from the Danish University of Education, Denmark. She obtained her degree in Political Science in 1995 and in Modern Languages in 1994 from the Universidad de los Andes, Bogotá, Colombia.

Her research interests are mathematics and science education at all levels; in particular innovation and change processes in those fields, curricular development, multiculturalism in science and mathematics education, and science and mathematics teacher education. She is one of the leading scholars on socio-political research in mathematics education and is well known internationally for her research in that area. Currently, her research explores the significance of mathematics and science education as fields where power relations are actualized in producing subjectivities and generating inclusion/exclusion of different types of students. Her research is part of the Nordic Center of Excellence "Justice through education in the Nordic Countries".

She was the editor-in-chief of the journal *Nordic Studies in Mathematics Education*, together with Morten Blomhøj from Roskilde University. She serves in the editorial board of scientific journals in Colombia, Denmark, Mexico, Spain and South Africa. She is also reviewer in several international journals and research books series by publishers such as Springer.

## Diplomas and qualifications

Pedagogic diploma for assistant professors. Centre for University Teaching and Learning at Aalborg University. Aalborg, February 2004.

Ph.D. in mathematics education. Danish University of Education. Copenhagen, March 2003.

Political Scientist. Universidad de los Andes. Bogota, March 1995. Occupied the first place in the class. This diploma is equivalent to have obtained a Master degree in Political Science, after a 5 year program.

Professional in Modern Languages. Universidad de los Andes. Bogota, March 1994. Occupied the first place in the class. This diploma is equivalent to have obtained a Master degree in Modern Languages, after a 5 year program.

Tutor for Teacher Training in Educational Research. SECAB - CEID. Bogota, December 1994.

Official Translator and Interpreter English - Spanish, Spanish - English. Resolution 662 of 1994. Ministry of Justice - Republic of Colombia. Bogota, June 1994.

## Languages

Native language: Spanish.

Second language: English.

Third language: French.

Fourth language: Danish.

Other languages: Portuguese: reading, listening and conversation. Norwegian and Swedish: reading and listening.

## Awards and Distinctions

### The Danish University of Education – Denmark

Awarded with a 3 year Ph.D. scholarship. Copenhagen, November 1998 – October 2001.

### Colombian Institute for the Development of Science and Technology (Colciencias) – Colombia

Awarded with a scholarship from the National Program of Doctoral Education. Colombian Institute for the Development of Science and Technology (Colciencias) and the Inter-American Development Bank. Bogota, August 1997 - August 1998. Selected together with 40 candidates, among 250 applicants from the whole country and in all areas of knowledge. This scholarship provided the funding for my first year of studies in Denmark from August 1997 to August 1998.

Awarded with a grant from the Colombian Research Award in the National Program for the Promotion of Researchers. Colombian Institute for the Development of Science and Technology (Colciencias) and Colombian Association for the Advancement of Science (ACAC). Bogota, December 1995 - December 1996. Selected in the category of young research talent, together with 100 researchers, out of 400 applicants in all categories and all areas of knowledge.

### Colfuturo – Colombia

Awarded with the Colfuturo Fellowship Program 1996, for Graduate Studies. Selected for funding for graduate studies abroad with 50 other candidates, from a pull of 300 applicants. Bogota, July 1996. I rejected the offering of this scholarship/study loan because I considered joining a doctoral program that was longer than the 2 years of funding that this institution offered.

### Fulbright Commission – Colombia and USA

Selected as candidate to the Fulbright Fellowship Program for Graduate Studies in the USA. Bogota, February - August 1996. I rejected the offering for a scholarship to study Political Science at John Hopkins University in the USA, to which I had been admitted.

## Professional Experience and Appointments

### Employment history

Full professor of Mathematics Education at the Department of Mathematics and Science Education, Faculty of Science. Stockholm University. Since February 2016 – currently.

Full professor of Education in Mathematics and Science in the Knowledge Society. Since February 1, 2010. Employed at the Faculty of Engineering and Science, Department of Learning and Philosophy, from February 2010 to May 2015, and at the Department of Development and Planning since May 2015. Aalborg University.

Associate Professor. December 2004 – January 2010. Employed at the Faculty of Engineering and Science, Department of Learning and Philosophy, Aalborg University.

Assistant Professor. April 2002 – November 2004. Employed at the Faculty of Engineering and Science, Department of Learning and Philosophy, Aalborg University.

Research Assistant. November 2001 – February 2002. Department of Curriculum Studies. Danish University of Education.

Ph.D. fellow. September 1997 – October 2001. Department of Curriculum Studies. Danish University of Education.

Researcher and lecturer. January 1995 - July 1997. “una empresa docente”, Universidad de los Andes. Bogota, Colombia.

Research assistant. January 1993 - December 1994. “una empresa docente”, Universidad de los Andes. Bogota, Colombia.

### Leadership at Aalborg University

Member of the PhD Study Board at the Faculty of Engineering and Science. Since January 2012.

Leader of the Doctoral Program “Technology and Science” at the Faculty of Engineering and Science. Since June 2007.

Leader of the Doctoral Program “Health Education, Organizations and Ethics” at the Faculty of Medicine. January 2011 – July 2015.

Leader of the “Science and Mathematics Education Research Group (SMERG)” at the Department of Education, Learning and Philosophy. January 2006 – January 2015.

Member of the Study Board of Technoanthropology, January 2012 – December 2013.

Member of the Advisory Board of the Confucius Institute for Innovation and Learning. Since August 2009.

Member of the University Board for the UNESCO Chair in Problem Based Learning in Engineering and Science. Since January 2007 until June 2011.

Member of the Internationalization Task Force of the Department of Education, Learning and Philosophy. Since January 2009.

Member of the Joint Consultative Committee (Samarbejdsudvalg) of the Department of Education, Learning and Philosophy. Since June 2007.

Member of the Advisory Board of the Department of Education, Learning and Philosophy. May 2005 – May 2007.

Member of the Board of Studies at the Department of Education and Learning. June 2003 – May 2007.

### University of Granada, Spain

International guest lecturer at the International Master of Innovation and Research in Curriculum Studies. Faculty of Education. October 2015, October 2016.

### University of Wisconsin, Madison –USA

Honorary visiting scholar. August 2016; January 2012 – June 2012.

### Beijing Normal University – China

Visiting scholar at the Faculty of Education. March 2009, March 2010, March 2011.

### University of Antioquia – Colombia

Visiting professor at the Faculty of Education. July 2010.

International advisor for the project “El conocimiento matemático: desencadenador de interrelaciones en el aula de clase”, funded by COLCIENCIAS. February 2009 – December 2010.

### University do Vale do Rio dos Sinos (UNISINOS) – Brazil

Visiting professor at the Postgraduate School of Education and the Faculty of Humanities. Funded by the Brazilian Research Council (CNPq). September 13-16, 2015.

Visiting scholar at the Postgraduate School of Education. August 2009.

Collaboration with Professor Gelsa Knijnik in researching the political sociology of mathematics education, since March 2008.

### University of Hong Kong – China

Visiting scholar at the School of Education. March 2009.

Collaboration with Professor Frederick Leung. Exploration of possibilities for institutional collaboration. Work with the group of Ph.D. students in mathematics education.

### National Pedagogical University of Colombia – Colombia

Visiting professor at the Department of Mathematics. July – August, 2008, August – September, 2009, July-August 2010, November 2013.

Co-researcher in the project “Estudio del papel de los escenarios y ambientes de aprendizaje de las matemáticas en los procesos de inclusión”, together with Professor Gloria García. The project was funded by the COLCIENCIAS. January 2010 – December 2013.

Participation in the joint research project “Reinventando el currículo y los escenarios de aprendizaje de las matemáticas. Un estudio desde la perspectiva de la educación matemática crítica”, together with Professor Gloria García. October 2007– March 2009.

Participation in different field-work activities and teaching at the Master of Mathematics Education.

### University of Malta

Visiting scholar at the Faculty of Education. April 2008 and October 2007.

Exploration of collaboration in research, education and doctoral studies. Assistance in the design of the Master in Mathematics Education.

### Griffith University – Australia

Visiting scholar at the School of Education. April 2001.

### Stanford University – USA

Visiting scholar at the School of Education. Winter quarter 2000.

### University of Durban-Westville, South Africa

Visiting Scholar at the Faculty of Education. July - August 1998.

### Danish National Innovation and Research Center on Pedagogy - Denmark

Invited mathematics teacher in 8<sup>th</sup> grade. Copenhagen, August 1998 - June 1999.

### Centre for Research in Learning Mathematics (Center for Forskning i Matematiklæring) - Denmark

Research assistant. Copenhagen, May 1998 – December 2004.

### The Danish University of Education - Denmark

Research Assistant. Copenhagen, November 2001 – February 2002.

Member of the Ph.D. Student Council. Copenhagen, September 1998 – December 2001.

Coordinator of the Ph.D. group in mathematics education. Copenhagen, September 1997 – December 1999.

Ph.D. fellow. Copenhagen, September 1997 – October 2001.

### Universidad de los Andes - Colombia

Visiting professor and member of the International Advisory Board of the Center of Educational Development CIFE. Since January 2008.

Member of the research group in mathematics education “una empresa docente”. Since January 2008.

Director of the Mathematics Teachers’ Professional Development Project. “una empresa docente”. Bogota, August 1996 – July 1997.

Researcher. “una empresa docente”. Bogota, January 1995 - July 1997.

Research assistant. “una empresa docente”. Bogotá, January 1993 - December 1994.

Teacher assistant and research assistant. Department of Political Science. January 1994 - December 1995.

Assistant teacher and teacher. Faculty of Economics. January 1992- August 1996.

Teacher. Department of Modern Languages. January – June 1993.

Teacher assistant and teacher. Department of Mathematics. January 1990 – June 1996.

## Presencia Foundation - Colombia

Research assistant on Civic Education and Political Participation. Bogota, October - November 1994.

## Research Activities

### Stockholm University

*New belonging through mathematics education.* Collaboration project between Stockholm University and University of Illinois, Urbana-Champaign. Funded by INSPIRE Framework of collaboration between Swedish Universities and University of Illinois, USA. June 2016 – December 2017.

*Research(ing) subjects in the neoliberal academia.* Collaboration project with Kristiina Brunila, University of Helsinki, within the frame of the Nordic Center of Excellence JustEd. Since January 2016.

### Aalborg University

*CompAssess Project: Assessment of student competences with emphasis on the development of competences.* Collaborative European project between Teknikka and Mondragon University, Spain; Libera University of Bolzano and Tangram, Italy; Sociedade Portuguesa de Inovacao, Portugal; Northern University College, Ireland; and UC Syd and Aalborg University, Denmark. Funded by EU, Lifelong Learning Program, project nr. 2014-1-ES01-KA202-005000.

*Reduction of inequalities for high-school boys,* with University College Metropol. Developmental research. Development: Karin Svejgaard and Kjeld Sten Iversen. Researcher: Paola Valero. Funded by the Region Midt Denmark. Since August 2014.

*Mapping Ex/inclusion in Primary Mathematics and Science Education Cultures.* Principal investigator. This project is part of the NordForsk "JustEd". Since August 2013.

*Ung-til-Ung: Mønsterbrydning gennem faglig og social kontakt i uddannelsessystemet.* Principal investigator. Aalborg, Since January 2011. Project funded by the Region Northern Jutland. Since August 2011.

*CULT-GAP. Understanding the Gap Between Modern and Post-Modern Cultures in Mathematics and Science Education.* Principal investigator. Aalborg, January 2010 – July 2012.

*Contextualized and practice-embedded science education in vocational education,* carried out in collaboration between University College Metropol and Aalborg University. Main researcher, together with PhD fellow Peer Daubjerg and Karin Svejgaard. Aalborg, January 2010–June 2011. Funded by the Danish Ministry of Education.

*Developmental and evaluation research on the project "Natur/teknik og den naturfaglige kultur i folkeskolen"* [Primary science education and the science culture in primary school], carried out by Naturvidenskabernes Hus [The House of Science]. Main researcher, together with Ph.D. fellow Martin Krabbe Sillasen. Aalborg, since July 2008. Funded by Naturvidenskabernes Hus.

*Between reality and utopia: A socio-political agenda for mathematics education in situations of poverty and conflict.* Co-researcher with Ole Skovsmose. Aalborg, since January 2008.

Curriculum design in university environments. Co-researcher with Anie Aarup Jensen and Ole Christensen, within the research group "Teaching and Teaching Cultures". Aalborg, since February 2006.

*The natural sciences and mathematics in a postindustrial era: The next generation of science and mathematics education.* Co-researcher with Ole Christensen and Diana Stentoft. Aalborg, since September 2005.

*Use of energy at home. A development initiative for science highschool teachers.* Co-researcher with Ole Christensen and Diana Stentoft; in collaboration with the House of Science and the Museum of Electricity at Bjerringbro. February 2005 – December 2006.

*Learning from diversity: Communication, conflict and learning in the multicultural mathematics classroom.* Research project funded by the Danish Research Council for the Humanities. Co-researcher with Helle Alrø and Ole Skovsmose. Aalborg, since November 2002 – October 2005.

*Mathematics Education and Democracy: Theoretical and Practical Meanings.* Co-researcher with Ole Skovsmose. Aalborg University, since March 2002.

## Overview of recent research funding at Aalborg University

<b>Project</b>	<b>Role</b>	<b>Starting</b>	<b>End</b>	<b>EURO</b>
Communication, conflict and mathematics education in multicultural classrooms, funded by the Danish Research Council for the Humanities	PI: Ole Skovsmose. Co-researchers: Helle Alrø and Paola Valero	01/11/02	31/10/05	120.737
PhD scholarship in learning difficulties in mathematics, funded by VIA University College and NADIFO.	Student: Troels Lange. Supervisor: Paola Valero	01/08/04	31/07/08	122.705
PhD scholarship in collaboration between primary science teachers, funded by VIA University college and the House of Science.	PI: Paola Valero. Student: Martin K Sillasen	01/08/07	31/07/11	65.973
PhD scholarship in discourses of evidence-based, science teacher education, funded by UCN and the Danish Research Council.	PI: Paola Valero. Student: Jette R Schmidt	01/09/08	31/08/12	153.333
PhD in innovative mathematics learning in teacher education, funded by NAVIMAT and the Danish Research Council.	PI: Paola Valero. Student: Henning Westphael	01/09/08	31/08/12	143.333
PhD scholarship in science teachers' life histories, funded by VIA University College.	Student: Peer Daugbjerg. Supervisor: Paola Valero	01/09/08	31/08/12	50.016
PhD scholarship in critical mathematics education, funded by Malmö University College and the Danish Research Council.	PI: Paola Valero. Student: Annica Andersson	15/09/08	15/09/11	153.333
PhD scholarship in socio-political problems of mathematics teachers, funded by the Foundation of Science and Technology of Portugal.	Student: Alexandre Pais. Supervisor: Paola Valero	01/02/09	31/01/12	37.200
Applications and practice in science education at vocational schools, with University College Metropol, Funded by the Danish Ministry of Education.	Developmental research. Development: Karin Svejgaard. Researcher: Paola Valero	01/04/10	31/12/11	33.200
Youth-to-youth. Patterns of education in science in Northern Denmark. Funded by the Education Fund of Region Northern Denmark.	Consortium for the project of a network of educational institutions. Aalborg University is the research partner in the consortium. PI: Paola Valero. Student: Lars Bang Jensen.	01/08/11	01/07/15	94.100
Reduction of inequalities for high-school boys, with University College Metropol. Funded by the Region Midt Denmark.	Developmental research. Development: Karin Svejgaard. Researcher: Paola Valero	01/03/14	01/11/15	7.433
PhD in school geometry and the construction of the modern subject. Funded by the Chilean Research Council	Student: Melissa Andrade. Supervisor: Paola Valero	01/05/13	01/05/17	38.400
PhD in the new political theories of ethnomathematics in indigenious communities in Colombia. Funded by the Colombian Research Council	Student: Aldo Parra. Supervisor: Paola Valero	01/03/14	01/03/18	38.400
<b>Total</b>				<b>1.058.163</b>

## International collaboration research projects

*Mathematics and science education and the dispositive of technoscientificity*. International collaborative project between Gelsa Knijnik, Universidade do Vale do Rio dos Sinos, São Leopoldo, Brazil; Gloria García, Universidad Pedagógica Nacional, Bogotá, Colombia; Malin Ideland, Malmö University, Malmö, Sweden; and Paola Valero, Aalborg University, Aalborg, Denmark. Under examination for financing in the Brazilian Research Council (CnPq). Since September 2014.

*Partner in the Nordforsk Center of Excellence Justice through Education (NCoE JustEd)*. Center funded by NordForsk. Since June 2013.

*Studying the role of learning landscapes in mathematics and inclusion processes* [Estudio del papel de los escenarios y ambientes de aprendizaje de las matemáticas en los procesos de inclusión]. Co-researcher with Gloria García, Universidad Pedagógica Nacional de Colombia. Project funded by the Colombian Foundation for the Advancement of Science (Colciencias). Since July 2010.

*PBL in China*. Co-researcher with Anette Kolmos, Lone Dirckinck Homfeldt and Xiangyun Du, for Aalborg University; and Xianlin Gu, Kai Yu, Baocun Liu, Jiansheng Ma and Yingjie Wang for Beijing Normal University, China. January 2009 – currently.

*Quality and Equity Agendas in Mathematics Education*. Collaborative research project between Bill Atweh, Curtin University of Technology, Australia; Mellony Graven, University of the Witwatersrand, South Africa; Walter Secada, University of Miami, USA. July 2008 – December 2010.

*El conocimiento matemático: desencadenador de interrelaciones en el aula de clase*. International advisory researcher. Research project funded by the Universidad de Antioquia and Colciencias. Medellín, Colombia. February 2009 – December 2010.

*Reinventando el currículo y los escenarios de aprendizaje de las matemáticas*. Un estudio desde la perspectiva de la educación matemática crítica. Collaborative research project with the group “Didáctica de las matemáticas” at the Universidad Pedagógica Nacional de Colombia. Funded by Colciencias and IDEP. Bogotá, Colombia. October 2007 – March 2009.

## The Danish University of Education - Denmark

*Ideology and Power in Secondary School Mathematics within Educational Reform Processes. A Theoretical Approach*. Ph.D. research project supervised by Ole Skovsmose. Department of Mathematics, Physics, Chemistry and Informatics. Copenhagen, September 1997 – December 2001.

*MAPUFU Project. Mathematics teachers' professional development through research in the school*. Co-researcher with Kristine Jess. Funded by the Department of Inservice Teacher Education – Copenhagen. The Royal Danish School of Educational Studies. Copenhagen, March 1998 - April 1999.

*Mathematics Education and Democracy: Theoretical and Practical Meanings*. Co-researcher with Ole Skovsmose. Funded by the Centre for Research in Learning Mathematics, co-hosted by the University of Aalborg, the University of Roskilde and the Royal Danish School of Educational Studies in Denmark. March 1998 – February 2002.

## “una empresa docente” - Universidad de los Andes - Colombia

*MEN-EMA II Project*. Funded by the SECAB and the National Ministry of Education. Bogota, January 1996 - July 1997.

*PRIME I Project*. A proposal for the empowerment of school mathematics through a network of educational institutions. Funded by the National Ministry of Education, the Corona Foundation, Colciencias and IDEP. Bogota, January 1995 - July 1997.

*Graphic Calculators and Precalculus. Teacher's beliefs Project*. Funded by Colciencias, Texas Instruments and the National Central Bank. Bogota, May 1993 - December 1995.

*Mathematics Teachers' Epistemological Views Project*. Bogota, January - May 1993.

*Club EMA Project. “Model of the Colombian System of Mathematics Education”*. Bogota, June - December 1992.

## Department of Political Science - Universidad de los Andes - Colombia

Master dissertation to obtain the title of Political Scientist. “Deliberative citizenry: towards a civic education in Colombia”. Graded 5.0 in a 5.0 scale, Special Mention. Bogota, January 1994 - December 1994.

With Gabriel Murillo. “The relation among economics, society and democracy. And what about civil society?” Recommendations to the Inter-American Development Bank. Bogota, August 1994 - February 1995.

With Dora Rothlisberger and Gabriel Murillo. “Civic Education for Democracy Program. Recommendations for the new political administration”. Presidential Council for the State Modernization. Bogota, May 1994.

### Presencia Foundation - Colombia

Education and Political Participation Project. Bogota, October - November 1994.

### Department of Modern Languages - Universidad de los Andes - Colombia

A new methodological design for English 06112. Action-research Project in the formation of teachers of English as a second language. Bogota, January - May 1993.

Socio-linguistic Analysis of the Colombian Political Constitution. Bogota, May - August 1992.

## Presentations in Seminars, Conferences and Congresses

### Invited keynote lectures and high profiled presentations

“Mathematics education and the matrix of domination”. Invited plenary reaction at the Ninth Mathematics Education and Society Conference (MES 9). Volos, Greece. University of Thessaly, April 7-12, 2017.

“In(ex)clusion in mathematics education and the fabrication of the modern citizen”. Plenary keynote at the Sixth Greek Congress of Mathematics Education Research (GARME 6). Thessaloniki, Greece. Greek Association of Mathematics Education and Aristotle University. December 4-6, 2015.

“Las competencias matemáticas. De la vida democrática al trabajo competitivo”. Plenary keynote at the Colombian Congress of Mathematics Education ECME 15. Bucaramanga, Colombia. ASOCOLME and Universidad del Atlántico. October 6 – 8, 2014.

“Investigacion en educacion matematica y los retos de la inclusión en América Latina”. Plenary keynote at RELME 28. Barranquilla, Colombia: CLAME and Universidad del Atlántico. July 28 – August 1, 2014.

“Cutting the calculations of social change with school mathematics”. Paper at the Plenary Panel “The calculus of social change – mathematics at the cutting edge”. Joint Meeting of PME 38 and PME-NA 36. Vancouver, Canada: July 15-20, 2014.

“Más allá de la dicotomía teoría–aplicaciones. El Aprendizaje Basado en Problemas y los ensamblajes matemáticos”. Plenary keynote at the international seminar “Día de la Ciencia: Las Matemáticas Aplicadas y la Educación Basada en Proyectos”. Universidad del Rosario, Faculty of Science. Bogotá, November 7, 2013.

“In/exclusión en las matemáticas escolares”. Plenary keynote at the Research seminar “Escolaridad, subjetividad y matemáticas. Hacia una política cultural de las matemáticas escolares”. National Pedagogical University of Colombia and Colciencias. Bogotá, November 1–2, 2013.

“Investigación, currículo escolar y constitución de la subjetividad”. Plenary keynote at the VII Iberoamerican Congress of Mathematics Education. Uruguayan Society of Mathematics Education. Montevideo, September 16-20, 2013.

“Subjetividad, modernidad y matemáticas escolares”. Plenary keynote at the XIX Congress of Mathematics in Colombia. Colombian Association of Mathematicians and Universidad del Norte. Barranquilla, July 13-17, 2013.

“Las matemáticas como materia escolar: ¿Qué? ¿Por qué? ¿Para qué?”. Invited keynote plenary at the VIII Encuentro Internacional de Matemáticas del Caribe (EIMAT 2012). Barranquilla, Universidad del Atlántico. October 30 – November 2, 2012.

“¿¡Matemáticas para todos! Promesas, derrotas y desafíos”. Opening lecture at the VIII Encuentro Internacional de Matemáticas del Caribe (EIMAT 2012). Barranquilla, Universidad del Atlántico. October 30 – November 2, 2012.

“Educación matemática y la construcción de la subjetividad Moderna”. Invited keynote plenary at the research seminario Educación Matemática, Diversidad, Procesos de Inclusión/Exclusión. Bogotá, Universidad Pedagógica Nacional. October 26, 2012.

“Socioeconomic influence on mathematical achievement: what is visible and what is neglected”. Report of the Survey Study Team 5 at ICME 12. With Mellony Graven, Murad Jurdak, Danny Martin, Tamsin Meaney, and Miriam Penteado. Seoul, Korea, July 8–15, 2012.



“Subjectivity and school mathematics in the USA: Is there a chance for being Latin@s?” Invited keynote at the Annual Center for Mathematics Education of Latinos/as (CEMELA), funded by the USA National Science Foundation. Chapel Hill, University of North Carolina. May 1–3, 2012.

“Students’ interest in mathematics: Postmodern youth resisting Modern subjectification”. Invited keynote at the 63<sup>rd</sup> CIEAEM. Barcelona, University of Barcelona, July 25–29, 2011.

“Possibilities for the classroom from a socio-political perspective”. Invited workshop at the International Conference FAMA (Family Math for Adult Learners). Barcelona, University of Barcelona, July 24, 2011.

“Las matemáticas escolares ¿Qué? Y ¿Para qué?” Invited keynote at the II Jornadas de Educación Matemática. Equidade e Comunicación. A Coruña, Universidad de A Coruña, Spain, April 25 to 27, 2011.

“Der er også mennesker i sciences. Om fagene som et rum for identitetsdannelse” Invited keynote at the conference “Mind the gaps. Science sammenhænge og progression i undervisningssystemet”. Ballerup, Ingeniørhøjskole København and Aalborg University. October 27, 2010.

“¿Bájenlo del cielo! La constitución social y política del currículo de matemáticas” Invited keynote lecture at the Seventh Venezuelan Conference of Mathematics Education (COVEM VII). Caracas, ASOVEMAT and Instituto Pedagógico de Caracas. October 5–8, 2010.

“Mere end eksperimenter og begreber. Elevernes identitet og kommunikation i naturfagslæring”. Invited keynote lecture at the conference “Fremtidens Naturfag 2010”. Organized by Centre for Undervisningsmidler i Danmark, DI Organisation for erhvervslivet and Nationalt center for undervisning i natur, teknik og sundhed. Middelfart, Copenhagen and Bjerringbro, September 12–14, 2010.

“Acercar el formalismo y el uso en la educación matemática en ingeniería”. With Ole Ravn. Keynote lecture at the IV Seminario de Matemática Educativa. Colombian School of Engineering. Bogotá, October 22<sup>nd</sup> to 24<sup>th</sup>, 2009.

“La educación matemática como una red de practices sociales”. Invited keynote lecture at the II International Congress of Research on Education, Pedagogy and Teacher Education. Medellin, Colombia. University of Antioquia and National Pedagogical University of Colombia. August 26<sup>th</sup>–28<sup>th</sup>, 2009.

“Mathematics teacher education: An international perspective”. Invited keynote lecture at the VII National Seminar of Research on Education, Pedagogy and Teacher Education. Medellin, Colombia. University of Antioquia and National Pedagogical University of Colombia. August 25<sup>th</sup>, 2009.

“Education, Technology and Inclusion: Navigating through the complexity of school practices”. Invited keynote lecture at the panel “Educação, Tecnologia e Inclusão”, at the VI International Congress of Education. Education and technology: (Dis)connected subjects? Porto Alegre, Brazil, UNISINOS, August 17<sup>th</sup> to 19<sup>th</sup> 2009.

“Mathematics education as a network of social practices”. Invited keynote lecture at the 6<sup>th</sup> Conference of the European Society for Research in Mathematics Education (CERME 6). University Joseph Fourier, Lyon, France, January, 25 – 29, 2009.

“Plato missed the point. The social and political flesh and blood of mathematics education”. Invited keynote lecture at the 11<sup>th</sup> Science and Mathematics Education Conference of the Middle East. American University of Beirut, Beirut, December 6–7, 2008.

“School mathematics from a socio-political perspective”. Invited panellist with John Mason, Open University, Anne Watson, Oxford University and Thomas Lingefjård, Gothenburg University, to the panel “Perspectives on mathematical knowledge”. 6<sup>th</sup> MADIF. Stockholm University, Stockholm, January 30, 2008.

“De carne y hueso? La vida social y política de las competencias matemáticas”. Invited keynote lecture at the Foro Educativo Nacional de Colombia – Competencias matemáticas. Bogotá, Colombia, October 24–26, 2006.

“Evidence-based education? Questioning its educational, scientific and political discourses”. Invited keynote lecture at the 3<sup>rd</sup> Nordic Conference on Special Needs Education in Mathematics. Aalborg University – Nordic Research Network on Special Needs Education in Mathematics. Skørping, Denmark, November 23–25, 2005.

“What does power have got to do with mathematics education?” Invited keynote lecture at the 4<sup>th</sup> Dialogue on Mathematics Teaching Issues: Social and Cultural Aspects of Mathematics Education. Aristotle University of Thessaloniki – Primary Education Department. Thessaloniki, Greece, March 19–20, 2005.

“Mathematics education research, diversity and inclusion”. Invited plenary respondent to Arthur Powell’s plenary paper “The diversity backlash and the mathematical agency of students of color” at the 28<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education (PME 28). Bergen University College, Bergen, Norway, July 14–18, 2004.

“Mathematics education in a world apart - Where we are all together”. With Ole Skovsmose. Invited keynote lecture at Mathematics Education and Society 3. Center for Research in Learning Mathematics, Helsingør, Denmark, April 2–7, 2002.

“(Dis)empowering forces in everyday mathematics. Challenges to democracy”. With Lena Lindenskov. Invited keynote lecture in ALM 8. Center for Research in Learning Mathematics, Roskilde University and ALM Charity. Roskilde (Denmark), June 28-30, 2001.

“Organización escolar, democracia y cambio en la enseñanza de las matemáticas”. Invited sub-plenary lecture in ProfMat 2000. Associação de Professores de Matemática de Portugal. Funchal (Portugal), November 8-11, 2000.

“Reforma, democracia y educación matemática en la escuela secundaria”. Invited keynote lecture in the XI Seminario de Investigación em Educação Matemática (XI SIEM). Associação de Professores de Matemática de Portugal. Funchal (Portugal), November 6-7, 2000.

“Del tecnólogo al profesional. Cambio de enfoque en la formación de profesores de matemáticas”. Invited sub-plenary lecture at ProfMat 99. Associação de Professores de Matemática de Portugal. Portimão (Portugal), November 10-14, 1999.

“Desenmascarar las matemáticas: Un reto para los profesores del próximo milenio”. Invited keynote lecture at the ProfMat 99. Associação de Professores de Matemática de Portugal. Portimão (Portugal), November 10-14, 1999.

“Retos a la formación matemática del ciudadano del próximo milenio”. Keynote lecture to the Workshop “Metodología y aspectos curriculares de la enseñanza de las matemáticas”. Fundación Universitaria de Boyacá. Tunja, January 16-18, 1997.

## Presentations in conferences and seminars

“Mathematics education and human capital in curricular technologies since the 1950's”. Paper presented at the symposium “Neoliberalism in mathematics education”. Ninth Mathematics Education and Society Conference (MES 9). Volos, Greece. University of Thessaly, April 7-12, 2017.

“The cultural politics of difference in mathematical performance. What does a theorization of "race" has to offer?” Paper presented at the symposium “Race and racism in mathematics education”. Ninth Mathematics Education and Society Conference (MES 9). Volos, Greece. University of Thessaly, April 7-12, 2017.

“The sacralization of mathematics in the making of the scientifically minded citizen”. Paper presented at the symposium “Bodies, souls and the languages of modern schooling: Between sacralization and scientification” International Standing Conference for the History of Education (ISCHE) 2016. Chicago, 17-20, 2016.

“Bodies, souls and the languages of modern schooling: Between sacralization and scientification”. With Mette Buchardt, Allalborg University, and Daniel Tröhler, University of Luxembourg. Symposium presented at the International Standing Conference for the History of Education (ISCHE) 2016. Chicago, 17-20, 2016.

“Discourse, power and agency”. With Kristiina Brunila, Helsinki University. Workshop at the Summer School 2016 of the NordForsk Center of Excellence JustEd, “Cultures of Justice”. Gothenburg, 8-12 August, 2016.

“Anxiety and the making of research(ing) subjects in neoliberal academia”. With Kristiina Brunila, Helsinki University. Invited plenary at the Summer School 2016 of the NordForsk Center of Excellence JustEd, “Cultures of Justice”. Gothenburg, 8-12 August, 2016.

“Mathematics education is Political!”. Invited paper at the opening panel of the TSG 34: Social and Political Dimensions of Mathematics Education. ICME 13. Hamburg, Germany, July 24-31, 2016.

“Presentation of ICMI Study 21: Mathematics Education and Language Diversity”, with Richard Barwell, Canada; Núria Planas, Spain; Mercy Kazima, Malawi; Philip Clarkson, Australia; Judith Moschkowitz, USA. At ICMI Studies presentations at ICME 13. Hamburg, Germany, July 24-31, 2016. (Available at <https://lecture2go.uni-hamburg.de/12go/-/get/v/19768>)

“The cultural politics of math and science education. Beyond the specificity of subject didactics”. Invited plenary at the FOU-Dag. Stockholm, May 25, 2016.

“Critical didactics. The case of critical mathematics education”. Invited lecture at the International Symposium on Critical Curriculum Theory. Department of pedagogy, didactics and educational research. Uppsala, November 18 and 19, 2015.

“Examining the rationality of mathematics and science education”. Research seminar at the Doctoral program in mathematics and science education. Department of Mathematics Education, Stockholm University. Stockholm, November 16, 2015.

“Muerte o transfiguración: Sobre las humanidades en el capitalismo tecnológico”. Invited lectura at the seminar “Humanities now”, organized by the deanship of Humanities, Universidade do Vale do Rio dos Sinos (Unisinos). Sao Lopoldo, Brazil, September 23, 2015.

“The Danish educational system. Transformation of the Nordic ideal”. Invited presentation at the plenary panel “Educational systems and cultures in the Nordic countries. At the Summer School 2015 of the NordForsk Center of Excellence JustEd, “A Nordic model?”. Oslo, 17-21 August, 2015.

“Storytelling, Subjectivity and Education”. With Kenneth M. Jørgensen, Aalborg University. Invited seminar at the Education and Social Research Institute Lecture Series. Manchester, UK, Manchester University. April 29, 2015.

“Mathematics and science education and the dispositive of technoscientificity”. With Gelsa Knijnik, Unisinos, Brazil. Invited paper. International conference “The Disorder of Mathematics Education”. Berlin, Freie Universität, January 16 – 18, 2015.

“Mapping discursive changes in education. The making of the neoliberal, scientific-literate subject in Danish folkeskole”. Invited parallel special lecture and workshop at the Summer School of the NordForsk Center of Excellence “Justice through Education. Helsinki, August 17-21, 2014.

“Colonización y matemáticas escolares. Una mirada histórico cultural a la educación matemática”. Special lecture at RELME 28. Barranquilla, Colombia: CLAME and Universidad del Atlántico. July 28 – August 1, 2014.

“Del conocer divino a las estructuras mentales: Inserciones de las matemáticas escolares en las culturas de Colombia”. Invited special lecture at the Colombian Congress of Mathematics Education ECME 14. Barranquilla, Colombia. ASOCOLME and Universidad del Atlántico. October 8 – 10, 2013.

“Mathematics for all and the promise of a bright future”. Presentation at the Working Group X Cultural diversity and Mathematics Education, at the Eighth Congress of European Research in Mathematics Education (CERME 8). Antalya, Middle East Technical University and ERME. February 6-10, 2013.

“Hvor kritisk er kritisk matematikdidaktik? Mod et kritik af matematik i Moderniteten”. Presentation at NOMUS XI. Ry, Aalborg University, Roskilde University and Bergen University College. January 5-9, 2013.

“From knowledge to value: Towards an economic theorization”. Paper presented at the “Topic Study Group 37: Theoretical issues in mathematics education” at ICME 12. With Alexandre Pais. Seoul, Korea, July 8–15, 2012.

“The educational in education out in the blue? A response from mathematics education” Paper presented at the Symposium “A Manifesto for Education”, organized by Gert Biesta, University of Stirling, UK and Carl Säfström, Mälardalen University, Sweden. AERA 2012. Vancouver, April 13–18, 2012.

“Researching the Political in mathematics education”. Invited lecture at the Department of Education. Ann Arbor, University of Michigan, April 5, 2012.

“Researching the Political in mathematics education”. Invited seminar at the Colloquium of Mathematic Education. Lansing, Michigan State University, April 4, 2012.

“Matematik i det multikulturelle klasseværelse”. Invited keynote at Roskilde University Fagdidaktiskseminar. Roskilde, Roskilde University, June 9, 2011.

“De unges interesse for matematik og naturfag – Fra fag til kultur”. Invited keynote at the Research Day at VIA University College in Nørre Nissum. Nørre Nissum, April 28, 2011.

“Professional identity binding subject matter and learning”. Invited workshop at Aalborg University’s Pedagogic Day 2011. Aalborg, Aalborg University, March 17, 2011.

“Vi gider ikke matematik! - Om ungdomskultur og interesse for faget”. Invited keynote at the yearly conference of SEMAT (Association of University College Mathematics Lecturers). Roskilde, February 4, 2011.

“El currículo de matemáticas: ¿crítico y socialmente comprometido?” Keynote at the closing panel “The mathematics curriculum in Venezuela”, at the Seventh Venezuelan Conference of Mathematics Education (COVEM VII). Caracas, ASOVEMAT and Instituto Pedagógico de Caracas. October 5–8, 2010.

“Aprendizaje basado en problemas y organizado por proyectos. Una experiencia europea”. Invited lecture at the Colombian School of Engineering. Bogotá, July 30<sup>th</sup>, 2010.

“Más allá de los muros de la escuela: Repensar la formación de maestros socio-cultural y políticamente”. Invited lecture to the Faculty of Education at the University of Antioquia, July 14, 2010.

“The hidden curriculum of PBL”. With Diana Stentoft. Paper presented at the International Conference: Visions, Challenges and Strategies for Problem-Based Learning. Aalborg, Denmark, Aalborg University, May 4-6, 2010.

“Crossing intra- and interdisciplinary boundaries in educational research: Towards domain inclusive synthesis”. Paper presented at the Symposium “The challenge of synthesis: Methodological, Theoretical and Domain-Related Inclusivity” at the Annual Conference of the AAERA 2010. Denver, USA, April 29th to May 4th, 2010.

“The challenge of synthesis: Methodological, Theoretical and Domain-Related Inclusivity”. With David Clarke, Harsh Suri, Li Hua Xu and Anna Sfard. Interactive symposium presented at the Annual Conference of the AAERA 2010. Denver, USA, April 29th to May 4th, 2010.

“The importance of the relation between the socio-political context, interdisciplinarity and the learning of the mathematics”. With Francisco Camelo. Research paper presented at the Sixth International Mathematics Education and Society Conference (MES 6). Berlin, Germany, 20-25 of March, 2010.

“From questions of how to questions of why in mathematics education research”. With Alexandre Pais and Diana Stenoft. Research paper presented at the Sixth International Mathematics Education and Society Conference (MES 6). Berlin, Germany, 20-25 of March, 2010.

“Constituting subjectivities in mathematics and science education”. Inaugural lecture as a full professor. Department of Education, Learning and Philosophy, Aalborg University. Aalborg, Denmark, March 4<sup>th</sup>, 2010. Broadcasted and available on-line at: <https://www.edumedia.dk/#?PageType=Asset&ID=1322>.

“Broadening the role of theory in mathematics education research”. With Alexandre Pais and Diana Stenoft. Research paper presented at the 7<sup>th</sup> MADIF. Stockholm University, Stockholm, January 27, 2010

“Dispositions and changing teacher practice in mathematics”. With Tamsin Meaney and Troels Lange. Research paper presented at the 2009 Conference of the Australian Association For Research in Education 2009 (AARE 2009). Canberra, November 29th to December 3rd, 2009.

“Multicultural mathematics classrooms in a learning landscape”. Invited lecture at the research seminar of the Swedish network “Forskning om lärande och undervisning i mångkulturella matematikrum” (F-LUMM). Malmö, October 26<sup>th</sup>, 2009.

“La educación matemática como una red de practicas sociales”. Invited lecture at the research seminar of the Department of Mathematics at the National Pedagogical University of Colombia. Bogotá, September 4<sup>th</sup>, 2009.

“The importance of the relation between the socio-political context, interdisciplinarity and the learning of mathematics”. With Francisco Camelo, Gabriel Mancera, Julio Romero and Gloria García. Research paper presented at the II International Congress of Research on Education, Pedagogy and Teacher Education. Medellín, Colombia. University of Antioquia and National Pedagogical University of Colombia. August 26<sup>th</sup>-28th, 2009.

“Mathematics education giving meaning for social science students in Sweden”. With Annica Andersson. Research paper presented at the II International Congress of Research on Education, Pedagogy and Teacher Education. Medellín, Colombia. University of Antioquia and National Pedagogical University of Colombia. August 26<sup>th</sup>-28th, 2009.

“Mathematics education as more than learning: a theoretical perspective”. With Alexandre Pais and Diana Stenoft. Research paper presented at the II International Congress of Research on Education, Pedagogy and Teacher Education. Medellín, Colombia. University of Antioquia and National Pedagogical University of Colombia. August 26<sup>th</sup>-28th, 2009.

“Classrooms, teachers and students: World differences and similarities”. Invited lecture at the Network Meeting “Mathematics Education at school and out-school spaces”. Porto Alegre, Brazil. UNISINOS, August 17th, 2009.

“Approaching the social and political dimensions of mathematics education”. Invited research seminar at the Faculty of Education, University of Hong Kong. Hong Kong, March 9, 2009.

“Multiculturalism in mathematics education”. Invited respondent to the Fourth Annual Symposium on Teaching and Learning Mathematics in Multilingual Classrooms. UNISA and MARANG Centre for Mathematics and Science Education, University of the Witwatersrand. Johannesburg, South Africa, February 21, 2009.

“School mathematical discourse in a learning landscape: Broadening the perspective for understanding mathematics education in multicultural settings”, with Meaney, T., Alrø, H., Fairhall, U., Skovsmose, O., and Trinick, T. Paper presented at the Topic Study Group “Mathematics education in a multilingual and multicultural environment”, at the 11<sup>th</sup> International Congress on Mathematics Education (ICME 11). University of Nuevo León, Monterrey, México, July 6<sup>th</sup> – 13<sup>th</sup>, 2008.

“The role and nature of international co-operation in mathematics education”, with Jonny Lot and Corine Castela. Discussion paper presented at the Discussion Group “The role and nature of international co-operation in mathematics education”, at the 11<sup>th</sup> International Congress on Mathematics Education (ICME 11). University of Nuevo León, Monterrey, México, July 6<sup>th</sup> – 13<sup>th</sup>, 2008.

“Los retos de la investigación en educación matemática en América Latina: Enseñanzas para el mundo”. Invited paper presented at the “Iberoamerican Symposium on the Status of Mathematics Education Research in Iberoamerica”, at the 11<sup>th</sup> International Congress on Mathematics Education (ICME 11). University of Nuevo León, Monterrey, México, July 6<sup>th</sup> – 13<sup>th</sup>, 2008.

“Nordic Studies in Mathematics Education (NOMAD)”, with Morten Blomhøj. Workshop for prospective authors, run at the 5th Nordic Conference on Research in Mathematics Education (NORMA08). Copenhagen University and the Danish School of Education at Aarhus University. Copenhagen, Denmark, April 21<sup>st</sup> to 25<sup>th</sup>, 2008.

“Life-long mathematics education: Needs and constraints”, with Tine Wedege. Discussion paper at the Topic Group “Life-long mathematics education 1”. 5th Nordic Conference on Research in Mathematics Education (NORMA 08), Copenhagen, Denmark. April.

“Life-long mathematics education: Empower, disempower, counterpower?”, with Tine Wedege. Discussion paper at the Topic Group “Life-long mathematics education 2”. 5th Nordic Conference on Research in Mathematics Education (NORMA 08), Copenhagen, Denmark. April.

“Researching multicultural mathematics classroom through the lens of landscapes of learning”, with Alrø, H. and Skovsmose, O. Research paper presented at the 5th Nordic Conference on Research in Mathematics Education (NORMA 08), Copenhagen, Denmark. April.

“Power distribution in the network of mathematics education practices”, with Ole Ravn Christensen and Diana Stentoft Rees. Paper presented at the research symposium “Opening the research text. Mathematics education under cross-interrogation” at the Annual American Educational Research Association Conference 2008. New York, USA.

“In between reality and utopia: Mathematics education in situations of conflict and poverty”. Paper presented in the Working Group “Mathematics education and society”, at the Symposium on the occasion of 100<sup>th</sup> Anniversary of ICMI. Rome, Italy. ICMI, March 5<sup>th</sup> to 8<sup>th</sup>, 2008.

“Power distribution in the network of mathematics education practices”, with Ole Ravn Christensen and Diana Stentoft Rees. Paper presented at the research symposium “Opening the research text: Critical insights and in(ter)ventions into mathematics education.” Fifth International Mathematics Education and Society Conference (MES5). University of Lisbon, Aalborg University, and University of Technology Sidney. Albufeira, Portugal, February 16<sup>th</sup> to 21<sup>st</sup>, 2008.

“In between reality and utopia: Mathematics education in situations of conflict and poverty”. Paper presented at the Fifth International Mathematics Education and Society Conference (MES5). University of Lisbon, Aalborg University, and University of Technology Sidney. Albufeira, Portugal, February 16<sup>th</sup> to 21<sup>st</sup>, 2008.

“Mathematics learning in multicultural settings: Language in a learning landscape”. With Tamsin Meaney, University of Otago, New Zealand. Invited keynote lecture at Forum for Matematikkens Didaktik Årlig Konfernce, Nyborg, Denmark, January 16-17, 2008.

“The role of theory in the justification of research findings (in NOMAD as an example)”. With Morten Blomhøj, Roskilde University Center. Invited workshop to the seminar/course for Ph.D. supervisors/Ph.d. students “Justification of findings in mathematics and science education research, with particular regard to the role of theory in such justification” organized by the Danish National Doctoral School in Mathematics and Science Education and Nordic Doctoral School in Mathematics Education. Nyborg, Denmark, November 22-24, 2007.

“Plato missed the point! The social and political flesh and blood of mathematics education”. Invited research seminar at the Faculty of Education. University of Malta, Malta. October 8, 2007.

“Innovation og diversitet: venner eller fjender i design og implementering af uddannelsesforløb”. With Christensen, O. R., Jensen, A. A., & Valero, P. Paper fremlagt ved Den 13. årlige DUN-konference om universitetsundervisning, Aalborg, Danmark. May 2007.

“Investigación socio-política en educación matemática: Raíces, tendencias y perspectivas”. Invited Ph.D. seminar at the Department of Mathematics Education, Universidad de Granada, Spain. March 26, 2007.

“What do editors expect from reviewers in the review reports?” With Morten Blomhøj, Roskilde University Center. Invited workshop to the Seventh seminar for Ph.D. supervisors organized by the Nordic Doctoral School in Mathematics Education. Trondheim, Norway, February 8-9, 2007.

”The natural sciences and mathematics in a postindustrial era: The next generation of science and mathematics education”. With Ole Ravn Christensen. Presentation at the VII Nordisk Matematikkens Undervisning Seminar (NOMUS VII). Aalborg University. Holbæk, Denmark, October 29 – November 2, 2005.

”Culture, diversity and conflict in landscapes of mathematics learning”. With Helle Alrø. Paper presented at the Fourth Conference of the European Society for Research in Mathematics Education (CERME 4). Ramon Llull University. Sant Feliu de Guixols, Spain, February 17-21, 2005.

”My (confusion) with the definition of mathematics”. Invited keynote lecture at the conference ”Matematik: Hvad er det for et størrelse?”, organized by Forum for Matematikken Didaktik. Nyborg, Denmark, January 20-21, 2005.

”Linking Micro- and Macro-Contexts of Practices in Researching Mathematics Education”. Invited paper presented at the International workshop “Methodologies for researching mathematics, science and technology education in societies in transition”. Durban, University of Kwazulu Natal - UNESCO, October 8-10, 2004.

“Skole matematik i Danmark - Et blik ‘udefra’”. Invited keynote lecture at the Seminarium Matematiklæreres Konferencen (SeMat 2004). Seminar organized by the Union of Mathematics Teacher Training Colleges. Kalø, September 8-10, 2004.

“International cooperation in mathematics education. A discussion paper”. With Bill Atweh, Paolo Boero, Murad Jurdak and Ben Nebres. Background paper for the Discussion Group “International cooperation in mathematics education” at the 10<sup>th</sup> International Congress on Mathematics Education (ICME 10). Technical University of Denmark. Copenhagen, July 4-11, 2004.

”Learning from diversity: Communication, conflict and mathematics education in the multicultural classroom”. With Helle Alrø. Paper presentation in the Third Conference of the European Society for Research in Mathematics Education (CERME 3). University of Pisa. Bellaria (Italy), February 28 – March 3, 2003.

“Kommunikation, konflikt og matematiklæring i det multikulturelle klasseværelse”. With Helle Alrø. Paper presentation in the Nordisk Matematikkens Undervisning Seminar VI (NOMUS VI). Høgskolen i Bergen, Bergen, Norway, October 26-30, 2002.

“Reflections on research methodology within a socio-political approach to mathematics education”. Invited keynote lecture in the Nordisk Matematikkens Undervisning Seminar VI (NOMUS VI). Høgskolen i Bergen, Bergen, Norway, October 26-30, 2002.

“The myth of the active learner: From cognitive to socio-political interpretations of students in mathematics classrooms”. Research paper presented in MES3. Center for Research in Learning Mathematics, Helsingør, Denmark, April 2-7, 2002.

“O dilema da relevância da matemática na investigação em educação matemática”. With João F. Matos, Madalena Santos and Elsa Fernandes. Paper presented in XI Seminário de Investigação em Educação Matemática (XI SIEM). Associação de Professores de Matemática de Portugal. Funchal (Portugal), November 6-7, 2000.

“Subjetividad y conocimiento científico. Criterios de calidad en la investigación sociopolítica en educación matemática”. Invited panelist in the plenary panel “Paradigmas e qualidade da investigação em educação matemática” in XI Seminário de Investigação em Educação Matemática (XI SIEM). Associação de Professores de Matemática de Portugal. Funchal (Portugal), November 6-7, 2000.

“Quality in mathematics teacher education: An individual or a collective matter”. In Seminarium Matematiklæreres Konferencen (SeMat 2000). Seminar organized by the Union of Mathematics Teacher Training Colleges. Vejle, September 20-22, 2000.

“Between the sword and the wall: The issues of democracy in secondary school mathematics education”. Paper presented in the Working Group for Action “Social and Political Dimensions of Mathematics Education” in the 9<sup>th</sup> International Congress on Mathematics Education (ICME 9). Science Council of Japan and Japan Society of Mathematical Education. Tokyo/Makuhari, July 31 – August 6, 2000.

“Equity in the school organization of mathematics education”. Paper presented in the Topic Study Group “Equity and Mathematics Education” in the 9<sup>th</sup> International Congress on Mathematics Education (ICME 9). Science Council of Japan and Japan Society of Mathematical Education. Tokyo/Makuhari, July 31 – August 6, 2000.

“Exploring dilemmas of research on the social aspects of mathematics education”. With Elsa Fernandes, Madalena Santos and With Joao Filipe Matos. Discussion group in the 24<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education (PME 24). University of Hiroshima. Hiroshima (Japan), July 23 - 27, 2000.

“Supporting change through a mathematics team forum for teachers’ professional development”. With Kristine Jess. Research report presented in the 24<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education (PME 24). University of Hiroshima. Hiroshima (Japan), July 23 - 27, 2000.

“Researching the Complexity of Mathematics Education in the Context of the School”. Lecture presented in the research seminar in the School of Education at Sheffield Hallam University. Sheffield (UK), May 17, 2000.

“Dilemmas of socio-political research in mathematics education”. Staff seminar in the School of Education at Sheffield Hallam University. Sheffield (UK), May 16, 2000.

“Dilemmas of Social/political/cultural Research in Mathematics Education”. With Joao Filipe Matos. Paper presented in the Second International Conference on Mathematics Education and Society. University of Lisbon. Montechoro (Portugal), March 26 – 31, 2000.

“Dilemas de la investigación socio-política en educación matemática”. X Seminario de Investigaçao em Educaçao Matemática (X SIEM). Associação de Professores de Matemática de Portugal. Portimão (Portugal), November 8-9, 1999.

“Romper la neutralidad política. El compromiso crítico de la educación matemática con la democracia”. Primer Encuentro de la Asociación Colombiana de Matemática Educativa (ASOCOLME). Universidad Distrital. Bogotá: October 14-16, 1999.

“Social aspects of mathematics education”. Project group in the 23rd. Conference of the International Group for the Psychology of Mathematics Education (PME 23). The Technion and the Centre for Educational Technology. Haifa (Israel), July 25 - 30, 1999.

“Mapping Practices and Discourses about School Mathematics in a Time of Reform”. Working paper presented in the Ph.D. seminar The Nature of Mathematics and Mathematics Education. Department of Mathematics, Physics, Chemistry and Informatics in the Royal Danish School of Educational Studies and the Centre for Educational Development in University Science in Aalborg University. Copenhagen, May 17 - 19, 1999.

“Socialization or learning? A view on the culture of a Danish mathematics classroom”. With Mikael Skånstrøm. Plenary lecture in the conference Matematik og Kultur. Royal Danish School of Educational Studies. Copenhagen, March 26-27, 1999.

“Mathematics teacher education. Considerations regarding mathematics and society”. Keynote lecture in the conference Matematik i samfundet. En begrundelse for matematikundervisning?. Center for Forskning i Matematik and Forum for Matematikkens Didaktik. Nyborg, 11-12, 1999.

“Mathematics teachers’ professional development through research in the school”. Keynote lecture in the Nordisk Matematikkens Undervisning Seminar (NOMUS III). Centre for Learning Mathematics. The Royal Danish School of Educational Studies - Roskilde University - Aalborg University. Roskilde, October 24 - 28, 1998.

“Reform, democracy and secondary mathematics education within the school”. Research project presented in a working group in the Nordisk Matematikkens Undervisning Seminar (NOMUS III). Centre for Learning Mathematics. The Royal Danish School of Educational Studies - Roskilde University - Aalborg University. Roskilde, October 24 - 28, 1998.

“Research methodologies from the north revisited from the south”. Paper presented in the Symposium “Detraditionalizing mathematics, mathematics education and mathematics education research” in the International Conference of the International Group Mathematics Education and Society (MEAS 1). Nottingham University. Nottingham (UK), September 7-11, 1998.

“Deliberative democratization: An alternative in mathematics education?”. Paper presented in the Symposium “Detraditionalizing mathematics, mathematics education and mathematics education research” in the International Conference of the International Group Mathematics Education and Society (MEAS 1). Nottingham University. Nottingham (UK), September 7-11, 1998.

“Detraditionalizing mathematics, mathematics education and mathematics education research”. Symposium in the International Conference of the International Group Mathematics Education and Society (MEAS 1). Nottingham University. Nottingham (UK), September 7-11, 1998.

“Tradition versus democratization: an ideological fight in mathematics teacher education”. Seminar within the series of research seminars of the Faculty of Education in the University of Durban Westville. Durban (South Africa), July 31, 1988.

“Research methodologies from the north revisited from the south”. Research report in the 22nd. Conference of the International Group for the Psychology of Mathematics Education (PME 22). University of Stellenbosch. Stellenbosch (South Africa), July 12-17 1998.

“Research in the Social Aspects of Mathematics Education”. Working group in the International Group for the Psychology of Mathematics Education (PME 22). University of Stellenbosch. Stellenbosch (South Africa), July 12-17 1998.

“Under-represented countries in PME: National Mathematics Education Research Communities and Priorities”. Discussion group in the International Group for the Psychology of Mathematics Education (PME 22). University of Stellenbosch. Stellenbosch (South Africa), July 12-17 1998.

“In the search for democratic mathematics teachers”. Forum for Matematikkens Didaktik. Copenhagen, April 22, 1998.

“Interdisciplinarity in mathematics education programs”. Invited lecturer to the Summer Conference at the Pedagogen in Gothemburg University. Department of Mathematics - University of Gothemburg. Gothemburg (Sweden), July 22-24 1997.

“Research communities in mathematics education in Colombia”. Presentation in the discussion group “Under-represented countries in PME”. PME 21. ICMI - University of Helsinki. Lahti (Finland), July 14 - 19, 1997.

“School structure influence on administrators’ actions upon mathematics staff development in schools”. Oral communication in PME 21. ICMI - University of Helsinki. Lahti (Finland), July 14 - 19, 1997.

“An innovative approach to the teaching of mathematics for social sciences students. The struggles of a ‘constructivist’ approach”. Presentation in the topic group “Constructivism in the classroom” at the ICME 8. ICMI - University of Seville - SAEM Thales. Seville (Spain), July 14 - 21, 1996.

“The teaching of mathematics from within the school. Teachers and principals as researchers”. Presentation in the ICMI’s permanent study groups slot for the PME, in the ICME 8. ICMI - University of Seville - SAEM Thales. Seville (Spain), July 14 - 21, 1996.

“Prime Project. The empowerment of school mathematics through a network of educational institutions”. Project presented in the ICME 8. ICMI - University of Seville - SAEM Thales. Seville (Spain), July 14 - 21, 1996.

“Teacher’s beliefs and technology in the classroom”. Presentation in the working group “Technology in the classroom” in the ICME 8. ICMI - University of Seville - SAEM Thales. Seville (Spain), July 14 - 21, 1996.

“Prime Project. The empowerment of school mathematics through a network of educational institutions”. Presentation in the working group “Teachers as Researchers” in the PME 20. ICMI -University of Valencia. Valencia (Spain), July 8-12, 1996.

“Precalculus and graphic calculators: the influence on teacher’s beliefs”. Research report in the PME 20. ICMI - University of Valencia. Valencia (Spain), July 8-12, 1996.

“The teaching of mathematics from within the school. Teachers and principals as researchers”. Research report in the PME 20. ICMI -University of Valencia. Valencia (Spain), July 8-12, 1996.

“The evaluation of the civic education process”. Andinean Training Workshop for Leaders in Civic Education. Universidad de los Andes, International Agency for Education. Bogotá, May, 1996.

“La problemática de la enseñanza de las matemáticas escolares desde una perspectiva institucional”. II National Meeting of Teachers, Researchers and Innovators in the Teaching of Sciences. ACAC. Bogota, October 4 - 6, 1995.

“El modelaje aplicado a la comprensión de problemas sociales”. IX Inter-American Conference on Mathematics Education. CIEM, SCHEM y USACH. Santiago de Chile, July 31 and August 1 - 5, 1995.

“Calculadoras gráficas y precálculo: creencias del profesor”. IX Inter-American Conference on Mathematics Education. CIEM, SCHEM y USACH. Santiago de Chile, July 31 and August 1 - 5, 1995.

“El cambio de significado de las matemáticas para los estudiantes de ciencias sociales”. IX Inter-American Conference on Mathematics Education. CIEM, SCHEM y USACH. Santiago de Chile, July 31 and August 1 - 5, 1995.

“La interdisciplinaria en la Educación Matemática: el caso de la Ciencia Política”. IX Inter-American Conference on Mathematics Education. CIEM, SCHEM y USACH. Santiago de Chile, July 31 and August 1 - 5, 1995.

“La democratización del salón de clase de matemáticas”. Research and Innovation in the Mathematics Classroom. EPE. Bogota, June 21 - 23, 1995.

“La dictadura de las matemáticas: hacia una educación matemática para la paz y la democracia”. Strategies and Experiences in the Construction of Peace. Inter-university Meeting organized by the ANPAZ Program. Universidad de los Andes. Bogota, May 24 - 26, 1995.

“Los Foros de Interés Ciudadano: una herramienta de educación cívica para la socialización política”. From Political History to Democratic Inter-subjectivity. Meeting organized by the Department of Psychology of the Universidad de los Andes. Bogota, February 20 - 21, 1995.

“Del autoritarismo a la democracia: es posible dar el salto en la Educación Matemática”. II International Symposium on Mathematics Education. “una empresa docente”. Bogota, October 12-14, 1994.

“Calculadoras gráficas y precálculo: el impacto en las creencias del profesor”. II Ibero-American Congress on Mathematics Education. Regional University of Blumenau and SBEM. Blumenau (Brazil), July 17-22, 1994.

“Constitución y lenguaje: un análisis comparativo de las Constituciones de 1886 y 1991”. VI Congress of Anthropology in Colombia. Universidad de los Andes. Bogota, July 23-28, 1992.



## Participation in Editorial Boards and Journals

Reviewer in the *Cultural Studies in Knowledge, Curriculum and Education Series*. Routledge. Since May 2015.  
Member of the editorial team for the *Springer Encyclopedia of Educational Philosophy and Theory*. Since May 2015.

Editor-in-chief together with Morten Blomhøj of *Nordic Studies in Mathematics Education (NOMAD)*. January 2006 – December 2009.

Editor of research papers section in *Revista EMA. Innovación e investigación en educación matemática*. Bogota, August 1995 - July 1997.

Member of the Editorial Board of the *International Journal of Educational Studies in Mathematics (IJESIM)*. Since December 2014.

Member of the Editorial board of the *Latin American Ethnomathematics Journal*. Since March, 2013.

Member of the editorial board of the journal *PNA. Revista de investigación en Didáctica de la Matemática y Pensamiento Numérico*. Granada, Spain. Since April 2007.

Member of the editorial board of the journal *Pythagoras*. Johannesburg, South Africa. Since March 2005.

Member of the editorial board of the journal *MONA*. Copenhagen, Denmark. February 2005 – September 2008.

Member of the editorial board of the journal *Revista EMA. Investigación e innovación en educación matemática*. University of los Andes, Bogotá – Colombia. Since September 1999.

Reviewer of *Policy & Society*. Published by Elsevier. Since December 2014.

Reviewer of the *Journal of Mathematics Teacher Education*. Published by Springer. Since January 2013.

Reviewer in *Studies in Philosophy and Education*. Published by Springer. Since January 2012.

Reviewer in *ZDM. The International Journal on Mathematics Education*. Since January 2008.

Reviewer in *Quadrante. Revista de investigação em Educação Matemática da Associação de Professores de Matemática de Portugal*. Since July 2006.

Reviewer in *Relime. Revista de la Red Latinoamericana de Investigación en educación matemática*. Since January 2004.

Reviewer in *Mathematics Education Research Journal (MERJ)*. Published by the Mathematics Education Research Association of Australasia. Since January 2012.

Reviewer in *Educational Studies in Mathematics*. Published by Springer. Since June 2010.

Reviewer in *Mathematical Thinking and Learning*. Published by Lawrence Erlbaum. Since January 2005.

Reviewer in the *Mathematics Education Library Book Series*, Springer. Since January 2007.

## Involvement in International Conferences, Projects and Research Groups

Member of the organizing team of the discussion group “Race, Power, and Mathematics Education” with Danny Martin, University of Illinois, Chicago, USA; Joy Spencer, University of San Diego, USA; and Luz Valoyes, Universidad de Santiago de Cali, Colombia. ICME 13. Hamburg, Germany, January - July 2016.

NordForsk Center of Excellence Justice through Education (NCoE JustEd). Leader of Aalborg University’s partnership in the center. Since July 2013.

Appointed chair of the Survey Team “Socio-Economic Influence on Students’ Achievement”, at ICME 12. August 2009 – July 2012.

Appointed chair of the working group “Diversity and mathematics education: social, cultural and political challenges/issues” at CERME 7. August 2009 – February, 2011.

Member of the international program committee for ICMI Study 21 “(Re)sourcing teaching and learning mathematics in multilingual contexts”. September 2008 – currently.

Chair of the organizing team of the discussion group “The nature and roles of international cooperation in mathematics education” at ICME 11. Monterrey, Mexico, July 2008.

Member of the program committee of NORMA 08 (Nordic Research in Mathematics Education Conference). Copenhagen, Denmark, April 2008.

Member of the organizing team of the Fifth International Conference of the group for the Study of Mathematics Education and Society (MES 5). Albufeira, Portugal, February 2008.

Member of the organizing team of the Working Group 10 “Mathematics education in multicultural settings” at Fourth Conference of the European Society for Research in Mathematics Education (CERME 4). Ramon Llull University. Sant Feliu de Guixols, Spain, February 17-21, 2005

Member of the organizing team of the discussion group “International collaboration in mathematics education” at ICME X. Copenhagen, Denmark, July 2004.

Coordinator of the working group “Mathematics Education and Society” in the XI meeting of the Inter-American Committee on Mathematics Education. Blumenau, Brazil, July 13-17, 2003.

Chair of the Third International Conference of the group for the Study of Mathematics Education and Society (MES 3). Helsingør, Denmark, March 2002.

Teaching Staff Mobility Program with Sheffield Hallam University (UK), within the Socrates 1999/2000 Program.

Member of the International Committee of the group for the Study of Mathematics Education and Society (MES). Since September 1998.

## Member of Advisory Board in Research Projects

Member of the Advisory Board for the project “Dynamics in Basic Education Politics in Nordic Countries (DYNO)”. Led by Hannu Simola, Helsinki University. Funded by the Finish Research Council. Since September 2014.

Member of the Advisory Board for the project “The eco-certified child. Fabrications of subjects in education for sustainable development”, led by Malin Ideland, Malmö University, Sweden, and funded by the Swedish Research Council. Since October 2011.

Member of the advisory board of the project “Adults’ mathematics: in work and for school”, PI: Lisa Björklund Boistrup, Stockholm University/Malmö University. Funded by the Swedish Research Council. January 2011 - December 2015.

International advisor for the project “El conocimiento matemático: desencadenador de interrelaciones en el aula de clase”, led by Diana Jaramillo. Funded by Colciencias. Universidad de Antioquia. May 2008 – July 2010.

## Reviewer for International Research Institutions

Reviewer for the Swedish National Bank Jubilee Fond, since June 2016.

Reviewer for the USA National Science Foundation’s Science, Technology, and Society (STS) Program, October-November 2015.

Reviewer for the Belgian Research Council, May 2012.

Reviewer for the Saudi Center of Research Excellence in Mathematics and Science Education, commission by the Saudi Arabian Ministry of Higher Education, and organized by the Royal Society of New Zealand. October 2011.

Reviewer for the South African Research Council, Since November 2010.

Reviewer for the Dutch Research Council, August 2010.

## Member of assessment committee in academic positions

International member of the assessment committee for post-doc in mathematics education. Bergen University College, November- December 2016.

International member of the assessment committee for professorship in mathematics education, Luleå Technical University, 2014.

Chair of the assessment committee for professorship in science education, Copenhagen University, 2014.

International member of the assessment committee for professorship in didactics, Gothenburg University, 2014.

Chair of the assessment committee for professorship in the sociology of science education, Copenhagen University, 2013.

International member of the assessment committee for professorship in mathematics education, Bergen University College, 2013.

International assessor for full professor promotion for the University of New Brunswick, Canada. September 2011.

## PAOLA VALERO'S FULL PUBLICATION LIST

### Monographs (6)

- García, G., Valero, P., Salazar, C., Mancera, G., Camelo, F., Romero, J. (2013). *Procesos de inclusión/exclusión. Subjetividades en educación matemática*. Bogotá: Fondo Editorial de la Universidad Pedagógica Nacional.  
([http://issuu.com/fondoeditorialupn/docs/pdf\\_procesos\\_de\\_inclusi\\_\\_\\_\\_exclusi\\_](http://issuu.com/fondoeditorialupn/docs/pdf_procesos_de_inclusi____exclusi_))
- García, G., Valero, P., Camelo, F., Mancera, G., Romero, J., Peñaloza, G. & Samacá, S. (2010). Escenarios de aprendizaje de las matemáticas: Un estudio desde la perspectiva de la educación matemática crítica. Bogotá: Universidad Pedagógica Nacional.
- Perry, P., Valero, P., Castro, M., Gómez, P., Agudelo, C. (1998). La calidad de las matemáticas en secundaria. Actores y procesos en la institución educativa. Bogotá: "una empresa docente".  
<http://ued.uniandes.edu.co/servidor/ued/libros/calidad.html>  
Indexed in ZDM, 31/1999, D10-2375
- Perry, P., Andrade, L., Carulla, C., Castro, M., Fernández, F., Valero, P. (1998). Experiencias de desarrollo profesional en matemáticas. Un apoyo para la reforma en la escuela secundaria. Bogotá: "una empresa docente".  
<http://ued.uniandes.edu.co/servidor/ued/libros/prime1.html>
- Gómez, P., Carulla, C., Gómez, C. Mesa, V., Valero, P. (1996). Situaciones problemáticas en precálculo. México: Grupo Editorial Iberoamérica - "una empresa docente".  
<http://ued.uniandes.edu.co/servidor/ued/libros/situacprobprecalc.html>
- Gómez, P., Carulla, C., Castro, M., Fernández, F., Gómez, C., Mesa, V. Perry, P., Valero, P. (1995). Aportes de una empresa docente a la IX CIAEM. Bogotá: "una empresa docente".  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>

### Peer-reviewed articles in journals and periodicals (55)

- Montecino, A., & Valero, P. (submitted)
- Brunila, K., & Valero, P. (submitted) Anxiety and the making of research(ing) subjects in neoliberal academia.
- Valero, P. (submitted). El deseo de acceso y equidad en la educación matemática. *Revista colombiana de educación*.
- Valero, P., & Ravn, O. (2017). Recontextualizaciones y ensamblajes: ABP y matemáticas universitarias [Recontextualizations and assemblages: PBL and university mathematics]. *Didacticae*, 1(1), 4-25. doi: DOI: 10.1344/did.2017.1.4-25.
- Peñaloza, G., & Valero, P. (2016). Nihil obstat. Las ciencias naturales escolares y la fabricación del ciudadano católico en Colombia. *Educação Unisinos*, 20(1), 3-13. doi: 10.4013/edu.2016.201.01
- Cifuentes, G. A., & Valero, P. (2016). Tracing translations of ICT policies in higher education. *Education Policy Analysis Archives*, 2016, 24. 1-128. doi: 10.14507/epaa.24.1914
- Valero, P., Andrade-Molina, M., & Muñoz, A. M. (2015). Lo político en la educación matemática: De la educación matemática crítica a la política cultural de la educación matemática. *Revista Latinoamericana de Investigación en Matemática Educativa*, 18(3), 287-300. DOI: 10.12802/relime.13.1830
- Hernández, C., Ravn, O., Valero, P. (2015). The Aalborg University PO-PBL Model from a socio-cultural learning perspective. *Journal of Problem Based Learning in Higher Education*,  
<http://dx.doi.org/10.5278/ojs.jpblhe.v0i0.1206>
- Andersson, A., Valero, P., & Meaney, T. (2015). "I am [not always] a maths hater": Shifting students' identity narratives in context. *Educational Studies in Mathematics*, 1-19. doi: 10.1007/s10649-015-9617-z
- Daugbjerg, P., de Freitas, E., & Valero, P. (2015). Mapping the entangled ontology of science teachers' lived experience. *Cultural Studies of Science Education*, 1-25. doi: 10.1007/s11422-014-9612-1.
- Valero, P. & Knijnik, G. (2015). Governing the Modern, Neoliberal Child through ICT Research in Mathematics Education. *For the Learning of Mathematics*, 35(2), 33-38.

- Hernández, C., Laidy, C., Olarte, Valero, P. (2014). Una comparación entre cursos de física para estudiantes de medicina y biología utilizando diseños centrados en el profesor o en los estudiantes. *Voces y silencios: Revista Latinoamericana de Educación*, 5(2), 83-98. ISSN: 2215-8421. <http://vocesy silencios.uniandes.edu.co/index.php/vys/index>
- Pais, A., & Valero, P. (2014). Whither social theory? *Educational Studies in Mathematics*, 87(2), 241-248. doi: 10.1007/s10649-014-9573-z
- Valero, P., Daubjerg, P., Løvbjerg, K. (2014). Praksisnærhed i erhvervsskolens naturfagsundervisning gennem betydende overgange. *NORDYRK. Nordic Journal of Vocational Education and Training*, 4, 1-15. <http://home.hit.no/~aakre/nordyrk/2014/2014-7-valero.pdf>
- Valero, P., & García, G. (2014). Matemáticas escolares y el gobierno del sujeto moderno [School mathematics and the governing of the Modern subject]. *BOLEMA: Boletim de Educação Matemática*, 28(49), 491-515. doi: <http://dx.doi.org/10.1590/1980-4415v28n49a02>
- Valero, P., & Meaney, T. (2014). Trends in researching the socioeconomic influences on mathematical achievement. *ZDM International Journal on Mathematics Education*, 1-10. doi: 10.1007/s11858-014-0638-3
- Sillasen, M. K., & Valero, P. (2013). Municipal consultants' participation in building networks to support science teachers' work. *Cultural Studies of Science Education*, 8(3), 595-618. doi: 10.1007/s11422-012-9478-z
- Valero, P., Garcia, G., Camelo, F., Mancera, G., Romero, J. (2012). Mathematics education and the dignity of being. *Pythagoras*, 33(2), Art. #171, 9 pages. <http://dx.doi.org/10.4102/pythagoras.v33i2.171>
- Skovsmose, O., Scanduzzi, P. P., Valero, P., & Alrø, H. (2012). A aprendizagem matemática em uma posição de fronteira: Foregrounds e intencionalidade de estudantes de uma favela brasileira. *Bolema: Boletim de Educação Matemática*, 25(42), 231-260.
- Pais, A., & Valero, P. (2012). Researching research: mathematics education in the Political. *Educational Studies in Mathematics*, 80(1), 9-24. doi: 10.1007/s10649-012-9399-5
- Skovsmose, O., Scanduzzi, P., Valero, P., Alrø, H. (2011). Aprender matemáticas en una posición de frontera: Los porvenires y la intencionalidad de los estudiantes en una favela brasilera. *Educación y pedagogía*, 23(59), 103-124.
- Sillasen, M. K., Daubjerg, P., Schmidt, J., & Valero, P. (2011). Kvaliteter ved reformer af naturfagsundervisning i Danmark: læreres ressourcer og roller i reformprocesser. *MONA*. 1(2011), 39-56.
- Sillasen, M. K., Valero, P., & Sørensen, S. (2010). Læreres vilkår for at udvikle en naturfaglig kultur omkring natur/teknik. *MONA*, 2010(2), 7-22.
- Stentoft, D., & Valero, P. (2009). Identities-in-action: Exploring the fragility of discourse and identity in learning mathematics. *Nordic Studies in Mathematics Education*, 14(3), 55-77.
- Skovsmose, O., Alrø, H., Valero, P., Silverio, A. P., & Scanduzzi, P. P. (2009). "Antes de dividir temos que somar": 'Entre-vistando' foregrounds de estudantes indígenas. *Boletim de Educação Matemática (BOLEMA)*, 34, 237-262.
- Stentoft, D., & Valero, P. (2009). Identidades-en-acción: Sobre la fragilidad del discurso y la identidad en el aula de matemáticas. *Educação UNISINOS*, 13(2), 97-109. Available at [http://www.unisinos.br/publicacoes\\_cientificas/educacao/](http://www.unisinos.br/publicacoes_cientificas/educacao/)
- Alrø, H., Skovsmose, O., & Valero, P. (2009). Matematik er noget man bruger til at lave lektier med. *Matematik- og Naturfagsdidaktik - tidsskrift for undervisere, forskere og formidlere (MONA)*, 2009(2), 7-20.
- Valero, P., Meaney, T., Alrø, H., Fairhall, U., Skovsmose, O., & Trinick, T. (2008). School mathematical discourse in a learning landscape: understanding mathematics education in multicultural settings. *Nordic Studies in Mathematics Education*, 13(4), 69-94.
- Skovsmose, O., Scanduzzi, P., Valero, P., Alrø, H. (2008). Learning mathematics in a borderland position: Students' foregrounds and intentionality in a Brazilian favela. *Journal of Urban Mathematics Education*, 1(1), 35-59. <http://ed-osprey.gsu.edu/ojs/index.php/JUME>.
- Skovsmose, O., Alrø, H., Valero, P., Silverio, A. P., & Scanduzzi, P. P. (2008). "Antes de dividir, se tiene que sumar": 'Entre-vistar' porvenires de estudantes indígenas. *Revista Latinoamericana de Etnomatemática*, 1(2), 111-136.

- Valero, P. (2008). Discourses of power in mathematics education research: Concepts and possibilities for action. *PNA. Revista de investigación en didáctica de la matemática*, 2(2), 43-60. Available at: <http://www.pna.es/Numeros/Volumen2Numero2.html>
- Valero, P. (2007). What has Power Got to Do with Mathematics Education? *Philosophy of Mathematics Education Journal*, 21, September 2007. Available at: <http://www.people.ex.ac.uk/PErnest/>
- Valero, P. (2007). A socio-political look at equity in the school organization of mathematics education. *Zentralblatt für Didaktik der Mathematik. The International Journal on Mathematics Education*, 39(3), 225-233.
- Skovsmose, O., Alrø, Helle, Valero, P. (2007). "Before you divide, you have to add": Inter-viewing Indian students' foregrounds. *The Montana Mathematics Enthusiast. Monograph 1: International Perspectives on Social Justice in Mathematics Education* (pp. 151-168). Missoula (USA): The University of Montana
- Christensen, O. R., Stentoft, D., Valero, P., & Sørensen, S. C. (2006). *Gymnasieskolen imellem fag og sag - flerfaglighed i almen studieforberedelse. Matematik- og Naturfagsdidaktik - tidsskrift for undervisere, forskere og formidlere (MONA)*, 2006(4), 21-40.
- Skovsmose, O. & Valero, P. (2005). *Mathematics Education and Social Justice: Facing the Paradoxes of the Informational Society. Utbildning & Demokrati*, 14(2), 57-72.
- Valero, P. (2002). Consideraciones sobre el contexto y la educación matemática para la democracia. *Quadrante. Revista Teórica e de Investigaçao*, 11(1), 33-40.
- Skovsmose, O. & Valero, P. (2002). Quebrando a neutralidade política: o compromisso crítico entre a educação matemática e a democracia. *Quadrante. Revista Teórica e de Investigaçao*, 11(1), 7-28.
- Valero, P. (2001). Review of the book C. Keitel (Ed.). *Social Justice and Mathematics Education. Gender, Class, Ethnicity and the Politics of Schooling. Zentralblatt für Didaktik der Mathematik*, 33(6), 187-191.
- Jess, K., & Valero, P. (2001). Fokus på efteruddannelse: Fra kurser til professionel udvikling. *Matematik*, 29(5), 14-19.
- Valero, P. (2000). Educación matemática y Sociedad 2: La complejidad social de la educación matemática. *Revista EMA*, 5(3), 290-292.
- Denys, B., Valero, P. (1999). PME and under-represented countries. *PME News*, May 1999, 21-22. <http://members.tripod.com/~IGPME/cpmenews.html>
- Valero, P. (1999a). Deliberative mathematics education for social democratization in Latin America. *Zentralblatt für Didaktik der Mathematik*, 99(1), pp. 20-26. Indexed in ZDM, 31/1999, A40-0734.
- Valero, P. (1999b). PME 23: Enfoques en la investigación en educación matemática. *Revista EMA*, 5(1), 97-111.
- Valero, P., & Vithal, R. (1999). Research Methods of the "North" revisited from the "South". *Perspectives in Education*, 18(2), 5-12.
- Mesa, V., Valero, P. (1998). Dilemas de la formación de investigadores en educación matemática. *Revista EMA*, 3(2), 133-146. Indexed in ZDM 30/1998, D20-1772.
- Valero, P. (1998a). Socialization or learning? A view on the Danish Folkeskole. *CRIT*, 4-98, 20-29.
- Valero, P. (1998b). PME 22: Diversidad y cambio en la educación matemática. *Revista EMA*, 4(1), pp. 87-90.
- Valero, P. (1998c). Educación matemática y democracia: un tema de interés en América Latina?. *Boletín informativo del Comité Interamericano de Educación Matemática*, 6 (1), pp. 7-8.
- Valero, P. (1997a). Países poco representados en el PME: hacia el análisis de las comunidades de investigación en educación matemática. *Revista EMA*, 3(1), 85-87
- Valero, P. (1997b). Under-represented Countries in PME: Towards the Analysis of Mathematics Education Research Communities. *PME News*, Nov. 1997, 14-15.
- Valero, P. (1997c). PME 20: un motivo especial. *Revista EMA*, 2(1), 73-77.
- Valero, P. (1997d). A day to be true. Mathematics education for democracy in Colombia. *Chreods*, 11, 49-61. [http://s13a.math.aca.mmu.ac.uk/Chreods/Issue\\_11/PaolaValero.html](http://s13a.math.aca.mmu.ac.uk/Chreods/Issue_11/PaolaValero.html)
- Valero, P., Fernández, F. (1997). El PME: Una comunidad internacional de investigación. *Revista EMA*, 3(1), 89-91.
- Denys, B., Valero, P., Edwards, L. (1996). Under-represented Countries Group. *PME News*, Nov. 1996, 6.

- Valero, P., Gómez, P., Perry, P. (1996). Educación matemática en secundaria y desarrollo profesional. Una visión institucional. *Educación y Cultura*, 40, 42-47.
- Carulla, C., Valero, P. (1994). Un impulso a la comunidad de Educación Matemática en Colombia. *Boletín del Club EMA*, 7, 3-4.  
<http://ued.uniandes.edu.co/servidor/ued/boletinema.html/boletin7.html>
- Valero, P. (1994). Educación Matemática y Democracia. *Boletín del Club EMA*, 6, 8-11.  
<http://ued.uniandes.edu.co/servidor/ued/boletinema/boletin6.html>

## Peer-reviewed articles in anthologies (57)

- Valero, P. & Arvola-Orlander, A. (submitted).
- Andrade-Molina, M., Valero, P., & Ravn, O. (submitted). The amalgam of faith and reason: Euclid's elements and the scientific thinker. In P. Ernest et al. (Eds.), *Philosophy of mathematics education today*. New York: Springer.
- Montecino, A., & Valero, P. (submitted). The programmed obsolescence of the mathematics teacher. In M. Jurdak & R. Vithal (Eds.), *Socio-political dimensions of mathematics education: voices from margin to mainstream*. New York: Springer.
- Valero, P. (2017). Mathematics "for all" and the promise of a brighter future "for some". In Popkewitz, T., Diaz, J., Kirchgasser, C. (Eds.), *Political Sociology and Transnational Educational Studies: The Styles of Reason Governing Teaching, Curriculum and Teacher Education* (pp. 117-132). London: Routledge.
- Andrade-Molina, M., & Valero, P. (2017). The effects of school geometry in the shaping of a desired child. In H. Stahler-Pohl, N. Bohmann & A. Pais (Eds.), *The disorder of mathematics education. Challenging the socio-political dimensions of research*. New York: Springer.
- Montecino, A., & Valero, P. (2017). Mathematics teachers as products and agents: To be and not to be, that's the point! In H. Stahler-Pohl, N. Bohmann & A. Pais (Eds.), *The disorder of mathematics education. Challenging the socio-political dimensions of research*. New York: Springer.
- Valero, P., & Knijnik, G. (2016). Mathematics Education as a Matter of Policy. In M. A. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory* (pp. 1-6). Singapore: Springer Singapore.
- Planas, N., & Valero, P. (2016). Tracing the Socio-Cultural-Political Axis in Understanding Mathematics Education. In A. Gutiérrez, G. C. Leder & P. Boero (Eds.), *The Second Handbook of Research on the Psychology of Mathematics Education. The Journey Continues* (pp. 447-479). Rotterdam: Sense Publishers
- Andersson, A., Valero, P. (2016). Negotiating Critical Pedagogical Discourses: Contexts, Mathematics, and Agency. In P. Ernest, B. Sriraman, N. Ernest (Eds.), *Critical mathematics education: Theory and praxis* (pp. 203-228). Charlotte: IAP.
- Richard Barwell, Philip Clarkson, Anjum Halai, Mercy Kazima, Judit Moschkovich, Nuria Planas, Mamokgethi Setati Phakeng, Paola Valero and Martha Villavicencio (2016). Introduction: An ICMI Study On Language Diversity In Mathematics Education. In R. Barwell et al. (Eds.), *Mathematics Education and Language Diversity – The 21st ICMI Study* (pp. 1-22). New York: Springer.
- Halai, A., Muzafar, I., Valero, P. (2016). Research rationalities and the construction of the deficient multilingual mathematics learner. In R. Barwell et al. (Eds.), *Mathematics Education and Language Diversity – The 21st ICMI Study* (279-295). New York: Springer.
- Parra, A., Mendes, J., Valero, P., Villavicencio, M. (2016). Mathematics Education in Multilingual Contexts for the Indigenous Population in Latin America. In R. Barwell et al. (Eds.), *Mathematics Education and Language Diversity – The 21st ICMI Study* (pp. 67-84). New York: Springer.
- Andrade-Molina, M., Montecino, A., Parra, A., & Valero, P. (2015). Insubordinated Psychopathologies. In B. D'Ambrosio & C. Lopes (Eds.), *Creative insubordination in Brazilian mathematics education research* (pp. 261-272). Raleigh, NC: Lulu Press.
- Bang, L., Valero, P. (2015). Chasing the Chimera's tails: An analysis of interest in science. In T. Popkewitz (Ed.), *The "Reason" of Schooling. Historizing Curriculum Studies, Pedagogy and Teacher Education* (pp. 131-149). New York: Routledge.
- Zhou, C., & Valero, P. (2015). A Comparison of Creativity in Project Groups in Science and Engineering Education in Denmark and China. In G. E. Corazza, S. Agnoli (Eds.), *Multidisciplinary Contributions to the Science of Creative Thinking* (133-151). New York: Springer.

- Schmidt, J., Daubjerg, P., Sillasen, M., Valero, P. (2015). Del ciudadano alfabetizado al trabajador científico cualificado: la racionalidad neoliberal en las reformas danesas de la enseñanza de las ciencias. In D. Tröhler & T. Lenz (Eds.), *Trayectorias del desarrollo de los sistemas educativos modernos. Entre lo nacional y lo global*. Barcelona: Octaedro.
- Schmidt, J., Daubjerg, P., Sillasen, M., Valero, P. (2015). From the Literate Citizen to the Qualified Science Worker: Neoliberal Rationality in Danish Science Education Reforms. D. Tröhler & T. Lenz (Eds.), *Trajectories in the Development of Modern School Systems: Between the National and the Global*. (pp. 213-226). London: Routledge.
- Valero, P. (2015). Re-interpreting students' interest in mathematics: Youth culture and subjectivity. In U. Gellert, J. Giménez, C. Hahn, S. Kafoussi (Eds.), *Educational Paths to Mathematics* (p. 15-32). New York: Springer.
- Valero, P., Pais, A. (2015). Political perspectives in mathematics education. In C. Bergsten. (Ed.), *Refractions of Mathematics Education – Festschrift for Eva Jablonka* (pp. 173-196). Charlotte: IAP.
- Daubjerg, P. S., Løvenskjold Svejgaard, K., & Valero, P. (2014). Elevernes forgrund: Mening i undervisning og fremtidigt erhverv. I T. Størner, & K. Holm Sørensen (red.), *Elever i erhvervsuddannelserne*. (1 udg., s. 53-70). København: Munksgård Danmark.
- Valero, P. (2013). Political perspectives in mathematics education. In S. Lerman (Ed.), *Encyclopedia of Mathematics Education*. New York: Springer. Retrieved a <http://springerreference.com/docs/edit/chapterdbid/313305.html>
- Carulla, C., Valero, P. (2011). Hacia una perspectiva sociocultural de la evaluación para el aprendizaje: un caso de educación en ciencias. En J. Montoya, A.-M. Truscott y A. Mejía (Comp.), *Educación para el siglo XXI. Aportes del Centro de Investigación y Formación en Educación (CIFE), 2007-2011* (pp. 27-56). Bogotá: Ediciones Uniandes.
- Carulla, C., Valero, P. (2011). Et sociokulturelt perspektiv på evaluering i naturfag. Andreassen, K. E., Friche, N., & Rasmussen, A. (Red.). *Målt og vejet: Uddannelsesforskning om evaluering* (pp. 279-300). Aalborg: Aalborg Universitetsforlag.
- Pais, A., Valero, P. (2011). Beyond disavowing the politics in mathematics education research. In B. Atweh, M. Graven, W. Secada & P. Valero (Eds.), *Quality and Equity Agendas in Mathematics Education* (pp. 35-48). New York: Springer.
- Valero, P. (2011). Mapping social constructions and complexities. In B. Atweh, M. Graven, W. Secada & P. Valero (Eds.), *Quality and Equity Agendas in Mathematics Education* (pp. 299- 304). New York: Springer.
- Valero, P. & Pais, A. (2011). Mathematics education between reality and utopia: Examining Research in situations of conflict, poverty and violence. In A. Halai & D. Wiliam (Eds.), *Researching Education: Methodologies of the South* (pp. 158-177). Islamabad: Oxford University Press.
- García, G., Valero, P. & Mancera, G. (2010). Condiciones y oportunidades para configurar en el aprendizaje de las matemáticas: La subjetividad en procesos de socialización. In Garcia, G., Valero, P., Camelo, F., Mancera, G., Romero, J., Peñaloza, G. & Samacá, S. *Escenarios de aprendizaje de las matemáticas: Un estudio desde la perspectiva de la educación matemática crítica* (pp. p. 53-73). Bogotá: Universidad Pedagógica Nacional.
- Valero, P. (2010). Entre la realidad y la utopía: Investigación socio-política en educación matemática. In Garcia, G., Valero, P., Camelo, F., Mancera, G., Romero, J., Peñaloza, G. & Samacá, S. *Escenarios de aprendizaje de las matemáticas: Un estudio desde la perspectiva de la educación matemática crítica* (pp. p. 23-53). Bogotá: Universidad Pedagógica Nacional.
- Alrø, H., Skovsmose, O., Valero, P. (2010). A learning landscape: Building perspectives on mathematics learning in multicultural classrooms. In Sriraman et al. (Eds.), *The Sourcebook on Nordic Research in Mathematics Education* (p. 651-669). Greenwich: IAP.
- Stentoft, D., & Valero, P. (2010). Fragile Learning in the Mathematics Classroom: How Mathematics Lessons are not Just for Learning Mathematics. In M. Walshaw (Ed.), *Unpacking Pedagogy: New Perspectives for Mathematics* (87-107). Greenwich: IAP.
- Valero, P., Ravn, O., Alrø, H. (2010). A man, his ideas and his time. An interview with Ole Skovsmose. In H. Alrø, O. Ravn, & P. Valero (Eds.), *Critical mathematics education: Past, present and future* (pp. 1-9). Rotterdam: Sense.
- Valero, P. & Stentoft, D. (2010). The 'post' move of critical mathematics education. In H. Alrø, O. Ravn, & P. Valero (Eds.), *Critical mathematics education: Past, present and future* (pp. 183-195). Rotterdam: Sense.



- Alrø, H., Skovsmose, O. & Valero, P. (2009). Inter-viewing foregrounds. In M. César & K. Kumpulainen (Eds.), *Social Interactions in Multicultural Settings* (pp. 13-37). Rotterdam: Sense Publishers.
- Valero, P. (2009). Mellem globale og lokale forandringsprocesser. In P. Rasmussen & A. Jensen (Eds.), *Læring og forandring* (pp. 137-162). Aalborg: Aalborg Universitetsforlaget.
- Valero, P. (2009). What has power got to do with mathematics education? In P. Ernest, B. Greer, & B. Sriraman (Eds.), *Critical Issues in Mathematics Education* (pp. 237-254). Greenwich: IAP.
- Valero, P. (2009). Participating in identities and relationships in mathematics education. In Black, L., Mendick, H., & Solomon, Y. (Eds.), *Mathematical relationships in education: Identities and participation* (pp. 213-226). London: Routledge, Taylor and Francis.
- Valero, P. (2008). En vandring med en socio-politisk perspektiv. In T. Wedege (Ed.). *Identitet og forskning. Ni essays om at blive matematikdidaktisk forsker* (pp. 131-146). Copenhagen: NAVIMAT.
- Valero, P., Christensen, O., & Skovsmose, O. (2008). The multi-layered transitions of knowledge production and university education in science and mathematics. In O. Skovsmose, P. Valero, & Christensen, O. (Eds.), *Transitions in university science and mathematics education* (pp. 1-13). New York: Springer.
- Christensen, O. R., Stentoft, D., & Valero, P. (2008). A landscape of power distribution. In K. Nolan & E. De Freitas (Eds.), *Opening the research text. In(ter)ventions in mathematics education* (pp. 147-154). New York: Springer.
- Christensen, O. R., Stentoft, D., & Valero, P. (2008). Power distribution in the network of mathematics education practices. In K. Nolan & E. De Freitas (Eds.), *Opening the research text. In(ter)ventions in mathematics education* (pp. 131-146). New York: Springer.
- Skovsmose, O., & Valero, P. (2007). Educación matemática y justicia social: hacerle frente a las paradojas de la sociedad de la información. In J. Jimenez; J. Diez; M. Civil (Eds.). *Educación matemática y exclusión* (pp. 45-61). Barcelona: Graó.
- Valero, P. (2007). In between the global and the local: The politics of mathematics education reform in a globalized society. In B. Atweh, A. Calabrese Barton, M. Borba, N. Gough, C. Keitel, C. Vistro-Yu & R. Vithal (Eds.), *Internationalisation and globalisation in mathematics and science education* (pp. 421-439). New York: Springer.
- Valero, P. (2006). Diskurser om magt i matematik didaktisk forskning – Begreber og handlingsmuligheder. In O. Skovsmose & M. Blomhøj (red.), *Kunne det tænkes?* (pp. 296-311). København: Mallings Beck.
- Alrø, H., Skovsmose, O. & Valero, P. (2006). Forgrundsundersøgelser i et læringslandskab. In M. Høines and N. Lindén (Eds.), *Stifinneren – Caspar er 25 år* (pp. 1-12). Bergen: Caspar.
- Valero, P. (2004). Postmodernism as an attitude of critique to dominant mathematics education research. In M. Walshaw (Ed.), *Mathematics education within the postmodern* (pp. 35-54). Greenwich (USA): Information Age.
- Valero, P. (2004). Socio-political perspectives on mathematics education. In P. Valero & R. Zevenbergen (Eds.), *Researching the Socio-political Dimensions of Mathematics Education: Issues of Power in Theory and Methodology* (pp. 5-24). Dordrecht: Kluwer.
- Jess, K. & Valero, P. (2003). Fokus på efteruddannelse: Fra kurser til professionel udvikling. In O. Skovsmose & M. Blomhøj (Eds.), *Kan det virkelig passe?* (pp. 217-228). Copenhagen: L&R Uddannelse.
- Valero, P. (2003). Socialisering eller læring? En mening om det matematiske klasseværelse i den danske folkeskole. In O. Skovsmose & M. Blomhøj (Eds.), *Kan det virkelig passe?* (pp. 93-102). Copenhagen: L&R Uddannelse.
- Vithal, R., & Valero, P. (2003). Researching mathematics education in situations of social and political conflict. In A. Bishop et al. (Eds.), *Second International Handbook of Mathematics Education* (pp. 545-592). Dordrecht: Kluwer.
- Skovsmose, O., & Valero, P. (2002). Democratic access to powerful mathematical ideas. In L. D. English (Ed.), *Handbook of international research in mathematics education: Directions for the 21st century* (pp. 383-407). Mahwah, NJ: Lawrence Erlbaum Associates.
- Mesa, V., & Valero, P. (2001). Dos experiencias de formación doctoral: Objetivos, disciplinarietàad, enfoques y estrategias. In P. Gómez, & L. Rico (Eds.), *Iniciación a la investigación en didáctica de la matemática. Homenaje al profesor Mauricio Castro*. (pp. 39-56) Granada, Spain: Universidad de Granada.
- Skovsmose, O., Valero, P. (2001). Breaking Political Neutrality. The Critical Engagement of Mathematics Education with Democracy. In B. Atweh, H. Forgasz, B. Nebres (Eds.), *Socio-cultural aspects of mathematics education: An international research perspective* (pp. 37-56) Mahwah, NJ: Lawrence Erlbaum Associates.

- Valero, P., Perry, P., Castro, M., Gómez, P. y Agudelo, C. (1998). Desarrollo profesional de directivos y profesores: motor de la reforma de las matemáticas escolares. En P. Perry (Ed.), *Experiencias de desarrollo profesional en matemáticas. Un apoyo para la reforma en la escuela secundaria* (pp. 3-38). Bogotá: "una empresa docente".
- Valero, P., Gómez, P. y Perry, P. (1997). School mathematics improvement: Administrators and teachers as researchers. In V. Zack, J. Mousley, C. Breen (Eds.), *Developing practice: teachers' inquiry and educational change* (pp. 113-121). Geelong, Australia: CSMEE; Universidad de Deakin.
- Perry, P., Valero, P. y Gómez, P. (1996). La problemática de las matemáticas escolares desde una perspectiva institucional. En P. Gómez, P. Perry (Eds.), *La problemática de las matemáticas escolares. Un reto para directivos y profesores* (pp. 3-54). México: una empresa docente - Grupo Editorial Iberoamérica.
- Gómez, C. y Valero, P. (1995). Calculadoras gráficas y precálculo: el impacto en las creencias del profesor. In P. Gómez et al., *Aportes de "una empresa docente" a la IX CIAEM* (pp. 141-162). Bogotá: una empresa docente.  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>
- Gómez, P. y Valero, P. (1995). La potenciación del Sistema de Educación Matemática en Colombia. En P. Gómez et al., *Aportes de "una empresa docente" a la IX CIAEM* (pp. 1-9). Bogotá: una empresa docente.  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>
- Perry, P., Valero, P. y Gómez, P. (1995). Proyecto MEN-EMA: exploración de la problemática de las matemáticas escolares en colegios oficiales de Bogotá. En P. Gómez et al., *Aportes de "una empresa docente" a la IX CIAEM* (pp. 19-44). Bogotá: una empresa docente.  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>
- Valero, P. (1995). La interdisciplinaria en la Educación Matemática: el caso de la Ciencia Política. In P. Gómez et al., *Aportes de "una empresa docente" a la IX CIAEM* (pp. 11-18). Bogotá: una empresa docente.  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>
- Valero, P. (1995). El modelaje aplicado a la comprensión de problemas sociales". In P. Gómez et al., *Aportes de "una empresa docente" a la IX CIAEM* (pp. 75-80). Bogotá: una empresa docente.  
<http://ued.uniandes.edu.co/servidor/ued/libros/libroaportes/preliminares.html>

## Anthologies (11)

- Valero, P., Ravn, O., Pais, A. (Eds.) (under preparation). *Networks of practice in mathematics and science education. Studies of philosophy, society, culture and politics*. Springer.
- Barwell, R., Clarkson, P., Halai, A., Kasima, M., Moskovitch, J., Planas, N., Setati, K., Valero, P., Villavicencio, M. (2016). *Mathematics Education and Language Diversity – The 21st ICMI Study*. New York: Springer.
- Valero, P., & Skovsmose, O. (2012) (Comp.). *Educación matemática crítica: Una visión socio-política del aprendizaje y enseñanza de las matemáticas* (Translated and edited by Patricia Perry). Bogotá: Ediciones Uniandes – “una empresa docente”.
- Atweh, B., Graven, M., Secada, W. & Valero, P. (2011) (Eds.). *Quality and Equity Agendas in Mathematics Education*. New York: Springer.
- Alrø, H., Ravn, O., & Valero, P. (2010) (Eds.). *Critical mathematics education: Past, present and future*. Rotterdam: Sense.
- Skovsmose, O., Valero, P., & Christensen, O. R. (2008) (Eds.). *Transitions in university science and mathematics education*. New York: Springer.
- Matos, J.F., Valero, P. & Yasukawa, K. (Eds.) (2008). *Proceedings of the Fifth International Mathematics Education and Society Conference*. Lisbon: Centro de Investigação em Educação, Universidade de Lisboa – Department of Education, Learning and Philosophy, Aalborg University.
- Kilpatrick, J., Hoyles, C. & Skovsmose, O in collaboration with Valero, P. (Eds.) (2005). *Meaning in Mathematics Education*. Dordrecht: Springer.
- Valero, P. & Zevenbergen, R (Eds.) (2004). *Researching the Socio-political Dimensions of Mathematics Education: Issues of Power in Theory and Methodology*. Dordrecht: Kluwer.
- Valero, P., & Skovsmose, O. (Eds.) (2002). *Proceedings of the Third International Mathematics Education and Society Conference*. Copenhagen: Centre for Research in Learning Mathematics.

Skovsmose, O. (1999). *Hacia una filosofía de la educación matemática crítica*. Translated and edited by Paola Valero. Bogotá: “una empresa docente”.

## Other academic works

### *Dissertations (2)*

Valero, P. (2002). *Reform, democracy and mathematics education. Towards a socio-political frame for understanding change in the organization of secondary school mathematics*. Copenhagen: Danish University of Education, Ph.D. dissertation.

Valero, P. (1995). *Ciudadanía deliberativa: hacia una educación cívica en Colombia*. Bogotá: Departamento de Ciencia Política, Universidad de los Andes. Undergraduate dissertation. Special mention.

### *Papers in peer-reviewed congress proceedings (78)*

Valero, P. (2017). *Mathematics education and the matrix of domination*. In A. Chronaki (Eds.), *Proceedings of the 9th Mathematics Education and Society Conference*. Volos, Greece: University of Thessaly.

Andrade-Molina, M. & Valero, P. (2015). *Shaping a scientific self: A circulating truth within social discourse*. In S. Mukhopadhyay & B. Greer (Eds.), *Proceedings of the Eighth International Mathematics Education and Society Conference (MES 8)* (Vol. 1, pp. 284-297). Portland, USA: Ooligan Press, Portland State University.

Montecino, A., & Valero, P. (2015). *Product and agent: Two faces of the mathematics teacher*. In S. Mukhopadhyay & B. Greer (Eds.), *Proceedings of the Eighth International Mathematics Education and Society Conference (MES 8)* (Vol. 2, pp. 794-806). Portland, USA: Ooligan Press, Portland State University.

Parra, A., & Valero, P. (2015). *Ethnomathematical barterers*. In S. Mukhopadhyay & B. Greer (Eds.), *Proceedings of the Eighth International Mathematics Education and Society Conference (MES 8)* (Vol. 3, pp. 873-886). Portland, USA: Ooligan Press, Portland State University.

Valero, P., Graven, M.; Jurdak, M.; Martin, D.; Meaney, T. & Penteadó, M. (2015). *Socioeconomic influence on mathematical achievement: what is visible and what is neglected*. In Cho, S.J. (Ed.), *Proceedings of ICME 12: Intellectual and attitudinal challenges* (pp. 285-304). New York: Springer.  
<http://www.springer.com/978-3-319-10685-4>

Valero, P. (2014). *Cutting the calculations of social change with school mathematics*. In Liljedahl, P., Nicol, C., Oesterle, S., & Allan, D. (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36* (Vol. 1, pp. 73-78). Vancouver, Canada: PME.

Valero, P. (2013). *Investigación en educación matemática, currículo escolar y constitución de la subjetividad*. In *Proceedings of the VII Iberoamerican Congress of Mathematics Education (VII CIBEM)*. ISSN 2301-0797.

Valero, P. (2013). *Materiality and discourse in school curriculum: A Critical examination of mathematics*. In *AERA 2013 Annual Meeting Online Repository*. AERA Books (American Educational Research Association).

Valero, P. (2013). *Progress, Wealth, and Mathematics Achievement*. In *AERA 2013 Annual Meeting Online Program*. (s. 6). AERA Books (American Educational Research Association).

Valero, P. (2013). *Mathematics for all and the promise of a bright future*. In B. Ubuz, Ç. Haser & M. A. Mariotti (Eds.), *Proceedings of the 8th Congress of European Research in Mathematics Education (CERME 8)* (pp. 1804-1814). Antalya, Turkey: Middle East Technical University – European Society for Research in Mathematics Education.

Zhou, C., & Valero, P. (2013). *A Comparison on Group Creativity in Science and Engineering Education between Denmark and China*. Abstract from The First International Conference on the Science of Creative Thinking, Bologna, Italian.

Valero, P. (2012). *The Educational in Education, Out in the Blue?: A Response From Mathematics Education*. In *AERA 2012 Annual Meeting Program: Non Satis Scire: To Know Is Not Enough*. (s. 247). Cincinnati, Ontario: AERA Books (American Educational Research Association).

Valero, P. (2011). *Re-interpreting students' interest in mathematics: Youth culture resisting Modern subjectification*. B. Di Paola & J. Diez-Palomar (Eds), *Facilitating access and participation: mathematical practices inside and outside the classroom*. *Proceedings of the CIEAEM 63. Quaderni di Ricerca in didattica (Mathematics)*, 22, July 2012, 72-84.  
[http://math.unipa.it/~grim/quaderno22\\_suppl\\_1.htm](http://math.unipa.it/~grim/quaderno22_suppl_1.htm)

- Camelo, F., Mancera, G., Romero, J., García, & Valero, P. (2010). The importance of the relation between the socio-political context, interdisciplinarity and the learning of the mathematics. In U. Gellert, Jablonka, E. & Morgan, C. (Eds.), *Proceedings of the Sixth International Mathematics Education and Society Conference* (pp. 199-208). Berlin: Freie Universität.
- Pais, A., Stenoft, D., Valero, P. (2010). From questions of how to questions of why in mathematics education research. In U. Gellert, Jablonka, E. & Morgan, C. (Eds.), *Proceedings of the Sixth International Mathematics Education and Society Conference* (pp. 398-407). Berlin: Freie Universität.
- Valero, P. (2010). Mathematics education as a network of social practices. In V. Durand-Guerrier, S. Soury-Lavergne & F. Arzarello (Eds.), *Proceedings of the Sixth Congress of the European Society for Research in Mathematics Education* (pp. LIV-LXXX). Lyon: Institut National de Recherche Pédagogique.
- Ravn, O. & Valero, P. (2010). Acercar el formalismo y el uso en la educación matemática en ingeniería. In Grupo de Investigación Pentagoría (Ed.), *Memorias del IV Seminario de Matemática Educativa* (pp. 3-20). Bogotá: Escuela Colombiana de Ingeniería.
- Camelo, F., Mancera, G., Romero, G., García, G., Valero, P. (2009). The importance of the relation between the socio-political context, interdisciplinarity and the learning of mathematics. In C. Sandoval & Y. Ladino (Eds.), *Proceedings of the II International Congress of Research on Education, Pedagogy and Teacher Education*. Medellín: University of Antioquia – National Pedagogical University of Colombia.
- Andersson, A. & Valero, P. (2009). Mathematics education giving meaning for social science students in Sweden. In C. Sandoval & Y. Ladino (Eds.), *Proceedings of the II International Congress of Research on Education, Pedagogy and Teacher Education*. Medellín: University of Antioquia – National Pedagogical University of Colombia.
- Pais, A., Valero, P., Stenoft, D. (2009). Mathematics education as more than learning: a theoretical perspective. In C. Sandoval & Y. Ladino (Eds.), *Proceedings of the II International Congress of Research on Education, Pedagogy and Teacher Education*. Medellín: University of Antioquia – National Pedagogical University of Colombia.
- Valero, P. (2009). La educación matemática como una red de prácticas sociales. In C. Sandoval & Y. Ladino (Eds.), *Proceedings of the II International Congress of Research on Education, Pedagogy and Teacher Education*. Medellín: University of Antioquia – National Pedagogical University of Colombia.
- Christensen, O. R., Stenoft, D., Valero, P., Nolan, K., de Freitas, E., Brown, T., Ernest, P., & Graham, S. (2008). A symposium on opening the research text: critical insights and in(ter)ventions into mathematics education. In Matos, J., Valero, P., & Yasukawa, K. (Eds.), *Proceedings of the Fifth International Mathematics Education and Society Conference* (s. 128-131). Aalborg, Denmark: Centro de Investigação em Educação, Universidade de Lisboa and Department of Education, Learning and Philosophy, Aalborg University.
- Valero, P. (2008). In between reality and utopia: A socio-political research agenda for mathematics education in situations of conflict and poverty. I Matos, J., Valero, P., & Yasukawa, K. (red.): *Proceedings of the Fifth International Mathematics Education and Society Conference* (s. 158-163). Aalborg, Denmark: Centro de Investigação em Educação, Universidade de Lisboa and Department of Education, Learning and Philosophy, Aalborg University.
- Christensen, O. R., Jensen, A. A., & Valero, P. (2007). Innovation og diversitet – Venner eller fjender i design og implementering af uddannelsesforløb. I Den 13. årlige DUN-konference om universitetsundervisning 2007. (s. 1-9).
- de Abreu, G., César, M., Gorgorió, N., & Valero, P. (2007). Issues and challenges in researching mathematics education in multicultural settings. In M. Bosch (Ed.), *Proceedings of the IV Congress of the European Society for Research in Mathematics Education*. (s. 1125-1130). Barcelona: Universitat Ramon Llull.
- Alrø, H., Skovsmose, O. & Valero, P. (2007). Culture, diversity and conflict in landscapes of mathematics learning. In M. Bosch (Ed.), *Proceedings of the IV Congress of the European Society for Research in Mathematics Education*. (s. 1125-1130). Barcelona: Universitat Ramon Llull.  
<http://cerme4.crm.es/Papers%20definitius/10/wg10listofpapers.htm>
- Valero, P. (2006). De carne y hueso? La vida social y política de las competencias matemáticas. MEN (Ed), *Memorias del Foro Educativo Nacional de Colombia – Competencias matemáticas*. Bogotá: Ministerio de educación nacional. <http://www.colombiaaprende.edu.co/html/home/1592/article-109379.html>
- Valero, P. (2005). What has mathematics got to do with power? In D. Chassapis (Ed.), *Proceedings of the 4<sup>th</sup> Dialogue on Mathematics Teaching Issues: Social and Cultural Aspects of Mathematics Education* (pp. 25-43). Thessaloniki (Greece): Aristotle University of Thessaloniki – Primary Education Department.

- Valero, P. (2004). Mathematics education research, diversity and inclusion. A response to Arthur Powell's "The diversity backlash and the mathematical agency of students of color". In M.J. Høines & A.B. Fuglestad (Eds.), *Proceedings of the 28<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education (PME 28)*, vol. 1 (pp. 50-54). Bergen (Norway): Bergen University College.
- Alrø, H., Skovsmose, O. & Valero, P. (2003). Communication, conflict and mathematics education in the multicultural classroom. In *Proceedings of the III CERME*. Bellaria.  
[http://www.dm.unipi.it/~didattica/CERME3/proceedings/Groups/TG10/TG10\\_list.html](http://www.dm.unipi.it/~didattica/CERME3/proceedings/Groups/TG10/TG10_list.html)
- Lindenskov, L. & Valero, P. (2002). (Dis)empowering forces in everyday mathematics. Challenges to democracy. In L.Ø. Johansen & T. Wedege (Comp.), *Numeracy for empowerment and democracy? Proceedings of the 8<sup>th</sup> International Conference on Adults Learning Mathematics* (pp. 33-41). Roskilde, Denmark: CRLM – ALM.
- Valero, P. (2002). The myth of the active learner: From cognitive to socio-political interpretations of students in mathematics classrooms. In P. Valero & O. Skovsmose (Eds.), *Proceedings of the Third International Mathematics Education and Society Conference* (pp. 489-500). Copenhagen: Centre for Research in Learning Mathematics.
- Skovsmose, O., & Valero, P. (2002). Mathematics education in a world apart - Where we are all together. In P. Valero & O. Skovsmose (Eds.), *Proceedings of the Third International Mathematics Education and Society Conference* (pp. 6-14). Copenhagen: Centre for Research in Learning Mathematics.
- Lindenskov, L. & Valero, P. (2001). (Dis)empowering forces in everyday mathematics. Challenges to democracy. *Programme and abstracts of ALM 8* (p. 25). Roskilde, Denmark: Roskilde University – CRLM.
- Valero, P. (2000). Organización escolar, democracia y cambio en la enseñanza de las matemáticas. In E. Fernandes & J.F. Matos (Eds.), *Actas do ProfMat 2000* (pp. 132-133). Funchal, Portugal: Associação de Professores de Matemática de Portugal.
- Matos, J.F., Valero, P., Santos, M., & Fernandes, E. (2000). O dilema da relevância da matemática na investigação em educação matemática. In J.F. Matos & E. Fernandes (Eds.), *Investigação em educação matemática – perspectivas e problemas* (pp. 253-262). Funchal, Portugal: Associação de Professores de Matemática de Portugal.
- Valero, P. (2000). Subjetividad y conocimiento científico. Criterios de calidad en la investigación sociopolítica en educación matemática. In J.F. Matos & E. Fernandes (Eds.), *Investigação em educação matemática – perspectivas e problemas* (pp. 103-111). Funchal, Portugal: Associação de Professores de Matemática de Portugal.
- Valero, P. (2000). Reforma, democracia y educación matemática en la escuela secundaria. In J.F. Matos & E. Fernandes (Eds.), *Investigação em educação matemática – perspectivas e problemas* (pp. 71-78). Funchal, Portugal: Associação de Professores de Matemática de Portugal.
- Valero, P., & Jess, K. (2000). Supporting change through a mathematics team forum for teachers' professional development. In T. Nakahara, & M. Koyama (Eds.), *Proceedings of the 24<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education (PME 24)*, vol. 4 (pp. 249-256). Hiroshima: University of Hiroshima.
- Valero, P., & Matos, J.F. (2000). Dilemmas of Social/political/cultural Research in Mathematics Education. In J.F. Matos & M. Santos (Eds.), *Proceedings of the Second International Mathematics Education and Society Conference* (pp. 394-403). Lisbon: CIEFC – University of Lisbon.
- Valero, P. (2000). Dilemas de la investigación socio-política en educación matemática. *APM (Ed.), Memórias do X Seminário de Investigação em Educação Matemática (X SIEM)* (pp. 87-96). Lisboa: APM.
- Valero, P. (1999). Del tecnólogo al profesional. Cambio de enfoque en la formación de profesores de matemáticas. In *APM (Ed.), Memórias do ProfMat 99* (p. x). Lisboa: APM.
- Valero, P. (1999). Desenmascarar las matemáticas: Un reto para los profesores del próximo milenio. In *APM (Ed.), Memórias do ProfMat 99* (p. x). Lisboa: APM.
- Valero, P. (1999). Dilemas de la investigación socio-política en educación matemática. *APM (Ed.), Resumos do X Seminário de Investigação em Educação Matemática (X SIEM)* (p. x). Lisboa: APM.
- Valero, P. (1999). Mathematics teacher education. Considerations regarding mathematics education and society. In M. Blomhøj and L. Øhlenschläger (Eds.), *Report of the conference "Mathematics and Society: A ground for mathematics Education?"* (pp. 63-96). Roskilde: Center for Læring Matematik and Forum for Matematikkens Didaktik.

- Boaler, P., Valero, P. (1999). Social Aspects of Mathematic Education. In O. Zaslowski (Ed.). Proceedings of the 23rd. Conference of the International Group for the Psychology of Mathematics Education (p. 249). Haifa: Technion, vol. 1.
- Andrade, L., Valero, P. (1998). Profesores de matemáticas y el cuestionamiento acerca de su práctica. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes. Caracas: UCV.
- Boaler, J., Valero, P. (1998). Research in the Social Aspects of Mathematics Education. In A. Olivier, K. Newstead (Eds.), Proceedings of the 22nd. Conference of the International Group for the Psychology of Mathematics Education (p. 273). Stellenbosch: University of Stellenbosch, vol. 1.
- Castro, M., Perry, P., Valero, P., Gómez, P. (1998). La interacción profesional entre profesores de matemáticas: el caso de algunos colegios colombianos. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes (p. 126). Caracas: UCV.
- Gómez, P., Mesa, V., Carulla, C., Valero, P., Gómez, C. (1998a). Innovación curricular en precálculo con calculadoras gráficas. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes (p. 51). Caracas: UCV.  
<http://ued.uniandes.edu.co/servidor/em/recinf/reportes/cibem3/cibem3-pg.html>
- Gómez, P., Mesa, V., Carulla, C., Valero, P., Gómez, C. (1998b). Situaciones problemáticas de precálculo. El estudio de funciones a través de la exploración con calculadoras gráficas. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes (p. 51). Caracas: UCV.  
<http://ued.uniandes.edu.co/servidor/em/recinf/reportes/cibem3/cibem3-pg.html>
- Gómez, P., Perry, P., Castro, M., Valero, P. (1998). Los profesores de matemáticas como investigadores. La problemática de la formación permanente. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes (p. 132). Caracas: UCV.  
<http://ued.uniandes.edu.co/servidor/em/recinf/reportes/cibem3/cibem3-pg.html>
- Perry, P., Valero, P., Castro, M., Gómez, P. (1998). Estrategia de desarrollo profesional para profesores de matemáticas. In UCV (Ed.), III Congreso Iberoamericano de Educación Matemática. Resúmenes (p.141). Caracas: UCV.
- Tarp, A., Valero, P., Skovsmose, O. (1998). De-traditionalizing mathematics. In P. Gates, & T. Cotton (Eds.), Proceedings of the First International Mathematics Education and Society Conference (MEAS 1) (pp. 43-44). Nottingham: Centre for the Study of Mathematics.
- Valero, P. (1998a). Interdisciplinarity in mathematics education programs. In T. Lingefjord, G. Dahland (Eds.), Research in Mathematics Education. A Report from a Follow-up Conference after PME 1997 (pp. 99-108). Gothenburg: University of Gothenburg - Department of Subject Matter Didactics.
- Valero, P. (1998b). Reform, democracy and secondary mathematics education within the school. In M. Blomhøj (Ed.), Rapport fra NOMUS III. Læreprocesser i matematik (p. 30-31). Roskilde: Center for Forskning i Matematiklæring.
- Valero, P. (1998c). Struggles of a 'constructivist' curricular innovation. In O. Bjorkqvist (Ed.). Constructivism in the classroom (pp. 43-60). Vasa: Department of Teacher Education, Abo Akademi.  
Indexed in ZDM, 30/1998, D35-1804.
- Valero, P., Denys, B., Vithal, R., Gómez, P. (1998). Under-represented Countries in PME: National Mathematics Education Research Communities and Priorities. In A. Olivier, K. Newstead (Eds.), Proceedings of the 22nd. Conference of the International Group for the Psychology of Mathematics Education (p. 280). Stellenbosch: University of Stellenbosch, vol. 1.
- Valero, P., Jess, K. (1998). Matematiklæreres professionelle udvikling gennem forskning i egen undervisning. In M. Blomhøj (Ed.), Rapport fra NOMUS III. Læreprocesser i matematik (p. 28-29). Roskilde: Center for forskning i matematiklæring.
- Valero, P., Vithal, R. (1998a). Research methods of the "north" revisited from the "south". In P. Gates, & T. Cotton (Eds.), Proceedings of the First International Mathematics Education and Society Conference (MEAS 1) (pp. 401-408). Nottingham: Centre for the Study of Mathematics.
- Valero, P., Vithal, R. (1998b). Research methods of the north revisited from the south. In A. Olivier, K. Newstead (Eds.), Proceedings of the 22nd. Conference of the International Group for the Psychology of Mathematics Education (pp. 153-160). Stellenbosch: University of Stellenbosch, vol. 4.  
Indexed in ZDM, 31/1999, D20-2389.
- Castro, M., Perry, P., Valero, P., Gómez, P. y Agudelo, C. (1997). La interacción profesional como elemento dinamizador en el desarrollo profesional de los profesores de matemáticas. En R. Farfán (Ed.), Resúmenes de la Reunión Latinoamericana de Matemática Educativa (p. 74). Morelia: Universidad Michoacana de San Nicolás de Hidalgo.

- Gómez, P., Valero, P., Denys, B., Leung, S. (1997). Under-represented countries in PME: towards the analysis of mathematics education research communities. In E. Pehkonen (Ed.) (1997). Proceedings of the 21st. Conference of the International Group for the Psychology of Mathematics Education (p. 212). Helsinki: University of Helsinki - Lahti Research and Training Center, vol. 1.
- Perry, P., Castro, M., Valero, P., Gómez, P., Agudelo, C. (1997). A look at teachers' professional knowledge through the analysis of classroom activities. In E. Pehkonen (Ed.), Proceedings of the 21th. Conference of the International Group for the Psychology of Mathematics Education (p. 257). Lahti: Universidad de Helsinki, vol. 1.
- Valero, P. (1997). Teacher's beliefs and technology in the classroom". In M. Borba, T. Souza, B. Hudson, J. Fey (Ed.), Technology in the Mathematics Classroom (pp. 185-192). Rio Claro: ICME - UNESP - U. do Rio Claro.
- Valero, P., Gómez, P., Perry, P., Castro, M., Agudelo, C. (1997). School structure influence on administrators' actions upon mathematics staff development in schools. In E. Pehkonen (Ed.), Proceedings of the 21th. Conference of the International Group for the Psychology of Mathematics Education (p. 266). Lahti: Universidad de Helsinki, vol. 1.
- Gómez, P., Carulla, C., Gómez, C., Mesa, V., Valero, V. (1996). Calculadoras gráficas y precálculo. In Barón, G., Mariño, O., Escobar, H. (Eds.), Memorias del 3er. Congreso Iberoamericano de Informática Educativa. Cali: SENA.
- Murillo, G., Valero, P. (1996). De una democracia restringida hacia una participativa: el peligro de la contra-reforma y la regresión en Colombia. In E. Diniz (Ed.), O Desafio da Democracia na América Latina (pp. 493-511). Rio de Janeiro: IUPERJ.
- Perry, P., Gómez, P., Valero, P. (1996). The teaching of mathematics from within the school. Teachers and principals as researchers. En L. Puig, A. Gutiérrez, (Eds.), Proceedings of the 20th. Conference of the International Group for the Psychology of Mathematics Education (pp. 123-130). Valencia: Universidad de Valencia, vol. 4.
- Valero, P. (1996). La dictadura de las matemáticas: hacia una educación matemática para la paz y la democracia. In S. Bermúdez (Ed.), Estrategias y experiencias para la construcción de la paz. Educación para la paz (pp. 254-268). Bogotá: Departamento de Historia - ANPAZ - Uniandes.
- Valero, P., Gómez, C. (1996). Precalculus and graphic calculators: The influence on teacher's beliefs. In Puig, Luis & Gutiérrez, Angel (Eds.), Proceedings of the 20th. Conference of the International Group for the Psychology of Mathematics Education (pp. 371-378). Valencia: University of Valencia, vol. 4.
- Gómez, C., Valero, P. (1995). Calculadoras gráficas y precálculo: el impacto en las creencias del profesor". In CIAEM (Ed.), Memorias de la IX CIAEM. Santiago: CIEM, SCHEM, USACH.
- Gómez, P., Valero, P. (1995). La potenciación del sistema de educación matemática en Colombia. In CIAEM (Ed.), Resúmenes de conferencias y presentaciones de invitadas a la IX CIAEM (pp. 1-10). Santiago: CIEM, SCHEM, USACH.
- Perry, P., Gómez, P., Valero, P. (1995). Proyecto MEN-EMA: exploración de la problemática de las matemáticas escolares en colegios oficiales de Bogotá. In CIAEM (Ed.), Memorias de la IX CIAEM. Santiago: CIEM, SCHEM, USACH.
- Valero, P. (1995a). El cambio de significado de las matemáticas para los estudiantes de ciencias sociales. In CIAEM (Ed.), Memorias de la IX CIAEM. Santiago: CIEM, SCHEM, USACH.
- Valero, P. (1995b). El modelaje aplicado a la comprensión de problemas sociales. In CIAEM (Ed.), Memorias de la IX CIAEM. Santiago: CIEM, SCHEM, USACH.
- Valero, P. (1995c). La interdisciplinarietà en la Educación Matemática: el caso de la Ciencia Política. In CIAEM (Ed.), Memorias de la IX CIAEM. Santiago: CIEM, SCHEM, USACH.
- Valero, P. (1995d). Constitución y lenguaje: un análisis comparativo de las Constituciones de 1886 y 1991. In S. Bermúdez (Ed.), Memorias del Simposio Culturas para la Paz del VI Congreso de Antropología en Colombia (pp. 54-74). Bogotá: Fundación Alejandro Angel Escobar.
- Gómez, C., Valero, P. (1994). Calculadoras gráficas y Precálculo: el impacto en las creencias del profesor. In CIBEM (Ed.), Resúmenes del II Congreso Iberoamericano de Educación Matemática. Blumenau: Universidad Regional de Blumenau y Sociedad Brasileira de Educación Matemática.

#### *Research reports (4)*

- Sillasen, M.K., Valero, P. (2009). NaTeKu-undersøgelsen. Evaluering af udviklingsprojektet "Natur/teknik og den naturfaglige kultur i folkeskolen". Aalborg: AAU, VIA, Naturvidenskabernes Hus.

- García, G., Valero, P., Peñaloza, G., Mancera, G., Romero, J., Camelo, F., Samacá, M. (2009). Reinventando el currículo y los escenarios de aprendizaje de las matemáticas. Un estudio desde la educación matemática crítica. Bogotá: Universidad Pedagógica Nacional – IDEP – Colciencias.
- Skovsmose, O., Alrø, H., Valero, P. (2005). Communication, conflict and mathematics education in the multicultural classroom. Aalborg: Department of Education, Learning and Philosophy – Aalborg University.
- Gómez, C., Valero, P. (1994). Calculadoras gráficas y Precálculo: El impacto en las creencias del profesor. Bogotá: una empresa docente – Universidad de los Andes.

### *Other publications (33)*

- Valero, P. (2016). Preface. In F. Wanderer, & G. Knijnik (Eds.), *Educação matemática e sociedade* (p. 9-12). São Paulo: Editora Livraria da Física.
- Valero, P., & Aroca Araújo, A. (2014). Los porvenires de la investigación etnomatemática en Colombia. *Revista Latinoamericana de Etnomatemática*, 7(2), 4-8.
- Blomhøj, M., Valero, P., & Häggström, J. (2009). Four new years of Nomad – a time of growth. *Nordic Studies in Mathematics Education (NOMAD)*, 14(4), 1-8.
- Blomhøj, M., Valero, P., & Häggström, J. (2009). The role of research in mathematics education reform work. *Nordic Studies in Mathematics Education (NOMAD)*, 14(3), 1-5.
- Blomhøj, M., Valero, P., & Häggström, J. (2009). The role of overview papers in mathematics education research. *Nordic Studies in Mathematics Education (NOMAD)*, 14(2), 1-6.
- Blomhøj, M., & Valero, P. (2009). Quality criteria in mathematics education research. *Nordic Studies in Mathematics Education (NOMAD)*, 14(1), 1-5.
- Blomhøj, M., & Valero, P. (2008). Bringing focus to mathematics education in multicultural and multilingual settings. *Nordic Studies in Mathematics Education (NOMAD)*, 13(4), 1-6.
- Blomhøj, M., & Valero, P. (2008). Nordic mathematics education research in the world and in the region. *Nordic Studies in Mathematics Education (NOMAD)*, 13(3), 1-6.
- Blomhøj, M., & Valero, P. (2008). Strengthening NOMAD as a means of research communication in the Nordic Studies in Mathematics Education (NOMAD), 13(2), 1-6.
- Blomhøj, M., & Valero, P. (2008). The International Commission on Mathematical Instruction: A centenary of history and a future to construct. *Nordic Studies in Mathematics Education (NOMAD)*, 13(1), 1-6.
- Blomhøj, M., & Valero, P. (2007). Mathematics education: A key for success in a globalized world? *Nordic Studies in Mathematics Education (NOMAD)*, 12(3), 1-5.
- Alrø, H., Skovsmose, O., Valero, P. (2007). Inter-viewing foregrounds. Aalborg: Institut for Uddannelse, Læring og Filosofi.
- Blomhøj, M., & Valero, P. (2007). Mathematics education: A key for success in a globalised world? *Nordic Studies in Mathematics Education (NOMAD)*, 12(3), 1-4.
- Blomhøj, M., & Valero, P. (2007). The important and difficult task of improving mathematics teacher education. *Nordic Studies in Mathematics Education (NOMAD)*, 12(2), 1-4.
- Christensen, O. R., Stentoft, D., & Valero, P. (2007). Power and Mathematics Education. Aalborg: Institut for Uddannelse, Læring og Filosofi.
- Blomhøj, M., & Valero, P. (2007). The first year of the Danish editorial team. *Nordic Studies in Mathematics Education (NOMAD)*, 12(1), 1-4.
- Blomhøj, M., & Valero, P. (2006). New chief editors on the job. *Nordic Studies in Mathematics Education (NOMAD)*, 11(1), 1-3.
- Blomhøj, M., & Valero, P. (2006). The great variation in the field of mathematics education. *Nordic Studies in Mathematics Education (NOMAD)*, 11(2), 1-3.
- Blomhøj, M., & Valero, P. (2006). The review process and the role of NOMAD in the Nordic mathematics education community. *Nordic Studies in Mathematics Education (NOMAD)*, 11(3), 1-3.
- Blomhøj, M., & Valero, P. (2006). Vanskeligheder i/med matematiklæring - behov for øget forskning. *Nordic Studies in Mathematics Education (NOMAD)*, 11(4), 1-6.
- Valero, P. (2005). In between the global and the local: The politics of mathematics education reform in a globalized society. Aalborg: Department of Education and Learning, Research papers, nr. 1, February 2005.



- Valero, P. (2004). El modelo de infusión ideológica a la luz de la investigación internacional en educación matemática. Prefacio al libro A.J. Moreno Verdejo (2004). *Ideología y educación matemática. El proceso de infusión ideológica* (pp. 9-16). Barcelona: Octaedro.
- Vithal, R., & Valero, P. (2001). Researching mathematics education in situations of social and political conflict. Roskilde: Center for Forskning i Matematiklæring, Særlig udgivelse nr. 5, August 2001.
- Skovsmose, O., Valero, P. (2001). Democratic access to powerful mathematical ideas. Copenhagen: Center for Forskning i Matematiklæring, Skrift nr. 30, March 2001.
- Skovsmose, O., Valero, P. (1999). Breaking Political neutrality: The critical Engagement of Mathematics Education with Democracy. Copenhagen: Center for Forskning i Matematiklæring, Skrift nr. 11, november 1999.
- Jess, K., Valero, P. (1999). Faglig forum for matematiklærere. Kommunikation, kvalificering og udvikling i skolen. In K. Jess, P. Valero (Red.), MAPUFU I Projekt. Matematiklæreres professionelle udvikling gennem forskning i egen undervisning. København: Center for forskning i matematiklæring, Skrift nr. 6, marts 1999, pp. 4-17.
- Jess, K., Valero, P. (1999) (Red.). MAPUFU I Projekt. . Matematiklæreres professionelle udvikling gennem forskning i egen undervisning. Copenhagen: Center for forskning i matematiklæring, Skrift nr. 6, marts 1999.
- Valero, P. (1999). Deliberative mathematics education for social democratization in Latin America. In O. Skovsmose, P. Valero. *On the Connection between Mathematics Education and Democracy*. Copenhagen: Center for forskning i matematiklæring, Skrift nr. 2, januar 1999.
- Valero, P. (1999). La educación matemática crítica en contexto. Prefacio a la versión en español. In O. Skovsmose, *Hacia una filosofía de la educación matemática crítica* (pp. vii-xxv). Translated and edited by Paola Valero. Bogotá: "una empresa docente".
- Valero, P. (1998). Deliberative mathematics education for social democratization in Latin America. In *Arbejdsrapporter i forskningsprogrammet "Skolefag, Læring og Dannelse i det 21. Århundrede"*. København: Danmarks Lærerhøjskole: , juni 1998, nr. 4.
- Valero, P. (1988). Ideology and power relationships in the teaching of critical mathematics within schools. In *Skolefag, Læring og Dannelse i det 21. Århundrede. Projektbeskrivelser*. København: Danmarks Lærerhøjskole, pp. 129-133.
- Valero, P. and Jess, K. (1998). Mathematics teacher's professional development through research in the school. A proposal for an alternative mathematics teacher education. Copenhagen: Department of Mathematics - RDSSES.
- Valero, P. (1997). Una visión de la didáctica de las matemáticas desde Francia. Algunos conceptos y métodos. Bogotá: una empresa docente.

# PAOLA VALERO's TEACHING PORTFOLIO

## Diplomas

Pedagogic education for university assistant professors. Centre for University Teaching and Learning at Aalborg University. Aalborg, October 2002 – February 2004.

Modern Languages. Department of Modern Languages. Universidad de los Andes. Bogota, January 1989 - December 1993. Occupied the first place in the class.

## Participation in university pedagogy courses and workshops

Participation in Stockholm University's Teaching Conference 2016 (Lärarkonferens2016 - undervisning och lärande i akademien). Organized by the Center for University Pedagogy, Stockholm University. February 28, 2016.

Participation in Aalborg University's Pedagogic Day. Aalborg, March 17, 2011, 2009.

Participation in the seminar/course for Ph.D. supervisors/Ph.D. students organized by the Danish Doctoral School of Science and Mathematics Education and the Nordic Doctoral School in Mathematics Education. Nyborg, Denmark, November 22-24, 2007.

Gode studie- og læringsmiljøer og effektivisering – kan de to ting forenes? Aalborg, Danish Network of University Pedagogy (DUN), May 31-June 1, 2007.

Participation in the seventh seminar for Ph.D. supervisors organized by the Nordic Doctoral School in Mathematics Education. Trondheim, Norway, February 8-9, 2007.

Participation in the fourth seminar for Ph.D. supervisors organized by the Nordic Doctoral School in Mathematics Education. Lund, Sweden, November 14-15, 2005.

Participation in the second seminar for Ph.D. supervisors organized by the Nordic Doctoral School in Mathematics Education. Korsør, Denmark, March 25-26, 2005.

De nye naturvidenskaber– Ethiske fordringer, didaktiske udfordringer. Conference organized by Dansk Center for Naturvidenskabsdidaktik (DCN), Aalborg University. Skørping, May 12-13, 2004

If reform of university science education is the answer, what were the questions? Conference organized by Dansk Center for Naturvidenskabsdidaktik (DCN), University of Copenhagen. Korsør, May 22-23, 2003.

Workshop “Metodología y aspectos curriculares de la enseñanza de las matemáticas”. Fundación Universitaria de Boyacá. Tunja, January 16-18 1997.

La argumentación y la prueba en la educación matemática. Cuestiones de innovación. El caso de la geometría en un ambiente tecnológico. “una empresa docente”. Bogotá, November 25 - 26 1996.

Assessment Techniques in the Teaching of Mathematics Professor Jeremy Kilpatrick (U. of Georgia). “una empresa docente”. Bogota, March 1993.

## Teaching responsibilities

### University pedagogy level

#### Stockholm University

“Explorations of the “context” of mathematics teaching and learning”. Invited lecture at the Mathematics Section Teachers' Meeting at MND. Stockholm, April 13, 2016.

“Professional identity binding subject matter and learning”. Lecture at Stockholm University's Teaching Conference 2016 (Lärarkonferens2016 - undervisning och lärande i akademien). Organized by the Center for University Pedagogy, Stockholm University. February 28, 2016.

#### Aalborg University – Centre for University Teaching and Learning– Learning Lab.

Workshop “Professional identity, subject matter, and learning”. Guest workshop at AAU's teaching day, May 2011.

Workshop: “Who is the student in our classroom? Understanding young adults in university studies”. Workshop within the University Teacher Education for Assistant Professors. April 11, 2011.

Workshop: Teaching portfolios: Challenges and difficulties? Workshop within the University Teacher Education for Assistant Professors. December 14, 2006.

What’s the meaning of a pedagogical education for university staff? Workshop within the University Teacher Education for Assistant Professors. November 14, 2005.

Workshop: Teaching portfolios: Challenges and difficulties? Workshop within the University Teacher Education for Assistant Professors. November 14, 2004.

## Doctoral level

### *International doctoral summer schools*

NordForsk Center of Excellence in Education JustEd Summer School. 2014: In charge of discussion of student projects, together with Professor Ingólfur Jóhanesson. Organized by Helsinki University, Helsinki, August 16-20, 2014. 2015: In charge of discussion of student projects, together with Professor Jón Torfi Jónason. Organized by Oslo University, Oslo, August 17-21, 2015.

Post-Graduate Mathematics Education Summer School of the University of Athens, Greece. Responsible for the seminar “Political perspectives in mathematics education”. Anavyssos, June 6-8, 2015.

### *Guest lecturer at PhD courses*

The cultural politics of mathematics education. Guest lecturer to the PhD course “Critical mathematics education”. Bergen University College, January 13, 2017.

### **Stockholm University – Doctoral Program of Mathematics and Science Education**

PhD course “Theory of science and history of mathematics Education”. Compulsory course in the mathematics education line. Stockholm, Fall 2016.

### **Aalborg University – Doctoral Program “Technology and Science”**

PhD course “Histori(es) of Science/Math as School Subjects and Pedagogical Objects: The making of the Child and the Future Citizen”, in collaboration with Malin Ideland, Malmö University, Christina Siry, University of Luxembourg, and Daniel Tröhler, University of Luxembourg. Aalborg, December 11-12, 2014.

PhD course “Researching in educational settings from cultural perspectives”, offered in collaboration between the Doctoral Program on Health Education, Organization and Ethics, Faculty of Medicine; the Doctoral Program Technology and Science, Faculty of Engineering and Science; and the Doctoral Program of Learning and Philosophy, Faculty of the Humanities. With Xiaugyun Du, and Kenneth Mølbjerg Jørgensen, AAU. Aalborg, November 10-12, 2014.

PhD course “Dilemmas in science, engineering and technology”, in collaboration with Ole Ravn (Dpt. Learning), Per Halkjær Nielsen (Dept. Chemistry & Bioscience) and Peter Axel Nielsen (Dept. Computer Science), AAU. Aalborg, May 7-8, 2014; May 8-9, 2015.

PhD course History(ies) of the scientific Rationality, in collaboration with Antje Gimmler, AAU. Aalborg, December 5-6, 2013.

PhD course “Theoretical Perspectives on the Body in Education”. Organized in collaboration between the Nordic Network for Researcher in Cultural, Political and Social Perspectives on Science Education (CPSSE) at Malmö University, and the doctoral program "Health Education, Organisations and Ethics" at the Faculty of School in Medicine, Biomedical Science and Technology. With Malin Ideland, Malmö Univeristy, Elizabeth de Freitas, Adelphi University, USA; Marie Öhman. October 8-10, 2013.

PhD course “Introduction to the PhD studies”, on behalf of the Doctoral School of Technology and Science and the Doctoral School of Health and Medicine. In collaboration with Jes Vollertsen (Dept. Civil NEngineering), John Rasmussen (Dept. Mechanical engineering); Rasmus Wagepetersen (Dept. Mathematics), AAU. Aalborg, course has been held 6 times a year since 2013 as a compulsory course to all the new students in these two faculties.

PhD course “Governmentality and the study of transitions in governance”, in collaboration with Mathew Cashmore and Tim Richardson, AAU, and Gelsa Knijnik, Universidade do Vale do Rio dos Sinos, Brazil. Aalborg, November 21-23, 2012.

PhD course “Writing interpretative research papers”, In collaboration with Mathew Cashmore and Tim Richardson, AAU, and Tamsin Meaney, Malmö University. Aalborg, September 12-14, 2012. This course has been offered as well in 2013, 2014 and 2015, and the design has been developed.

PhD course “Criteria of quality in Ph.D. work”. In collaboration with Palle Rasmussen. Guest lecturers: Kathrin Otrell-Cass, AAU, and Gelsa Knijnik, Universidade do Vale do Rio dos Sinos, Brazil. Aalborg, August 23-24, 2012.

PhD course “The Social and Cultural Roots of Science, Technology and Mathematics”. Guest lecturers: Malin Ideland and Claes Malmberg, Malmö University; and Luis Radford, École des Sciences de l’Éducation, Laurentian University, Canada. Aalborg, December 6, 2011.

Seminar on PhD supervision: Tools and processes for PhD tutors. In collaboration with Anette Kolmos and Lise Kofoed. Aalborg, December 1, 2011.

PhD course “Discourse and narrative in educational research”. Guest lecturers: Candia Morgan, Institute of Education, London, UK and Elizabeth de Freitas, Adelphi University, New York, USA. Aalborg, November 10, 2011.

PhD course “Qualitative research methodologies in technology, science and education”. In collaboration with Tim Richardson. Aalborg, May 26-28, 2010; May 11-13, 2011; October 8-10, 2012; May 15-17, 2013; March 12-14, 2014; March, 2015. This course has been part of the regular general course of the Doctoral School.

PhD course “Quality criteria in maths and science education PhD work”. Guest lecturers: Tamsin Meaney, Troels Lange, Malin Ideland and Claes Malmberg Malmö University. May, 17-18, 2011.

PhD course “Constructing subjectivities in mathematics and science education”. Guest lecturers: Thomas Popkewitz, University of Wisconsin at Madison, and Danny Martin, University of Chicago. November 29 – December 2, 2010.

PhD course “Analysing data in educational research”. Guest lecturer: Gelsa Knijnik, Universidad do Rio do Vale dos Sinos, Brazil. March 12-14, 2010.

PhD course “Learning-in-practice: Socio-cultural and political theories in engineering, mathematics, and science education”. Head of the organizing committee and the academic program. Guest lecturers: Luis Radford, Laurentian University, Canada, and Wolf-Michael Roth, University of Victoria, Canada. Sæby, November 2<sup>nd</sup> – 5<sup>th</sup>, 2009.

Ph.D. course “Qualitative research methodologies in technology, science and education”. In collaboration with Kenneth Mølbjerg Jørgensen and Tim Richardson. Aalborg, May 27-29, 2009.

Ph.D. course “The Postmodern Learner: Challenging Traditions in the Organization of Education and Learning”. Head of the organizing committee and the academic program. Guest lecturers: Gert Biesta, Institute of Education, University of Stirling, UK; Steven Lerman, London South Bank University, UK. Sæby, November 26-28, 2008.

Ph.D. course “Designing social learning systems in a globalized world: At the crossroads of cultural diversity and technological development”. Head of the organizing committee and the academic program. Guest lecturers: Renuka Vithal, University of Kwazulu Natal, South Africa, Etienne Wenger, North San Juan, California, USA and Aalborg University; and Lone Dirckinck Holmfeld, Xiangyun Du and Ole Skovsmose, Aalborg University. Sæby, November 5-8, 2007.

Ph.D. course “Perspectives on Identity in Learning and Education Research”. Head of the organizing committee and the academic program. Guest lecturers: Alison Pullen, University of Technology, Sydney, Australia, Anna Sfard, University of Haifa, Israel, Carl Rhodes, University of Technology, Sydney, Australia and Etienne Wenger, North San Juan, California, USA and Aalborg University. Sæby, November 14-17, 2006.

Ph.D. course “Researching the socio-political dimensions of education: Issues of power in theory and methodology”. With professor Ole Skovsmose. Aalborg, October 27-29, 2004.

Ph.D. course “Learning and dialogue”. With professor Ole Skovsmose. Aalborg, April 14-15, 2004.

Ph.D. course “Risk and responsibility”. With professor Ole Skovsmose. Aalborg, April 2-4, 2003.

Ph.D. course “Research methodology in education”. With professor Ole Skovsmose. Aalborg, November 5-7, 2002.

Ph.D. course “The Social Relations of Mathematics and Mathematics Education”. With guest professors Sal Restivo, Rensselaer Polytechnic Institute, USA, and Wenda K. Bauchspies, Pennsylvania State University, USA. In cooperation between the European Doctoral School of Technology and Science at Aalborg University and Learning Lab Denmark. Copenhagen, May 27-29, 2002.

## Masters level

### Aalborg University – Department of Learning and Philosophy

Module “Mapping controversies in science and technology”. Design and teaching the module, in collaboration with Anders Munk and Khalid Saiffudin. At the Master of Technoanthropology. Spring 2014.

Module “Pedagogy and pedagogical innovation”. Design and teaching in the module, together with Birthe Lund. Master in Learning and Innovative Change. Spring 2006. Spring 2009.

Module “Learning in multicultural contexts”. Design and teaching in the module, together with Annie Aarup Jensen and Annette Lorentsen. Master in Learning and Innovative Change. Spring 2006.

Module “Pedagogical innovation: The relationship between education and society”, Specialization in Pedagogical Innovation in Mathematics and Science in the Master in Learning Processes. Design, coordination and teaching in the module. Spring 2004, Spring 2005, Spring 2006.

Module “Pedagogical innovation in mathematics and science education”, Specialization in Pedagogical Innovation in Mathematics and Science in the Master in Learning Processes. Design, coordination and teaching in the module. Spring 2004, Spring 2006.

Master in Learning Processes, Specialization in Pedagogical Innovation in Mathematics and Science. Design of specialization courses. June 2002 – May 2003.

### **Aalborg University – UNESCO Center for Project Based Learning in Engineering**

Module “Learning theories in engineering and science”. Master in Project Based Learning in Science and Engineering. Spring 2006, Fall 2007.

Master in Project Based Learning in Science and Engineering. Design of the module “Learning theories in engineering and science” and member of the core teaching team of the program. February 2004 – currently.

### **Bachelor level**

#### **Stockholm University – Department of Mathematics and Science Education**

Independent work at advanced level. Supervision of students’ independent research work in mathematics education to finalize the teacher education program. Fall 2016

Independent work at basic level. Supervision of students’ independent basic research work in mathematics and science education. Fall 2016

#### **Aalborg University – Department of Learning and Philosophy**

Module “Cultural history of technology”. Design and teaching the module, in collaboration with Christian Baron. At the Bachelor of Technoanthropology. Spring 2015.

Elective course “Technoanthropology in micro perspective”. Design and teaching the module, in collaboration with Kathrin Otrell-Cass. At the Bachelor of Technoanthropology. Fall 2013, Fall 2014.

#### **Aalborg University – Department of Mathematical Sciences**

Mathematics education course for mathematics students. Aalborg, Fall 2002.

#### **Universidad de los Andes - Colombia**

Teacher assistant in the course “Seminar on Democratic Governability”. Department of Political Science. 1st. semester 1995.

Spanish Teacher in the M.A. in Social Evaluation of Projects. Faculty of Economics. January - August 1996, February and May 1995, May 1994.

Teacher Assistant in the course “Colombian Political Development”. Department of Political Science. 1st. semester 1994.

English Teacher. Department of Modern Languages. 1st. semester 1993.

Teacher of the course “Mathematics, Science and Society”. Department of Mathematics. 1st. semester 1996, 1st. and 2nd. semesters 1995, 1st. semester 1992.

Assistant Teacher for the Spanish Course in the M.A. in Social Evaluation of Projects. Faculty of Economics. February 1994, February 1993, February 1992.

Teacher Assistant in the course “Mathematics, Science and Society”. Department of Mathematics. 2nd. semester 1991, June - July 1991, 1st. semester 1990.

Teacher Assistant in the course “Statistics and Society”. Department of Mathematics. 1st. semester 1991, 2nd. semester 1990.

### **Professional development courses for school teachers**

“Del professor al estudiante. Cambio pedagógico y teorías activas del aprendizaje”. Invited workshop for vocational teachers at Teknika, Vasque Center for Vocational Education. San Sebastián, November 25, 2016.

“Posibilidades para el aula desde una perspectiva socio-política”. Invited workshop for teachers and teacher students at the II Jornadas de Educación Matemática. Equidade e Comunicação. A Coruña, Universidad de A Coruña, April 25 to 27, 2011.

“La investigación de escenarios de aprendizaje en las matemáticas escolares. Invited research seminar for researchers and teachers at the National Pedagogical University of Colombia, Bogotá, July 27<sup>th</sup> to 29<sup>th</sup>, 2010.

“Investigar la educación matemática socio-políticamente”. Invited research seminar for researchers and teachers at the University of Antioquia. Medellín, July 12-15, 2010.

“Democracia, poder y educación matemática: Por qué?”. Invited workshop for undergraduate students at the District University of Bogotá Francisco José Caldas. Bogotá, September 3<sup>rd</sup> – 4<sup>th</sup>, 2009.

“Sharing meanings and concerns in Critical Mathematics Education”. With Annica Anderson, Alexandre Pais and Diana Stenoft. Invited workshop for master students and staff members at the District University of Bogotá Francisco José Caldas and National Pedagogical University of Colombia. Bogotá, September 3<sup>rd</sup> – 4<sup>th</sup>, 2009.

“Designing learning scenarios from the perspective of Critical Mathematics Education”. With Annica Anderson, Alexandre Pais and Diana Stenoft. Professional development course for mathematics teachers organized by the Colombian Association of Mathematics Education (ASOCOLME) and the Secretary of Education of the Capital District of Bogotá (IDEP). Bogotá, August 31<sup>st</sup> – September 1<sup>st</sup>, 2009.

“Sharing meanings and concerns in Critical Mathematics Education”. With Annica Anderson, Alexandre Pais and Diana Stenoft. Invited workshop for master students and staff members at the University of Antioquia. Medellín, August 28<sup>th</sup>, 2009.

“Matematik som skolefag – Hvad? Hvorfor?”. Invited seminar at the meeting of the Mathematics Teachers’ Network at the University College Sjælland. Sorø, April 30, 2009.

Problem-based project-organized learning (PBL): An alternative to give flesh and blood to mathematics education. Invited workshop at the 11<sup>th</sup> Science and Mathematics Education Conference of the Middle East. American University of Beirut, Beirut, December 6-7, 2008.

Democracia, poder y educación matemática. ¿Por qué? Invited seminar at the Master of Education. Universidad Nacional de Colombia. Bogotá, Colombia, August 14, 2008.

La visión sociopolítica de la educación matemática. Raíces, tendencias y perspectivas. Invited seminar in the Master of Mathematics Education. Universidad Pedagógica de Colombia. Bogotá, Colombia, August 12-13, 2008.

Inclusion and diversity in mathematics education. Invited lectures in the Master of Education, with specialization in mathematics Education. University of Malta. Msida, Malta, April 12-14, 2008.

Education in Denmark under political change. Invited lecture to undergraduate students of science and mathematics education at the Faculty of Education. University of Malta, Malta. October 7, 2007.

The multicultural classroom. With Helle Alrø and Ole Skovsmose. Invited workshop in the Pedagogic Diploma for Teachers on Bilingual Education. CVU Nordjylland. March 29, 2007.

Aprendizaje Basado en Problemas: Una alternativa para darle vida a las matemáticas. Invited workshop to primary and secondary school teachers within the Foro Educativo Nacional de Colombia – Competencias matemáticas. Bogotá (Colombia), October 26-27, 2006.

Perspectivas socio-políticas en educación matemática. Invited seminar within the Master of Mathematics Education at the Department of Mathematics, Universidad Pedagógica Nacional de Colombia. Bogotá (Colombia), September 7, 2005.

Perspectivas socio-políticas en educación matemática. Invited seminar within the Master of Mathematics Education in the Faculty of Science, University of Lisbon (Portugal), March 26, 2005.

La investigación socio-política en educación matemática. Invited seminar within the Master of Mathematics Education in the Faculty of Science, University of Lisbon (Portugal), March 30, 2004.

Perspectivas socio-políticas en educación matemática. Invited seminar within the Master of Mathematics Education in the Faculty of Science, University of Lisbon (Portugal), March 18, 2003.

Between the macro- and micro-contexts in educational research: Placing the politics of school mathematics. Invited seminar in the Critical Mathematics Education Seminar Series at Brisbane University of Technology. Brisbane (Australia), May 3, 2001.

Subjectivity and Scientific Knowledge: Opening the Politics of Education. Invited seminar in the Women’s Network Meeting at Griffith University. Gold Coast (Australia), April 20, 2001.

Democracy in the Mathematics Classroom: Letting Politics in. Lecture for undergraduate and graduate students in mathematics education. Seminar in the School of Education at Sheffield Hallam University. Sheffield, May 17, 2000.

Profesionalización, política y responsabilidad social. Special lecture to undergraduate and masters students in mathematics education in the University of Lisbon. Lisbon, November 2 and 5, 1999.

With Kristine Jess. Matematiklæreres professionel udvikling gennem forskning i egen undervisning. Workshop given in the Annual Seminar for Consultants in Education. Copenhagen, August 6, 1999.

A global perspective in mathematics education. Special session in the mathematics Teachers Training Seminar in the Royal Danish School of Educational Studies. Copenhagen, August 27, 1988.

Global trends in mathematics education. The Royal Danish School of Educational Studies - Glostrup Pædagogisk Central. Copenhagen, August 26, 1998.

Tradition versus democratization: the ideological conflict in educational change. Seminar for the staff of the Faculty of Education in the University of Zululand. Umlazi (South Africa), August 14, 1988.

The discourse of reform: may language change mathematics teaching in the school? Workshop within the Conference Matematik og Sprog. Department of Mathematics, The Royal Danish School of Educational Studies. Copenhagen, March 13, 1998.

Matematik undervisning og IT. With Lisser Ejersbo. The Royal Danish School of Educational Studies - Brøndby Pædagogisk Central. Copenhagen, March 10, 1998.

Graphic calculators in the teaching of mathematics. Seminar for Master students. Department of Mathematics, The Royal Danish School of Educational Studies. Copenhagen, October 7, 1997.

Mathematics teachers and innovation in Colombia. Special session in the mathematics Teachers Training Seminar in the Royal Danish School of Educational Studies. Copenhagen, August 29, 1997.

La didáctica de las matemáticas desde Francia: conceptos y métodos. Seminario de formación de profesores para la Especialización en didáctica de las matemáticas de la Universidad Francisco de Paula Santander. Cúcuta, May 1997.

Innovación curricular en matemáticas. Conceptos y estrategias. Seminario de formación profesional para profesores de matemáticas. With Mauricio Castro. “una empresa docente”, Bogotá.

A view to infinity. Workshop for mathematics teachers. With Mauricio Castro. IX Conferencia Interamericana de Educación Matemática. CIEM, SCHEM y USACH. Santiago de Chile, July 31 and August 1-5, 1995.

Professional development of mathematics teachers and school administrators through action-research. With Patricia Perry and Pedro Gómez, within the framework of the research and professional development project MEN-EMA II and PRIME I. una empresa docente, Universidad de los Andes. Bogotá, January 1996 – July 1997.

## Academic Supervision and Assessment Activities

### Ph.D. assessment

International member of the assessment committee of the PhD thesis “Modelling” in mathematics education: A historical encounter with mathematics, ability and body” by Ayşe Yolcu, supervised by Anita Wager and Thomas Popkewitz, University of Wisconsin, Madison, USA, May 10, 2017.

Internal member of the assessment committee of the PhD thesis “Mathematics achievement of early and newly immigrated students in different topics of mathematics” by Jöran Petersson, supervised by Eva Norén, Stockholm University, Sweden, April 27, 2017.

International member of the assessment committee of the PhD thesis “El saber escolar matemático en Colombia y la constitución de subjetividades (Una mirada al período histórico 1995 – 2013) by Carlos A. Garzón Bustos, supervised by Claudia X. Herrera Beltrán, Universidad de la Salle, Colombia, January-March 2016.

Opponent of the Ph.D. thesis “Fabricating the teacher as researcher. A genealogy of academic teacher education in Finland” by Johanna Sitomaniemi-San, supervised by Prof. Vanessa de Oliveira Androtti and Prof. Rauni Räsänen, University of Oulu, Finland, November 19, 2015.

Chair of the assessment committee of the Ph.D. thesis “Learner Motivation in Teaching And Learning Chinese As a Foreign Language. Why Does Teaching and Learning Method Matter?” by Youjin Ruan, supervised by Prof. Xiangyun Du, Aalborg University. Aalborg, Denmark, May 2015 – September 2015.

Discussant in the 90% seminar of the PhD thesis “Meeting with PISA” by Margareta Serder, supervised by Prof. Malin Ideland, Malmö University. Malmö, Sweden, August 25, 2014.

International member of the assessment committee of the Ph.D. thesis “Inventando “pequenos cientistas”: iniciação Científica nos anos iniciais do ensino fundamental” by Diane Bocasanta, supervised by Prof. Gelsa

Knijnik. School of Education, University do Rio do Vale dos Sinos. Porto Alegre, Brasil, September 2013 – January 2014.

International member of the committee of the Ph.D. thesis “Governing Equality: Mathematics For All?” by Jennie Diaz, supervised by Prof. Thomas Popkewitz, University of Wisconsin, USA. June 2012 – December 2013.

International member of the assessment committee for the Ph.D. thesis “What will you trust? Studies about teenagers’ opinions of trustworthiness”, by Matts Lundström, supervised by Dr. Malin Ideland and Prof. Margareta Egborg, Malmö University, Malmö, May–October 2011.

Opponent for the Ph.D. thesis “Flerspråkiga matematikklassrum. Diskurser i grundskolans matematikundervisning”, By Eva Norén, supervised by Prof. Astrid Petersson. Department of Mathematics and Science Education, Stockholm University. September – December, 2011.

International member of the assessment committee for the Ph.D. thesis “Key characteristics of teaching practices of an Indian Mathematics teacher in Chennai, India”, by Jeyanthi Subramannian, supervised by Prof. Frederick Leung. Faculty of Education, University of Hong Kong. August–October, 2010.

International member of the assessment committee for the Ph.D. thesis “Barns tilnærming til analogiske og kombinatoriske resonnement. En longitudinell studie av samspill i smågrupper”, by Unni Wathne, supervised by Prof. Roger Saljø and Prof. Maria Luiza Cestari. Department of Mathematics Education, University of Agder. Agder, Norway, January 2009 – April 2009.

Chair of the assessment committee for the Ph.D. thesis “Full Circle: Inclusion and exclusion in problem-based group work”, by Frederik Hertel, supervised by Prof. Ole Skovsmose. Department of Education, Learning and Philosophy, Aalborg University. Aalborg, January – October 2008.

International member of the assessment committee of the Ph.D. thesis “A ”realidade” nas tramas discursivas da educacao matematica”, by Claudia G. Duarte, supervised by Prof. Gelsa Knijnik. School of Education, University do Rio do Vale dos Sinos. Porto Alegre, Brasil, September 2008.

International member of the assessment committee for the Ph.D. thesis “The implementation of a mandatory mathematics curriculum in South Africa: The case of mathematical literacy”, by Helen Sidiropoulos, supervised by Prof. Jonathan D. Jansen. Pretoria, South Africa, August 2007.

## Ph.D. supervision: Main supervisor

Main supervisor for the project “Prowling Ethno-mathematical interactions: Intellectual property, collective creation, social relevance and political engagement” by Aldo Parra. March 2014- March 2018.

Main supervisor for the project “Subjectivity of the Mathematics Teacher and development discursive of its rationality” by Alexander Montecino. May 2013 – May 2017.

Main supervisor for the project “School mathematics curriculum and the socio-political: School geometry, subjectivity construction and the cultural gap”, by Melissa Andrade. May 2013 – May 2017.

Main supervisor of the project “På sporet af magtspillet om dansk naturfagsundervisning: Neoliberal styring af folkeskolen og læreruddannelsen siden årtusindskiftet”. By Jette Schmidt. September 2008 – December 2015. Thesis completed and successfully examined by Prof Emeritus Ole Skovsmose (Chair), AAU; Professor Dennis Beach, Gothenburg University, Sweden; Professor Jens Dolin, Copenhagen University, Denmark. March 4th 2016.

Main supervisor of the project “Being Science – A vivisection of monsters”. By Lars Bang Jensen. October 2011 – December 2014. Thesis completed and successfully examined by Associate professor Ole Ravn (Chair), AAU, Professor Gelsa Knijnik, Universidad do Vale do Rio dos Sinos, Brazil, and Associate professor Elizabeth de Freitas, Adelphi University, New York, USA. July 2015.

Main supervisor of the project “Forandringsprocesser I netværk af sociale naturfaglige praksisser. En socio-kulturel-politisk analyse af natur/tekniklæreres professionelle udvikling i uddannelsesreformer”. By Martin Krabbe Sillasen. September 2007 – February 2014. Thesis completed and successfully examined by Associate professor Kathrin Otrell-Cass (Chair) AAU, Associate Professor Jan Sølberg, Copenhagen University, and Associate Professor Claes Malmberg, Malmö University, Sweden. June 2014.

Main supervisor of the project “Entanglement of science teachers’ lives and work”. By Peer Daughbjerg. September 2008 – October 2013. Thesis completed and successfully examined by Associate professor Kathrin Otrell-Cass (Chair) AAU, Professor Christina Siry, University of Luxembourg, and Associate professor Maria André, Stockholm University, Sweden. December 2013.

Main supervisor of the project “Assessment for learning in Inquiry Based Science Education: From individualistic to socio-cultural perspectives”. By Cristina Carulla. March 2008 – December 2011. Thesis



completed and examined successfully by Associate professor Kurt Keller (chair) AAU, Professor Luis Radford, École des Sciences de l'Éducation, Laurentian University, Canada, and Associate professor Malin Ideland, Malmö University, Sweden. December 2013.

Main supervisor of the thesis "Mathematics Education and the Political: An Ideology Critique of an Educational Research Field". By Alexandre Pais. January 2009 – December 2011. Thesis completed and examined successfully by Associate professor Kenneth Mølberg Jørgensen, Aalborg University, Professor Luis Radford, École des Sciences de l'Éducation, Laurentian University, Canada, and Professor Roberto Ribeiro Baldino, Universidade Estadual do Rio Grande do Sul, Brazil. December, 2011.

Main supervisor of the thesis "Engagement in Education: Identity Narratives and Agency in the Contexts of Mathematics Education". By Annica Andersson. September 2008 – November 2011. Thesis completed and examined successfully by Assoc. Prof. Ulla Thøgersen, Aalborg University, Professor Candia Morgan, Institute of Education, London, UK and Elizabeth de Freitas, Adelphi University, New York, USA. Aalborg, November, 2011.

Main supervisor of the project "Student teachers' views of mathematics and professional competence development". By Henning Westphael. September 2008 – May 2010. PhD study aborted before completion.

Main supervisor of the thesis "Difficulties, Meaning and Marginalisation in Mathematics Learning as Seen through Children's Eyes". By Troels Lange. August 2004 – June 2009. Thesis completed and examined successfully by Assoc. Prof. Ole Ravn Christensen, Aalborg University, Assoc. Prof. Anna Chronaki, University of Thessaly, Greece, and Prof. Marit Johnsen Høines, Bergen University College, Norway. July 2009.

Main supervisor of the thesis "Challenging research conceptions in (mathematics) education – Telling stories of multiplicity and complexity" by Diana Stentoft. Aalborg, February 2004 – December 2008. Thesis completed and examined successfully by Assoc. Prof. Kenneth Mølberg Jørgensen, Aalborg University, Senior Lecturer Tamsin Meaney, Charles Sturt University – Australia, and Senior Research Fellow Heather Mendick, London Metropolitan University – UK. January 2009.

#### Ph.D. supervision: Co-supervisor

Co-supervisor of the project "Contribuciones a la constitución de la subjetividad política desde ambientes de modelación matemática" by Francisco Camelo. Main supervisor Prof. Jussara Araujo, Universidade Federal de Minas Gerais, Brazil. Belo Horizonte, since June 2014.

Co-supervisor of the project "A sociocultural approach to understanding classroom interaction in teaching and learning Chinese as a foreign language: implications for Chinese language education" by Rui Bao. Main supervisor Prof. Xiangyun Du, Aalborg University. June 2014-June 2015. Thesis completed and defended successfully on February 1st 2015. Assessed by Professor Emeritus Ole Skovsmose (Chair) AAU; Associate Professor Ke Zhao, Shanghai University of Finance and Economics, Shanghai; Danping Wang, Technological and Higher Education Institute of Hong Kong, China.

Co-supervisor of the project "Enacting ICT policies in higher education: a multiple case study in Colombia", by Gary Cifuentes. Main supervisor Associate Professor Par-Ola Zander, Aalborg University, January 2013 – June 2015. Thesis completed and defended successfully on December 17<sup>th</sup> 2015. Assessed by Professor Pirkko Raudaskovski (Chair) AAU; Professor Inés Dussel, CINVESTAV, Mexico; Professor Gert Biesta, Brunel University, UK.

Co-supervisor of the project "Introducing Student-Centered Approaches in University Physics Education: Perspectives on PO-PBL Learning, Interventions and Challenges", by Carola Hernández. September 2010 – September 2013. Thesis completed and defended successfully by Assoc. Prof. Kathrin Otrell-Cass (Chair), Aalborg University, Assoc. Prof. Vilma Mesa, University of Michigan, USA, Prof. Cristiano Matos, Sao Paulo State University, Brazil.

Project supervisor of the project "Pakistani immigrants as citizens of Denmark and critical mathematics education". By Sikunder Ali Baber. Aalborg, February 2004 – January 2005.

#### Licenciat thesis supervision – Stockholm University

Anna Wallin

Laila Riesten

#### Master thesis supervision in the Master in Learning Processes – AAU

"Man føler sig så dum ... Unges oplevelser med at være i matematikvanskeligheder". By Anna Margrethe N. Østergaard. Aalborg, Fall 2012.

“At blive enanæstesisygeplejerske”. By Hans Erik Steiner-Johnsen. Aalborg, Fall 2010–Winter 2011.

“De får gode resultater i matematik”. By Anne Fleischer. Aalborg, Fall 2009 – Winter 2010.

“Læringsmuligheder i skoven”. By Marianne Hald-Mortensen and Palle Olesen. Aalborg, Fall 2005 – Spring 2006.

“Atuarfitalak – Fra idé til virkelighed”. By Lone Hindby. Aalborg, Fall 2004.

“Matemativanskeligheder” By Helle Damkjær. Aalborg, Fall 2004.

### Supervision of pedagogical diploma for assistant professors – AAU

Pedagogical supervision of assistant professor Claus Graff, Department of Medical Technology, Aalborg, 2010-2011.

Pedagogical supervision of assistant professor Jesper Jung, Department of Physics and Nanotechnology, Aalborg, 2010-2011.

Pedagogical and subject matter supervision of assistant professor Ulla Thøgersen, Department of Education Learning and Philosophy, Aalborg, January 2009 – February 2010.

Pedagogical supervision of assistant professor Kim Knudsen, Department of Mathematics, Aalborg, 2003-2006.

Pedagogical supervisor of associate professor Morten Nielsen, Department of Mathematics. Aalborg, 2002-2004.

### Master project-work supervision – AAU

Teaching portfolio. Master of Problem Based Learning. By Finn Ommestrup. Aalborg, Fall 2008.

Teaching portfolio. Master of Problem Based Learning. By Maria Victoria Echavarria. Aalborg, Fall 2008.

Teaching portfolio. Master of Problem Based Learning. By Hector Noriega. Aalborg, Fall 2008.

“Læringsmuligheder i skoven”. Master of Learning Processes. By Marianne Hald-Mortensen and Palle Olesen. Aalborg, Fall 2005.

### Undergraduate project-work supervision

”Interkulturel kompetenceudvikling i den danske læreruddannelse”. By Ulla Egidiusen Egekvist. Department of Education, Learning and Philosophy, AAU. Aalborg, Fall 2005.

”Kulturanalyse i et læringsperspektiv”. By Maria Madsen. Department of Education, Learning and Philosophy, AAU. Aalborg, Fall 2005.

”Mentoring for nye lærere i folkeskolen”. By Hanne Toft Andersen. Department of Education, Learning and Philosophy, AAU. Aalborg, Fall 2005.

”Læring og undervisning i forskeskolen”. By Line Svanborg Jørgensen. Department of Sociology, AAU. Aalborg, Spring 2005.

”Fysik og kompetencer. Kompetencebegrebet i relation til fysik i gymnasiet efter reformen”. By Morten Vinther Olsen and Susanne Thomsen. Department of Physics and Nanotechnology, AAU. Aalborg, Fall 2004.

“Kompetencer og evaluering i gymnasium”. By Stine Bang Henriksen, Keld Jørgensen, Christian Fischer Pedersen, and Berit Steffensen. Department of Mathematical Sciences, AAU. Aalborg, Fall 2002.

“Alternative former for evaluering af modeleringskompetence i gymnasium”. By Jess Boye. Department of Mathematical Sciences. Aalborg, Fall 2002.

## My philosophy in teaching: Evolution and Reflections

### Important experiences at undergraduate level

One of my studies in the University of Los Andes was Modern Languages. This was a 5-year study program, which, among others, prepared students to be language teachers (both native and foreign languages) at secondary level. From here I obtained all basic training in learning and pedagogical theories, curriculum planning, design and implementation, and teaching methods in general and in the teaching of languages in particular. I started as an undergraduate student taking different teaching assistant tasks in languages, political sciences and mathematics. From here I was exposed to newer and experimental thinking in education, and had the possibility of practicing both the design and the implementation of innovative curriculum. The graduation

project for my degree in Modern Languages was in fact an action-research based curricular design and implementation for an introductory English course at the university.

When I joined “una empresa docente”, the research center on mathematics education at the Universidad de los Andes, I was responsible for the course “Mathematics, Science and Society”, offered by the Department of Mathematics to students in the social sciences and the humanities. This course was taught every semester and there was a team of teachers around it who were in charge of running an action-research based curricular design and implementation. The very innovative character of this course in terms of instructional materials, topics and learning activities was a challenge for many regular mathematics teachers since it demanded the ability of putting mathematical knowledge in relation with knowledge in the history and philosophy of mathematics and of science in general, and of the social sciences as well. This was an experience in which I was able to apply my pedagogical knowledge in the area of languages and start getting acquainted more in depth with mathematics, its relationship to science, and with some of the predicaments of mathematics teaching at university level in progressive environments. The fact that teaching in this course had a research component promoted in me a very good understanding of the dynamics of curriculum development and teaching.

From 1993 to 1995 I was part of a research team studying the impact of the introduction of graphic calculators on the curriculum of a pre-calculus course for first year university students. Part of the activities in the research team was the design of a curricular innovation that was implemented by some of the teachers in the research team and the teacher participating in the study. I participated in the production of a book compiling the series of problems constructed particularly for the course (Gómez, P., Carulla, C., Gómez, C. Mesa, V., Valero, P. (1996). Situaciones problemáticas en precálculo. México: Grupo Editorial Iberoamérica - "una empresa docente"), as well as in the testing of the situations through collaborative teaching with my colleagues. Although this interest on mathematics teaching and technology has not been my interest in the latest years, I had the opportunity of getting acquainted with some of the main issues of this area both in theory and practice.

### Teaching in my academic career

In the last 12 years in my positions as assistant professor, associate professor and professor at Aalborg University, I had been involved in the design and implementation of undergraduate courses in mathematics education for mathematics students, offered by the Department of Mathematics. The course “Mathematics Education” intended to introduce students to some of the basic theories of mathematics education as a research area, and to some relevant working tools for the planning, implementation and evaluation of small curricular units in mathematics. I designed the course in a participatory fashion in order to reflect in my own praxis as a teacher some of the principles of a progressive view on the teaching and learning of mathematics. I also introduced a new form of course exam based on three short interrelated papers and a discussion of them. This assessment form was successful and appropriate for the participatory and active pedagogy adopted in the course. Students were very positive towards the work done during the course and their exam papers reflect the depth of their pedagogical reflections in relation to their own mathematical learning, but also in relation to their previous ideas about the task of a mathematics teacher. I documented carefully the course design, as well as its development, in a portfolio as a way of engaging in deeper reflections about my own praxis.

Aalborg University is one of the leading universities in the world in organizing studies on a Problem Based Learning model. This means that course teaching and activities are related to students’ own learning through their engagement in collaborative projects in which problems (either theoretical or real) are at the center of learning. Project supervision is therefore part of the staff competencies. I have supervised groups of students in mathematics education, physics education and the sociology of education.

#### *At undergraduate level*

I have been part of the team developing a new interdisciplinary education called “Technoanthropology”. This program is offered in collaboration between the Faculty of Engineering and Science, Medicine and the Humanities. It integrates many of the insights in progressive mathematics and science education research in the design of a program that educates a person who develops hybrid knowledge of engineering and science and anthropological/social science methods. The person develops expertise in analyzing and managing technological/scientific expert cultures and therefore can act as a cultural broker between expert and non-expert cultures.

As part of this program I have been involved in the design and teaching of courses that see technoanthropological problems from the point of view of learning, and a course on cultural history of technology. These two courses are based on my research and they are also an interdisciplinary effort integrating colleagues from different fields of expertise.

#### *At graduate level*

At a graduate level, I have been involved in different masters programs. Within a Master in Learning Processes I have been the coordinator, designer, teacher and supervisor of a specialization line in innovation in science and mathematics education. The whole master is oriented towards the professional development of teachers at different educational levels, of leaders and of consultants in education. This masters program has as a target people who have full time jobs. Therefore the courses are developed as a combination of weekend seminars, web-based interaction, and project supervision.

In the Master in Learning and Innovative Change I have been member of the curriculum development and teaching team in charge of the courses "Learning in multicultural contexts" and in the specialization in "Pedagogical innovation". In this master the focus is not mathematics or science education since it is a master oriented towards general processes of change in learning both in formal educational environments and in organizations. This is a program for full time students. Face-to-face interactions between teachers and students are complemented with web-based discussion fora on the students' topics. The research-based approach not only to the teaching but also to the curriculum development in this area provides a very good possibility for carrying out innovative and reflective teaching.

Within the Master in Problem Based Learning, I am part of the core curricular design and teaching team. I have been responsible to lead the design of a course on "Learning theories in engineering and science education", which I have also been teaching. This is a distance, web-based masters with students from all around the world. The course basic material is available on-line for students to work with, and their individual study is facilitated through web-based discussion, group video-conference sessions and individual and collaborative project work. Examinations are done via video-conference.

### *At doctoral level*

Since 1992 I have been in charge of the organization and teaching of the doctoral school in the doctoral program called "Technology and Science". In Denmark Ph.D. studies are organized by doctoral schools, which are in charge of administering Ph.D. programs. The Ph.D. courses I have run have been focused on mathematics education, as well as of a more general character for students in engineering, science and mathematics education. More recently I have also implemented a model of Ph.D. course through a research seminar in which well-known international researchers, national researchers and Ph.D. students interact around the understanding of a particular topic and with the aim of providing feed-back to students on their projects in relation to the topic in question. These seminars are interdisciplinary and therefore bring together different perspectives on the topic of the course. The seminars combine a variety of activities (lectures, discussions and case analysis), which makes then a very participatory environment for Ph.D. students to reflect on their projects. The seminars have been received very good evaluation from students, researchers and guest lecturers.

The area of PhD supervision has also become a special field of interest for me since I was appointed leader of the doctoral program "Technology and Science". As main supervisor of a group of PhD students in the areas of science and mathematics education, I have been experimenting with forms of collegial supervision that help creating a solid collective structure for the education of researchers. In contrast to the existing tradition of individuality and isolation in doctoral studies in Denmark and in the Department where I work, I have been trying to promote a doctoral environment that, inspired on ideas from the social theories of learning particularly the notion of "communities of practice" by Etienne Wenger, promotes an active exchange between senior researchers and students around both the research of senior researchers and the students' projects. This demands a design of different key activities to support the students' research process as well as the opening of opportunities for collective writing and publication. This experience has given me the possibility of learning how to offer students insight into the processes of research, as well as to how to construct strong and active research-learning communities that can potentiate the resources that each one of the students and the senior researchers bring with them into the process of writing PhD thesis.

More recently I have been part of the PhD Study Board at the Faculty of Engineering and Science. Part of my work in this team of professors is working on the quality assurance of PhD studies at the Faculty. My expertise in educational research has contributed with this work in the professionalization of PhD course teaching at the different programs in the faculty, as well as developing a strategy for professional development of PhD supervisors. In this work I constantly collaborate with colleagues from a variety of engineering and science fields, in developing forms of reaching both students and particularly supervisors accross the variety of fields in the faculty.

### *At in-service professional development of teachers*

In the area of in-service professional development, I have been part of the curriculum design and teaching team of a big professional development strategy for school leaders and mathematics teachers on change in mathematics education. The strategy combined the development of action research projects by teachers and leaders in their school (a school participated as a team of 2 leaders and 2 teachers), a series of seminars intending to support their projects, and team meetings to discuss the projects in each team. This program run

from 1993 to 1997 in Colombia and involved 25 schools in that period. The professional development strategy was also part of my research. Its structure and effects have been documented in several of my publications with some of my Colombian colleagues. This experience of professional development of teachers gave me an insight into adult education for the purpose of change. It allowed me to gain skills in bridging research results and teaching practice, as well as conducting effective professional development for teachers that has a sustainable impact on their possibilities to initiate reform.

The learning on how to run this type of professional development strategies was the base for the formulation of other professional development programs for teachers. Before leaving Colombia, I coordinated the design of such a program that, at that time, run for a public competition to be offered as one of the professional development programs for teachers by Department of Education of Bogota's City. Unfortunately I could not be part of the teaching team since I moved to Denmark to pursue my Ph.D. studies.

In Denmark I replicated at a smaller scale the professional development strategy mentioned above, and it was seen as a very successful way of supporting teachers in bringing change in their teaching according to the constructivist-inspired curricular guidelines by the Danish Ministry of Education. This experience was also been documented in my writings with Kristine Jess.

Besides these experiences in Colombia as well as during the years I have lived in Denmark I have been involved permanently in giving courses, seminars and workshops for primary, secondary and high school teachers, as well as for assistant professors as part of their education in university pedagogy. Topics for such courses and seminars have been related to practical implications of my own research. Lately and as a result of the project on mathematical learning in multicultural settings, my colleagues and I have been developing courses for general teachers and mathematics teachers on diverse aspects of the dynamics of learning in multicultural classrooms in Denmark. I have also run short seminars for teachers on the implementation of problem-based approaches to the teaching of mathematics. These activities have been carried out with teachers in different countries such as Colombia, Denmark, Portugal, Malta, South Africa and England.

## Common threads and principles for my teaching

Reflecting on the different kinds of courses and settings in which I develop my teaching practice, some of the following points seem to be prominent for me:

- My design of teaching sequences (whether long or short) are based on a complex analysis of the unique combination between the subject matter to be taught and the forms of communication and interaction that I think are most effective for inviting people to engage with the ideas, points of view, reflections and contents that I would like them to think about. This is what I would call a "fag-didaktik" (in Danish) or a subject-oriented-pedagogy, which in my view is a much more sophisticated form of knowledge and practice than what Lee Shulman defined in his, at that time revolutionary, concept of pedagogical content knowledge.
- Inspired on the social and socio-cultural theories of learning, I see my role as a teacher, a more experienced participant in certain practices, to create environments for others to get involved in the ways of thinking, talking and seeing that practice. Whether a university subject or the practice of educational research, my responsibility is not to transmit knowledge but rather to open and initiate conversations that have the possibility of challenging and, thereby moving, participants' ideas, views, and discourses about the issues and practices at stake.
- I care for my students and for the people I interact with. I show this and I try always to create a safe, caring environment for dialogue and learning. If learning is a human, emotional and social activity, how could it be taken as a mere intellectual exercise? My energy when teaching does not only go to the intellectual aspect of the interactions but also to the social and affective dimensions of them.
- I always try to challenge myself and therefore care about what participants in my teaching think and experience. A constant assessment talk is part of my practice, in any kind of teaching. This helps me moving and bettering my own practice.

# CURRICULUM VITAE

## BETTINA DAHL SØNDERGAARD (SOENDERGAARD)

### Work:

Aalborg University (AAU)  
Aalborg Centre for Problem Based Learning in  
Engineering, Science and Sustainability under the  
auspices of UNESCO, Department of Planning,  
Vestre Havnepromenade 5, 1 (Office 1.219)  
DK-9000 Aalborg; Denmark  
E-mail: [bdahls@plan.aau.dk](mailto:bdahls@plan.aau.dk); Tel: (+45) 9940.3684

### Home:

Helgolandsgade 3, 3TH  
DK-9000 Aalborg; Denmark  
E-mail: [b.dahls@seh.oxon.org](mailto:b.dahls@seh.oxon.org)  
Mobile: (+45) 4081.0778

Year of birth: 1970  
Nationality: Danish



## POSITIONS

- Associate Professor Aalborg University, DK (AAU)  
11.2012-  
Head of Section  
5.2016-  
Professor II  
12.2016-11.2018  
Associate Professor Aarhus University, DK (AU)  
1.2009-10.2012  
Assistant Professor Aarhus University, DK (AU)  
1.2007-12.2008  
Assistant Professor Aalborg Teacher Training College, DK (now: University College Nordjylland, UCN)  
8.2006-12.2006  
Assistant Professor Virginia Tech (Virginia Polytechnic Institute and State University, VT), USA  
8.2004-6.2006  
Adviser tenured 1/4/03  
10.2002-7.2004  
Research Officer  
4.2000-7.2002 11 mo  
PhD Fellow  
11.1998-9.2002  
Research Assistant  
8.1998-9.1999 4 mo  
High school teacher  
8.1997-7.1998  
Student Assistant  
8.1996-12.1996 3mo  
Instructor/TA  
2.1995-5.1996 4 mo  
Humanitarian Aid  
10.1994-12.1994
- Engineering and mathematics education, higher education, problem and project based Learning (PBL). Teach, supervise, research, apply for grants, outreach. Head of Section C, with two research groups: PBL & techno-anthropology/health informatics  
University of Bergen, N (UiB)  
Department of Mathematics. Teaching and supervision in mathematics education and teacher training in mathematics. (Adjunct Professor, 20%)  
Grades 1-17 math education, higher educ, grades 4-10 informal science education. Teach, supervise, research, development, consult, evaluation, apply for grants, admin.  
Grades 1-17 math education, higher educ, grades 4-10 informal science education. Teach, supervise, research, development, consult, evaluation, apply for grants, admin.  
Grades 1-10 mathematics education, pre/in-service teachers, mathematics. Participate in formative evaluation project on first-year students and design of development project  
Manage MAED secondary (grades 6-12) math education program and coordinate field experiences. Teach, advise, research, outreach, grant applications (STEM edu)  
Norwegian University of Science and Technology, Norwegian Centre for Mathematics Education (NTNU) National tests grades 4, 7, 10, 11 and project description. Teach, research, dev, admin, "Math Circus". *Senior admin position w/academic. Asst prof level. (Rådgiver)*  
University of Oxford, UK  
Research: EU education and training policies and their relationship to national identity and tradition. EU funded FP4. TMR network PRESTiGE. Teams at 6 EU universities  
Roskilde University, DK (RUC)  
Supervisor: M. Blomhøj. PhD Assessment Committee: O. Skovsmose, A. Sfard, L. Lindenskov. Defence Chair: M. Niss. Included teaching (*Ph.d.-stipendiat*, 36 mo part-time)  
Danish National Institute for Educational Research (DPI)  
Vocational schools' math qualification requirements. OECD PISA test questions. AMI (Applying Math International) compare grades 3-4: DK, UK, D, NL. *Part-time after 10.1998.*  
Aalborg Katedralskole, DK  
Mathematics and social science. Used ICT, organised study visits outside of school and visits from parties and organizations in class, administered 3 oral exams (*Årsvikar*)  
Aalborg University, DK (AUC/AAU)  
Centre of Philosophy & the Theory of Science. Secretary, report on future organisation. Member (f. Skovsmose) working group on study structure. Attached Researcher till 1999  
Aalborg University, DK (AUC/AAU)  
Teach mathematics: Engineering and Science Basic Study Year & Entrance Course. Employed 3 semesters (appointments by semester). Marked a mock exam (*Hjælpe lærer*)  
Danish Balkan Mission, Câmpulung, Rumania  
Visited elderly; distributed clothes, tracts, and food to elderly and toys to kindergartens and orphanages; voluntary at an orphanage. Organised this. Worked with interpreter

## RESEARCH VISITS

### Stanford University, USA

#### Visiting scholar

- H-Star Scholarship from DASTI (Danish Agency for Science, Technology and Innovation) at DMSTI (Danish Ministry for Science, Technology and Innovation) research partnership program with H-STAR (Human-Sciences and Technologies Advanced Research) Institute, Stanford University.
- [https://hstar.stanford.edu/2011-12\\_visitors](https://hstar.stanford.edu/2011-12_visitors)
- 1 September – 30 November **2011**

## PAID EXTERNAL CONSULTANCY ETC.

### *Short Term Consultant (STC), The World Bank*

- Report with advice for teaching primary mathematics in developing countries based on the psychology of learning mathematics and neuroscience. 20 days during 2008-2009

### *External Reviewer on international research proposals and applications*

- Member of assessment committee. Ministry of Education; Sweden. 2013
- Evaluator. The Research Promotion Foundation (RPF); Cyprus. 2010 & 2011
- Scientific project reviewer. Ministry of Science, Education and Sports; Croatia. 2006

## EDUCATION

PhD	<b>Mathematics Education</b> Title: <i>A focus group study of Danish and English high-achieving high school pupils of mathematics: What can we learn from their verbalised explanations of how they learn mathematics?</i> Supervisor: Morten Blomhøj. Submitted 9.2002, accepted for defence 12.2002 without being ask to make changes	<u>Roskilde University</u> , DK (Dept. of Mathematics and Physics)	4. 2003
MSc	<b>Educational Research Methodology</b> Study visit: National Foundation for Educational Research (NFER). In addition: Research Seminars, Centre for Mathematics Education & British Society for Research into Learning Mathematics (BSRLM) Conference, University of Warwick, 1999. Supervisor: Anne Watson. One full year: 10.1999-9.2000	<u>University of Oxford</u> , UK (Dept. of Education & St Edmund Hall)	2000
<i>Candidata scientiarum</i> (cand.scient.) ≈ BSc + MSc	<i>Hovedfag</i> (4 yrs full time, 2 at graduate level) <b>1994</b> in <b>mathematics</b> . 1 grad year was mathematics education (thesis). Supervisor: Ole Skovsmose. Study visit: Department of Mathematics Education, Bielefeld University, Germany. 1990-94. Ca. 240 ECTS <i>Sidefag</i> (1.5 yrs full time undergraduate level, 3rd-5th semester) <b>1997</b> in <b>social science</b> . 1995-97. Ca. 90 ECTS	<u>Aalborg University</u> , DK	1997

# STUDY VISITS, COURSES, AND QUALIFICATIONS<sup>1</sup>

## *University teaching*

PhD Supervisor Workshop 1 & 2 27 h	AalUni (Sund,Teknat), DK	2016
Supervising Student Teachers <b>1 US credit ≈ 2 ECTS</b>	Virginia Tech (SOE), USA	2005
University Science Education (PhD courses) <b>10 ECTS</b>	Aalborg University (DCN), DK	00-02

## *Research skills*

SPSS for qualitative analysis 1 dy	Aarhus University (HR), DK	2012
Qualitative Data Analysis with Nvivo ½ dy	Virginia Tech (FDI), USA	2005
SummerSchool: European Society f Research in MathEduc 1wk	Universität Klagenfurt, A	2002
PhD Course: Research Methodology in Math Education ½ dy	Royal Danish School of Educ Stud	1999

## *Management*

Project management 1, part of BA <b>6 ECTS</b>	Business College BI (Handelshøyskolen), N	2003
--	---	------

## *Comparative education*

Oxford MSc 'comparative & international education' study visit 2 dy	UNESCO & OECD, F	2002
Comparative education methods, part of PRESTiGE meeting 2 dy	Université de Bourgogne, F	2000

## *Upper Secondary Mathematics Teacher Training, grades 10-12*

Theory of education (Teoretisk pædagogikum) 1 & 2 (of 3) 1 wk	Ministry of Education, DK	1997
'Mathematics Competence' (Tildelt Fagkompetence i matematik)	Ministry of Education, DK	1997

## *Testing & assessment*

Scoring Performance Assessments; prof.dev. & training course ½ dy	AERA Annual Meeting USA	2008
Effective Program Evaluations ½ dy	Virginia Tech (OERO), USA	2006
Study visit: Qualifications and Curriculum Authority (QCA) ½ dy	QCA, London, UK	2003
Study visit: Office for Standards in Education (Ofsted) ½ dy	Ofsted, London, UK	2003
Seminars: CAT (Computer Adaptive Testing) 2 dy	University of Bergen, N	2003

## *Professor Qualifications, mathematics education*

Qualified as Professor, Department of Mathematical Sciences	University of Agder, N	2012
---	------------------------	------

## *Other qualifications and certificates*

Statutory Work Environment Educ (Lovpligtigarbejdsmiljøuddannelse) <sup>22h</sup>	AAU - Crecea A/S	2016
DTF Tour Referee ( <i>Turneringsreferee</i> , Danske Tennis Officials) 1 dy	Dansk Tennis Forbund	2016
Hjemmeværnets (HJV) Grunduddannelse, Basic Army Training 100h:	Danish Home Guard	2009
- The First Aid Test, bronze badge (HJV) 32 h	Danish First Aid Council	2009
Certificate for proficiency in yachting power boats, Speedbådsprøve	Danish Maritime Authority	2009
Emergency Aid for appointed persons, OU First Aid Unit ½ dy	University of Oxford, UK	2000

# EDITOR AND REVIEWER

## *Editorial board and/or editor*

<u>Editor of Cases</u> , 2016-	<u>Journal of Problem Based Learning in Higher Education (JPBLHE)</u> . Founded 2012. Publisher: Aalborg University. ISSN: 2246-0918. Level 1- journal (The Danish Bibliometric Research Indicator system, BFI)
--------------------------------	---

<sup>1</sup> Please see Teaching Portfolio for more on teaching



<u>Editorial Board member</u> , 2017-	<u>International Journal of Science and Mathematics Education (IJSME)</u> . Founded 2003. Publisher: Springer. ISSN: 1571-0068. Level 2-journal (highest level)
<u>Editorial Board member</u> , 2006-	<u>Mathematical Thinking and Learning (MTL)</u> . Founded 1999. Publisher: Lawrence Erlbaum Associates (LEA). ISSN: 1098-6065. Level 2-journal
<u>International Editorial Advisory Board member</u> , 2005-12	<u>The Montana Mathematics Enthusiast (TMME)</u> . Journal of the Montana Council of Teachers of Mathematics (MCTM), USA. Founded 2004. Publisher: Information Age Publishing (IAP). ISSN: 1551-3440. Level 1-journal
<u>Associated Board member</u> , 2010-12 <u>Book Review Editor</u> , 2011-2012	<u>Dansk Universitetspædagogisk Tidsskrift [The Danish journal of university pedagogy] (DUT)</u> . Founded 2006. Publisher: Syddansk Universitetsforlag. ISSN: 1901-5089. 2010-12. Level 1-journal
<u>Associated Board member</u> , 2003-2004	<u>Norwegian Centre for Mathematics Education Newsletter</u> . Founded 2003. Norwegian University of Science and Technology

### ***Journal reviewer (Level 2)***

- Educational Studies in Mathematics
- European Journal of Engineering Education
- International Journal of Science and Mathematics Education
- Journal for Research in Mathematics Education
- Mathematical Thinking and Learning
- Zentralblatt für Didaktik der Mathematik

### ***Journal reviewer (Level 1)***

- African Journal of Research in Mathematics, Science and Technology Education
- Dansk Universitetspædagogisk Tidsskrift [The Danish journal of university pedagogy] (DUT)
- Educational Assessment
- International Electronic Journal of Mathematics Education
- Journal of Problem Based Learning in Higher Education
- Matematik- og Naturfagsdidaktik [Mathematics and Science Education] (MONA)
- Nordic Studies in Mathematics Education (NOMAD)

### ***Reviewer (conferences and handbooks)***

IRSPBL	2017	Reviewer of the 6th International Research Symposium on Problem Based Learning (IRSPBL 2017). Bogotá, Colombia, 3-5 July
	2015	Reviewer of the 5th International Research Symposium on Problem Based Learning (IRSPBL 2015). San Sebastian, Spain, 6-9 July
	2013	TPC (technical program committee) of the 4th International Research Symposium on Problem Based Learning (IRSPBL 2013). Kuala Lumpur, Malaysia, 2-3 July
AERA OST SIG	2013	American Educational Research Association, Special Interest Group, Out-of-School Time. Annual Meeting. San Francisco, CA, USA, 27 April - 1 May
	2012	-- do -- Vancouver, British Columbia, Canada, 13-17 April
	2011	-- do -- New Orleans, LA, USA, 8-12 April
	2010	-- do -- Denver, CO, USA, 30 April - 4 May
	2009	-- do -- San Diego, CA, USA, 13-17 April
AERA SIG/RME	2011	Review Panel. American Educational Research Association, Special Interest Group, Research in Mathematics Education. Annual Meeting. New Orleans, LA, USA, 8-12 April

RR for PME (Level 1- journal)	2017	Psychology of Mathematics Education (PME40) conference, Singapore, 17-22 July. Research Report (RR) proposals. ISSN: 0771-100X
	2016	-- do -- PME40, Szeged, Hungary, 3-7 August
	2015	-- do -- PME39, Tasmania, Australia, 13-18 July
	2014	-- do -- PME38/PME-NA36, Vancouver, Canada, 15-20 July
	2013	-- do -- PME37, Kiel, Germany, 28 July - 2 August
	2012	-- do -- PME36, Taipei, Taiwan, 18-22 July
	2011	-- do -- PME35, Ankara, Turkey, 10-15 July
	2006	-- do -- PME30, Prague, Czech Republic, 16-21 July
PME-NA	2006	Psychology of Mathematics Education - North America (PME-NA28) conference 2006, Mérida, Yucatán, Mexico, 9-12 November
	2005	-- do -- PME-NA27, Roanoke, Virginia, USA, 20-23 October
Handbook	2006	Handbook of International Research in Mathematics Education, 2nd edition. Editor: L. English. 2008. Publisher: Routledge

## GRANTS, PROJECTS, and SCHOLARSHIPS

Project: <u>Modeller for gruppedannelse i PBL</u> (Models for forming student groups in PBL)	Funded: <u>DKK 200,000</u> by Aalborg University internal strategic funding of development projects intended to further develop PBL at Aalborg University. Joint project leadership: Bettina Dahl Søndergaard and Ole Ravn. Other participants: Lone Krogh, Leif Kjær Jørgensen, Stine Bylin Bundgaard.	Aalborg University, DK 2017-18
<u>Travel grant</u>	<u>DKK 10,000</u> . Obel Family Foundation. International Forum: American Society for Engineering Education (ASEE), Columbus, Ohio, USA. 28 June 2017	Aalborg University, DK 2013
Project: <u>European Union and Russia Studies</u> (NPHE-2016/10356)	Funded: <u>EUR 8,000</u> by NORDPLUS which is the Nordic Council of Ministers' central programme in the area of lifelong learning. Project leader: Tiina Jaksman (University of Tartu, EE). Other partners: Vilius Mačkinis (Vilnius University, LT); Jouni Järvinen (University of Helsinki, FI); Ulla Zumente-Steele (Riga Graduate School of Law, LV); Iveta Reinholde (University of Latvia, LV); Rasa Lopetaité (Northern Lithuania College, LT); Lars Rydén (Uppsala University, SE). The goal of the network is to improve teaching, learning and joint curricula planning within interdisciplinary area studies	Aalborg University, DK 2016-17
Project: <u>Enhancing Student Learning Experience in Interdisciplinary Area Studies</u> (NPHE-2015/10223)	Funded: <u>EUR 11,096</u> by NORDPLUS which is the Nordic Council of Ministers' central programme in the area of lifelong learning. Project leader: Laura Roop (University of Tartu, EE). Other partners: Vilius Mačkinis (Vilnius University, LT); Minna Oroza (University of Helsinki, FI); Ulla Zumente-Steele (Riga Graduate School of Law, LV); Iveta Reinholde (University of Latvia, LV); Rasa Lopetaité (Northern Lithuania College, LT); Matthew Kott (Uppsala University, SE). The project has the following objectives: (eg.) To exchange experiences concerning active learning methods (PBL) within interdisciplinary studies.	Aalborg University, DK 2015-16
<u>Travel grant</u>	<u>DKK 10,000</u> . Obel Family Foundation. 4th International Research Symposium on Problem Based Learning	Aalborg University, DK

	(IRSPBL), Kuala Lumpur, Malaysia, 2-3 July 2013	2013
<u>H-Star Visiting Scholarship for Stanford University, USA</u>	<u>DKK 10,000</u> in travel money plus fees in relation to receiving the Visiting Scholarships at H-STAR (Human-Sciences and Technologies Advanced Research Institute) at Stanford University, USA. Funding: Danish Agency for Science, Technology and Innovation (DASTI)	Aarhus University, DK 2011
Project: <u>Biological Diversity. Museum dissemination of artefacts and learning using iPads</u> ( <i>Biologisk mangfoldighed. Museumsformidling af genstande og læring med iPads</i> )	Project leader: Pernille Mølgaard Andersen, Natural History Museum Aarhus. <u>Collaborating partner</u> together with people from Aarhus Teacher Training College (VIAUC)	Aarhus University, DK 2011
Project: <u>Mathematics at the study of economics</u> ( <i>Matematik på oeconstudiet - didaktisk analyse</i> )	Project leader: Lina Lindenskov. Project group: Morten Misfeldt, Helena Skyt Nielsen, Michael Stæhr, Pernille Rattleff, Tasha Buch. <u>Background Group member</u> together with Søren Kruse & Helle Mathiasen	Aarhus University, DK 2009-12
Project: <u>Transition problems from primary to tertiary education level in a didactical perspective</u> ( <i>Overgangsproblemer (folkeskole – gymnasium – universitet) som udfordringer i uddannelsessystemet – et didaktisk perspektiv</i> )	Project leader: Helle Mathiasen (Aarhus University). Other participants: Camilla Kølsen de Wit (Alexandra Institute); Finn Hoe Bendixen (Center for Uformel Læring, CULD); Karsten Enggaard (Center for Anvendt Naturfagsdidaktik, CAND); Dorte Ågård, Hanne Leth Andersen, Lena Lindenskov, Morten Misfeldt, Annemarie Møller Andersen, Helene Sørensen (Aarhus University). Funding: Ministry of Education: <u>DKK 200,000</u> ; Det Kommunale Momsfond, KL: <u>DKK 250,000</u> ; Aarhus University Research Fund: <u>DKK 74,000</u> . Took part in writing the project description and applications	Aarhus University, DK 2007-09
Project: <u>What Is The Importance Of Good Questioning Techniques To Student Teachers Of Mathematics?</u>	Applied for and received: IRB (Internal Review Board) approval of research on student teachers' development of questioning techniques	Virginia Tech, USA 2006
Project: <u>The first national tests in mathematics grades 4, 7, 10, 11.</u> Both written, oral and computer based	The Ministry of Education and Research asked the Centre to develop the tests. We then wrote a project description that was approved ( <u>NOK 5 mill</u> ). Project leader: Ingvill Holden. Collaborated with Telemark University College (Gard Brekke) and Oslo University (Gunnar Gjone). I participated in developing the key stage goals based on the curriculum L97, test questions, codes, and competence profiles. We had meetings with international experts on assessment (Qualifications and Curriculum Authority (QCA) & the Office for Standards in Education (Ofsted), UK), and seminars with international experts on CAT (Computer Adaptive Testing)	Norwegian Centre for Mathematics Education 2003
Scholarship: <u>Study visit</u> , Department of Mathematics Education, Bielefeld University, Germany	The Obel Family Foundation & The Travel Committee of the Study Board for Natural Sciences ( <i>F-studienævnet</i> ), Aalborg University, DK. Funding: <u>DKK 1,400</u>	Aalborg University, DK 1994
<u>Principal Niels Christensen's Memorial Scholarship</u> ( <i>Rektor Niels Christensens Mindelegat</i> ). Awarded (one cannot apply for it) at high school graduation ceremony	For two diligent, gifted and necessitous mathematics high school graduates per year group (chosen among 5 classes). <u>DKK 500</u> . I studied the mathematics-line with mathematics and physics at highest level ( <i>Matematisk-fysisk gren</i> )	Aalborg Katedralskole, DK 1989

# LEADERSHIP AND ADMINISTRATIVE OFFICES

## *Employments with major elements of administration and management*

Aalborg University, DK	May 2016-	Head of Section C, Department of Planning. Staff responsibility of ca. 20 people, includes PhD students and academic staff. The section consists of two research groups. One in PBL which includes the Aalborg Centre for Problem Based Learning in Engineering, Science and Sustainability under the auspices of UNESCO, and another in Techno-Anthropology which includes the Danish Centre for Health Informatics.
Virginia Tech, School of Education, USA	2004-06	Assistant Professor: Managed MAED secondary (grades 6-12) mathematics education program and coordinated field experiences
Norwegian University of Science and Technology, Norwegian Centre for Mathematics Education	2002-04	<i>Rådgiver</i> /Adviser: a senior administrative position w/academic. Asst prof level. Order of rank: Executive Officer ( <i>Konsulent</i> ); Higher Executive Officer ( <i>Førstekonsulent</i> ); Senior Executive Officer ( <i>Seniorkonsulent</i> ); Adviser ( <i>Rådgiver</i> ); Senior Adviser ( <i>Seniorrådgiver</i> )

## *Member of international boards etc. (professionally)*

<u>Treasurer</u> <sup>2</sup>	2012-14	PME (International Group for the Psychology of Math Educ)
<u>Webmaster, OST SIG AERA International Committee (IC)</u>	2011-12	Out-of-School Time, SIG, Am Educ Res Assn
<u>Chair, OST SIG AERA</u>	2010-14	PME (International Group for the Psychology of Math Educ)
<u>Chair Elect &amp; Program Chair OST SIG</u>	2010-11	Out-of-School Time, SIG, Am Educ Res Assn
<u>Secretary &amp; Treasurer, OST SIG</u>	2009-10	Out-of-School Time, SIG, Am Educ Res Assn
<u>Annual Fund Committee</u>	2008-09	Out-of-School Time, SIG, Am Educ Res Assn
<u>Co-chair, Topic Study Group 10</u>	2009	St Edmund Hall, University of Oxford, UK
<u>Co-coordinate Disc. Group 3 PME28</u>	2007-08	Int. Congress on Math Educ, ICME-11 (quadrennial - 2008)
	2004	Psychology of Mathematics Education Conference (PME)

## *Member of boards etc. in Denmark (professionally and student policy)*

Bibliometric research indicator group	2017-19	Education (#17), Ministry of Higher Education and Science
Work's Council ( <i>SU + AMU</i> )	2016-	Department of Development and Planning, AAU (employer)
Special Interest Group	2015-	SIG on the Exam, DUN (Danish Higher Education Network)
<u>Task force leader: Staff development</u>	2014-16	UCPBL, UNESCO PBL Centre, Aalborg University
<u>Semester coordinator</u>	2014	Semester 1: Dev. of Teaching Competencies, MPBL, AAU
Technology Group	2014-	High school teacher educ ( <i>Faggruppen for teknologi, teopæd</i> )
<u>Representing Faculty of Eng &amp; Sci</u>	2014-16	PBL Academy, AAU (Appointed by the dean)
<u>Chairman, Mathematics &amp; IT Group</u>	2012	High school teacher educ ( <i>Faggruppen for matematik, teopæd</i> )
Resource person (DUN)	2012-	Danish Higher Education Network (DUN)
<u>Vice chair, corps of ext. examiners</u>	2010-18	Mathematics at universities, Danish Ministry ( <i>Censorkorps</i> )
International Committee	2010-11	Faculty of Science, AU. Represent IVS and CSE
Board	2010-13	Forum for Matematikkens Didaktik (FMD)
Chairman Appeal Board ( <i>Ankenævvn</i> )	2009	Student complaints, philosophy of math (corps of examiners)
Work's Council ( <i>SamarbejdsudvalgSU</i> )	2008-10	Department of Science Studies, IVS, AU (employee)
<u>Department Council (<i>Institutråd</i>)</u>	2007-08	Department of Science Studies, IVS (prev. Steno), AU
Chairman Appeal Board ( <i>Ankenævvn</i> )	2007	Student complaints, math education (corps of ext. examiners)
Network, Rep Fac. of Science 07-08	2007-12	University Pedagogical Network (UPN), AU
DeputyRep Advanced Taught Courses	1999-00	Department of Educational Studies, University of Oxford, UK
Interim Study Board, Philosophy	1996-97	Stud. Rep., Faculty of Engineering & Science, AUC/AAU, DK
Representatives' Council, students	1995-97	Recommendation Committee, Stud Halls of Residence Aalborg <sup>3</sup>
Steering Group	1992	7th semester (MAT3), mathematics, AUC/AAU, DK
<u>Chair Student Council (<i>Kollegianerråd</i>)</u>	1992-94	Nordjysk Handelskollegium, Aalborg
Board, representing the students	1991-94	Nordjysk Handelskollegium, Aalborg

<sup>2</sup> Included being the Head of the Treasurer Portfolio Group of the IC of IGPME (<http://igpme.org/>). Usually 400+ members worldwide

<sup>3</sup> IFAK, Indstillingsudvalget for Aalborgs kollegier. Later AKU, Anvisning af Kollegie- og Ungdomsboliger

### ***Larger conference planning committees etc.***

- IPC (International Programme Committee) of NORMA14 (Seventh Nordic conference on Mathematics Education. Appointed by the LOC (Local Organising Committee) and NoRME (Nordic Society for Research in Mathematics Education). 3-6 June 2014 NORMA14, Turku, Finland
- IPC (International Programme Committee), appointed by the IC (International Committee) of IGPM (International Group for the Psychology of Mathematics Education). 28 August - 2 July 2013. Ca. 600 participants PME37, Kiel, Germany
- Out-of-School Time (OST), Special Interest Group (SIG), American Educational Research Association (AERA). 13-17 April 2012. SIG Officer (webmaster). Ca. 15,000 participants at AERA. Ca. 100 at the SIG Annual Meeting 2012. Vancouver, British Columbia, Canada
- Out-of-School Time (OST), Special Interest Group (SIG), American Educational Research Association (AERA). 8-12 April 2011. SIG Chair. Ca. 15,000 participants at AERA. Ca. 100 at the SIG Annual Meeting 2011. New Orleans, LA, USA
- Out-of-School Time (OST), Special Interest Group (SIG), American Educational Research Association (AERA). 30 April - 4 May 2010. SIG Program Chair. Ca. 15,000 participants at AERA. Ca. 100 at the SIG Annual Meeting 2010. Denver, CO, USA
- Out-of-School Time (OST), Special Interest Group (SIG), American Educational Research Association (AERA). 13-17 April 2009. SIG Officer (secretary/treasurer). Ca. 15,000 participants at AERA. Ca. 100 at the SIG Annual Meeting 2009. San Diego, CA, USA
- Topic Study Group 10: Research and development in the teaching and learning of number systems and arithmetic. Co-chair. Appointed by IPC (International Program Committee) of ICMI (The International Commission on Mathematical Instruction) founded 1908. Ca. 2,500 participants at ICME-11. 6-13 July 2008. Ca. 40 at the TSG 11th quadrennial International Congress on Mathematical Education, (ICME-11). Monterrey, Mexico
- International Group for the Psychology of Mathematics Education - North America, PME-NA27, 27th conference. 20-23 October 2005. Assisted as reviewer and with practicalities. Ca. 400 participants Roanoke. Virginia Tech, USA

### ***Smaller conference planning etc.***

- Forum for Matematikkens Didaktik Day conference. 16 March 2011. Theme: Inquiry based learning in science and mathematics. Ca. 20 participants Odense, DK
- Centre for Science Education (CSE) Seminar about mathematics talents in the high school. 22 March 2010. My initiative and planning. Ca. 15 participants CSE, Aarhus University, DK
- Overgangsproblematikker i uddannelsessystemet (Transitions problems in the education system). 26 October 2009. Ca. 100 participants The Danish School of Education (DPU), Aarhus University, Copenhagen
- November Conference: "Popularisering av matematikk (Popularization of mathematics)". 17-18 November 2004. Ca. 300 participants Trondheim. Norwegian University of Science and Technology (NTNU),
- November Conference: "Utvikling av matematikkundervisning i samspill mellom praksis og forskning (Develop mathematics teaching in interaction with practice and research)". 18-19 November 2003. Ca. 300 participants. Opening conference Norwegian University of Science and Technology (NTNU)

### **Employment Assessment Committees<sup>4</sup>**

Position as associate professor	<p><u>Chairman of committee.</u> Position in Problem Based Learning in Engineering Education. At Department of Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Technical Faculty of IT and Design. Aalborg University Esbjerg, DK. 2017</p> <p><u>Interview with applicant.</u> Position in Organizational Change, Socio-technical Studies and Health Informatics. At Department of Development and Planning, Faculty of Engineering and Science. Aalborg University, DK. 2016</p>
Position as assistant professor	<p><u>Chairman of committee.</u> Position in Problem Based Learning in Continuing Engineering Education Research. At Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science. Aalborg University, DK. 2016</p> <p><u>Member of committee.</u> Position in competence development in knowledge-based organisations; Faculty of Engineering, Science and Medicine, the Department of Education, Learning and Philosophy (cross-faculty department). Aalborg University, DK. 2011</p> <p><u>Member of committee.</u> Position in sport, motivation, and learning; Faculty of Engineering, Science and Medicine, the Department of Education, Learning and Philosophy (cross-faculty department). Aalborg University, DK. 2011</p> <p><u>Member of committee.</u> Position in design and motivation for higher education; Faculty of Engineering, Science and Medicine, the Department of Education, Learning and Philosophy (cross-faculty department). Aalborg University, DK. 2009</p>
Position as Teaching Associate Professor ( <i>Studielektor</i> )	<p><u>Member of committee.</u> Position in Problem Based Learning in Engineering and Science. At Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science. Aalborg University, DK. 2015</p>
Position as Research Assistant (Videnskabelig assistent)	<p><u>Member of committee.</u> Position in Problem Based Learning in Engineering and Science. At Department of Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Technical Faculty of IT and Design. Aalborg University, DK. 2017</p>
Position as External Lecturer ( <i>Ekstern lektor</i> )	<p><u>Chairman of committee.</u> Position in Problem Based Learning and Mathematics Education. At Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Technical Faculty of ICT and Design. Aalborg University, DK. 2017</p> <p><u>Interview with applicants.</u> Position in Problem Based Learning. At Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science. Aalborg University, DK. 2016</p> <p><u>Chairman of committee.</u> Position in Problem Based Learning in Science, Technology and Society. At Department of Development and Planning, Faculty of Engineering and Science, Aalborg University Esbjerg, DK. 2015</p>

### **Award Committees**

Award Committee	<p><u>Chairman of committee.</u> Scholar Award for American Educational Research Association, Out of School Time, Special Interest Group (AERA OST SIG). Others in the committee: Larry Suter (Harvard University, USA), Caroline O'Brien, Sabrina Kataoka (University of California, Irvine, USA). 2016</p> <p>The winner receives a check for \$350 and a plaque.</p>
-----------------	---

---

<sup>4</sup> For PhD assessment committees, please see Teaching Portfolio

# LANGUAGES AND COMPUTER SKILLS

Languages	<b>Danish</b> (mother tongue) <b>English</b> (fluent) <b>Norwegian</b> (understand all, write/speak some) <b>Swedish</b> (understand almost all) <b>German</b> (daily use: read/write/speak) <b>French</b> (basic use: read/write/speak) <b>Latin</b> (basic use: read/translation)	<i>English</i> : 1999 IELTS test Academic: 7.5 at scale 0-9. 1987 Upper Secondary Exam. 1986 Class 9 Exam, Extended. <i>German</i> : 1986 Class 9 Exam, Extended. <i>French</i> : 1989 Upper Secondary Exam. 1989: Course, G. D. Luxembourg. <i>Latin C</i> : 2008 Upper Secondary Exam.
Word processing	MS Office, WordPerfect, LaTeX, Adobe Acrobat, Lotus	
Web design	HTML-coding, Macromedia Dreamweaver, phpBB forum	
Courseware	Blackboard, FirstClass/SkoleKom, AULA, Moodle	
Conference	All Academic, Skype, Skype Business, Adobe Connect, PODIO	
Mathematics	Maple, MatLab	
Statistics	SPSS, SAS, S-Plus, SurveyXact	
Qualitative data	ATLAS/ti, Nvivo	
Computer laboratory	Established a computer lab with educational mathematics computer games for youth aged 6-18. Introduced it to teachers and students. Researched their experience (see 2004c). Norwegian Centre for Mathematics Education (NSMO), Norwegian University of Science and Technology (NTNU), 2002-04.	

## ACADEMIC MEMBERSHIPS

**SfN** (Society for Neuroscience), 2006-2011. Membership application must be sponsored by two SfN members.  
**PME** (International Group for the Psychology of Mathematics Education), 2003-07 & 2009-14, 2016  
**NCTM** (National Council of Teachers of Mathematics, USA), 2004-2009  
**LAMIS** (Landslaget for matematikk i skolen, Norway), 2002-2004  
**FMD** (Forum for Matematikkens Didaktik, Denmark), 1999-2013  
**CIES** (Comparative and International Education Society), 2004-2006  
**DUN** (Dansk Universitetspædagogisk Netværk, Denmark), 2007-  
**AERA** (American Educational Research Association), 2008-2016

## PUBLICATIONS AND PRESENTATIONS

'Dahl' is the usual author name but occasionally it is 'Søndergaard' ('Soendergaard'); 'ø' is the second last letter in the Danish alphabet that has three extra vowels: æ, ø, å by the end of the Latin alphabet.

**Erdős Number: 5** (Paul Erdős -1-> Shmuel Zaks -2-> Dexter Kozen -3-> Michael Schwartzbach -4-> Claus Brabrand; <http://itu.dk/people/brabrand/>)

### Books

1. Sriraman, Bharath; Bergsten, Christer; Goodchild, Simon; Pálsdóttir, Guðbjörg, Dahl, Bettina & Haapasalo, Lenni (Eds.) (2010a). The First Sourcebook on Nordic Research in Mathematics Education: Norway, Sweden, Iceland, Denmark, and contributions from Finland. Charlotte, VA: Information Age Publishing. 740 pages. ISBN: 978-1-61735-099-3.
2. Bock, Dirk De; Dahl Søndergaard, Bettina; Gómez Alfonso, Bernardo & Cheng, Chun Chor Litwin (Eds.) (2008a). Research and development in the teaching and learning of number systems and arithmetic. Proceedings, TSG 10 (Topic Study Group), ICME-11 (The 11th International Congress on Mathematical Education), Monterrey, Mexico, 6-13 July 2008. Printed in Belgium. 150 pages. ISBN: 978-90-807827-4-7.
3. Phillips, David; Dahl, Bettina; Economou, Anastasia & Ertl, Hubert (2003a). Interpreting EU Educational Policies: The Cases of the European Dimension in Education and the Socrates and

Leonardo Programmes. *Cadernos Prestige: Final Series, Vol. 7*. Lisboa: Educa, Portugal. 42 pages. ISBN: 972-8036-55-8.

### **Book chapters**

4. Dahl, Bettina & Troelsen, Rie (2015a). Lecturing. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 179-188). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
5. Andersen, Hanne Leth; Dahl, Bettina; & Tofteskov, Jens (2015b). Assessment and Exams. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 369-408). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
6. Dahl, Bettina & Krogh Lone (2015c). Teaching portfolios. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 445-454). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
7. Dahl, Bettina & Troelsen, Rie (2013a). Forelæsning [The lecture]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 177-187). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
8. Andersen, Hanne Leth; Dahl, Bettina; & Tofteskov, Jens (2013b). Eksamen [The examination]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 369-408). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
9. Dahl, Bettina & Krogh Lone (2013c). Undervisningsportfolio [Teaching portfolio]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 445-455). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
10. Dahl, Bettina (2010b). Can two different types of mathematics teacher preparation in Denmark integrate? A discussion of research-based teaching and mathematics competencies. In (Eds.) Sriraman, Bharath; Bergsten, Christer; Goodchild, Simon; Pálsdóttir, Guðbjörg, Dahl, Bettina & Haapasalo, Lenni (Eds.) (2010a). *The First Sourcebook on Nordic Research in Mathematics Education: Norway, Sweden, Iceland, Denmark, and contributions from Finland* (pp.613-626). Charlotte, VA: Information Age Publishing. 740 pages. ISBN: 978-1-61735-099-3.
11. Dahl, Bettina (2010c). Commentary on The Fundamental Cycle of Concept Construction Underlying Various Theoretical Frameworks. In (Eds.) Bharath Sriraman & Lyn English, *Theories of Mathematics Education: Seeking New Frontiers* (pp. 193-208). Springer. ISBN: 978-3-642-00741-5.
12. Sriraman, Bharath & Dahl, Bettina (2009a). On Bringing Interdisciplinary Ideas to Gifted Education. In (Ed.) Larisa V. Shavinina, *The International Handbook of Giftedness* (pp. 1235-1256). Springer Science. ISBN: 978-1-4020-6161-5.
13. Dahl Søndergaard, Bettina (2007a). Diagnostiske tests og deres anvendelse i matematikundervisningen: Et eksempel på formativ evaluering [Diagnostic tests and their use in the teaching of mathematics: An example of formative assessment]. In (Ed.) Bodil Christensen, *Faglighed, test og evalueringskultur (Series): Evaluering og test i matematik*. Vejle: Krogh, pp. 61-76. ISBN: 978-87-624-0855-5.
14. Dahl, Bettina (2006a). Lær om læring fra dygtige gymnasieelever: metakognitive interviews [Learn about learning from good high school pupils: Metacognitive interviews]. In (Eds.) Ole Skovsmose & Morten Blomhøj, *Kunne det tænkes? - om matematiklæring*, Copenhagen: Malling Beck, pp.159-178. ISBN: 87-7988-773-2.
15. Dahl, Bettina & Stedøy, Ingvill M. (2004a). A Nordic community: Ideas of education and democracy in mathematics? In (Ed.) Ingvill M. Stedøy, *Mathematics Education - The Nordic Way*, Trondheim: NTNU-trykk Norway, pp. 1-10. ISBN: 82-471-6013-7.



16. Dahl, Bettina (2003b). Tensions between the European and the Nordic Dimension in Education, with particular reference to Sweden. In (Eds.) David Phillips & Hubert Ertl, *Implementing European Union Education and Training Policy - A Comparative Study of Issues in Four Member States*, Dordrecht: Kluwer Academic, pp. 87-115. ISBN: 1-4020-1292-6.
17. Dahl, Bettina (2003c). The impact of EU education and training policies in Sweden. In (Eds.) David Phillips & Hubert Ertl, *Implementing European Union Education and Training Policy - A Comparative Study of Issues in Four Member States*, Dordrecht: Kluwer Academic, pp. 189-212. ISBN: 1-4020-1292-6.
18. Siedersleben, Wenke & Dahl, Bettina (2003d). Chronology of education and training policy within the European Union. In (Eds.) David Phillips & Hubert Ertl, *Implementing European Union Education and Training Policy - A Comparative Study of Issues in Four Member States*, Dordrecht: Kluwer Academic, pp. 319-329. ISBN: 1-4020-1292-6.

### **Prefaces**

19. Ryberg, Thomas; Davidsen, Jacob; & Dahl, Bettina (2016). Fifth Issue of the Journal of Problem Based Learning in Higher Education. *Journal of Problem Based Learning in Higher Education*, Vol. 4, Nr. 1, p. i-iv.
20. Wiberg, Merete; Søndergaard, Bettina Dahl; Von Müllen, Rikke Lyngby; Kjær-Rasmussen, Lone Krogh; & Jørgensen, Peter Stray (2011a). Almenpædagogik og fagdidaktik [General pedagogy and subject didactics]. *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 6, No. 10, p. 1-2. ISSN: 1901-5089.
21. Wiberg, Merete; Søndergaard, Bettina Dahl; Von Müllen, Rikke Lyngby; Jørgensen, Anker Helms; Ingerslev, Gitte Holten; & Dohn, Nina Bonderup (2011b). It, læringsressourcer og nye undervisningsmiljøer [It, learning resources and new teaching environments]. *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 6, No. 11, p. 6-7. ISSN: 1901-5089.
22. Dahl, Bettina & Sriraman, Bharath (2010d). Mathematics Education Research in Denmark: A Brief Introduction. In (Eds.) Sriraman, Bharath; Bergsten, Christer; Goodchild, Simon; Pálsdóttir, Guðbjörg, Dahl, Bettina & Haapasalo, Lenni (Eds.) (2010a). *The First Sourcebook on Nordic Research in Mathematics Education: Norway, Sweden, Iceland, Denmark, and contributions from Finland* (pp.553-554). Charlotte, VA: Information Age Publishing. 740 pages. ISBN: 978-1-61735-099-3.
23. De Bock, Dirk, Dahl Søndergaard, Bettina, Alfonso, Bernardo Gómez, & Cheng, Chun Chor Litwin (2008b). Preface. In (Eds.) Dirk De Bock; Bettina Dahl Søndergaard; Bernardo Gómez Alfonso & Chun Chor Litwin Cheng. *Proceedings, TSG 10, ICME-11, Monterrey, Mexico. 6-13 July 2008*. Belgium: University of Leuven, pp. 5-6. ISBN: 978-90-807827-4-7.

### **Journal articles**

24. Dahl, Bettina (201X). What is the problem in problem based learning in higher education mathematics. *European Journal of Engineering Education*. ISSN: 0304-3797. Accepted.
25. Dahl, Bettina (201X). First-year non-STEM majors' use of definitions to solve calculus tasks: Benefits of using concept image over concept definition? *International Journal of Science and Mathematics Education*. ISSN: 1571-0068. Accepted.
26. Dahl, Bettina; Kolmos, Anette; Holgaard, Jette Egelund; & Hüttel, Hans (2016). Students' experiences of change in a PBL curriculum. *International Journal of Engineering Education*, Vol. 32, No. 1(B), p. 384-395. ISSN 0949-149X.
27. Dahl, Bettina & Kolmos, Anette (2015d). Students' attitudes towards group-based project exams in two engineering programmes. *Journal of Problem Based Learning in Higher Education (JPBLHE)*, Vol. 3, No. 2, p. 62-79. ISSN: 2246-0918.
28. Dahl, Bettina & Hüttel, Hans (2015e). Studerendes oplevelse af reorganisering af problem-baseret læring på Aalborg Universitet [Students' experience of the reorganisation of problem based learning at

Aalborg University] *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 10, No. 19, pp. 43-55. ISSN: 1901-5089.

29. Jukić Matić, Ljerka & Dahl, Bettina (2014a). Retention of Differential and Integral Calculus: A Case Study of a University Student in Physical Chemistry. *International Journal of Mathematical Education in Science and Technology*, Vol. 45, No. 8, pp. 1167-1187. ISSN: 1464-5211.
30. Søndergaard, Bettina Dahl & Stald, Line (2013d). Få meget ud af lidt: langtidseffekt af workshop til universitetsstuderende i naturvidenskabelig formidling i uformelle læringsmiljøer [Dissemination of knowledge in informal learning environments]. *MONA (Mathematics and Science Education)*. Vol. 9, No. 1 (March 2013), pp. 22-37. ISSN: 1604-8628.
31. Jukić Matić, Ljerka & Dahl (Søndergaard), Bettina (2012a). University students' retention of derivative concepts 14 months after the course: Influence of 'met-befores' and 'met-afters'. *International Journal of Mathematical Education in Science and Technology*, Vol. 6, No. 15, pp. 749-764. ISSN: 1464-5211.
32. Nielsen, Birgitte Lund; Caspersen, Michael E.; & Dahl, Bettina (2011c). Hvad skal instruktører på naturvidenskab vide om undervisning? [What do teaching assistants in science need to know about how to teach?] *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 6, No. 10, pp. 18-24. ISSN: 1901-5089.
33. Dahl, Bettina (2011d). Tværfaglig fagdidaktik. *Cursiv*, Vol. 7, pp. 199-204. ISSN: 1901-8878.
34. Dahl, Bettina (2010e). Kompetencer i matematik ved overgangen mellem det almene gymnasium og universitetet: En SOLO-analyse af progression og vidensformer i læreplaner og kursusbeskrivelser [Mathematics competencies in the transition from secondary to tertiary level: A SOLO analysis of progression and forms of knowledge in the curricula]. *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 5, No. 9, pp. 24-29. ISSN: 1901-5089.
35. Brabrand, Claus & Dahl, Bettina (2009b). Using the SOLO-Taxonomy to Analyze Competence Progression of University Science Curricula. *Higher Education (HE)*, Vol. 58, Issue 4, pp. 531-549. ISSN: 0018-1560.
36. Dahl, Bettina; Lien, Eirik & Lindberg-Sand, Åsa (2009c). Conformity or confusion? Changing higher education grading scales as a part of the Bologna Process: the cases of Denmark, Norway, and Sweden. *Learning and Teaching: The International Journal of Higher Education in the Social Sciences (LATISS)*, Vol. 2, No. 1 (Spring 2009), pp. 39-79. ISSN: 1755-2273.
37. Dahl, Bettina & Cachaper, Cecile (2008c). Teaching mathematics effectively to primary students in developing countries: Insights from neuroscience and psychology of mathematics. GPE Working Paper Series on Learning (Global Partnership for Education, The World Bank); No. 5 (79782)). 60 pages. Authors contributed equally.  
<http://documents.worldbank.org/curated/en/295371468154764509/pdf/797820WP0math00Box0379789B00PUBLIC0.pdf>
38. Dahl Søndergaard, Bettina (2008d). International mobilitet med den nye danske karakterskala? [International mobility with the new Danish grading scale?] *MONA (Mathematics and Science Education)*. Vol. 4, No. 2 (June 2008), pp. 110-117. ISSN: 1604-8628.
39. O'Lear, Mike & Dahl, Bettina (2008e). Main Points of Objections to the "No Child Left Behind" (NCLB) Law. *The Montana Mathematics Enthusiast*, Vol. 5, No. 2 (July 2008), pp. 357-364. ISSN: 1551-3440.
40. Dahl Søndergaard, Bettina (2008f). The political realism of Augustine and Morgenthau: Issues of Man, God, and just war. *Alternatives: Turkish Journal of International Relations*, Vol. 7, No. 1 (Spring 2008), pp. 37-63. ISSN: 1303-5525.
41. Dahl, Bettina (2006b). Various theoretical frameworks in concept construction and how to move forward as a field: A commentary to Pegg and Tall. *ZDM, Zentralblatt für Didaktik der Mathematik / International Reviews on Mathematical Education*, Vol. 38, No. 1 (February 2006), pp. 63-69. ISSN: 1615-679X.

42. Dahl, Bettina (2006c). Theories are from Mars - practice is on Venus: How on Earth to use learning theories in a classroom. *Virginia Mathematics Teacher (VMT)*, Vol. 33, No. 1 (Fall 2006), pp. 7-10.
43. Dahl, Bettina (2005a). A comparison of the Danish and the Virginia secondary teacher education system: their values and emphasis on mathematics content knowledge. *The Montana Mathematics Enthusiast*, Vol. 2, No. 2 (October 2005), pp. 93-106. ISSN: 1551-3440.
44. Dahl, Bettina (2004b). Analysing cognitive learning processes through group interviews of successful high school pupils: Development and use of a model. *Educational Studies in Mathematics*, Vol. 56, pp. 129-155. ISSN: 0013-1954.
45. Dahl, Bettina (2004c). PC-spill og matematikklæring - bruk av spill i en fritimelignende situasjon [PC games and the learning of mathematics]. *Tangenten*, Vol. 15, No. 4, pp. 64-67. ISSN: 0802-8192.
46. Dahl, Bettina (2003e). Hvad kan vi lære om de kognitive læreprocesser i matematik ved at spørge dygtige gymnasieelever? En fokusgruppeundersøgelse analyseret ud fra en række psykologiske læringsteorier [What can we learn about cognitive learning processes in mathematics by asking good high school pupils? A focus group study analysed using various psychological learning theories]. *Centre for Research in Learning Mathematics Series*, No. 37. Roskilde: CRLM, Danish University of Education, Roskilde University, Aalborg University. 30 pages. ISSN: 1600-2474.
47. Dahl, Bettina (2003f). A Synthesis of different psychological learning theories? Piaget and Vygotsky. *Philosophy of Mathematics Education Journal*, Vol. 17. 24 pages. ISSN: 1465-2978.
48. Dahl, Bettina (2003g). De lærer på forskellig vis! - om talentfulle elevers syn på egen læring [They learn in different ways! Talented pupils' view of own learning]. *Tangenten*, Vol. 14, No. 4, pp. 50-54. ISSN: 0802-8192.
49. Dahl, Bettina (1996a). Learning Mathematics as Language-Games Transitions? *Aalborg University, Department of Mathematics and Computer Science Series: R-96-2047*. 18 pages. ISSN: 0908-1216.
50. Dahl, Bettina (1996b). Læring som sprogspiloverskridelse? [Learning as language-games transition?]. *Nordic Studies in Mathematics Education (NOMAD)*, Vol. 4, No. 1, pp. 7-24. ISSN: 1104-2176.
- Proceedings, Conference of the International Group for the Psychology of Mathematics Education (PME)**
51. Dahl, B. (2014b). Assessment of University Students' Teamwork Competencies in Group Projects. *Proceedings of the 38th Conference of the International Group for the Psychology of Mathematics Education (PME38) and the 36th Conference of the North American Chapter of the Psychology of Mathematics Education (PMENA 36)*, Vancouver, Canada. 15-20 July 2014. (Eds.) S. Oeserle; C. Nicol; P. Liljedahl & D. Allan. PME, p. 53, Vol. 6. ISSN: 0771-100X.
52. Dahl, B. (2013e). The learning approaches of university mathematics students in a required mathematics course. *Proceedings, the 37th Conference of the International-Group for the Psychology of Mathematics Education (PME37)*, Kiel, Germany. 28 July – 2 August 2013. (Eds.) A. M. Lindmeier & A. Heinze. PME, p. 48, Vol. 5. ISSN: 0771-100X.
53. Dahl, B. (2012b). University students' incoherent concept definition images of continuity and asymptotes. *Proceedings, the 36th Conference of the International-Group for the Psychology of Mathematics Education (PME36)*, Taipei, Taiwan. 18-22 July 2012. (Ed.) T.-Yi Tso. PME: p. 267, Vol. 4. ISSN: 0771-100X.
54. Jukić, Ljerka & Dahl, Bettina (2011e). University students' concept image and retention of the definite integral. *Proceedings, the 35th Conference of the International-Group for the Psychology of Mathematics Education (PME35)*, Ankara, Turkey. 10-15 July 2011. (Ed.) B. Ubuz. PME, pp. 73-80, Vol. 3. ISSN: 0771-100X.
55. Jukić, Ljerka & Dahl, Bettina (2010f). The retention of key derivative concepts by university students on calculus courses at a Croatian and Danish university. *Proceedings, the 34th Conference of the*

*International Group for the Psychology of Mathematics Education (PME34)*, Belo Horizonte, Brazil. 18-23 July 2010. (Eds.) M. M. F. Pinto & T. F. Kawasaki. PME, pp. 137-144, Vol. 3. ISSN: 0771-100X.

56. Dahl, Bettina (2009d). Transition problems in mathematics that face students moving from compulsory through to tertiary level education in Denmark: Mismatch of competencies and progression. *Proceedings, the 33th Conference of the International Group for the Psychology of Mathematics Education (PME33), Thessaloniki, Greece. 19-24 July 2009*. (Eds.) M. Tzekaki; M. Kaldrimidou & C. Sakonidis. PME, pp. 369-376, Vol. 2. ISSN: 0771-100X.
57. Baber, Sikunder Ali & Dahl, Bettina (2005b). Dealing with learning in practice: Tools for managing the complexity of teaching and learning. *Proceedings of the 29th Conference of the International Group for the Psychology of Mathematics Education (PME29), University of Melbourne, Australia. 10-15 July 2005*. (Eds.) H. L. Chick & J. L. Vincent. Melbourne: PME, pp. 97-104, Vol. 2. ISSN: 0771-100X.
58. Teppo, Anne; Speiser, Robert; Søndergaard, Bettina Dahl & van den Heuvel-Panhuizen, Marja (2004d). Keeping the mathematics in mathematics education research. *Proceedings of the 28th Conference of the International Group for the Psychology of Mathematics Education (PME28)*. (Eds.) M. Johnsen Høines & A. B. Fuglestad. Bergen, Norway. 14-18 July 2004. Bergen: Bergen University College. Coordinate Discussion Group 3 (DG 3), p. 261, Vol. 1. ISSN: 0771-100X.
59. Dahl, Bettina (2003h). What can we learn about cognitive learning processes by asking the pupils?. *Proceedings of the 27th Conference of the International Group for the Psychology of Mathematics Education (PME27) held jointly with the 25th Conference of PMENA (PME-North American Chapter)*. (Eds.) N. A. Pateman; B. J. Dougherty & J. Zilliox. Honolulu, Hawaii, USA. 13-18 July 2003. Hawaii: CRDG, College of Education, University of Hawai'i. PME, pp. 277-284, Vol. 2. ISSN: 0771-100X.

#### ***Proceedings, American Educational Research Association, Annual Meeting (AERA)***

60. Cachaper, Cecile; Spielman, Laura J.; Dahl Soendergaard, Bettina; Corwin, Stephen; Dietrich, Carl B.; Rosenzweig, Mike; Tabor, Lisa; Edmister, Whitney & Fortune, Jimmie C. (2008g). Universities as Catalysts for Community Building among Informal STEM educators: The Story of POISED (POISED: Partners for Outreach in Informal STEM Education; STEM: Science, Technology, Engineering, Mathematics). 12 pages. AERA (American Educational Research Association) Annual Meeting, New York, USA. 24-28 March 2008.  
[https://php.radford.edu/~poised/deliverContentItem.php?type=news&item\\_id=6](https://php.radford.edu/~poised/deliverContentItem.php?type=news&item_id=6)

#### ***Papers from invited international keynote conference presentations***

61. Brabrand, Claus & Dahl, Bettina (2009e). Analyzing CS Competencies using The SOLO Taxonomy. ACM SIGCSE Bulletin, Vol. 41, Issue 3 (September 2009). ISSN: 0097-8418. Pages 1-1. ITiCSE '09. SESSION: Keynote. Brabrand was invited keynote speaker.
62. Brabrand, Claus & Dahl, Bettina (2008h). Constructive Alignment and the SOLO Taxonomy: A Comparative Study of University Competences in Computer Science vs. Mathematics. 7th Koli Calling 2007 (Computing Education Research). *Conferences in Research and Practice in Information Technology, Vol. 88*. (Eds.) Raymond Lister & Simon. Australian Computer Society, Inc, pp. 3-17. ISSN 1445-1336. Brabrand was invited keynote speaker.

#### ***Book reviews***

63. Søndergaard, Bettina Dahl (2015f). Review of monograph by Zdenka Kolar-Begovic, Ruzica Kolar-Super, Ivana Djudjevic Babic (Eds.) (2015). Higher Goals in Mathematics Education. Zagreb, Croatia: Element. ISBN: 978-953-197-586-5. 10 p. Monograph referee. The review will be used for entering into for instance ERIC database and Croatian National and University Library in Zagreb.
64. Dahl, Bettina (2012c). Universitetsundervisning i det 21. århundrede: Læring, dannelse, marked [University teaching in the 21st century]. *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 7, No. 13, pp. 131-136. ISSN: 1901-5089.
65. Dahl, Bettina (2008i). A critique on the role of social justice perspectives in mathematics education. *Mathematical Thinking and Learning*, Vol. 10, No. 3, pp. 305-312. ISSN: 1098-6065.

66. Dahl, Bettina (2007b). Om forholdet mellem læring og undervisning i universitetspædagogikken [The relationship between learning and teaching at university]. *Dansk Universitetspædagogisk Tidsskrift (DUT)*, Vol. 2, No. 4, pp. 58-59. ISSN: 1901-5089.

### **Other proceedings**

67. Dahl, Bettina (2017). The study approaches of university students in a calculus class. Paper. Keynote presentation. Osijek, Croatia. Teaching and Learning Mathematics. 26-27 May 2017.

68. Dahl, Bettina (2017). Project Supervisors' Views of a Group Based Project Exam for Engineering Students in a Problem-Based Learning Curriculum. Paper to be presented at the International Forum: American Society for Engineering Education (ASEE), Columbus, Ohio, USA. 28 June 2017.

69. Spliid, Claus Christian Monrad; Bøgelund, Pia; & Dahl, Bettina (2017). Student challenges when learning to become a real team in a PBL curriculum: Experiences from first year science, engineering and mathematics students. Paper to be presented at IRSPBL. 2017.

70. Dahl, Bettina (2017). Mathematics students' attitudes to group-based project exams compared to students in science and engineering. Paper presented at CERME10 the Tenth Congress of the European Society for Research in Mathematics Education. 2017.

71. Bøgelund, Pia & Dahl, Bettina (2015g). Assistant professors' expectations and understandings of PBL group supervision: Three cases of lack of prior experience in PBL. Global Research Community: Collaboration and Developments. In E. de Graaff, A. Guerra, A. Kolmos, N. A. Arexolaleiba (Eds.). Aalborg: Aalborg Universitetsforlag, p. 137-148. ISBN: 978-87-7112-304-3.

72. Dahl, Bettina & Kolmos, Anette (2013f). Students and Supervisors' Views of Individual vs. Group Based Project Exams in Engineering Education. Proceedings, the 41th Conference of the International-Group for the European Society for Engineering Education. SEFI: European Association for Engineering Education, 2013. 10 pages.

73. Kolmos, Anette; Holgaard, Jette Egelund & Dahl, Bettina (2013g). Reconstructing the Aalborg Model for PBL: A case from the Faculty of Engineering and Science, Aalborg University. PBL Across Cultures. In K. Mohd-Yusof, M. Arsat, M. T. Borhan, E. de Graaff, A. Kolmos & F. A. Phang (Eds.). Aalborg: Aalborg Universitetsforlag, p. 289-296. ISBN: 978-87-7112-092-9

74. Jukić, Ljerka & Dahl, Bettina (2011f). What affects retention of core calculus concepts among university students? A study of different teaching approaches in Croatia and Denmark. In M. Pytlak, T. Rowland, & E. Swoboda (Eds.), *Proc. 7<sup>th</sup> Congress of the European Society for Research in Mathematics Education* (pp. 2033-2042). Rzeszów, Poland: CERME. ISBN: 978-83-7338-683-9.

75. Dahl Søndergaard, Bettina (2008j). A Brick in the Wall of Mathematics Education Research in Number Systems and Arithmetic. (Eds.) Dirk De Bock; Bettina Dahl Søndergaard; Bernardo Gómez Alfonso & Chun Chor Litwin Cheng. Proceedings, TSG 10, ICME-11, Monterrey, Mexico. 6-13 July 2008. Belgium: University of Leuven, pp. 131-136. ISBN: 978-90-807827-4-7.

76. Dahl, Bettina (2008k). Improving the Danish university education system: A comparison of policy borrowing from an outcome-based framework in 1973 and 2003. In (Eds.) Chris Rust, Proceedings, the Oxford Centre for Staff and Learning Development's (OCSLD) *15th Improving Student Learning Symposium (ISL)*. Trinity College, Dublin, Ireland, 3–5 September 2007, pp. 255-266. ISBN: 978-1-873576-76-2.

77. Dahl, Bettina (2006d). Cultural Diversity and International Education: The Case of Ethnomathematics. *Proceeding: The Third Annual Mid Atlantic Conference on the Scholarship of Diversity (MACSD)*. Virginia Tech, 2-3 February 2006. 12 pages. [http://www.multicultural.vt.edu/conference\\_06](http://www.multicultural.vt.edu/conference_06).

78. Dahl, Bettina (2004e). Can different theories of learning work together? Some results from an investigation into pupils' metacognition. *DG 10 (Discussion Group 10): Different perspectives, positions, and approaches in mathematics education research, at ICME-10 (the 10th International Congress on Mathematical Education)*. Copenhagen, DK. 4-11 July 2004. 14 pages. DG 10 Team: Lyn English (chair), Anna Sierpinska (chair), Jere Confrey, Marie-Jeanne Perrin Glorian, Tatiana

Oleinik. Presented by distribution. Published on ICME-10 website (<http://www.icme-organisers.dk/dg10/>).

79. Dahl, Bettina (2004f). How do gifted students become successful? A study in learning styles. In (Eds.) Edward Barbeau; Hyunyong Shin; Emiliya Velikova; Alex Friedlander; Shailesh Shirali; Agnis Andžāns, *Proceedings of the Topic Study Group 4 (TSG 4): Activities and programmes for gifted students. The 10th International Congress on Mathematical Education (ICME-10)*. Copenhagen. 4-11 July 2004. Published by: Riga, University of Latvia & University of Rousse (Bulgaria): University of Latvia, Riga, pp. 25-34. ISBN: 9984-770-17-6.

*In March 2009, P. Feher (Pedagogical Institute, University of Pécs, Hungary) asked for permission to translate this (2004f) paper and then place it at a website for Hungarian mathematics teachers.*

80. Dahl, Bettina (2004g). Development of a democratic Europe: The use of education policy. *Preceedings, 48th Annual Conference of the Comparative and International Education Society (CIES)*. Brigham Young University, Salt Lake City, Utah, USA. 9-12 March 2004. 24 pages. Brigham Young University: Salt Lake City, CD-ROM.
81. Dahl, Bettina (2004h). Hamper or helper? The role of language in learning mathematics. In (Eds.) Christer Bergsten & Barbro Grevholm, *Mathematics and Language*. Proceedings of MADIF4, the 4th Swedish Mathematics Education Research Seminar (SMDF). Malmö, Sweden, 21-22 January 2004. Linköping: SMDF, pp. 104-114. MADIF-4. ISBN: 91-973934-2-8.
82. Dahl, Bettina (2003i). Dialogcafeen [The dialogue café]. In, *Utvikling av matematikkundervisning i samspill mellom praksis og forskning*, Preceding, Nordic Conference: Mathematics Education, 18-19 November 2002. Series: Norwegian Center for Mathematics Education, Trondheim: NTNU-trykk, Norway; No 1, pp. 229-230. ISBN: 82-471-5167-7.
83. Dahl, Bettina Søndergaard (2003j). IKT-baserade prov [ICT based tests in Norway]. In (Ed.) Astrid Petterson. Proceeding, 6th Nordic Conference on testing in mathematics, pp. 76-77 (Appendix 16). PRIM-gruppen, Stockholm Institute of Education, Sweden. Långholmen 11-12 September 2003.

### **Teaching Materials**

84. Video recording about the PBL model at AAU (in Danish) (2015h). For use in high school teaching in connection to AAU On Demand. Recorded by Ahmed Hussain. 17 February 2015.
- Five teaching videos (in Danish) about PBL (2015i-m). Recorded by Mikkelsen, Beni Maroc. 30 January 2015:
85. Gruppearbejde: Hvordan håndterer man problemer med et gruppemedlem? [How to handle problems with a group member] [https://www.youtube.com/watch?v=HH1sdj\\_WMn4](https://www.youtube.com/watch?v=HH1sdj_WMn4)
86. Hvad kendetegner en god projektgruppe (with AAU principal Per Michael Johansen)? [What is a good group?] <https://www.youtube.com/watch?v=UsTvn9rX0Gw>
87. PBL-eksperten: Om forventningsafstemning i projektarbejdet [About adjusting mutual expectations in project work] <https://www.youtube.com/watch?v=fHPJLDZLYjw>
88. PBL-eksperten: "Disse problemer er de mest typiske i projektarbejdet" [Most typical problems in project work] <https://www.youtube.com/watch?v=OysrjXGEuRo>
89. PBL-eksperten: "Dette skal I huske på under gruppedannelsen" [Remember this when you create groups] <https://www.youtube.com/watch?v=EzR5pMnQuyg>
90. Teaching Video – The Oral Exam: High Grade Student (2012d). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 19 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>
91. Teaching Video – The Oral Exam: Medium Grade Student (2012e). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 19 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>
92. Teaching Video – The Oral Exam: Low Grade Student (2012f). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 18 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>

93. Corry, Aino & Dahl, Bettina (2011g). The Teaching Portfolio. Developing Good Teachers and Scientists, Vol. 1. 14 pages. ISSN: 2245-0556.  
[http://stll.au.dk/fileadmin/site\\_files/science.au.dk/files/CSE/Media/PDF/Ressourcer/TeachingPortfolio\\_endeligudgave\\_16.05.2012.pdf](http://stll.au.dk/fileadmin/site_files/science.au.dk/files/CSE/Media/PDF/Ressourcer/TeachingPortfolio_endeligudgave_16.05.2012.pdf)
94. Den nye karakterskala: Implementation på NAT/AU (2007). [The new grade scale: Implementation at the Faculty of Science at Aarhus University, Denmark]. With Erik Meinecke Schmidt, Claus Brabrand (chairman), & Hans Kjeldsen. Slides.

### **Reports and theses**

95. Søndergaard, Bettina Dahl & Kolmos, Anette (2013h). Studerendes og vejlederes erfaring med den nye gruppebaserede projekteksamen på første år på Det Teknisk-Naturvidenskabelige Fakultet på Aalborg Universitet januar 2013. Online publication. 35 pages. ISBN 978-87-91404-50-4.
96. Mathiasen, Helle; Dahl Søndergaard, Bettina; Kølsen de Wit, Camilla; Blach, Christina; Ågård, Dorte; Bendixen, Finn Hoe; Andersen, Hanne Leth; Enggaard, Karsten; Lindenskov, Lena; Misfeldt, Morten; Andersen, Annemarie Møller; Sørensen, Helene (2009f). Overgangsproblemer som udfordringer i uddannelsessystemet [Transition problems as challenges in the education system]. Report to the Danish Ministry of Education. Aarhus University, CULD. 187 pages. ISBN: 978-87-993318-0-2.
97. Mathiasen, Helle; Dahl Søndergaard, Bettina; Kølsen de Wit, Camilla; Ågård, Dorte; Bendixen, Finn Hoe; Andersen, Hanne Leth; Enggaard, Karsten; Lindenskov, Lena; Misfeldt, Morten; Andersen, Annemarie Møller; & Sørensen, Helene (2009g). Overgangsproblemer som udfordringer i uddannelsessystemet [Transition problems as challenges in the education system]. Conference Report, Region Midt. 30 September – 1 October 2009. 40 pages. ISBN: 978-87-993318-1-9.
98. Mathiasen, Helle; Dahl Søndergaard, Bettina; Kølsen de Wit, Camilla; Ågård, Dorte; Bendixen, Finn Hoe; Andersen, Hanne Leth; Enggaard, Karsten; Lindenskov, Lena; Misfeldt, Morten; Andersen, Annemarie Møller; & Sørensen, Helene (2009h). Overgangsproblemer som udfordringer i uddannelsessystemet [Transition problems as challenges in the education system]. Conference Report, DPU conference, 26 October 2009. 25 pages. ISBN: 978-87-993318-2-6.
99. Søndergaard, Bettina Dahl (2007c). Evaluering af Natur i Teltet 2007 [Evaluation of the informal science education programme of the Steno Museum: 'Nature in the Tent' 2007]. 28 November 2007. Steno Department for Studies in Science and Science Education, Faculty of Science, Aarhus University, DK. Internal evaluation report. 47 pages.
100. Stald, Line J. & Søndergaard, Bettina Dahl (2007d). Natur i Teltet 2007 og fremover ['Nature in the tent' 2007 and in the future]. 28 November 2007. Short version of the evaluation report (2007c) including the way forward. Steno Department for Studies in Science and Science Education, Faculty of Science, Aarhus University, DK. 8 pages.
101. Dahl Søndergaard, Bettina (2002). A focus group study of Danish and English high-achieving high school pupils of mathematics: What can we learn from their verbalised explanations of how they learn mathematics? Roskilde University, IMFUFA, DK. PhD thesis. 390 pages.
102. Dahl, Bettina (2000a). A case study of high-achieving pupils of mathematics: How the psychology of learning mathematics relates to their reported learning experiences. University of Oxford, Department of Educational Studies, MSc thesis. 97 pages.
103. Dahl, B. (2000b). How does a person learn mathematics: good high school pupils' own perception of their learning process in mathematics (pp. 41-44), *Aktivitets- og evalueringsrapport for 1998 og 1999*. Publication Series of Center for Research in Learning Mathematics. Roskilde: CRLM, Danish University of Education, Roskilde University, Aalborg University.
104. Søndergaard, Bettina Dahl (1996c). Fremtidig organisering af Center for Filosofi og Videnskabsteori [Future organisation of the Centre of Philosophy and the Theory of Science]. 26 November 1996, Centre of Philosophy and the Theory of Science, Aalborg University, DK. 9 pages.
105. Dahl, Bettina (1995). Sprogspilsudspændende variable i en sprogspiloverskridende proces i matematikundervisningen [The viables spanning the language-games in a process of

*language-games transition in the teaching of mathematics*]. Aalborg University, Department of Mathematics and Computer Science: IR-95-2006. 138 pages. Revised Master's thesis from 1994.

106. Dahl, Bettina; Hølleddig, Vibeke; Munter, Jacob; Møller, Jakob; Nielsen, Lene; Simoni, Susanne & Thomassen, Lars (1992). Paul Ernests socialkonstruktivisme: en grundlags- og konsistenskritik [*Paul Ernest's social constructivism: A critique of basis and consistency*], Aalborg University, Department of Mathematics and Computer Science. 137 pages. (7th semester's Mathematics (MAT3) report listed at Aalborg University Library as 'Master's thesis'). Authors contributed equally.

### **Op-ed commentaries to newspapers and letters to newspaper editors**

107. Søndergaard, Bettina Dahl (2016). Dyr, men god ordning [Expensive, but good system. About external examination]. *Jyllands-Posten*, Danish national daily newspaper, Wednesday 6 July 2016, page 19.
108. Søndergaard, Bettina Dahl (2006e). Danes relish self-effacing humor. *The Roanoke Times*, Virginia regional daily newspaper, Thursday 23 February 2006, Virginia section, page 9. The Roanoke Times has a circulation of 100,160 on weekdays and 112,397 on Sundays.
109. Søndergaard, Bettina Dahl (2005c). Hent inspiration til en ny læreruddannelse i USA [Get inspiration to a new teacher education in the USA]. *Berlingske Tidende*, Danish national daily newspaper, Tuesday 11 October 2005, Magasin section, page 11. Berlingske Tidende has a circulation of 130,487 on weekdays and 149,356 on Sundays (2004).
110. Søndergaard, Bettina Dahl (2005d). Ikke det offentliges opgave [Not a task for the public sector]. *Nordjyske Stiftstidende*, Danish regional daily newspaper, Saturday 25 June 2005, section 1, page 8. Nordjyske Stiftstidende has a circulation of 74,428 on weekdays and 85,667 on Sundays (2004).
111. Søndergaard, Bettina Dahl (2005e). Mødepligt er spildtid [Mandatory attendance requirements at universities is a waist of time]. *Politiken*, Danish national daily newspaper, Tuesday 14 June 2005, section 2, page 6. Politiken has a circulation of 134,391 on weekdays and 172,943 on Sundays (2004).
112. Søndergaard, Bettina Dahl (2005f). Når børnene skal lære [When the children are learning]. *Jyllands-Posten*, Danish national daily newspaper, Monday 13 June 2005, section 1, page 8. Jyllands-Posten has a circulation of 157,701 on weekdays and 214,823 on Sundays (2004). It is the largest newspaper in Denmark.

### **Abstracts published**

113. Dahl, Bettina (2007). Bedre muligheder for læring og evaluering i lyset af loven om den nye karakterskala. Invited presentation at the 8th May-Conference on Natural Science Education. Organized by the University of Southern Denmark. 9-10 May 2007.
114. Dahl, Bettina (2007). Progressionsanalyse af læringsmål der er kvantificeret ved brug af SOLO-taksonomien. Danish University Pedagogical Network's conference at Aalborg University, Denmark, 31 May - 1 June 2007.
115. Dahl, Bettina (2006). How to Navigate Between Many Different Learning Theories and Pendulum Swings. The 28th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM). See program, No. 113. Virginia Tech, 10-11 March 2006.
116. Dahl, Bettina (2006). The dilemma and challenges of different theoretical frameworks of learning. The VCTM Research Session at the 28th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM). See program, No. 55. Virginia Tech, 10-11 March 2006.
117. Dahl, Bettina (2005). Contrasting dichotomies and pendulum swings in mathematics curricula: A comparison between Virginia and Denmark. 49th Annual Conference of the Comparative and International Education Society. Hosted by Stanford University, California, USA. 22-26 March 2005.



118. Phillips, David; O'Dowd, Mina; & Orivel, François; & Dahl, Bettina (2004). PRESTiGE: Overview of the Results of a 5-year EU Training and Research Network. 48th Annual Conference of the Comparative and International Education Society (CIES). Hosted by Brigham Young University, Salt Lake City, Utah, USA. Panel presentation. 9-12 March 2004.
119. Søndergaard, Bettina Dahl (2004). Studerendes læringsopfattelser i matematik og didaktiske (ud)fordringer heraf. Conference, Centre for Educational Development in University Science (DCN), Aalborg University. Skørping, DK. 12-13 May 2004.
120. Dahl, Bettina (2001). The European and the Nordic Dimension in Education: Problems of Standardisation and Tradition for Sweden. The PRESTiGE network meeting/conference at Lady Margaret Hall, University of Oxford, UK. 6-9 January 2001. By invitation only. Network consisted of Humboldt-Universität zu Berlin (Germany), Université de Bourgogne (France), Universidad Complutense de Madrid (Spain), Universidade de Lisboa (Portugal), Stockholm University (Sweden), and University of Oxford (UK). Professor Francisco Ramirez, Stanford University (USA) was invited to give feedback and comments.

#### **Selected newsletter articles**

121. Søndergaard, Bettina Dahl (2015n). OST World: Research Connections. In (Ed.) Helen Malone, *AERA OST SIG Series, Issue 16, December 2015*. 4 pages.
122. Søndergaard, Bettina Dahl (2014c). PME International Committee Report: Treasurer Portfolio Group (TPG) Report. In (Eds.) Cynthia Nicol, Silvia Alatorre, Maike Vollstedt, *PME Newsletter (International Group for the Psychology of Mathematics Education)* (Vol. 5, May/June), pp. 2-3.
123. Søndergaard, Bettina Dahl (2013i). PME International Committee Report: Treasurer Portfolio Group (TPG) Report. In (Eds.) Cynthia Nicol, Silvia Alatorre, Maike Vollstedt, *PME Newsletter (International Group for the Psychology of Mathematics Education)* (Vol. 4, April), p. 9.
124. Søndergaard, Bettina Dahl (2011h). Education Research for the Public Good. In (Ed.) Sarah Pitcock, *OST SIG Newsletter (Out-of-School Time, Special Interest Group, AERA – American Educational Research Association)* (Spring 2011), p. 1.
125. Søndergaard, Bettina Dahl (2010g). An Eye to the Future. In (Ed.) Sarah Pitcock, *OST SIG Newsletter (Out-of-School Time, Special Interest Group, AERA – American Educational Research Association)* (Fall Winter 2010), p. 1-2.
126. Søndergaard, Bettina Dahl (2010h). Hvordan skal vi uddanne lærere til grundskolen og gymnasierne?. Newsletter for Forum for Matematikkens Didaktik (Vol. 14, No. 2), p. 5-8. ISSN 1603-6417.
127. Søndergaard, Bettina Dahl (2010i). Dødsfald (og andet) kommer altid i grupper af tre (some statistics). Newsletter for Forum for Matematikkens Didaktik (Vol. 14, No. 2), p. 3-4. ISSN 1603-6417.
128. Søndergaard, Bettina Dahl (2009i). Out-of-School Time SIG 2010: Understanding Complex Ecologies in a Changing World and the Importance of Out-of-School Time Research. In (Ed.) Sara Hill, *OST SIG Newsletter (Out-of-School Time, Special Interest Group, AERA – American Educational Research Association)* (Fall Winter 2009), p. 3.
129. Søndergaard, Bettina Dahl (Ed.) (2004i). Norwegian Centre for Mathematics Education Newsletter (June 2004), Vol. 2, No. 3.
130. Søndergaard, Bettina Dahl (Ed.) (2004j). Norwegian Centre for Mathematics Education Newsletter (March 2004), Vol. 2, No. 2.
131. Søndergaard, Bettina Dahl (2004k). Using history in popularisation of mathematics. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (January 2004), Vol. 2, No. 1, p. 5.

132. Søndergaard, Bettina Dahl (2004l). Skolematikkens formative årtier 1903-1937 i Danmark [School mathematics 1903-1937 in Denmark]. I (Ed.) Bettina Dahl Søndergaard, *Nasjonalt senter for matematikk i opplærings nyhetsbrev* (January 2004), Vol. 2, No. 1, p. 4.
133. Søndergaard, Bettina Dahl (Ed.) (2003j). *Norwegian Centre for Mathematics Education Newsletter* (October 2003), Vol. 1, No. 7.
134. Søndergaard, Bettina Dahl (2003k). PME 27 - HAWAII. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (August 2003), Vol. 1, No. 6, pp. 3-4.
135. Nortvedt, Guri; Kjørstad, Geir Arne & Søndergaard, Bettina Dahl (2003l). Erfaringer med nasjonale prøver i andre land [Experience with national tests in other countries (UK & Sweden)]. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (June - July 2003), Vol. 1, No. 5, pp. 2-4.
136. Søndergaard, Bettina Dahl (2003m). Dataprogrammer [Computer programmes]. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (April 2003), Vol. 1, No. 4, p. 4.
137. Søndergaard, Bettina Dahl (2003o). Matematikkensenterets diskusjonsforum [Discussion forum for the Norwegian Centre for Mathematics Education]. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (March 2003), Vol. 1, No. 3, p. 2.
138. Søndergaard, Bettina Dahl & Holden (now Stedøy-Johansen) Ingvill M. (2003p). Nasjonale prøver i matematikk [National tests in mathematics]. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (February 2003), Vol. 1, No. 2, pp. 2-3.
139. Søndergaard, Bettina Dahl (2003q). Nettverksbygging. Matematikk didaktikk miljøene ved universitetene og høyskolene [Networking. Mathematics Education centres at universities and university colleges]. In (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (January 2003), Vol. 1, No. 1, p. 4.
140. Søndergaard, Bettina Dahl (2003r). Presentasjon av Nasjonalt Senter for Matematikk i Opplæringen [Presentation of the National Centre for Mathematics Education]. I (Ed.) Bettina Dahl Søndergaard, *Norwegian Centre for Mathematics Education Newsletter* (January 2003), Vol. 1, No. 1, p. 2.
141. Søndergaard, Bettina Dahl (2000c). Highlighting Nordic Contributions to PRESTiGE. In (Ed.) Mina O'Dowd, *PRESTiGE Newsletter* (October 2000), Vol. 6, pp. 1, 2 & 4. Aki Virtanen & Björn Hammar also contributed.

***Invited presentations at conferences and workshops: INTERNATIONAL audience***

Keynote Speaker: The study approaches of university students in a calculus class. Paper. Keynote presentation. Osijek, Croatia. Teaching and Learning Mathematics. 26-27 May 2017. Held 26 May 2017.

Keynote Speaker: The principles and practices of Problem Based Learning (PBL) at Aalborg University. Didaktik-Forum. University of Applied Sciences, Brandenburg. Germany 5-6 October 2016. Held 5 October.

Presenter: Problem Based learning and how it relates to RRI (Responsible Research and Innovation). Workshop at 1st HEIRRI Conference: Teaching Responsible Research and Innovation at University. CosmoCaixa Science Museum, Barcelona, Spain. Together with Mar Carrió. 18 March 2016.

Presenter: PBL and Assessment. Workshop for Visitors, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Aalborg University, DK, 8-9 October 2015. Held 9 October.

Presenter: Aalborg University's experience in project and problem-based teaching. Workshop: "Approaches to Teaching in Interdisciplinary Studies". Part of NordPlus financed project "Enhancing

Student Learning Experience in Interdisciplinary Area Studies." With Nordplus "Baltic Sea Region Studies Network". Tartu, Estonia. 24-25 August 2015. Held 24 August.

Presenter: PBL and Assessment. Workshop for Visitors, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Aalborg University, DK, 12-13 March 2015. Held 12 March.

Presenter: PBL and Assessment. Workshop for Visitors, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Aalborg University, DK, 30-31 October 2014. Held 31 October.

Keynote speaker: How to assess knowledge, skills, and competencies in engineering projects? The Sixth International Symposium on Project Approaches in Engineering Education PAEE 2014. Medellín, Colombia. 28-29. July 2014. Held 29 July.

Presenter: Assessment. Workshop for Visitors, UNESCO Chair in Problem Based Learning in Engineering Education, Aalborg University, DK, 7-8 November 2013. Held 8 November.

Co-presenter: Workshop on Assessment in PBL at the 4th International Research Symposium on Problem Based Learning (IRSPBL), Kuala Lumpur, Malaysia, 2-3 July 2013. Together with Madya Dr Berhannudin Bin Mohd Salleh (Berhan). Held 3 July.

Presenter: What does constructive alignment mean and how can we use it for teaching at university? Lecture, Institut für Mathematik und Informatik, Pädagogische Hochschule Schwäbisch Gmünd, Germany. 28 June 2012.

Presenter: International mobilitet med de nye danske karakterskala? [International mobility with the new Danish grading scale?]. Conference: Nasjonal karaktersamling (National Grading Meeting), Norwegian Association of Higher Education Institutions (UHR). Oslo University College. Norway. 28 October 2008.

Discussant and chair for Short Oral session: Curriculum-specific professional Development: A Phenomenographical Study of Teachers' Perspectives (Arbaugh, F; Lannin, J.; Barker, D.; Jones, D. L.) & What are They Learning? Grade 3 Results of a Focused Longitudinal Comparativ Mathematics Curricula Study (Kehle, A; Lambdin, D.; Essex, N. K.; McCormick, K.), at *PME-NA27 (International Group for the Psychology of Mathematics Education - North America)*, 20-23 October 2005 in Roanoke, Virginia, USA.

Presenter: IKT baserte prøver i Norge [ICT based tests in Norway]. Conference on testing and evaluation in mathematics; PRIM-gruppen, Stockholm Institute of Education, Sweden. 11-12 September 2003. Participants from universities and education ministries in Denmark, Finland, Iceland, Norway & Sweden.

Presenter: The European and the Nordic Dimension in Education: Problems of Standardisation and Tradition for Sweden. PRESTIGE network conference at Lady Margaret Hall, University of Oxford, UK. 6-9 January 2001. Network (and team leader) consisted of Humboldt-Universität zu Berlin, Germany (Jürgen Schriewer), Université de Bourgogne, France (François Orivel), Universidad Complutense de Madrid, Spain (Joaquín Abellán), Universidade de Lisboa, Portugal (António Nóvoa), Stockholm Universitet, Sweden (coordinator Ingemar Fägerlind) & University of Oxford, UK (David Phillips). Francisco Ramirez, Stanford University (USA) was invited to give feedback.

### ***Invited presentations at conferences, workshops, and book presentations: NATIONAL audience***

Presenter: Gruppeeksamen på Aalborg Universitet [Group exam at Aalborg University]. Seminar: Mundtlig eksamen [Oral exam]. LearningLab DTU, Technical University of Denmark, Lyngby, DK. 28 November 2016.

Presenter: Principper og erfaring med holddeling i matematik på gymnasialt niveau [Principles and experience dividing students in mathematics at upper secondary level]. Seminar: Holddeling i matematik: Erfaringsudveksling. Viborg Gymnasium, DK. 13 May 2016.

Presenter: Alignment og forskellige holdninger til gruppeeksamen blandt ingeniør- og naturvidenskabsstuderende [Alignment and different attitudes to the group exam among engineering and science students]. DUN (Dansk Universitetspædagogisk Netværks) EksamensSIG (Special Interest Group). Copenhagen Business School (CBS), Copenhagen, DK. 29 March 2016.

Presenter: Tiltag på og uden for gymnasieskolen rettet mod matematiktalenterne. Overgangen til universitetet [Mathematics talented students and the transition to university]. Talk at meeting for high school principals in Northern Jutland about mathematics. Also presentation from Lene Østergaard Johansen about mathematics difficulties and the transition from lower secondary education to high school. Det Gymnasiale Kontaktråd. Organised by Lise Holmgaard, High School Secretariat, Aalborg University, DK. 19 November 2015.

Facilitator: The panel debate “Innovativ evaluering og entreprenørskab [Innovative Assessment and Entrepreneurship]” at the conference about Innovation and Entrepreneurship organised by Fonden for entreprenørskab, Aalborg University, and University College of Northern Denmark. Panel consisted of Lone Krogh Kjær-Rasmussen, Aalborg University, Søren Hansen, Aalborg University, Anni Stavnskær Pedersen, University College of Northern Denmark, & Mark Rosener, CEO, Peerpilot Aps. Held at Aalborg University, DK. Held 23 April 2015

Discussant, chair, and co-organiser at PBL Academy Seminar and steering group leader: Flexible Learning Environments. Other discussant and co-chair: Jacob Davidsen. Aalborg University, DK. 11 March 2015.

Discussant, chair, and co-organiser at PBL Academy Seminar: Developing student competencies with PBL. Other discussants and co-chairs: Jacob Davidsen, Erik Laursen & Diana Stentoft. Aalborg University, DK. 28 January 2015.

Presenter: Problem-baseret læring [Problem based learning]. Teaching Day, MARTEC (MARTEC - maritime and polytechnic college), Frederikshavn, DK. 3 March 2014.

Presenter: Hvad er Center for Scienceuddannelse (CSE). Eksempler på hvad vi arbejder med: Talenter i matematik [Talents in mathematics]. Meeting at Viby Gymnasium, Aarhus, DK. With Mette Andresen. Organised by Dinna Balling. 13 March 2012.

Presenter: Husk dine points! Produktivitetfremmende tiltag i forsknings- og undervisningspolitikken og deres konsekvenser for universitetspædagogikken [Remember your points! Productivity enhancing measures in research and teaching policy and their impact on university teaching]. Session at the DUN conference (Danish University Pedagogical Network), 30-31 May 2011. Session title: Universitetspædagogik og universitetspolitik. Session head: Palle Rasmussen, Aalborg University (AAU), DK. Other presenters: Palle Rasmussen (AAU) and Nina Rasmussen, Danish Students' Council. Held 30 May 2011.

Presenter: Hvordan plejer vi talenterne uden at det går ud over resten af klassen? Talent Conference. Mærsk Mc-Kinney Møller Videncenter, Sorø, DK. 9 December 2010.

Panel: Symposium om sammenlignende fagdidaktik. Danmarks Pædagogiske Universitetsskole (DPU), Aarhus University, Copenhagen, DK. 25-26 November 2010. 25 November 2010.

Presenter: Hvad er egentlig en god matematiklæreruddannelse: Indspark fra FMD's medlemmer [What is a good teacher training in mathematics?]. Danmarks Matematikundervisningskommission (DMUK) [Denmark's Commission of Mathematics Education] (under ICMI), Technical University of Denmark (DTU), DK. 18 November 2010.

Presenter at workshop: Hvordan kan man undervise talenterne uden at det skader de øvrige elever? [How can you teach the talents without hurting the rest of the pupils?]. Conference about talents in science for high school principals. Mærsk Mc-Kinney Møller Videncenter, Sorø, DK. 2 September 2010.

Presenter (3 times): Conference about the project on transition problems: Transition problems in the education system. Two panel presentations (Introduction and common issues; Final Panel) and one workshop (Progression in mathematical competencies – or lack of). Copenhagen, The Danish School of Education, Aarhus University, DK. 26 October 2009.

Presenter (5 times): Region Midt conference, Hunting the red thread – on transition issues in the education system. Silkeborg, DK. 30 September – 1 October 2009. Five presentations: Three panel presentation (Around the red thread 30/9; Summary by the research group 30/9; Closing debate 1/10) and two workshops (Two steps forward and one back – about progression in mathematical competencies: an analysis of curricula for primary to tertiary level, repeated twice 30/9).

Presenter: Undervisningen om tal og aritmetik [Teaching numbers and arithmetics]. Meeting, Experience from ICME-11 in Mexico. Danmarks Matematikundervisningskommission (DMUK) [Denmark's Commission of Mathematics Education] (under ICMI), Technical University of Denmark (DTU), DK. 14 November 2008.

Presenter: En rejse i matematikdidaktikken: Forskning på langs af uddannelsessystemet [A journey in mathematics education: Research at all levels of teaching]. University of Southern Denmark, Department of Mathematics and Computer Science (IMADA), DK. Mathematics Colloquium. 11 August 2008.

Presenter: Et fælles sprog: Hvad er didaktik, pædagogik, fagdidaktik? Og hvad laver en universitetspædagog? Visioner [A common language: What is didactics, pedagogy, subject didactics, and the work of a higher education researcher - Visions]. Seminar about the Faculty of Science, Aarhus University, DK future strategy in science education. Kaløvig Center, DK. 24-25 June 2008.

Book presentation: Faglighed, test og evalueringskultur (Series): Evaluering og test i matematik [Evaluation and tests in mathematics]. Bodil Christensen (Ed.) (2007), Vejle: Krogh. ISBN: 978-87-624-0855-5. CEPRA (VidenCenter for Evaluering i PRAksis), Aalborg ZOO, DK. 12 November 2007.

Invitation to closed international conference: Moving forward: International Perspectives, Ideas, and Best Practice in Higher Education in Science and Engineering. by Danish Ministry of Science, Technology and Innovation, the Danish Ministry of Education, the Confederation of Danish Industries, and the Danish Society of Engineers. In connection with preparation of a national strategy for science, technology and health. Included group discussions on pre-selected themes. Copenhagen, DK. 26 October 2007.

Presenter: Hvordan bruges de nye målbeskrivelser og vurderingskriterier i eksamensbedømmelsen i matematik? [How to use the new course objectives and examination criteria in mathematics?]. Store karakterskaladag [Big grade-scale day], the Danish University of Education, Copenhagen, DK. 27 August 2007.

Presenter: Bedre muligheder for læring og evaluering i lyset af loven om den nye karakterskala? [Improved options for learning and examination in light of the law of the new Danish grading scale?]. The 8th May-Conference on Natural Science Education. Organized by the University of Southern Denmark, DK. 9-10 May 2007.

Presenter: Amerikansk læreruddannelse og lærerstuderende [American teacher education and student teachers]. Seminar (NAFADISE) at Copenhagen University, Centre for Science Education, DK. 14 June 2006.

Presenter: Studerendes læringsopfattelser i matematik og didaktiske (ud)fordringer heraf [University students' perceptions of learning mathematics and didactical challenges and demands hereof]. May-Conference, Centre for Educational Development in University Science (DCN), Aalborg University. Skørping, DK. 12-13 May 2004.

Presenter: Nasjonalt senter for matematikk i opplæringen [The Norwegian Centre for Mathematics Education]. Board meeting of the Norwegian Council of Mathematics (NMR). Norwegian University of Science and Technology, Norway. 14 March 2003.

Presenter: Spesielt begavede elever i matematikk [Gifted pupils in mathematics]. Part of a special education course. Course instructor: Geir Botten. Sør-Trøndelag University College, Teacher Education Program, Trondheim, Norway. 22 January 2003.

Presenter: Nasjonalt senter for matematikk i opplæringen [The Norwegian Centre for Mathematics Education]. Meeting, the National Council of Teacher Education (NRLU). Norwegian University of Science and Technology, Norway. 27 November 2002.

Panellist: Foreløbige forskningsresultater fra projektet om erhvervsuddannelsernes kvalifikationskrav til matematik [Preliminary research results of the project on the qualification requirements in mathematics at the vocational schools in Denmark]. The Danish National Institute for Educational Research (DPI). In a panel with Senior Researcher Ole Bredo. Meeting with the Background Committee which took place at the Danish Metal Workers' Union, Copenhagen, DK. 21 September 1998.

Presenter: Sprogspil og filosofi: Filosofiske overvejelser i specialet [Language-games and philosophy: Philosophical considerations in the Master's thesis]. Saturday Seminar: "What is Philosophy?" before the Annual General Meeting of the Philosophical Society of Northern Jutland, Aalborg, DK. 23 March 1996.

### ***INTERNATIONAL conference presentations and panel participations***

Presenter: Mathematics students' attitudes to group-based project exams compared to students in science and engineering. Paper presented at CERME10, the Tenth Congress of the European Society for Research in Mathematics Education. Dublin, Ireland, 1-5 February 2017. Held 3 February.

Co-presenter with Pia Bøgelund. Assistant professors' expectations and understandings of PBL group supervision: Three cases of lack of prior experience in PBL. IRSPBL - Panel Format - Session 16: PBL learning outcomes. Moderator: Nestor Arana-Arexolaleiba. International Joint Conference on the Learner in Engineering Education (IJCLEE 2015) - The 5th International Research Symposium on Problem Based Learning (IRSPBL 2015). San Sebastian, Spain, 6-9 July 2015. Held 9 July.

Presenter: Assessment of University Students' Teamwork Competencies in Group Projects. PME38 – PMENA 36 (38th Annual Conference of the International Group for the Psychology of Mathematics Education & the 36th Conference of the North American Chapter of the Psychology of Mathematics Education), Vancouver, Canada. 15-20 July 2014. Held 17 July.

Presenter: Students and Supervisors' Views of Individual vs. Group Based Project Exams in Engineering Education. 41<sup>st</sup> SEFI (European Society of Engineering Education) Annual Conference, Leuven, Belgium. 16-20 September 2013. With Anette Kolmos. Held 18 September.

Presenter: The learning approaches of university students in a required mathematics course. PME37 (37th Annual Conference of the International Group for the Psychology of Mathematics Education), Kiel, Germany. 28 July - 2 August 2013. Held 1 August.

Co-presenter of paper: Reconstructing the Aalborg Model for PBL – a Case from the Faculty of Engineering and Science, Aalborg University. 4<sup>th</sup> International Research Symposium on Problem Based Learning (IRSPBL), Kuala Lumpur, Malaysia, 2-3 July 2013. Together with Anette Kolmos. Held 3 July.

Presenter: University students' incoherent concept definition images of continuity and asymptotes. PME36 (36th Annual Conference of the International Group for the Psychology of Mathematics Education), Taipei, Taiwan. 18-22 July 2012. Held 20 July.

Presenter: University students' concept image and retention of the definite integral. Research Report, PME35 (35th Annual Conference of the International Group for the Psychology of Mathematics Education), Ankara, Turkey. 10-15 July 2010. See 2011d. Held: 11 July.

Presenter: The retention of key derivative concepts by university students on calculus courses at a Croatian and Danish university. Research Report, PME34 (34th Annual Conference of the International Group for the Psychology of Mathematics Education), Belo Horizonte, Brazil. 18-23 July 2010. See 2010f. Held: 20. July.

Presenter: Transition problems in mathematics that face students moving from compulsory through to tertiary level education in Denmark: Mismatch of competencies and progression. Research Report,

PME33 (33th Annual Conference of the International Group for the Psychology of Mathematics Education), Thessaloniki, Greece. 19-24 July 2009. See 2009d. Held: 22 July.

Presenter: A Brick in the Wall of Mathematics Education Research in Number Systems and Arithmetic. TSG 10 (Topic Study Group), ICME-11 (The 11th International Congress on Mathematical Education), Monterrey, Mexico. 6-13 July 2008. See 2008i.

Roundtable: Universities as Catalysts for Community Building among Informal STEM educators: The Story of POISED (POISED: Partners for Outreach in Informal STEM Education; STEM: Science, Technology, Engineering, Mathematics). Co-presenters: Cecile Cachaper & Laura J. Spielman (Radford University, VA, USA). AERA (American Educational Research Association) Annual Meeting, New York, USA. 24-28 March 2008. See 2008h.

Presenter: Changing grading-scales in higher education as a part of the Bologna Process – the case of Denmark, Norway and Sweden. Co-presenters: Eirik Lien (Norwegian University of Science and Technology) & Åsa Lindberg-Sand (Lund University, Sweden). Network 11 (Higher Education), NERA's (Nordic Educational Research Association) 36th Conference, Copenhagen, DK. 6-8 March 2008.

Presenter: Improving university students' learning through education policy borrowing? Danish university management reforms and new grading scale. The Oxford Centre for Staff and Learning Development's (OCSLD) 15th Improving Student Learning Symposium (ISL), Trinity College, Dublin, Ireland. 3–5 September 2007. See 2008j.

Presenter: Contrasting dichotomies and pendulum swings in mathematics curricula: A comparison between Virginia and Denmark. 49th Annual Conference of the Comparative and International Education Society (CIES 49). Stanford University, California, USA. 22-26 March 2005.

Presenter: How do gifted students become successful? A study in learning styles. TSG 4 (Topic Study Group 4): Activities and programmes for gifted students, at ICME-10 (the 10th International Congress on Mathematical Education). Copenhagen, DK. 4-11 July 2004. See 2004f.

Presenter: Development of a democratic Europe: The use of education policy. 48th Annual Conference of the Comparative and International Education Society (CIES 48). Brigham Young University, Salt Lake City, Utah, USA. 9-12 March 2004. See 2004g.

Panellist: PRESTiGE: Overview of the Results of a 5-year EU Training and Research Network. 48th Annual Conference of the Comparative and International Education Society (CIES 48). Brigham Young University, Salt Lake City, Utah, USA. In a panel with: David Phillips (University of Oxford, UK), Mina O'Dowd (Lund University, Sweden) & François Orivel (Université de Bourgogne, France). 9-12 March 2004.

Presenter: What can we learn about cognitive learning processes by asking the pupils? Research Report, PME27 (27th Annual Conference of the International Group for the Psychology of Mathematics Education) held jointly with PMENA25 (PME-North American Chapter), Honolulu, Hawaii, USA. 13-18 July 2003. See 2003h.

### ***NATIONAL conference or symposia presentations and panel participations***

Presenter: Få meget ud af lidt: Workshops til universitetsstuderende i naturvidenskabelig formidling i uformelle læringsmiljøer [Get a lot out of a little: Workshops for university students in science communication in informal learning sessions] 18th Danish University Pedagogical Network's (DUN) conference. Presentation of work done in collaboration with Line Stald (Aarhus University, DK). Trinity, Fredericia, DK. 29-30 May 2012.

Presenter: A study using the SOLO taxonomy to investigate course progression and course characteristics at university science departments. Colloquium, Department of Science Studies, Aarhus University, DK. Presentation of work done in collaboration with Claus Brabrand. 3 November 2008.

Presenter: Progressionsanalyse af læringsmål der er kvantificeret ved brug af SOLO-taksonomien [Progression analysis of Learning Objectives that have been made Quantifiable using the SOLO taxonomy] 13th Danish University Pedagogical Network's (DUN) conference. Presentation of work

done in collaboration with Claus Brabrand (Aarhus University, DK). Aalborg University, DK. 31 May – 1 June 2007.

Presenter: Dygtige elever i matematik: Hvordan lærer de det? [Good students of mathematics: How do they learn it?]. Colloquium, Steno Department for Studies of Science and Science Education, Aarhus University, DK. 19 February 2007.

Presenter: How to Navigate Between Many Different Learning Theories and Pendulum Swings. The 28th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM). Virginia Tech, USA. 10-11 March 2006.

Presenter: The dilemma and challenges of different theoretical frameworks of learning. The VCTM Research Session at the 28th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM), Virginia Tech, USA. 10-11 March 2006.

Panellist: Cultural Diversity and International Education: The Case of Ethnomathematics. The Third Annual Mid Atlantic Conference on the Scholarship of Diversity (MACSD). Virginia Tech (VT), USA. 2-3 February 2006. Panel title: "Cultural Diversity in a global context". Chair: Josiah Tlou (School of Education, VT). Co-panelist: Ioannis Stivachtis (Department of Political Science, VT): "The International Order in a Multicultural World: Challenges for the 'International' University", Xi Chen (Department of Political Science, VT): "Human Rights, Global Social Justice and Cultural Diversity: Myth or Reality? The Case of China" & Scott Nelson (Department of Political Science, VT): "A Normative Approach to Internationalizing Political Science Curricula". See 2006d.

Presenter: Various theoretical frameworks in concept construction and how to move forward as a field. Working paper presented at Mathematics Education Seminar; School of Education, Virginia Tech, USA. 5 December 2005.

Presenter: Analysing cognitive learning processes through group interviews of successful high school pupils: Development and use of a model (see 2004b). Mathematics Education Seminar; School of Education, Virginia Tech, USA. 27 September 2004.

Presenter: Hamper or helper? The role of language in learning mathematics. MADIF-4: The Fourth Swedish Mathematics Education Research Seminar; Swedish Society for Research in Mathematics education; Malmö, Sweden. 21-22 January 2004. See 2004h.

Presenter: Flinke elever på videregående skoler i Danmark og England forteller om sine læringsprosesser [Good high school pupils in Denmark and England tell about their learning processes]. Lunch Seminar; The School Laboratory for Mathematics, Natural Science, and Technology; Norwegian University of Science and Technology, Norway. 21 August 2003.

Panellist: The PRESTiGE European Union TMR Network. Research Group Meeting, Comparative and International Education, Department of Educational Studies, University of Oxford, UK. In a panel with: David Phillips (University of Oxford, UK), António Nóvoa (Lisbon University, Portugal), Hubert Ertl (Paderborn University, Germany) & Anastasia Economou (University of Oxford, UK). 8 November 2001.

Presenter: Development of a psychological framework for analysis. Unpublished working paper. The Department of Mathematics and Physics (IMFUFA) education-seminar, Roskilde University, DK. 28 February 2001.

Presenter: Preliminary research results of PhD work. The Department of Mathematics and Physics (IMFUFA) education-seminar, Roskilde University, DK. 26 August 1999.

***Invited chairing and moderating at conferences, seminars, and professional meetings – INTERNATIONAL audience***

Reactor: CERME10, the Tenth Congress of the European Society for Research in Mathematics Education, TWG 21: Assessment in Mathematics Education. Dublin, Ireland, 1-5 February 2017. Held 2 February.



Moderator. IRSPBL - PBL Format - Session 6: PBL examples. D. Centea & S. Srinivasan. *Problem Based Learning in the Conceptual Design of Hybrid Electric Vehicles*. E. Triantafyllou, M. Misfeldt, & O. Timcenko. *A Problem-Based Learning Approach of Teaching Mathematics to Media Technology Students Using a Game Engine*. J. Lin. *PBL in PETOE*. International Joint Conference on the Learner in Engineering Education (IJCLEE 2015) - The 5th International Research Symposium on Problem Based Learning (IRSPBL 2015). San Sebastian, Spain, 6-9 July 2015. Held 9 July.

Chair: Short Oral. SO1. 'Teacher knowledge and social phenomena' (swap with N. Presmeg). *Relationship between religious beliefs and views of effective mathematics teaching and learning from the perspective of mathematics teachers.*(Chan, Y-C); *A third-space of mathematical practice: implications for teacher education* (Civil, M.); *Research training needs of practicing mathematics teachers* (Sanchez Robaye, B. J.). PME37 (37th Annual Conference of the International Group for the Psychology of Mathematics Education), Kiel, Germany 28 July – 2 August 2013. Held 29 July.

Chair: Research Report. RR1-08. 'Ways of looking' at quotient spaces in linear algebra. How to get beyond the modern definition? (B. Souto-Rubio & I. Gomez-Chacon). PME36 (36th Annual Conference of the International Group for the Psychology of Mathematics Education), Taipei, Taiwan. 18-22 July 2012. Held 19 July.

Chair: Short Oral. SO05.04: *Exploring Mathematics Teachers' Use of Textbooks: A Mixed Methods Study* (M. Özgeldi, E. Çakıroğlu); *Examining Mathematics Student Teachers' Representations: The Case of Limit Concept* (S. Kula, E. B.-Güzel) & *Designing Professional Development for Mathematics Teachers: A Case Study* (S. Watson & M. Swan). PME35 (35th Annual Conference of the International Group for the Psychology of Mathematics Education), Ankara, Turkey. 10-15 July 2011. Held 14 July.

Chair: Research Report. RRO3.13: *Number sense in children: understanding number as an operator when adding and subtracting* (A. G. Spinillo). PME35 (35th Annual Conference of the International Group for the Psychology of Mathematics Education), Ankara, Turkey. 10-15 July 2011. Held 11 July.

Chair for session: Promising Practices of Out-of-School Programs: Supporting Science Education, Student Engagement, and Academic Outcomes. Several presenters to four presentations. AERA (American Educational Research Association) Annual Meeting. SIG Out-of-School Time. 8-12 April 2011 in New Orleans, Louisiana, USA. Held: 9 April.

Co-chair for Business Meeting. Other chair: David J. Shernoff. AERA (American Educational Research Association) Annual Meeting. SIG Out-of-School Time. 8-12 April 2011 in New Orleans, Louisiana, USA. Held: 9 April.

Chair: Short Orals. SO2.13: *Preservice teachers' approaches in function problem solving: A comparative study between Cyprus and Italy* (A. Gagatsis) & *Learning to solve algebraic equations by teaching a computer agent* (N. Matsuda). PME34 (34th Annual Conference of the International Group for the Psychology of Mathematics Education), Belo Horizonte, Brazil. 18-23 July 2010. Held 19 July.

Co-chair for Business Meeting. Other chair: David Fleming. AERA (American Educational Research Association) Annual Meeting. SIG Out-of-School Time. 30 April – 4 May 2010 in Denver, Colorado, USA. Held: 3 May.

Chair for session: What Mediates Out-of-School Time Program Success? The Role of Parents and Other Factor. Several presenters to five presentations. AERA (American Educational Research Association) Annual Meeting. SIG Out-of-School Time. 30 April – 4 May 2010 in Denver, Colorado, USA. Held: 1 May.

Chair for session: Exploring the relationship between tasks, teacher actions, and student learning (Sullivan, P.; Clarke, D.; Clarke, B.; O'Shea, H.). (Changed session). PME33 (33th Annual Conference of the International Group for the Psychology of Mathematics Education), Thessaloniki, Greece. 19-24 July 2009. Held: 23 July.

Chair for session: Financing Out-of-School Time: Who Provides the Funding and How Much Does It Cost? (Rinehart, J. Afterschool Alliance; Sparks, S. R., Johns Hopkins University; Cahill, S. Rhode Island After-school Plus Alliance), at AERA (American Educational Research Association) Annual Meeting. SIG Out-of-School Time. 13-17 April 2009 in San Diego, California, USA. Held: 14 April.

**Media: TV, radio, and newspapers (NATIONAL)**

Ønske om større sammenhæng mellem matematikundervisningen i folkeskolen og gymnasiet. 26 June 2013: DR P4 Radioavisen 06.00 (resumé)

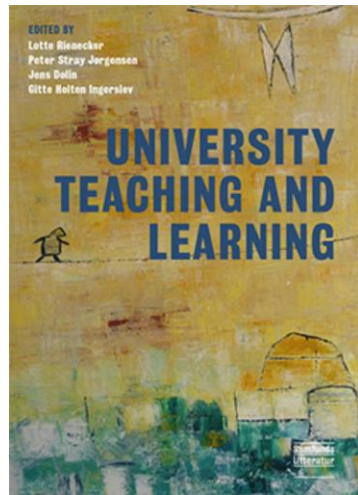
Brat overgang får gymnasieelever til at snuble i matematik. 26 June 2013: (Kristeligt Dagblad) (Kristeligt Dagblad) (Kristeligt-Dagblad.dk) (Thisted Dagblad) (Thisted Dagblad) (Nordjyske Stiftstidende Aalborg) (Nordjyske Stiftstidende Aalborg) (Nordjyske Stiftstidende Himmerland) (Nordjyske Stiftstidende Himmerland) (Nordjyske Stiftstidende Vendsyssel) (Nordjyske Stiftstidende Vendsyssel)

Interview in national TV and news media: In connection with the shooting tragedy at Virginia Tech, Monday 16 April 2007, USA. I did altogether 7 interviews for national or regional news media. 16 April: 1 for a national newspaper, Ekstra Bladet (phone interview evening, published 17 April). 17 April: 2 (taped) for the national TV2 Radio (taped 7 am) and the regional radio DR P4 East Jutland (taped 2:20 pm); 4 for 3 different national TV-programmes: 1 over the mobile phone for TV2 NEWS (7:45 am), 2 direct transmission for TV2 NEWS (11 am) and TV2 Go'Aften Danmark (6:25 pm), and 1 taped for TV2 Nyhederne (taped 12-2 pm, broadcasted 7 pm). 2007.

Interview in local newspaper: 'Drillesyg på Djævleøen': In connection with my online *Nordjysk (local dialect) - Danish dictionary*. <http://web.gvdnet.dk/GVD001352/ordbog.htm>. In *Nordjyske Stiftstidende*. Danish regional daily newspaper, Tuesday 17 June 2003.

Interview in local newspaper: 'Grøde i filosofiens rødder': Together with Lennart Nørreklit (chairman); Claus Rosenstand (deputy chairman); Michael Rasmussen (treasurer). About the founding of the *Philosophical Society of Northern Jutland*. I was then the secretary. In *Aalborg Stiftstidende (Nordjyske Stiftstidende)*, Danish regional daily newspaper, Sunday 19 November 1995.

# Teaching Portfolio - Bettina Dahl Søndergaard



## Table of contents

Teaching philosophy	2
University teaching: Courses	2
University teaching: Supervision and facilitation	6
Primary and secondary level teaching	9
Study visits, courses, and workshops taken	10
Teaching material produced	11
External examination	13
Judge in mathematics and science student contests in out-of-school time events	17
PhD assessment committees etc.	17
Study administration	18
Student evaluations	19
Other university teaching and high school teacher training	23
Contact information	28
Appendix A-I: Teaching material, exam assignment, diploma and recommendations	29-41

# TEACHING PHILOSOPHY

My teaching philosophy is based on my experience as a teacher as well as the knowledge I have gained as a researcher in education, particularly within learning psychology. Students learn in various ways and therefore it is important to use a range of teaching methods and alter between for instance lecturing and other activities. A typical experience for a teacher is that one approach can work well with one class, but the following year it seems to not go as well with an otherwise similar class. Also things like time of day/week have an impact. Through using a variety of teaching styles one can reach more students. However, this has to be balanced with what is possible in practice. I believe that good teaching may also happen in lectures to several hundred students if one uses active learning strategies such as the peer instruction techniques of the Harvard physicist Mazur or techniques from theatre actors and physically move around to underline important points. Another technique which I use a lot, is to simply ask the students not only if they understand what I talk about, but also if there is something in the style of teaching that appeals more, or less, to them. My experience is that showing this interest into the students' learning in itself creates more attention. Overall, I also believe that it is important to remember that teaching at universities is *research-based*. This means that active researchers teach, they teach the newest knowledge, and the teaching style should be *research-like*. Therefore, whenever appropriate, the students should work with the subjects' primary artefacts, sources and data, and not only with textbooks. This also means that students should experience the processes of research at a suitable level, which for instance is done during the project and problem based learning (PBL) teaching style at Aalborg University. Furthermore, too often supervision or facilitation is not perceived as 'teaching'. I believe that teaching is both what happens in a classroom or auditorium in front of a larger group of students and the supervision given to single students or groups working on a project. The style of teaching is different, but the goal is the same.

## UNIVERSITY TEACHING: COURSES

### University of Bergen (N), 2017-

Title	Role	When	ECTS	Level	Language	Exam	Size
Mathematics Education 2 <sup>1</sup> (MATDID202-P)	Course coordinator and teacher	Spring 2017	5	Under-graduate	Norwegian /Danish	Oral or written project	27

### Aalborg University (DK), 2012-

AAU is a PBL university where each semester typically consists of three 5 ECTS courses and one 15 ECTS project where the students work in groups.

Title	Role	When	ECTS	Level	Language	Exam	Size
Didactics of mathematics <sup>2</sup>	Co-taught with M. Haggren Brynildsen, A. I. Parra-Sanchez & M. Misfeldt  Course coordinator	Spring 2017	5	Under-graduate	Danish	Oral	20
PV (Problem Based Learning in Science, Technology and Society) <sup>3</sup>	Taught first-year course for math, math-economics, math-technology, physics, & nanotechnology  Course coordinator	Autumn 2016	5	Under-graduate	Danish	Take home written online. Pass/fail	110
PV	For math, math-economics, math-technology, & physics. Course coordinator	Autumn 2015	5	Under-graduate	Danish	Do	100

<sup>1</sup> Norwegian course name: Matematikdidaktikk 2.

<sup>2</sup> Danish course name: Matematikkens fagdidaktik.

<sup>3</sup> Danish course name: Problembaseret læring i videnskab, teknologi og samfund.

PV	Co-taught with L. Botin (course coordinator). For math, math-economics, math-technology, physics & techno-anthropology	Autumn 2013, 2014	5	Under-graduate	Danish	Do	120
PV	Co-taught with T. J. Hegland (course coordinator) & J. E. Holgaard. For chemistry, environment, biology, health science, & nanotechnology	Autumn 2013	5	Under-graduate	Danish	Do	180
PBL and Project Management in an Intercultural Context (PBL Intro)	Taught land management, cities and sustainability, techno-anthropology, surveying and mapping, environmental management & sustainability science	Autumn 2015	1	Graduate (new to AAU)	English	Active and attend 2/3	30
						Written exam	60
PBL Intro	Taught urban planning and mobility, land management, cities and sustainability, & surveying	Autumn 2014	1	Graduate (new to AAU)	English	Active, attend 2/3	15
MPBL (Master in Problem Based Learning)	Taught Course 2, Semester 3: Research methods for educational evaluation (Sessions: Quantitative research methods & Educational evaluation). Other teacher: E. de Graaff	Autumn 2015	5	Post-graduate (international)	English	Written	4, on-line
MPBL	Taught Course 2, Semester 1: Teaching and learning theories (Session: Teaching and learning in STEM). Other teachers: E. de Graaff & M.-L. Dahms	Autumn 2014	5	Post-graduate (international)	English	Oral, based on essay	7, on-line
MPBL	Course 2 coordinator, at Semester 3	Autumn 2015	5				
MPBL	Semester 1 coordinator	Autumn 2014	15				
*Workshops <sup>4</sup>	'Assessment' and 'Lecturing' Assistant Professor Teacher Training Programme ( <i>Adjunktprædagogikum</i> )	Spring 2014, 15, 16	1-2 half-days	Asst prof & postdocs	Danish & English	Active and attend all	30

### Aarhus University (DK), 2007-12

Teaching at the Faculty of Science at AU is not divided into two semesters each academic year but into four "quarters" consisting of seven weeks of teaching followed by an exam.

Title	Role	When	ECTS	Level	Language	Exam	Size
Mathematics and Computer	Taught and developed. For	Spring 2008, 09,	5	Graduate	Danish	Oral, written	15-40

<sup>4</sup> (\*): See detailed list in the section: "Other university teaching and high school teacher training", including co-teachers.

Science Education <sup>5</sup>	upper secondary level	10, 11, 12				synopsis. Graded	
*Introduction to Science Teaching	Co-developed and co-taught with several	2010 (1), 2011 (2), 2012 (2)	5	PhD	English	Portfolio, ongoing	20-30
*Basic Course on Instruction and Teaching <sup>6</sup>	Co-developed and co-taught with B. L. Nielsen & M. E. Caspersen	Autumn 2009	2.5	PhD	Danish	Student presentation	30
*Workshops in informal science education	Developed & taught with L. J. Stald. For primary level	Spring & summer 2008	3 half days	Graduate & under graduate	Danish	Ongoing, participation	40
*Assistant Professor Teacher Training	Participate in designing, planning, and teaching	2008 (1), 09 (2), 10 (2), 11 (1), 12 (2)	5	Asst prof & postdocs	Danish	Do	45
*Assistant Professor Teacher Training	Do	2009, 10, 11-12, 12-13	5	Asst prof & postdocs	English	Do	40
*Courses in University Teaching (Universitets-pædagogik)	Do. At Faculties of Science & Agricultural Sciences	2007, 08, 09, 10	From hours to days	Academic staff, all levels	Danish English	None	50
*Mathematics education (Fagdidaktik Matematik, Teoretisk Pædagogikum)	Taught high school teachers (Pædagogikum-kandidater og tilsynsførende, htx & hhx)	Spring, summer, autumn 2010	Half-days	In-service training & supervisors	Danish	Ongoing, by active participation	15-20

### Aalborg Teacher Training College (DK), 2006

In Denmark, teacher training for compulsory grades 1-9 does not take place at a university but at what was formerly called a "Seminarium" or a Teacher Training College. Now these are called University Colleges, but for clarity, I have used the old naming. The programmes lead to 4-year professional bachelor degrees.

Details about course	ECTS	Level	Teaching form	Size
Mathematics ( <i>Liniefag</i> ) for grades 1-10	42 (2-3 years)	Under-graduate	Taught three classes. One co-taught w/ H.K.T. Nielsen. One was a credit ( <i>Merit</i> ) class	30

### Virginia Tech (USA), 2004-06

Virginia Polytechnic Institute and State University (Virginia Tech) is a public land-grant university serving the Commonwealth of Virginia, the nation, and the world community. Virginia Tech has state-wide educational facilities in six regions and a study-abroad site in Switzerland. Virginia Tech has teacher training programmes, for instance aimed at middle school (grades 6-8) and high school (grades 9-12).

Title	Course ID	When	Load	Level	Teaching form & role	Exam	Size
Teaching Mathematics in Middle & Secondary Schools I (Math)	EDCI 5724	Fall 2004 & 2005	3 US credits	Graduate	Class teaching. Co-taught 2005	Grades essay & observation	20

<sup>5</sup> Danish course name: Matematikkens og datalogiens fagdidaktik.

<sup>6</sup> Danish course name: Ph.d.-grundkursus om instruktion og undervisning.

methods)  - <i>combined with:</i>  Teaching Mathematics in Middle & Secondary Schools I (Math methods)	EDCI 3724	Do	4 US credits	Under-graduate	w/V.R.P. Bannister		
- & with:  Field Studies in Education	EDCI 5964	Do	3 US credits	Graduate			
Teaching Mathematics in Middle & Secondary Schools II (Math methods)	EDCI 4744 & 5744	Spring 2005 & 2006	3 US credits	Graduate & under-graduate	Class teaching and co-taught 2006 w/V.R.P. Bannister	Lesson plan etc., graded	20
Mathematics for secondary teachers	MATH 4626	Fall 2004	3 US credits	Graduate	Class teaching & student presentations	Math & lesson plan, graded	20
History of mathematics (Independent study)	EDCI 5974	Spring 2005	3 US credits	Graduate	Tutoring	Written play, not graded	1
Internship in Education (student teaching)	EDCI 5754 & 4754	Spring 2005 & 2006	9 US credits	Graduate & Under-graduate	Class teaching & student observation	P/F (5754), A-F (4754); observation, e- portfolio	20
Comparative Analysis of K16 Education Systems	It later ran as an Independent study (w/J. Tlou)		3 US credits	Summer 2006: Developed 1 of 3 courses in a proposed web-based 'Graduate Certificate' in 'International Comparative Education'			
<ul style="list-style-type: none"> <li>- NCATE (<i>The National Council for Accreditation of Teacher Education</i>) accredited institution</li> <li>- 3 US credits <math>\approx</math> 6 ECTS</li> </ul>							

### Norwegian University of Science and Technology (N), 2002-04

Some graduate students did projects in mathematics or physics education. I co-taught this course which is part of the study programme in physics for students wishing to become teachers.

Course title & ID	When	ECTS	Level	Language	Teaching form	Exam	Size
Research methodology for natural science education <sup>7</sup> , MNFEL392	2003	9	PhD & MSc ( <i>Hovedfag</i> )	<i>Norwegian/Danish</i>	Taught the qualitative part, P. M. Kind the quantitative part	Oral, based on paper	4

### Roskilde University (DK), 2000-01

RUC is also a PBL university but has a different structure than AAU.

Title	Details about course	When	ECTS & level	Teaching form	Exam	Size
BASE: mathematical	Mathematical modelling, analysis, and simulation of experimental data from biology,	Autumn 2000 Spring	7.5. First-year	Lecturing and exercises in groups. Team	Individual oral, based on written	60

<sup>7</sup> Norwegian course name: Fagdidaktikk forskningsmetode.

modelling <sup>8</sup>	physics, and chemistry using the computer programme MatLab	2001	BSc	taught w/T. H. Kjeldsen. Had TA	group projects	
------------------------	--	------	-----	---------------------------------	----------------	--

### Aalborg University (DK), 1995-1996

While still being a student at AAU, I taught mathematics three semesters as TA (*Hjælpeleærer*). It was a good experience in how to be a teacher.

Title	Details about course	When	ECTS & level	Teaching form	Size
Mathematics	Fast-track entry programme for adults with a vocational degree who want to study engineering ( <i>Adgangskursus</i> )	Autumn 1995 Spring 1996	Highest high school level	TA, separate rooms with groups of 6-8 students	100
Mathematics 2	Linear algebra etc.	Spring 1995	2nd semester 3 M ≈ 3 ects	Do. Marked mock-exam	100

## UNIVERSITY TEACHING: SUPERVISION AND FACILITATION

### University teachers

I very much enjoy working with university teachers and help them develop into even better teachers. University teachers are highly engaged and passionate about their research and they want to be good teachers. The discussions with them often become like a discussion among colleagues about teaching. But they are also busy people and not educational researchers, and it is a very interesting and exciting challenge to find the right balance between providing them with a theoretical research based understanding of educational issues and practical and useful tips.

Employer	Who supervised	Specification
Aalborg University, DK 2012-	Pedagogical supervisor ( <i>Pædagogisk vejleder</i> ) of assistant professors & postdocs, Faculty of Engineering and Science. Observation of their teaching (usually lecturing), project supervision, and how they hold oral exam, as well as feedback on their teaching portfolio.	1 assistant professor: I. Cascudo Pueyo (Department of <u>Mathematical Sciences</u> ). 2017  2 assistant professors: J. T. Kristensen (Department of <u>Mathematical Sciences</u> ), & K. B. Pedersen (Department of <u>Physics and Nanotechnology</u> ). 2016  5 assistant professors: S. Bøgh, D. Chrysostomou, R. Darula, C.-G. Sanporean, S. N. Sørensen (Department of <u>Mechanical and Manufacturing Engineering</u> ). 2015  3 assistant professors: M. G. Rasmussen (Department of <u>Mathematical Sciences</u> ), A. Sørensen, A. C. Hastrup (Department of <u>Biotechnology, Chemistry, and Environmental Engineering</u> ). 2014  9 assistant professors: M. Dziubinski, T. Tvedebrink, E. Rubak (Department of <u>Mathematical Sciences</u> ), G. Chen, L. Nalpantidis, S. Tommerup, J. Jakobsen, C. G. Olesen (Department of <u>Mechanical and Manufacturing Engineering</u> ), C. Fisker (Department of <u>Physics and Nanotechnology</u> ). 2013
Aarhus University, DK 2007-12	5 groups of Assistant Professors and postdocs	Project supervision at AU's Assistant Professor Teaching Certificate ( <i>Adjunkt pædagogikum</i> ), Module 3. Participants from the Faculty of Science and Technology (a merger of the Faculty of Science, Faculty of Agricultural Sciences, and National Environmental Research Institute). Spring 2011

<sup>8</sup> Danish course name: BASE – et grundkursus i matematisk modellering.



	2 groups of Assistant Professors and postdocs	Do. Participants from the <u>Faculty of Science, Faculty of Agricultural Sciences, and National Environmental Research Institute</u> . Autumn 2010
--	---	--

## Students

I very much enjoy being a supervisor to students as it gives me the opportunity to over a longer period interact on a regular basis with students about the topic. I find it rewarding to see them grow and become more competent and the fact that this type of teaching happens in a much smaller setting than a usual lecture hall/auditorium makes it easier to discuss and explain things. It also makes it easier to aim my supervision at exactly where they are. I usually aim at developing a friendly atmosphere, without actually becoming their friend. Some boundaries are necessary as they need to later take an exam where I will be the examiner, and they also need to develop independency. Furthermore it is sometimes needed to exclude a student from a group if the student does not commit to the group and then a professional distance is needed. There are different types of supervisor roles and I probably take on most of these roles at different times. As *process supervisor* I give advice on how they collaborate and do project management and as *product supervisor* I give concrete feedback to written text both in terms of what is actually written and how it is written but also suggestions for improvements. As a *laissez-faire supervisor* (which may sound negative, but it is not) I try to make the students take the lead and then motivate and encourage them, including pushing them to become their very best but sometimes students need the *control supervisor* who steps in and intervenes when, or before, they get completely off into a wrong direction. Often it depends on the group or the student which role I take on. Specifically in relation to PhD students, mostly the supervision develops into collaboration, also after the end of the PhD study.

## PhD students

Employer	Who supervised	Specification
Aalborg University, DK 2012-	K. Staffas (Uppsala University, Sweden)	Supervisor. Other supervisor: E. de Graaff (AAU). Title: " <u>Developing requisite motivation in engineering studies: A study on a master and bachelor program in electronic engineering at Uppsala University</u> ". Defended March 2016
	H. bin Mohamad	Supervisor. Main supervisor: E. de Graaff (AAU). Title: " <u>The impact of Problem-Based Learning on students' competencies in technical vocational education and training</u> ". Defence expected autumn 2017
Aarhus University, DK 2007-12	Lj. Jukić Matić (J. J. Strossmayer University of Osijek, Croatia)	PhD supervisor: " <u>Teaching and learning outcomes in undergraduate calculus courses for students of technical and science studies in Croatia and Denmark</u> ". Thesis submitted to University of Zagreb, Faculty of Science, Department of Mathematics, Croatia. Other supervisor: F. M. Brueckler, University of Zagreb, Croatia. Committee consisted of (besides BDS and FMB): S. Ungar, A. Cizmesija, and Ž. Milin-Šipuš. Defended July 2011

## Graduate students

Employer	Who supervised	Specification
University of Bergen, N 2016-	3 students, TBA	Supervision of 60 ECTS Master theses in mathematics education
Aalborg University, DK 2012-	Fernando José Rodriguez Mesa	Design and planning of a PBL semester. 5 ECTS project as part of the MPBL (Master in Problem Based Learning), Semester 2, spring 2016
	L. F. de C. Andrade & R. J. Lawlor	Teaching portfolio. 5 ECTS project as part of the MPBL (Master in Problem Based Learning), Semester 1, autumn 2014

Aarhus University, DK 2007-12	C. Danielsen	Master's Thesis (in Danish), 30 ECTS: " <u>High school teachers' evaluation of the use of CAS on the pupils' algebraic skills</u> " <sup>9</sup> . 2011
	P. Hoveroust	Master's Thesis (in Danish), 30 ECTS: " <u>Can high school pupils with mathematics anxiety learn better heuristic?</u> " <sup>10</sup> . 2011
	P. Hoveroust	Mathematics education project (in Danish), 5 ECTS: " <u>Progression in mathematical competencies from Bachelor to Master level at Aarhus University</u> " <sup>11</sup> . 2010
	U. H. Antonsen	Master's Thesis (in Danish), 30 ECTS: " <u>Specialised Study Projects in [high school] Mathematics and Social Science: A Theoretical and Empirical Study of Interdisciplinarity and Mathematical Competencies</u> " <sup>12</sup> . 2009
Virginia Tech, USA 2004-06	16 students	<ul style="list-style-type: none"> <li>- Observation of internship and student teaching (with TAs)</li> <li>- Advisor (approved their Plan of Study)</li> <li>- Supervised and led all 16 graduate students in the programme to the <i>Masters Comprehensive Exam</i></li> <li>- Included feedback to each student' electronic portfolio developed to satisfy this exam</li> <li>- Included planning and cooperating teacher (and principal) meetings</li> </ul> <p>Names: J. Abramson, K. Barber, M. Bauer, A. Brown, H. Dickenson, M. Gerhart, N. Glover, K. Gravett, S. Hannah, M. Keaney, M. Lasken, K. Macted, M. Pac, L. Shankman, M. Vodicka, A. Wilson</p>

## Undergraduate students

Employer	Who supervised	Specification
Aalborg University, DK 2012-	3 groups of students	Co-supervisor ( <i>Bivejleder</i> ). 3 groups of <u>physics</u> students. Main supervisors: M. Brincker, C. B. Sørensen & E. J. H. Skjølstrup. Topic: Thermodynamic and optical properties of gases. Second semester, 2017
	10 groups of students	Co-supervisor ( <i>Bivejleder</i> ). 5 groups of <u>mathematics</u> students and 1 single person. Main supervisors: L. K. Jørgensen & O. Geil. Theme: Communication via covert channels and social media & Combinatorics: graph theory and optimisation. 4 groups of <u>physics</u> students. Main supervisors: M. Brincker & E. Skovsen. Topic: Thermodynamic and optical properties of gases. Second semester, 2016
	6 groups of students	Co-supervisor ( <i>Bivejleder</i> ). 4 groups of <u>mathematics</u> students. Main supervisors: M. H. Brynildsen & L. K. Jørgensen. Theme: Combinatorics: graph theory and optimisation. 2 groups of <u>physics</u> students. Main supervisor: M. Brincker. Topic: Thermodynamic and optical properties of gases. Second semester, 2015
	9 groups of students	Co-supervisor ( <i>Bivejleder</i> ). 6 groups of <u>mathematics</u> students. Main supervisors: L. K. Jørgensen & O. Geil. Theme: Combinatorics: graph theory and optimisation. 3 groups of <u>physics</u> students. Main supervisors: P. Simensen & M. L. Trolle. Topic: Thermodynamic and optical properties of gases. Second semester, 2014

<sup>9</sup> Danish title: CAS-værktøjer i Gymnasieskolens Matematikundervisning: Gymnasielærernes vurdering af CAS-værktøjernes effekt på elevernes algebraiske færdigheder og konsekvenserne deraf.

<sup>10</sup> Danish title: Kan elever med matematiksræk hjælpes med matematisk problemløsning?

<sup>11</sup> Danish title: Lever håbet om progression i matematiske kompetencer fra Bachelor- til Kandidatdelen af matematikstudiet på Aarhus Universitet?

<sup>12</sup> Danish title: Studieretningsprojekter i matematik og samfundsfag: et empirisk og teoretisk studie af tværfaglighed og matematiske kompetencer.

Aarhus University, DK 2007-12	B. D. Laursen	Bachelor's Thesis (in Danish), 10 ECTS: " <u>The Role of Proofs and Proving in the Danish High School</u> " <sup>13</sup> . 2009
Virginia Tech, USA 2004-06	29 students	Supervised (w/TAs) all undergraduate students in the Bachelor programme in secondary mathematics education (see also under graduate students)  Names: J. Biber, J. Booker, J. Caracciolo, W. Carpenter, A. Clayton, B. Cook, R. Cox, J. Craig, L. Foster, B. Hamilton, K. Hogan, B. Huber, W. Hughes, E. Kelly, N. Kezmarsky, S. Kole, S. Larimer, P. Lillard, K. Massey, S. Mead, A. Mook, S. Murray, J. Nemeč, M. O'Neill, T. Preston, A. Riabtsev, B. Ro, J. Stephens, K. Texler

## Teaching assistants

Employer	Who supervised	Specification
Aalborg University, DK 2012-	H. W. Routhe	External lecturer on the PV-course, 2016
Aarhus University, DK 2007-12	N. Anker & L. Thorsen	Teaching Assistants at the course Mathematics and computer science upper-secondary education, 2012
Virginia Tech, USA 2004-06	O. Rivera-Marrero (PhD. student) C. C. Dietrich (PhD.) E. Pack (retired mathematics teacher)	Had 2 Teaching Assistants (TAs) yearly to assist me with the observations of student internship/student teaching

## PRIMARY AND SECONDARY LEVEL TEACHING

Prior to starting my work on the PhD thesis, I taught mathematics and social science for a year at a Danish high school. Since my PhD and a lot of my later research is on secondary mathematics education, it has been rewarding for me research-wise to have experience meeting real students. It among other things taught me how difficult it was to actually apply an education theory into a real classroom. So many things are happening inside a classroom and the gap from real life to the education theories is wide. Although one year of teaching high school is not a lot, this real life experience makes it, in my opinion, easier to both find relevant research areas but also to communicate with teachers about teaching. Also my experience as a supply teacher gave me some ideas about how gifted education and lower secondary education happens in the real world – even though my supply teaching experience is rather limited.

MentlQa Nordjylland, Aalborg, DK	<ul style="list-style-type: none"> <li>○ Private school for gifted pupils</li> <li>○ Spring 2010</li> <li>○ Supply teacher (<i>Vikar</i>)</li> <li>○ Combined grade 7 and 8, mathematics</li> </ul>
Aalborg Katedralskole, DK	<ul style="list-style-type: none"> <li>○ High School</li> <li>○ 1997-1998</li> <li>○ Full time, full school year (<i>Årsvikar</i>)</li> <li>○ Mathematics, 2 classes</li> <li>○ Social science, 1 class</li> <li>○ Used ICT</li> <li>○ Organised study visits outside of school and visits from political parties and organizations in class</li> <li>○ Administered 3 oral exams</li> </ul>

<sup>13</sup> Danish title: Beviser og bevisførelsens rolle i gymnasiet.

Skipper Clement Skolen, Aalborg, DK	<ul style="list-style-type: none"> <li>○ Private school up to grade 10</li> <li>○ Spring 1995</li> <li>○ Supply teacher (<i>Cykelvikar</i>)</li> <li>○ Danish</li> </ul>
-------------------------------------	--

## STUDY VISITS, COURSES, AND WORKSHOPS TAKEN

### Formal teacher training

I have part of the Danish teacher training for high school teachers (*Pædagogikum*) relating to theories of education and subject didactics of mathematics (see Appendix A). I also passed a course in “Supervising Student Teachers” at Virginia Tech, School of Education (SOE), aimed for people who supervise prospecting teachers. Focus was on application of general supervisory principles to the student teaching experience. Training was provided in skills needed for the practice of a clinical approach to supervising student teachers. Special attention was given to protocols for serving in a liaison role for the university to the public schools and to alternative procedures for evaluating student teachers (see Appendix B). I also took PhD courses offered by the Centre for Educational Development in University Science (DCN) in e.g. 'Epistemology and Learning' (2.5 ECTS). In total it amounted to 10 ECTS. DCN was a collaboration between seven Danish universities: Aalborg University (headquarters), Copenhagen University, the Danish University of Education, the Pharmaceutical University, Roskilde University, the Royal Veterinarian and Agricultural University, and the University of Southern Denmark. At Aalborg University I also participated in two PhD supervisor workshops each of a full day length. These were organised by the PhD Office for the Faculty of Medicine and the Faculty of Engineering and Science. The workshop included assignment such as preparing a PhD Supervisor Letter and the workshops were rewarded with a diploma (see Appendix C for diploma and PhD Supervisor Letter).

### Non-formal teacher training

I have taken many pedagogical courses and workshops in Denmark, Norway, and USA and I also gained knowledge during seminars about educational issues at my work places. I have also been part of several study visits focusing on educational issues. As can be seen in my PhD diploma, I got an evaluation of my teaching while I was at Roskilde University.

The smaller courses listed below at Virginia Tech, USA (those without ECTS annotations) were of the length “an afternoon”. This is indicated as ½ dy (day), and the courses were given by either the *Faculty Development Institute* (FDI) or *Center for Excellence in Undergraduate Teaching* (CEUT). At Virginia Tech there was not a formal mandatory pedagogical training of Assistant Professors, but all academic staff (termed ‘faculty’ in the USA) had the opportunity to take the below mentioned courses for free. I also took a workshop about Effective Program Evaluation at the Office of Educational Research & Outreach (OERO). I also sat in on some workshops offered by the Center for Teaching and Learning (CTL), Stanford University, USA, while I was a visiting scholar.

I try to participate regularly in such courses to get new ideas to improve my own teaching but also to get ideas I can pass on when I teach teaching courses myself. Another thing I find very useful is to speak with colleagues about how they teach similar courses as mine. I find that my colleagues are usually very happy to share their teaching material with their fellow colleagues and I gladly do the same. This way we all learn from each other.

### Overview

#### University teaching

PhD Supervisor Workshop 2 15 h	AalUni (Sund,Teknat), DK	2016
PhD Supervisor Workshop 1 12 h	AalUni (Sund,Teknat), DK	2016
PBLAcadSem: Exploring intercult. competencies in relation to PBL ½dy	Aalborg University, DK	2016
PBL Academy Seminar: Flexible Learning Environments ½ dy	Aalborg University, DK	2015
PBL Academy Seminar: Developing student competencies w/PBL ½ dy	Aalborg University, DK	2015
PV Course Seminar: PBL in Science, Technology & Society 1½ dy	Aalborg University, DK	2015
PV Course Seminar: PBL in Science, Technology & Society 1 dy	Aalborg University, DK	2014
Learning Lab Seminar: Ways of supervising assistant professors ½ dy	Aalborg University, DK	2013
Effective Public Speaking in Academic Settings ½ dy	Stanford Uni (CTL), USA	2011
Fundamentals of Leading Effective Discussions ½ dy	Stanford Uni (CTL), USA	2011
Received peer supervision on my workshop facilitation ½ dy	Aarhus University, DK	2011
CSE Seminar: Organizing and facilitating workshops & teaching 2 dy	Aarhus University, DK	2011
UPNet Seminar: How to do university teacher training 2 dy	Aarhus University, DK	2010
Mentored (Adjunktmentor) by Associate Professor Poul V. Thomsen	Aarhus University, DK	07-08
<b>Supervising Student Teachers 1 US credit ≈ 2 ECTS</b>	Virginia Tech (SOE), USA	2004
Motivating Your Students: Strategies for Design & Implementation ½ dy	Virginia Tech (FDI), USA	2005
Using Acting Techniques in the Teaching & Learning Process ½ dy	VirginiaTech(CEUT), USA	2005
<b>University Science Education (PhD courses) 10 ECTS</b>	Aalborg Uni (DCN), DK	00-02

### E-learning

Moodle introductions, E-lærings Samarbejdet ved AAU – ELSA ½ dy	Aalborg University, DK	2012
Video Production: Planning and Shooting Digital Video ½ dy	Virginia Tech (FDI), USA	2006
Test Creation for Distance Classes Brownstone Diploma ½ dy	Virginia Tech (FDI), USA	2005
Blackboard6: Create Web-based Courses, Question Pools, Gradebook 1dy	Virginia Tech (FDI), USA	2005
eLearning Assessment Methods ½ dy	Virginia Tech (FDI), USA	2005

### Upper Secondary Mathematics Teacher Training, grades 10-12

Theory of education (Teoretisk pædagogikum) 1 & 2 (of 3) 1 week	Ministry of Education, DK	1997
'Mathematics Competence' (Tildelt Fagkompetence i matematik)	Ministry of Education, DK	1997

### Testing & assessment

Scoring Performance Assessments; prof.dev. & training course ½ dy	AERA Annual Meeting USA	2008
Effective Program Evaluations ½ dy	Virginia Tech (OERO), USA	2006
Study visit: Qualifications and Curriculum Authority (QCA) ½ dy	QCA, London, UK	2003
Study visit: Office for Standards in Education (Ofsted) ½ dy	Ofsted, London, UK	2003
Seminars: CAT (Computer Adaptive Testing) 2 dy	University of Bergen, N	2003

### Other qualifications and certificates

Statutory Work Environment (Lovpligtig arbejdsmiljøuddannelse) 3 dy	AAU - Crecea A/S	2016
DTF Tour Referee (Turneringsreferee, Danske Tennis Officials) 1 dy	Dansk Tennis Forbund	2016
The First Aid Test, bronze badge (Danish Home Guard, HJV) 32 h	Danish First Aid Council	2009
Emergency Aid for appointed persons, OU First Aid Unit ½ dy	University of Oxford, UK	2000

## TEACHING MATERIAL PRODUCED

I often supplement textbooks with own material and for the PV-course at Aalborg University, I choose all the teaching materials through a mix of textbooks, articles, and online material including video clips. The appendices show three examples. Appendix D is from Virginia Tech about the Topaze and Jourdain-effects in teaching used in a course teaching secondary mathematics education. The purpose was that the students should learn these specific educational concepts and be able to apply them in practice. The example in Appendix E is from the PV-course at Aalborg University. It is an example where students in the auditorium sit and discuss two versions of a problem statement for second semester physics. In this way one can have active learning even in large auditoria. Appendix F is from a workshop about lecturing techniques for assistant professors at Aalborg University.

I am a co-author of several textbooks and have been part of producing a number of teaching videos. Writing or producing such material is a very different process than writing a research paper. I find it rewarding as my research area is in education, hence my ultimate goal is to help improve the teaching and learning. Finding ways to communicate research based knowledge to teachers is important to me.

### Textbook chapters and texts

1. Dahl, Bettina & Troelsen, Rie (2015). Lecturing. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 179-188). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
2. Andersen, Hanne Leth; Dahl, Bettina; & Tofteskov, Jens (2015). Assessment and Exams. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 369-408). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
3. Dahl, Bettina & Krogh Lone (2015). Teaching portfolios. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 445-454). University teaching and learning. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1960-4.
4. Dahl, Bettina & Troelsen, Rie (2013). Forelæsning [The lecture]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 177-187). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
5. Andersen, Hanne Leth; Dahl, Bettina; & Tofteskov, Jens (2013). Eksamen [The exam]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 369-408). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
6. Dahl, Bettina & Krogh Lone (2013). Undervisningsportfolio [Teaching portfolio]. In (Eds.) Lotte Rienecker, Peter Stray Jørgensen, Jens Dolin & Gitte Holten Ingerslev (pp. 445-455). Universitetspædagogik [Textbook university teaching]. Frederiksberg: Samfundslitteratur. ISBN: 978-87-593-1637-5.
7. Corry, Aino & Dahl, Bettina (2011). The Teaching Portfolio. *Developing Good Teachers and Scientists*, Vol. 1. 14 pages. ISSN: 2245-0556.  
[http://stll.au.dk/fileadmin/site\\_files/science.au.dk/files/CSE/Media/PDF/Ressourcer/TeachingPortfolio\\_endelig\\_udgave\\_16.05.2012.pdf](http://stll.au.dk/fileadmin/site_files/science.au.dk/files/CSE/Media/PDF/Ressourcer/TeachingPortfolio_endelig_udgave_16.05.2012.pdf)
8. Dahl Søndergaard, Bettina (2007). Diagnostiske tests og deres anvendelse i matematikundervisningen: Et eksempel på formativ evaluering [Diagnostic tests and their use in the teaching of mathematics: An example of formative assessment]. In (Ed.) Bodil Christensen, *Faglighed, test og evalueringskultur (Series): Evaluering og test i matematik*. Vejle: Krogh, pp. 61-76. ISBN: 978-87-624-0855-5.

### Video clips

9. Video recording about the PBL model at AAU (in Danish) (2015). For use in high school teaching in connection to AAU On Demand. Recorded by Hussain, Ahmed. 17 February 2015.  
Five teaching videos (in Danish) about PBL (2015). Recorded by Mikkelsen, Beni Maroc. 30 January 2015:
10. Gruppearbejde: Hvordan håndterer man problemer med et gruppemedlem? [How to handle problems with a group member] [https://www.youtube.com/watch?v=HH1sdj\\_WMn4](https://www.youtube.com/watch?v=HH1sdj_WMn4)
11. Hvad kendetegner en god projektgruppe (with AAU principal Per Michael Johansen)? [What is a good group?] <https://www.youtube.com/watch?v=UsTvn9rX0Gw>
12. PBL-eksperten: Om forventningsafstemning i projektarbejdet [About adjusting mutual expectations in project work] <https://www.youtube.com/watch?v=fHPJLDZLYjw>
13. PBL-eksperten: "Disse problemer er de mest typiske i projektarbejdet" [Most typical problems in project work] <https://www.youtube.com/watch?v=OysrjXGEuRo>
14. PBL-eksperten: "Dette skal I huske på under gruppedannelsen" [Remember this when you create groups] <https://www.youtube.com/watch?v=EzR5pMnQuyg>
15. Teaching Video – The Oral Exam: High Grade Student (2012). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 19 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>

16. Teaching Video – The Oral Exam: Medium Grade Student (2012). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 19 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>
17. Teaching Video – The Oral Exam: Low Grade Student (2012). With Karen Lauridsen & Ole Lauridsen. Aarhus University, DK. 18 min. Teaching video aimed at the international academic staff taking 'Assistant Professor Teaching Certificate': <http://vimeo.com/intluniversity>
18. Den nye karakterskala: Implementation på NAT/AU (2007). [The new grade scale: Implementation at the Faculty of Science at Aarhus University, Denmark]. With Erik Meinecke Schmidt, Claus Brabrand (chairman), & Hans Kjeldsen. Slides.

## EXTERNAL EXAMINATION

### Membership and vice chairing of Corps of Higher Education External Examiners (*Censorkorps*) in mathematics

I have been an external examiner numerous times at Master's theses, candidate and Bachelor-projects, and oral exams in mathematics education and the philosophy of mathematics (*Videnskabsteori*) at university level. I was furthermore twice appointed by the previous chairman of the Corps of Higher Education External Examiners in Mathematics (H. J. Munkholm) to be chairman of Appeal Boards of cases of student complaints over exams in mathematics education and the philosophy of mathematics. I am also an external examiner at the teacher training colleges in mathematics where I have examined both oral and written exams, including group exams. In Denmark, teacher training for grades 1-9 does not happen at universities but at teacher training colleges.

In general, I find that being an external examiner is a rewarding experience. Discussions with the internal examiner give me insight into how teaching takes place other places and the material and assignment used gives me ideas to improve my own teaching. I also find it rewarding when an external examiner participates in the exam of my courses as it gives me an opportunity to discuss the course and the exam with a colleague who often provides good feedback and ideas. It is also a good opportunity to have a more general discussion about what happens in the field of research. The issue about exam methods is furthermore part of my research area (see CV).

Formally I am part of several corps of external examiners. In Denmark, universities and university colleges are only allowed to use external examiners who have been appointed by the Danish Ministry of Science, Technology and Innovation or the Danish Ministry of Education:

- Corps of University External Examiners: Mathematics
  - Appointed by the Danish Ministry of Science, Technology and Innovation
  - 1/4 2006-31/3 2018 (4-years appointments)
- Vice chair of Corps of University External Examiners: Mathematics  
1/4 2010-31/3 2018 (4-years appointments)

Being a Vice chair includes finding members to an Appeal Board in relation to exam complaints as well as participating in a ministerial meeting in February 2012 with other chairs of corps of higher education external examiners in discussing the reintroduction of the group exam. It also includes discussions of changes to the law about external assessment (autumn 2016).

- Corps of Teacher Training College External Examiners: Mathematics
  - Appointed by the Danish Ministry of Education
  - 1/4 2006-31/3 2018 (4-years appointments)
- Corps of Teacher Training College External Examiners: Bachelor projects (mathematics)
  - Appointed by the Danish Ministry of Education
  - 1/4 2010-31/3 2018 (4-years appointments)

### About Electronic Portfolio exam

This was the Virginia Tech *Masters comprehensive exam*. Each student created a website with information about their teaching philosophy, examples of lesson planning, CVs, and how they would align their teaching to the Virginia *Standards of Learning* (SOLs) and the professional teaching standards from *Interstate New Teacher Assessment and Support Consortium* (INTASC). In many ways I found this to be a good type of exam since it encouraged the students to integrate theory and practice. The students were also supposed to use these websites in job search and their knowledge of IT and websites was an advantage and something Virginia Tech students were famous for. But in relation to the fact that it was a *Master's* exam, the style was not as good in testing what we usually call academic disciplines, and it did not encourage research-based teaching as much as most Danish programmes do, in my experience.

### **About oral exams in mathematics, focus on proofs**

This took place at a Danish high school - *gymnasium*. Exams usually have a backwash effect on the teaching, and since mathematics proof and reasoning is a central part of mathematics, I agree with the central place proofs have in the exam – also at the *gymnasium*. However, usually the proofs are not used in order to enhance the *understanding* of the mathematics, more as a check of their correctness. Also many steps in proofs appear “mysterious” for the pupils. I think that pupils will have a greater profit from working with the proofs in a more explorative manner, at least occasionally, in order to get experience with the process of creating proofs.

### **About oral exams based on a 2-page synopsis**

I used this type of exam in my course in Mathematics and Computer Science Education at Aarhus University. The students had prior to the exam submitted a two-page synopsis to describe a teaching sequence using literature from the course. I chose this type of exam partly since a parallel course in Science Education already existed and used this type of exam and partly since I judged it was the most relevant type of exam as it ensured alignment with my goals and learning outcomes for the course. The students have always gotten good grades but since the style was very new to the students, I gave them the option of submitting a synopsis during the course for feedback. See Appendix G for an example of a student synopsis.

### **About group based exams**

Both as a student myself and as a supervisor at Aalborg University, I have experienced the group based project exam - from both sides so to speak. The group exam was heavily criticized and banned by the government in 2006. A new government changed that decision in 2012, and I have since then done research into this type of exam. Mostly students and examiners at Aalborg University are content with the group exam but there are still challenges and questions about for instance very shy or dominant students, can students hide, how does an examiner keep track of each student in large groups, etc. Groups at Aalborg University can be with up to eight students. The new group exam has an individual part inserted into it, which my research shows is something that is valued highly by the examiners and the students. In general the group based project exam is praised for being able to see how students interact with each other, and it is a more realistic setting that to some extent mirrors their group work and later professional work. In this way the exam is more aligned with PBL competencies such as collaboration. Personally I share both the concerns and the praise. Shy students do seem to suffer but the individual part makes them stand out but seeing the students interact with each other also provides valuable information about how competent they are on both the content and as teammates.

I was also at some point an external examiner at a group exam at a teacher training college. The groups here consisted of two students and for most groups it worked well. However, in very mixed groups where one student was close to failing and the other one was quite good, it was more challenging to make sure that the better student got enough time to shine, since the usual examiner reaction towards students who are close to failing is to give them a little extra time and attention to be sure in judging correctly if they are above or below the passing line. In some circumstances one wondered if the better student was trying to help his/her friend by not appearing “too good”, hence not let the less good student appear even worse by comparison. Such situations can be managed by the examiners but they are more challenging.

### **Development of exams at own university**

In 2011 while I was at Aarhus University, I participated in discussions with students from the Student Council for Mathematics and Physics (*Mat/Fys StudenterRåd, MFSR*) and another university teacher (L. B. Krogh) about designing innovative exams. I find it very rewarding to be able to use my research to help with



concrete advice on exams but it also works the opposite way – dealing with the practice of exams aids forming relevant research topics.

## Experience as internal examiner

### Aalborg University

- Problem Based Learning in Science, Technology and Society (PV), 5 ECTS
  - Written exam, autumn 2013 (two courses), 2014, 2015, 2016 (with Lars Botin, Troels J. Hegland, Carla Smink, or Henrik Routhe)
  - Oral re-exam, February 2014, 2015, 2016 (with Lars Botin, Bente Nørgaard, or Carla Smink)
- PBL and Project Management in an Intercultural Context (PBL Intro, 1 ECTS)
  - The written assignment for students who did not pass by attendance (Autumn 2015)
- Master in Problem Based Learning (MPBL)
  - Course 1, Semester 3: Management of change to PBL (Written, Autumn 2015, 5 ECTS)
  - Course 2, Semester 3: Research methods for educational evaluation (Written, Autumn 2015, 5 ECTS)
  - Project, Semester 1: Teaching portfolio (Written, Autumn 2014, 5 ECTS)
  - Course 1, Semester 1: Teaching and learning theories (Oral, Autumn 2014, 5 ECTS)

### University of Bergen

- Master exam (Avsluttende mastergradeksamen), 60 ECTS
  - 2017, 1 student<sup>14</sup>
  - 2016, 1 student<sup>15</sup>
- MATDID202-P, Oral exam
  - 2016, 1 student

## Experience as external examiner

### University level

Independent study ( <i>Individuel studieaktivitet</i> ), mathematics education, report with written exam, 15 ECTS	University of Southern Denmark - 2012: 1 student
Master's thesis ( <i>Speciale</i> ), w/oral exam, 30 ECTS. Mathematics Education or Mathematics Philosophy	University of Southern Denmark - 2016: 1 student <sup>16</sup> - 2013: 1 student <sup>17</sup> Aarhus University - 2016: 1 student <sup>18</sup> Copenhagen University - 2016: 3 students <sup>19</sup> - 2015: 2 students <sup>20</sup> - 2013: 1 student <sup>21</sup> - 2009: 4 students <sup>22</sup>

<sup>14</sup> T. Berteig: "Praksis i matematikundervisning: En undersøkelse av praksisen til matematikklærere i videregående skole i Buskerud og hvilken holdning de samme lærerne har til å endre praksis".

<sup>15</sup> G. Myhr: "Erfaringsbasert master i undervisning med fordypning i matematikk".

<sup>16</sup> M. Breinholt: "Kompetenceudvikling gjennom fagsamspill mellom matematik og fysik på de gymnasiale uddannelser".

<sup>17</sup> D. Jørgensen: "Undervisning og matematikkens historie".

<sup>18</sup> M. B. Madsen: "Polya og matematisk problemløsning i gymnasieundervisningen med stilladsering som pædagogisk ramme".

<sup>19</sup> C. M. Mattsson: "A Study on Teacher Knowledge Employing Hypothetical Teacher Tasks: Based on the Principles of the Anthropological Theory of Didactics" & M. M. Lindahl & J. Kyhnæb: "Teaching infinitesimal calculus in high school – with infinitesimals".

<sup>20</sup> C. S. Poulsen: "Basic algebra in the transition from lower secondary school to high school" & L. Eriksen: "Studie og forskningsforløb om modellering med variabelsammenhænge på matematik C i gymnasiet".

<sup>21</sup> N. Koefoed: "Et didaktisk design om definition, eksistens og eksakt værdi af bestemt integral".

	- 2007: 3 students <sup>23</sup>
Various projects, 7.5-15 ECTS (Bachelor thesis, Candidate project, Subject project), no oral defence. Mathematics Education	Copenhagen University - 2009: 2 students - 2008: 1 student - 2007: 3 students - 2006: 1 student
Advanced Didactics of Mathematics (DidMatV). 7.5 ECTS. Master's level. Written exam	Copenhagen University - 2014: 15 students
Basic course in Science and Mathematics Education (DidG), 7.5 ECTS, oral exam. Bachelor and candidate level	Copenhagen University - 2010: 22 students - 2008: 24 students
Philosophy of mathematics ( <i>Videnskabsteori</i> ) (VtMat), 7.5 ECTS, oral exam. Bachelor level	Copenhagen University - 2017: 10 students - 2015: 11 students - 2014: 12 students - 2013: 11 students - 2011: 11 students
<b>Teacher Training Colleges</b>	
Mathematics adviser ( <i>Matematikvejleder</i> ), Pedagogical Diploma (PD) (60 ECTS in-service teacher training. Part time. Minimum 2 years of teaching experience required for entry)	Aarhus Teacher Training College (VIAUC) - 2017: 12 students (written) School of Continuing Education, Nørresundby (UCN) - 2015: 1 student (oral) - 2012: 2 students (oral) Odense Teacher Training College (UCL) - 2015: 9 students (written) N. Zahles Teacher Training College (UCC) - 2014: 14 students (written) Holstebro Teacher Training College (VIAUC) - 2012: 10 students (written) Silkeborg Teacher Training College (VIAUC) - 2010: 16 students (oral)
Professional Bachelor Thesis, w/oral exam. Mathematics and Pedagogy	Hjørring Teacher Training College (UCN) - 2015: 5 students - 2012: 2 students Aarhus Teacher Training College (VIAUC) - 2015: 2 students Blaagaard Teacher Training College (UCC) - 2012: 2 students Jelling Teacher Training College (UCL) - 2009: 10 students
Professional Bachelor final oral and/or written exam. Mathematics	Aarhus Teacher Training College (VIAUC) - 2015: 1 student, oral - 2013: 3 students, oral Jelling Teacher Training College (UCL) - 2014: 2 students, oral Aalborg Teacher Training College (UCN)

<sup>22</sup> B. Hansen: "Didaktik på tværs af matematik og historie", N. Ussingkær: "En didaktisk undersøgelse af brudte lineære funktioner i rammerne af tysk fritidsmatematik", H. Ademoovski & H. Ademoovski: "Proportionalitet på mellemtrinnet - Design af didaktiske situationer baseret på stofdidaktisk analyse".

<sup>23</sup> A. Hesselbart: "Mathematical reasoning and semiosis - a theoretical analysis of didactical challenges in learning to prove", J. Tosev: "Forskningslignende situationer - En empirisk, didaktisk undersøgelse af et eksperimentelt matematikforløb for danske gymnasieelever", N. Nørskov: "En covarianstilgang til variable-sammenhænge i gymnasiet - i et semiotisk perspektiv".

- 2013: 24 students, oral & written
- 2010: (Summer, re-exam): 8 oral, 14 written  
Nørre Nisum Teacher Training College (VIAUC)
- 2011: 9 students, oral & written  
Skive Teacher Training College (VIAUC)
- 2008 (Summer, re-exam): 7 students, written  
Hjørring Teacher Training College (UCN)
- 2007: 12 students, oral & written

## JUDGE IN MATHEMATICS AND SCIENCE STUDENT CONTESTS IN OUT-OF-SCHOOL TIME EVENTS

I very much enjoy participating in out-of-school time events. It gives the students an opportunity to work with mathematics or science in another way than in school and they learn to communicate and present their product. It is also an opportunity for them to meet children from other schools. Furthermore it is usually very enjoyable to meet students in these situations.

**Poster competition**, Master class in mathematics for high school pupils in connection with Mærsk Mc-Kinney Møller Videncenter for talents in science

- Sorø, Denmark, 22 April 2010

**FIRST LEGO League**, Scandinavia. Pupils aged 10-16 use LEGO® MINDSTORMS™ Robotics Invention System™ technology to build robots and friendly compete

- Aalborg, Denmark, 7 November 2015 (*Trash Trek*)
- Aarhus, Denmark, 13 November 2010 (*Body Forward*)
- Aarhus, Denmark, 8 November 2008 (*Climate Connections*)
- Trondheim, Norway, 8 November 2003 (*Mission to Mars*)

**CEDAR (Coal Education Development and Resource)** Regional Coal Fair. Mathematics coal-centred student projects (grades 1-12)

- Pikeville, Kentucky, USA, 1 May 2006

## PHD ASSESSMENT COMMITTEES ETC.

PhD assessment committees

Chairman. Thesis by Annette Grunwald, Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering, Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science.  
Title: "Naturfagernes og ingeniøruddannelsernes attraktivitet - set fra et inter-organisatorisk læringsperspektiv". Supervisors: L. B. Henriksen & J. E. Holgaard. Others in committee: L. Metz (Freie Universität Berlin, Germany) and B. Bungum (Norwegian University of Science and Technology).  
Defence: 20 May 2016

Aalborg University, DK

Chairman. Thesis by Mahyuddin Bin Arsat (Din), Department of Development and Planning, UNESCO Chair in Problem Based Learning, Faculty of Engineering and Science.  
Title: "Effectiveness of Sustainability Incorporation in Engineering Curricula; A Framework for Course Design". Supervisors: E. de Graaff & J. E. Holgaard. Others in committee: J. Sagalas (Technical University of Catalonia, Spain) and M. Svanstrom (Chalmers University of Technology, Sweden).  
Defence: 3 June 2014

Aalborg University, DK

	<p><u>Member</u>. Thesis by Levi Esteban Elipane, Department of Science Education, Faculty of Science.  Title: "Integrating the essential elements of lesson study in pre-service mathematics teacher education". Supervisor: Carl Winsløw. Others in committee: M. Bosch (Universita Ramon Llull, Barcelona, Spain) and R. Evans (Copenhagen University, Chair).  Defence: 1 November 2012</p>	Copenhagen University, DK
PhD defence chairing	<p><u>Chair of defence (Ordstyrer)</u>. Expected PhD defence by Alex Montecino Munoz and Melissa Valeska Andrade-Molinos. Expected September 2017.</p> <p><u>Chair of defence (Ordstyrer)</u>. PhD defence by Bart Mitchel Johnson.  Title: Professional Competency Development of Students in a PBL Curriculum. Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering, Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science &amp; Itasca Community College, MN, USA.  Defence: 17 June 2016</p> <p><u>Chair of defence (Ordstyrer)</u>. PhD defence by Verner Larsen.  Title: Faglighed og Problem-Baseret Læring – Vidensstrukturer i Professionsbacheloruddannelser. At Department of Development and Planning, Faculty of Engineering and Science.  Defence: 16 December 2013</p>	Aalborg University, DK  Aalborg University, DK
Assessor of PhD application	<p><u>Co-signer</u>. PhD application by Concetta Ianniello, Department of Development and Planning, Aalborg Centre for Problem Based Learning in Engineering Science and Sustainability under the auspices of UNESCO, Faculty of Engineering and Science.  Signed: 24 September 2015</p>	Aalborg University, DK

## STUDY ADMINISTRATION

### Study Plans / Curricula (*Studieordning*)

At Aalborg University I took part in revising the MPBL (Master in Problem Based Learning) Study Plan (approved 2013) together with Mona-Lisa Dahms (head) and Erik de Graaff. This included a major reworking of the previous programme as this was organised in three modules but we changed the MPBL to four semesters, included limiting the number of optional courses. The change from modules to semesters was due to change in regulations for Master programmes. We also edited the learning objectives of each course and project. See full curriculum: <http://www.mpbl.aau.dk/curriculum/>

At Aalborg University I also took part in the revision of the Bachelor of Mathematics Study Plan (approved September 2015) as I reformulated the learning objectives of the existing course: Problem Based Learning in Science, Technology and Society (PV) and I created the learning objectives and a course description to a new course in the Didactics of Mathematics (*Matematikens Fagdidaktik*) that became an elective at the 4th semester. The revision was led by T. Tvedebrink. See full curriculum: [http://www.ses.aau.dk/digitalAssets/96/96878\\_ba-mat-15.pdf](http://www.ses.aau.dk/digitalAssets/96/96878_ba-mat-15.pdf)

At Aarhus University I took part in the overall planning and organisation of the *Adjunktpædagogikum/Adjunktkurset* (University Teacher Training Programme). This programme was led by Torben K. Jensen. I particularly participated in developing and teaching the Module 2 which was about lecturing techniques.

At Aarhus University I also developed the graduate course in Mathematics and Computer Science Education aimed at upper secondary level. This included writing the learning objectives, list of contents, deciding on textbook, and type of exam. At first this was done in collaboration with Claus Brabrand.

I got experience with curriculum planning very early on since I was a member of the interim Study Board at Philosophy and Theory of Science at Aalborg University, August 1996 - March 1997. I represented the

students at the Faculty of Engineering and Science first as a substitute, then as full member. I took part in writing the first Study Plan. Before that I had been part of an 8-persons working group discussing the possible structure of a completely new study in philosophy and the theory of science. I got this seat from Ole Skovsmose who did not have the time to participate. Lennart Nørreklit was chairman.

### **Programme responsible**

I managed the secondary mathematics education program at Virginia Tech, USA. This means that I had the responsibility of making sure that the students' individual *Plans of Study* fulfilled both Virginia Tech's requirements for a Master's degree and the Commonwealth of Virginia's requirements for teaching licensure. I coordinated and administered the internship and student teaching which included that I visited all the schools to meet the cooperating teachers and give these my instructions, decide on student allocations, and meet with the principals when problems arose. I observed the students' teaching and gave them feedback but I also had assistants who observed the students many more times after guidance by me. I also took part in deciding whom to accept for the graduate programme.

### **Semester coordinator**

Master in Problem Based Learning (MPBL), Aalborg University, DK. 1st semester autumn 2014. The semester theme was: "Development of Teaching Competences". This included coordinating dates and times for sessions and exams and having the general overview of who taught and supervised the two courses and the project.

### **Course Coordinator**

Didactics of Mathematics, Aalborg University, DK. 4<sup>th</sup> semester spring 2017. A course that students can choose at fourth semester if they wish to become high school teachers. Included planning the topics and find co-teachers.

Master in Problem Based Learning (MPBL), Aalborg University, DK. Course 2: "Research methods for educational evaluation", 3rd semester autumn 2015. This included planning which overall topics should be covered at which lectures and find co-teachers and examiner to the course.

Problem Based Learning in Science, Technology and Society (PV), Aalborg University, DK. 1st semester autumn 2015 and 2016. Planning the whole course, exam, and re-exam.

## **STUDENT EVALUATIONS**

When one speaks of evaluation of teaching or training, one sometimes distinguishes between four levels of student responses or outcomes: reaction, learning, behaviour, and results. The first level measures students' immediate reaction which helps a teacher understand how the teaching was perceived and received. This part is important in relation to improving future teaching. However, it is also important to have an idea of what the students 'learnt', regardless of their immediate reaction as well as how the students apply the knowledge they have learnt, ergo their 'behaviour'. Finally the 'result' indicates to what extent what has been learnt and applied has led to good results for the students in their professional life. All four levels are important in order to know the quality of the teaching, but some of these levels also depend on circumstances beyond the reach of the original teacher. For instance the opportunities the students get to apply their knowledge depend on how the curriculum is structured later in the study programme or how a future employer organises the work. University teachers such as myself are usually only able to measure the first two, namely the students' immediate reaction in course evaluations and their learning during exams or course assignments. However, sometimes the behaviour or results can also be seen. Below I will give examples of evaluations in these categories.

### **Reactions**

My teaching at Virginia Tech was evaluated by the students at the end of each course. I passed around the official Virginia Tech questionnaire and hereafter I left the room. The students then anonymously filled out the questionnaire, collected them and passed them on to the secretary in charge of these evaluations. I did not get the results before the beginning of the next semester and the grading of the past semester had finished. I always got good evaluations but I have used the students' comments to further improve my

teaching. Although the overall rating was good (see Appendix H), I learnt from the students' rating of specific points that for instance not all found the textbook adequate. Since there is not one overall textbook that would always fit everybody, I made some course material in addition to the textbook:

*Students' evaluations of teaching at Virginia Tech;  
Scale 1-4; 1: 'poor', 2: 'fair', 3: 'good', 4: 'excellent'*

*How they overall rated my teaching:  
3.3 (Fall 2004), 3.7 (Spring 2005), 3.8 (Fall 2005), 4.0 (Spring 2006)*

In terms of the course in Mathematics and Computer Science Education at Aarhus University, the evaluations were also good, and increasingly good during the years. For instance in 2012 everybody found the course either good, very good (75%) or neutral - at least the 8 (of 36 students) who filled out the course evaluation (see figure below):

Hvordan vil du vurdere kurset som helhed?	Respondenter	Procent(%)
Ved ikke / ikke relevant	0	0,0
Meget dårlig(t)	0	0,0
Dårlig(t)	0	0,0
Hverken / eller	2	25,0
God(t)	5	62,5
Meget god(t)	1	12,5
Antal besvarelser	8	100,0

At Aalborg University I have also received good evaluation of my teaching in PV (Problem Based Learning in Science, Technology and Society). Below is a piece of a minute of a Steering group meeting (*Styringsgruppemøde*) at first semester of Physics (13 October 2014). The students say that I am a very good lecturer ("Kvindelig forelæser er en rigtig dygtig forelæser"):

Problembaseret læring i videnskab, teknologi og samfund (PV):	
Fysik: [redacted]	Kvindelig forelæser er en rigtig dygtig forelæser. (skal følges op på)

In a minute of a similar meeting two years later (18 October 2016), the students were still very content and said the following (in Danish) about the course which now also consisted of students from nanotechnology as well as a teaching assistant:

PV

Underviserne er gode til at hjælpe og komme rundt. Dagsordens-slide er en rigtig god ting, da det hjælper med forståelsen af, hvad man skal igennem i kurset. Humøret er højt, og en masse gode faglige jokes. PV er en god puster, i forhold til de andre tunge fag. Det faglige i PV er godt input til projekterne og det sociale i grupperne.

Procesanalyse-kurset måtte gerne have været der lidt tidligere. Det kom først dagen der skulle afleveres procesanalyse, så det blev lidt hektisk. Næste år må der gerne være en ekstra dag eller to til at lave procesanalysen. Feedback på procesanalysen kom skriftligt, og var egentlig super god, da man kan bruge det til P1.

Videnskabsteori og filosofi delen er gode aspekter til faget. Det letter lidt på faget, da alt andet teori godt kan blive lidt tungt.

Der er lidt for mange sider at læse, men det er rart der lige bliver nævnt, hvor fokus skal være henne i teksten.

De studieretninger der er sat sammen til PV, passer meget godt sammen, da vi har en del om det samme.

At a similar meeting with the mathematics students on (23 November 2016), the students also said that the course was good and useful. Some students from the technical high school found that some of the course content is something they have already learnt. This is true, since this high school also organise teaching in project groups but this is not the case in the several other types of high schools in Denmark:

b. PV:	"Det er fint".
	"På HTX har vi haft meget af pensum i forvejen"
	"Fedt at kunne sende 'proces-tekst' til Bettina i forbindelse med statusseminar"

I am also a co-supervisor at the second semester (P2) of Physics and Mathematics. This co-supervision is a kind of continuation of the PV course in order to help the students implement the tools in their project work. I enjoy doing this co-supervision as it makes it possible to follow the students for a whole academic year and help them grow. I also get good feedback on this. The email below is from the semester coordinators of the second semester of physics and nanotechnology.

**Fra:** Eva Maria Petersen  
**Sendt:** 27. juni 2014 12:49  
**Til:** Jette Egelund Holgaard; Mette Mosgaard  
**Cc:** Esben Skovsen  
**Emne:** feedback on P2 co-supervision from Nano/fys

Dear Jette and Mette,

I guess you remember that we have asked for new co-supervisors on P2 in November. Now that we have finished the first round of co-supervision with the new co-supervisors we would like to give some feedback on the PBL supervision:

██████████ who has been co-supervisor for the nanotechnology students, has done a great job. She has succeeded in showing that the PBL part does not have to be a separate "add-on" part of the P2 project (like it was before), but that it can be a fully integrated part, which complements the technical part perfect. Due to her great commitment the students were inspired and realized the potential of the (PBL, process analysis,...) tools for their project work.

We have also had a very good cooperation with Bettina Dahl Søndergaard, who has been co-supervisor of the physics students. With these student groups we have been unfortunate to have several "bad elements" who have caused a lot of problems for the rest of the students. Bettina has been very good at showing the students how to use the tools from the PV course to handle conflicts related to working in project groups.

Therefore we would really like to continue the cooperation with ██████████ and Bettina on the next year if possible.

Often I make my own mid-term course evaluation in order to find out if there are any problems before the course has actually ended and it is too late to change things. Also, as stated in the Teaching Philosophy, each group of student is different so things that have worked well with other students might not work as well with the present students. I typically ask the students to in groups write up to three things they like about the course and up to three suggestions for improvement. I ask the former question in order to know which things work well and what I should not change. It is also always nice and more pleasant to read about the parts that they are happy with instead of just hearing about what does not work too well. I ask the students to formulate their critiques as areas for improvement instead of just critique as it encourages them to make concrete suggestions for improvement and also aids their development of own study skills and competencies. It also makes it easier for me to have an idea of what might make the situation better. In relation to the PV-course, sometimes (eg. 2015), the issues are very practical for instance asking me to put the PowerPoint slides in pdf-format on Moodle and not just the PowerPoint format, and sometimes it relates to the teaching such as that I can progress faster or that I should include more from the readings into the lecture. In relation to the former, this is something I could quite easily change, and gladly did. But in relation to the latter, a colleague of mine, with whom I discussed the comment, told me that this was in fact not a critique but something good. As university teachers we are not supposed to digest all the material for the students and why should the students do the readings if everything is presented at the lecture. In fact, what I normally do in lectures is to present the key points from the readings and then add something new which is not in the readings to add extra perspectives. It is on purpose that I do not present the more irrelevant points in the readings. The students also need to become able to make judgement about what is important and what is not in the readings. I therefore decided not to make changes in my teaching regarding this point but instead explain more carefully to the students why I do what I do in order to adjust expectations and make them understand (and accept) it.

In general I learn from the midterm evaluations that the students actually like that I mention things outside the reading material, the presentation and the teaching are well connection, my enthusiasm, I speak loud and clear, the PowerPoint works well, the inter-activity during the lecture with breaks and discussion rounds, examples from real life, room for questions, and the fact that my background is in mathematics is something that students (PV) appreciate as it makes it possible for me to relate the material to things they understand.

At Aalborg University I also act as a pedagogical supervisor for assistant professors at the Faculty of Engineering and Science. During two semesters I observe the assistant professors while they do course lecturing, group facilitation and/or hold oral exam and here give feedback. I also assist them in preparing their teaching portfolio. Besides me, they also have a department supervisor who also makes observations. I receive good feedback from this, among other things seen in the email inserted below from an assistant professor from the Department of Mechanical and Manufacturing Engineering:

**adj.paed certificate received - thank you for all :)**

Radoslav Darula

Du svarede den 26-09-2016 16:08.

Sendt: 26. september 2016 11:32

Til: Bettina Dahl Søndergaard

Dear Bettina

sorry writing a bit later (I am bit busy with other things)..some time ago I received a letter with a adjunktpaedagogikum certificate and I would like to thank you for all your time, advices and help during the course. it was/is very very helpful

Med venlig hilsen / Best Regards / S pozdravom

Rado

At Virginia Tech I used a Class Participation / Self-Assessment Worksheet (see below) that I passed around by the end of each teaching session. The sheet was a slightly revised document originally developed by my colleague Skip Wilson. The purpose was partly for me to have a kind of formative assessment of how things were going, partly to remind the students that they also had a responsibility for making the teaching a learnable experience as they were supposed to come prepared to class, behave well, respect the feelings of their classmates etc. In the first part of the course, the worksheets were very useful and the students also appreciated them. However towards the end of the course I usually abandoned them since the students were getting fed up having to fill out this sheet at every single lesson – and they also appeared to come prepared and engage actively, so there was not a need for the worksheet any longer.

#### SEMINAR PARTICIPATION / SELF-ASSESSMENT WORKSHEET

Name:  Date: 9/30/05

Circle or fill in the blank. If you want to explain one of your responses, please do.

I was ( partially / completely ) prepared for class today.

I asked 0 questions during whole-class discussion in class today.

I volunteered 5 ideas during whole-class discussion in class today.

I asked 2 questions to one or more of my classmates during class today.

I helped someone else in the class to understand something 1 times during class today.

I respected the thoughts and feelings of my classmates and instructor ( some / most / all ) of the time in class today.

I felt that my thoughts and feelings were respected ( some / most / all ) of the time in class today.

I felt that today ( my class mates and/or I ) have been working in a serious manner.

I understand ( some / most / all ) of what we discussed in class today.

I ( did / did not ) receive individual help from my instructor outside of class this week.

I ( was / was not ) on time today.

Use the space below to make any other comments about your participation today or any other thing that you find important for me to know.

It's always good to know that other people go through what you're feeling. Thanks for sharing your first days' experiences.



## Learning, behaviour, and results

On some occasions, I was able to get an impression of how my teaching led to learning and changed the behaviour and results of the students or course participants. Naturally, in terms of learning, good grades are one indication of learning, but future behaviour and results are even better indicators.

At Virginia Tech one year after graduation, the graduates receive a survey asking them to look back and evaluate their study programme. In "Survey of 2005 Education Graduates" one of the questions was: "What one course, person, or experience was most valuable in your teacher preparation program?" Several of the students mentioned me. One said: "Bettina Soendergaard was very helpful during my last semester at Tech while I was student teaching". Another wrote:

What one course, person, or experience was most valuable in your teacher preparation program?

Math with technology helped.

Bettina Dahl Soendergaard's lessons/books on classroom management student teaching was a needed experience

A third simply stated my name without any further comments. Reading such evaluations from students a year after graduations is a very rewarding experience as it feels good to know that one made a good impact but it is also helpful in order to learn what it actually is that future teachers need during their first years of teaching. From these comments it appears that managing a class is difficult but essential in order to create a frame in which learning can take place.

At Aarhus University, I held a course for chemistry PhD students in presentation techniques and in a subsequent letter, the leader of the OChem Research School Karl A. Jørgensen wrote (8 December 2008): "Det er arrangørernes klare opfattelse at deltagernes evner til at holde foredrag blev forbedret signifikant i løbet af de tre dage kurset varede" [The organisers clearly found that the participants' abilities to make presentations were improved significantly during the three days of the course]. See Appendix I for full letter. Another time at Aarhus University I got the following note in an email (23 January 2008) from the organiser Jacob H. Nielsen of a session about creating learning objectives using the SOLO taxonomy for teachers at the Faculty of Agricultural Science:

Date: Wed, 13 Feb 2008 20:53:33 +0100

From: Jacob Holm Nielsen <JacobH.Nielsen@agrsci.dk>

To: bdahls@si.au.dk

Subject: SV: Oplæg

Kære Bettina,

Tak for din deltagelse i vores internat. Folk har været meget begejstret for dit indlæg og din metodiske gennemgang. Materialet bliver benyttet i udstrakt grad

Mvh

Jacob

Translated to English, it says: "Thank you for your participation in our course. People were very happy with your presentation and method. The material is used extensively". It is rewarding to receive such emails but it is also useful in order to know what might work well in similar teaching situations. What I particularly deduce from the comments here is that when giving education courses to (prospecting) teachers who are not educational researchers, it is important to give guidance that are practical and useful and not spent too much time on educational theories.

## OTHER UNIVERSITY TEACHING AND HIGH SCHOOL TEACHER TRAINING

### Guest lecturing at university courses at own university

Kvalitative forskningsmetoder: overblik og eksempler [Qualitative research methods: overview and examples]. Part of the Science Education Master's Programme aimed at Teacher Training College science teachers. Department of Science Studies (prev. Steno Department for Studies of Science and Science Education), Aarhus University, DK. Main course instructor: Niels B. Dohn. 23 January 2009.

Natur i Teltet: At udforske og formidle naturens forunderlige verden i et uformelt læringsmiljø [Nature in the Tent: To explore and communicate the magnificent nature through informal learning]. Part of the Science Education Master's Programme aimed at Teacher Training College science teachers. Department of Science Studies (prev. Steno Department for Studies of Science and Science Education), Aarhus University, DK. Main course instructor: Niels B. Dohn. 29 August 2008.

Kvalitative forskningsmetoder: overblik og eksempler [Qualitative research methods: overview and examples]. Part of the Science Education Master's Programme aimed at Teacher Training College science teachers. Steno Department for Studies of Science and Science Education, Aarhus University, DK. Main course instructor: Poul V. Thomsen. 7-8 February 2008.

Begrundelsesproblemet for matematikundervisning [The justification problem for the teaching of mathematics]. Part of a course in the theory of mathematics, Steno Department for Studies of Science and Science Education, Aarhus University, DK. Course instructor: Henrik Kragh Sørensen. 28 February 2007.

Different learning theories in practice. Part of the MATH 4654 Capstone Thesis and Seminar course for the secondary mathematics education students, Virginia Tech, USA. Course instructor: Stephanie Behm. 2 March 2006.

Flinke elever i videregående skole lærer på forskjellig vis [Good high school pupils learn in various ways]. Mathematics course for high school teachers. Theme: Variation of working methods - variation of learning strategies. Together with Ingvill M. Holden (now Stedøy-Johansen) & Kjersti Wæge. Norwegian Center for Mathematics Education, Norwegian University of Science and Technology, Trondheim. 8 December 2003.

Matematikkompetencer som middel til fagbeskrivelse af matematik [Mathematical competencies as a way to describe the subject mathematics]. Seminar for graduate and PhD students. Together with Ingvill M. Holden (now Stedøy-Johansen). Norwegian Center for Mathematics Education, Norwegian University of Science and Technology, Trondheim. 3 September 2003.

Matematikens didaktik: præsentation af en teori udviklet i specialet [Mathematics education: Presentation of a theory developed in the Master's thesis]. As part of the course in the theory of science and didactics of mathematics. Course instructor: Iben Maj Christiansen. The 7th semester of mathematics (MAT3), Aalborg University, DK. 2 October 1995.

## **Invited to give PhD courses in Germany**

Presentations and workshops. Course for PhD students in Organometallic Chemistry at Marie Curie Early Stage Training Site, INDAC-Chem. Collaboration between the University of Nottingham (UK), University of Dortmund (Germany), University of Genève (Switzerland) & University of Sassari (Italy). Dortmund, Germany. 24-26 March 2009.

- Presenter: How to deliver a presentation. Held 25 March
- Presenter: How to plan a presentation. Held 26 March

## **Courses in 'University Teaching' etc. to academic staff at Aalborg University, DK**

These courses are taught by multiple teachers, hence the detailed description of what was my role

### **2016**

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), Spring 2016

- Workshop Presenter: Lecturing. 10 February & 16 March

### **2015**

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), Spring 2015

- Workshop Presenter: Good lectures in large classrooms. 25 February & 25 March

## 2014

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), Spring 2014

- Presenter: Hvordan kan man evaluere de studerende gennem et undervisningsforløb og til sidst til eksamen? [How can we evaluate students during the course and at the exam?]. With Palle Rasmussen. The Day of Teaching, Aalborg, 9 April 2014
- Presenter: Hvordan kan man evaluere de studerende gennem et undervisningsforløb og til sidst til eksamen? [How can we evaluate students during the course and at the exam?]. The Day of Teaching, Copenhagen, 10 April 2014

## Courses in 'University Teaching' etc. to academic staff at Aarhus University, DK

These courses are taught by multiple teachers, hence the detailed description of what was my role

## 2012

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*)

- Facilitator: Feedback til undervisningsportfolioer for ansatte på Faculty of Science and Technology [Feedback on Teaching Portfolio, for people at Faculty of Science and Technology]. Module 4, 31 May 2012
- Presenter: Planlægning af en forelæsning. Langtidsplanlægning og den enkelte forelæsning [Planning a lecture]. Part of Module on Lecturing with Michael E. Caspersen. Module 2, 23 October 2012

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), in English

- Presenter: Basic didactic concepts – active learning, teaching objectives, content and testing. 22 August 2012
- Presenter: Learning theory and learning situations. 22 August 2012
- Role play: The Oral Exam. With Karen Lauridsen, Ole Lauridsen & Stacy Cozart. 23 March 2012
- Presenter: How to plan a lecture? Long term planning of a whole course and the single lecture. Part of Module on Lecturing with Michael E. Caspersen. 23 March 2012
- Presenter: More on lecturing. Feedback. 18 April 2012
- Presenter: The teaching portfolio. 18 April 2012
- Feedback: The teaching portfolio. 8 May 2012

PhD course for TAs: Introduction to Science Teaching, Faculty of Science and Technology

- Presenter: The teaching portfolio. 14 September 2012 (Q1). Rikke Frøhlich Hougaard assisted
- Assisted Rikke Frøhlich Hougaard: Presentation skills. 14 September 2012 (Q1)
- Presenter: The teaching portfolio. 1 June 2012 (Q4). With Aino V. Corry
- Co-developer: Presentation skills. 1 June 2012 (Q4). With Rikke Frøhlich Hougaard

## 2011

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*)

- Facilitator: Feedback til undervisningsportfolioer for ansatte på Faculty of Science and Technology [Feedback on Teaching Portfolio, for people at Faculty of Science and Technology]. Module 3, 13 December 2011
- Facilitator: Feedback til undervisningsportfolioer for ansatte på Faculty of Science and Technology [Feedback on Teaching Portfolio, for people at Faculty of Science and Technology]. Module 3, 27 May 2011
- Facilitator: Feedback on mini-lectures. Module 2, 4 April 2011
- Presenter: Aktiv læring under en forelæsning [Active learning during a lecture]. Module 2, 28 February 2011

PhD course for TAs: Introduction to Science Teaching, Faculty of Science and Technology

- Presenter: The teaching portfolio. 2 December 2011 (Q2)
- Presenter: A little more on body language. 23 May 2011 (Q4)
- Presenter: The teaching portfolio. With Aino V. Corry. 11 May 2011 (Q4)

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), in English

- Presenter: Basic didactic concepts – teaching objectives, content and testing/exam. Part of Module 1, 30 November 2011

## 2010

PhD course for TAs: Introduction to Science Teaching, Faculty of Science and Technology

- Presenter: Planning and delivering a presentation. 26 November 2010 (Q2)
- Presenter: Learning goals and competences. 19 November 2010 (Q2)
- Presenter: The teaching portfolio. With Aino V. Corry. 19 November 2010 (Q2)

Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*)

- Presenter: Ideer til projekter [Ideas for projects]. Module 3, 15. November 2010
- Facilitator: Feedback on mini-lectures. Module 2, 25 October 2010
- Presenter: Aktiv læring under en forelæsning [Active learning during a lecture]. Module 2, 20 September 2010
- Facilitator: Feedback på udkast til undervisningsportfolier [Feedback on drafts to Teaching Portfolio at the Faculty of Science (NAT) & the Faculty of Agricultural Sciences (DJF)]. Workshop, 10 May 2010
- Presenter: Metoder til udvikling af forelæsningen [Methods to improve the lecture]. Workshop, 14 April 2010

Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), in English

- Facilitator of workshop: PowerPoint and Clickers. With Morten Bygvraa. Workshop, 7 April 2010
- Presenter: Holding presentations: using PowerPoint and other techniques. Workshop, 6 April 2010
- Presenter: The presentation and lecture. Workshop. 14-15 January 2010

Medarbejderseminar [Seminar for all staff], Department of Mathematical Sciences, Faculty of Science, Aarhus University. Vindstedcentret

- Facilitator: Vejledning og praksisteori - smågruppeundervisning og personlig vejledning af kandidat- og ph.d.-studerende [Academic supervision and teaching in small classes]. Teacher: Gunnar Handal, University of Oslo, Norway. 5-6 January 2010

## 2009

Grundkursus om instruction og undervisning [Basic Course on Instruction Teaching]. For PhD students, Faculty of Science, Aarhus University. 2.5 ECTS. Autumn 2009. Developer, organiser, and presenter: With Birgitte Lund Nielsen and Michael E. Caspersen

- Presenter: Undervisningsportfolio [The teaching portfolio]. 27 November 2009
- Presenter: Kollegavejledning [Collegial supervision]. 6 November 2009
- Presenter: Constructive alignment, SOLO-taksonomien [Constructive alignment and the SOLO Taxonomy]. 2 November 2009

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*)

- Facilitator: Feedback på udkast til undervisningsportfolier [Feedback on drafts to Teaching Portfolio at the Faculty of Science (NAT), Faculty of Agricultural Sciences (DJF), and National Environmental Research Institute (DMU)]. Workshop, 2 December 2009
- Presenter: Organisering og metoder i forelæsningen: med afsæt i Harvard-fysikeren Mazurs pædagogiske forskning [Organisation and methods in the lecture: inspiration from the Harvard physicists' educational research]. Workshop, 3 November 2009
- Facilitator: Feedback på udkast til undervisningsportfolier [Feedback on drafts to Teaching Portfolio at the Faculty of Science]. Workshop, 4 May 2009
- Presenter: Organisering og metoder i forelæsningen: med afsæt i Harvard-fysikeren Mazurs pædagogiske forskning [Organisation and methods in the lecture: inspiration from the Harvard physicists' educational research]. Workshop, 2 April 2009

University Teaching Introductory Course, Faculty of Agricultural Sciences, Aarhus University. Organised by Torben K. Jensen and Egon Noe. Koldkærgård. 24-26 November 2009

- Presenter: Aktiverende forelæsninger – at koble klogt: Organisering og metoder i forelæsningen, med afsæt i Harvard-fysikeren Mazurs pædagogiske forskning [Activation using the Harvard physicist' educational research]. Held 25 November

Course for all the academic staff at the Department of Physics and Astronomy, Faculty of Science, Aarhus University. Organised by Torben K. Jensen. Hotel Ebeltoft Strand. 2-3 June 2009

- Presenter: Revitalisering af forelæsningen – koble klogt. Forelæsningen som aktiverende undervisningsform: afsæt i Harvard-fysikeren Mazurs undervisning og pædagogiske forskning. [Revitalisation of the lecture: Activation using the Harvard physicist' educational research].

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*), in English

- Presenter: Teaching and organisation of lectures. Workshop, 20 April 2009

## 2008

'Assistant Professor Teaching Certificate' (*Adjunktpædagogikum*)

- Facilitator: Feedback på udkast til undervisningsportfolier [Feedback on drafts to Teaching Portfolio at the Faculty of Science]. Workshop, 1 December 2008
- Presenter: Organisering og metoder i forelæsningen: med afsæt i Harvard-fysikeren Mazurs pædagogiske forskning [Organisation and methods in the lecture: inspiration from the Harvard physicists' educational research]. Workshop, 4 November 2008

OChem Summer School 2008. Course for PhD students at Department of Chemistry, Faculty of Science, Aarhus University. Sandbjerg Estate. 19-21 September 2008

- Presenter: Planning a presentation. Presentation and workshop
- Presenter: Delivering a presentation. Presentation and workshop

Half day course for assistant professors at Department of Molecular Biology, Faculty of Science, Aarhus University. Planned in collaboration with Christina Cvitanich. 18 August 2008

- Presenter: How to plan and teach a university course. With Gregers Rom Andersen

Course for all the academic staff at the Department of Biological Sciences, Faculty of Science, Aarhus University. Organised together with Finn Borchsenius. Sandbjerg Estate. 11-12 June 2008

- Presenter: En vejledningssamtale: videoeksempel og spørgeteknik [Questioning technique during supervision]. Main teacher: Gunnar Handal, University of Oslo, Norway

University Teaching Introductory Course, Faculty of Agricultural Sciences. Module 1: Planning the teaching, use of ICT, and lecturing. University Pedagogical Network (UPN), Aarhus University. Juelsminde Strand. 21-22 April 2008

- Presenter: Læringsmål, taxonomier og forskningsbaseret undervisning [Learning objectives, taxonomies, and research based education]
- Presenter: En forelæsning om forelæsningen – at sende klart og koble klogt [A lecture about the lecture]. With Torben K. Jensen

Working seminar with some of the academic staff at Faculty of Agricultural Sciences, Aarhus University. About the formation of the new education programme 'Molecular Nutrition and Food Technology'. Skarrildhus. 24-25 January 2008

- Presenter: Udformning og anvendelse af læringsmål i praksis [How to create learning objectives]. 24 January 2008

## 2007

Whole day course for assistant professors at Department of Molecular Biology, Faculty of Science, Aarhus University

- Assisting presenter and co-organiser: Hjælp! Jeg skal være vejleder [Help! I am going to be a supervisor]. With Gitte Wichmann-Hansen (presenter) & Christina Cvitanich. 10 December 2007

Seminar for all academic staff at the Faculty of Science, Aarhus University. With Claus Brabrand (main speaker), Hans Kjeldsen & Erik Meineche Schmidt (dean). Brabrand, Kjeldsen & Dahl formed together with Henrik Kragh Sørensen & Tom Vindbæk Madsen the 'new national grade scale implementation working group', appointed by the dean

- Presenter: Den nye karakterskala: Implementation på NAT/AU [The new Danish grading scale: Implementation at the Faculty of Science, Aarhus University]. 24 January 2007

## **Courses in Theory of Education aimed at the upper secondary level in mathematics and events for Danish high school mathematics teachers**

Presenter: Hvad er svært ved beviser for gymnasieelever - og kan vi gøre noget ved det? [What is difficult with mathematics proofs and can we do something about it?]. High school teacher's day, Department of Mathematical Sciences, Aarhus University. 18 March 2011.

Presenter: Fagdidaktik i matematik [Mathematics education]. Part of the first mathematics education course for future mathematics teachers at htx (the Higher Technical Examination Programme). Vejle Centerhotel. 24 November 2010.

Presenter: Fagdidaktik i matematik [Mathematics education]. Part of a course for supervisors for future mathematics teachers at htx (the Higher Technical Examination Programme) and hhx (the Higher Commercial Examination). 22 April 2010.

Presenter: Fagdidaktik i matematik [Mathematics education]. Part of the first mathematics education course for future mathematics teachers at htx (the Higher Technical Examination Programme). Middelfart Kursuscenter. 2 March 2010.

## **Workshops and smaller presentations to university students – not traditional courses**

Presenter: Problem Based Learning at Aalborg University. Studenterhuset, Aalborg. About PBL to international students. Event organised by the International Office. 4 February 2015.

Three workshops given together with Line J. Stald (Steno Museum, Aarhus University) for students at the Faculty of Science, Aarhus University who are to present at the informal science education event "Nature in the Tent", 31 August – 6 September 2008.

- Presenter: Hvordan bruger jeg min krop og stemme rigtigt? [How I use my voice and body language the right way]. 21 August 2008.
- Presenter: Min målgruppe og hvordan jeg når dem? [My audience and how I reach them]. 18 June 2008.
- Presenter: Min målgruppe og hvordan de tænker? [My audience and how they think]. 10 June 2008.

Invited presentation for students at the Faculty of Science, Aarhus University.

- Presenter: Et oplæg om oplæg [How to make a presentation, ideas from acting techniques and rhetoric]. 7 May 2008.
- Presenter: Et oplæg om oplæg [How to make a presentation, ideas from acting techniques and rhetoric]. 15 May 2007.

Facilitated: Explorations of mathematics and art through tessellations. Session at the 11th "Women in Mathematics: Career Day at Virginia Tech" program for middle school girls, Blacksburg. Co-lead with Gwen M. Lloyd & Vanessa R. Pitts Bannister. Ca. 250 middle school (6th grade) girls came for an intergenerational, multimedia, mathematical celebration. Virginia Tech mathematics education majors taught the students tessellations. 18 November 2005.

Facilitated: Explorations of mathematics and art through tessellations. Session at the 10th "Women in Mathematics: Career Day at Virginia Tech" program for middle school girls, Blacksburg. Co-lead with Gwen M. Lloyd. Ca. 250 middle school (6th grade) girls came for an intergenerational, multimedia, mathematical celebration. Virginia Tech mathematics education majors taught the students tessellations. 18 November 2004.

## **CONTACT INFORMATION**

Bettina Dahl Søndergaard (Soendergaard)  
Aalborg Centre for Problem Based Learning in Engineering, Science and Sustainability under the auspices of UNESCO; Department of Planning; Aalborg University (AAU)  
Vestre Havnepromenade 5, 1 (Office 1.219); DK-9000 Aalborg, Denmark

E-mail: [bdahls@plan.aau.dk](mailto:bdahls@plan.aau.dk)  
Tel: (+45) 9940.3684  
Mobile: (+45) 4081.0778

## APPENDIX A

### Diploma for Danish High School Teacher Training, 1997

As part of my employment at Aalborg Katedralskole, I took the below mentioned one-week full time course.



Undervisnings  
ministeriet

Gymnasieafdelingen

Frederiksholms Kanal 25  
1220 København K  
Fax 3392 5608  
Tlf. 3392 5600

Søndergaard, Bettina Dahl  
Grønnegade 28, 2.tv.  
9000 Ålborg

17. oktober 1997

#### BEKRÆFTELSE PÅ DELTAGELSE I PÆDAGOGISK KURSUS FOR ÅRSVIKARER

Det bekræftes hermed, at Søndergaard, Bettina Dahl,  
[redacted] i skoleåret 1997-1998 har gennemført  
pædagogisk kursus for årsvikarer, svarende til  
kursusmodul I og II i kursus i teoretisk pædagogik,  
jf. pædagogikumbekendtgørelsen af 10. april 1990.

Undervisningsministeriet, Gymnasieafdelingen

Susanne Henriksen

17/10-1997

Susanne Henriksen  
Kontorfuldmægtig

dato





# APPENDIX C

Diploma for workshops in supervision of PhD students, Aalborg University, 2016

Aalborg University



## CERTIFICATE

**Bettina Dahl Søndergaard**

has completed the PhD course

**"Supervisor workshop 1"**

Fall, 2016

**Description:** The course focused on the relationship between PhD student and supervisor and covered theoretical models, tools and reflections related to:

- Supervision style and supervisory roles
- Hands-on/hands-off supervision
- The asymmetry of the supervisory relationship
- Active listening
- Awareness of typical crises in the PhD study
- Alignment of expectations between supervisor and PhD student
- Alignment of expectations between main supervisor and co-supervisors
- Reflections on participant cases

Bringing participants experiences into play within a theoretical framework was a central activity in the course and participants gained meta-level reflection on their own supervision and awareness of their strong and weak points as supervisors. This supported their ability to further development as supervisors in their everyday practice.

The course included 1 day of participation and preparation of a case story and the total workload is 12 hours.

**Course leader:** Mirjam Godskesen, PhD & Coach

  
Torben Larsen  
PhD Study Director

  
Faculty of Engineering and Science

# PhD Supervisor Letter, Aalborg University

Bettina Dahl Søndergaard

November 2016

## Supervision of PhD students

Welcome to the PhD programme connected with the Aalborg Centre for Problem Based Learning in Engineering, Science and Sustainability under the auspices of UNESCO at Aalborg University! I hope you will enjoy the next three years and that this will be something you will later look back on with joy.

This letter is intended to give you some guidelines to how you may benefit the most from being supervised by me. It is about how I usually supervise, but I am also flexible so we can discuss how best to organise the supervision.

### Scientific content

- My field of expertise is mathematics education, particularly the psychology of learning mathematics for secondary and tertiary level. Furthermore I do research in problem and project based learning (PBL) in higher education engineering, particularly on assessment issues. I have also done research in gifted upper secondary education, out-of-school time programmes for secondary education, and teacher training. All of this is mainly in the field of mathematics, science, and engineering education. Within these areas, I ought to be able to give rather well-grounded advice and feedback.
- I am also very focused on research methodology; both qualitative and quantitative. I am a keen believer in the importance of choosing suited research methodologies, and I require my PhD students to spend a considerable amount of time reflecting on choice of methodology as well as writing about it in their thesis/papers.

### Types of feedback

- In general I am able to give advice on most aspects of a PhD (research design, data collection, analysis, theory, literature search, structure) as well as relevant courses and conferences but please do not consider me an oracle. It is always beneficial to ask several people for advice and I do not know everything. When I was a PhD student myself, I asked a lot of different people for advice. Sometimes it led to confusion due to advice pointing in different and opposite directions, but this forced me to be independent and make decisions. Research is not like a mathematics routine task with one way of finding the solution. It can and will take many directions, also unforeseen directions.
- I read raw manuscript drafts but between reading different versions, considerable work should be done. But I am also glad to give feedback to outlines of chapters/papers before they are written.
- I usually provide feedback on different levels such as making note of things that are good, where I find things missing or unclear and give suggestions for new aspects to be included. During the process I will let you know when your work is approaching the level of a PhD thesis.
- I am not a native speaker of English, so I will not (cannot) proofread your work but I may catch some mistakes.

1

### What I expect from you

- I expect that you to be able to find literature and do academic writing as well as able to find relevant workshops and conferences to attend.
- Since this is a PhD study, you are training to become an independent researcher. This means that I expect you to gradually take more and more control. In the beginning I will guide you more, but gradually you are the boss. You will in fact end up knowing more about the topic than me. Towards the end, the relationship would resemble very much the relationship of two colleagues.

### Practicalities

- Some students write a monograph, others a collection of papers. We can discuss what works best in your case. Usually I am not a co-author of the papers you may wish to include in your PhD thesis. However in cases, where my feedback ends up consisting of substantial parts of the paper, Vancouver Convention (<http://openwetware.org/wiki/Authorship>) states that I should a co-author. But we will discuss this in each case.
- We can meet both face-to-face in my office or on skype or the phone. In the beginning it is beneficial with face-to-face meetings to get to know each other and the subject, but later skype or phone meetings are also useful in my experience.
- In the beginning we should at least talk once every week, then later when the work is taking off it would be less seldom, sometimes even a month between meetings. Very early in the work, I expect that you start to contact me when you need a meeting or feedback. It will not be me contacting you unless I have not heard from you in a really long time.
- If you just need feedback on a small issue such as bouncing an idea, I would usually be able to answer within a few days. If you need me to read several pages, I would usually need longer time. I will let you know in each case.
- I only answer emails within normal working hours (8-16, Mon-Fri) and during vacations, I do not read emails. In case of emergencies, you are of course always welcome to call me on my phone.

### General advice

- I have a rather big network regarding the research areas mentioned above. When you go for your abroad stay I can be helpful putting you in touch with relevant people. I can give you advice on relevant conferences, but when you are at the conference, try not to talk too much with people you already know from Aalborg. Get to know new people!
- I would encourage you to seek the company of other PhD students. It can give valid and useful inspiration for the PhD, but doing a PhD can also be a lonely task and in my own experience it is good to know that one is not alone. Expect some emotional ups and downs when for instance a data collection is not going according to plans. It is completely normal to feel ups and downs, but please talk to me, friends, family, or other PhD students about this. Personally I felt that doing a PhD was like climbing Himalaya and that felt frightening. At some point, I got the advice to climb Himalaya only one step at a time – then I would get there – and I did!

Good luck with your PhD!

Bettina

2

Aalborg University



## CERTIFICATE

**Bettina Dahl Søndergaard**

has completed the PhD course

**"Supervisor workshop 2"**

Fall, 2016


**Description:** The course focuses on the context of the PhD education and the relationship between PhD student and supervisor and covers theoretical models, tools and reflections related to:

- Rules & regulations
- Process- and product supervision
- Project management
- Intercultural dimensions in supervision and how to promote independence
- Feedback methods
- Writing process
- Feedback on supervisor letters
- Reflections on participant cases

Bringing participants experiences into play with theories is a central activity in the course and participants gain meta-level reflection on their own supervision and awareness of their strong and weak points as supervisors. This supports their ability to further development as supervisors in their everyday practice.

The course includes 1 day of participation and preparation of a supervisor letter and the total workload is 15 hours.

**Course leader:** Mirjam Godskesen, PhD & Coach

  
Torben Larsen  
PhD Study Director

  
Faculty of Engineering and Science

## APPENDIX D

### Example: Assignment made at Virginia Tech, 2004-06

#### The TOPAZE and JOURDAIN effect in assessing students.

Brousseau, Guy (1997). *Theory of Didactical Situations in Mathematics*. Dordrecht: Kluwer Academic Publishers.

Sierpiska: URL: [alcor.concordia.ca/~sierp/TDSLecture%204.pdf](http://alcor.concordia.ca/~sierp/TDSLecture%204.pdf).

#### THE TOPAZE EFFECT – Giving the answer in the question (p. 25).

The name comes from a play by Marcel Pagnol, written in 1928. Pagnol had been a teacher and taught English. The play 'Topaze' is set in a private boarding school. Topaze is a teacher in that school. The first scene of the play shows Topaze giving a dictation to a pupil during the recess:

Topaze: (*He dictates while he walks up and down*). "Some... lambs... Some lambs... were safe... in a park; in a park. (*He bends over the shoulder of the pupil and continues*) Some lambs... lambz (*The pupil looks at him, bewildered*). Now, child, make an effort. I am saying lambz. Were (*he repeats very distinctly*) we-re. That shows that there was not only one lamb. There were several lambz". (*The pupil looks at him, dazed*).

Topaze wants the student to succeed but what he does is not leading to the student's learning, but to the student's producing a correct answer in spite of not having learned anything.

#### THE JOURDAIN EFFECT – Giving a scientific name to a trivial activity (p. 25-26).

The name comes from a play by Molière (Jean-Baptiste Poquelin), 'The Cit turned Gentleman' (*Le bourgeois gentilhomme*), which was first acted in 1670. Mr. Jourdain is a simple man who aspires to become part of the nobility by education. He hires, among others, a philosophy master:

*Mr. Jourdain*: ... I must commit a secret to you. I'm in love with a person of great quality, and I should be glad you would help me to write something to her in a short billet-doux, which I'll drop at her feet. ...

*Philosophy-Master*: Is it verse that you would write to her?

*Mr. Jourdain*: No, no, none of your verse.

*Philosophy-Master*: You would only have prose?

*Mr. Jourdain*: No, I would neither have verse or prose.

*Philosophy-Master*: It must one or t'other.

*Mr. Jourdain*: Why so?

*Philosophy-Master*: Because, sir, there's nothing to express one's self by, but prose or verse.

*Mr. Jourdain*: Is there nothing then but prose, or verse?

*Philosophy-Master*: No, sir, whatever is not prose, is verse, and whatever is not verse, is prose.

*Mr. Jourdain*: And when one talks, what may that be then?

*Philosophy-Master*: Prose.

*Mr. Jourdain*: How? When I say, Nicola, bring me my slippers, and give me my nightcap, is that prose?

*Philosophy-Master*: Yes, sir.

*Mr. Jourdain*: On my conscience, I have spoken prose above these forty years, without knowing anything of the matter, and I have all the obligations in the world for informing me about this.

If we describe the productions of our students in mathematical terms, which presuppose an elaborate conceptual activity, while having no evidence of such an activity.

EXAMPLE 1: If we say that a student has divided a fraction by another fraction, while it would have been more appropriate to say that the student has changed the sign of division into a sign of multiplication, put the second fraction upside down and used his memory of the multiplication table to produce two numbers separated by a horizontal little line.

EXAMPLE 2: If we say that 'a student has solved an equation' to refer to an activity of transforming an expression containing numbers and letters into another such expression, according to certain rules. Most students have no notion of equation, just as Mr. Jourdain had no notion of 'prose'.

EXAMPLE 3: During the New Math reforms in 1960s and 70s, children were given all sorts of 'manipulatives' to play with, toys, dolls, and blocks. When children were sorting toys, their activities were called using the terms of set theory such as 'finding the intersection of two sets'. The case of claiming that some kindergarten or first grade children manipulating cups of yogurt 'constructed the group of Klein' became legendary (p. 26 & 139-140 & Sierpiska).

## EXERCISES

### A

Write two pairs of dialogues between a teacher and a student (or several students) on a piece of mathematics. The first pair of dialogues should be within Middle School mathematics, the second pair should be within High School mathematics. Each pair should consist of both a dialogue that illustrate the TOPAZ EFFECT and one that does not (but where it is illustrated that he student has learnt the mathematics).

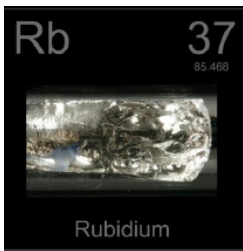
### B

Find two examples from the Middle School curriculum and two examples from the High School curriculum that illustrates the JOURDAIN EFFECT.

# APPENDIX E

## Example: Slide from lecture about PBL at Aalborg University, 2015

This slide was part of a lecture about the problem statement in PBL during the PV-course at first semester. Since all the students were from mathematics and physics study programmes, I found it important that they saw some examples from their own field. The example below is from students at Physics, 2<sup>nd</sup> semester and both problem statements were genuine examples from previous students' work. The essential learning goal was that the students become aware of the difference between a problem statement and a list of activities to do. The method of instruction was that first I told them something in general about what a problem statement is, then the students should by themselves sit and wonder which of the two examples were an actual problem statement, and why. Then they should discuss it with the students sitting around them and finally we discussed it on the whole class. The number of students in the auditorium was around 100. The method was inspired by Mazur's peer instruction. The yellow head at the top of the slide was a figure I used frequently on my slides in order to signal to the students that now they had to sit and think about something.



## Oftest et spørgsmål



### Problem Statement X (FYS P2)

- To model the rubidium atom as a classical mass-spring system
- To set up an experiment to determine the absorption and index of refraction of rubidium around a quantum leap, namely  $5S \rightarrow 5P$  in rb85
- We will compare our results from the experiment with the predictions from our model
- In addition we will also determine the heat of vaporization of rubidium, using the data from the same experiment.

### Problem Statement Y (FYS P2)

Is it possible to construct an accurate classical model of a Rubidium gas using simple approximations? Can we also model rubidium's thermo dynamical properties? Is it possible to conduct an experiment to test this model? And will the model be able to accurately predict the experimental results?

Billede: [www.periodictable.com](http://www.periodictable.com) & [vivagiammagazine.com](http://vivagiammagazine.com)



## APPENDIX F

### Example: Slide from lecture about lecturing at Aalborg University, 2016

I teach a workshop where the first part is a lecture on lecturing. As one of my first slides I show the one below with a quotation from Seinfeld. The purpose is two-fold. First is to reassure the assistant professors that if/when they are nervous about giving lectures to 100+ students, there is not something wrong with them – it is a completely normal reaction. Second, I use humour in order to illustrate to them how they themselves may use humour to illustrate a point when they lecture.



According to Schultz (2011), this comes from a study by Wallace et al. (1977) but Seinfeld made some adjustments (changed it from more people fear to people fear more)

Picture: [insight.nhtv.nl](http://insight.nhtv.nl)



# APPENDIX G

## Example: Exam assignment from Aarhus University, 2009

This is an example in Danish of a two-page student synopsis in the subject "Mathematics and Computer Science Education". This was a graduate course for students who later want to become high school teachers of mathematics. It was the first course in mathematics education they had attended. The actual teacher training for high school teachers takes place after graduating and usually during their first employment. Each student submitted a synopsis like this for the exam. The exam was oral and an external examiner was present. The oral exam lasted 20 minutes per student and was graded. The purpose of the synopsis was that the student should create, present and discuss a smaller lesson plan in mathematics aimed at the Danish high school. The content and purpose of the lesson (or lessons) should be justified and discussed based on the course material and it should contain some concrete mathematics to exemplify what the student intended to do in the classroom.

<p style="text-align: center;"><hr/><b>Forløb om differentialregning for STX A-niveau</b> Synopsis i Matematikkens Fagdidaktik<hr/></p>	<p style="text-align: center;"><u>Differentialregning</u></p> <p>Ifølge læreplanen for matematik på A-niveau indgår differentialregning som kernestof, og det fremgår, at eleverne bl.a. skal kunne "udlede udvalgte differentialkvotienter", samt at undervisningen skal omfatte "ræsonnement og bevisførelse inden for infinitesimalregning". Endvidere finder differentialregning mange anvendelser inden for naturvidenskab generelt, og der er dermed rig mulighed for at styrke elevernes indre motivation (jf. [Cangelosi]).</p> <p>Min idé, med det forløb som jeg senere skitserer, er, at eleverne i højere grad, end det ofte er tilfældet i gymnasiet, selv skal sidde og arbejde med beviser for udsagn, idet vi dermed opnår det samspil mellem didaktiske og adidaktiske situationer, som beskrives i TDS, og i tråd med de (til eksamen) udleverede artikler, ønsker jeg, at eleverne skal have en større forståelse for bevisførelse. Dette vil øge elevernes indre motivation til at lave beviser, idet de kan se, at bevisførelse er med til at give dem øget forståelse af resultaterne, og ikke blot er noget de skal lave for lærerens skyld.</p> <p>Jeg har valgt at fokusere på definitionen af differentialkvotient, samt på udledningen af visse differentialkvotienter og regneregler. Dette er tænkt at dække nogle af de første lektioner i et forløb om differentialregning og ville naturligt blive efterfulgt af udledning af mere avancerede differentialkvotienter, reglen for differentiation af sammensat funktion, samt evt. et forløb om monotoniforhold.</p> <p>Jeg vil antage, at eleverne er bekendt med grænseværdibegrebet og funktionsbegrebet (heriblandt forskellige representationer af funktioner), samt at eleverne har et grundlæggende kendskab til begrebet gennemsnitsfart fra fysik. Det sidste er med for at kunne give en motiverende introduktion til differentialregningen. Dette gøres for at elevernes tilegnelse af begrebet differentiability, i så høj grad som muligt, sker ved assimilation i henhold til Piagets skemateori.</p> <p>I første lektion vil læreren ved tavlen indlede med at snakke om gennemsnitsfart - hvorledes gennemsnitsfarten kommer tættere på den øjeblikkelige fart, når tidsrummet bliver mindre. Herefter vil læreren vise, hvordan gennemsnitsfarten svarer til en sekanthældning på en graf for en stedfunktion, og dernæst definere differentiability ud fra grænseværdien af sekanthældninger. Da definitionen er motiveret vha. grafen for en funktion, vil denne tilgang henvende sig både til elever, der lærer auditivt (direkte definition ved grænseværdi af sekantbrøk) og elever, der lærer visuelt (fortolkning som hældning ud fra grafen), og da eleverne forudsættes at kende til grænseværdi, vil begrebet differentialkvotient i høj grad passe ind i deres eksisterende skemaer. Selvom begrebet er nyt, vil man altså undgå, at det udelukkende skal adapteres ved akkommodation. Endvidere er de fleste af de funktioner, de kender i forvejen, formentlig differentiable, hvilket også øger muligheden for at begrebet kan adapteres ved assimilation.</p> <p>Læreren giver nu et bevis for differentialkvotienten for en simpel funktion, f.eks. en konstant funktion, og søger for, at det er klart, hvad fremgangsmåden er i denne type beviser. Det kunne f.eks. være ved "tretrinsreglen", som jeg har forklaret på Bilag 1. Herefter sættes eleverne to og to til at arbejde på at bevise, hvad differentialkvotienten af en anden simpel funktion er (f.eks. <math>f(x) = ax + b</math>), mens læreren sørger for at yde den nødvendige hjælp. Efter dette, bliver beviset gennemgået på tavlen</p> <p style="text-align: center;">2</p>
---	---

## Differentialregning

af enten læreren eller en elev. Læreren har her mulighed for at differentiere undervisningen, ved at sætte forskellige hold til at kigge på forskellige funktioner, hvor sværhedsgraden passer til elevernes niveau. På denne måde undgår man nemmere misbrug af analoge miljøer, og at der dermed bliver tale om Topaze-effekt, hvilket er en oplagt risiko her. Ved at sammensætte eleverne hensigtsmæssigt og evt. i større grupper, har man mulighed for at gøre brug af idéerne om gruppearbejde, som præsenteret i [Winebrenner], og dermed også give de rigtigt dygtige elever en udfordring. Den afsluttende opsamling kan blive mere besværlig at gennemføre, men læreren kan sørge for, at eleverne ikke arbejder med alt for mange forskellige funktioner, og opsamlingen kan så foregå ved, at eleverne gennemgår deres beviser på tavlen med hjælp fra læreren.

Denne undervisningsform er inspireret af TDS, idet jeg har forsøgt at skabe vekselvirkning mellem didaktiske og adidaktiske situationer, og idéerne i [Cox] har også været til inspiration, idet eleverne selv får lov at sidde og bevise resultater. Dog har jeg valgt, at eleverne får resultaterne udleveret og blot skal bevise dem, idet jeg mener, at fremgangsmåden fra [Cox], hvor eleverne selv kommer med hypoteser, er for svært til dette emne. Et helt forløb i differentialregning vil desuden indeholde en masse opgaverregning og anvendelser, hvilket vil stimulere problemløsningskompetencen, modeleringskompetencen og hjælpemiddelkompetencen, og gøre det klart for eleverne, hvorfor differentialregning indgår i læreplanen som kernetstof. Det forløb, jeg har beskrevet, vil stimulere de resterende fem kompetencer (jf. [KOM]), og det samlede forløb vil således stimulere alle otte kompetencer.

Når regnereglerne for differentiation i en senere lektion skal gennemgås, starter læreren med at give eleverne nogle minutter til at tænke over, hvordan de ville gennemføre beviset for  $(f + g)'(x) = f'(x) + g'(x)$ , og læreren fungerer herefter som kridtstyret ved tavlen, mens eleverne kommer med forslag til en bevisførelse. Her er det vigtigt at eleverne er vant til at deltage ved tavleundervisning. Læreren giver nu på tavlen, et bevis for produktreglen, hvor han forklarer det led,<sup>1</sup> som indskydes vha. forlæns/baglæns-metoden, som beskrevet i [Stanton]. Herefter arbejder eleverne i grupper om beviset for differentiation af  $\left(\frac{f}{g}\right)'(x)$ , hvor de (evt. med lærerens meget sparsomme hjælp) skal finde frem til det rigtige led at indskyde vha. forlæns/baglæns-metoden. På denne måde bliver beviserne i højere grad "forklarende" i stedet for blot "bevisende", hvilket er pointen i [Knuth].

I undervisningsforløbet ovenfor har jeg kun beskrevet nogle enkelte lektioner, da mit fokus har været at beskrive, hvordan man kan gøre det klart for eleverne, at et bevis kan være med til at øge deres forståelse af et resultat. For at øge elevernes forståelse for bevistechnik og bevisets rolle i matematik, har jeg ladet eleverne arbejde med beviser i adidaktiske situationer med efterfølgende opsamling. Dette kan efter min og [Cox]'s mening være en meget givtig proces, men da det kan være svært for eleverne, er man, som lærer, nødt til at tilrettelægge undervisningen meget efter elevernes niveau, så man på samme tid undgår, at eleverne opfatter det som håbløst svært, og at Topaze-effekten optræder.

<sup>1</sup>De led, som jeg her omtaler, bliver forklaret på bilag 2

## Differentialregning

### Litteratur

- [Cangelosi] Cangelosi, J. S. (2003), 'Motivating Students to Engage in Mathematical Learning Activities', *Teaching Mathematics in Secondary and Middle School*, 3rd edition, Merrill Prentice Hall, pp. 88-129.
- [Cox] Cox, R. L. (2004), 'Using Conjectures to Teach Students the Role of Proof', *Mathematics Teacher*, Vol. 97, pp. 48-52.
- [KOM] KOM (2002), *Kompetencer og Matematiklæring*, København, Undervisningsministeriet.
- [Knuth] Knuth, E. J. (2002), 'Proof as a Tool for Learning Mathematics', *Mathematics Teacher*, Vol. 95, pp. 486-490.
- [Stanton] Stanton, R. O. (2006), 'Proofs that students can do', *Mathematics Teacher*, Vol. 99, pp. 478-482.
- [Winebrenner] Winebrenner, S. (2001), *Teaching Gifted Kids in the Regular Classroom*, Free Spirit Publisher, pp. 129-144 & 171-181.
- [Winsløw] Winsløw, Carl (2006), *Didaktiske elementer: En indføring i matematikkens og naturfagets didaktik*, Frederiksberg: Biofilia.

## Differentialregning

### Bilag 1

For at illustrere hvad jeg mener med tretrinsreglen, vil jeg her bevise, at  $f(x) = ax + b$  er differentiabel med differentialkvotient  $f'(x) = a$ . De tre trin består i at beregne  $\Delta y$ , dernæst beregne  $\frac{\Delta y}{h}$  og til sidst se på grænseværdien af denne for  $h \rightarrow 0$ . Altså i dette tilfælde

- $\Delta y = f(x_0 + h) - f(x_0) = a(x_0 + h) + b - ax_0 - b = ah$
- $\frac{\Delta y}{h} = \frac{ah}{h} = a$
- $\frac{\Delta y}{h} = a \rightarrow a$  for  $h \rightarrow 0$

Vi har således pr. definition, at  $f(x) = ax + b$  er differentiabel med differentialkvotient  $f'(x) = a$ .

### Bilag 2

Jeg vil nu give bevis for produktreglen og gøre brug af forlæns/baglæns-metoden fra [Stanton]

**Sætning.** Lad  $f$  og  $g$  være funktioner som er differentiable i  $x_0$ . Så er  $fg$  differentiabel i  $x_0$  og differentialkvotienten er  $f'(x_0)g(x_0) + f(x_0)g'(x_0)$ .

**Bevis.** Vi gør brug af tretrinsreglen, men springer for nemheds skyld trin 1 over og kigger direkte på  $\frac{\Delta y}{h}$ .

$$\frac{\Delta y}{h} = \frac{f(x_0 + h)g(x_0 + h) - f(x_0)g(x_0)}{h} \quad (1)$$

Indtil videre har dette været et forlæns bevis i den forstand som nævnes i [Stanton], men nu går vi i stå, for vi kan ikke udtale os om grænseværdien af denne brøk, da både tæller og nævner går mod nul, fordi  $f, g$  er kontinuerte i  $x_0$ .

Vi går derfor i gang med en baglæns proces, og kigger på det resultat vi skal ende med, altså  $f'(x_0)g(x_0) + f(x_0)g'(x_0)$ . Dette kan vi se er grænseværdien af

$$\frac{f(x_0 + h) - f(x_0)}{h} \cdot g(x_0) + f(x_0) \cdot \frac{g(x_0 + h) - g(x_0)}{h}$$

for  $h \rightarrow 0$ . Dette passer dog ikke ret godt med det vi har i (1), idet leddet

$$f(x_0 + h)g(x_0 + h)$$

ikke optræder nogen steder. Fordi  $g$  er kontinuert, har vi  $g(x_0 + h) \rightarrow g(x_0)$ , og (1) er således også grænseværdien af

$$\begin{aligned} & \frac{f(x_0 + h) - f(x_0)}{h} \cdot g(x_0 + h) + f(x_0) \cdot \frac{g(x_0 + h) - g(x_0)}{h} \\ = & \frac{f(x_0 + h)g(x_0 + h) - f(x_0)g(x_0 + h) + f(x_0)g(x_0 + h) - f(x_0)g(x_0)}{h} \end{aligned}$$

## Differentialregning

for  $h \rightarrow 0$ . Vi kan således se, at hvis vi i (1) indskyder

$$-f(x_0)g(x_0 + h) + f(x_0)g(x_0 + h)$$

som jo blot er nul, så får vi det ønskede. I mange lærebøger bliver det ikke forklaret, hvor dette trick med at lægge nul til på en smart måde stammer fra, og beviset bliver dermed i høj grad et spørgsmål om at kunne huske tricket, hvor det med denne forlæns/baglæns-metode bliver helt klart hvad tricket er.  $\square$

I beviset for regnereglen for differentiation af en kvotient indgår et lignende trick. Her skal man dog i stedet indskyde

$$-f(x_0)g(x_0) + f(x_0)g(x_0)$$

men dette trick vil også fremgå af baglæns-skridtet.

# APPENDIX H

## Example: Student evaluations from Virginia Tech, 2006

Below are examples of two official student evaluations of two of my courses at Virginia Tech.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY      SPRING    2006    29																								
TEST SCORING SERVICE -- STUDENT PERCEPTIONS OF INSTRUCTION																								
SUMMARY FOR: TEACHING & LEARNING - SOENDERGAARD B D																								
EDCI - 4754, CRN= 12062																								
TOTAL NUMBER OF RESPONDERS = 6																								
NO. QUESTION ABBREVIATED	NO. & PROPORTION OF RESPONDERS					MEAN	CORRELATION WITH:																	
	OMIT	POOR	FAIR	GOOD	EXLT NA	RESPONSE	OVERALL	EXP.GR.	EFFORT															
1 KNOWLEDGE OF SUBJECT	0	0	0	0	6	4.0	.00	.00	.00															
	.00	.00	.00	.00	1.00	.00	N= 6	N= 6	N= 6															
2 SUCCESS COMMUNICATNG	0	0	0	4	2	3.3	.00	.32	.00															
	.00	.00	.00	.67	.33	.00	N= 6	N= 6	N= 6															
3 SUBJECT STIMULATING	0	0	0	2	4	3.7	.00	-.32	.00															
	.00	.00	.00	.33	.67	.00	N= 6	N= 6	N= 6															
4 CONCERN AND RESPECT	0	0	0	0	6	4.0	.00	.00	.00															
	.00	.00	.00	.00	1.00	.00	N= 6	N= 6	N= 6															
5 GRADING FAIRNESS	0	0	0	0	6	4.0	.00	.00	.00															
	.00	.00	.00	.00	1.00	.00	N= 6	N= 6	N= 6															
6 CLASS ADMINISTRATION	0	0	0	1	5	3.8	.00	-.20	-.45															
	.00	.00	.00	.17	.83	.00	N= 6	N= 6	N= 6															
7 OVERALL RATING	0	0	0	0	6	4.0	.00	.00	.00															
	.00	.00	.00	.00	1.00	.00	N= 6	N= 6	N= 6															
8 TEXTBOOK ADEQUACY	0	0	0	2	2	3.5	.00	-.58	-.58															
	.00	.00	.00	.33	.33	.33	N= 4	N= 4	N= 4															
9 VALUE OF ASSIGNMENTS	0	0	0	1	4	3.8	.00	-.25	.41															
	.00	.00	.00	.17	.67	.17	N= 5	N= 5	N= 5															
<table border="0" style="width:100%; border:none;"> <tr> <td style="width:10%;"></td> <td style="width:10%; text-align:center;">LT AV- OMIT ERAGE</td> <td style="width:10%; text-align:center;">AVER- AGE</td> <td style="width:10%; text-align:center;">GT AV- ERAGE</td> <td style="width:10%; text-align:center;">NA</td> <td style="width:10%;"></td> </tr> </table>																LT AV- OMIT ERAGE	AVER- AGE	GT AV- ERAGE	NA					
	LT AV- OMIT ERAGE	AVER- AGE	GT AV- ERAGE	NA																				
10 EFFORT REQUIRED	0	0	3	3	0	2.5	.00	.45	1.00															
	.00	.00	.50	.50	.00	.00	N= 6	N= 6	N= 6															
<table border="0" style="width:100%; border:none;"> <tr> <td style="width:10%;"></td> <td style="width:10%; text-align:center;">REQUIRED OMIT MAJOR</td> <td style="width:10%; text-align:center;">REQUIRED NONMAJOR</td> <td style="width:10%; text-align:center;">ELECTIVE TO FULFILL</td> <td style="width:10%; text-align:center;">FREE ELECT. IN MAJOR</td> <td style="width:10%; text-align:center;">FREE ELECT. NOT IN MAJ.</td> <td style="width:10%; text-align:center;">NOT APPLICABLE</td> <td style="width:10%;"></td> </tr> </table>																REQUIRED OMIT MAJOR	REQUIRED NONMAJOR	ELECTIVE TO FULFILL	FREE ELECT. IN MAJOR	FREE ELECT. NOT IN MAJ.	NOT APPLICABLE			
	REQUIRED OMIT MAJOR	REQUIRED NONMAJOR	ELECTIVE TO FULFILL	FREE ELECT. IN MAJOR	FREE ELECT. NOT IN MAJ.	NOT APPLICABLE																		
	0	2	4	0	0	0	.00	.33	.67	.00	.00	.00	.00	.00										
12 OMIT FRESHMAN SOPHOMORE JUNIOR SENIOR MASTERS DOCTORAL NA MEAN LEVEL	0	0	0	0	6	4.0	.00	.00	.00															
	.00	.00	.00	.00	1.00	.00	N= 6	N= 6	N= 6															
<table border="0" style="width:100%; border:none;"> <tr> <td style="width:10%;"></td> <td style="width:10%; text-align:center;">OMIT</td> <td style="width:10%; text-align:center;">F</td> <td style="width:10%; text-align:center;">D</td> <td style="width:10%; text-align:center;">C</td> <td style="width:10%; text-align:center;">B</td> <td style="width:10%; text-align:center;">A</td> <td style="width:10%; text-align:center;">P</td> <td style="width:10%; text-align:center;">NA</td> <td style="width:10%; text-align:center;">MEAN GRADE</td> </tr> </table>																OMIT	F	D	C	B	A	P	NA	MEAN GRADE
	OMIT	F	D	C	B	A	P	NA	MEAN GRADE															
	0	0	0	0	1	5	0	0	3.8															
	.00	.00	.00	.00	.17	.83	.00	.00	.00															
<table border="0" style="width:100%; border:none;"> <tr> <td style="width:10%;"></td> <td style="width:10%; text-align:center;">LT AV- OMIT ERAGE</td> <td style="width:10%; text-align:center;">AVER- AGE</td> <td style="width:10%; text-align:center;">GT AV- ERAGE</td> <td style="width:10%; text-align:center;">NA</td> <td style="width:10%;"></td> </tr> </table>																LT AV- OMIT ERAGE	AVER- AGE	GT AV- ERAGE	NA					
	LT AV- OMIT ERAGE	AVER- AGE	GT AV- ERAGE	NA																				
14 COURSE GAINS:						MEAN	CORRELATION WITH:																	
	OMIT	POOR	FAIR	GOOD	EXLT NA	RESPONSE	OVERALL	EXP.GR.	EFFORT															
A KNOWLEDGE, THEORIES	0	0	2	4	0	2.7	.00	-.32	.00															
	.00	.00	.33	.67	.00	.00	N= 6	N= 6	N= 6															
B PROBLEM SOLVING ABIL.	0	0	4	2	0	2.3	.00	.32	.71															
	.00	.00	.67	.33	.00	.00	N= 6	N= 6	N= 6															
C APPRECIATION OF SUBJ.	0	0	0	6	0	3.0	.00	.00	.00															
	.00	.00	.00	1.00	.00	.00	N= 6	N= 6	N= 6															
15 GENDER: OMIT 0 FEMALE 3 MALE 3						.00	.45	1.00																
	.00	.50	.50			N= 6	N= 6	N= 6																

# APPENDIX I

## Letter of recommendation, Aarhus University, 2008

A A R H U S U N I V E R S I T E T



Vedr. Bettina Dahl Søndergaard

OChem Forskerskole ved Kemisk Institut, Aarhus Universitet har engageret Bettina Dahl Søndergaard til at afholde kurset "*How to prepare and deliver a high quality scientific presentation*".

Kurset blev afholdt som et 3-dages seminar i forbindelse med OChem Sommerskole 2008 d. 19.-21. september 2008 for 35 ph.d.-studerende i organisk kemi fra danske og internationale universiteter. Kurset blev afholdt på engelsk.

Kurset "*How to prepare and deliver a high quality scientific presentation*" blev afholdt som en række forelæsninger af Bettina Dahl Søndergaard, efterfulgt af gruppeøvelser og evalueringer hvor teorierne kunne prøves af i praksis under supervision af Bettina Dahl Søndergaard.

Forelæsningerne omhandlede bl.a. emner som planlægning og strukturering af foredrag, teknisk brug af PowerPoint, fremlægning og brug af kropssprog og retorik, samt mental forberedelse og afhjælpning af nervøsitet. Tilblivelsen af kursusforløbet skete i samarbejde med arrangørerne af OChem Sommerskole, hvor Bettina Dahl Søndergaard var meget lydhør overfor vores ønsker og behov, hvorfor forløbet blev særdeles vedkommende for vores kursusedtagere.

Bettina Dahl Søndergaard leverede et professionelt og meget inspirerende kursus. I den efterfølgende evaluering blev Bettina Dahl Søndergaards kursus da også fremhævet yderst positivt af deltagerne, og forløbet blev vurderet som virkeligt godt, lærerigt og meget relevant for deltagerne. Det er også arrangørernes klare opfattelse at deltagerne evner til at afholde foredrag blev forbedret signifikant i løbet af de 3 dage, kurset varede.

Med venlig hilsen

Karl Anker Jørgensen

Leder af OChem Forskerskole

OChem GRADUATE SCHOOL

8. december 2008

Karl Anker Jørgensen,  
prof., dr. scient  
Tel: 8942 3910  
Fax: 8619 6199  
Email: [kaj@chem.au.dk](mailto:kaj@chem.au.dk)

Ref: Signe Grann Hansen  
Tel: 8942 3911  
Email: [sgh@chem.au.dk](mailto:sgh@chem.au.dk)



OChem Graduate School  
University of Aarhus  
Building 1512  
Langelandsgade 140  
DK-8000 Aarhus C  
Denmark  
Tel: +45 8942 3911  
Fax: +45 8619 6199  
Web: [www.ochem.au.dk](http://www.ochem.au.dk)

**1. Lauri Tuomas Ensio Malmi**

Born 13.11.1959, Helsinki, Citizenship: Finnish, Gender: Male

**2. Formal education**

- Doctor of Science in Technology (Computer Science), Department of Computer Science and Engineering, Helsinki University of Technology, 1997.
- Master of Science in Technology, Department of Technical Physics, Helsinki University of Technology (TKK), passed with honor, 1985. Major: Computer Science

**3. Current employment**

Aalto University, Chair of strategic initiative: Aalto Online Learning (A!OLE) 01.01.2016 – 31.12.2020  
60 % working time from 01.01.2017 ->

Aalto University, School of Science, Department of Computer Science

Professor of Computer Science (Modeling, analysis and visualization of programs). 1.1.2008 -,

- Main research areas: Computing education research, educational technology

**4 Previous employments**

Aalto University, School of Science

Vice dean of education, (part time position)

01.02.2015 – 31.12.2016

Helsinki University of Technology, Laboratory of Information Processing Science

Professor of Computer Science (Methodology of Programming Education) 01.11.2001 - 31.12.2007

Professor pro tem (computer science) 01.08.1999 - 31.10.2001

Researcher / Lecturer / Full-time teacher (several fixed time nominations) 01.07.1986 - 31.07.1999

Helsinki University of Technology, Computing Centre

Application designer / Senior designer

01.01.1984 - 30.06.1986

**5. Research funding, projects, supervision experience***1. Funding for research projects and own role in applications*

- Smart Content for Python Programming, Partner subcontract for University of Pittsburgh, US (165 692 USD, 2014-2016), funded by Advanced Distributed Learning, US, principal investigator (PI)
- ISiCLE – Interoperability and Social Media In Computer Science Learning Environments (200000 e, 2011-2014), Foundation of 100 years of Technology industry in Finland, PI, in collaboration with Dr. Ari Korhonen
- TAPAS - Automated Assessment Technologies for Free Text and Programming Assignments (171200 e, 2006-2009). Consortium with University of Joensuu, chaired by prof. Erkki Sutinen, funded by Academy of Finland, PI
- Network of Introductory Programming (300000 e, 2006-2008)
  - Joint initiative with University of Turku and Tampere University of Technology, funded by Ministry of Education, PI, in collaboration with Dr. Ari Korhonen

*2. Funding based on the status as the Center of Excellence in Education*

- National Center of Excellence of Education (Department of Computer Science and Engineering), (900000 e, 2010-2012), funded by Ministry of Education, PI, in collaboration with Dr. Ari Korhonen and prof. Marko Nieminen.
- National Center of Excellence of Education (Basic Computing Education at Helsinki U. of Tech., TKK) (830000 e, 2004-2006), funded by Ministry of Education, PI
- National Center of Excellence of Education (Basic Computing Education at TKK) (830000 e, 2001-2003), funded by Ministry of Education, PI
- Center of Excellence of Education at TKK (Basic Computing Education) (35000 e, 1999-2000), funded by TKK, PI

*3. Funding for developing education*

- Aalto Online Learning (A!OLE), strategic development action of Aalto University, (4ME, 2016->), funded by Aalto University. Coordinating the whole university wide initiative (with strong support from project manager Tomi Kauppinen).

- Koodiaapinen for Finnish school teachers (15000 e, 2016-2017), together with University of Helsinki (Tiina Korhonen, Arto Vihavainen), funded by Ministry of Education.
- Programming in Python MOOC (“Kiinnostaako koodaus?”) for Finnish school teachers (30000 e, 2015-2016), together with University of Helsinki (Tiina Korhonen, Arto Vihavainen), funded by Ministry of Education.
- Introductory programming MOOC (110000 e, 2014-2016), funded by Aalto School of Science, PI
- SW Developer Training programme (37000 e, 2011-2012), funded by Ericsson Ltd PI
- Research training course “Introduction to Engineering Education Research”, in collaboration with Uppsala University and Aalborg University, PI, (357700 NOK, about 44000 euros, 2010), funded by NordForsk
- Interactive Learning Environment of Spatial Data Structures (60000 e, 2006), PI funded by TKK
- Learning environment for programming (50000 e, 2004), funded by TKK
- Course management system (85000 e, 2001-2003), funded by TKK

#### 4. *Research leadership*

- Chair of Learning + Technology Research group from 2000-, which focuses on advanced learning environments for programming education (automatic assessment, program visualization, algorithm visualization, gamification), investigating students’ learning process in programming and generic learning technologies. The group has published 250+ scientific journal and conference papers, and its members have completed 14 PhD theses. [http://cse.aalto.fi/en/research/learning\\_technology/](http://cse.aalto.fi/en/research/learning_technology/)

#### 5. *Supervised postdocs* (10)

- Tapio Auvinen 2015 ->, Juha Sorva 2012-, Otto Seppälä 2012-, Päivi Kinnunen 2013-2015, Juha Helminen, 2014, Petri Ihantola 2011-2014, Ville Karavirta 2009-2013, Jan Lönnberg 2012-2013, Ahmad Taherkhani 2013, Ari Korhonen 2003-2006.

#### 6. *Supervised PhD theses* (15), in all cases the principal instructor

1. Aura Paloheimo, *Women and Higher Engineering Education – Supporting Strategies*, 2015,
2. Simon, *Emergence of computing education as a research discipline*, 2015,
3. Tapio Auvinen, *Educational Technologies for Supporting Self-Regulated Learning in Online Learning Environments*, 2015,
4. Lasse Hakulinen, *Gameful Approaches for Computer Science Education, From Gamification to Alternate Reality Games*, 2015,
5. Juha Helminen, *Supporting Acquisition of Programming Skills in Introductory Programming Education: Environments for Practicing Programming and Recording and Analysis of Exercise Sessions*, 2014,
6. Ahmad Taherkhani, *Automatic Algorithm Recognition Based on Programming Schemas and Beacons: A Supervised Machine Learning Classification Approach*, 2013,
7. Jussi Nikander, *Interaction and Visualization Methods in Teaching Spatial Data Algorithms and Analyzing Spatial Data*, 2012,
8. Otto Seppälä, *Advances in Assessment of Programming Skills*, 2012,
9. Juha Sorva, *Visual Program Simulation in Introductory Programming Education*, 2012,
10. Jan Lönnberg, *Understanding and Debugging Concurrent Programs Through Visualisation*, 2012,
11. Petri Ihantola, *Automated Assessment of Programming Assignments: Visual Feedback, Assignment Mobility, and Assessment of Students' Testing Skills*, 2011,
12. Ville Karavirta, *Facilitating Algorithm Visualization Creation and Adoption in Education*, 2009,
13. Päivi Kinnunen, *Challenges of teaching and studying programming at a university of technology - Viewpoints of students, teachers and the university*, 2009,
14. Sami Surakka, *Needs Assessment of Software Systems Graduates*, 2005,
15. Ari Korhonen, *Visual Algorithm Simulation*, 2003,

Currently supervising 4 doctoral thesis projects at Aalto University.

## 6. Teaching experience and prizes

Teacher in charge of numerous courses in, e.g., programming, data structures and algorithms, learning technology, and research methods. Supervised 75+ Master’s thesis projects. About 40 ECTS pedagogical training. Numerous curriculum design tasks. *Prizes*: Teacher of the year 1999, Helsinki University of Technology, Excellent Education in Electronics (Elektroniikka-insinöörien seura r.y), 2000.

## 7. Scientific activities and positions of trust

### *Professorship evaluation*

- *Michal Armoni*, promotion to associate professor, Weizmann Institute of Science, Israel, 2017
- *Andrew Luxton-Reilly*, promotion to associate professor, University of Auckland, New Zealand, 2016
- *Associate Professor/Senior Lecturer in Engineering Education Research*, external evaluator, Chalmers Technical University, Sweden, 2016 (6 candidates).
- *Professor in Learning Technology and Digitalization*, member of assessment committee, Denmark Technical University, 2016 (8 candidates).
- *Raymond Lister*, promotion to associate professor, Sydney University of Technology, Australia, 2013
- *Mordechai Ben-Ari*, promotion to full professor, Weizmann Institute of Science, Israel, 2012
- *Judy Sheard*, promotion to associate professor, Monash University, Australia, 2011
- *Jürgen Böstler*, promotion to professor of computer science, Umeå University, Sweden, 2010
- *Erik deGraaf*, nomination to professor at UNESCO chair of problem based learning, Aalborg University, Denmark, 2010

### *Docentship evaluation*

- *Ville Tirronen*, docentship in “principles of programming languages and programming education”, University of Jyväskylä, 2014
- *Mike Joy*, docentship in computer science, University of Joensuu, Finland, 2008

### *Other promotion evaluations*

- *Mike Joy*, assoc. prof., promotion to Professorial Teaching Fellow, University of Warwick, UK, 2016
- *Robin Clark*, promotion to Reader, Aston University, UK, 2011
- *Anna Eckerdal*, promotion to Universitetslektori, Uppsala universitet, Sweden, 2010.

### *Dissertation assessment*

1. *Daniel Knox*, Computer Science Students Learning to Code: A Cartography of Programming Practice (member of examination committee), 2016
2. *Donna Teague*, Neo-Piagetian Theory and the Novice Programmer, Queensland University of Technology, Australia, 2015 (pre-examiner),
3. *Vikas Shinde*, Design of Course Level Project Based Learning Models for an Indian Engineering Institute, Aalborg University, Denmark, 2014 (member of examination committee),
4. *Anni Rytkönen*, University of Helsinki teachers as users and adopters in change of web-based learning environments in teaching. University of Helsinki, 2014 (pre-examiner),
5. *Tamara Sliusarenko*, Quantitative assessment of course evaluations. Technical University of Denmark, 2014 (member of examination committee),
6. *Harri Hämäläinen*, Integration of Learning Supportive Applications to Development of E-Portfolio Construction Process, Lappeenranta University of Technology, 2013 (pre-examiner and opponent),
7. *Mikko Apiola*, Developing Learning Environments Through Supporting Creativity: Two Cases on Teaching Basic and Advanced Programming. University of Helsinki, 2013 (pre-examiner),
8. *Antonio Pérez-Carrasco*, Sistema generador de animaciones interactivas para la docencia de algoritmos recursivos, Universidad Rey Juan Carlos, Spain, 2011 (member of grading committee),
9. *Francisco Martinez*, Generation of Educational Visualizations of the Syntax Analysis, Universidad Rey Juan Carlos, Spain, 2011 (reviewer for a European PhD),
10. *Marie Nordström*, Object Oriented Quality in Introductory Programming Education, Umeå University, Sweden, 2010 (member of grading committee),
11. *Linda Mannila*, Teaching Mathematics and Programming – New Approaches with Empirical Evaluation, Åbo Akademi, Finland, 2009 (pre-examiner and opponent),
12. *Anna Eckerdal*, Novice Programming Students' Learning of Concepts and Practise, Uppsala University, Sweden, 2009 (opponent),
13. *Maxim Mozgovoy*, Enhancing Computer-Aided Plagiarism Detection, University of Joensuu, Finland, 2007 (pre-examiner),
14. *Kirsti Ala-Mutka*, Automatic Assessment Tools in Learning and Teaching Programming. Tampere University of Technology, Finland, 2005 (pre-examiner and opponent),
15. *Anders Berglund*, Learning Computer Systems in a Distributed Project Course - The What, Why, How and Where. Member of examination committee, Uppsala University, Sweden, 2005 (member of examination committee)

#### *Program committees*

- ICER, International Computing Education Research Workshop, Member of Review committee, 2005-2017, associate PC chair 2015, **program chair 2017-2018**
- ISSEP 2006, Informatics in Secondary Schools – Evolution and Perspectives, PC member
- Koli Calling, International Conference on Computing Education Research, PC member 2002 – 2017, **chair 2004, co-chair 2008**
- LaTiCE 2013-2014, IEEE conference on Learning and Teaching in Computing and Engineering, PC member
- NoPhiCER, Nordic Workshop on Phenomenography in Computing Education Research, PC member 2007, chair 2008
- Program Visualization Workshop, PVW, PC member 2004, 2006, 2008, 2011, chair 2004
- Reflektori 2007, National symposium on Engineering Education, PC chair
- Softvis, ACM Symposium of Software Visualization, PC member 2005, 2008

#### *Membership of editorial board of scientific journals*

- *IEEE Transactions of Learning Technologies*, Member of editorial board, 2013-
- *ACM Transactions on Computing Education* (former JERIC, Journal of Educational Resources in Technology), Member of editorial board, 2010-2015, special guest editor, 2009
- *ACM Inroads*, Member of editorial advisory board, 2013-, regular columnist: Computing Education Research, 2013-
- *Informatics in Education*, Member of editorial board, 2006-, special guest editor in vol 4 no 1, 2005

#### *Other scientific positions of trust*

- Board member, SEFI working group on Engineering Education Research (2009-)
- Board member, NNEER, Nordic Network of Engineering Education Research (2010-2013)
- Board member, Finnish Society for Computer Science (1990-1992, 2007-2009), vice president 2009.
- Chair of evaluation committee for School of Computer Science and Communications in Education Assessment Exercise at Kungliga Tekniska Högskolan, Sweden, 2011.
- Steering group member, Nordic Network of Engineering Education Research (2010-2013)

#### *Referee in scientific journals*

- ACM JERIC, Journal of Educational Resources in Technology, ACM Transactions on Computing Education, Computer Science Education, European Journal of Engineering Education, IEEE Transactions on Education, Informatics in Education, Information & Software Technology, Journal of Engineering Education, Nordic Journal of Computing

#### *Referee in scientific conferences*

- ACM ITICSE 2004-2010, Innovation and Technology in Computer Science Education
- ACM SIGCSE 2006-2008, SIGCSE Technical Symposium on Computer Science Education
- Annual SEFI conference, 2010-, European Society for Engineering Education

#### *Research training activities and experience*

- Doctoral training network in Science, Technology, Engineering, Arts & Design, and Mathematics: Learning and Educational Technology (STEAM-LET), 2014->, Chair 2014-2016.
- ICER (International Computing Education Research conference), co-chair of doctoral consortium, UC Berkeley, USA, 2009, co-chair of ICER doctoral consortium, 2010, Aarhus University
- ICER 2014 doctoral consortium, discussant
- International doctoral consortium on informatics and informatics engineering education research: scope, methods, and validation, Vilnius University (Druskininkai, Lithuania), 2013.
- Koli Calling doctoral consortium, Koli, Finland, 2009, 2011, co-chair
- “Introduction to Engineering Education Research”, Nordic research training course (15 ECTS), 2010, main coordinator
- Helsinki Graduate of Computer Science and Engineering (HeCSE), 2009-2013, Board member

#### *Selected international working groups, keynotes and visits abroad*

- ITICSE working groups



- 1) "Increasing Accessibility and Adoption of Smart Technologies for Computer Science Education", Uppsala, Sweden, 2014. Co-chair, 2) "Design Patterns for Online Learning Environments in CS", Madrid, Spain, 2008. Co-chair, 3) "A Survey of Literature on the Teaching of Introductory Programming", Dundee, Scotland, 2007, 4) "A Seminal Literature for Computer Science Education Research", Lisbon, Portugal, 2005., 5) "Evaluating the educational impact of algorithm visualization", Thessaloniki, Greece, 2003, 6) "Improving the Educational Impact of Algorithm Visualization", Aarhus, Denmark, 2002.
- Selected keynotes and invited talks
    - "Using automatic and semi-automatic feedback to support students's learning process", CDIO European Regional Meeting, TU/Delft, 2016
    - "Technologies for supporting students' learning process on large courses", TU/Eindhoven, 2015
    - "(Nordic) Engineering education research", Technical University of Denmark, 2014
    - "Reflections of PhD projects in Computing Education Research", Uppsala University, Sweden, 2013.
    - "A survey of theoretical foundations and research processes in Computing Education Research", Uppsala University, Sweden, 2013.
    - "Many faces of Computing Education Research", Monash University, Australia, 2012, also in University of Auckland and Auckland University of Technology, New Zealand, 2012.
    - "Sample dissertations in programming education", Melbourne Computing Education Conventicle, 2012.
    - "What is the level of a PhD thesis in EER?", Annual Seminar of Nordic Network in Engineering Education, Aalborg, Denmark, 2012, panelist
    - "The European perspective on Engineering Education Research; the status quo:", 1<sup>st</sup> European Summit of Engineering Education Research, Leuven, Belgium, 2011, panelist
    - "Why, What and How Are We Doing Our Research?", International Conference on Computer Supported Education (CSEDU), Netherlands, May 2011.
    - "Computing education and Programming education research", Vilnius University, Lithuania, 2010.
    - "Tools Research for Programming Education", Aarhus University, Denmark, 2010.
    - "Research and Development in Computing Education". CETUSS workshop: Developing Computer Science Education - How Can It Be Done? Linköping, Sweden, 2006.
  - Major visits abroad
    - Visiting professor, Monash University, Australia, 10-12/2012
    - Visiting professor, Uppsala University, Sweden, 3-5/2013

## 8. Summary of publications (see separate document for a complete list)

- 33 international refereed journal papers, 70 international refereed conference papers, 44 other scientific publications, 1 text book
- Google scholar citations 3216, H-index 26 (1553 and 18 since 2012).

Lauri Malmi  
List of publications  
18.5.2017

*Summary*

- 33 international refereed journal papers, 70 international refereed conference papers, 44 other scientific publications, 1 text book
- Google scholar citations 3216, H-index 26 (1553 and 18 since 2012).

A1. *Articles in international scientific refereed journals*

1. L. Malmi. A New Method for Updating and Rebalancing Tree-Type Main Memory Dictionaries. *Nordic Journal of Computing*, vol 3 no 2, 1996, pp. 111-130.
2. R. Vilmi, L. Malmi. Learning English by Creating, Writing and Playing WWW Adventure Games. *Educational Technology Research & Development*, vol 44 no 3, 1996, pp. 109-118.
3. A. Korhonen, L. Malmi, J. Nikander, P. Tenhunen, Interaction and Feedback in Automatically Assessed Algorithm Simulation Exercises. *Journal of Information Technology Education*, vol. 2, 2003, pp. 241-255.
4. T. Naps, G. Rössling, et. al. Exploring the Role of Visualization and Engagement in Computer Science Education. Report of the Working Group on "Improving the Educational Impact of Algorithm Visualization", ITICSE'2002. *ACM SIGCSE Bulletin*, vol. 35 no 2, 2003, pp. 131-152.
5. T. Naps, G. Rössling, et. al.: Evaluating the Educational Impact of Visualization. Report of the ITICSE'2003 working group on "Evaluating the Educational Impact of Visualization". *SIGCSE Bulletin*, vol 35 no 4, 2003, pp. 124-136.
6. L. Malmi, V. Karavirta, A. Korhonen, J. Nikander, O. Seppälä, P. Silvasti: Visual Algorithm Simulation Exercise System with Automatic Assessment: TRAKLA2. *Informatics in Education*, vol 3 no 2, 2004, pp. 267-288.
7. M-J. Laakso, T. Salakoski, L. Grandell, X. Qiu, A. Korhonen, and L. Malmi, Multi-Perspective Study of Novice Learners Adopting the Visual Algorithm Simulation Exercise System TRAKLA2. *Informatics in Education*, vol 4 no 1, 2005, pp. 49-68.
8. S. Surakka, L. Malmi, Delphi study of the cognitive skills of experienced software developers. *Informatics in Education*, vol 4 no 1, 2005, pp. 123-142.
9. P. Kinnunen, L. Malmi, Problems in Problem-Based Learning - Experiences, Analysis and Lessons Learned on an Introductory Programming Course. *Informatics in Education*, vol 4 no 2, 2005, pp. 193-214.
10. S. Surakka, L. Malmi, Need Assessment of Computer Science and Engineering Graduates. *Computer Science Education*, vol 15 no 2, 2005, pp. 103-121.
11. E. Nuutila, S. Törmä, L. Malmi, PBL and Computer Programming - The Seven Steps Method with Adaptations. *Computer Science Education*, vol 15 no 2, 2005, pp. 123-142.
12. A. Pears, S. Seidman, C. Eney, P. Kinnunen, L. Malmi, Constructing a Core Literature for Computing Education Research. Report of the ITICSE 2005 working group "A Seminal Literature for Computer Science Education Research". *SIGCSE Bulletin*, vol 37 no 4, pp. 152-161, 2005.
13. L. Malmi, V. Karavirta, A. Korhonen, J. Nikander, Experiences on Automatically Assessed Algorithm Simulation Exercises with Different Resubmission Policies. *ACM Journal of Educational Resources in Computing*, vol 5 no 3, Article 7, 2005.
14. V. Karavirta, A. Korhonen, L. Malmi, On the use of resubmissions in Automatic Assessment systems. *Computer Science Education*, vol 16 no 3, 2006, pp. 229-240.

15. O. Seppälä, L. Malmi, A. Korhonen, Observations on Student Misconceptions - A Case Study of the Build-Heap Algorithm. *Computer Science Education*, vol 16 no 3, 2006, pp. 241-255.
16. M. Zhou, A. Korhonen, L. Malmi, I. Kosonen, T. Luttinen, Integration of GIS-T with Real-time Traffic Simulation System: An Application Framework. *Transportation Research Record: Journal of the Transportation Research Board*. vol. 1972, 2007. pp. 78-84.
17. A. Pears, S. Seidman, L. Malmi, L. Mannila, E. Adams, J. Bennedsen, M. Devlin, J. Paterson, A Survey of Literature on the Teaching of Introductory Programming, *ACM SIGCSE Bulletin*, vol 39 no 4, 2007, pp. 204-223.
18. M-J. Laakso, L. Malmi, A. Korhonen, Using Roles of Variables to Enhance Novice's Debugging Work. *Issues in Informing Science and Information Technology*, vol 5, 2008, pp. 281-295.
19. G. Rößling (co-chair), L. Malmi (co-chair), M. Clancy, M. Joy, A. Kerren, A. Korhonen, A. Moreno, T. Naps, R. Oeschle, A. Radenski, R. Ross, J. Angel Velazquez-Iturbide, Enhancing Learning Management Systems to Better Support Computer Science Education. *ACM SIGCSE Bulletin*, vol 40, no 4, 2008. pp. 142-166.
20. A. Pears, A. Berglund, A. Eckerdal, P. East, P. Kinnunen, L. Malmi, R. McCartney, J-E. Moström, L. Murphy, M. Ratcliffe, C. Schulte, B. Simon, I. Stamouli, L. Thomas, Learning Computer Science: Perceptions, Actions and Roles. *European Journal of Engineering Education*, vol 34 no 4. pp. 327-338.
21. A. Pears, A., L. Malmi, 2009. Values and Objectives in Computing Education Research. *ACM Transactions on Computing Education*, vol 9, 3 (Sep. 2009), 1-6. (preface to special issue on selected papers from Koli Calling 2008 conference).
22. V. Karavirta, A. Korhonen, L. Malmi, T. Naps, A Comprehensive Taxonomy of Algorithm Animation Languages. *Journal of Visual Languages and Computing*, vol. 21, nro 1, 2010, p. 1-22.
23. A. Taherkhani, A. Korhonen, L. Malmi, Recognizing Algorithms Using Language Constructs, Software Metrics and Roles of Variables: An Experiment with Sorting Algorithms. *Computer Journal*, 2011. vol. 54, nro 7, pp. 1049-1066.
24. A. Taherkhani, A. Korhonen, L. Malmi, Categorizing Variations of Student-Implemented Sorting Algorithms. *Computer Science Education*, 2012, vol 22 no 2, pp. 109-138.
25. J. Sorva, J. Lönnberg, L. Malmi, Students' ways of experiencing visual program simulation. *Computer Science Education*, 2013 (<http://dx.doi.org/10.1080/08993408.2013.807962>)
26. A. Taherkhani, L. Malmi, Beacon- and Schema-Based Method for Recognizing Algorithms from Students' Source Code. *Journal of Educational Data Mining*, vol 5 no 2, 2013, pp. 69-101.
27. J. Sorva, V. Karavirta, L. Malmi, A Review of Generic Program Visualization Systems for Introductory Programming Education. *ACM Transactions of Computing Education*, vol 13 no 4, article 15. 2013.
28. T. Auvinen, L. Hakulinen, L. Malmi, Increasing Students' Awareness of their Behavior in Online Learning Environments with Visualizations and Achievement Badges. *IEEE Transactions in Learning Technologies*, vol 8 no 3, 2015, 261-273.
29. P. Kinnunen, J. Lampiselkä, L. Malmi, V. Meisalo, Pedagogical Foci in Nordic Physics and Chemistry Education Research Papers. *Nordic Studies in Science Education (NorDiNa)*, vol 12 no 1, 2016, 3-20,
30. K. Edström, A. Kolmos, L. Malmi, J. Bernhard and P. Andersson, A bottom-up strategy for establishment of EER in three Nordic countries – the role of networks. *European Journal of Engineering Education*. <http://dx.doi.org/10.1080/03043797.2016.1190956>, 2016.
31. L. Malmi, T. Adawi, R. Curmi, E. De Graaff, G. Duffy, C. Kautz, P. Kinnunen, B. Williams, A Methodological Analysis of recent Engineering Education Research papers in European Journal of

- Engineering Education. *European Journal of Engineering Education*, 2016.  
<http://dx.doi.org/10.1080/03043797.2016.1202905>
32. A. Al Lily, J. Foland, D. Stoloff, ..., L.Malmi, ..., Academic Domains as Political Battlegrounds - A Global Enquiry by 100 Academics in the Fields of Education and Technology. *Information Development*, 2016, <https://doi.org/10.1177/0266666916646415>.
  33. T. M. Takala, L. Malmi, R., Pugliese, T. Takala, Empowering Students to Create Better Virtual Reality Applications: A Longitudinal Study of a VR Capstone Course. *Informatics in Education- An International Journal*, vol 15 no 2, 2016, 287-317.
- A2. *Articles in international edited volumes and peer-reviewed conference publications*
1. L. Malmi: Efficient Rebalancing of Tree-Type Main Memory Dictionaries. *Proceedings of 5th Australasian Database Conference*, Global Publication Services, 1993, pp. 227-246.
  2. L. Malmi: CENVIRON - An Environment for Teaching and Learning C Language. *Proceedings of CLCE'94, Complex Learning in Computer Environment*, University of Joensuu, Finland, 1994, pp. 87-90.
  3. A. Eerola, L.Malmi: KELVIN - A System for Analysing and Teaching C Programming Style. *Proceedings of CLCE'94, Complex Learning in Computer Environment*, University of Joensuu, Finland, 1994. pp. 112-117.
  4. K. Oksanen, L. Malmi. Memory Reference Locality and Periodic Relocation in Main Memory Search Trees, *Proceedings of the 5th Hellenic Conference on Informatics*, Athens, Greece, 1995, pp. 679-687.
  5. L. Malmi, E. Soisalon-Soininen, Group Updates for Relaxed Height-Balanced Trees. *Proceedings of PODS'99, Principles of Database Systems*, 1999, pp. 358-367.
  6. A. Korhonen, L. Malmi: Algorithm Simulation with Automatic Assessment. *Proceedings of ITICSE'2000, Innovation and Technology in Computer Science Education*, 2000, pp. 160-163.
  7. A. Korhonen, L. Malmi, Design Pattern for Algorithm Animation and Simulation, *Proceedings of the First Program Visualization Workshop*, International Proceedings Series #1, University of Joensuu, 2001, pp. 89-100.
  8. R. Saikkonen, L. Malmi, A. Korhonen, Fully Automatic Assessment of Programming Exercises. *Proceedings of ITICSE'2001, Innovation and Technology in Computer Science Education*, 2001, pp. 133-136.
  9. A. Korhonen, L. Malmi. Matrix - Concept Animation and Algorithm Simulation System. *Proceedings of AVI'2002, Advanced Visual Interfaces*, 2002, p. 109-114.
  10. A. Korhonen, L. Malmi, P. Myllyselkä, P. Scheinin. Does It Make A Difference If the Students Exercise on the Web Or in the Class Room? *Proceedings of ITICSE'2002, Innovation and Technology in Computer Science Education*, 2002, pp. 121-124.
  11. L. Malmi, A. Korhonen, R. Saikkonen. Experiences in Automatic Assessment on Mass Courses and Issues for Designing Virtual Courses}. *Proceedings of ITICSE'2002, Innovation and Technology in Computer Science Education*, 2002, pp. 55-59.
  12. A. Korhonen, L. Malmi, J. Nikander, and P. Silvasti. Algorithm Simulation -- A Novel Way to Specify Algorithm Animations. *Proceedings of the Second Program Visualization Workshop*, Denmark. Report, DAIMI PB - 547, Department of Computer Science, University of Aarhus, Denmark, 2002, pp. 28-36.
  13. A. Korhonen, L.Malmi, Internet Based Training of Data Structures and Algorithms at University Education. In: J. Bobry, A. Eteläpelto (Eds.): *Collaboration and Learning in Virtual Environments*. Ebook available in URL: <http://selene.lib.jyu.fi:8080/julpu/9513914208.pdf>. University of Jyväskylä, Finland, 2003, pp. 137-146.

14. P. Silvasti, L. Malmi, P. Torvinen: Collecting statistical data of the usage of a web-based educational software. *Proceedings of IASTED International Conference on Web-based Education*, Austria, 2004, pp. 107--110.
15. J. Lönnberg, A. Korhonen, L. Malmi: MVT - A system for visual testing of software. Jan Lönnberg, *Proceedings of the Working Conference on Advanced Visual Interfaces (AVI'04)*, ACM, 2004, pp. 385-388.
16. J. Naukkarinen, L. Malmi, Faculty Development in Engineering Education in Finland. In: A. Kolmos, O. Vinther, P. Andersson, L. Malmi, M. Fuglem (Eds.) *Faculty Development in Nordic Engineering Education*. Aalborg University Press, Denmark, 2004. pp. 97-110.
17. P. Andersson, L. Malmi, Proposing Nordic Excellent Teaching Practice, NETP. In: A. Kolmos, O. Vinther, P. Andersson, L. Malmi, M. Fuglem (Eds.) *Faculty Development in Nordic Engineering Education*. Aalborg University Press, Denmark, 2004. pp. 89-96.
18. V. Karavirta, A. Korhonen, L. Malmi, K. Stålnacke, MatrixPRO - A Tool for Demonstrating Data Structures and Algorithms Ex Tempore. *Proceedings of Third Program Visualization Workshop*. Research Report CS-RR-407, Department of Computer Science, The University of Warwick, UK, 2004. pp. 26-33.
19. A. Korhonen, L. Malmi, Taxonomy of Visual Algorithm Simulation Exercises. *Proceedings of Third Program Visualization Workshop*. Research Report CS-RR-407, Department of Computer Science, The University of Warwick, UK, 2004. pp. 118-125.
20. L. Malmi, A. Korhonen, Automatic Feedback and Resubmissions as Learning Aid. *Proceedings of ICALT'2004, 4th IEEE International conference on Advanced Learning Technologies*, 2004, pp. 186-190.
21. P. Kinnunen, L. Malmi, Analysing Discussion in Problem-Based Learning Group in Basic Programming Course. *Proceedings of Fourth Finnish / Baltic Sea Conference of Computer Science Education*, Report TKO-A42/04, Laboratory of Information Processing Science, Helsinki University of Technology, Finland, 2004, pp. 97-100.
22. S. Surakka and L. Malmi, Cognitive skills of experienced software developer: Delphi study. *Proceedings of Fourth Finnish / Baltic Sea Conference of Computer Science Education*, Report TKO-A42/04, Laboratory of Information Processing Science, Helsinki University of Technology, Finland, 2004, pp. 37-46.
23. M. Laakso, T. Salakoski, A. Korhonen, L. Malmi, Case study: Introducing WWW-based Exercise System TRAKLA2 in Course of Algorithms and Data Structures at University of Turku. *Proceedings of Fourth Finnish / Baltic Sea Conference of Computer Science Education*, Report TKO-A42/04, Laboratory of Information Processing Science, Helsinki University of Technology, Finland, 2004, pp. 28-36.
24. P. Kinnunen, L. Malmi, Do Students Work Efficiently in a Group? - Problem-Based Learning Groups in Basic Programming Course. *Proceedings of Fourth Finnish / Baltic Sea Conference of Computer Science Education*, Report TKO-A42/04, Laboratory of Information Processing Science, Helsinki University of Technology, Finland, 2004, pp. 57-66.
25. J. Sorva, L. Malmi, An Object Testing Tool For CS1. *Ninth Workshop on Pedagogies and Tools for the Teaching and Learning of Object Oriented Concepts*, ECOOP, 2005.  
<http://www.cs.umu.se/~jubo/Meetings/ECOOP05/Submissions>
26. A. Pears, S. Seidman, C. Eney, P. Kinnunen, L. Malmi, Maintaining a Core Literature of Computing Education Research. *Proceedings of Koli Calling 2005 - Fifth Koli Calling Conference of Computer Science Education*, TUCS General Publication No 41, Turku Centre for Computer Science, 2006, pp.170-173.
27. V. Karavirta, A. Korhonen, L. Malmi, Different Learners Need Different Resubmission Policies in Automatic Assessment Systems. *Proceedings of Koli Calling 2005 - Fifth Koli Calling*

- Conference of Computer Science Education*, TUCS General Publication No 41, Turku Centre for Computer Science, 2006, pp. 95-102
28. O. Seppälä, L. Malmi, A. Korhonen, Observations on student errors in algorithm simulation exercises. *Proceedings of Koli Calling 2005 - Fifth Koli Calling Conference of Computer Science Education*, TUCS General Publication No 41, Turku Centre for Computer Science, 2006, pp. 81-86.
  29. M. Rontu, A. Korhonen, L. Malmi, System for Enhanced Exploration And Querying. *Proceedings of AVI 2006, Advanced Visual Interfaces*, Venice, Italy, 2006. pp. 508-511.
  30. V. Karavirta, A. Korhonen, L. Malmi: Taxonomy of Algorithm Animation Languages. *Proceedings of SoftVis 2006 – ACM Symposium of Software Visualization*, 2006, pp. 77-85.
  31. P. Kinnunen, L. Malmi: Why Students Drop Out CS1 Course? *Proceedings of ICER 2006. International Conference on Computing Education Research*, ACM, 2006, pp. 97-108.
  32. M. Zhou, Ari Korhonen, L. Malmi, I. Kosonen, T. Luttinen, Integration of GIS-T with Real-time Traffic Simulation System: An Application Framework. *Proceedings of the 86<sup>th</sup> Traffic engineering Board*, Washington, USA, 2006.
  33. J. Sorva, Juha, L. Malmi, Incorrect Understandings and Phenomenography. *First Nordic Workshop on Phenomenography in Computing Education Research*, NoPhICER. Uppsala 2007.
  34. M. Zhou, I. Kosonen, L. Malmi, Towards more efficient traffic information services by integrating real-time traffic simulation system, *The 6th European Congress on ITS*, Aalborg, Denmark, 18th - 20th of June 2007.
  35. M. Zhou, L. Malmi, A. Korhonen, I. Kosonen, T. Luttinen, Visualization on Real-time Traffic Simulation Data Stream. *Proceedings of 14th World Congress on Intelligent Transport Systems*, Beijing, 2007.
  36. L. Malmi, A. Korhonen, Active Learning and Examination Methods in a Data Structures and Algorithms Course. In: M. Caspersen, J. Bennedsen, M. Kölling (Eds.), *Reflections on Teaching Programming*, Springer, 2008. pp. 210-227.
  37. E. Nuutila, S. Törmä, P. Kinnunen, L. Malmi, Learning Programming with the PBL Method - Experiences on PBL Cases and Tutoring. In: M. Caspersen, J. Bennedsen, M. Kölling (Eds.), *Reflections on Teaching Programming*, Lecture Notes in Computer Science 4821, Springer, 2008. pp. 47-67.
  38. A. Berglund, P. Kinnunen, L. Malmi, A doctoral course in research methods in computing education research - How should we teach it? *Proceedings of Koli Calling - 7th Baltic Sea Conference on Computing Education Research*. CRPIT, vol 88, 2008. pp. 175-178.
  39. A. Pears, A. Berglund, A. Eckerdal, P. East, P. Kinnunen, L. Malmi, R. McCartney, J-E. Moström, L. Murphy, M. Ratcliffe, C. Schulte, B. Simon, I. Stamouli, L. Thomas, What's the Problem? Teachers' Experience of Student Learning Successes and Failures. *Proceedings of Koli Calling - 7th Baltic Sea Conference on Computing Education Research*. CRPIT, vol 88, 2008. pp. 207-211.
  40. P. Kinnunen, L. Malmi, CS Minors in a CS1 Course. *Proceedings of ICER 2008, International Computing Education Research Workshop*, ACM, 2008, pp. 79-90.
  41. A. Taherkhani, L. Malmi, A. Korhonen. Algorithm Recognition by Static Analysis and Its Application in Students' Submissions Assessment, *Proceedings of 8th Koli Calling – International Conference on Computing Education Research*. Uppsala University, 2009. pp. 88-91.
  42. J. Lönnberg, A. Berglund, L. Malmi. Helping Students Debug Concurrent Programs, *Proceedings of 8th Koli Calling – International Conference on Computing Education Research*. Uppsala University, 2009. pp. 76-79.
  43. J. Lönnberg, A. Berglund, L. Malmi, How Students Develop Concurrent Programs. *Proceedings of ACE'2009, Australasian Computing Education conference*, 2009. pp. 129-138.

44. A. Taherkhani, A. Korhonen, L. Malmi, Using Roles of Variables in Algorithm Recognition, *Proceedings of 9th Koli Calling – International Conference on Computing Education Research*, 2010.
45. J. Helminen, L. Malmi, A. Korhonen, Quick Introduction to Programming with an Integrated Code Editor, Automatic Assessment and Visual Debugging Tool - Work in Progress. *Proceedings of 9th Koli Calling – International Conference on Computing Education Research*, 2010, pp. 59-62.
46. L. Malmi, J. Sheard, Simon, R. Bednarik, J. Helminen, A. Korhonen, N. Myller, J. Sorva, A. Taherkhani, Characterizing research in computing education: a preliminary analysis of the literature. *Proceedings of the Sixth International Workshop on Computing Education Research (ICER '10)*. 2010. ACM, New York, NY, USA. 3-12.
47. P. Kinnunen, V. Meisalo, L. Malmi, Have we missed something?: identifying missing types of research in computing education. *Proceedings of the Sixth international workshop on Computing Education Research (ICER '10)*. 2010. ACM, New York, NY, USA. 13-22.
48. J. Helminen, L. Malmi: Jype - a program visualization and programming exercise tool for Python. *Proceedings of the 5th international symposium on Software visualization (SOFTVIS '10)*. 2010. ACM, New York, NY, USA. 153-162.
49. L. Malmi, T. Salakoski. 2010. Reflections on Koli Calling Conference: emergence of the Koli spirit. In *Proceedings of the 10th Koli Calling International Conference on Computing Education Research (Koli Calling '10)*. 2010. ACM, New York, NY, USA, 128-128.
50. J. Lönnberg, M. Ben-Ari, L. Malmi, Visualising concurrent programs with dynamic dependence graphs. *Proceedings of the 6th IEEE International Workshop on Visualizing Software for Understanding and Analysis (VISSOFT 2011)*, Williamsburg, Virginia, September 29-30, 2011. Pp. 1-4. IEEE.
51. J. Lönnberg, M. Ben-Ari, L. Malmi, Java replay for dependence-based debugging. *Proceedings of the Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD - IX)*, Toronto, Canada, July 17, 2011. New York, NY 2011, ACM, pp. 15-25.
52. J. Lönnberg, L. Malmi, M. Ben-Ari, Evaluating a Visualisation of the Execution of a Concurrent Program. *Proceedings of the 11th Koli Calling International Conference on Computing Education Research (Koli Calling 2011)*. 2011, ACM, 39-48.
53. J. Helminen, P. Ihantola, V. Karavirta, L. Malmi, How Do Students Solve Parsons Programming Problems?: -- An Analysis of Interaction Traces. *Proceedings of 8<sup>th</sup> International Computing Education Research Workshop*, Auckland, New Zealand, September, 2012. ACM, 119-126.
54. A-K. Högfeldt, A. Cornell, M. Cronhjort, A. Jerbrant, R. Lyng, R. Kantola, L. Malmi, U. Lundqvist, J. Malmqvist, P. Hussmann, J. Villadsen, H. Brattebø, T. Torvatn, Program leadership from a Nordic perspective – managing education development. *Proceedings of 2012 International CDIO Conference*.
55. A. Taherkhani, A. Korhonen, L. Malmi, Automatic Recognition of Students' Sorting Algorithm Implementations in a Data Structures and Algorithms Course. *Proceedings of Koli Calling 2012, International Conference on Computing Education Research*, pp. 83-92.
56. J. Lönnberg, L. Malmi, Back to School – How Professional Software Developers Develop and Test Software in an Educational Context. *Proceedings of Koli Calling 2012, International Conference on Computing Education Research*, pp. 47-56.
57. L. Malmi, E. De Graaf, T. Adawi, R. Curmi, G. Duffy, C. Kautz, P. Kinnunen, B. Williams, Developing a Methodological Taxonomy of EER papers. *Proceedings of 40<sup>th</sup> SEFI Annual Conference 2012*, Tesseloniki, Greece, 23-26 September, 2012.

58. A.-K. Högfeltd, E. Strömberg, A. Jerbrant, A. Berglund, P. Hussmann, J Villadsen, P. Kinnunen, L. Malmi, J. Malmqvist, B. Baggerud, Program leadership from a Nordic perspective – Program leaders’ power to influence their program. In: *Proceedings of CDIO 2013 conference*.
  59. L. Malmi, T. Adawi, R. Curmi, E. De Graaff, G. Duffy, C. Kautz, P. Kinnunen, B. Williams, Methodological Analysis of SEFI EER papers. In: *Proceedings of SEFI 2013 conference*, paper 87.
  60. P. Kinnunen, L. Malmi, Pedagogical Focus of Recent Engineering Education Research Papers. In: *Proceedings of SEFI 2013 conference*, paper 78.
  61. P. Kinnunen, J. Lampiselkä, L. Malmi, V. Meisalo, Identifying Missing Types of Research in Science Education. *Proceedings of 10th Conference of the European Science Education Research Association (ESERA) 2013*. <http://www.esera.org/publications/esera-conference-proceedings/science-education-research-for-evidence/>
  62. A. Eckerdal, P. Kinnunen, N. Thota, A. Nylén, J. Sheard, and L. Malmi. Teaching and learning with MOOCs: Computing academics’ perspectives and engagement. In *Proceedings of the 19th Annual Joint Conference on Innovation and Technology in Computer Science Education (ITiCSE '14)*, p. 9-14.
  63. L. Hakulinen, L. Malmi. QR code programming tasks with automated assessment. In *Proceedings of the 19th Annual Joint Conference on Innovation and Technology in Computer Science Education (ITiCSE '14)*, p. 177-182.
  64. P. Kinnunen, V. Meisalo, L. Malmi (In print). Highlighting Multi-Level Processes in Science Teaching and Learning. LUMAT: Research and Practice in Math, Science and Technology Education. *Proceedings of Nordic Research Symposium on Science Education (NFSUN)*, 2014.
  65. L. Malmi, J. Sheard, Simon, R. Bednarik, J. Helminen, P. Kinnunen, A. Korhonen, N. Myller, J. Sorva, A. Taherkhani, Theoretical Underpinnings of Computing Education Research – What is the Evidence? *Proceedings of the Tenth International Conference on Computing Education Research (ICER '14)*, pp. 27-34.
  66. J. Sheard, A. Eckerdal, P. Kinnunen, L. Malmi, A. Nylén, N. Thota, MOOCs and the Impact on Academics. *Proceedings of Koli Calling 2014, International Conference on Computing Education Research*, pp. 137-145.
  67. P. Brusilovsky, S. Edwards, A. Kumar, L. Malmi (co-chairs), L. Benotti, D. Buck, P. Ihtola, R. Prince, T. Sirkiä, S. Sosnovsky, J. Uguiza, A. Vihavainen, M. Wollowski, Increasing Adoption of Smart Learning Content for Computer Science Education. *Proceedings of the Working Group Reports of the 2014 on Innovation & Technology in Computer Science Education Conference*.
  68. P. Kinnunen, V. Meisalo, L. Malmi, Feedback loop model - a tool for systematic analysis of challenges of instructional processes in science education. *Proceedings of 11th Conference of the European Science Education Research Association (ESERA) 2015*.
  69. R. Hosseini, T. Sirkiä, J. Guerra, P. Brusilovsky, L. Malmi, Animated Examples as a Practice Content in Java Programming Course. *Proceedings of the 47th ACM Technical Symposium on Computing Science Education*. pp. 540-545. 2016.
  70. J. Lampiselkä, P. Kinnunen, L. Malmi, A. Kaasinen. Research on teaching and learning in biology, chemistry and physics ESERA 2013 conference. Accepted for publication in the *Proceedings of 12th Conference of the European Science Education Research Association (ESERA) 2017*.
- A3. *Articles in peer-reviewed Finnish scientific conference proceedings*
1. J. Hyvönen, L.Malmi: TRAKLA - A System for Teaching Algorithms Using Email and a Graphical Editor. *Proceedings of HYPERMEDIA in Vaasa'93*, 1993, pp. 141-147.



2. J. Hautaniemi, E. Rämö, L. Malmi: CALPAS: A Computer Assisted Learning Environment for Pascal Programming. *Proceedings of HYPERMEDIA in Vaasa'93*, 1993, pp. 116-120.
3. L. Malmi: BALT - A Tool for Studying Balanced Trees. *Proceedings of Vaasa Hypermedia'94*, 1994, pp. 287-293.
4. V. Hirvisalo, K. Kaiju, J. Kotovirta, L. Malmi, E. Nuutila, I. Rein, T. Soininen: VIA - Interactive Graph Algorithm Animator. *Proceedings of Vaasa Hypermedia'94*, 1994, pp. 174-179.
5. A. Korhonen, L. Malmi, J. Nikander, and P. Tenhunen. Automatic Feedback and Algorithm Simulation. In *Proceedings of Kolin Kolistelut - First Annual Baltic Conference on Computer Science Education*, Report A-2002-1, University of Joensuu, Finland, 2002. pp. 20-26.
6. A. Korhonen, L. Malmi, P. Mård, H. Salonen, P. Silvasti. Electronic course material on Data Structures and Algorithms. *Proceedings of Second Finnish / Baltic Sea Conference of Computer Science Education*, Report A-2002-7, University of Joensuu, Department of Computer Science, pp. 16-20.
7. P. Kinnunen, L. Malmi. Problem Based Learning in Introductory Programming Does It Scale Up? *Proceedings of Second Finnish / Baltic Sea Conference of Computer Science Education*, Report A-2002-7, University of Joensuu, Department of Computer Science, pp. 38-42.
8. L. Malmi, S. Ensio, T. Riski. Course Management System For Large Scale Courses. *Proceedings of Second Finnish / Baltic Sea Conference of Computer Science Education*, Report A-2002-7, University of Joensuu, Department of Computer Science, pp. 81-82.
9. A. Korhonen, L. Malmi, P. Silvasti, TRAKLA2: A Framework for Automatically Assessed Visual Algorithm Simulation Exercises. *Proceedings of Third Finnish / Baltic Sea Conference of Computer Science Education*. Report B-2003-3, Department of Computer Science, University of Helsinki, 2003, pp. 41-49.
10. P. Kinnunen, L. Malmi: Some Methodological Viewpoints how to Evaluate Efficiency of Learning in a Small Group - a Case Study of Learning Programming. *Proceedings of XXI Annual Symposium of the Finnish Mathematics and Science Education Research*. Research report 253, University of Helsinki, Department of Applied Sciences of Education, 2004, pp. 510-527.
11. P. Kinnunen, J. Lampiselkä, L. Malmi, V. Meisalo, Pedagogical aspects in Finnish science education research publications. *Proceedings of the annual conference of Finnish Mathematics and Science Education Research Association*, 2013. Research report series of the department of teacher education, University of Jyväskylä. pp. 153-164.

C. *Scientific monographs, edited proceedings*

1. L. Malmi: A Structured Intermediate Language for Modula-2. Teknillinen korkeakoulu, laskentakeskus, Research Report 27, 1986, 37 p.
2. L. Malmi, Pascal-ohjelmien samankaltaisuuden tutkimisesta (On detecting plagiarism in Pascal programs). Licentiate's thesis, Helsinki University of Technology, Department of Computer Science, 1989.
3. L. Malmi et al: Detecting Plagiarism in Pascal and C Programs, Report TKO-B78, Department of Computer Science, Helsinki University of Technology, 1992, 23 p.
4. L. Malmi: An Efficient Algorithm for Balancing Binary Search Trees, Report TKO-B84, Department of Computer Science, Helsinki University of Technology, 1992, 16 p.
5. J. Hyvönen, L. Malmi: TRAKLA - A System for Teaching Algorithms Using Email and a Graphical Editor. Report TKO-B100, Department of Computer Science, Helsinki University of Technology, 1993, 9 p.
6. L. Malmi: Efficient Rebalancing of Tree-Type Main Memory Dictionaries, Report TKO-B107, Department of Computer Science, Helsinki University of Technology, 1993, 31 p.

7. K. Oksanen, L. Malmi. Memory Reference Locality and Periodic Relocation in Main Memory Search Trees. Report TKO-B126, Department of Computer Science, Helsinki University of Technology, 1995, 11 p.
8. L. Malmi, On Updating and Balancing Relaxed Balanced Search Trees in Main Memory, Thesis for a Doctor of Science in Technology, report A 35, Helsinki University of Technology, Laboratory of Information Processing Science, 1997, 116 p.
9. A. Kolmos, O. Vinther, P. Andersson, L. Malmi, M. Fuglem (Eds.), *Faculty Development in Nordic Engineering Education*. Aalborg University Press, Denmark, 2004.
10. A. Korhonen and L. Malmi (Eds.): *Proceedings of the Fourth Finnish/Baltic Sea Conference on Computer Science Education*, Research report TKO-A42/04 (Kolin Kolistelut - Koli Calling 2004 organized by University of Joensuu), Helsinki University of Technology, Department of Computer Science and Engineering, Laboratory of Information Processing Science, Finland, 2004. ISBN 951-22-7438-8.
11. A. Pears and L. Malmi (Eds.), *Koli Calling 2008, 8<sup>th</sup> International Conference on Computing Education Research*. Uppsala University, 2009.

D. *Publications intended for professional communities*

1. L. Malmi: *Ohjelmoinnin perusteet ja Pascal-kieli*. (Introductory programming and Pascal-language) OtaDATA, 1988. 433 p. (in Finnish)
2. L. Malmi, M. Henrichsson, T. Karras, J. Saarhelo, S. Särkilahti: Kopioitujen Pascal-ohjelmien havaitsemisesta (On detecting Plagiarism in Pascal programs). *Tietojenkäsittelytiede* 2, 1991, pp. 20-35, (in Finnish).
3. L. Malmi: Rinnakkaishakujen tehokas toteuttaminen keskusmuistitietokannoissa, tutkimusesittely (Efficient implementation of index searches in main memory databases). *Tietojenkäsittelytiede*, no 5, 1994, pp. 45-48, (in Finnish).
4. L. Malmi. Automaattinen tarkastaminen opetuksen apuvälineenä (Automatic Assessment as an Aid for Education). *Tietojenkäsittelytiede*, vol 17, pp. 24-35. (in Finnish).
5. S. Surakka, L. Malmi. Work Experience vs. Co-operative Training Program. *SIGCSE Bulletin*, vol 34 no 4, 2002, pp. 44-47.
6. L. Malmi, Yhteistyöllä eteenpäin - ajatuksia ja kokemuksia opetuksen kehittymisestä (Progress with co-operation - thoughts and experiences about developing education), *Peda-Forum 2 / 2004*, pp. 25-30. (in Finnish).
7. V. Karavirta, A. Korhonen, L. Malmi, K. Stålnacke, MatrixPro - A Tool for Demonstrating Data Structures and Algorithms Ex Tempore. *Proceedings of ICALT'2004, 4th IEEE International conference on Advanced Learning Technologies*, pp. 892-893. (poster)
8. L. Malmi, Opetuksen kehittämistä vai opetuksen tutkimusta (Developing education or research in education), keynote at *Reflektori 2005*, Dipoli TKK, 2005.
9. P. Ihtola, A. Korhonen, L. Malmi, Algoritmisimulaatio tietorakenteiden ja algoritmien opetuksessa (Algorithm Simulation in teaching data structures and algorithms). In the *Collection of papers in Reflektori 2005*. URL: <http://www.dipoli.tkk.fi/ok/p/reflektori/verkkojulkaisu/index.php?p=verkkojulkaisu>
10. L. Malmi, A Pathway to Computing Education Research, ACM Inroads, Featured column in Computing Education Research, Vol 4 no 3, September 2013, pp. 42-43.
11. L. Malmi, Doctoral Studies in Computing Education Research - Part 1, ACM Inroads, Featured column in Computing Education Research, Vol 4 no 4, December 2013, pp. 18-19.

12. L. Malmi, Doctoral Studies in Computing Education Research - Part 2, ACM Inroads, Featured column in Computing Education Research, Vol 5 no 1, March 2014, pp. 26-27.
13. L. Malmi, Reporting and Research Questions, ACM Inroads, Featured column in Computing Education Research, Vol 5 no 2, June 2014, pp. 29-30.
14. L. Malmi, Tools research – what is it? ACM Inroads, Featured column in Computing Education Research, Vol 5 no 3, September 2014, pp. 34-35.
15. L. Malmi, Theory – what is it for? ACM Inroads, Featured column in Computing Education Research, Vol 5 no 4, December 2014, pp. 34-35.
16. L. Malmi, Can we show an impact? ACM Inroads, Featured column in Computing Education Research, Vol 6 no 1, March 2015, pp. 30-31.
17. L. Malmi, Supervisor’s perspective. ACM Inroads, Featured column in Computing Education Research, Vol 6 no 2, June 2015, pp. 27-28.
18. L. Malmi, Practitioner notes, ACM Inroads, Featured column in Computing Education Research, Vol 6 no 3, September 2015, pp. 40-41.
19. L. Malmi, Entering the research community. ACM Inroads, Featured column in Computing Education Research, Vol 6 no 4, December 2015, pp. 27-28.
20. L. Malmi. Looking for research training resources. ACM Inroads Featured column in Computing Education Research, vol 7 no 2, June 2016, 43-44.
21. L. Malmi. 2016. Doctoral consortia. ACM Inroads, Featured column in Computing Education Research, Vol 7 no 4, December 2016, 38-39.
22. L. Malmi, 2017. Program leadership, ACM Inroads, Featured column in Computing Education Research, Vol 8 no 1, June 2017, 22-24.

G. *Theses*

1. L. Malmi, Puurakenteiseen välikieleen perustuvan Modula-ohjelmointijärjestelmän suunnittelu ja toteutus (Design and implementation of Modula-2 programming environment based on tree type intermediate language), Master’s thesis, Helsinki University of Technology, Laboratory of Information Processing Science, 1985.
2. L. Malmi, Pascal-ohjelmien samankaltaisuuden tutkimisesta (On detecting plagiarism in Pascal programs). Licentiate’s thesis, Helsinki University of Technology, Laboratory of Information Processing Science, 1989.
3. L. Malmi, On Updating and Balancing Relaxed Balanced Search Trees in Main Memory, Thesis for a Doctor of Science in Technology, Report A 35, Helsinki University of Technology, Laboratory of Information Processing Science, 1997, 116 p.

Note. No publications in classes B (Non-refereed scientific articles), E (Publications intended for the general public, linked to the applicant’s research), F (Public artistic and design activities), H (Patents and invention disclosures) and I (Audiovisual material, ICT software).

**Fortegnelse over bedømmelsesudvalg til  
stilling Professor in Impact Assessment and Decision-Making (60222) ved PLAN**

**Navn:** Professor Susse Georg  
**Arbejdssted:** PLAN, AAU  
**E-mail:** sgeorg@plan.aau.dk

**Navn:** Professor Thomas Fischer  
**Arbejdssted:** University of Liverpool  
**E-mail:** Fischer@liverpool.ac.uk

**Navn:** Professor Bo Elling  
**Arbejdssted:** RUC  
**E-mail:** [be@ruc.dk](mailto:be@ruc.dk)

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

## Professor in Impact Assessment and Decision-Making (60222)

### Position No.

60222

At the Technical Faculty of IT and Design, Department of Planning, The Danish Centre for Environmental Assessment (DCEA), a position as Professor of Impact Assessment and Decision-Making is open from 1 October 2017, or soon hereafter. The Department of Planning (PLAN) conducts research and teaching on development and planning in a broad sense, including social science aspects as well as more technical aspects of development, and with a focus on environmental, international as well as administrative dimensions. The Danish Center for Environmental Assessment is an inter-disciplinary research and policy engagement centre within PLAN undertaking research within the field of impact assessment and environmental decision-making. The Centre provides theoretically pluralistic, methodologically rigorous, and analytically sound input to research and practice, and contributes to out-reach and educational programmes – all with a view to promote participatory and sustainable transitions. DCEA is a leading research centre connecting impact assessment practice to theories of decision-making and governance, with a strong focus on critical engagement with governments, businesses and civil society within regional, national and international policy-making arenas.

### Job description

Specific research areas for the position fall within impact assessment, planning and decision-making. The applicant should have documented experience in these areas such that they can contribute to the continued development of DCEA's position as one of the leading research centres connecting impact assessment practice to theories of decision-making and governance with a strong focus on critical engagement with governments, business and civil society.

Teaching will primarily be in the undergraduate programme in By-, Energi- og Miljøplanlægning (City, Energy and Environmental Planning) and the graduate programme in Environmental Management and Sustainability Science, but also in other study programmes at the University and in professional training programmes.

In terms of research, the position is aimed at applicants who can document original scientific production in their research and who can demonstrate that they have contributed significantly to the scientific field of the position. The professor will have to take a lead in developing research within the core areas of DCEA. In particular, the professor will be responsible for the research areas and their development:

- Multi-facetted understandings of the mechanisms underlying planning and decision processes, and how they relate to impact assessment practice
  - Individual and institutional decision behavior, and understandings of change in response to impact assessment
  - Societal planning and systemic assessment approaches for researching and supporting sustainable business models and decision-making
  - Develop prescriptive decision models and theory related to impact assessment
  - Society-sensitive research for sustainability through interactionism – in which knowledge is produced in cooperation and interdependency between research and practice (action/change agency research)
- Besides the research and teaching activities, the professor is also expected to be willing to take upon the role of research group leader with the administrative and social obligations that relates to this role at the Department. The work place of the position is in Aalborg, but travel activities are to be expected.

### Qualifications:

- A Ph.D. with a strong background in impact assessment and decision-making
- Demonstrated research interest and experience in impact assessment, planning and decision-making
- International publication record comprising publications within the academic field of the position
- Possessing experience in action-/ and change-oriented research

- Possessing an active network and relationships with national and international institutions working with impact assessment
- Documented experience in successful application for external research funding, and project management
- Experience in teaching after the PBL (problem Based Learning) methods and with professional training

Mastering Danish or Nordic language is a benefit due to the Danish language teaching opportunities and the many Danish cooperation partners to the center.

**Workplace**

Aalborg

**Agreement**

Appointment and salary acc. to the agreement between the Ministry of Finance and the Danish Confederation of professional Associations (AC) on Academics in the State. Employment as Professor is in accordance with a classified position on scale 37. In addition, a pensionable increment will be given.

**Deadline**

26/06/2017

**Apply online**

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

[top](#)

# Curriculum Vitae Bo Elling

**Postadresse:**

Universitetsvej 1  
09.2  
DK-4000  
Roskilde  
Danmark

**E-mail:** [be@ruc.dk](mailto:be@ruc.dk)

**Telefon:** 4674-2123

**Hjemmeside:** <http://www.ruc.dk/~be>

**Web:** <http://www.ruc.dk/~be>, <http://www.ruc.dk/~be>

**Forskning og undervisning**

Jeg forsker og underviser bl.a. i moderne samfund og teorier herom, herunder de etiske og æstetiske aspekters betydning og jeg har en lang erfaring med at undervise i samfundsvidenskabelig videnskabsteori og metodologi. Desuden beskæftiger jeg mig med byteori og planlægning, miljøregulering og offentlighedens inddragelse heri. Aktuelt forsker jeg i bæredygtig, kompakt byudvikling, hvor beboernes tilvalg er afgørende frem for knaphedens tvangsmekanismer.

**Forskningsområder**

- Historie, Samfundsforhold Miljø, Energi, Natur, Ressourcer Offentlig administration, styring og forvaltning Videnskabsteori, Videnskabshistorie, Videnskabssociologi, Forskningspolitik

**Uddannelse:**

1976: mag. scient. soc. , Sociologisk Institut, Københavns Universitet.

2003: doktor i sociologi, dr. scient. soc., Roskilde Universitetscenter.

**Ansættelser:**

1972 - 1978 Københavns Universitet som undervisningsassistent, scholarstipendiat og kandidatstipendiat.

Siden 1977 på Roskilde Universitetscenter, fra 1981 som lektor.

Phd-programleder, programmet Society, Space and Technology, ved ENSPAC siden januar 2007.

Phd-skoleleder for ENSPAC siden februar 2009.

## **Undervisning:**

Undervisning ved sociologisk Institut, Københavns Universitet, 1972-1978.

Underviser på den samfundsvidenskabelige basisuddannelse og på den teknologisk-samfundsvidenskabelige overbygningsuddannelse siden 1977. Fra efterår 2009 ved uddannelsen, Plan, By og Proces, ENSPAC.

Undervisning ved forskeruddannelsesprogrammet Society, Space and Technology (SST), ENSPAC.

Undervisning ved Læreranstalternes Fælles Byplankursus 1987-1996, samt Formand.

Undervisning og kursusleder ved NordPlan (fællesnordisk planlægningsuniversitet), Stockholm, i perioden 1993-1996.

Forelæsninger ved Master of Public Policy, RUC, 2003-2007.

Talrige gæsteforelæsninger ved danske og udenlandske universiteter.

## **Forskning:**

I det sidste årti en omfattende forskningsaktivitet indenfor miljøpolitik, miljøregulering, miljøplanlægning og fysisk planlægning, design, miljøvurdering (VVM) og strategisk miljøvurdering (SEA).

Forskningsleder ved NordREFO 1989-1998.

Deltaget i en lang række europæiske og internationale forskningsprojekter/grupper indenfor strategic environmental assessment siden 1992.

Omfattende sociologisk forskning i teorier om det moderne samfund, modernitetsteori, oplysningstid og -teori, samt moderne samfundsvidenskabelig videnskabsteori.

## **Seneste publikationer**

Elling, B. & J. Nielsen (1996a), *Miljøvurdering af regionplaner* TemaNord 1996:602, Nordisk Ministerråd, København, 183 p.p.

Elling, B. & J. Nielsen (1996b), *Miljøvurdering af lovforslag. Studie i strategisk miljøvurdering og 2 eksempler*, Udgivet af Miljø og Energiministeriet, Landsplanafdelingen, Juli 1997, 119 p.p.

Elling, B. (1996d) *Forstudie om strategisk miljøvurdering*, TemaNord 1996:538, Nordisk Ministerråd, 31 p.p.

Elling, B, (ed.) (1996e) *De store nordiske transportprojekter. Transportinfrastruktur, miljø og regional udvikling*. 182 p.p. Heri: Indledning, og Transport, miljø og regional udvikling i Danmark.



Nordiska Institutet för Regionalpolitisk Forskning, 1996:4, Stockholm p. 9-34 og p. 35-64. (editor and co-author)

Elling, B. (1997) Strategic environmental assessment of national policies: the Danish experience of a full concept assessment, in *Project Appraisal* Vol. 12 No. 3, p. 161-172

Elling, B. (1997b) Strategisk miljøvurdering, i Holm, J., Kjærgård, B. & K. Pedersen (red.) *Miljøregulering - tværfaglige studier (Environmental Regulation - interdisciplinary studies)*, Roskilde Universitetsforlag, p. 140-159

Elling, B. (1997c) En sociologisk-miljøpolitisk tolkning af begrebet 'det miljømæssige råderum', i *Det miljømæssige råderum - en antologi*, Institut for Miljø, teknologi og samfund, RUC, p. 30-34

Elling, B. (1998) *Strategisk miljøvurdering i regionplanlægningen*, TemaNord 1998:519, Nordisk Ministerråd, København, 67 p.p.

Elling, B. & J. Nielsen (1998) *Strategic Environmental Assessment of Policies in Denmark*, Issued by the European Commission, Directorate-General, Environment, Nuclear Safety and Civil Protection, Brussels. 111 p.p.

Elling, B. (1998) Danish experience with SEA in policy-making, in Kleinschmidt, V. & D. Wagner (ed.) (1998) *Strategic Environmental Assessment in Europe*, Kluwer Academic Publishers, p. 62-69

Elling, B. (1998) Strategic environmental assessment of national policies: the Danish experience of a full concept assessment, in Fauchald, O.K. & Greker, M. (ed.) *Environmental assessment of trade agreements and policy*, Tema Nord, Environment, 1998.551, Nordic Council of Ministers, Copenhagen, p. 115-126

Elling, B. (1999) *Miljøvurdering i regionplanlægningen. Evaluering af Nordjyllandsprojektet*, Udgivet af Miljø og Energiministeriet, Landsplanafdelingen, August 1999, 99 p.p.

Elling, B. (ed.) (1999b) *Scenarier for Nordens Infrastrukturlandskab*, 183 p.p. Heri: Transportinfrastruktur og miljø (sammen med K.G. Høyer) og Scenarier for Nordens infrastrukturelandskab, Nordregio 1999:6, Stockholm, p. 81-104 og p. 105-143 (editor and co-author)

Elling, B. (1999c) Kan man kommunikere sig til bedre miljøbeslutninger? i *Miljønyt*, No. 38, 1999, Miljøstyrelsen, Miljøministeriet, København, p. 17-22, English version: Can communication result in better environmental decision-making.

Elling, B. (2000a) Integration of strategic environmental assessment into regional spatial planning, in *Impact Assessment and Project Appraisal*, Vol. 18 No. 3, September 2000, p. 233-243

Elling, B. (2000b) *Erfaringer med miljøvurdering af lovforslag*, Udgivet af Miljø og Energiministeriet, Landsplanafdelingen, Juli 2000, 94 p.p.

- Elling, B., Thissen, W. (2001) ANSEA Theoretical Background, First Report from the Scientific Board, Roskilde University and Delft University of Technology, Roskilde and Delft, (I) 8 pages
- Elling, B., Thissen, W. (2002) ANSEA Theoretical Background and Methodology, Second Report from the Scientific Board, Roskilde University and Delft University of Technology, Roskilde and Delft, (I) 6 pages
- Elling, B. (2003) *Modernitetens miljøpolitik*, Frydenlund Grafisk, København, 384 p.p. Disputats.
- Elling, B. (2004) Kapitel 5: Kritisk teori, i Fuglsang, L.; Bitsch Olsen, P. (red.) *Videnskabsteori I Samfundsvidenskaberne. På tværs af fagkulturer og paradigmer*. Frederiksberg: Roskilde Universitetsforlag, pp 207-232
- Elling, B. (2004) Modernity and Communicative Reflection in Environmental Assessment, in: Hilding-Rydevik, T., Theodórsdóttir, A.H. (ed.) *Planning for Sustainable Development - The practice and potential of Environmental Assessment*, Stockholm: NordRegio, pp 53-67
- Elling, B. (2005) Strategic Environmental Assessment and Land Use Planning - Denmark, in Wood, C. et al (ed.): *Strategic Environmental Assessment and Land Use Planning*, London-Sterling, VA, Earthscan, 2005, pp 63-78
- Elling, B. (2005) SEA of Bills and other Government Proposals in Denmark, in Sadler, B. (ed.) *Strategic Environmental Assessment at the Policy Level - Recent Progress, Current Status and Future Prospects*, Prague: The Regional Environmental Center, UNECE, VROM, pp 46-54
- Elling, B. (2007) Miljøvurderinger: også en kamp mellem viden og interesser, i Jensen, A., Andersen, J., Hansen, O.E. & Aagaard Nielsen, K. (red.) *Planlægning I teori og praksis: et tværfagligt perspektiv*, Frederiksberg, Roskilde Universitetsforlag, pp. 327-348
- Elling, B. (2008) *Rationality and the Environment: Decision-making in Environmental Politics and Assessment*, London, Earthscan, 281 p.p.
- Elling, B. (2008) Rationality and effectiveness: do EIA and SEA treat them as synonyms? In *Project Appraisal and Impact Assessment*, No 27(2) June 2009, p. 121-131.
- Elling, B. (2009) Public participation in SEA, In Sadler, B., Ashemann, R., Dusik, J., Fisher, T., Partidario, M., and Verheem, R. (eds.) *Handbook of Strategic Environmental Assessment*, London Earthscan. (in press). approx 12 pp
- Elling, B., Nielsen, K. AA., Figueroa, M. & Jelsøe, E. (eds.) (2010) *A new agenda for sustainability*, Ashgate, (in press)
- Figueroa, M, Elling, B., Jelsøe, E., & Nielsen, K. AA.(2010) Introduction: A new agenda for sustainability, in Elling, B., Nielsen, K. AA., Figueroa, M. & Jelsøe, E. (eds.) (2010) *A new agenda for sustainability*, Ashgate, (in press) 14 pp

## **Publikationsliste Bo Elling**

### **Communicative planning as counter-power**

Elling, B. 14 nov. 2016 I : *International Planning Studies*. s. 1-16 16 s.

### **Borgerne som modmagt i planlægningen**

Elling, B. okt. 2016 I : *Dansk Sociologi*. 27, 2, s. 37-61 24 s.

### **Environmental Assessment as Acceptance and Legality Planning**

Elling, B. & Nielsen, H. 15 aug. 2015 I : *Journal of Environmental Policy and Planning*. 18 s.

### **Energy Transition in local social communities**

Søndergård, B., Elling, B., Schjerling, T. & Møhring, A-L. feb. 2015 *Sustainable Transition of Housing and construction*. Holm, J., Søndergård, B., Stauning, I. & Jensen, J. O. (red.). Frederiksberg: Frydenlund Academic, Kap. 9, s. 243-272 30 s.

### **Communicative Planning as Counter-Power**

Elling, B. 21 dec. 2014 I : *International Planning Studies*. 20 s.

### **Energiomstilling i lokale sociale fællesskaber**

Elling, B., Søndergård, B., Schjerling, T. & Møhring, A-L. 2014 *Bæredygtig omstilling i bolig og byggeri*. Holm, J., Søndergaard, B., Stauning, I. & Jensen, J. O. (red.). København: Frydenlund Academic, Kap. 9, s. 243-272 20 s.

### **Hvem Bestemmer**

Elling, B. nov. 2013 I : *Byplan*. 65, 3, s. 18-19 2 s.

### **Kritisk teori**

Elling, B. 2013 *Videnskabsteori i samfundsvidenskaberne: På tværs af fagkulturer og paradigmer*. Olsen, P. B., Fuglsang, L. & Rasborg, K. (red.). 3 udg. København: Samfundslitteratur, Kap. 4, s. 137-170 33 s.

### **SEA of River Basin Management Plans and Democracy: Why is public engagement necessary for successful planning an policy making**

Nielsen, H. & Elling, B. 2011

### **Some Wider Reflections on the Challenge of Public Participation**

Elling, B. 2011 *Handbook of Strategic Environmental Assessment*. Sadler, B., Aschemann, R., Dusik, J., Fischer, T. B., Partidário, M. R. & Verheem, R. (red.). London, Washington DC: Earthscan Publications Ltd, Kap. 22, s. 356-368 13 s.

### **A new Agenda for Sustainability**

Nielsen, K. A. (red.), Elling, B. (red.), Figueroa, M. (red.) & Jelsøe, E. (red.) 21 sep. 2010 Leeds: Ashgate. 300 s. (Ashgate studies in environmental policy and practice).

### **Conclusions and perspectives for Research and Political Practice**

Elling, B., Figueroa, M., Jelsøe, E. & Nielsen, K. A. 21 sep. 2010 *A new Agenda for Sustainability*. Leeds: Ashgate, s. 289- 297 8 s. (Ashgate studies in environmental policy and practice).

### **Introduction to A new Agenda for Sustainability**

Figuerola, M., Elling, B., Jelsøe, E. & Nielsen, K. A. 21 sep. 2010 *A new Agenda for Sustainability*. Leeds: Ashgate, s. 1-12 12 s. (Ashgate studies in environmental policy and practice).

### **A Record on Modernity, Rationality and Sustainability**

Elling, B. 2010 *A New Agenda for Sustainability*. Aagaard Nielsen, K., Elling, B., Figuerola, M. & Jelsøe, E. (red.). Ashgate, Kap. 2, s. 31-41 (Ashgate studies in environmental policy and practice).

### **Rationality and Effectiveness: does EIA/SEA treat them as synonyms?**

Elling, B. 2009 I : Impact Assessment and Project Appraisal. 27, 2, s. 121-131 11 s.

### **Rationality and the Environment: Decision-making in Environmental Politics and Assessment**

Elling, B. 2008 London: Earthscan Publications Ltd. 281 s.

### **Miljøvurderinger: også en kamp mellem viden og interesser**

Elling, B. 2007 *Planlægning i teori og praksis: et tværfagligt perspektiv*. Jensen, A., Andersen, J., Hansen, O. E. & Aagaard Nielsen, K. (red.). Frederiksberg: Roskilde Universitetsforlag, s. 327-348

### **SEA of Bills and other Government Proposals in Denmark**

Elling, B. 2005 *Strategic Environmental Assessment at the Policy Level: Recent Progress, Current Status and Future Prospects*. Sadler, B. (red.). Prague: Ministry of the Environment, s. 46-54 9 s.

### **Strategic Environmental Assessment and Land Use Planning - Denmark**

Elling, B. 2005 *Strategic Environmental Assessment and Land Use Planning: An International Evaluation*. Jones, C., Baker, M., Short, M., Carter, J. & Wood, C. (red.). 1. udg. London - Sterling, VA: Earthscan Publications Ltd, s. 63-78 16 s.

### **Kapitel 5: Kritisk teori**

Elling, B. 2004 *Videnskabsteori i samfundsvidenskaberne: På tværs af fagkulturer og paradigmer*. Fuglsang, L. & Olsen, P. B. (red.). 2. Udgave udg. Frederiksberg: Roskilde Universitetsforlag, s. 207-232

### **Modernity and Communicative Reflection in Environmental Assessment**

Elling, B. 2004 *Planning for Sustainable Development - the practice and potential of Environmental Assessment*. T., H-R. & A.H., T. (red.). Nordregio, s. 53-67

### **Modernitetens miljøpolitik**

Elling, B. 2003 København: Frydenlund Grafisk.

### **Erfaringer med miljøvurdering af lovforslag**

Elling, B. 2000 Miljø og Energiministeriet: Djøf / Jurist- og Økonomforbundet.

### **Integration of strategic environmental assessment into regional spatial planning**

Elling, B. 2000 I : Impact Assessment and Project Appraisal. 18, 3 (September), s. 233-243

### **Kan man kommunikere sig til bedre miljøbeslutninger?**

Elling, B. 1999 *Borgernes miljørettigheder: Miljøstyrelsens konference om Århuskonventionen 8. september 1999*. (Miljønyt; Nr. 38).

### **Miljøvurdering i regioplanlægningen: evaluering af Nordjyllandsprojektet**

Elling, B. 1999 Miljø og energiministeriet, Landsplanafdelingen. 95 s.

### **Scenarier for Nordens infrastrukturandskab**

Elling, B., Berger, S., Høyer, K. G., Selstad, T. & Thorsteinsson, T. 1999 *Scenarier for Nordens Infrastrukturandskab*. Elling, B. (red.). Stockholm: Nordregio, s. 105-143 (Nordregio Report; Nr. 6, Vol. 1999).

### **Transportinfrastruktur og miljø**

Elling, B. & Høyer, K. G. 1999 *Scenarier for Nordens Infrastrukturandskab*. Elling, B. (red.). Stockholm: Nordregio, s. 81-104 (Nordregio Report; Nr. R1999:6).

### **Danish experience with SEA in policy-making**

Elling, B. 1998 *Strategic Environmental Assessment in Europe*. Kleinschmidt, V. & Wagner, D. (red.). London: Kluwer Academic Publishers, s. 62-69

### **Strategic environmental assessment of national policies: the Danish experience of a full concept assessment**

Elling, B. 1998 *Environmental assessment of trade agreements and policy*. Fauchald, O. K. & Greker, M. (red.). Copenhagen: Nordic Council of Ministers, s. 115-126 (TemaNord; Nr. 551, Vol. 1998).

### **Strategic Environmental Assessment of Policies in Denmark**

Elling, B. & Nielsen, J. 1998 Brussels, Belgium: European Commission. 111 s.

### **Strategisk miljøvurdering i regionplanlægningen**

Elling, B. 1998 Nordic Council of Ministers. 67 s. (TemaNord; Nr. 519, Vol. 1998).

### **EA developments in Denmark**

Elling, B. 1997 I : EIA Newsletter. 15

### **En sociologisk-miljøpolitisk tolkning af begrebet "det miljømæssige råderum"**

Elling, B. 1997 *Det miljømæssige råderum: en antologi*. Roskilde: Roskilde Universitet, s. 30-34

### **Miljøvurdering af lovforslag: Studie i strategisk miljøvurdering og 2 eksempler**

Elling, B. & Nielsen, J. 1997 København: Miljø og energiministeriet, Landsplanafdelingen. 119 s.

### **Projekt miljøvurdering af regionplaner**

Elling, B. 1997 I : Nordisk nyhedsbrev for KU/MBK/VVM, Videncenter for miljøvurdering. 5

### **Recent EA developments in Denmark**

Elling, B. 1997 I : EIA Newsletter. 13

### **Strategic environmental assessment of national policies: the danish experience of a full concept assessment**

Elling, B. 1997 I : Project appraisal : cost-benefit, impact assessment, risk analysis, technology assessment [1990-1997]. 12, 3, s. 161-172

### **Strategisk miljøvurdering**

Elling, B. 1997 *Miljøregulering: tværfaglige studier*. Holm, J., Kjærgaard, B. & Pedersen, K. (red.). Roskilde: Roskilde Universitetsforlag, s. 140-159

### **Study on environmental assessment of policies**

Elling, B. 1997 I : EIA Newsletter. 14

### **De store Nordiske Transportinfrastrukturprojekter: Transportinfrastruktur, Miljø og Regional Udvikling**

Elling, B. (red.) 1996 Stockholm: NordREFO. 182 s. (NordREFO : information om regionalpolitik och regionalpolitisk forskning i Norden; Nr. 4).

### **Forstudie om strategisk miljøvurdering**

Elling, B. 1996 Nordisk Ministerråd: Djøf / Jurist- og Økonomforbundet. 31 s. (TemaNord; Nr. 538).

### **Indledning**

Elling, B. & Høyer, K. G. 1996 *De Store Nordiske Transportinfrastrukturprojekter: Transportinfrastruktur, Miljø og Regional Udvikling*. Elling, B. (red.). Stockholm: NordREFO, s. 9-34 (NordREFO : information om regionalpolitik och regionalpolitisk forskning i Norden; Nr. 4).

### **Miljøvurdering af regionplaner**

Elling, B. & Nielsen, J. 1996 Nordisk Ministerråd: Djøf / Jurist- og Økonomforbundet. 183 s. (TemaNord; Nr. 602).

### **Policy of environmental assessment in Denmark**

Elling, B. 1996 *Environmental assessment of policies: briefing papers on experience in selected countries*. de Boer, J. J. & Sadler, B. (red.). The Hague: Ministry of Housing, Spatial Planning and the Environment, s. 39-46

### **Projekt miljøvurdering af lovforslag**

Elling, B. 1996 I : Nordisk nyhedsbrev for KU/MBK/VVM, Videncenter for miljøvurdering. 5

### **Transport, miljø og regional udvikling i Danmark**

Elling, B. 1996 *De Store Nordiske Transportinfrastrukturprojekter: Transportinfrastruktur, Miljø og Regional Udvikling*. Elling, B. (red.). Stockholm: NordREFO, s. 35-64 (NordREFO : information om regionalpolitik och regionalpolitisk forskning i Norden; Nr. 4).

### **Likeli and desirable future EIA and SEA developments in Denmark**

Elling, B. 1995 I : Chuanmei Guancha. 10

### **The Danish report to the preparatory study for the ERDF programme to the environment**

Elling, B. & Schroll, H. 1987 Roskilde: Roskilde Universitet. (Forskningsrapportserien; Nr. 1, Vol. 1987).

***Professor Dr Thomas B Fischer, PhD, Dipl-Geogr, FIEMA, Director Environmental Assessment and Management Research Centre, Director World Health Organization (WHO) Collaborating Centre on Health in Impact Assessments***  
*Department of Geography and Planning*  
*School of Environmental Sciences*  
*Faculty of Science and Engineering*  
*University of Liverpool, UK*

***My curriculum vitae is divided into four sections, as follows:***

Section 1:

***Personal Details, Qualifications, Employment History and Research Grants/Projects***  
Pages 2-6

Section 2:

***Publications***  
Pages 7-25

Section 3:

***Current and Past Teaching and Administrative Responsibilities***  
Page 26

Section 4:

***Other Professional Activities***  
Pages 27-30

**Section 1 - Personal Details, Qualifications, Employment History & Research Grants/Projects****1) Personal Details**

**Name:** Professor Dr Thomas Bernward Fischer Dipl.-Geogr. PhD FIEMA  
**Occupation:** *Professor*, University of Liverpool  
*Director*, Environmental Assessment and Management Research Centre  
*Director*, WHO Collaborating Centre 'Health in Impact Assessments'  
*Editor-in-chief*, Impact Assessment and Project Appraisal  
*Fellow*, Institute of Environmental Management and Assessment (IEMA)  
**Email:** fischer@liverpool.ac.uk  
**Website:** <https://fischersite.wordpress.com/>  
**LinkedIn:** <https://uk.linkedin.com/pub/thomas-fischer/6/862/49>  
**Google Scholar:** <https://scholar.google.co.uk/citations?user=S76z6YoAAAAJ&hl=en>  
**Scopus citations:** 1184 on 10/05/2017  
**Date of Birth:** 19/11/1965  
**Nationality:** Germany  
**Languages:** English (excellent, both written and spoken), German (mother tongue), French (good, both written and spoken), Dutch (basics), Spanish (basics), Russian (basics)  
**Personal circumstances:** Married with three children

**2) Higher Education**

January 1996 to December 1999 UNIVERSITY OF MANCHESTER, UK  
 PhD on strategic environmental assessment and the consideration of sustainability aspects in transport and spatial/land use policies, plans and programmes

April 1986 to Oct. 1991 FREIE UNIVERSITÄT (FU) BERLIN, Germany  
 Masters Degree in Geography (1<sup>st</sup> class), *Diplom-Geograph*

1988 to 1989 WILFRID LAURIER UNIVERSITY, Waterloo, Ontario, Canada  
 post-graduate studies in transport geography (part of FU Berlin Masters Programme)

1990 UNIVERSITÉ LOUIS PASTEUR, Strasbourg, France  
 post-graduate studies in physical geography (part of FU Berlin Masters Programme)

**3) Employment Record (only full time employment)**

Since March 2002 LECTURER, then SENIOR LECTURER, then READER and since 2009 PROFESSOR in Environmental Assessment, Planning, Management; DIRECTOR, Environmental Assessment and Management Research Centre 2015-, HEAD OF DEPARTMENT, Geography and Planning 2010-2014, School of Environmental Sciences, UNIVERSITY OF LIVERPOOL

March 2000 to Feb. 2002 SENIOR RESEARCHER on Transport and Mobility at the INSTITUTE FOR REGIONAL DEVELOPMENT AND STRUCTURAL PLANNING (IRS), ERKNER NEAR BERLIN

August 1998 to February 2000 RESEARCH ASSOCIATE for Transport Planning at the Faculty of the Built Environment, UNIVERSITY OF THE WEST OF ENGLAND, BRISTOL

November 1994 to January 1996 PROJECT CO-ORDINATOR/MANAGER for environmental impact assessment at DEGES, BERLIN, privatised sub-organisation of the Federal Ministry of Transport and the new German *Länder* for conducting 'German Unity Motorway Projects'

Nov. 1991 to October 1994 PROJECT MANAGER for environmental impact assessments of various types of projects. GESELLSCHAFT FÜR UMWELTPLANUNG (GUT), POTSDAM



#### 4) Research and Project Experiences

##### a) *Research Interests*

Environmental Planning, Assessment and Management; Integrated / Sustainability Assessment; Spatial Planning; Transport Planning; Health in Impact Assessment.

##### b) *Externally funded research & knowledge transfer projects since 2002*

'Simulations for *Innovative Mechanisms for the Self-organizing City*: testing new tools for *Value Capturing*' (JPI grant, ESRC, Co-Investigator (Co-I), 2015-2018, University of Liverpool (UoL) share £264,000 of £1.2M)

'Reuniting planning and health: tackling the implementation gaps in evidence, governance and knowledge' (ESRC seminar series, Co-I, 2015-2017, UoL share £3,700 of £30,000)

'Business and Local Government Data Research Centre' (ESRC, Co-I, 2014-2019, UoL share £2.2M)

'Introduce and embed a natural flood risk assessment commercial service' (Knowledge Transfer Partnership, NERC, 2013-2016, Co-I, £126,000).

'Adaptation and Resilience of Coastal Energy' (EPSRC, 2012-2017, Co-I, UoL share £946,000 of £1.6M).

'Celtic Seas Partnership (CSP) – Stakeholder Driven Integrated Management of the Celtic Seas Marine Region' (LIFE+ 2011 project with WWF-UK (PI), Dublin Regional Authority, SeaWeb and NERC, Co-I, 1/2013-12/2016; UoL share £230,000 of £3.5M).

'PURE Hubs: Supporting Pioneers in Urban-Rural Entrepreneurship' (Interreg, 2012-2015, PI; UoL share £650,000 of £4,000,000).

'Environmental assessment and disaster events' (JSPS/ESRC collaborative seminars with University of Technology Tokyo, 5/2012-5/2013, PI, £35,000).

'Development of a Territorial Impact Assessment (TIA) framework for the EC and national as well as regional/local policies and plans in EU member states' (EC ESPON project with Universities of Porto, Ljubljana and Delft, 11/2010 – 5/2012, Principal Investigator – PI, UoL share £150,000 of £300,000)

'Enhancing Attractiveness of Environmental Assessment and Management Higher Education – T<sub>wo</sub>EA-M' (EC Erasmus Mundus Action 4 with Universities of Bratislava, Graz, Seoul, Nankai, Tokyo and Bangkok, 12/2008-11/2010, PI, UoL share £150,000 of £230,000)

'Developing the learning potential of appraisal in spatial planning' (ESRC, 2007- 2008, Co-I, £75,247)

'Towards an improved governance? Differences in perceptions of effective SEA application in the UK and China' (British Academy, 2006-2007, PI, UoL share £ 16,000)

EU COST356 Action 'Towards the definition of a measurable environmentally sustainable transport', Chair of working group 3.1 'Requirements from a planning point of view'; (19 signatory countries; 2006-2010; networking costs are covered; ie meetings etc.; UoL share ~ £15,000 of £250,000)

'PENTA – Promotion of European Education on Environmental Assessment for Third Country Audience' (European Commission, 2005-2008, PI, UoL share £80,000 of £140,000)

'Web-based MA in spatial planning, materials on SEA' (OPDM/UWE, 2005, PI, UoL share £5,000).

Evaluation of the Integrated Appraisal Toolkit (NWRA, 2005, Co-Investigator – Co-I, UoL share £5,000)

'Linguistic Impact Assessment' (Welsh Consortium of Government, Co-I, UoL share £11,000 of £80,000), 2003

'Developing an integrated appraisal toolkit' & 'Toolkit evaluation' (NWRA, 2002–2003, Co-I, UoL share £3K)

*c) Involvement in other project (including consultancy) and knowledge exchange activities since 2002*

'(H)IA Online Platform', World Health Organization (WHO) (3/2017-10/2017)

'HIA and Green Space in urban planning', World Health Organization (WHO) (4/2016-10/2016)

'Developing guidelines for nuclear power programme SEAs' (International Atomic Agency, 03/2016-04/2017)

'Supporting Teaching of EA at Mehran University of Engineering and Technology, Pakistan'; USAID-funded project for establishing a new Centre of Excellence on Water resources (University of Utah, 11/2015-6/2016; 12/2016-6/2017)

'SEA in the UK', fact-finding mission for the Vietnamese Ministry of the Environment (October 2014)

'Development of EIA curricula and EIA Handbook for tertiary level academic and public administration institutions in Pakistan' (IUCN Pakistan, September 2012 – May 2014)

'Member of Environmental Impact Assessment Quality Mark Review Panel – conducting document reviews and staff Interviews' (IEMA, June 2011 - 2017)

'High Speed Rail Consultation – Quality assurance' (dialoguebydesign, March-August 2011)

'The consideration of health in strategic environmental assessment (WHO, April to June 2009)

'Review of SEA in transport, territorial planning, energy, and industry in the UK (Ramboll, 2007)

'Environmental Assessment in Land Use Planning in the EU' (gtz, June 2006)

'SEA effectiveness globally' (World Bank, February 2005)

'The Impact of assessment on transport decision making' and 'Types of SEA and scope of assessment tasks in TEN planning' (EC FP5 / Arcadis, BEACON Project), March 2005

*d) Small University of Liverpool internal grants*

'Exploring the role of Management Education in Business Schools in supporting environmental managers' learning and development' (Pump priming scheme; 2012-2013; Co-I)

'Network Element Award' (2011)

'Progress in EA tiering in transport planning in the UK, Netherlands, Germany: 1997-2002' (RDF, 2002, PI)

*e) Main research projects/ awards 1998-2002 as Researcher at IRS Erkner and UWE Bristol*

'Benefits of SEA for Transitional Countries' (UNDP, April 2002, PI)

'Mobility and Transport' (German Environment Network, January 2002, PI)

'International Study on the Integration of Environmental, Social and Economic Issues in Spatial Planning: Landscape Plan and Preparatory Land Use Plan Ketzin' (IAIA, Co-I, 2001)

'Appropriate Housing for Older People' (HBW Hennigsdorf Housing Association, Co-I, 2001)

'Space-time structures and modernity' (IRS, 2000-2001, PI)

'Environmental Planning in the EU' (Royal Commission, 2000, Co-I)

'European Local Transport Information Service - ELTIS' (EC, 1999, Co-I)

'Sustainability Appraisal for Regional Planning Guidance' (DETR, 1999, Co-I)

'Interreg cross-border spatial planning, survey in the Euregion Maas-Rijn' (EC, 1999, Co-I)

'Manual on SEA of Transport Plans' (EC, 1998, Co-I)

*f) Main projects 1990-1994 at GUT consultancy (Potsdam)*

Environmental statement for the rail link extension (60 km) Berlin-Hannover (1992-1994)

Environmental statement for several bypasses, mainly for Brandenburg's Road Authority (1992-1994), including those for the towns of Teltow, Michendorf, Cumlosen, Loewenberg, Seelow, the B96 road between the Motorway A10 and Berlin and Chemnitz

Environmental statement for a paper mill – trans-boundary project for the city of Strasbourg (1993)

Environmental statement for the tram line extension in Rostock for the city of Rostock (1992)

Landscape planning for 60 km of the rail link extension Berlin-Hannover for German Rail (1994)

Landscape planning for several cycle paths for the Land Brandenburg's Road Authority (1994)

Landscape planning for gas pipeline in Potsdam for the city of Potsdam (1994)

A range of small-scale environmental studies (1990-1994)

*g) Studentship awards (MA and PhD level)*

2002 DFG travel award for participation to Cartagena, Colombia (1 week)

1998 The Brian Large Travel Bursary Award for research travels (2 months)

1996-1998 University of Manchester studentship award (3 years)

1990 Freie Universität Berlin thesis travel award (2 months)

1990 Association for Canadian Studies and External Affairs Canada travel award (1 month)

1990 ERASMUS award for Université Louis Pasteur, Strasbourg, France (1 term)

1988-1989 DAAD (German Acad. Exchange Service) award for WLU, Waterloo, On, Canada (1 year)

*h) PhD Research Supervisions*

*As first supervisor*

Paola Gazzola Strategic Environmental Assessment in Italy (2002-6)

Urmila Jha-Thakur Environmental Impact Assessment Follow-Up in India (2002-6)

Mark Smith Integration of Land-use and transport planning (2004-8)

Paula Posas SEA in Development Co-operation (2006-11)

John Phylip-Jones Strategic Environmental Assessment in the Electricity Sector (2005-12)

Karen Potter Climate change and flooding (2008-12)

Tara Muthoora Social Impact Assessment and Wind Energy (2010-17)

Damola Aderiye	Strategic Environmental Assessment in Nigerian oil exploration (2012-17)
Ramiz Babayev	Environmental Impact Assessment in Azerbaijan (2013-)
Hung Shiu Fung	The credibility problem of EIA (2014-)
Fatemeh Khosravi	The potential for SEA in Iran (2015-)
Charlotte Beattie	Water Management and SEA (2016-)
<i>As second supervisor</i>	
Nike Hsieh	Integrated Coastal Zone Management (2002-6)
Wenxin Zhang	Industrial Environmental Management for Urban Sustainability (2002-7)
Josephina Cendejas	Social Capital and the Environment in Mexico (2002-9)
Maia Gachechiladze	Monitoring in spatial and transport planning (with CEU, Budapest (2005-9)
Obaidullah Nadeem	Public Participation in transport EIA in Pakistan (with Lahore University; 2007-9)
Chiara Bragnanolo	GIS and SEA in Italy (University of Trento; 2009- 11)
Clara Lemos	Tourism planning and EA/management (Sao Paolo University; 2008-11)
Yogy Sundaramurthy	Expert system for sustainable planning in the renewable energy sector (2012-16)
Maulud Tafida-Isa	Implementing Environmental Impact Assessment within a political economy based on Natural resources: A study on crude oil exploitation in Nigeria (2014-)
Anne Carolina Malvestio	SEA in transport planning in Sao Paulo State (Sao Paolo University; Brazil; 2014-)
Juan Carlos T. Gonzalez	SEA in Mexico (Universidad Autónoma de San Luis Potosí, Mexico; 2015-)
Yangying Huang	SEA in Chinese Trade Policy (Nankai University, Tianjin, China; 2015-)
José J. Diez-Rodríguez	SEA for the Mexican Electricity Sector (UPC Barcelona, Spain; 2015-)
Peter Fawcett	Health in spatial planning (ESRC; 2014-)
Annegret Repp	Land in EIA (HafenCity University Hamburg; 2016-)

**Section 2 - Publications****1) Journal Articles Published****Refereed**

1. Bond, A.; Fischer, T.B. and Fothergill, J. 2017. Progressing quality in environmental impact assessment: the IEMA Quality Mark as an example of voluntary accreditation, *Environmental Impact Assessment Review* 63: 160-171, <http://www.sciencedirect.com/science/article/pii/S0195925516303900>.
2. Huang, Y.; Fischer, T.B. and Xu, H. 2017. The stakeholder analysis of Chinese Foreign Direct Investment SEA: the case of OBOR in Pakistan, *Impact Assessment and Project Appraisal*, 35(2): 158-171. <http://dx.doi.org/10.1080/14615517.2016.1251698>.
3. Fischer, T.B.; Therivel, R.; Bond, A.; Fothergill, J. and Marshall, R. 2016. The revised EIA Directive – possible implications for practice in England, *UVP Report*, 30(2): 106-112; <http://www.uvp.de/de/uvp-report/jg30/jg30h2/866-uvp-report-030-19>.
4. Jha-Thakur, U. and Fischer, T. B. 2016. 25 years of the UK EIA System: Strengths, Weaknesses, Opportunities and Threats, *Environmental Impact Assessment Review*, 61: 19-26, <http://dx.doi.org/10.1016/j.eiar.2016.06.005>
5. Jones, R. and Fischer, T.B. 2016. EIA Follow-Up in the UK – a 2015 update, *Journal of Environmental Assessment Policy and Management*; 1650006 (22 pages); DOI:[10.1142/S146433321650006X](https://doi.org/10.1142/S146433321650006X).
6. Jiricka, A.; Formayer, H.; Schmidt, A.; Völler, S.; Leitner, M.; Fischer, T.B.; Wachter, T. W. 2016. Consideration of climate change impacts and adaptation in EIA practice – Perspectives of actors in Austria and Germany, *Environmental Impact Assessment Review*, 57: 78-88; doi:[10.1016/j.eiar.2015.11.010](https://doi.org/10.1016/j.eiar.2015.11.010).
7. Fischer, T.B. and Noble, B. 2015. Impact Assessment Research – achievements, gaps and future directions, *Journal of Environmental Assessment Policy and Management*, 17(1): 1501001 (12 pages); DOI: [10.1142/S1464333215010012](https://doi.org/10.1142/S1464333215010012).
8. Fischer, T.B.; Jha-Thakur, U. and Hayes, S. 2015. Environmental Impact Assessment and Strategic Environmental Assessment Research in the UK, *Journal of Environmental Assessment Policy and Management*, 17(1): 1550016 (12 Seiten); DOI: [10.1142/S1464333215500167](https://doi.org/10.1142/S1464333215500167).
9. Phylip-Jones, J. and Fischer, T.B. 2015 Strategic Environmental Assessment (SEA) for Wind Energy Planning: Lessons from the United Kingdom and Germany, *Environmental Impact Assessment Review* 50: 202-212; DOI:[10.1016/j.eiar.2014.09.013](https://doi.org/10.1016/j.eiar.2014.09.013) (open access).
10. Golobic, M.; Marot, N.; Kolaric, S. and Fischer, T. B. 2015 Applying Territorial Impact Assessment in a Multilevel Policy Making Context – the Case of Slovenia, *Impact Assessment and Project Appraisal*, 33(1): 43-56; <http://dx.doi.org/10.1080/14615517.2014.938438>.
11. Fischer, T. B.; Gore, T.; Golobic, M.; Pinho, P.; Sykes, O.; Marot, N.; Waterhout, B. 2015. Territorial Impact Assessment (TIA) of European draft directives – The emergence of a new policy assessment instrument, *European Planning Studies*, 23(3): 433-451; [www.tandfonline.com/doi/full/10.1080/09654313.2013.868292#.UtbwA\\_svn80](http://www.tandfonline.com/doi/full/10.1080/09654313.2013.868292#.UtbwA_svn80).
12. van Buuren, A., Potter, K., Warner, J. & Fischer, T. B. 2015. Making Space for Institutional Change? A comparative case study on regime stability and change in river flood management in the Netherlands and England, *International Journal of Water Governance*, 3: 81–100; <http://dx.doi.org/10.7564/14-IJWG37>.
13. Fischer, T. B. and Fothergill, J. 2014. Das IEMA UVP Gütezeichen (EIA quality mark) im Vereinigten Königreich: Ein Beispiel freiwilliger Akkreditierung, *UVP Report*, 28 (3+4).

14. Jiricka, A.; Völler, S.; Leitner, M.; Formayer, H.; Fischer, T. B.; Wachter, T.F. 2014. Herausforderungen bei der Integration von Klimawandelfolgen und –anpassung in Umweltverträglichkeitsprüfungen – ein Blick auf die Planungspraxis in Österreich und Deutschland, *UVP Report*, 28 (3+4).
15. Tajima, R.; Gore, T. and Fischer, T. B. 2014. Policy integration between Environmental Assessment and Disaster Management, *Journal of Environmental Assessment Policy and Management*, 16(3): 450028; DOI: 10. <http://www.worldscientific.com/doi/pdf/10.1142/S1464333214500288> (open access).
16. Fischer, T. B. 2014. Impact Assessment: There can be strength in diversity, *Impact Assessment and Project Appraisal*, <http://dx.doi.org/10.1080/14615517.2013.872844>.
17. Smith, M.; Sykes, O. and Fischer, T. B. 2014. Derailed: Understanding the implementation failures of Merseytram, *Town Planning Review*, 85(2): 237-260, <http://dx.doi.org/10.3828/tpr.2014.15>.
18. Gore, T. and Fischer, T. B. 2014. Uncovering the factors that can support and impede post-disaster EIA practice in developing countries: The case of Aceh Province, Indonesia, *Environmental Impact Assessment Review*, <http://dx.doi.org/10.1016/j.eiar.2013.09.001>.
19. Fischer, T. B.; Smith, M. and Sykes, O. 2013. Can less sometimes be more? - Integrating Land Use and Transport Planning on Merseyside (1965 – 2008), *Urban, Planning and Transport Research*: 1(1): 1-27; <http://www.tandfonline.com/doi/pdf/10.1080/21650020.2013.866876> (open access).
20. Fischer, T.B. and Jha-Thakur, U. 2013. Environmental assessment and management related higher education master level degree programmes in the EU – an analysis, *Journal of Environmental Assessment Policy and Management*, 15(4): 1350020.
21. Phylip-Jones, J. and Fischer, T. B. 2013. EIA for Wind Farms in the United Kingdom and Germany, *Journal of Environmental Assessment Policy and Management*, 15(2): 1340008.
22. Tajima, R. and Fischer, T. B. 2013. Should different impact assessment instruments be integrated? Evidence from English spatial planning, *Environmental Impact Assessment Review*, 41: 29-37.
23. Fischer, T. B. and Onyango, V. 2012. SEA related research projects and journal articles: an overview of the past 20 years, *Impact Assessment and Project Appraisal*, 30(4): 253-263.
24. Arts, J.; Runhaar, H.; Fischer, T. B.; Jha-Thakur, U.; van Laerhoven, F.; Driessen, P. and Onyango, V. 2012. The Effectiveness of EIA as an Instrument for Environmental Governance – A Comparison of the Netherlands and the UK, *Journal of Environmental Assessment Policy and Management*, 14(4): 1250025-1-40.
25. Bragagnolo, C., Fischer, T. B and Geneletti, D. 2012. Cumulative effects in strategic environmental assessment of spatial plans – evidence from Italy and England. *Impact Assessment and Project Appraisal*, 30(2): 100-110.
26. Riddlesden, D.; Singleton, A. D. And Fischer, T. B. 2012. A survey of the use of Geographic Information Systems in English Local Authority Impact Assessments, *Journal of Environmental Assessment Policy and Management*, 14(1): 1250006-1 - 14.
27. Lemos, C.; Fischer, T.B. and Perreira Souza, M. 2012. Strategic environmental assessment for tourism planning – extent of application and quality of documentation, *EIA Review*, 35: 1-10.
28. Therivel, R. and Fischer, T. B. 2012. Sustainability Appraisal in England, *UVP Report*, 26(1): 16-21.
29. Gachechiladze-Bozhesku, M. and Fischer, T. B. 2012. Benefits of and barriers to SEA follow-up, *EIA Review*, 32(4): 22-30.
30. Fischer, T. B.; Potter, K.; Donaldson, S and Scott, T. 2011. Municipal waste management strategies, strategic environmental assessment and the consideration of climate change in England, *Journal of Environmental Assessment Policy and Management*, 13(4): 541-565.

31. Potter, K.; Ward, S.; Shaw, D.; MacDonald, N.; White, I.; Fischer, T. B.; Butler, D. and Kellagher, R. 2011. Engineers & planners –sustainable water management alliances, *Engineering Sustainability*, 164(4):239-247.
32. Gazzola, P.; Jha-Thakur, U.; Kidd, S.; Peel, D. and Fischer, T. 2011. Enhancing environmental appraisal effectiveness: Towards an understanding of internal context conditions in organisational learning, *Planning Theory & Practice*; 12 (2): 183–204.
33. Nadeem, O. and Fischer, T.B. 2011. An Evaluation Framework for Effective Public Participation in EIA in Pakistan, *EIA Review*, 31(1): 36-47.
34. Fischer, T. B. 2010. The EU and its regulatory role in environmental policy and assessment, *GeolNova*. Special issue ‘The Evolution of Integration in Europe, 20 Years after the Fall of the Berlin Wall’: 155-167.
35. Fischer, T. B.; Martuzzi, M. And Nowacki, J. 2010. The consideration of health in SEA, *EIA review*; 30(3): 200-210.
36. Fischer, T. B. 2010. Reviewing the quality of strategic environmental assessment reports for English spatial plan core strategies, *EIA Review*, 30(1): 62-69.
37. Fischer, T.B. and He Xu. 2009. Differences in perceptions of effective strategic environmental assessment application in the UK and China, *Journal of Environmental Assessment Policy and Management*, 11(4): 471-485.
38. Fischer, T.B.; Gazzola, P.; Jha-Thakur, U.; Kidd, S. and Peel, D 2009. Learning through EC Directive based SEA in spatial planning? Evidence from the Brunswick Region in Germany, *EIA Review*, 29(6): 421-428.
39. Jha-Thakur, U.; Gazzola, P.; Fischer, T.B.; Peel, D. and Kidd, S. 2009. SEA effectiveness – The Significance of Learning, *Impact Assessment and Project Appraisal*, 27(2): 133-144 (2010 Best Paper Award).
40. Fischer, T. B. und Sykes, O. 2009. The EU Territorial Agenda - Indicating Progress for Climate Change Mitigation and Adaptation? *Town Planning Review*, 80(1): 57-82.
41. Shaw, D.; Sykes, O. and Fischer, T.B. 2009. Culture, regeneration and urban renaissance: Reflections of Liverpool’s experiences as ‘European Capital of Culture’, *RaumPlanung*, 143: 92-97.
42. Jha-Thakur, U.; Fischer, T. B. and Rajvanshi, A. 2009. Reviewing the design stage of EIA follow-up: looking at open cast coal mines in India, *Impact Assessment and Project Appraisal* 27(1): 33-44.
43. Jha-Thakur U; Fischer T; Gazzola P; Kidd S; Peel D 2009. Exploring relevant skills and knowledge areas for strategic environmental assessment, *The Environmentalist*, 92(2): 12-16.
44. Jha-Thakur, U. and Fischer, T. B 2008. Are Open Cast Coal Mines in India casting a shadow on the Indian Environment? *International Development Planning Review*, 30(4): 441-459.
45. Fischer, T. B 2007. Zur internationalen Bedeutung der Umweltprüfung (on the international importance of environmental assessment, *uvp report* 21(4): 248-255.
46. Kidd, S. and Fischer, T.B. 2007. Towards sustainability: is integrated appraisal a step in the right direction?, *Environment and Planning C*, 25(2): 233-249.
47. Fischer, T.B. 2006. Linkages between SEA and other assessment or planning tools, *Journal of Environmental Assessment Policy and Management*, 8(4): 495-504.
48. Fischer, T.B. 2006. SEA and transport planning: towards a generic framework for evaluating practice and developing guidance, *Impact Assessment and Project Appraisal*, 24 (3): 183-197.

49. Fischer, T.B. and Gazzola, P. 2006. SEA good practice elements and performance criteria – equally valid in all countries? – the case of Italy, *EIA Review* 26(4): 396-409.
50. Morrison-Saunders, A. und Fischer, T.B. 2006. What is wrong with EIA and SEA anyway? - A Sceptic's Perspective on Sustainability Assessment, *Journal of Environmental Assessment Policy and Management* 8(1): 19-39.
51. Fischer, T.B. 2006. SEA in spatial/land use planning in the 25 member states – a July 2006 update, *UVP report* 20 (3): 127-131.
52. Marshall, R. and Fischer, T.B. 2006. Regional electricity transmission planning and tiered SEA in the UK – the case of ScottishPower, *Journal of Environmental Planning and Management* 49(2): 279-299.
53. Fischer, T.B. 2006. Erste Erfahrungen mit der Umsetzung der SUP Richtlinie in der englischen Raumplanung (Experiences with implementing the SEA Directive in spatial planning in England), *UVP report* 20 (1+2): 48-52.
54. Fischer, T.B. 2005. Having an impact? – Context elements for effective SEA application in transport policy, plan and programme making, *Journal of Environmental Assessment Policy and Management* 7(3): 407-432.
55. Fischer, T.B. 2004. Mit der strategischen Nachhaltigkeitsprüfung zu einer besseren Berücksichtigung von Umweltaspekten? – Erfahrungen aus dem Vereinigten Königreich (Does sustainability appraisal lead to a better consideration of environmental aspects in strategic planning? – Experiences from the United Kingdom), *UVP Report*, 2004-4: 220-224.
56. Fischer, T.B. 2004. Transport Policy-SEA in Liverpool, Amsterdam and Berlin - 1997 and 2002. *EIA review*, 24(3): 319-336.
57. Gazzola, P.; Caramaschi, M. and Fischer, T.B. 2004. Implementing the SEA Directive in Italy, *European Environment*, 14(3): 188-199
58. Fischer, T.B. 2003. Environmental Assessment of the EU Structural Funds Regional Development Plans and Operational Programmes – A case study of the German objective 1 areas, *European Environment*, 13(5): 245-257.
59. Barker, A. and Fischer, T.B. 2003. English regionalism and sustainability: towards the development of an integrated approach to SEA. *Europ. Planning Studies*, 11(6): 697-716.
60. Fischer, T.B. 2003. Die Folgenprüfung zum Entwicklungsplan Oldham: Ein positiv wahrgenommenes Verfahren auf dem Prüfstand (Impact Assessment of UDP Oldham), *UVP Report*, 17(1): 29-33.
61. Fischer, T.B. 2003. Strategic environmental assessment in post-modern times, *EIA review*, 23(2): 155-170.
62. Fischer, T.B. and Seaton, K. 2002. Strategic environmental assessment – effective planning instrument or lost concept? *Planning Practice and Research*, 17(1): 31-44.
63. Fischer, T.B. 2002. SEA performance criteria – the same requirements for every assessment? *Journal of Environmental Assessment Policy and Management*, 4(1): 83-99.
64. Fischer, T.B., Wood, C. and Jones, C. 2002. Improving the practice of policy, plan and programme environmental assessment, *Environment and Planning B*, 29(2): 159-172.
65. Fischer, T.B. and Siemoneit, D. 2001. Die Strategische Umweltprüfung–das Beispiel des Regionalplans Lau-sitz-Spreewald in Brandenburg (*SEA for Regional Plan Lausitz-Spreewald*). *UVP-Report*, 15(5): 253-258.
66. Fischer, T.B. 2001. The practice of environmental assessment for transport and land use policies, plans and programmes, *Impact Assessment & Project Appraisal*, 19(1): 41-51.



67. Fischer, T.B. 2000. Die strategische Umweltprüfung in England, den Niederlanden und Deutschland (SEA in England, Netherlands & Germany), *UVP-Report*, 2000(4): 221-225.
68. Fischer, T.B. 1999. Benefits from SEA application - a comparative review of North West England, Noord-Holland and EVR Brandenburg-Berlin, *EIA Review*, 19(2): 143-173.
69. Fischer, T.B. 1999. The consideration of sustainability aspects within transport infrastructure related policies, plans and programmes, *Journal of Environmental Planning and Management*, 42(2): 189-219.
70. Fischer, T.B. 1999. Comparative analysis of environmental and socio-economic impacts in SEA for transport related policies, plans and programs, *EIA Review*, 19(3): 275-303.
71. Fischer, T.B. 1998. Die Strategische Umweltprüfung - Vorteile ihrer Anwendung und Klassifizierungsmöglichkeiten (Benefits from SEA application and possibilities for an SEA classification), *UVP-Report* 1998(2/3): 69-73.

### **Non-Refereed**

1. Fischer, T.B. 2016. Lessons for Impact Assessment from the UK Referendum on BREXIT, *Impact Assessment and Project Appraisal*, 183-185.
2. Fischer, T. B. 2016. Implications of the revised EIA Directive, *UVP Report*, 30 (2): 59-60.
3. Carmichael, L.; Lock, K.; Sweeting, D.; Townshend, T. And Fischer, T. B. 2016. Reuniting the evidence base for health and planning: Lessons from an ESRC seminar series, *Town and Country Planning*, 85(11): 461-464.
4. Fischer, T.B. and Nadeem, O. 2014. Developing EIA curricula for tertiary level educational institutions in Pakistan (in Urdu). *Jareeda*, Quarterly Newsletter by the IUCN, Pakistan.
5. Fischer, T. B. 2012. The quality of local transport plan (LTP) 3 SEA reports in North West England – a comparative review with English spatial and waste management planning related SEA practice, *Town and Country Planning* 81 (6): 281-286.
6. Fischer, T. B. 2012. Best Value for the Taxpayer? (The Treasury's National Infrastructure Plan 2011), *Town and Country Planning*, 81 (2): 81-86.
7. Fischer, T. B.; Sykes, O. and Gore, T. 2011. Making the case for participatory TIA, *Town and Country Planning*. 80(4): 204-207.
8. Fischer, T.B. 2010. UVP in Lehre und Forschung an deutschsprachigen Universitäten – Blick aus dem Ausland, *UVP Report*, 24(5): 198.
9. Fischer, T. B. and Sykes, O. 2009. The ten-t – an environmental pitch, *Town and Country Planning*, 78(4): 194-196.
10. Fischer, T. B. und Gazzola, P. 2007. Sustainability Appraisal proceedings and conclusions of the joint RTPI/IAIA conference in Liverpool, *Town Planning Review*, 78(4): 531-537.
11. Sykes, O. und Fischer T. B. 2007. The new EU territorial agenda - progress for the environment? *Town and Country Planning*, 76 (6+7): 225-229.
12. Fischer, T. B. und Sykes, O. 2007. Ingredients of governance for climate change adaptation in the EU – some reflections on a new green paper, *Town and Country Planning*, 76(11): 471-476.

### **2) Academic and professional books**

1. Fischer, T. B. (ed.) 2016. *Environmental Assessment; Critical Concepts of Built Environment*, Routledge, London, 4 Volumes; <https://www.routledge.com/products/9781138777767>.

2. Fischer, T. B. (ed.) 2016 Progress in environmental assessment policy and management theory and practice, World Scientific, Singapore, <http://www.worldscientific.com/worldscibooks/10.1142/p1047>.
3. Fischer, T. B. (ed.) 2014. EIA Handbook for Pakistan, IUCN, Pakistan, [http://cmsdata.iucn.org/downloads/niap\\_eia\\_handbook.pdf](http://cmsdata.iucn.org/downloads/niap_eia_handbook.pdf).
4. Fischer, T. B. and Nadeem, O. 2014. Environmental Impact Assessment Course Curriculum for Higher Education Institutions in Pakistan, IUCN, Pakistan, [http://cmsdata.iucn.org/downloads/niap\\_eia\\_curriculum\\_for\\_hei.pdf](http://cmsdata.iucn.org/downloads/niap_eia_curriculum_for_hei.pdf).
5. Sadler, B., Aschemann, R.; Dusik, J.; Fischer, T. B.; Partidário, M. and Verheem R. (eds) 2011. Handbook of Strategic Environmental Assessment, Earthscan, London.
6. Nowacki, J; Martuzzi, M. and Fischer, T. B. (eds) 2009. Health and Strategic Environmental Assessment, WHO, Rome. (<http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/health-impact-assessment/publications/2010/health-and-strategic-environmental-assessment>)
7. Fischer, T. B.; Gazzola, P.; Jha-Thakur, U.; Belcakova, I. and Aschemann, R. (eds) 2008. Environmental Assessment Lecturers' Handbook, ROAD Bratislava, [www.twoeam-eu.org](http://www.twoeam-eu.org).
8. Fischer, T.B. 2007 Theory and Practice of Strategic Environmental Assessment – towards a more systematic approach, Earthscan, London (also published in Chinese by Science Press in 2008).
9. Fischer, T.B. 2002. Strategic Environmental Assessment in Transport and Land-use Planning, Earthscan, London (also published in Albanian in 2013).

### 3) Contributions to Books

1. Fischer, T.B. 2016. Chapter 12: Linking SEA with other assessment and planning tools, in: Sadler, B. and Dusik, J. *European and International Experiences with Strategic Environmental Assessment – Recent Progress and Future Prospects*, Earthscan: 270-283.
2. Fischer, T. B. 2016. Green Network Plan Hamburg, in: Coutts, C. *Green Infrastructure and Public Health*, Routledge: 286-298.
3. Fischer, T. B. 2016. General Introduction, in: Fischer, T. B. *Environmental Assessment; Critical Concepts of Built Environment*, Routledge, London, 4 Volumes: 25-53.
4. Hayes, S. and Fischer, T. B. 2015. Setting and meeting objectives in sustainability assessment, in Morrison-Saunders, A; Bond, A. and Pope, J. *Sustainability Assessment*, Routledge: 265-284.
5. Fischer, T. B.; Saeed, A.; Schijf, B and Khan, M. I. 2014. EIA Teaching at Tertiary Level Institutions in Pakistan – Baseline & Development Needs, in: Fischer, T. B. *EIA Handbook for Pakistan*: 39-47.
6. Fischer, T.B. 2014. Strategic environmental assessment in England, in Lee, M. C. *Strategic Environmental Assessment* (in Korean).
7. Fischer, T.B. 2014. Health and Strategic Environmental Assessment, in Fehr, R.; Martuzzi, M.; Nowacki, J. and Viliani, F. *Health in Impact Assessments*, WHO, EUPHA and IAIA: 23-46.
8. Fischer, T.B. 2013. Making policy level participation effective: Territorial Impact Assessment (TIA) of European Union policy proposals, in: Lawrence, D. *Impact Assessment – Practical Solutions to Recurrent Problems and Contemporary Challenges*. John Wiley and Sons. New Jersey: 263-264.
9. Cave, B.; Rao, M.; Thakur, U. and Fischer, T. B. 2013. How can health impact assessment help planning and public health meet emerging challenges for India?, in: O'Mullane, M. *Integrating Health Impact Assessment (HIA) into the Policy Process*, Oxford University Press: 140-152.

10. Fischer, T.B. 2011. Methodological Approaches to SEA in Spatial Planning, in: Say, N. P. *Stratejik Çevresel Değerlendirme & Planlama (SEA and Planning)*, TIMOB, Ankara: 19-36.
11. Fischer, T.B. 2011. Implementation of the SEA Directive in the European Union, in: Say, N. P. *Stratejik Çevresel Değerlendirme & Planlama (SEA and Planning)*, TIMOB, Ankara: 95-106.
12. Fischer, T.B. 2011. Thematic Overview of Linkages between SEA and other instruments, in: Sadler B., Aschemann, R.; Dusik, J.; Fischer, T. B.; Partidário, M. and Verheem R. (eds). *Handbook of Strategic Environmental Assessment*, Earthscan, London: 235-242.
13. Hanusch, M. and Fischer, T. B. 2011. SEA and Landscape Planning, in: Sadler B., Aschemann, R.; Dusik, J.; Fischer, T. B.; Partidário, M. and Verheem R. (eds). *Handbook of Strategic Environmental Assessment*, Earthscan, London: 257-173.
14. Kidd, S.; Fischer, T.B. and Jha-Thakur, U. 2011. Developing the Learning Potential of Strategic Environmental Assessment in Spatial Planning, in: Rogerson, R., Sadler, S., Green, A. And Wong, C. (eds.). *Sustainable Communities*, University of Hertfordshire Press: 53-68
15. Fischer, T. B.; Dalkmann, H.; Lowry, M. and Tennøy, A. 2010. The dimensions and context of transport decision making; in: Robert Joumard and Henrik Gudmundsson (eds.) 2010. *Indicators of Environmental Sustainability in Transport*, Les collections de l'Inrets, Paris: 79-102 ; [http://hal.archives-ouvertes.fr/docs/00/49/28/23/PDF/Indicators\\_EST\\_May\\_2010.pdf](http://hal.archives-ouvertes.fr/docs/00/49/28/23/PDF/Indicators_EST_May_2010.pdf).
16. Morrison-Saunders, A. And Fischer, T. B. 2009. What is Wrong with EIA and SEA anyway? in: Sheate, W (ed.). *Tools, Techniques and approaches for sustainability*, Imperial College Press, London, 221-242.
17. Fischer, T. B. und Sykes, O 2009. The new EU Territorial Agenda - Indicating Progress for Climate Change Mitigation and Adaptation?, in: Davoudi S et al. *Planning for Climate Change*, Earthscan: 111-124.
18. Fischer, T.B. 2008. Introduction and summary, in: Fischer, T. B.; Gazzola, P.; Jha-Thakur, U.; Belcakova, I. and Aschemann, R. (eds). *Environmental Assessment Lecturers' Handbook*, ROAD Bratislava, 6-8.
19. Gazzola, P. and Fischer, T.B. 2008. Core Module 1 – Environmental Assessment, in: Fischer, T. B.; Gazzola, P.; Jha-Thakur, U.; Belcakova, I. and Aschemann, R. (eds). *Environmental Assessment Lecturers' Handbook*, ROAD Bratislava, 42-57.
20. Posas, P. and Fischer, T.B. 2008. Organisational behaviour and public decision making in the EA context, in: Fischer, T. B.; Gazzola, P.; Jha-Thakur, U.; Belcakova, I. and Aschemann, R. (eds). *Environmental Assessment Lecturers' Handbook*, ROAD Bratislava, 93-115.
21. Fischer, T.B. and Phylip-Jones, J. 2008. Scoping in environmental assessment, in: Fischer, T. B.; Gazzola, P.; Jha-Thakur, U.; Belcakova, I. and Aschemann, R. (eds). *Environmental Assessment Lecturers' Handbook*, ROAD Bratislava, 136-142.
22. Fischer, T.B. 2005. Germany, in: Jones C, Baker M, Carter J, Jay S, Short M and Wood C (eds.). *Strategic Environmental Assessment and Land Use Planning*, Earthscan, London: 79-96.
23. Fischer, T.B. 2004. Germany, in: Dalal-Clayton, B. and Sadler, B. *The Status and Potential of SEA*, IIED, London: 80-82.
24. Fischer, T.B. 2004. SEA in the UK, in: Schmidt M, João E and Albrecht E (eds), *Implementing Strategic Environmental Assessment*, Springer-Verlag: 83-98.
25. Marshall. R. and Fischer. T. B. 2004. Best Practice Use of SEA – Industry. Energy and Sustainable Development, in: Schmidt M, João E and Albrecht E (eds), *Implementing Strategic Environmental Assessment*, Springer-Verlag: 673-690.
26. Fischer, T.B. and Partidário, M.R. 2004. SEA, in: Arts, J. and Morrison-Saunders, A. (eds.). *Follow-up in Environmental Assessment*, Earthscan, London: 224-247.

27. Fischer, T.B. 2002. Sustainable Transport Planning Through Strategic Environmental Assessment in: Möhlenbrink, W, Bargende M, Hangleiter, U and Martin U (eds.) Networks for Mobility, University of Stuttgart: 518-531.
28. Fischer, T.B. 2002. Towards a more systematic approach to policy, plan and programme environmental assessment – some evidence from Europe, in: Marsden, S. and Dovers, S. (eds.) SEA in Australasia, Sydney Place Federation Press: 99-113.
29. Fischer, T.B. 2000. Lifting the Fog on SEA. Towards a Categorisation and Identification of Some Major SEA Tasks, in: Bjarnadóttir, H. (ed.). Environmental Assessment in the Nordic Countries, Nordregio, Stockholm: 39-46.

#### 4) Monographs and other papers

1. Fischer, T.B., Welsch, M. et al (forthcoming). Strategic Environmental Assessment for Nuclear Power Programmes – Guidelines, International Atomic Energy Agency, Vienna.
2. Fischer, T. B. 2014. SEA and EIA; in: LIAISE Toolbox. <http://beta.liaise-toolbox.eu/ia-methods/sea-and-eia>.
3. Fischer, T. B. 2014. Development of an EIA Curriculum for Tertiary Level Institutions in Pakistan - Current Baseline, Development Needs, Outline and Suggestions for Further Action NIAP, IUCN Pakistan, [http://cmsdata.iucn.org/downloads/niap\\_development\\_of\\_eia\\_curriculum\\_baseline\\_study.pdf](http://cmsdata.iucn.org/downloads/niap_development_of_eia_curriculum_baseline_study.pdf).
4. Fischer, T. B., Jha-Thakur, U. and Schmidt, C 2009. Open cast coal-mining and follow-up; the role of SEA, paper for the Impact Assessment, Biodiversity and the Extractive Industries, 24-26 March 2009, Beijing, China. [http://www.ipieca.org/system/files/event-materials/4.1\\_-\\_urmila\\_thakur\\_6338.201171875kb.pdf](http://www.ipieca.org/system/files/event-materials/4.1_-_urmila_thakur_6338.201171875kb.pdf)
5. Fischer, T. B. und Phylip-Jones, J. 2007. *Strategic Environmental Assessment (SEA) of the Fife Supplementary Planning Guidance for Renewable Energies*, in: SEA – materials for China’s ‘International Conference on Strategic Environmental Assessment (SEA)’, SEPA. [http://content.undp.org/go/cms-service/download/asset/?asset\\_id=2083586](http://content.undp.org/go/cms-service/download/asset/?asset_id=2083586).
6. Kidd S, Jha-Thakur U, Peel D, Fischer T, Gazzola P (2008) Developing the Learning Potential of Strategic Environmental Assessment. In: eds. Strategic Environmental Assessment. CoastNet, The Resource Centre. London:CoastNet: 1-13 [www.CoastWeb.info](http://www.CoastWeb.info)
7. Fischer, T.B. 2005. Training Compendium for SEA in China (40,000 words), World Bank Institute.
8. Fischer, T.B. 2004. Having an impact? – the influence of non-technical factors on the effectiveness of SEA in transport decision making, expert paper prepared for EU BEACON Network, 40 p., [www.transport-sea.net](http://www.transport-sea.net).
9. Fischer, T.B. 2004. Editorial for the 2nd Edition of the European Environment Journal on SEA, 14(2): 55-57.
10. Fischer, T.B. 2004. Editorial for the 1st Edition of the European Environment Journal on SEA, 14(3): 135-137.
11. Dusik, J., Fischer, T.B. and Sadler, B. 2003. Benefits of a Strategic Environmental Assessment, REC, UNDP, 5 pages, [www.ecissurf.org](http://www.ecissurf.org) (English and Russian)
12. Fischer, T.B. 2003. IAIA03 – SEA Session Conclusions, *SEA & Transport Planning 5*: 14, trl, Crawthorne.
13. Fischer, T.B. 2002. Raum-Zeit-Strukturen im Modernisierungsprozeß - Mobilität und Verkehr als Träger und Spiegelbild d. Regional- u. Siedlungsentwicklung, (transport aspects in regional & spatial development), 90p.
14. Fischer, T.B. 2002. IAIA02 – Wege zu einer besseren SUP. *UVP-Report 2002-2*.

15. Fischer, T.B. 2002. Mobilität, Verkehr und Umweltfolgen(-prüfung). *Mobility, transport and environmental impacts*. Deutscher Naturschutzring, University of Lüneburg, 72 pages.
16. Fischer, T.B. 2001. How to effectively evaluate the performance of an assessment. *Transport planning: Influence of Strategic Environmental Assessment / Integrated Assessment on Decision-making* Report by the Finnish Environment Agency: 38-40,  
[https://helda.helsinki.fi/bitstream/handle/10138/40664/FE\\_534.pdf?sequence=1](https://helda.helsinki.fi/bitstream/handle/10138/40664/FE_534.pdf?sequence=1).
17. Fischer, T.B. 2001. Das 20. Treffen der Internationalen Gesellschaft für Folgeprüfungen in Cartagena, Kolumbien – Folgeprüfungen im urbanen Kontext (Summary of IAIA 2001 conference). *UVP-Report 2001-2*: 105-106.
18. Fischer, T.B. 2001. Strategic Environmental Assessment Tiering in Transport Infrastructure Planning – Will the ‘SEA Directive’ Remedy Current Shortcomings? *SEA & Transport Planning* 3: 18-19, trl, Crawthorne.
19. Fischer, T.B. 2000. SEA- more than a lost concept? *SEA & Transport Planning* 1: 17-18, trl, Crawthorne.
20. Fischer, T.B. 2000. SEA - no need to be afraid of the European Council Directive. *The European Urban Research Association Newsletter* 7: 11-12.
21. Fischer, T.B. 1998. The application of SEA for transport infrastructure related policies, plans and programmes in North West England, Noord-Holland and EVR Brandenburg-Berlin - a comparative analysis, *EIA-Newsletter*.
22. Articles in the IAIA Newsletter (International Association for Impact Assessment)
  - Fischer, T.B. 2007. Promotion of European Education on Environmental Assessment for Third Country Audience (PENTA): Workshop in Dehradun, India, September 24-26, 2007 18 (5).
  - Fischer, T.B. 2007. PENTA 18 (4)
  - Fischer, T.B. 2004. SEA – Practitioners for practitioners 15 (3)
  - Fischer, T.B. 2003. SEA promotional material for Central and Eastern Europe 14 (3)
  - Fischer, T.B. 2003. Draft guidance on SEA by the ODPM 14 (1)
  - Fischer, T.B. 2002. An integrated appraisal toolkit: Guidance for the North West of England, 13 (5)
  - Fischer, T.B. 2002. New Book on SEA in Transport and Spatial Planning, 13 (4)
  - Fischer, T.B. 2002. Database of International Environmental Quality Objectives for SEA, 13 (4)
  - Fischer, T.B. 2002. Regional Planning and SEA in the State of Brandenburg, 13(3)
23. Articles in ‘IRS aktuell’ (IRS journal, circulation: 2,500 - <www.irs-net.de>)
  - Fischer, T.B. 2001. SUP-Protokoll zur Espoo-Konvention (SEA protocol to the Espoo Convent.), 34: 14
  - Fischer, T.B. 2001. Die Isländische Staatliche Planungsagentur - Skipulagsstofnun - zu Besuch beim IRS (Icelandic State Planning Agency visits the IRS), 34: 14-15
  - Fischer, T.B. 2001. 20. Konferenz der Internationalen Gesellschaft für Folgeprüfungen (IAIA) in Cartagena, Kolumbien (conference report of IAIA01), 32: 14
  - Fischer, T.B. & Farke, A. 2001. Visionen - ein neues informelles Instrument für eine zukunftsfähige Planung? (visions—a new instrument for sustainable planning?) 32: 12-13
  - Fischer, T.B. 2001. Positive ökonomische Effekte durch Straßenbau? (positive economic effects from road construction?), 31: 13
  - Fischer, T.B. 2001. Projektbeteiligung des IRS an der International Study on the Integration of Environmental, Social, and Economic Issues in Spatial Planning, 31: 12
  - Fischer, T.B. 2000. Konferenz ‘IAIA00 - Back to the Future’ in Hong Kong - Zeit für Veränderungen in der Praxis der Auswirkungsprüfung von Politiken, Plänen und Programmen in Deutschland (conference report of IAIA00), 29: 10.
  - Fischer, T.B. 2000. Für eine neue Verkehrsplanung in Deutschland (towards new transport planning in Germany), 27/28: 10-11.

24. Articles in 'GUT informiert' (Journal of GUT Consultancy Group, circulation: 4,000)
- Fischer, T.B. 1994. Der Verkehrswegeplanungsprozeß in Deutschland (the transport planning process in Germany), July 1994.
  - Fischer, T.B. 1994. UVS im Raumordnungsverfahren (EIA in spatial planning), 02/1994.
  - Fischer, T.B. 1993. Landschaftspflegerische Begleitplanung Eisenbahnstrecke Hannover-Magdeburg-Berlin (landscape plan for the rail link Hanover-Berlin), 08/1993.
  - Fischer, T.B. 1993: Ablaufschema einer UVS zur Korridorfindung und Variantenauswahl einer Umgehungsstrasse (environmental statement for a bypass), 08/1993.
25. Editorials in the 'Journal of Environmental Assessment Policy and Management': 3/2009; 4/2009; 1/2010; 2/2010; 3/2010; 4/2010; 1/2011; 2/2011; 3/2011; 4/2011; 1/2012; 2/2012; 3/2012; 4/2012; 1/2013; 2/2013; 3/2013; 4/2013; 1/2014; 2/2014; 3/2014; 4/2014; 1/2015; 2/2015; 3/2015; 4/2015; 1/2016; 2/2016.
26. Editorials in 'Impact Assessment and Project Appraisal': 3/2016; 4/2016; 1/2017; 2/2017

### 5) Working Papers/Project Reports

1. Fischer, T. B.; Jha-Thakur, U.; Aschemann, R. And Belcakova, I. 2010. Guidebook to Environmental Assessment and Management Related Master Level Higher Education in European Union Member States.
2. Fischer, T. B.; Jha-Thakur, U.; Aschemann, R. And Belcakova, I. 2010. A report on East and South East Asian Higher Education Postgraduate EA and Management Requirements and Interests.
3. Kidd, S.; Fischer, T.; Peel, D. and Jha-Thakur, U. 2008. Southampton Local Development Framework – Developing the Learning Potential of Sustainability Appraisal, Homes and Communities Academy.
4. Fischer, T.; Kidd, S. and Jha-Thakur, U. 2008. Interactive Landscape (Environmental) Planning Königslutter, and Communities Academy.
5. SEA training materials (single authored) for the web-based MA in spatial planning (OPDM/University of the West of England, 2005, EIA training materials for the web-based MA in spatial planning (OPDM/University of the West of England), <http://www.built-environment.uwe.ac.uk/spatialplanning/policyappraisaltopics.asp>)
6. 'SEA effectiveness globally' (single authored project report to the World Bank Institute, 2005).
7. 'Types of SEA and scope of assessment tasks in TEN planning – moving towards a more systematic approach' (single authored paper for the BEACON Project, 2005)
8. 'Linguistic Impact Assessment' (project report by M Tewdwr Jones, N Gallent and T Fischer, 2003)
9. Kidd S J and Fischer T B 2003, NW Integrated Appraisal Toolkit Evaluation Report NW Reg. Assembly.
10. Barker A. and Fischer T.B. 2002. Delivering sustainable development within the English regions: the application of SEA, Aberdeen Papers in Land Economy, 02-11, 2002, 36pp.
11. 'Appropriate Housing for Older People' (unpublished project report by Thomas Knorr-Siedow and Thomas Fischer, HBW Hennigsdorf Housing Association, 2001).
12. 'Space-time structures and modernity' (unpublished single-authored project report, IRS, 2000-2001).
13. Fischer, T.B., Brown, C., Devereux, M., Dühr, S., Guillemoteau, D., Nadin, V., Pilgrim, J., Rodde, X. and Seaton, K. 2000. *A Comparison of Environmental Planning Systems Legislation in Selected Countries*, a background paper for the RCEP study on environmental planning, UWE, Bristol.
14. Fischer, T.B. 2000. *Tiered Transport Planning for Sustainable Development*. 8 pages, [www.irs-net.de](http://www.irs-net.de).
15. 'Mobilitätsaspekte bei der Entwicklung der Dienstleistungswirtschaft in Metropolregionen (Mobility aspects in the development of the service sector in metropolitan areas (IRS, 2001)

16. 'Environmental Planning in the EU' (single authored papers on case studies in the Netherlands, Germany and Belgium, Royal Commission for Environmental Pollution, 2000)
17. 'European Local Transport Information Service - ELTIS' (Three single authored expert papers, EC, 1999)
18. 'Sustainability Appraisal for Regional Planning Guidance' (single authored expert paper to the DETR, 1999)

#### 6) Book Reviews

1. Fischer, T. B. 2012. Ecosystem Planning in Florida, by C Brody 2008. *Town Planning Review*.
2. Fischer, T. B. 2011. Rationality and the Environment, Bo Elling 2009. *Journal of Environmental Policy and Planning*, 13(2): 201-204.
3. Fischer, T. B. 2007. Planning Cities for the Future – The Successes and Failures of Urban Economic Strategies in Europe, Peter Karl Kresl, 2007, Edward Elgar, London, *Town Planning Review*, 78(6):799-801.
4. Fischer, T.B. 2005. Strategic Environmental Assessment in Action, Riki Therivel, Earthscan, London, *Town Planning Review*, 76(3): 363-364.
5. Fischer, T.B. 2002. Urban Transport, Environment and Equity – The Case for Developing Countries, Eduardo A Vasconcellos, Earthscan, London, *Urban Studies* 39 (13): 2566-67.
6. Fischer, T.B. 2002. Planning for a sustainable future, edited by Antonia Layard, Simin Davoudi and Susan Batty, Spon Press London, *Town Planning Review* 73(4): 492-493.
7. Fischer, T.B. 2001. Adjusting Life Cycle Assessment Methodology for Use in Public Policy Discourse, R. Bras-Klapwijk 1999, *Impact Assessment Project Appraisal* 19(3): 247-248
8. Fischer, T.B. 1998. Environmental Impact assessment in the United Kingdom and Germany, Katharina Marr, 1997, Ashgate Publishing Ltd, Aldershot, *EIA Newsletter*, Summer 1998.
9. Fischer, T.B. 1997. Environmental Handbook, German Federal Environment Agency, 1997, Vieweg, Braunschweig, *Project Appraisal*, 1997-2: 65-66
10. Fischer, T.B. 1996. Environmental Impact Assessment in the Baltic Countries and Poland, Nordic Council of Ministries, Copenhagen, *EIA Newsletter*, Winter 1996.

#### 7) Keynote speeches and presentations at international conferences and workshops (invited and fully funded by conference organiser)

1. Fischer, T. B. 2017. Survey on Health in Impact Assessments Online Platform. *(Health) Impact Assessments Online Platform Workshop in Bonn, Germany, 25-26 April*.
2. Fischer, T. B. 2016. Academic research on impact assessment for health and planning, *RTPI – Healthy Planning Event*, 5 October 2016, Manchester.
3. Fischer, T. B. 2016. The role of impact assessment. Roundtable Discussion at House of Commons 'a cross-sector approach to creating healthy cities', 1 October 2016, London
4. Fischer, T. B. 2016. The Potential of SEA; Icelanding State Planning Agency, Reykjavik, 9 June.
5. Fischer, T.B. 2016. Experiences with SEA, European Commission Expert Workshop, *Brussels, 18 May*
6. Fischer, T.B. 2016. Sustainability Appraisal in the UK – lessons for Turkey; *10<sup>th</sup> Regional Development and Governance Symposium, Policy Research Foundation of Turkey (TEPAV), Ankara, 19 February*

7. Fischer, T.B. 2015. Reuniting Planning and Health: *Health Impact Assessment and Health Integration into Environmental Assessments Workshop in Bonn, Germany, 24-25 September.*
8. Fischer, T. B. 2015. Taking stock of the Territorial Impact Assessment in the Committee of the Regions, round table contributor, *Brussels, Belgium, 10 June.*
9. Fischer, T. B. 2015. Measuring SEA effectiveness: Conference on SEA and SA, Oxford, *1-2 June.*
10. Fischer, T. B. 2014. Das IEMA UVP Gütesiegel im Vereinigten Königreich: Ein Beispiel freiwilliger Akkreditierung, 12. UVP-Kongress, Bad Honnef, Germany, *30 September.*
11. Fischer, T. B. 2013. Strategische Umweltprüfung (SUP/SEA) und Territoriale Verträglichkeitsprüfung (TVP/TIA) – ein Beitrag zum nachhaltigen Landmanagement? *Presentation at workshop in Berlin „Planungswissenschaftliche Ansätze für ein Nachhaltiges Landmanagement“, 5 March.*
12. Fischer, T. B. 2012. Environmental Assessment higher education in Europe and Pakistan, *several presentations at IUCN NIAP workshop in Islamabad, Pakistan, 13 September.*
13. Fischer, T. B. 2012. Urban transport related planning and the role of indicators, *presentation at the EC cost Action TU1002 (Accessibility instruments for planning practice in Europe) meeting in Amsterdam, 5 July.*
14. Fischer, T. B. 2012. Territorial Impact Assessment. *presentation at the ESPON TIA workshop in Brussels, 6 June.*
15. Fischer, T.B. 2012. L'évaluation a priori des projets de transports urbains en Grande-Bretagne et en Allemagne. *Rail et aménagement : une approche comparée entre la France et la Grande-Bretagne, Paris, 20 May.*
16. Smith, M.; Sykes, O. and Fischer, T.B. 2012. Why have there been so many failures in the return to Tramways in Great Britain? – lessons from the case of Merseytram. *Rail et aménagement : une approche comparée entre la France et la Grande-Bretagne, Paris, 20 May.*
17. Fischer, T.B. 2012. ESPON and Territorial Impact Assessment (EATIA), *presentation at the ESPON-Interstrat Conference Positioning urban Scotland in its European context – What can we learn about benchmarking?, Edinburgh, 30 March 2012.*
18. Fischer, T.B. 2011. Territorial Impact Assessment for European Directives, *presentation to the Working Group on Territorial Cohesion & Urban Matters, Brussels, 15 December.*
19. Fischer, T.B. 2011. Influencing the development of environmental awareness (and behaviour) - or what educators need to consider, *presentation at the International Dialogue for Environmental Action Conference in Gabala, Azerbaijan, 25 November.*
20. Fischer, T. B. 2011. Impact Assessment in Transport Planning, *VIII Semana da Engenharia Ambiental, Sao Carlos, Sao Paulo, 17 October.*
21. Fischer, T. B. 2010. Situation specific indicators for environmental assessment in transport planning Keynote at the SEA workshop of the Korean Environment Institute, Seoul, *30 November to 1 December 2010.*
22. Fischer, T. B. 2010. Different methodological approaches to land use plan SEAs; *keynote at the workshop Environmental Assessment in Turkey, Adana, 13.-14. Mai.*
23. Fischer, T. B. 2010. Enhancing Attractiveness of Environmental Assessment and Management Higher Education, *keynote at the TwoEA-M project conference in Tianjin, China, 20-21 March 2010.*
24. Fischer, T. B. 2010. Environmental Assessment and Management Higher Education in Europe, *keynote at the TwoEA-M project conference in Johor, Malaysia, 23-24 March 2010.*



25. Fischer, T. B. 2009. The European Union and its regulatory role, keynote at the Forum of Federations international conference 'Environmental Assessment in Federations: Current Dynamics and Emerging Issues, Ottawa 13-15 September.
26. Fischer, T. B. 2009. Health inclusive SEA in spatial and transport planning, *keynote at the Kiev Protocol to the Espoo Convention Workshop of the WHO, Rome, 8-9 June, 2009.*
27. Fischer, T. B., and Jha-Thakur, U. 2009. Open cast coal-mining and follow-up; the role of SEA, *keynote at the conference 'Impact Assessment, Biodiversity and the Extractive Industries', 24-26 March 2009, Beijing.*
28. Fischer, T. B. and Couch, C. 2008. Housing developers and urban regeneration in England, *keynote at the URBAN network conference, Dortmund, Germany, May.*
29. Fischer, T. B. 2008. Strategic Environmental Assessment; keynote at the 9th International Health Impact Assessment Conference, *Liverpool, October.*
30. Fischer, T. B. 2007. How does environmental assessment work?, *keynote at the PENTA congress in Dehradun, India.*
31. Fischer, T. B. 2007. Internationale Bedeutung der U(V)P, *presentation at TatORT Dortmund – 20 Jahre UVP-Gesellschaft e.V., Dortmund, Germany.*
32. Fischer, T. B. 2007. UK experiences in implementing SEA in spatial and transport planning, *workshop on the transposition of the SEA Directive in Bucharest, Romania.*
33. Fischer, T. B. 2007. Impact Assessment for sustainable development, *PENTA workshop in Graz, Austria.*
34. Fischer, T. B. 2007. Handling Environmental Impacts, *keynote at the 2<sup>nd</sup> International Congress on Environmental Planning and management, Berlin, Germany.*
35. Fischer, T. B. 2007. Carbon footprinting, *keynote at the Liverpool Community Environment Network Open Meeting , Code for Sustainable Homes, Liverpool, UK.*
36. Fischer, T. B. 2006. 'Tour d'horizon sur les définitions de l'ÉES et leur évolution, démonstration des avantages de l'ÉES, difficultés rencontrées du point de vue pratique, leçons tirées de cas concrets', *opening speech at the 15th Quebec Association for Impact Assessment conference, Montreal, Canada.*
37. Fischer, T. B. 2006. Ensuring that Merseyside's growth is environmentally sustainable. *The Sustainable Development of the Liverpool City Region Conference, Liverpool, UK.*
38. Fischer, T. B. 2006. Sustainability Assessment. *Paper presented at Korean EIA Association Conference, Seoul, Korea.*
39. Fischer, T. B. 2005. Benefits from SEA, *Conference of the EC BEACON Network, Brussels, Belgium.*
40. Fischer, T.B. 2005. Dealing with different Trans European Transport Networks Planning Levels – Tasks, Impacts, Issues and Effective Assessment, *BEACON Workshop, Lisbon, Portugal.*
41. Fischer, T.B. 2004. Principles for Effective SEA Application, *BEACON Workshop, Brussels, Belgium.*
42. Fischer, T.B. 2004. Integration in der Umwelt-Folgenprüfung – Erfahrungen aus dem Vereinigten Königreich. *EIA Association of German Speaking Countries Conference, Potsdam, Germany.*
43. Fischer, T.B. 2003. Why we need SEA, *6th meeting of the Latin American Environment Units of Transport Ministries, Panama.*
44. Fischer, T.B. 2003. Current SEA practice in England and the requirements of the European SEA Directive, *SEA Workshop, Marienthal, Germany.*

45. Fischer, T.B. 2003. *Latin America and Caribbean Workshop on SEA, September 17 –19, Cartagena, Columbia, four presentations:*
  - a. Institutional and Legal Frameworks for the Effective Application of SEA
  - b. The advantages of SEA
  - c. SEA case studies (spatial and transport)
  - d. The European SEA Directive
46. Fischer, T.B. 2003. Development Plan Oldham – reflecting on a positively perceived SEA. *Conference of the Federal Environment Agency, Graz, Austria.*
47. Fischer, T.B. 2001. SEA of regional development plans in the new German Länder, *CEE-regional workshop of the Sofia EIA Initiative, 10-11 Dec. 2001, Bled, Slovenia.*
48. Fischer, T.B. 2001. International SEA experience, *SEA in the co-operation with developing and transition countries, 26-27 November 2001, German Environment Ministry, Berlin, Germany.*
49. Fischer, T.B. 2001. Approaches and tools for assessments in land use and sector plans. *The Nordic EIA Conference, Helsinki, Sept. 6-7, Nordregio, Stockholm.*
50. Fischer, T.B. 2001. Managing the consequences of actions interfering with nature and landscape – the role of SEA. *International Workshop of the Federal Agency for Nature Conservation, 20-22 June, Island of Vilm, Germany.*
51. Fischer, T.B. 2001. How to effectively evaluate the performance of an assessment. *Transport Planning: does the influence of SEA/Integrated Assessment reach decision making? UNECE Workshop at the Finnish Environment Institute, 14-15 May, Espoo, Finland.*
52. Fischer, T.B. 2000. Can spatial planning influence transport? *Europäische Akademie für städtische Umwelt, 14 November 2000, Berlin, Germany.*
53. Fischer, T.B. 1999. Lifting the fog on SEA - towards a categorisation and identification of some major SEA tasks, *Nordregio conference on EIA/SEA in Nordic countries, Karlskrona, Sweden, 22-23 November.*

#### **8) Other presentations at international conferences**

54. Fischer, T.B. and Welsch, M. 2017. IAEA Guidelines for SEA of Nuclear Power Programmes; paper presented in the International Association of Impact Assessment Conference, held in Montreal 4-7 April.
55. Fung, R and Fischer T. B. 2017. Public Participation in EIA in Hong Kong, paper presented in the International Association of Impact Assessment Conference, held in Montreal 4-7 April.
56. Tafida Isa, M; Jha-Thakur, U. 2017. EIA Systems of Oil Producing Countries in Africa; paper presented in the International Association of Impact Assessment Conference, held in Montreal , Canada, 4-7 April. Paper published in Conference proceedings.
57. Jha-Thakur, U; Aderiye, D; Fischer, T B. 2017. Smartening the Smart-Cities of India; paper presented in the International Association of Impact Assessment Conference, held in Montreal 4-7 April.
58. Fischer et al 2017. Impact Assessment and the development of green spaces for health; paper presented in the International Association of Impact Assessment Conference, held in Montreal 4-7 April.
59. Fischer, T. B. 2016. Consideration of climate change impacts and adaptation in EIA practice: Perspectives of actors in Austria and Germany, *presentation at the special IAIA symposium 'IA and water, Lincoln, UK 1-2 September.*
60. Malvestio, A, C.; Montano, M. And Fischer, T. B. 2016. Transport Planning in Brazil: a case analysis of current practice in considering environmental and social issues. *Presentation at the 22nd International Sustainable Development Research Society Conference , Lisbon.*

61. Fischer, T. B. 2016. Learning through SEA, *presentation at the IAIA Conference in Nagoya, Japan, 11 May*.
62. Muthooru, T and Fischer, T. B. 2015. SIA and social acceptance of wind farms in England, *presentation at the IAIA Conference in Florence, Italy*.
63. Jha-Thakur, U. and Fischer, T.B. 2015. SWOT Analysis of UK EIA system, *presentation at the IAIA Conference in Florence, Italy*.
64. Fischer, T. B. 2015. Development of an EIA Curriculum for Pakistan, *presentation at the IAIA Conference in Florence, Italy*.
65. Fischer, T. B. and Noble, B. 2015. Impact Assessment Research – achievements, gaps and future directions, *presentation at the IAIA Conference in Florence, Italy*.
66. Schulze Bäing, A.; Sykes, O. and Fischer, T. B. Perspektivischer Inkrementalismus and Projects – a planning strategy for peri-urban areas? AESOP Congress, Utrecht, 9-12 July 2014.
67. Fischer, T. B.; Saeed, A.; Schijf, B and Khan , M. I. 2013. EIA Teaching at Tertiary Level Institutions in Pakistan – Baseline & Development Needs, *presentation at the IAIA Conference in Calgary, Canada, May (in conference proceedings; <http://www.iaia.org/conferences/iaia13/final-papers.aspx>)*.
68. Fischer, T. B.; Harashina, T.; Tajima, R. And Gore, T. 2013. Policy integration between Environmental Assessment and Disaster Management, *presentation at the IAIA Conference in Calgary, Canada, May (in conference proceedings; <http://www.iaia.org/conferences/iaia13/final-papers.aspx>)*.
69. Fischer, T. B. 2013. Strategic Environmental Assessment and health; *presentation in the special session 'Health in Impact Assessments' at the IAIA Conference in Calgary, Canada, May (in conference proceedings; <http://www.iaia.org/conferences/iaia13/final-papers.aspx>)*.
70. Fischer, T. B.; Golobic, M.; Gore, T. and Marot, N. 2013. Territorial Impact Assessment – a new policy assessment tool to support territorial cohesion; *presentation at the IAIA Conference in Calgary, Canada, May (in conference proceedings; <http://www.iaia.org/conferences/iaia13/final-papers.aspx>)*.
71. Jha-Thakur, U.; Fischer, T. B.; Onyango, V. and Labhassetwar, P. 2013. Health within EIA in the UK and India; *presentation at the IAIA Conference in Calgary, Canada, May (in conference proceedings; <http://www.iaia.org/conferences/iaia13/final-papers.aspx>)*.
72. Lord, A. and Fischer, T. B. 2013. Urban/Environmental? Rethinking the distinction between development and conservation in the peri-urban landscape, *presentation at the AESOP conference in Dublin, July*.
73. Fischer, T. B. and Tajima, R. 2012 Integration of different assessment instrument in spatial planning in England, *presentation at the Berlin Conference on the Human Dimensions of Global Environmental Change, Berlin, 5-6 October 2012*.
74. Fischer, T. B. and Gore, T. 2012. Territorial Impact Assessment of European Directives, *presentation at the IAIA Conference in Porto, Portugal, 27 May – 1 June*.
75. Fischer, T. B. 2012. Territorial Impact Assessment for energy related policies, *presentation at the AESOP conference in Ankara, 11-15 July*.
76. Fischer, T.B. and Schmidt, C. 2011. The Consideration of Health Impacts from Global Climate Change in UK and German Local Spatial Plans and their Associated SEAs, *presentation at Smart Environment Interest Group Conference in Newcastle, UK, 8th November*.
77. Fischer, T.B. and Gore, T. 2011. Territorial Impact Assessment for European Directives, *presentation at the special IAIA meeting on strategic environmental assessment, Prague, Czech Republic, 21-23 September*.

78. Fischer, T.B. and Onyango, V. 2011. SEA research since 1991. – Results of a survey, *presentation at the special IAIA meeting on strategic environmental assessment, Prague, Czech Republic, 21-23 September.*
79. Tajima, R. and Fischer, T. 2011. Integration of different assessment instrument in spatial planning in England, *presentation at the special IAIA meeting on strategic environmental assessment, Prague, Czech Republic, 21-23 September.*
80. Hanusch, M., Balla, S. and Fischer, T.B. 2011 Appropriate SEA application in Germany – views from practice, administration and academia, *presentation at the special IAIA meeting on strategic environmental assessment, Prague, Czech Republic, 21-23 September.*
81. Fischer, T.B. 2011. Espon and Territorial Impact Assessment, *presentation at the ESPON conference, Budapest, Hungary, 21 June.*
82. Fischer, T.B. 2011. Environmental assessment for ‘greening’ decision making, *presentation at the Environmental Economics Society Annual Meeting, Istanbul, Turkey, 16 June.*
83. Fischer, T.B. 2010. Municipal waste management strategies, SEA and the consideration of climate change in England, *presentation at the special IAIA meeting on impact assessment and climate change, Aalborg, Denmark, 25 October.*
84. Fischer, T.B. 2010. Enhancing attractiveness of environmental assessment and management higher education, *presentation at the final TwoEA-M conference, 23-24 September, Graz, Austria.*
85. Fischer, T.B. 2010. TwoEA-M; enhancing attractiveness of environmental assessment and management education; *presentation at the AESOP conference in Helsinki, Finland, 7-9 July.*
86. Nowacki, J. Fischer, T.B. and Martuzzi, M. 2010. Health and SEA – challenges and opportunities, - *presentation at the IAIA Conference in Geneva, Switzerland, April.*
87. Jha-Thakur, U. and Fischer, T.B. 2010. TwoEA-M; enhancing attractiveness of environmental assessment and management education; *presentation at the IAIA Conference in Geneva, Switzerland, April.*
88. Fischer, T.B. 2010. Why to measure with indicators – the dimensions and context of transport decision making; *presentation and the cost 356 conference in Paris, 15 March.*
89. Fischer, T.B. 2009. SEA in England – experiences and prospects, *The SEA International Symposium – case studies and prospect of SEA in Europe, Korean Environment Institute, Seoul, 2 December.*
90. Fischer, T.B. 2009 The European Union and its regulatory role, *Viessmann Research Conference, Allendorf an der Eder, Germany, 12-13 October.*
91. Fischer, T. B. And Jha-Thakur, U. 2009. Motives of Chinese and Indian students for doing an MA in the UK, *AESOP conference, Liverpool, 15-19 July.*
92. Fischer, T. B. And Jha-Thakur, U. 2009. EC TwoEA-M project, *Planning Research Conference, Newcastle, 2 April.*
93. Lowry, M. And Fischer, T.B. 2009. The typology and selection of sustainable transportation. Transportation Research Forum, Portland, Oregon, 16-18 March. <http://www.trforum.org/forum/viewabstract.php?id=282>.
94. Fischer, T. B. and Philip-Jones, J 2008. Environmental Assessment (EA) processes of onshore and offshore wind energy proposals – *presentation at the IAIA Conference in Perth, Australia, May.*
95. Fischer, T.B. and Sykes, O. 2008. The new EU Territorial Agenda – progress for climate change mitigation and adaptation? *Presentation at the Planning Research Conference, Belfast, 18-20th March.*
96. Posas, P. and Fischer, T.B. 2008. Addressing climate change through SEA, *Presentation at the Planning Research Conference, Belfast, 18-20th March.*

97. Fischer, T. B.; Jha-Thakur, U.; Gazzola, P.; Kidd, S.; Peel, D. 2008. Learning in SEA: Misunderstood, Overlooked and Undervalued? *presentation at the Planning Research Conference in Belfast, 18-20 March.*
98. Fischer, T. B. and Phylip-Jones, J 2008. Evaluating the role of Environmental Assessment (EA) processes in the spatial planning of onshore and offshore wind energy proposals - *a comparative analysis of the member states of the United Kingdom and Germany presentation at the Planning Research Conference in Belfast, 18-20 March.*
99. Gazzola, P.; Belcakova, I.; Jha-Thakur, U.; Aschemann, R. and Fischer, T.B. 2007. Promotion of EA Education for Third Country Audience, *AESOP Conference, Naples, July 2007*
100. Gazzola, P. and Fischer, T. B. 2006. Effective SEA in Italy and in the UK *Annual Meeting of the International Association for Impact Assessment (IAIA), Stavanger, Norway, May 2006.*
101. Jha, U and Fischer, T.B. 2006. EIA monitoring for coal mining in India, *Annual Meeting of the International Association for Impact Assessment (IAIA), Stavanger, Norway, May 2006.*
102. Fischer, T. B. 2005. Effective SEA tiering – useful concept or useless chimera? *Meeting on SEA of the International Association for Impact Assessment (IAIA), Prague, September 2005.*
103. Morrison-Saunders, A., Fischer, T.B. und Arts, J. 2005. Nutritious, wholesome food – or a toothless future: Is the all-in-one sustainability assessment diet becoming deficient in vitamin E(nvironment)? *Annual Meeting of the International Association for Impact Assessment (IAIA), Boston, Juni 2005.*
104. Fischer, T.B. and Kidd, S. 2004. Towards Sustainability in the English Regions: Is Integrated Appraisal a Step in the Right Direction? *Annual meeting of the IAIA, Vancouver, April 2004.*
105. Fischer, T.B. 2004. SEA in Germany. *Annual meeting of the IAIA, Vancouver, April 2004.*
106. Fischer, T.B. 2003. Regional Strategic Transport Planning and Environmental Assessment in Liverpool, Amsterdam and Berlin, *AESOP / ACSP conference, Leuven, July 2003*
107. Fischer, T.B. 2003. Policy Assessment Follow-up: Some lessons from Europe. *Annual meeting of the International Association for Impact Assessment (IAIA), Marrakech, June 2003.*
108. Fischer, T.B. 2002. Ensuring sustainable transport planning through SEA, *Networks for Mobility, International Symposium on Mobility Research and Transportation Strategies, 18-20 September, Stuttgart.*
109. Fischer, T.B., Siemoneit, D. and Ullrich, R. 2002. Current regional plan-making in Germany and the requirements of the European SEA Directive, *Annual meeting of the International Association for Impact Assessment (IAIA), The Hague, 15-22 June, 2002.*
110. Barker, A. and Fischer, T.B. 2002. Developing a decision-making framework for sustainable development within the English regions, *Southern Crossings – 6<sup>th</sup> Australasian Urban History/Planning History Conference, Auckland, February 2002.*
111. Fischer, T.B. 2001. Towards a better consideration of climate change and greenhouse gas emission targets in transport and spatial/land use policies, plans and programmes. *Open Meeting of the Human Dimensions of Global Environmental Change Research Community, 6-8 October, 2001, Rio de Janeiro* ([http://sedac.ciesin.org/openmeeting/downloads/1003159123\\_presentation\\_rio2.doc](http://sedac.ciesin.org/openmeeting/downloads/1003159123_presentation_rio2.doc)).
112. Fischer, T.B. and Barker, A. 2001. English Regions and Sustainability: Towards the Development of a Productive SEA System. *Annual meeting of the International Association for Impact Assessment (IAIA), Cartagena, 27 May-3 June, 2001, conference travel funded by the DFG (German Research Association).*
113. Fischer, T.B. 2001. Landscape Plan & Local Land Use Plans Ketzin. *Annual meeting of the International Association for Impact Assessment (IAIA), Cartagena, 27 May-3 June 2001, conference travel funded by the DFG (German Research Association).*

114. Fischer, T.B. 2001. Assessment Tiering in Transport Planning-where is the evidence? *Annual meeting of the International Association for Impact Assessment (IAIA), Cartagena, 27 May-3 June, 2001 conference travel funded by the DFG (German Research Association).*
115. Fischer, T.B. 2000. SEA performance criteria and the requirements of a tiered SEA system, *Annual meeting of the International Association for Impact Assessment (IAIA), Hong Kong, 19-23 June 2000.*
116. Fischer, T.B. 1999. Die Anwendung der gestuften SUP (application of SEA within a tiered environmental assessment system), *Fortschreibung des Bundesverkehrswegeplans, Öko-Zentrum Hamm, 9.-10. November*
117. Fischer, T.B. 1999. Constructing a tower for overlooking the maze - some systematic SEA research conclusions, *Annual meeting of International Association f. Impact Assessment (IAIA), Glasgow, 16 June.*
118. Fischer, T.B. 1999. Assessing the effects of transport policies, plans and programmes, *presentation at Universität Kaiserslautern, 15 May 1999 (Invited).*
119. Fischer, T.B. 1998. The consideration of environmental and socio-economic effects in SEA, *Impact Assessment in the Development Process: Advances in Integrating Environmental Assessment with Economic and Social Appraisal, University of Manchester, 23 October 1998.*
120. Fischer, T.B. 1993. Die Anwendung eines Geoinformationssystems in der UVS zum Schienenwegeausbau Berlin-Magdeburg (The application of GIS in an environmental impact statement for a rail-link extension), *UTECH conference Berlin, February 1993.*

**9) Presentations / contributions to at seminar series/workshop (invited & funded by organiser)**

1. Fischer, T. B. 2016. The role of impact assessment. Roundtable Discussion at House of Commons 'a cross-sector approach to creating healthy cities', 1 October 2016, London
2. Fischer, T. B. 2015. 'Taking stock of the Territorial Impact Assessment in the Committee of the Regions' round table contributor, *Brussels, Belgium, 10 June 2015.*
3. Fischer, T.B. 2015. Commenting on a 'new' set of SEA performance criteria, *IAIA, Florence, Italy, 21 April.*
4. Fischer, T. B. 2015. Theory of SEA and EIA, *SPEAK, Stockholm, Sweden, 29.01.2015.*
5. IAIA Expert Workshop 'Review of World Bank Environmental/Social Framework', *London, 22 January.*
6. Fischer, T.B. 2012. On the integration of different impact assessment instruments, *University of Utrecht, Copernicus Lecture, 12 December.*
7. Fischer, T. B. 2010. The role of the EU in Environmental Management and Assessment, *keynote at the Liverpool in the World Centre Workshop, Liverpool, 20 May 2010.*
8. Fischer, T.B. 2009. On the role(s) of (strategic) environmental assessment in 'greening' decision making, *University of Utrecht, Copernicus Lecture, 2 March. <http://www.twoeam-eu.net/role.pdf>.*
9. Fischer, T.B. 2008. What are our long-term aspirations for SEA? Presentation at seminar 'Towards World Leadership in effective environmental assessment? An (unofficial) SEA of SEA in Scotland', IEMA and the International Association for Impact Assessment (IAIA), *Strathclyde University, Glasgow.*
10. Fischer, T.B. 2008. The new EU Territorial Agenda – Indicating Progress for Climate Change Mitigation and Adaptation? *Department of Civic Design Research Forum, 13 March.*
11. Fischer, T.B. 2008. Die potentielle Rolle der Landschaftsplanung und der Umweltprüfung bei der Implementierung der Biodiversitätskonvention in Deutschland (the potential role of landscape planning and

environmental assessment for the implementation of the biodiversity convention in Germany), *Seminar at the University of Applied Sciences in Erfurt, Germany, January 2008*.

12. Fischer, T.B. 2005. Importance of Context for Effective SEA, *Strathclyde Seminars, Glasgow, February*.
13. Gazzola, P. and Fischer, T.B. 2004. What form should SEA take? – an international perspective of current models and applications, *Environment Agency Workshop, Warrington, October 2004*.
14. Fischer, T.B. 2004. Regional Transport Policy Making & Environmental Assessment in Western & Central Europe – Recent Changes, *Presentation at Wilfrid Laurier University, Waterloo, On, Canada*.
15. Fischer, T.B. 2003. The integrated appraisal toolkit in North West England. *British Urban Regeneration Association, November 14, Wigan*.
16. Fischer, T.B. 2003. Regional Transport Planning, *UCL Seminars, London, 17 March 2003*.

**10) Guest Lectures, Seminars and Short Courses (invited and funded by organiser)**

- 2014 *University of Hannover* – Guest lecture on ‘spatial planning in England’.
- 2014 Teaching the HEC endorsed Environmental Impact Assessment Course Curriculum for Tertiary Level Institutions in Pakistan - a step-by-step introduction for EIA teachers, 2-day training course for the IUCN, Lahore, Pakistan.
- 2013 Strategic Environmental Assessment, 2-day training course for the IUCN, Islamabad, Pakistan
- 2013-14 The role of health in Impact Assessment; International HIA course, Liverpool, guest lectures.
- 2011 Environmental Assessment, 4 day training course, University of Sao Paolo, Brazil
- 2009-12 EA and its contribution to decision-making, Copernicus Institute, Utrecht University, guest lectures
- 2008 Strategic environmental assessment in the UK, Germany and Italy, University of Dundee, guest lecture
- 2007 SEA in Transport Planning, guest lecture in the SEA Centre of Nankai University, Tianjin, China
- 2006 Training seminar for Korean gov. officials in Seoul, Korea (with Prof Mu Choon Lee, Yonsei Uni.)
- 2005 SEA Training for environmental consultancies in North West England (Taylor Young and BDP)
- 2004 Short course on SEA for the *IAIA/World Bank* in Beijing, China
- 2003 Short course on SEA for the *World Bank* in Panama on transport impact assessment
- 2003 *World Bank* distance learning course on SEA for China; recording three videos
- 2004-12 *Manchester University* – guest lectures on strategic environmental assessment
- 2001/2 *Universität Potsdam* – Module on Transport Geography
- 1995/00 *Freie Universität Berlin* – Taught modules on Environmental Impact Assessment

### **Section 3 – Current and Past Teaching and Administrative Responsibilities**

I have teaching experience in higher education since 1995. The main focus of my teaching has been on transport, spatial and environmental assessment, planning and management. My main teaching interests are in the field of environmentally sustainable transport and spatial planning, policy and governance. Below, current teaching activities at the University of Liverpool are summarised.

#### **1) Teaching (Current)**

##### ***Postgraduate (Taught)***

Environmental Assessment (Module Co-ordinator, ten 2-hour lectures, attending and marking student presentations, marking seminar papers, exams and presentations)

Environmental Planning and Management Project (Module Co-ordinator, organising and supervising a client based student project, marking project presentations and reports)

Spatial Planning Challenges (Module Co-ordinator, ten 2-hour lectures, attending and marking student presentations, marking seminar papers, exams and presentations)

Dissertation supervision (MCD, MBA, MA students)

##### ***Undergraduate (Taught)***

Environmental Assessment (Module Co-ordinator, ten 2-hour lectures, attending and marking student presentations, marking seminar papers, exams and presentations)

Environmental Planning and Management Project (Module Co-ordinator, organising and supervising a client based student project, marking project presentations and reports)

Environmental Sustainability (Year 2 – Module Moderator)

#### **2) University Duties and Committees**

##### ***a) School***

Research Group leader 'Planning, Environmental Assessment and Management (2014-

Course Director MSc Environmental Assessment and Management (2013 -15)

Head of Department of Geography and Planning (Line Manager for 40 permanent academic members of staff and 20 fixed-term researchers; 2010 -2014)

Director of Post-Graduate Research (2008-2010)

Course Director MA Environmental Management and Planning (2005-2012)

Examinations Secretary (2004 - 2008)

##### ***b) Faculty***

Information Secretary (2002-2004)

Setting up of dual PhD agreement between Faculty of Science and Engineering and University of Sao Paulo, Sao Carlos Campus



**Section 4 – Other Professional Activities**

***a) Honorary positions and committee / professional membership***

Invited to chair the annual Scottish joint SEA/HRA forum; Glasgow 28 April 2016.

Evaluator for Italian Research and University Evaluation Agency (ANVUR) 2011-2014 Review (2016)

Initial Steering Group Member of IEMA's Impact Assessment Network (2015 -)

Member of the International Scientific Advisory Board for the SPEAK - Sustainable Planning and Environmental Assessment Knowledge – project, funded by the Swedish Environment Agency (2015 -)

Member of Evaluation Panel for the Swedish Environmental Protection Agency's 'Spatial Planning for Reduced Environmental Impact' Programme (January 2014).

Member of the Scientific Advisory Board for the 'ACRP8 - SPECIFIC - KR15AC8K12439' project, Austrian Climate & Energy Funds (2016-17)

Member of the Scientific Advisory Board for the ENVISAGE-CC project (ENVIRONMENTAL IMPACT ASSESSMENT SUPERIMPOSED BY ADAPTATION GOALS EXACTED BY CLIMATE CHANGE), Austrian Climate & Energy Funds (2012-13)

Rapporteur for ESRC Project 'Infrastructure and Spatial Planning' (2012)

Visiting Professor at University of Sao Paulo, Brazil (2011-)

Visiting Professor in the Research Centre for SEA at Nankai University, Tianjin, China (2007 -)

Professional Member of the NHS National Institute for Health and Clinical Excellence Public Health Programme Development Group for the NICE guidance on Spatial Planning; July 2009-June 2011.

Invited Member for Arcadia 'Impact Assessment Workshop' at Digital Humanities, King's College; 2-3 May 2012.

Chair of the International for Impact Assessment (IAIA) Ireland-UK Branch Committee (2011 -)

Fellow Member of the Institute for Environmental Management and Assessment (IEMA; since 2011)

Member of the Spatial Planning and Health Group (SPAGH), 2011 -

Member of EC COST 356 Action 'Towards the definition of a measurable environmentally sustainable transport' (2006-2009)

Member of European BEACON (Building Environmental Assessment Consensus on the Trans-European Networks) network (2004-2005)

Member of the UN Environment Programme Working Group on Integrated Assessment (2003-2005)

Chair of SEA section at the International Association for Impact Assessment (IAIA, 2001 - 2009)

Fellow at the Viessmann Research Centre on modern Europe, Wilfrid Laurier University, Waterloo, Ontario, Canada (2002-)

Member of the Environmental Planning and Protection Network/ SEA sub-group of the RTPi

Committee Member of the Ireland-UK Branch of the IAIA (2005-2006)

Member of the Working Group 'Sustainability Appraisal' at the German UVP Verein

*b) Other publishing and refereeing responsibilities*

- Editor-in-chief of Impact Assessment and Project Appraisal (June 2016-)
- Editor-in-chief of the 'Journal of Environmental Assessment Policy and Management' (June 2009 – June 2016)
- Member of the editorial board of the journal 'Impact Assessment and Project Appraisal' (2014 -2016)
- Member of the editorial board of the journal 'EIA Review' (2002 -)
- Member of the editorial board of the journal 'Land' (2010 -)
- Member of the editorial review board of the 'International Journal of Environment and Sustainability' (2012 - )
- Member of the editorial board of 'Environmental Sciences' (2012-)
- Member International Association for Impact Assessment Publications Committee (2001-2004)
- Special Edition Guest Editor for the Journal of EA, Policy and Management' on 'SEA in China, May 2009.
- Special Edition Guest Editor for two issues of the 'European Environment' journal on 'Progress towards meeting the requirements of the European SEA Directive' (2004)
- Editorial Board member of Environmental Dynamics Institute (2002-2006)
- Editorial Board member for Report on Integrated Land Use Planning, Transport and Environmental Policy-Making, Dutch Ministry of Transport (2003)
- Refereeing of Papers for Land Use Policy, Progress in Planning, Environmental Management, EIA review, Journal of Environmental Planning & Management, Planning Practice and Research, Impact Assessment and Project Appraisal, UVP-Report, International Journal for Life Cycle Assessment, Town Planning Review, Journal of Environmental Assessment Policy and Management, Science of the Total Environment and others
- Refereeing of Book Proposals for Sage Publications, Routledge and Earthscan
- Refereeing research proposals for UK ERSC (numerous), European Commission (numerous), Swedish EPA (2014), Canadian (2013), Portuguese FCT (2012), Swiss NSF (2013 and 2014) and German DFG (numerous).

*c) Conference organisation*

- Chair, IAIA Ireland –UK branch workshop on 'BREXIT and IA' in Liverpool, 2017.
- Co-chair, IAIA special symposium on water management in Lincoln, 2016.
- Organising Committee member of the Association of European Schools of Planning (AESOP) Conference in Prague, July 2015 (Track Chair Sustainable Resource Management).
- Organising Committee member of the Association of European Schools of Planning (AESOP) Conference in Ankara, July 2012 (Track Chair Sustainable Resource Management, Energy and Planning).
- Member of the organising committee of the international IAIA SEA conference in Prague, Czech Rep. (2011)
- Organising Committee member of the Association of European Schools of Planning (AESOP) Conference in Helsinki, July 2010.
- Local Organising Committee member of the Association of European Schools of Planning (AESOP) Conference in Liverpool, July 2009.

Member of the international organising committee of the 2<sup>nd</sup> International Congress on Environmental Planning and Management in Berlin, Germany (2007).

Member of the organising committee of the international IAIA SEA conference in Prague, Czech Rep. (2005)

Organisation of strategic environmental assessment streams at annual IAIA conferences:

- The Hague, the Netherlands (2002)
- Marrakech, Morocco (2003)
- Vancouver, Canada (2004)
- Boston, USA (2005)
- Stavanger, Norway (2006)
- Seoul, Korea (2007)
- Accra, Ghana (2009)
- Calgary, Canada (2013)

RTPI North West Branch Conference 'sustainability appraisal workshop' (Liverpool, 2003).

RTPI North West Branch Conference 'environmental impact assessment' (Liverpool, 2004)

RTPI North West Branch Conference 'strategic environmental assessment' (St Helens, 2005)

Combined RTPI North West Branch and IAIA UK meeting on SA/SEA (Liverpool, 2006)

IAIA Ireland-UK branch conference on '25 years of the European EIA Directive' (Liverpool, 2013)

*d) External examinations*

External Examiner for Niels Heeres (PhD candidate, University of Groningen, 2017)

External Examiner for Dee Fischer (PhD candidate, University of Johannesburg, 2017)

External Examination for Juan Carlos Tejada Gonzalez (PhD candidate, Autonomous University of San Luis Potosí, 2017)

External Examination for Alexandra Amrosio Polido (PhD candidate, New University of Lisbon, 2016)

External Examiner for Kiran Hameed (PhD candidate, University of Technology Berlin, 2014)

External Examiner for Matthew James Montgomery (PhD candidate, University of Bristol, 2014; 2016)

External Examiner for Chaunjit Chanchitpricha (PhD candidate, University of East Anglia, 2011)

External Examiner for Vincent Onyango (PhD Candidate, University of Cottbus, 2010)

External Examiner for Ainhoa Gonzales (PhD Candidate, University College Dublin, 2008)

External Examiner for Kaiyi Zhou (PhD Candidate, Imperial College London, 2008)

External examiner for Ivan Scrase (PhD Candidate, Imperial College London, 2006)

External examiner for Fiona Wright (PhD Candidate, University of Strathclyde, 2004, 2006)

External Examiner at University of East Anglia (MSc Environmental Assessment, 2013 - 2017)

External Examiner at Central European University (Budapest, Hungary, MESPOM MSc, 2017)

External Examiner at Dundee University (MA in Spatial Planning, 2009 - 12)

External examiner at University of Newcastle (MA in Spatial Planning, 2006 - 2009)

External MA theses supervisor (Potsdam, Bernburg, TU Berlin, Greifswald, Germany, 2001-2002).

Referee for professorial appointments at Aalborg University (Denmark), Murdoch University (Australia) and NW University (South Africa)

*e) Internal Examinations*

Internal Examiner for Jessica Barker (PhD Candidate, University of Liverpool, 2011)

Internal Examiner for Safaa Ghoneim (PhD Candidate, University of Liverpool, 2012)

Internal Examiner for Debra Fox (PhD Candidate, University of Liverpool, 2012)

Internal Examiner for Jarinya Saiyut (PhD Candidate, University of Liverpool, 2014)

*f) Hosting international academic visitors*

Dr David Annandale (Canada), Rob Verheem (The Netherlands), Prof Frank Vanclay (the Netherlands), Prof Xu He (China), Prof Mu Choon Lee (S Korea), Dr Ryo Tajima (Japan), Piper Foster (US), Christoph Schmidt (Germany), Prof Thomas Weith (Germany), Maia Gachechiladze (Hungary), Obaidullah Nadeem (Pakistan), Clara Lemos (Brazil), Chiara Bragagnolo (Italy), Wang Huizhi (China), Prof Alfred Hecht (Canada), Dr Ralf Aschemann (Austria), Prof Morrison-Saunders (Australia), Prof Nuriye Say (Turkey); Dr M Lowry (US); Prof Marcelo Montano (Brazil), Prof Marcelo Pereira de Souza (Brazil), Annegret Repp (Germany).

**Fortegnelse over bedømmelsesudvalg til  
stilling 42232 Associate Professor in Signal Processing and Scientific Computing ved Department of  
Electronic Systems**


**Navn:** Associate Professor Ove Andersen  
**Arbejdssted:** Department of Electronic Systems, AAU  
**E-mail:** oa@es.aau.dk

**Navn:** Professor Thomas Eriksson  
**Arbejdssted:** Department of Signals and Systems, Chalmers University of Technology, Sweden  
**E-mail:**

**Navn:** Professor Lars Kai Hansen  
**Arbejdssted:** Department of Applied Mathematics and Computer Science, DTU  
**E-mail:** lkh@imm.dtu.dk.

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

## Associate Professor in Signal Processing and Scientific Computing

Godkendt d. 12-6-17  
  
 Eskild Holm Nielsen  
 dekan

**Position No.**  
42232

At the Technical Faculty of IT and Design, Department of Electronic Systems, a position as Associate Professor in Signal Processing and Scientific Computing is open for appointment from November 1, 2017 or soon hereafter.

The Department of Electronic Systems is one of the largest departments at Aalborg University with a total of more than 250 employees. The department is internationally recognized in particular for its contributions within Information and Communication Technology (ICT). The research and teaching of the Department of Electronic Systems focus on electronic engineering and the activity areas are organized in the sections: Antennas, Propagation and Radio Networking section (APNet), Automation Control section (Control), Signal and Information Processing section (SIP), Wireless Communication Networks section (WCN) and Communication, Media and Information technologies (CMI).

The department focuses on maintaining a close interplay with the university's surroundings - locally, nationally and internationally - as well as producing unique basic research and educating talented and creative engineers. The department collaborates with leading ICT researchers all over the world.

### Job description

The Signal and Information Processing section seeks to appoint a full-time associate professor to participate in and further develop the section's research and teaching activities related to the combined field of signal processing and scientific computing. The applicant is expected to have research qualifications corresponding to the level achieved from a successful employment period as assistant professor or post-doc researcher. Therefore the applicant must document a record of scientific production at international level within signal processing and scientific computing, and in particular the applicant must demonstrate academic experience in the following engineering domains.

- Sparse signal-representation and -processing
- Statistical signal processing
- Compressed sensing
- Scientific computing
- eScience in signal processing
- Software engineering
- Modeling and simulation, e.g., Python

The associate professor is expected to conduct dissemination of research results to and initiate cooperation with industry in order to strengthen relations with local, national, and international private company partners.

Furthermore, the position involves preparation of research funding applications as well as teaching and assessment of undergraduate and graduate students. Primarily, the teaching will be in domains such as Signal Processing and Math Technology but may also be conducted in other study programs at the University. Teaching experience and competences in development of course material is therefore also required.

Further information about the scientific content of the position can be obtained from Assoc. Professor Peter Koch, email pk@es.aau.dk or phone (+45) 9940 8696.

### Qualification requirements:

The level of qualification for Associate Professors shall correspond to the level, which can be achieved on the basis of the appointment as Assistant Professor, but may be achievable in other ways. The appointment presupposes that the applicant can demonstrate original scientific production at an international level as well as documented teaching qualifications. Appointment to the position requires that both



research and teaching qualifications are at the requested level. The two qualifications will be given equal and principal priority in the overall assessment.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 10 publications.
- Teaching qualifications described in the teaching portfolio. If this is not enclosed the applicant must include an explanation for its absence.
- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position.
- References/recommendations.
- Personal data.

The applications are only to be submitted online by using the "Apply online" button below. An assessment committee will assess all candidates.

For further information concerning the application procedure please contact Anne Christoffersen by mail [ach@adm.aau.dk](mailto:ach@adm.aau.dk) or phone (+45) 9940 9680.

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen [here](#).

### **Workplace**

Aalborg

### **Agreement**

Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

### **Deadline**

09/07/2017

### **Apply online**

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

[top](#)

---

# CURRICULUM VITAE: THOMAS ERIKSSON

---

## BIOGRAPHY

---

Thomas Eriksson received the M.S. degree in Electrical Engineering in 1990, and the Ph.D. degree in Information Theory in 1996, both at Chalmers. After his degree, he worked for a year at AT&T Labs Research in Murray Hill, NJ, USA, and for a year at Ericsson AB in Kista, Stockholm, before he joined the Information Theory group at the [department of Signals and Systems \(S2\)](#) in 1999. In 2000, Thomas joined the [Communication Systems Group](#) (also at S2), first as an Associate Professor, since 2011 as a Professor, and 2013 a Full Professor.



His teaching has over the years involved several areas, for example Data Compression, Digital Communications and Information Theory. From 2007-2011, he was technical program director for the international Master's program in Communication Engineering. From 2011, he is vice head of department, responsible for the undergraduate education.

Thomas general research interests are in statistical signal processing and communication. A main interest is so called "Dirty RF" processing, where imperfections in communication hardware are analyzed and compensated. To this area belongs, e.g., signal design for efficient amplifier architectures, digital predistortion of nonlinear amplifiers, compensation of I/Q imbalance, design of efficient MIMO transmitters, analysis and compensation of phase noise in oscillators etc. Another area of interest is theory and methods for feedback of channel state information (CSI), both using quantization of CSI or hybrid ARQ.

Some software related to Thomas research can be found at <http://thomaseriksson-software.wikispaces.com/> .

---

## EDUCATION

---

- Master of Science (Civilingenjör) in Electrical Engineering, Chalmers University of Technology, 1990. The title of the master thesis is *Quantization of Prediction Filters in Modern Speech Coders*.



- Lic. Eng. (Teknologie licentiat), School of Electrical and Computer Engineering, Chalmers University of Technology, December 15, 1994. The title of the thesis is *Speech Coding from a Variable Rate Perspective*.
- Ph.D. (Teknologie doktor), School of Electrical and Computer Engineering, Chalmers University of Technology, Nov. 6, 1996. The title of the thesis is *Vector Quantization in Speech Coding*. ISBN 91-7197-400-8.

---

## PEDAGOGIC EDUCATION

---

- **Undervisnings- och presentationsteknik, 1991:** Ph.D. course, 3 hec. Examiner: Inga Alander.
- **Supervision of Research, TLD202 (now FCIU045), 2003:** Teachers course by CKK, 3 hec. Examiner: Michael Christie.
- **Handledning på Handledning, 2009:** For supervisors, given by Sola Coaching AB. This course was given as ten 3-hour meetings, with tasks to perform between the meetings. I estimate it to correspond to 4-5 hec. Examiners: Josef Frischer and Ola Stillbäck.
- **Pedagogical project, TLC101 (now FCIU040), 2008-2009:** Teachers course by CKK, 6 hec. Examiner: Michael Christie.

---

## ACADEMIC APPOINTMENTS/EMPLOYMENTS

---

- July 1990-Dec. 1996: Ph.D. student and teaching assistant (doktorand), Department of Information Theory, Chalmers University of Technology.
- May 1998-May 1999: Postdoc position. Department of Speech, Music and Hearing, Royal Institute of Technology (KTH). Main task was development of a speech coding algorithm at 4 kbps and supervision of PhD students.
- May 1999-Feb. 2011: Associate Professor (universitetslektor). Department of Signals and Systems, Chalmers University of Technology. Main tasks are supervision of Ph.D. students, teaching (master and graduate courses) and research.
- Sep 2003-Mar 2004: Guest professor. MCSP, Yonsei University, Seoul, S. Korea. Teaching and research on speaker recognition.
- Feb 2011—: Professor (Swedish: Biträdande Professor). Department of Signals and Systems, Chalmers University of Technology. Main tasks are supervision of Ph.D. students, teaching (master and graduate courses) and research.
- Oct 2011—: Vice Head of the Department of Signals and Systems, with responsibility for undergraduate education.
- Feb 2013—: Full Professor (Swedish: Professor). Department of Signals and Systems, Chalmers University of Technology. Main tasks are supervision of Ph.D. students, teaching (master and graduate courses) and research.

---

## PROFESSIONAL EMPLOYMENTS

---

- 1985-1990, for Enator Elektronikonsult, Göteborg. Work with programming and design of hardware. Localized in Karskoga, at Nobel Elektronik AB, to design the software for a industrial scale.
- 1986, for TempGuard AB, Karlskoga. Design of hardware and software for a mobile temperature guarding system.

- 1986--1990, for Enator Elektronikonsult, Göteborg Design of electronics.
- 1995, 1997, for Ericsson Microwave Systems in Mölndal, Göteborg. Giving courses in signal processing and speech coding.
- 1997--1998: Research consultant at AT\&T Research Labs, Florham Park, NJ, USA. Projects include development of speech coding algorithms at 1.2 kbps, speech synthesis and vector quantization.
- 1999, for Ericsson Radio Systems, Kista, Stockholm. Development of a speech coding algorithm at 4 kbps.

---



---

## SKILLS

---

### LANGUAGE SKILLS

---

- Native Swedish speaker
- Fluent in English
- Basic knowledge of German

### COMPUTER AND PROGRAMMING SKILLS

---

- Good knowledge of Windows, Unix, and Linux operating systems.
- Expert programming skills in Matlab, C and C++. Good programming skills of a variety of assembler languages, Pascal, FORTRAN, Php.

---



---

## EXPERIENCE

---

### TEACHING EXPERIENCE

---

- 1990, 1991, 1992, 1993, 1994, 1995: Exercise teacher in the 4th year master course *Communication Theory part A* and *part B* in the Electrical Engineering program at Chalmers University of Technology. This course deals with the basics of digital communication.
- 1995, 1997: In 1995, I developed a course in speech coding, designed for the needs of Ericsson Microwave Systems. The course was updated and given again in 1997. Lectures, course material, a laboration, listening samples and exams was developed.
- Sept. 1999--Dec. 1999: Teaching a project course in *Introduction to Electrical Engineering* for the first year undergraduate students. Project topic was "Digital Communication". The project was awarded as "Best Project".
- Sept. 1999--Dec. 1999: Teaching (lecturer and examiner) a course in *Modulation Theory* for the 4th year EE students.
- Sept. 2000--Dec. 2000: Teaching a project course in *Introduction to Electrical Engineering* for the first year undergraduate students. Project topic was "Image Compression".
- Feb. 2000--July 2000: Teaching (lecturer and examiner) of a Ph.D course in *Information Theory* together with Tony Ottosson.
- May 2001--Aug. 2001: Teaching (lecturer and examiner) of a Ph.D course in *Orthogonal Frequency-Division Multiplexing*.

- 2002--2006: Development and teaching (lecturer and examiner) of a course on *Computer Introduction* for the International Master of Science Program in Digital Communication Systems and Technology.
- 2002--2007: Development and teaching (lecturer and examiner) of a course on *Data Compression* for the International Master of Science Program in Digital Communication Systems and Technology.
- 2003: Development and teaching (lecturer and examiner) of a course on *Information Theory* for Yonsei University, Seoul, South Korea.
- 2008-2009: Examiner of a course on *Source Coding* for the Master Program in Communication Engineering.
- 2009: Development and Teaching of a joint master/PhD student course in *Information Theory*.
- 2012: Development of a course "*Wireless Link Project*".
- 2015: Development of a course on "Massive MIMO", to be given within GHZ Centre.
- 2015: Teaching "Estimation Theory" by Stephen Kay, at Ericsson in Lindholmen.

---

### SUPERVISION EXPERIENCE, PH.D. STUDENTS

- Ali Behravan (supervisor), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started April 2001, Lic. degree Jan. 2004, PhD May. 2006.
- Florent Munier (supervisor), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started February 2001, Lic. degree June 2004, PhD May. 2007.
- Aleksander Våljamäe (supervisor), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started May 2003, Lic. degree Dec. 2005.
- Guillermo Garcia (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started October 2004, Lic. Sep. 2007, PhD Dec. 2010.
- Daniel Persson (main supervisor and examiner), Information Theory Group, Dept. Signals and Systems, Chalmers University of Technology. Started 2002, Lic. Jan. 2006, PhD. Jan. 2009.
- Ali Soltani (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started September 2007, Lic Jan 2010, PhD Dec. 2012.
- Haiying Cao (co-supervisor), Microwave Electronics Laboratory, Chalmers University of Technology. Started September 2007, PhD December 2011.
- Ulf Gustavsson (main supervisor), Microwave Electronics Laboratory, Chalmers University of Technology. Started September 2007, Lic May 2009, PhD December 2011.
- Behrooz Makki (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started November 2008, Lic Jan 2011, PhD Dec 2013.
- Sepideh Afsaardoost (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started June 2009, Quit March 2011.
- Rajet Krishnan (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started September 2010. Lic Jan 2013, PhD April 2015.

- Mohammad Reza Khanzadi (main supervisor, examiner 2015), Microwave Electronics Laboratory, Chalmers University of Technology. Started September 2010. Lic Sep. 2013, PhD February 2016.
- Jingya Li (co-supervisor) , Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started November 2010. Lic .March 2013, PhD June 2015.
- Wei Wang (co-supervisor), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started March 2011. Lic. Sep 2013.
- Jessica Chani (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started February 2012. Lic December 2015.
- Katharina Hausmair (main supervisor and examiner), Communication Systems Group, Dept. Signals and Systems, Chalmers University of Technology. Started February 2013.
- Christopher Mollén (co-supervisor), Linköping University. Started 2013.
- Dhecha Nopchinda (co-supervisor), Microwave Electronics Laboratory, Chalmers University of Technology. Started January 2015.
- Jingjing Chen (co-supervisor), Microwave Electronics Laboratory, Chalmers University of Technology. My involvement started August 2015.
- Xinlin Zhang (co-supervisor), Signal Processing Group, Dept. Signals and Systems, Chalmers University of Technology. My involvement started August 2015.
- Nikolaos Kolomvakis (co-supervisor), Signal Processing Group, Dept. Signals and Systems, Chalmers University of Technology. My involvement started August 2015.
- Madeleine Kildal

---

## SUPERVISION EXPERIENCE, MASTER STUDENTS

---

Supervision and examination of more than 50 master thesis works in the area on digital communications and signal processing.

---

## POST DOCTORAL FELLOWS AND GUEST RESEARCHERS

---

- 2004--2005: Hosting post-doc Sung-Kyo Jung and PhD student Samuel Kim from Yonsei University, Seoul, Korea.
- 2005: Hosting guest researchers Hakan Arslan, Mustafa Durukal and Ezgi Safak from Bilkent University, Ankara, Turkey.
- 2005: Hosting guest researcher Daniel Bustos from Politecnico di Torino, Torino, Italy.
- 2012: Hosting guest researcher Katharina Hausmeir from TU Graz, Graz, Austria.
- 2013-2014: Hiring post-doc Per Landin from Högskolan in Gävle.
- 2013: Hosting guest researcher Nicolo Mazzali from University of Parma, Italy.
- 2015: Hosting guest researcher Christopher Mollén from Linköping University.

---

## ADMINISTRATIVE EXPERIENCE

---

- 2001-2002: Responsible for the S2 policy related to courses in the Information Technology master's program at Chalmers University of Technology.
- 2001-2002: Member of committee deciding the structure and courses of the Information Technology master's program at Chalmers University of Technology. See <http://www.cs.chalmers.se/~catarina/IT+/> for more information

- 2002: Organizer of a summer school for the National (Swedish) research project Personal Computing and Communications (PCC++) consisting of more than 40 Ph.D. students. Reference person: Arne Svensson, S2.
- 2003: Organizer of a summer school for the National (Swedish) research project Personal Computing and Communications (PCC++). Reference person: Arne Svensson, S2.
- Sep. 2003 - Aug. 2004: Co-leader of a South Korean project, *Development of Robust Speaker Verification Algorithms*, funded by the South Korean Government.
- 2004: Session chairman at International Conference on Spoken Language Processing (ICSLP2004), Jeju, Korea.
- 2001-2006: Co-leader of *System Design and Performance Analysis for a Wireless Communication System at 60 GHz*, which is co-funded by High Frequency Electronics (a research program funded by the Foundation for Strategic Research) and the Swedish Research Council for Engineering Sciences (from 2001).
- 1993--2007: Acts as reviewer of journal papers on a regular basis for the journals *IEEE Transactions on Information Theory*, *IEEE Transactions on Speech and Audio Processing*, *IEEE Transaction on Communications*, *IEEE Transactions on Vehicular Technology*, *IEEE Signal Processing Letters*, *IEEE Electronics Letters*, other.
- 2004: Member of the Scientific Review Committee in ICSLP2004.
- 2004: Session chair in ICSLP 2004.
- 2005: Member of the Scientific Review Committee in Eurospeech 2005.
- 2005-2010: Associate editor for EURASIP Journal on Audio, Speech and Music Processing.
- 2005-2007: Member of the gender equality workgroup at S2.
- 2007-present: Responsible for the Master Program in Communication Engineering at Signals and Systems, Chalmers.
- 2007-present: Member of the Program Committee of GHz centre, Chalmers.
- 2008-2009: Responsible for a funded Chalmers commitment (IMPACT) on "Sustainable Development", related to the Master Program on Communication Engineering.
- 2009-2010: Responsible for a funded Chalmers commitment (IMPACT) on "Improved Supervision".
- 2010: Member of the evaluation committee for the Swedish Research Council (VR).
- 2010: Developing a new master program in Communication Engineering at Signals and Systems, Chalmers.
- 2011: Evaluation of candidates for a position as Associate Professor at Aalborg University, Aalborg, Denmark.
- Oct 2011—: *Vice Head of the Department of Signals and Systems*, with responsibility for undergraduate education.
- April 2012: Evaluation of Niclas Björsell for a position as "Docent" at KTH, Stockholm, Sweden.
- March 2012: Evaluation of a research proposal for the program "Institutional Grants" in STINT, Sweden.
- May 2012: Evaluation of research proposals for the Information and Communication Technology Call 2012, of the Vienna Science and Technology Fund, Austria (<http://www.wvtf.at>).
- Sep 2012 – Feb 2013: Evaluation of the quality of Italian research for "The National Agency for the Evaluation of Universities and Research Institut" (ANVUR) in Italy.
- March 2013: Evaluation of 4 candidates for position as professors at Tampere University, Finland.

- April 2013: Evaluation of Ming Xiao for position as Assistant Professor at KTH, Stockholm.
- November 2013: Evaluation of Niclas Björsell for position as Professor at Högskolan i Gävle, Gävle, Sweden.
- February 2014: Member of the program committee at IEEE Multiconference in Systems, Signals, and Devices, Barcelona, Spain.
- April 2014: Evaluation of Sangyoun Lee for position as Professor at Yonsei University, Seoul, South Korea.
- December 2014: TPC at GLOBECOM2014 WS on Massive MIMO.
- June 2015: TPC at ICC2015.
- December 2015: TPC at GLOBECOM2015, both normal sessions and WS on Massive MIMO.

---

### OPPONENT AND COMMITTEE COMMISSIONS

---

- Grading committee member for Xiang Gao, LTH, Lund, Sverige (Feb 2016).
- Opponent for Markus Allen, , TUT, Tampere, Finland (Oct 2015)
- Thesis preexamination for Adnan Qamar Kiayani, TUT, Tampere, Finland (Aug 2015)
- Grading committee member for Senay Amanuel Negusse, KTH, Stockholm, Sverige (June 2015).
- Grading committee member for Carl Gustavsson, LTH, Lund, Sverige (Dec 2014).
- Thesis evaluation for Ahmet Hasim Gokceoglu, Tampere University, Tampere, Finland (May 2014).
- Grading committee member for Amirpasha Shirazina, KTH, Stockholm, Sverige (May 2014).
- Grading committee member for Krzysztof Szczerba , Chalmers Tekniska Högskola, Göteborg, Sverige (November 2013).
- Opponent for Jacek Pierzchlewski, Aalborg University, Aalborg, Denmark (April 2013)
- Grading committee member for Erik Axell, Linköpings Tekniska Högskola, Linköping, Sverige (September 2012).
- Grading committee member for Per Landin, Högskolan I Gävle, Gävle, Sverige (June 2012).
- Opponent for Lauri Anttila, TU Tampere, Tampere, Finland (Oct 2011).
- Grading committee member for Johannes Karlsson (Kron), KTH, Stockholm, Sverige (May 2011).
- Grading committee member for Bong-Jin Lee, Yonsei University, Seoul, S. Korea (January 2011)
- Opponent for Thomas Arildsen, Aalborg University, Aalborg, Denmark (December 2010).
- Grading committee member for Erik Bergfeldt, LiU, Norrköping, Sverige (November 2010).
- Opponent for Charles Nader (lic), Gävle Högskola, Gävle, Sverige (August 2010)
- Grading committee substitute for Andrew Backhouse, Chalmers, Göteborg, Sverige (Feb 2010).
- Grading committee member for Lei Bao, KTH, Stockholm, Sverige (June 2009).
- Grading committee substitute for Peter Holdfeldt, Chalmers, Göteborg, Sverige (May 2009).
- Grading committee member for Erik Björnemo, Uppsala University, Uppsala, Sverige (January 2009).
- Opponent for Nima Safari, NTNU, Trondheim, Norge (June 2008)

- Grading committee member for Niklas Wernersson, KTH, Stockholm, Sverige (June 2008)
- Opponent for Morten Holm Larsen, Aalborg University, Aalborg, Denmark (January 2008)
- Grading committee member for Giampiero Salvi, KTH, Stockholm, Sverige (October 2006)
- Grading committee member for Mattias Nilsson, KTH, Stockholm, Sverige (June 2006)
- Opponent for Barbara Resch (lic), KTH, Stockholm, Sweden (February 2006)
- Grading committee member for Martin Sehlstedt, Luleå University, Luleå, Sweden (September 2005)
- Grading committee member for Moo Young Kim, KTH, Stockholm, Sweden (December 2004)
- Opponent for Christoffer Rödbro, Aalborg University, Aalborg, Denmark (November 2004)
- Grading committee member for Adriana Vasilache, Tampere University of Technology, Tampere, Finland (2003)

---

### FUNDED RESEARCH GRANTS

---

- Sep. 2003 - Aug. 2004: Co-applicant of the South Korean project *Development of Robust Speaker Verification Algorithms*, funded by the South Korean Government.
- Apr. 2005 - Nov. 2005: Commissioned project administrator of the project "Implementation of compressed database for speech synthesizer", funded by Voiceware Co., Ltd. <http://www.voiceware.co.kr/>
- Jan. 2007 - Dec. 2016: Co-applicant of the Vinnova VINN-X approved application "GHz Centre".
- Jan. 2007 - Dec. 2009: Co-applicant of the approved grant "Minimization of Power Consumption in Future Telecommunications Systems", funded by VR.
- Jan. 2008 - Dec. 2010: Co-applicant of the approved grant "Compression of feedback information for scheduling and adaptive transmission", funded by VR.
- Jan. 2009 - Dec. 2011: Main applicant of the approved grant "Modeling and efficiency optimization of power amplifiers", funded by VR.
- Jan. 2010 - Dec. 2013: Co-applicant of the approved grant "Microwave Backhauling for IMT Advanced and Beyond (MAGIC)", funded by VINNOVA.
- Jan. 2010 - Dec. 2012: Co-applicant of the approved grant "Phase Noise in Communication Systems", funded by VR.
- Jan. 2012 - Dec. 2015: Main applicant of the approved grant "Modeling and signal design for multiple antenna architectures", funded by VR.
- Jan 2013- : MAGIC+, PI funded collaboration with Ericsson MINILINK.
- Mar 2014-: Leading VIRTUOSO, a project on Massive MIMO funded by Ericsson AB.
- Aug. 2014: Co-applicant of an SSF project on "Efficient Wireless THz Communications"
- Jan 2015-: Project leader of MATE, a project on a Massive MIMO testbed funded by S2, MC2, the ICT AOA, and 6 companies.
- Feb 2015-: Co-applicant (WP leader) in the EMPIR application "Metrology for 5G applications".
- Jan. 2016- Dec. 2019: Co-applicant of the approved grant "All-Digital Radio-over-Fiber: A New Radio Transmitter Architecture for Future Wireless Applications", funded by VR.
- May 2016; Co-applicant of the approved grant "SILIKA: Silicon-based Ka-band massive MIMO antenna systems for new telecommunication services," in the H2020 Marie Skłodowska-Curie action on Innovative Training Networks (ITN).

- Jan 2017-Dec 2021: Co-applicant of GHz Centre, financed by Vinnova.
- Oct 2016-May 2018: PI of the collaboration with RUAG Space, financed by ESA.
- Sep 2016-Sep 2018: PI of the project MIMO100G, financed by VINNOVA, with the goal to “take MIMO communications to its absolute limits”. A goal is to transmit 100 Gbits/s at a spectral efficiency of 100 bits/s/Hz, using 9x9 antennas.
- Sep 2016: Coapplicant of the Chalmers project SARanWAP, funded by Chalmers ICT, where we work with fast and power-efficient A/D converters.
- Nov 2016- : Coapplicant of COHABITANT, financed by VINNOVA, which is a prestudy of how to make radars and communication systems to coexist, using the same frequencies.

---

## INVITED COMMISSIONS

---

- Invited conference talk, "A safety-net approach for improved exploitation of speech correlations", at DSP95, Cyprus, June 1995.
- Invited lecture "On memory quantization", at Wireless@KTH, May 2003. <http://www.wireless.kth.se>
- Invited session chair "Speech Analysis I" in ICSLP 2004, Oct. 2004. <http://www.icslp2004.org/>
- Invited member of the Scientific Review Committee in ICSLP 2004 and Eurospeech 2005.
- Invited lecture "An information-theoretic view of pattern recognition", at Biometrics Engineering Research Center, Yonsei University, Seoul, Korea, Oct. 2004. [http://berc.yonsei.ac.kr/bulletin/announcement\\_read.asp?id=100&page=1](http://berc.yonsei.ac.kr/bulletin/announcement_read.asp?id=100&page=1)
- Invited paper "Compression of feedback for adaptive modulation and scheduling," IEEE Proceedings, special issue on adaptive transmission, Dec. 2007.
- Invited presentation “Phase noise in communication systems,” at Ericsson Technology Day, Mölndal, Sweden, March 2011.
- Invited presentation “Phase noise in communication systems,” at Ericsson, Milano, Italy, April 2011.
- Invited presentation “On OFDM and power amplifiers”, at Ericsson, Mölndal, Sweden, Dec. 2011.
- Co-chair of “ICEIC 2012” in Jeongseon, S. Korea. <http://iceic2012.org/>
- Invited presentation “Optimal Tracking of Phase Noise” at Ericsson Technology Day, Mölndal, Sweden, April 2013.
- Technical Program Chair of SWE-CTW, Gothenburg, Sweden, 2013.
- Program Committee of SSD 2014, Barcelona, Spain.
- Invited lecture, “Massive MIMO” on Ericsson Technology Day, Feb 2014.
- Invited lecture, “On precoding for Massive MIMO” on Ericsson Webcast (S&T), Kista, Nov 2014.
- TPC at GLOBECOM, Dec 2014.
- TPC at ICC, June 2015.
- Invited visit to Infineon, Villach, Austria, to talk about massive MIMO and hardware-constrained communication.
- Invited talk at 2016 European Future of Wireless Technologies Workshop, Stockholm Sweden, Talk about “Statistical hardware modeling”.
- Invited talk to Ericsson, November 2016 xx
- Invited talk at IMS 2017, on the workshop xx

---

## INTERNATIONAL AND NATIONAL COLLABORATION

---



Formerly, I had very strong connections with several professors at Yonsei University in Seoul, S. Korea. In particular, I spent 6 months in Korea as a guest professor 2003-2004, with Prof. Hong-Goo Kang as my main host.

In Sweden and worldwide, I currently have strong connections with Profs. Erik Larsson in Linköping, Prof. Giulio Colavolpe in Parma, Italy, Prof. Robert Schober in Erlangen, Germany, Prof. Andreas Molisch in California, USA, and Prof. Mikko Valkama, Tampere, Finland, where PhD students have been exchanged between the universities and joint applications have been written. I also have good connections with several companies. In particular, we have a long-going close collaboration with Ericsson AB, involving joint projects, co-supervision of students and exchange visits. Further, I have projects together with several Swedish and international companies (e.g. Ericsson, Saab, NXP, National Instruments, RUAG Space etc.) on MIMO systems and hardware-constrained communications.

---

## AWARDS

---

- Best paper at ICC2015, for the paper "Optimal Design of Energy-Efficient HetNets: Joint Precoding and Load Balancing", by J. Li, E. Björnson, T. Svensson, T. Eriksson, M. Debbah.
- Best paper at the *IEEE Workshop on Speech Coding*, USA, 2001 for the paper "An information theoretic perspective on the speech spectrum process," by F. Norden, T. Eriksson and P. Hedelin.
- Best paper at *NORSIG*, Helsinki, Finland, 1996 for the paper "Improving predictive vector quantizers in speech coding applications,," by J. Lindén, J. Skoglund and T. Eriksson.

---

## PATENTS

---

- Ericsson Radio Systems, "A method and apparatus for pre-processing speech signals prior to coding by transform-based speech coders" *Research Disclosure*, no. 42133, p. 612, May 1999. Inventors: Thomas Eriksson and Bastiaan Kleijn.
- Ericsson AB, "A phasenoise robust modem using a simplified carrier recovery method", ref P36734, Sep. 2012. Inventors: Thomas Eriksson and Mats Rydström.
- Ericsson AB, "A receiver for multicarrier modulated signals, " ref P38895, Feb. 2013. Inventors: Thomas Eriksson, Thomas Emanuelsson, Mats Rydström.
- Ericsson AB, "APPARATUS AND METHOD FOR DIGITAL BEAM-FORMING WITH LOW-RESOLUTION QUANTIZATION", ref P43701, Inventors: Ulf Gustavsson and Thomas Eriksson, 2014.
- Ericsson AB, "AN ANTENNA ARRANGEMENT FOR NON-LINEAR DISTORTION MITIGATION", ref P43920, Inventors: Ulf Gustavsson, Thomas Eriksson, Per Landin, Katharina Hausmair, 2014.
- Ericsson AB, "A RADIO TRANSMITTER FOR DISTORTION MITIGATION", ref P44993, Inventors: Ulf Gustavsson and Thomas Eriksson, 2014.
- Ghz Centre Innovation Disclosure, "Flexible and Efficient Multi-Antenna Transmitter Architecture Using Digital High-Speed Optical Interconnect Technology", Christian Fager and Thomas Eriksson, Feb 2015.
- Ghz Centre Innovation Disclosure, "Identification and Compensation of Distortion in Multi-Antenna Transmitters", Katharina Hausmair, Thomas Eriksson, Ulf Gustavsson and Christian Fager, Sep 2015.
- Ericsson AB, "interference suppression in a radio transceiver device", ref P49072, Inventors: Björn Gävert, Göran Nilsson, Mats Rydström, Robert Lindgren, Thomas Eriksson, March 2016.

- Ericsson AB, “Improved Diplexer removal receiver non-linearity compensation”, ref P51694, Inventors: Björn Gävert, Göran Nilsson, Mats Rydström, Robert Lindgren, Thomas Eriksson, January 2017.

#### PUBLICLY AVAILABLE SOFTWARE

---

- 1993-2000: Author of the software package SPLIB. SPLIB is a C++ object oriented software package with emphasis on speech coding and data compression. See <http://www.chalmers.se/sv/personal/Sidor/thomas-eriksson.aspx>
- 1998-2007: Author of the MATLAB tool SPCLAB. SPCLAB is a tool to analyze and listen to speech signals. See <http://www.chalmers.se/sv/personal/Sidor/thomas-eriksson.aspx>
- 2000-: Co-author of the software package IT++. IT++ is a C++ object oriented software package with functionality similar to MATLAB. See <http://www.sourceforge.net/projects/itpp>.
- 2007-: Author of various public research-related MATLAB algorithms. See <http://www.chalmers.se/sv/personal/Sidor/thomas-eriksson.aspx>
- 2014: Announcing WebLab, a web site where signals can be uploaded to be fed through our power amplifiers and downloaded. It has been used in DPD competitions on IMS, and is used worldwide by many researchers. See <http://www.dpdcompetition.com/>

---

# PUBLICATIONS: THOMAS ERIKSSON

---

## PUBLICATIONS

---

Look at <http://scholar.google.se/citations?hl=en&user=fVYfscoAAAAJ> for a Google Scholar overview of my papers and citations, h-index etc. The list below may lag a bit.

### PAPERS IN REFEREED JOURNALS

---

- [1] C. Mollén, E. G. Larsson, and T. Eriksson, "Waveforms for the Massive MIMO Downlink: Amplifier Efficiency, Distortion and Performance," *IEEE Transactions on Communications*, vol. 64, pp. 5050 - 5063, 2016.
- [2] B. Makki, T. Svensson, T. Eriksson, and M.-S. Alouini, "On the performance of RF-FSO links with and without hybrid ARQ," *IEEE Trans. Wireless Com.*, vol. 15, pp. 4928–4943, April 2016.
- [3] B. Makki, T. Svensson, T. Eriksson, and M.-S. Alouini, "On the Required Number of Antennas in a Point-to-Point Large-but-Finite MIMO System: Outage-Limited Scenario," *IEEE Transactions on Communications*, 2016.
- [4] B. Makki, A. Ide, T. Svensson, T. Eriksson, and M.-S. Alouini, "A Genetic Algorithm-based Antenna Selection Approach for Large-but-Finite MIMO Networks," *IEEE Transactions on Vehicular Technology*, 2016.
- [5] B. Makki, T. Eriksson, and T. Svensson, "On the Performance of the Relay-ARQ Networks," *IEEE Transactions on Vehicular Technology*, vol. 65, pp. 2078-2096, 2016.
- [6] R. Krishnan, M. R. Khanzadi, A. Graell i Amat, T. Eriksson, and R. Schober, "Linear Massive MIMO Precoders in the Presence of Phase Noise - A Large-Scale Analysis," *IEEE Transactions on Vehicular Technology*, vol. 65, pp. 3057-3071, May 2016.
- [7] J. Chani Cahuana, P. Landin, C. Fager, and T. Eriksson, "Iterative Learning Control for RF Power Amplifier Linearization," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, pp. 2778-2789, 2016.
- [8] S. Carpenter, D. Nopchinda, M. Abbasi, Z. S. He, M. Bao, T. Eriksson, *et al.*, "A D-band 48-Gbit/s 64-QAM/QPSK direct-conversion I/Q transceiver chipset," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, pp. 1285-1296, April 2016.
- [9] B. Makki, T. Svensson, T. Eriksson, and M. Debbah, "On Feedback Resource Allocation in Multiple-Input-Single-Output Systems using Partial CSI Feedback," *IEEE Transactions on Communications*, 2015.
- [10] B. Makki, T. Svensson, T. Eriksson, and M.-S. Alouini, "Adaptive Space-Time Coding using ARQ," *IEEE Transactions on Vehicular Technology*, 2015.
- [11] B. Makki, T. Svensson, and T. Eriksson, "On the Throughput and Outage Probability of Multi-relay Networks with Imperfect Power Amplifiers," *IEEE Transactions on Wireless Communications*, 2015.
- [12] J. Li, E. Björnson, T. Svensson, T. Eriksson, and M. Debbah, "Joint Precoding and Load Balancing Optimization for Energy-Efficient Heterogeneous Networks," *IEEE Transactions on Wireless Communications*, 2015.
- [13] P. Landin, S. Gustafsson, C. Fager, and T. Eriksson, "WebLab: A Web-Based Setup for PA Digital Predistortion and Characterization," *IEEE Microwave Magazine*, vol. 16, pp. 138-140, 2015.
- [14] R. Krishnan, G. Colavolpe, A. Graell i Amat, and T. Eriksson, "Algorithms for Joint Phase Estimation and Decoding for MIMO systems in the presence of Phase Noise and quasi-static fading channels," *IEEE Transactions on Signal Processing*, 2015.

- [15] M. R. Khanzadi, R. Krishnan, J. Söder, and T. Eriksson, "On the Capacity of the Wiener Phase Noise Channel: Bounds and Capacity Achieving Distributions," *IEEE Transactions on Communications*, 2015.
- [16] M. R. Khanzadi, G. Durisi, and T. Eriksson, "Capacity of SIMO and MISO Phase-Noise Channels with Common/Separate Oscillators," *IEEE Transactions on Communications*, 2015.
- [17] D. Persson, T. Eriksson, and E. G. Larsson, "Amplifier-Aware Multiple-Input Single-Output Capacity," *IEEE Transactions on Communications*, pp. 1-7, 2014.
- [18] B. Makki, A. Graell i Amat, and T. Eriksson, "On Noisy ARQ in Block-Fading Channels," *IEEE Transactions on Vehicular Technology*, vol. 63, pp. 731-746, 2014.
- [19] B. Makki, A. Graell i Amat, and T. Eriksson, "Green Communication via Power-optimized HARQ Protocols," *IEEE Transactions on Vehicular Technology*, vol. 63, pp. 161-177, 2014.
- [20] B. Makki, T. Eriksson, M. S. Alouini, and T. Svensson, "Coordinated Hybrid Automatic Repeat Request," *IEEE Communications Letters*, 2014.
- [21] B. Makki and T. Eriksson, "On the Performance of MIMO-ARQ Systems with Channel State Information at the Receiver," *IEEE Transactions on Communications*, pp. 1-16, 2014.
- [22] M. R. Khanzadi, D. Kuylenstierna, T. Eriksson, and H. Zirath, "Calculation of the Performance of Communication Systems from Measured Oscillator Phase Noise," *IEEE Transactions on Circuits and Systems*, pp. 1-13, 2014.
- [23] D. Persson, T. Eriksson, and E. G. Larsson, "Amplifier-Aware Multiple-Input Multiple-Output Power Allocation," *IEEE Communications Letters*, vol. 17, pp. 1112-1115, May 2013.
- [24] B. Makki, T. Eriksson, and T. Svensson, "On an HARQ-based Coordinated Multi-point Network using Dynamic Point Selection," *EURASIP Journal on Wireless Communications and Networking*, 2013.
- [25] B. Makki and T. Eriksson, "Fairness, Power Allocation, and CSI Quantization in Block Fading Multiuser Systems," *EURASIP Journal on Wireless Communications and Networking*, 2013.
- [26] B. Makki and T. Eriksson, "Feedback Subsampling in Temporally-Correlated Slowly-Fading Channels using Quantized CSI," *IEEE Transactions on Communications*, 2013.
- [27] R. Krishnan, M. R. Khanzadi, T. Eriksson, and T. Svensson, "Soft metrics and their Performance Analysis for Optimal Data Detection in the Presence of Strong Oscillator Phase Noise," *IEEE Transactions on Communications*, 2013.
- [28] R. Krishnan, A. Graell i Amat, T. Eriksson, and G. Colavolpe, "Constellation optimization in the presence of strong phase noise," *IEEE Transactions on Communications*, 2013.
- [29] M. R. Khanzadi, R. Krishnan, and T. Eriksson, "Estimation of Phase Noise in Oscillators with Colored Noise Sources," *IEEE Communications Letters*, vol. 17, pp. 2160-2163, 2013.
- [30] H. Mehrpoyan, A. A. Nasir, S. D. Blostein, T. Eriksson, G. K. Karagiannidis, and T. Svensson, "Joint estimation of channel and oscillator phase noise in MIMO systems," *IEEE Transactions on Signal Processing*, vol. 60, pp. 4790-4807, 2012.
- [31] B. Makki, N. Seifi, and T. Eriksson, "Multi-user Diversity with Two-Step channel state information feedback," *IET Communications*, vol. 6, pp. 1119-1125, 2012.
- [32] B. Makki, A. Graell i Amat, and T. Eriksson, "On ARQ-based Fast-Fading Channels," *IEEE Communications Letters*, vol. 16, pp. 1921-1924, 2012.
- [33] B. Makki, A. Graell i Amat, and T. Eriksson, "HARQ Feedback in Spectrum Sharing Networks," *IEEE Communications Letters*, vol. 16, pp. 1337-1340, 2012.
- [34] B. Makki and T. Eriksson, "On the Ergodic Achievable Rates of Spectrum Sharing Networks with Finite Backlogged Primary Users and an Interference Indicator Signal," *IEEE Transactions on Wireless Communications*, vol. 11, pp. 3079-3089, 2012.
- [35] B. Makki and T. Eriksson, "Multiuser diversity in correlated Rayleigh-fading channels," *EURASIP Journal on Wireless Communications and Networking*, vol. 2012:38, 2012.
- [36] B. Makki and T. Eriksson, "On the average rate of HARQ-based quasi-static spectrum sharing networks," *IEEE Transactions on Wireless Communications*, vol. 11, pp. 65-77, 2012.

- [37] B. Makki and T. Eriksson, "On Hybrid ARQ and Quantized CSI Feedback Schemes in Quasi-Static Fading Channels," *IEEE Transactions on Communications*, vol. 60, pp. 986-997, 2012.
- [38] J. Li, T. Eriksson, T. Svensson, and C. Botella, "Power Allocation for Two-Cell Two-User Joint Transmission," *IEEE Communications Letters*, vol. 16, pp. 1474-1477, 2012.
- [39] U. Gustavsson, T. Eriksson, H. M. Nemati, P. Saad, P. Singerl, and C. Fager, "An RF Carrier Bursting System using Partial Quantization Noise Cancellation," *IEEE Transactions on Circuits and Systems*, vol. 59, pp. 515-528, 2012.
- [40] H. Cao, H. M. Nemati, A. Tehrani Soltani, T. Eriksson, and C. Fager, "Digital Predistortion for High Efficiency Power Amplifier Architectures Using a Dual-input Modeling Approach," *IEEE Transactions on Microwave Theory and Techniques*, vol. 60, pp. 361-369, 2012.
- [41] S. Afsardoost, T. Eriksson, and C. Fager, "Digital Predistortion Using a Vector-Switched Model," *IEEE Transactions on Microwave Theory and Techniques*, vol. 60, pp. 1166 - 1174, 2012.
- [42] B. Makki and T. Eriksson, "CSI feedback in correlated slow-fading channels," *IEEE Communications Letters*, 2011.
- [43] B. Makki and T. Eriksson, "On the Capacity of Rayleigh-Fading Correlated Spectrum Sharing Networks," *EURASIP Journal on Wireless Communications and Networking*, 2011.
- [44] P. S. Kildal, A. Hussain, X. Chen, C. Orlenius, A. Skårbratt, J. Åsberg, *et al.*, "Threshold Receiver Model for Throughput of Wireless Devices with MIMO and Frequency Diversity Measured in Reverberation Chamber," *IEEE Antennas and Wireless Propagation Letters*, 2011.
- [45] S. Khademi, T. Svantesson, M. Viberg, and T. Eriksson, "Peak-to-Average-Power-Ratio (PAPR) Reduction in WiMAX and OFDM/A Systems," *EURASIP Journal on Advances in Signal Processing*, 2011.
- [46] S. Yousefi, J. Jaldén, and T. Eriksson, "Linear prediction of discrete-time 1/f processes," *IEEE Signal Processing Letters*, vol. 17, pp. 901-904, november 2010.
- [47] A. Soltani, H. Cao, S. Afsardoost, T. Eriksson, M. Isaksson, and C. Fager, "A Comparative Analysis of the Complexity/Accuracy Tradeoff in Power Amplifier Behavioral Models," *IEEE Transactions on Microwave Theory and Techniques*, vol. 58, pp. 1510-1520, June 2010.
- [48] D. Persson and T. Eriksson, "On multiple description coding of sources with memory," *IEEE Transactions on Communications*, vol. 58, pp. 2242-2251, August 2010.
- [49] D. Persson and T. Eriksson, "Power Series Quantization for Noisy Channels," *IEEE Transactions on Image Processing*, vol. 58, pp. 1405-1414, May 2010.
- [50] H. Nemati, H. Cao, B. Almgren, T. Eriksson, and C. Fager, "Design of Highly Efficient Load Modulation Transmitter for Wideband Cellular Applications," *IEEE Transactions on Microwave Theory and Techniques*, vol. 58, pp. 2820-2828, November 2010.
- [51] B. Makki and T. Eriksson, "On the Average Rate of Quasi-Static Fading Channels with ARQ and CSI Feedback," *IEEE Communications Letters*, vol. 14, pp. 806 - 808, September 2010.
- [52] B. Makki, L. Beygi, and T. Eriksson, "Channel Capacity Bounds in the Presence of Quantized Channel State Information," *EURASIP Journal on Wireless Communications and Networking*, vol. 2010, April 2010.
- [53] U. Gustavsson, T. Eriksson, and C. Fager, "Quantization Noise Minimization in SigmaDelta modulation based RF transmitter architectures," *IEEE Transactions on Circuits and Systems*, vol. 57, pp. 3082 - 3091, December 2010.
- [54] H. Cao, H. M. Nemati, A. Soltani, T. Eriksson, and C. Fager, "Linearization of Efficiency-Optimized Dynamic Load Modulation Transmitter Architectures," *IEEE Transactions on Microwave Theory and Techniques*, vol. 58, pp. 873-881, April 2010.
- [55] T. Svensson, T. Frank, T. Eriksson, M. Sternad, and A. Klein, "Block Interleaved Frequency Division Multiple Access for Power Efficiency, Robustness, Flexibility, and Scalability," *EURASIP Journal on Wireless Communications and Networking*, March 2009.
- [56] D. Persson and T. Eriksson, "Mixture Model-and Least Squares-Based Packet Video Error Concealment," *IEEE Transactions on Image Processing*, vol. 18, pp. 1048-1054, 2009.

- [57] H. Cao, A. Soltani, C. Fager, T. Eriksson, and H. Zirath, "I/Q imbalance compensation using a nonlinear modeling approach," *IEEE Transactions on Microwave Theory and Techniques*, vol. 57, pp. 513-518, 2009.
- [58] A. Behravan and T. Eriksson, "Tone Reservation to Reduce the Envelope Fluctuations of Multicarrier Signals," *IEEE Transactions on Wireless Communications*, vol. 8, pp. 2417-2423, 2009.
- [59] D. Persson, T. Eriksson, and P. Hedelin, "Packet Video Error Concealment With Gaussian Mixture Models," *IEEE Transactions on Image Processing*, vol. 17, pp. 145-154, Feb 2008.
- [60] F. Munier, T. Eriksson, and A. Svensson, "An ICI reduction scheme for OFDM system with phase noise over fading channels," *IEEE Transactions on Communications*, vol. 56, pp. 1119-1126, 2008.
- [61] V. P. G. Jimenez, T. Eriksson, A. G. Armada, and M. J. F.-G. Garcia, "Methods for compression of Feedback in Adaptive Multi-carrier 4G Schemes," *Springer Journal of Wireless Personal Communications*, vol. 47, pp. 101-112, October 2008.
- [62] M. Deumal, A. Behravan, T. Eriksson, and J. L. Pijoan, "Evaluation of performance improvement capabilities of PAPR-reducing methods," *Springer Journal of Wireless Personal Communications*, vol. 47, pp. 137-147, 2008.
- [63] G. Garcia, S.-K. Jung, and T. Eriksson, "Bayes-Optimal Estimation of GMM Parameters for Speaker Recognition," *Lecture Notes in Computer Science - Speaker Classification II*, vol. 4441/2007, pp. 142-156, 2007.
- [64] T. Eriksson and T. Ottosson, "Compression of feedback for adaptive transmission and scheduling," *IEEE Proceedings*, vol. 95, pp. 2314-2321, Dec. 2007.
- [65] T. Eriksson and T. Ottosson, "Compression of feedback in adaptive OFDM-based systems using scheduling," *IEEE Communications Letters*, vol. 11, pp. 859-861, November 2007.
- [66] T. Eriksson and F. Nordén, "Memory-based vector quantization of LSF parameters by a power series approximation," *IEEE Transactions on Audio, Speech and Language Processing*, vol. 15, pp. 1146-1155, May 2007.
- [67] T. Eriksson, S. Kim, H.-G. Kang, and C. Lee, "An information-theoretic perspective on feature selection in speaker recognition," *IEEE Signal Processing Letters*, pp. 500-503, July 2005.
- [68] F. Nordén and T. Eriksson, "Time evolution in LPC spectrum coding," *Transactions on Speech and Audio Coding*, vol. 12, pp. 290-301, May 2004.
- [69] E. Agrell, T. Eriksson, A. Vardy, and K. Zeger, "Closest point search in lattices," *IEEE Transactions on Information Theory*, vol. 48, pp. 2201-2214, Aug. 2002.
- [70] T. Eriksson, J. Lindén, and J. Skoglund, "Interframe LSF quantization for noisy channels," *IEEE Transactions on Speech and Audio Processing*, vol. 7, pp. 495-509, September 1999.
- [71] E. Agrell and T. Eriksson, "Optimization of lattices for quantization," *IEEE Transactions on Information Theory*, vol. 44, pp. 1814-1828, 1998.
- [72] B. Makki, T. Svensson, T. Eriksson, and M.-S. Alouini, "On the Performance of RF-FSO Links with and without Hybrid ARQ," *IEEE Transactions on Wireless Communications*.

---

#### PAPERS IN REFEREED CONFERENCES

---

- [1] C. Mollén, U. Gustavsson, and T. Eriksson, "Out-of-band radiation measure for MIMO arrays with beamformed transmission," presented at the IEEE International Conference on Communications, Kuala Lumpur, Malaysia, 2016
- [2] J. Chani Cahuana, P. Landin, C. Fager, and T. Eriksson, "Digital Predistorter Model Derivation Based on Iterative Learning Control," presented at the IEEE European Microwave Conference, 2016

- [3] K. Rundstedt, L. Bao, R. Krishnan, B.-E. Olsson, and T. Eriksson, "On Field Measurements and Modelling of 2x2 Microwave LOS-MIMO Systems," in *GLOBECOM*, 2015
- [4] B. Makki, T. Svensson, E. Thomas, and M. S. Alouini, "On the Performance of HARQ-based RF-FSO Links," in *GLOBECOM*, 2015
- [5] B. Makki, T. Svensson, T. Eriksson, and M. S. Alouini, "On the Required Number of Antennas in a Point-to-Point Large-but-Finite MIMO System," in *IEEE International Conference on Ubiquitous Wireless Broadband 2015*
- [6] J. Li, E. Björnson, T. Svensson, T. Eriksson, and M. Debbah, "Optimal Design of Energy-Efficient HetNets: Joint Precoding and Load Balancing," in *ICC*, 2015
- [7] R. Krishnan, M. R. Khanzadi, N. Krishnan, Y. Wu, A. Graell i Amat, and T. Eriksson, "Large-Scale Analysis of Linear Massive MIMO Precoders in the Presence of Phase Noise," 2015, pp. 1172-1177
- [8] M. R. Khanzadi, R. Krishnan, and T. Eriksson, "Receiver Algorithm based on Differential Signaling for SIMO Phase Noise Channels with Common and Separate Oscillator Configurations," in *GLOBECOM*, 2015
- [9] M. R. Khanzadi, G. Durisi, and T. Eriksson, "High-SNR capacity of multiple-antenna phase-noise channels with common/separate RF oscillators," in *ICC*, 2015, pp. 4012-4017
- [10] C. Fager, K. Hausmair, T. Eriksson, and K. Buisman, "Analysis of Thermal Effects in Active Antenna Array Transmitters Using a Combined EM/Circuit/Thermal Simulation Technique," in *INMMIC*, 2015
- [11] J. Chani Cahuana, C. Fager, and T. Eriksson, "A New Variant of the Indirect Learning Architecture for the Linearization of Power Amplifiers," in *European Microwave Conference*, 2015
- [12] C. Mollén, E. G. Larsson, and T. Eriksson, "On the Impact of Non-Linear Power Amplifiers in Massive MIMO," in *Swe-CTW*, Västerås, Sweden, 2014
- [13] C. Mollén, E. G. Larsson, and T. Eriksson, "On the Impact of PA-Induced In-Band Distortion in Massive MIMO," in *European Wireless*, 2014
- [14] B. Makki, T. Eriksson, and T. Svensson, "Spectrum sharing via HARQ feedback and adaptive power allocation," in *WCNC*, 2014
- [15] R. Maaskant, C. Fager, X. Bland, K. Hausmair, and T. Eriksson, "Scalability Analysis and Modeling of Future Massive MIMO Antenna Array Systems," in *Gigahertz Symposium*, Göteborg, Sweden, 2014
- [16] P. Landin, A. Mayer, and T. Eriksson, "MILA - A Noise Mitigation Technique for RF Power Amplifier Linearization," in *International Multi-Conference on Systems, Signals & Devices, Conference on Communication & Signal Processing*, 2014
- [17] M. R. Khanzadi, R. Krishnan, D. Kuylenstierna, and T. Eriksson, "Oscillator Phase Noise and Small-Scale Channel Fading in Higher Frequency Bands," in *GLOBECOM*, Austin, Texas, USA, 2014
- [18] U. Gustavsson, C. Sánchez-Perez, T. Eriksson, F. Athley, G. Durisi, P. Landin, *et al.*, "On the Impact of Hardware Impairments on Massive MIMO," in *GLOBECOM*, Austin, Texas, USA, 2014
- [19] C. Fager, U. Gustavsson, C. M. Andersson, M. v. D. Heijden, M. Acar, R. Jos, *et al.*, "Efficient and Wideband Power Amplifiers for Wireless Infrastructure Applications," in *Gigahertz Symposium*, Gothenburg, Sweden, 2014
- [20] C. Fager, X. Bland, K. Hausmair, J. C. Cahuana, and T. Eriksson, "Prediction of Smart Antenna Transmitter Characteristics Using a New Behavioral Modeling Approach," in *IMS*, Tampa Bay, USA, 2014
- [21] T. Eriksson, C. Fager, P. Landin, U. Gustavsson, J. Chani Cahuna, and K. Hausmair, "Linearization of Difficult Cases - MIMO, GaN and Deep Compression," in *Gigahertz Symposium*, Gothenburg, Sweden, 2014
- [22] T. Eriksson and C. Fager, "Digital predistortion of concurrent multiband communication systems," in *ICASSP*, 2014
- [23] J. Chani Cahuna, P. Landin, C. Fager, and T. Eriksson, "Linearization of Dual-Input Doherty Power Amplifiers," in *INMMIC*, 2014
- [24] B. Makki, J. Li, T. Eriksson, and T. Svensson, "Coordinated Multi-point Joint Transmission with Partial Channel Information Feedback," in *European Wireless*, 2013
- [25] B. Makki and T. Eriksson, "Secure Spectrum Sharing via Rate Adaptation," in *ICNC*, San Diego, USA, 2013

- [26] J. Li, B. Makki, T. Svensson, and T. Eriksson, "Power Allocation for Multi-Point Joint Transmission with Different Node Activeness," in *IEEE Wireless Communications and Networking Conference*, Shanghai, China, 2013
- [27] P. Landin, T. Eriksson, J. Fritzin, and A. Alvandpour, "Behavioral Modeling of Outphasing Amplifiers Considering Memory Effects," in *IMS*, Seattle, USA, 2013
- [28] M. R. Khanzadi, R. Krishnan, and T. Eriksson, "Effect of Synchronizing Coordinated Base Stations on Phase Noise Estimation," in *ICASSP*, Vancouver, Canada, 2013
- [29] M. Özen, C. M. Andersson, T. Eriksson, M. Acar, R. Jos, and C. Fager, "Linearization Study of a Highly efficient CMOS-GaN RF Pulse Width Modulation Based Transmitter," in *European Microwave Conference*, 2012
- [30] A. Soltani, T. Eriksson, and C. Fager, "Modeling of Long Term Memory Effects in RF Power Amplifiers with Dynamic Parameters," in *IMS*, Montreal, Canada, 2012
- [31] H. Mehrpoyan, A. A. Nasir, T. Eriksson, S. D. Blostein, G. K. Karagiannidis, and T. Svensson, "Time-Varying Phase Noise and Channel Estimation in MIMO Systems," in *International Workshop on Signal Processing Advances in Wireless Communications*, Cesme, Turkey, 2012, pp. 560-564
- [32] B. Makki, J. Li, T. Eriksson, and T. Svensson, "Throughput Analysis for Multi-Point Joint Transmission with Quantized CSI Feedback," in *VTC-Fall*, Quebec City, Canada, 2012
- [33] B. Makki, A. Graell i Amat, and T. Eriksson, "Power allocation in repetition time diversity hybrid automatic repeat request feedback," in *IEEE Wireless Communications and Networking Conference*, Paris, France, 2012
- [34] B. Makki and T. Eriksson, "Interference-Free Spectrum Sharing using a Sequential Decoder at the Primary User," in *SPAWC*, Çeşme, Turkey, 2012, pp. 154-158
- [35] J. Li, X. Chen, C. Botella, T. Svensson, and T. Eriksson, "Resource allocation for OFDMA systems with multi-cell joint transmission," in *SPAWC*, Çeşme, Turkey, 2012, pp. 179-183
- [36] R. Krishnan, M. R. Khanzadi, L. Svensson, T. Eriksson, and T. Svensson, "Variational Bayesian Framework for Receiver Design in the Presence of Phase Noise in MIMO Systems," in *WCNC*, 2012
- [37] M. R. Khanzadi, A. Panahi, D. Kuylenstierna, and T. Eriksson, "A model-based analysis of phase jitter in RF oscillators," in *International Frequency Control Symposium*, 2012
- [38] T. Eriksson and C. Fager, "On the future of digital predistortion," in *Gigahertz Symposium*, Stockholm, 2012
- [39] H. Cao, J. Qureshi, T. Eriksson, C. Fager, and L. C. N. De Vreede, "Digital Predistortion for Dual-Input Doherty Amplifiers," in *IEEE Topical Conference on Power Amplifiers for Wireless and Radio Applications*, 2012, pp. 45-48
- [40] A. Soltani, T. Eriksson, and C. Fager, "Measurement setup for digital predistortion adaptation," in *RF Measurement Technology Conference*, Gävle, Sweden, 2011
- [41] H. M. Nemati, B. Almgren, C. Andersson, H. Cao, T. Eriksson, C. Fager, *et al.*, "Varactor-Based Dynamic Load Modulation of RF PAs," in *European Microwave Conference*, Manchester, England, 2011
- [42] B. Makki and T. Eriksson, "Capacity bounds of spectrum sharing networks with no channel state information," in *European Wireless*, Wien, Austria, 2011
- [43] B. Makki and T. Eriksson, "Interference management using one bit feedback," in *European Wireless*, Wien, Austria, 2011
- [44] J. Li, T. Svensson, C. Botella, T. Eriksson, X. Xu, and X. Chen, "Joint Scheduling and Power Control in Coordinated Multi-Point Clusters," in *VTC*, 2011, pp. 1-5
- [45] R. Krishnan, H. Mehrpoyan, T. Eriksson, and T. Svensson, "Optimal and Approximate Methods for Detection of Uncoded Data with Carrier Phase Noise," in *GLOBECOM*, 2011
- [46] M. R. Khanzadi, H. Mehrpoyan, E. Alpman, T. Svensson, D. Kuylenstierna, and T. Eriksson, "On Models, Bounds, and Estimation Algorithms for Time-Varying Phase Noise," in *ISPCS*, 2011
- [47] M. R. Khanzadi, K. Haghighi, and T. Eriksson, "Optimal Modulation for Cognitive Transmission over AWGN and Fading Channels," in *European Wireless Conference*, Wien, Austria, 2011
- [48] H. Cao, C. Fager, T. Khan, A. S. Tehrani, and T. Eriksson, "Comparison of bandwidth reduction schemes in dynamic load modulation power amplifier architectures," in *INMMIC*, 2011, pp. 1-4



- [49] H. Cao, T. Eriksson, and C. Fager, "Digital Predistortion for Dual-Input Doherty Amplifiers," in *PAWR*, 2011
- [50] S. Yousefi, T. Eriksson, and D. Kuylenstierna, "A Novel Model for simulation of RF Oscillator Phase Noise," in *IEEE Radio and Wireless Symposium*, New Orleans, USA, 2010
- [51] T. Svensson and T. Eriksson, "On Power Amplifier Efficiency with Modulated Signals," in *IEEE Vehicular Technology Conference*, Taiwan, 2010
- [52] A. Soltani, H. Cao, C. Fager, and T. Eriksson, "Complexity analysis of power amplifier behavioral models," in *INMMIC*, Gothenburg, Sweden, 2010
- [53] A. Soltani, A. Behravan, H. Cao, T. Eriksson, and C. Fager, "Successive Cancellation of Power Amplifier Distortion for Multiuser Detection," in *Vehicular Technology Conference*, Ottawa, Canada, 2010
- [54] B. Makki and T. Eriksson, "Data transmission in the presence of noisy channel state feedback and outage probability constraint," in *ISITA*, Taichung, Taiwan, 2010, pp. 458-463
- [55] B. Makki and T. Eriksson, "Data Transmission in the Presence of Channel State Feedback and Outage Probability Constraint," in *IEEE Vehicular Technology Conference*, Ottawa, Canada, 2010
- [56] B. Makki and T. Eriksson, "Efficient Channel Quality Feedback Signaling using Transform Coding and Bit Allocation," in *IEEE Vehicular Technology Conference*, Taipei, Taiwan, 2010
- [57] M. R. Khanzadi, K. Haghighi, A. Panahi, and T. Eriksson, "A novel cognitive modulation method considering the performance of primary user," in *Wireless Advanced*, London, England, 2010
- [58] G. Garcia and T. Eriksson, "Study of Mutual information for Speaker recognition features," in *EUSIPCO*, Aalborg, Denmark, 2010, pp. 601-605
- [59] G. Garcia and T. Eriksson, "Sample Iterative Likelihood Maximization for Speaker Verification Systems," in *EUSIPCO*, 2010, pp. 596-600
- [60] C. Fager, H. M. Nemati, H. Cao, A. Soltani, T. Eriksson, R. Jos, *et al.*, "Highly Efficient Dynamic Load Modulation Transmitter," in *GigaHertz Symposium*, Lund, Sweden, 2010
- [61] C. Fager, H. Cao, T. Eriksson, R. Jos, H. Nemati, A. Soltani, *et al.*, "High Efficiency Transmitter Using Varactor Based Dynamic Load Modulation," in *IEEE International Microwave Workshop Series*, Portugal, 2010
- [62] T. Eriksson, A. Soltani, and C. Fager, "Low-complexity Volterra Modeling of Power Amplifiers," in *INMMIC*, Göteborg, Sweden, 2010
- [63] T. Eriksson, A. Soltani, and C. Fager, "Model-Based Adaptation of RF Power Amplifiers," in *Gigahertz Symposium*, Gothenburg, Sweden, 2010
- [64] A. Soltani, H. M. Nemati, H. Cao, T. Eriksson, and C. Fager, "Dynamic Load Modulation of High Power Amplifiers with Varactor-Based Matching Networks," in *IMS*, Boston, USA, 2009
- [65] U. Gustavsson, C. Fager, and T. Eriksson, "A general method for passband quantization noise suppression in pulsed transmitter architectures," in *IMS*, Boston, USA, 2009, pp. 1529-1532
- [66] U. Gustavsson, C. Fager, and T. Eriksson, "Noise-Shaped Coding and Quantization Noise Suppression for Pulsed Transmitter Architectures," in *RFMTTC*, 2009
- [67] G. Garcia and T. Eriksson, "A methodology for speaker-dependent acoustic features based on a simplified cortical response for speaker verification," in *EUSIPCO*, 2009
- [68] H. Cao, A. Soltani, H. M. Nemati, C. Fager, T. Eriksson, and H. Zirath, "Time Alignment in a Dynamic Load Modulation Transmitter Architecture," in *European Microwave Conference*, Rome, Italy, 2009, pp. 1211-1214
- [69] H. Cao, A. Soltani, H. M. Nemati, T. Eriksson, and C. Fager, "Time mismatch effects in a dynamic load modulation transmitter architecture," in *RF Measurement Technology for State of the Art Production and Design*, Gävle, Sweden, 2009
- [70] H. Cao, A. Soltani, C. Fager, T. Eriksson, and H. Zirath, "Dual-input nonlinear modeling for I/Q modulator distortion compensation," in *Radio and Wireless Symposium*, San Diego, USA, 2009, pp. 35-38
- [71] A. Soltani, H. Cao, T. Eriksson, and C. Fager, "Orthonormal-basis power amplifier model reduction," in *INMMIC*, Malaga, Spain, 2008, pp. 39-42
- [72] A. Soltani, H. Cao, T. Eriksson, and C. Fager, "Comparative analysis of the complexity/accuracy tradeoff for power amplifier behavior models," in *GigaHertz*

- Symposium*, Göteborg, <http://www.ghz2008.se/> -> Download the Abstract book, 2008, p. 82
- [73] G. Garcia and T. Eriksson, "Weight based Super-GMM for Speaker identification systems," in *EUSIPCO*, 2008
- [74] T. Eriksson, C. Fager, H. Cao, A. Soltani, U. Gustavsson, H. Nemati, *et al.*, "Modeling of dual-input power amplifiers," in *GigaHertz Symposium*, Göteborg, <http://www.ghz2008.se/> -> Download the Abstract book, 2008, p. 24
- [75] H. Cao, A. Soltani, C. Fager, T. Eriksson, and H. Zirath, "Compensation of Transmitter Distortion Using a Nonlinear Modeling Approach," in *INMMIC*, 2008, pp. 131-134
- [76] H. Cao, A. Soltani, C. Fager, and T. Eriksson, "Identification of distortions in a RF measurement system," in *GigaHertz Symposium*, Göteborg, <http://www.ghz2008.se/> -> Download the Abstract book, 2008, p. 84
- [77] D. Persson and T. Eriksson, "A Minimum Mean Square Error Estimation and Mixture-based Approach to Packet Video Error Concealment," in *ICASSP*, 2007
- [78] D. Persson and T. Eriksson, "Spatio-Temporal Markov Random Field-Based Packet Video Error Concealment," in *ICIP*, 2007
- [79] V. P. G. Jimenez, T. Eriksson, A. G. Armada, M. J. F.-G. Garcia, T. Ottosson, and A. Svensson, "Methods for compression of Feedback in Adaptive Multicarrier 4G Schemes.," in *4th COST289 workshop*, 2007
- [80] G. Garcia, T. Eriksson, and S.-K. Jung, "A Statistical Approach to Performance Evaluation of Speaker Recognition Systems," in *ICASSP*, Hawaii, USA, 2007
- [81] M. Deumal, A. Behravan, T. Eriksson, and J. L. Pijoan, "Constrained clipping for Peak Power reduction of multicarrier systems by Tone Reservation," in *VTC*, 2007, pp. 2195-2199
- [82] D. Persson, T. Eriksson, and P. Hedelin, "Qualitative analysis of video packet loss concealment with gaussian mixtures," in *ICASSP*, 2006, pp. 961-964
- [83] F. Munier and T. Eriksson, "Time-frequency channel estimation for MB-OFDM UWB systems," in *Personal, Indoor and Mobile Radio Communications*, Göteborg, Sweden, 2006, pp. 1-5
- [84] C.-H. Lee, S.-K. Jung, T. Eriksson, W.-S. Jung, and H.-G. Kang, "An Efficient Segment-Based Speech Compression Technique for Hand-Held TTS Systems," in *International Conference on Spoken Language Processing*, Pittsburgh, USA, 2006
- [85] A. Gupta, J. Reeder, A. Behravan, and T. Eriksson, "MAP Detection of Nonlinearly Distorted OFDM Signals," in *ICASSP*, 2006
- [86] A. Behravan and T. Eriksson, "Some Statistical Properties of Multicarrier Signals and Related Measures," in *IEEE Vehicular Technology Conference*, Melbourne, Australia, 2006
- [87] Z. Utkovski, A. Utkovski, and T. Eriksson, "High-Dimensional Spherical Quantization of Gaussian Sources," in *Canadian Workshop on Information Theory*, Montreal, 2005
- [88] F. Munier, M.-O. Wessman, T. Eriksson, and A. Svensson, "On the effect of antennas on UWB systems," in *Proceedings of 28th URSI General Assembly in India*, 2005
- [89] S. Kim, S. Yoon, T. Eriksson, H.-G. Kang, and D. H. Youn, "A noise-robust pitch synchronous feature extraction algorithm for speaker recognition systems," in *Interspeech*, Lisbon, Portugal, 2005, pp. 2029-2032
- [90] D. A. Bustos and T. Eriksson, "Simulation of RF power amplifier models into a system-level communication link," in *Asia-Pacific Microwave Conference*, Suzhou, China, 2005
- [91] F. Nordén and T. Eriksson, "On split quantization of Isf parameters," in *ICASSP*, Montreal, Canada, 2004
- [92] F. Munier, T. Eriksson, and A. Svensson, "Receiver Algorithms for OFDM systems in Phase Noise and AWGN," in *IEEE International Symposium on Personal, Indoor and Mobile Radio Communication*, 2004
- [93] S. Kim, T. Eriksson, H.-G. Kang, and D. H. Youn, "A pitch synchronous feature extraction method for speaker recognition," in *ICASSP*, Montreal, Canada, 2004
- [94] S. Kim, T. Eriksson, and H.-G. Kang, "On the time variability of vocal tract for speaker recognition," in *ICSLP*, 2004
- [95] T. Eriksson, S. Kim, H.-G. Kang, and C. Lee, "Theory for speaker recognition over IP," in *ICSLP*, 2004
- [96] A. Behravan and T. Eriksson, "Analysis of distortion in a memoryless bandpass nonlinearity," in *Nordic Radio Symposium*, Oulu, Finland, 2004

- [97] F. Munier, E. Alpmann, T. Eriksson, A. Svensson, and H. Zirath, "Estimation of phase noise for QPSK modulation over AWGN Channels," in *Gigahertz Symposium*, 2003
- [98] A. Behravan, T. Eriksson, A. Svensson, and H. Zirath, "Adaptive predistorter design for nonlinear high power amplifier," in *Gigahertz Symposium*, Linköping, Sweden, 2003
- [99] A. Behravan and T. Eriksson, "Baseband compensation techniques for bandpass nonlinearities," in *IEEE Vehicular Technology Conference Fall*, Florida, USA, 2003
- [100] A. Behravan and T. Eriksson, "Harmonic-based model for bandpass nonlinearity and its application to RF predistorter design," in *Int. Conference Wireless Com.*, Calgary, Canada, 2003, pp. 451-454
- [101] A. Behravan and T. Eriksson, "A model for bandpass nonlinearities based on harmonic measurements," in *IEEE Radio and Wireless Conference*, Boston, Massachusetts, USA, 2003, pp. 409-412
- [102] T. Svensson, J. Lassing, and T. Eriksson, "On the geometry of signals for multipath fading channels," in *Radio Science and Com. Conference, RVK*, Stockholm, Sweden, 2002
- [103] T. Eriksson and F. Nordén, "Memory vector quantization by power series expansion," in *IEEE Speech Coding Workshop*, Tokyo, Japan, 2002
- [104] A. Behravan and T. Eriksson, "PAPR and other measures for OFDM systems with nonlinearity," in *International Symposium on Wireless Personal Multimedia Communication*, Honolulu, Hawaii, USA, 2002, pp. 149-153
- [105] F. Nordén and T. Eriksson, "A Speech Spectrum Distortion Measure with Interframe memory," in *ICASSP*, Salt Lake City, Utah, USA, 2001
- [106] A. Behravan, F. Munier, T. Svensson, M. Flament, T. Eriksson, A. Svensson, *et al.*, "System implications in designing a 60 GHz WLAN RF front-end," in *Gigahertz Symposium*, Lund, Sweden, 2001
- [107] F. Nordén, T. Eriksson, and P. Hedelin, "An information theoretic perspective on the speech spectrum process," in *IEEE Workshop on Speech Coding*, 2000, pp. 93-95
- [108] F. Nordén and T. Eriksson, "Perceptual spectrum quantization," in *Asilomar Conference on Signals, Systems and Computers*, 2000, pp. 186-189
- [109] T. Eriksson, H.-G. Kang, and P. Hedelin, "Low-rate quantization of spectrum parameters," in *ICASSP*, Istanbul, Turkey, 2000
- [110] T. Eriksson and W. B. Kleijn, "On waveform-interpolation coding with asymptotically perfect reconstruction," in *IEEE Workshop on Speech Coding*, Porvoo, Finland, 1999, pp. 93-95
- [111] T. Eriksson and H.-G. Kang, "Pitch quantization in low bit-rate speech coding," in *ICASSP*, 1999, pp. 489-492
- [112] T. Eriksson, H.-G. Kang, and Y. Styliano, "Quantization of the spectral envelope for sinusoidal coders," in *ICASSP*, 1998, pp. 37-40
- [113] J. Lindén, J. Skoglund, and T. Eriksson, "Improving predictive vector quantizers in speech coding applications," in *NORSIG*, Finland, 1996
- [114] T. Eriksson, J. Lindén, and J. Skoglund, "Exploiting interframe correlation in spectral quantization: a study of different memory VQ schemes," in *ICASSP*, 1996, pp. 765-768
- [115] T. Eriksson, J. Lindén, and J. Skoglund, "Improvements of memory vector quantization for noisy channel transmission of LSF parameters," in *RVK*, Luleå, Sweden, 1996
- [116] P. Hedelin and T. Eriksson, "Interpolating the history-Improved excitation coding for high quality CELP coding," in *ICASSP*, Detroit, USA, 1995, pp. 17-20
- [117] T. Eriksson, J. Lindén, and J. Skoglund, "A safety-net approach for improved exploitation of speech correlations," in *International Conference on Digital Signal Processing*, Cyprus, 1995, pp. 96-101
- [118] T. Eriksson, J. Lindén, and J. Skoglund, "Vector quantization of glottal pulses," in *Eurospeech*, Madrid, Spain, 1995
- [119] T. Eriksson and J. Sjöberg, "Exploiting properties of speech signals in the design of variable rate speech coders," in *NORSIG*, Ålesund, Norway, 1994, pp. 244-219
- [120] T. Eriksson, "Dual-stage vector quantization with dynamic bit allocation," in *EUSIPCO*, Edinburgh, Scotland, 1994, pp. 383-386
- [121] T. Eriksson and J. Sjöberg, "Dynamic bit allocation in CELP excitation coding," in *ICASSP*, 1993, pp. 171-174
- [122] T. Eriksson and J. Sjöberg, "Evolution of variable rate speech coders," in *IEEE Workshop on Speech Coding*, Sainte-Adèle, Canada, 1993, pp. 3-4

# Curriculum Vitae — Lars Kai Hansen

Department of Applied Mathematics and Computer Science (DTU Compute),  
Technical University of Denmark B321, DK-2800 Kgs. Lyngby, Denmark.  
Tel:(+45) 45253889. Cell:(+45) 51801473. Email: lkh@imm.dtu.dk. WWW: www.imm.dtu.dk/ lkh

## Personalia

Born September 16, 1957 (Samsø, Danmark).  
Married, two children (1982,1987).

## Education

1992 Course in Pedagogical Methods, Technical University of Denmark.  
1986 Ph.D. Physics, University of Copenhagen.  
1986 Gold Medal of the University of Copenhagen.  
1984-86 Kandidatstipendiat, Physics, University of Copenhagen.  
1983 MSc. Physics, University of Copenhagen.  
1976-83 Studies in physics and mathematics, University of Copenhagen.

## Employments

2011 Catedra de Excelencia, Dep. Signal Theory and Communications, Universidad Carlos III de Madrid.  
2001- Head of Section for Cognitive Systems, DTU Compute.  
2000- Professor DTU Compute (former: Informatics and Mathematical Modelling) Technical University of Denmark.  
1997-98 Visiting Professor Brain Image Analysis Lab., University of California San Diego (6 months).  
1996-00 Associate Professor, Department of Mathematical Modelling, Technical University of Denmark.  
1994-95 Associate Professor, Electronics Institute.  
1990-94 Assistant Professor, Electronics Institute, Technical University of Denmark.  
1988-98 Visiting Professor San Diego State University (7 months).  
1987-90 Researcher, Andrex Radiation Products A/S.  
1986-87 Research Assistant, Physics Laboratory, University of Copenhagen.

## Professional activities

### Research interests

Statistical machine learning with applications in bio-medicine and digital media.

## Organization and major research grants

- Head of Neurotechnology for 24/7 mental state monitoring, project funded by the Danish Innovationsfonden (2014-2016). With Aarhus University, Danish Hyposafe A/S, and Roskilde Hospital.
- Member of the The Danish Council for Independent Research | Technology and Production Sciences 2011-2014 (FTP).
- Head of *THOR Center for Neuroinformatics*, DTU Compute, Technical University of Denmark. The center was initially founded on a grant from the Danish Research councils 'THOR' plan in 1998.
- Head of Section for Cognitive Systems, DTU Compute, Technical University of Denmark. In January 2009 a six member evaluation international panel<sup>1</sup> awarded the Section the highest possible grade and applauded it for '...a crisp and clear research agenda to a highly relevant field of high societal importance and impact'. The panel concluded: 'The Section is a core asset of DTU and Danish research as a whole, it has the highest international reputation.'
- Head of *Intelligent Sound*. Framework project funded by the Danish Technical Research Council (14 mill. DKK  $\approx$  1.9 mill Euro, 2005-2009). Participants from Aalborg University (Communication Technology and Computer Science). [www.intelligentsound.org](http://www.intelligentsound.org).
- Cofounder and principal investigator in *Center for Integrated Molecular Brain Imaging (CIMBI)*. Center funded by the Lundbeck Foundation (80 mill DKK  $\approx$  10.6 mill Euro, 2006-2015, project headed by Prof. G.M. Knudsen, Rigshospitalet, Denmark.) [www.cimbi.dk](http://www.cimbi.dk)
- Principal investigator in the Danish Strategic Research Council *Responsible Business in the Blogosphere* project. In collaboration with Mette Morsing, Center for Corporate Social Responsibility, Copenhagen Business School (Funding 1.6 mill Euro 2009-2013).
- Principal investigator in *PERCEPT* EU FP6 project on cognitive systems (Funding 1.8 mill Euro, project headed by Boris Velichowsky, TU Dresden, 2007-2009).
- *CONNECT*. Cofounder of National Research center for neural networks research in collaboration with the Niels Bohr Inst., and other institutions in Denmark (1991-2001) The center attracted contiguous funding from the Danish Research Councils in a ten year period (accumulated ca. 20 mill DKK). From 1999-2001 head of *CONNECT*.
- Head of *CISP Copenhagen Signal and Image Processing Graduate School*, funded by the Danish Research Training Council (2001-2004), with participants from the IT University and DIKU, University of Copenhagen (0.5 mill EUR, 2001-2004).
- Co-Principal Investigator in *Spatial and Temporal Patterns in Functional Neuroimaging* funded by National Institutes of Health, through the US Human Brain Project (1993-2006). This project funded postdoc salary and travel costs for members of the THOR Center on the US Government grant for about ten years. Project headed by prof. David Rottenberg, University of Minnesota.
- Additional grants: Prof. Ingemar Cox, University College London (Mønsted Foundation, 3 months). Co-principal investigator in *MAPAWAMO Mapping visual cortical regions in awake, behaving monkey using functional MRI*. funded by the EU Commission (Project headed by Guy Orban KU Leuven, Belgium). Principal Investigator in *DI-ADEME*: project on bio-mass quantification by image analysis, funded by the European Union MAST II program (project headed by prof. Peter Kofod Bjørnsen, University of Copenhagen). Principal Investigator in the *Interdisciplinary Neuroscience Project* funded by the Danish Research Councils (project headed by prof. Olaf Paulson, Rigshospitalet). Principal Investigator in BIOMED 2 project *Visual Object Recognition*, (project headed by prof. Anders Gade, University of Copenhagen). EU Training and Mobility Postdoc Grants: Mattias Ohlsson (Lund, Sweden) 24 months. Rod Murray-Smith (Berlin, Germany) 24 months. Danish partner in EU network *MAC: Multi-Agent Control: Probabilistic reasoning, optimal coordination, stability analysis and controller design for intelligent hybrid systems* (Project headed by Rod Murray Smith, Glasgow University, Scotland). Visiting professor grants for Prof. Peter Salamon San Diego State University (12 months).

---

<sup>1</sup>Prof. Dr. Klaus-Robert Müller, panel chair, Berlin Institute of Technology. Prof. Dr. Math. Friedhelm Mayer auf der Heide, Heinz Nixdorf Institute, University of Paderborn. Prof. Manuel Hermenegildo, Universidad Politecnica de Madrid. Prof. Grace Wahba, Dept. of Statistics, University of Wisconsin-Madison. Prof. Chris Williams, Institute for Adaptive and Neural Computation, University of Edinburgh. Prof. Dr. Reinhard Wilhelm, Universität des Saarlandes

- Member of editorial board of The Open Medical Imaging Journal and Open Medical Informatics Journal(2007, withdrawn 2008 based on the Journal's page charge policies). Associate editor of the journal 'Computational Intelligence and Neuroscience' (2006-2008). Editor-in-Charge of the International Journal of Neural Systems. (with Alan Murray) (1998-2000). Member of Editorial Board of IEEE Transactions of Neural Networks (1998-2000).
- Co-organizer of neural net workshops in Alden Biesen, Belgium (1993,1996). Co-organizer of neural net workshops in Telluride, Colorado (1990, 1992 and 1995).
- Organizer of Human Brain Project workshop in Ebeltoft, June 1999. Organizer of THOR Workshop Bornholm March 2001. Organizer of Intelligent Sound Workshops: Korsør, May 2005; Sæby May 2006; Karlslunde, May 2007.
- Co-organizer EMMDS2009, DTU, July 2009.
- Proposer and co-organizer for NIPS Workshop RUMBA Two-Day Workshop: Concepts and Methods in Neuroimaging. Whistler, British Columbia, Canada, December, 2001 and December, 2002. Proposer and co-organizer for NIPS Workshop on Multimodal Signal Processing Whistler, British Columbia, Canada, December 2004.

### **Other recent awards and honors**

- 2013. The ERC Advanced Grant proposal: *Computational Challenges in Deep Personal State Decoding CCDeep*, was accepted for second round reviews with the conclusion: "Overall, the panel considers that the proposal meets the ERC's excellence criterion, however is not at a sufficiently high position in the ranking order to be retained for funding."
- 2012. Royal Society (UK) International Exchange grant with Prof Ingemar Cox, UCK (12.000 GBP)
- 2011. "Cátedra de Excelencia" at Universidad Carlos III de Madrid / Banco Santander (60,000 EUR) .
- 2009. H.C. Ørsted's Fond (28,000 Euro)
- 2009. Direktør Dr.Techn. A.N. Neergaard og Hustrus Fond (27,000 EUR).
- 2005. Int. Conf. on Adaptive Knowledge Representation and Reasoning AKRR'05, Helsinki, Best Paper Award.
- Two of my PhD students have received the Danish Research Ministers Elite Travel Award (2x40.000 EUR), Morten Mørup (2006) and Trine Julie Abrahamsen (2012).

### **Major Talks 2008-12**

'Workshop on Algorithms for Modern Massive Data Sets' (MMDS 2008), Stanford University June, 2008. IPAM Workshop on Mathematics in Brain Imaging, UC Los Angeles, July, 2008. Advances in Neural Information Processing Systems (NIPS) invited workshop speaker, Dec 2008. Matrix Computations & Scientific Computing Seminar (UC Berkeley, January 21) Redwood Center for Theoretical Neuroscience, UC Berkeley, January 22, 2009. Plenary talk ICANNGA'09, Int. Conference on Adaptive and Natural Computing Algorithms Koupio, Finland, April, 2009. BBCI Workshop Bernstein Brain Computer Interaction Berlin, July 6, 2009. MLSP 2009 Plenary talk, IEEE Workshop Machine Learning for Signal Processing, Grenoble, Sep 2, 2009. AI Seminar, Dept. Computer Science UC San Diego (Jan, 2010). Dept. of Psychology, UC Santa Barbara (Jan 2010). Formal DCCN Colloquium, Donders Institute for Brain, Cognition and Behaviour (Nijmegen, May 2010). Keynote talk Bernstein Conference 2010 (Sep 2010, Berlin). ZKW Kolloquium, Center for Cognitive Sciences, University of Bremen (Apr 18 2011, Bremen). INC Chalk Talk, Institute for Neural Computation (UCSD, Jan 19, 2012). UCSD AI seminar (UCSD, Jan 23, 2012). MTV Tech Talk (Google, Jan 27, 2012). Institutionen för Psykologi Seminar (Lund Univ., Mar 30, 2012). Keynote Workshop on Cognitive Information Processing CIP 2012 (Baiona, Spain, May 30, 2012), SICSA Summer School Tutorial (Glasgow Univ., Jun 13, 2012). Workshop on Neural Data Analysis (Radboud University Nijmegen, Jul 6, 2012). Keynote 9th Sound and Music Computing Conference (Aalborg Univ., Jul 14, 2012). BBCI Summer School 2012 Tutorial (Berlin, Sep 21, 2012). Keynote 10th international workshop on Adaptive Multimedia Retrieval (Royal School of Library, Copenhagen, Oct 24, 2012).

### Other reviews and committees

- Member of IEEE Signal Processing Society Technical Committee on Neural Networks (1996-1998). Advisory board member (1998-)
- Chairman for the Danish Chapter of IEEE Signal Processing Society (2001-2002).
- Conference vicechair NORSIG'98 Nordic Conference on Signal Processing, Vigsø, June 1998.
- Member of Organizing Committee EUSIPCO 2010 (Plenary talks).
- Member of Program Committee NIPS\*98 (Area-chair: Applications and Implementations areas)
- Review Coordinator for sessions on Neural Networks and Pattern Recognition: International Conference on Neural Networks (ICNN'96), International Conference on Acoustics, Speech and Signal Processing ICASSP'96 and ICASSP'97. European Signal Processing Conference EUSIPCO 2007, 2008.
- Project proposal review for Swedish Technical Research Council (1996). Ten project proposal reviews for the Swedish Foundation for Strategic Research (2001).
- Review and member of panel Vetenskabsrådet, Research Council, Sweden (2007, 2008, 2009, 2010).
- Academy of Finland. Project proposal evaluation, evaluation of two Centers of Excellence (2005), and evaluation of Academy Professor application (2005). Evaluation of ESF application (2006). Panel Member (2007, 2008). Chair of panel in bio-medical engineering (2009, 2010, 2015). Chair of panel in data analysis (2011).
- National Institutes of Health, Washington, USA. Member of Human Brain Project proposal review committee ("Study Section") March 1998, October 2002, May 2003.
- Guest editor (with M Nielsen, P. Johansen): Special issue of Journal of Mathematical Imaging and Vision (2002). Guest editor (with T. Adali et al.) IEEE Journal of Selected Topics in Signal Processing (J-STSP) Special Issue on fMRI Analysis for Human Brain Mapping (2009).
- Reviewer for: Nature, NeuroImage, International Journal of Neural Systems, Journal of Geophysical Research: Solid Earth, NIPS\*96, NIPS\*98, IEEE Transactions on Systems, Man and Cybernetics, IEEE Transactions on Signal Processing. Europhysics Letters, ICASSP'98, NORSIG'98. NIPS\*01, NIPS\*02, NIPS\*06, Neural Computation.
- Numerous scientific committee memberships, e.g., BCI2013(Korea), PRNI2013, PRNI2015.
- Member of NISAC - Nordic IJCAI Scientific Advisory Committee (1999).
- External member of 13 Ph.D.-committees, eight in DK, two in Sweden, in France, in Finland, and in Belgium. External examiner for oral Ph.D.-exam. at Dept. of Biochemistry, DTU, 1999.
- Member of evaluation committee for Doctoral thesis Aarhus University (2005-06).
- External examiner for MSc. projects: Aarhus University, Odense University, University of Copenhagen (Niels Bohr Institute and Dept. of Computer Science), and Aalborg University. Member of national examiner corps in computer science and in engineering.
- Chairman of evaluation committee for assoc. prof. position in multimedia applications, Center for Tele-Informatics, Technical University of Denmark. Member of search committee for "Docent", Ingeniørhøjskolen i Aarhus. Chairman for evaluation committee for full professorship in communications, Technical Chairman for evaluation committee for full professorship in computer vision, IT-University Copenhagen. Member of evaluation committee for full professor in signal processing, Aalborg University, 2006. Chairman for evaluation committee for full professor in image analysis, DTU, 2007. Chairman for evaluation committee for full professor in software engineering, DTU, 2011. Chairman for evaluation committee for full professor in software engineering, DTU, 2015.
- Professor promotion letters in the US and Canada: Illinois Institute of Technology, Chicago; Florida State University Tallahassee, Florida; Univ. California San Diego; Univ. New Mexico, Albuquerque, New Mexico, University of Toronto, Toronto, Canada. City University, New York. Member of evaluation panel of full Professor in Physics Helsinki University of Technology.

## **Teaching**

- Main supervisor for six on-going Ph.D.-projects. two are funded by the Danish Strategic Research Councils, one is funded by Psychiatric Center Glostrup, three are funded by the Technical University of Denmark.
- Main supervisor for >50 completed Ph.D-projects.
- Ph.D.-courses: Advanced Digital Signal Processing (June 1996,1999,2000,2002,2003,2005,2006,2007), Medical Informatics (October 1996), Topics in Learning Theory (2000), Cognitive Systems (2006), Advanced Machine Learning (2008-2015).
- Main supervisor for more than 130 DTU MSc. projects 1991-2014.
- MSc.-courses, DTU: Digital Signal Processing Methods, Non-linear Signal Processing, Applied Digital Signal Processing, Advanced Topics Digital Signal Processing. Numerous individual projects in digital signal processing, neural networks, and application areas.

## **Innovation related activities**

- The THOR Center for Neuroinformatics hosted the start-up company HypoSafe (2006-07). HypoSafe has a patented technology for diagnosing low blood sugar levels based on EEG (electric brain waves), the first version of the signal detection system was developed by DTU on contract.
- The Intelligent Sound project spun-off the machine learning consultancy company Epital A/S ([www.epital.dk](http://www.epital.dk)).
- Industrial PhD-projects with Adform A/S, ISG A/S, M.A.N. B& W, Bruel & Kjaer.
- Private consultancy to industry: Danish Technological Institute, NEuroTech A/S, Andrex Radiation Products A/S, Magnus Petersen A/S, Midas Aps, Celwave RF A/S, Danish Institute of Technology Innovation. GN Resound A/S, HypoSafe A/S.

## **Other professional activities**

- Numerous popular presentations on neural networks and neuroimaging in companies, schools and public fora.
- Collaboration with the Danish science museum *Experimentarium*, on the Human Brain exhibition (1997) and the FutureBody exhibition (2000).
- National radio and TV appearances: 'Studio 2000' , radio interviews, 'Harddisken', radio interviews. Radio interview 'DR Principia', September 24, 2002. 'Viden-Om' October 12, 2004, TV interview and expert panel on Web-site. Radio intervies: P3 'Morgenradio' 2005; 'Videnskabens Verden' (2008, 2009, 2012, 2013); 'MorgenP1' (2013).
- Danish Science Festival 2000: Abstract for talk in festival catalogue. Three popular talks. Danish Science Festival 2002: Abstract for talk in festival catalogue. Two popular talks. Consultant for impromptu play 'brain builders'. Danish Science Festival 2008: Talks at high schools on neuroscience and search engines.



## Major recent scientific achievements

I conceived and directed the ‘Intelligent Sound’ large framework project funded by the Danish Technical Research Council (14 mill. DKK 1.9 mill Euro, 2005-2009). In the project we did theoretical research on audio representation, kernel multi-class detection, and we developed three audio search engines. ‘MiRocket’ is a ‘more like this’ real-time recommender based on music similarity for WinAmp. ‘CastSearch’ is an online audio podcast news search engine with speech-to-text transcription and latent semantic modelling which allows us to retrieve documents in which keywords were missed in the transcription. ‘MuZeeker.com’ is an online enriched music information search engine fusing Wikipedia music data and Youtube music video rendering. The impact from the Intelligent sound project derives from demonstrations, industry related innovation activity, and published papers having accumulated over 500 citations. Results from this project were presented in many invited talks and keynote presentations, including an invited talk at Facebook in Jan, 2013. A by-product the Matrix Cookbook has obtained another 500+ citations and in excess of 1 mill. downloads. Funding for a so-called innovation network ‘Danish Sound’ with over 200 Danish Companies in the audio business sector and for ‘CoSound’, a strategic research project featuring the leading media company Bang and Olufsen, have been secured (>30 mill DKK 4.0 mill Euro). Both of the latter industry related projects are headed by Assoc.prof. Jan Larsen in the Section for Cognitive Systems.

I am cofounder and principal investigator in ‘Center for Integrated Molecular Brain Imaging’ (CIMBI) funded by the Lundbeck Foundation (80 mill DKK 10.6 mill Euro, 2005-2015, project headed by Prof. G.M. Knudsen, Rigshospitalet, Denmark). This project is one of the most comprehensive imaging (functional and receptor) studies in the world. The project studies 100s of normal subjects with intensive protocols to understand the role of the serotonin receptor systems in personality variability. The role of my group is to develop new statistical modelling tools for the integration of multidimensional data. Our impact has been in expanding the Brede neuroinformatics framework, developing the internationally acclaimed ‘Smartphone Brain Scanner’<sup>2</sup>, and a large number of well-cited methods papers.

I am PI in the Responsible Business in the Blogosphere project, lead by prof. Mette Morsing, Center for Corporate Social Responsibility, Copenhagen Business School, with Danish Strategic Research Council funding (1.6 mill Euro 2009-2013). A unique interdisciplinary study of brand value and viral mechanisms in social media. The role of my group is to develop statistical tools for modelling virality in social media data and developing a service for companies to track their on-line persona. My recent work on Twitter virality (2011) is cited by Prof. Jon Kleinberg, among others, and I presented the results in a MTV Techtalk at Google January 2012.

---

<sup>2</sup>Selected for the Netexplo 100 list of major inventions in 2012

## Lars Kai Hansen - Publication list Sep. 28, 2016

### - Summary

In total 310 peer reviewed publications: 1 book, 104 journal papers, 192 full conference papers, and 13 book chapters. Accumulated more than 13500 citations, H-index = 51 (Google Scholar). Most relevant works (\*)

### - Journal papers w/ peer review

1. **L.K. Hansen** and K. Carneiro, *On the Peierls Transition in a Pinning Potential*. Solid State Comm. **49**, 531, (1984).
2. **L.K. Hansen** and K. Carneiro, *The Peierls Transition in Pinning Potentials from Counterions*. Mol.Cryst.Liq.Cryst. **120**, 413, (1985).
3. K. Carneiro, **L.K. Hansen**, A. Braude, K. Mortensen, C.S. Jacobsen, D. Turner and A.E. Underhill, *Regular Properties and anomalous behavior of Conducting Metal-Oxalato-Platinates, M-OP (M=Ni,Co,Zn,Mg,Mn)*. Mol.Cryst.Liq.Cryst. **119**, 471, (1985).
4. **L.K. Hansen** and D. Baeriswyl, *Collective Modes and Impurity Effects in Onedimensional Charge Density Wave Systems*. Journal of Physics **C19**, 5615, (1986).
5. **L.K. Hansen** and K. Carneiro, *Coulomb Induced Pseudo-Critical Behavior in Disordered CDW's*. Physica **143B**, 216, (1986).
6. J.S. Petersen, K. Carneiro, **L.K. Hansen** and M. Almeida, *Phonons in TCNQ Conductors Measured by Inelastic Neutron Scattering and Their Relation to Electronic Correlations*. Synth. Metals **19**, 433, (1987).
7. P. Alstrøm, **L.K. Hansen** and D.R. Rasmussen, *Cross-over Scaling for Moments in Multifractal Systems*. Physical Review **A36**, 827-837, (1987).
8. **L.K. Hansen** and P. Salamon: *Neural Network Ensembles*. IEEE Transactions on Pattern Analysis and Machine Intelligence **12** 993-1001 (1990).
9. **L.K. Hansen**: *Stochastic Linear Learning: Exact Test and Training Error Averages*. Neural Networks **6**, 393-396, (1993)
10. **L.K. Hansen**, R. Pathria and P. Salamon: *Stochastic Dynamics of Supervised Learning*. Journal of Physics A **26**, 63-72, (1993)
11. P. Salamon, J.C. Wooton, A.K. Konopka, and **L.K. Hansen**: *On the Robustness of Maximum Entropy Relationships for Complexity Distributions of Nucleotide Sequences*. Computers and Chemistry **17**, 135-148, (1993)

12. J. Gorodkin, **L.K. Hansen**, A. Krogh, C. Svarer, and O. Winter: *A Quantitative Study of Pruning by Optimal Brain Damage*. Int. Journ. Neural Systems **4**, 159-171, (1993)
13. **L.K. Hansen** and C.E. Rasmussen: *Pruning from Adaptive Regularization*. Neural Computation **6** 1223-1232 (1994).
14. **L.K. Hansen** and J. Larsen: *Linear Unlearning for Crossvalidation* Advances in Computational Mathematics **5** 269-280 (1996).
15. **L.K. Hansen**, C. Liisberg, and P. Salamon: *The Error-Reject Trade-Off*. Open Systems and Information Dynamics **4**, 159-184, 1997.
16. **L.K. Hansen**: *Commentary on paper by Nicholas Lange and Scott Zeger*. Invited comment on "Lange N, Zeger SL. Non-linear Fourier time series analysis for human brain mapping by functional magnetic resonance imaging (with Discussion)". J Royal Stat Soc, Appl Stat (1997).
17. C. Goutte and **L.K. Hansen**: *Regularization by a Pruning Prior*. Neural Networks **10**, 1053-9 (1997).
18. **L.K. Hansen**, I. Law, E. Rostrup, C. Svarer, O.B. Paulson: *Tankebilleder*. Naturens Verden **7** 268-276 (1997)
19. S.C. Strother, N. Lange, J.R. Anderson, K.A. Schaper, K. Rehm, **L.K. Hansen**, and D.A. Rotenberg: *Activation pattern reproducibility: Measuring the effect of group size and data analysis models*. Human Brain Mapping **5**, 312-316 (1997).
20. J. Larsen and **L.K. Hansen**: *Generalization: The Hidden Agenda of Learning* in J.-N. Hwang, S.Y. Kung, M. Niranjana & J.C. Principe (eds.), The Past, Present, and Future of Neural Networks for Signal Processing, IEEE Signal Processing Magazine, 43-45, Nov. 1997 (1997).
21. J. Gorodkin, **L.K. Hansen**, B. Lautrup and S. Solla: *Universal distribution of saliencies for pruning in layered neural networks* International Journal of Neural Systems, Vol. 8, Nos. 5 & 6 489-498 (1997)
22. M. Hintz-Madsen, **L.K. Hansen**, J. Larsen, M.W. Pedersen, and M. Larsen: *Neural Classifier Construction Using Regularization, Pruning and Test Error Estimation*. Neural Networks, **11**, 1659-1670 (1998).
23. J.E. Wilhjelm, M.-L.M. Grønholdt, B. Wiebe, S.K. Jespersen, **L.K. Hansen** & H. Sillesen: *Quantitative Analysis of Ultrasound B-mode Images of Carotid Atherosclerotic Plaque: Correlation with Visual Classification and Histological Examination*. IEEE Transactions on Medical Imaging, Vol. 17. No. 6. pp 910-922, (1998).
24. C. Goutte, P. Toft, E. Rostrup, F.Å. Nielsen and **L.K. Hansen**: *On clustering fMRI time series*. NeuroImage **9**:298-310, (1999).
25. **L.K. Hansen**, J. Larsen, F.Å. Nielsen, S.C. Strother, E. Rostrup, R. Savoy, N. Lange, J.J. Sidtis, C. Svarer, O.B. Paulson: *Generalizable Patterns in Neuroimaging: How Many Principal Components?* NeuroImage **9**, 534-544 (1999).
26. U. Kjems, S.C. Strother, J. Anderson, I. Law, **L.K. Hansen**. *Enhancing the Multivariate Signal of 15-O water PET Studies With a New Non-Linear Neuroanatomical Registration Algorithm*. IEEE Transactions in Medical Imaging **18** 306-319, (1999).

27. N. Lange, S.C. Strother, J.R. Anderson, F.Å. Nielsen, A.P. Holmes, T. Kolenda, R. Savoy, **L.K. Hansen**. *Plurality and Resemblance in fMRI Data Analysis* NeuroImage, **10** (3):282-303, (1999)
28. Liow JS., Rehm K., Strother SC., Anderson JR., Morch N., **L.K. Hansen**, Schaper KA, Rottenberg DA. *Comparison of voxel- and volume-of-interest-based analyses in FDG PET scans of HIV positive and healthy individuals* Journal of Nuclear Medicine. 41(4):612-621, (2000).
29. C. Goutte, F.A.A. Nielsen, **L.K. Hansen** *Modelling the hemodynamic response in fMRI with smooth FIR filters* IEEE Transaction on Medical Imaging, **19** 1188-1200 (2000).
30. C. Goutte, **L.K. Hansen**, M.G. Liptrot and E. Rostrup. *Feature-Space Clustering for fMRI Meta-Analysis*. Human Brain Mapping **13** 165-183 (2001).
31. **L.K. Hansen**, F.A.A. Nielsen, S.C. Strother, N. Lange *Consensus Inference in Neuroimaging*, NeuroImage **13** 1212-1218, (2001).
32. **L.K. Hansen**, F.Å. Nielsen, and J. Larsen. *Exploring fMRI data for periodic components*. Artificial Intelligence in Medicine, 25(1): 35-44, (2002).
33. F.Å. Nielsen and **L.K. Hansen**: *Modeling of activation data in BrainMapTM: Detection of outliers* Human Brain Mapping, **15**(3): 146-156 (2002).
34. J. Larsen and **L.K. Hansen**. *Comments for: Rivals, I., and Personnaz L. (2000). Construction of confidence intervals for neural networks based on least squares estimation*, Neural Networks, 13, 463-484. Neural Networks **15**(1): 141-142(2002).
35. J. Larsen, A. Szymkowiak and **L.K. Hansen**. *Probabilistic Hierarchical Clustering with Labeled and Unlabeled Data*. International Journal of Knowledge-Based Intelligent Engineering Systems **6**(1): 56-62 (2002).
36. P.A.d.F.R. Højen-Sørensen, O. Winther, and **L.K. Hansen**. *Mean Field Approaches for Independent Component Analysis* Neural Computation **14**: 889-918 (2002).
37. J. Larsen, **L.K. Hansen**, A. Szymkowiak, T. Christiansen and T. Kolenda. *Webmining: Learning from the World Wide Web*. Computational Statistics and Data Analysis, **38**:517-532 (2002).
38. U. Kjems, **L.K. Hansen**, J. Anderson, S. Frutiger, S. Muley, J. Sidtis, D. Rottenberg, and S.C. Strother. *The Quantitative Evaluation of Functional Neuroimaging Experiments: Mutual Information Learning Curves*. NeuroImage **15**(4): 772-786 (2002).
39. S.C. Strother, J. Anderson, **L.K. Hansen**, U. Kjems, R. Kustra, J. Sidtis, S. Frutiger, S. Muley, S. LaConte, and D. Rottenberg. *The Quantitative Evaluation of Functional Neuroimaging Experiments: The NPAIRS Data Analysis Framework*. NeuroImage **15**(4):747-771 (2002). .
40. O.B. Paulson, P. Born, C. Bundesen, A. Gade, C. Gerlach, **L.K. Hansen**, S. Holm, M. Jensen, S. Kyllingsbæk, A. Larsen, I. Law, E. Rostrup, C. Svarer: *Den arbejdende hjerne - hvordan kan den se ud?*. Ugeskrift for læger, vol. 164:2267-2275 (2002, Danish).
41. P.A.d.F.R. Højen-Sørensen, O. Winther and **L.K. Hansen**. *Analysis of Functional Neuroimages Using ICA Adaptive Binary Sources*. Neurocomputing **49**, 213-225 (2002).

42. D. Balslev, F.Å. Nielsen, S.A. Frutiger, J.J. Sidtis, T.B. Christiansen, C. Svarer, S.C. Strother, D.A. Rottenberg, **L.K. Hansen**, O.B. Paulson, I. Law *Cluster analysis of activity-time series in motor learning* Human Brain Mapping, vol. 15(3), pp. 135-145, (2002)
43. A.C.N. Chen, F.A.A. Nielsen, **L.K. Hansen**: *Neuroimaging of human pain and virtual reality modelling*. Advances in Clinical Neurophysiology, vol. 54:163-169 (2002).
44. I.K. Andersen, A.S. Have, C.E. Rasmussen, L. Hansson, J.R. Marstrand, H.B. Larsson, **L.K. Hansen**: *Perfusion Quantification Using Gaussian Process Deconvolution*. Magnetic Resonance in Medicine, vol. 48(2), pp. 351-361 (2002)
45. L.S. LaConte, D. Rottenberg, S. Strother, J. Anderson, S. Muley, J. Ashe, S. Frutiger, K. Rehm, **L.K. Hansen**, E. Yacoub, X. Hu: *The Evaluation of Preprocessing Choices in Single-Subject BOLD fMRI Using NPAIRS Performance Metrics*. NeuroImage, **18** pp. 10-27, (2003)
46. M. McKeown, **L.K. Hansen**, and T.J. Sejnowski: *Independent Component Analysis for fMRI: What is Signal and What is Noise?* Current Opinion in Neurobiology **13**(5) 620-629 (2003).
47. M. Gniadecka, P.A. Philipsen, S. Sigurdsson, S. Wessel, O.F. Nielsen, D.H. Christensen, J. Hercogova, K. Rossen, H.K. Thomsen, R. Gniadecki, **L.K. Hansen**, H.C. Wulf: *Malignant Melanoma Diagnosis by Raman Spectroscopy and Neural Network: Structure Alterations in Proteins and Lipids in Intact Cancer Tissue*. Journal of Investigative Dermatology **122**:443-449 (2004).
48. S. Sigurdsson, P.A. Philipsen, **L.K. Hansen**, J. Larsen, M. Gniadecka, and H.C. Wulf: *Detection of Skin Cancer by Classification of Raman Spectra*. IEEE transactions on Biomedical Engineering **51**(10): 1784-1793 (2004).
49. F.A.A. Nielsen, **L.K. Hansen**, *Finding related functional neuroimaging volumes*. Artificial Intelligence in Medicine **30**(2) 141-151 (2004).
50. F. Calamante, M. Mørup, **L.K. Hansen**: *Defining a Local Arterial Input Function for Perfusion MRI Using Independent Component Analysis*. Magnetic Resonance in Medicine **52** 789-797 (2004).
51. F.Å. Nielsen, **L.K. Hansen**, D. Balslev: *Mining for associations between text and brain activation in a functional neuroimaging database* Neuroinformatics, **2**(4), 369-380, (2004).
52. S.C. Strother, S. La Conte, **L.K. Hansen**, J. Anderson, J. Zhang, S. Pulapura and D. Rottenberg: *Optimizing the fMRI data-processing pipeline using prediction and reproducibility performance metrics: I. A preliminary group analysis*. NeuroImage **23**(S1), S196-S207 (2004).
53. K.B. Petersen, O. Winther, and **L.K. Hansen**: *On the slow convergence of EM and VBEM in low noise linear mixtures*. Neural Computation **17**(9) 1921-1926 (2005).
54. F.Å. Nielsen, D. Balslev, **L.K. Hansen**: *Mining the posterior cingulate: Segregation between memory and pain components*, NeuroImage, **27** 520-532 (2005).
55. T. Grotkjær, O. Winther, B. Regenber, J. Nielsen, **L.K. Hansen**: *Robust multi-scale clustering of large DNA microarray datasets with the consensus algorithm*. Bioinformatics **22** 58-67 (2006).

56. M. Mørup, **L.K. Hansen**, C.S. Hermann, J. Parnas, S.M. Arnfred: *Parallel Factor Analysis as an exploratory tool for wavelet transformed event-related EEG*. *NeuroImage* **29**(3) 938-947 (2006).
57. F.Å. Nielsen, M.S. Christensen, K.M. Madsen, T.E. Lund, and **L.K. Hansen**: *fMRI Neuroinformatics*. *IEEE Engineering in Medicine and Biology Magazine* **25**(2), 112-119 (2006).
58. R.K. Olsson and **L.K. Hansen**: *Linear State-space Models for Blind Source*, *Journal of Machine Learning Research*, **7**, 2585-2602, (2006).
59. B. Regenber, T. Grotkjær, O. Winther, A. Fausbøll, M. Aakesson, C. Bro, **L.K. Hansen**, S. Brunak, J. Nielsen: *Growth-rate regulated genes have profound impact on interpretation of transcriptome profiling in Saccharomyces cerevisiae* *Genome Biology*, **7**, R107, (2006).
60. Dyrholm, M., S. Makeig, **L.K. Hansen**: *Convolutional ICA for Spatio-Temporal Analysis of EEG*, *Neural Computation* **19**(4): 934-955 (2007).
61. S.M. Arnfred, **L.K. Hansen**, J. Parnas, J., M. Mørup: *Proprioceptive Evoked Gamma Oscillations* *Brain Research*, **1147** 167-174 (2007).
62. A.S Lukic, M.N. Wernick, Y. Yang, **L.K. Hansen**, K. Arfanakis, S.C. Strother: *Effect of Spatial Alignment Transformations in PCA and ICA of Functional Neuroimages* *IEEE Transactions on Medical Imaging*, **26** 1058-1068 (2007).
63. M. Mørup, **L.K. Hansen**, S.M. Arnfred: *ERPWAVELAB A toolbox for multi-channel analysis of time-frequency transformed event related potentials*. *Journal of Neuroscience Methods* **161**(2): 361-368 (2007).
64. **L.K. Hansen**: *Multivariate strategies in functional magnetic resonance imaging*. *Brain and Language*, **102**(2): 186-191(2007).
65. A. Meng, P. Ahrendt, J. Larsen, **L.K. Hansen**: *Temporal Feature Integration for Music Genre Classification*. *IEEE Transactions on Audio and Speech and Language Processing* **15**(5): 1654-1664 (2007).
66. S. Lehmann, **L.K. Hansen**: *Deterministic modularity optimization* *European Physical Journal B* **60**(1) 83-88 (2007).
67. D.J. Jacobsen, **L.K. Hansen** and K.H. Madsen: *Bayesian model comparison in non-linear BOLD fMRI hemodynamics*. *Neural Computation*, **20** 738-755 (2008).
68. A.B. Nielsen, **L.K. Hansen**: *Structure Learning by Pruning in Independent Component Analysis*. *Neurocomputing*, **71** 2281-2290 (2008).
69. M. Mørup, **L.K. Hansen**, S.M. Arnfred: *Algorithms for Sparse Non-negative Tucker decompositions*. *Neural Computation*, **20** 2112-2131 (2008).
70. T.B. Dyrby, E. Rostrup, W.F.C. Baare, E. van Straaten, F. Barkhof, H. Vrenken, S. Ropele, R. Schmidt, T. Erkinjuntti, L.-O. Wahlund, L. Pantoni, D. Inzitari, O.B. Paulson, **L.K. Hansen**, G. Waldemar: *Segmentation of Age-Related White Matter Changes in a Clinical Multi-centre Study*, *NeuroImage* **41**(2):335-345 (2008).

71. S.M. Arnfred, **L.K. Hansen**, J. Parnas, M. Mørup: *Regularity Increases Middle-latency Evoked and Late Induced Beta Brain Response Following Proprioceptive Stimulation*. Brain Research, **1218** 114-131 (2008).
72. H. Laurberg, M.G. Christensen, M. Plumbley, **L.K. Hansen** and S.H. Jensen. *Theorems on positive data: On the Uniqueness of NMF*. Computational Intelligence and Neuroscience Article ID 764206 (2008).
73. S. Lehmann, M. Schwartz, **L.K. Hansen**. *Biclique communities*. Physical Review E **78**(1) Article Number: 016108 (2008).
74. T. Beierholm, A.H. Nuttall, **L.K. Hansen**. *Use and Subtleties of Saddlepoint Approximation for Minimum Mean-Square Error Estimation*. IEEE Transactions on Information Theory **54**(12): 5778-5787 (2008).
75. T. Adali, Z.J. Wang, M.J. McKeown, V. Calhoun, **L.K. Hansen**: *Introduction to the Issue on fMRI Analysis for Human Brain Mapping*. IEEE Jour. of Selected Topics in Signal Processing **2**(6):813-816 (2008).
76. M. Mørup, **L.K. Hansen**, S.M. Arnfred, L.H. Lim, K.H. Madsen. *Shift invariant multilinear decomposition of neuroimaging data*. NeuroImage **42**(4):1439-1450 (2008).
77. (\*) M. Mørup, **L.K. Hansen**. *Automatic relevance determination for multi-way models*. Journal of Chemometrics. **23**(7-8):352-363 (2009).
78. Robin de Nijs, Maria J. Miranda, **L.K. Hansen**, L.G. Hanson: *Motion correction of single-voxel spectroscopy by independent component analysis applied to spectra from nonanesthetized pediatric subjects* Magnetic Resonance in Medicine **62**(5):1147-1154 (2009).
79. (\*) T.J. Abrahamsen · **L.K. Hansen**: *Regularized Pre-Image Estimation for Kernel PCA Denoising. Input space regularization and sparse reconstruction* Journal of Signal Processing Systems, **65**(3):403-412 (2011).
80. C. Stahlhut, M. Mørup, O. Winther, **L.K. Hansen**. *Simultaneous EEG Source and Forward Model Reconstruction (SOFOMORE) using a Hierarchical Bayesian Approach*. Journal of Signal Processing Systems, **65**(3):431-444 (2011).
81. (\*) P. Mondrup Rasmussen, K.H. Madsen, T.E. Lund, **L.K. Hansen**. *Visualization of nonlinear kernel models in neuroimaging by sensitivity maps* NeuroImage **55**(3):1120-1131 (2011).
82. (\*) T.J. Abrahamsen and **L.K. Hansen**. *A Cure for Variance Inflation in High Dimensional Kernel Principal Component Analysis*. Journal of Machine Learning Research **12**:2027-2044 (2011).
83. (\*) T.J. Abrahamsen and **L.K. Hansen**. *Sparse non-linear denoising: Generalization performance and pattern reproducibility in functional MRI*. Pattern Recognition Letters **32**(15):2080-2085 (2011).
84. (\*) P. Mondrup Rasmussen, **L.K. Hansen**, K.H. Madsen, N.W. Churchill, S.C. Strother. *Model sparsity and brain pattern interpretation of classification models in neuroimaging*. Pattern Recognition **45**(6):2085-2100 (2012).

85. M. Mørup, **L.K. Hansen**. *Archetypal analysis for machine learning and data mining*. Neurocomputing 80:54-63 (2012)
86. P.M. Rasmussen, T.J. Abrahamsen, K.H. Madsen, **L.K. Hansen**. *Nonlinear denoising and analysis of neuroimages with kernel principal component analysis and pre-image estimation*. NeuroImage **60**(3):1807-1818 (2012).
87. K.W. Jørgensen, **L.K. Hansen**. *Model Selection for Gaussian Kernel PCA Denoising*. IEEE Transactions on Neural Networks and Learning Systems **23**(1):163-168 (2012).
88. R. Dragusin, P. Petcu, C. Lioma, B. Larsen, H.L. Jørgensen, I.J. Cox, **L.K. Hansen**, P. Ingwersen, O. Winther. *FindZebra: A search engine for rare diseases*. International Journal of Medical Informatics. 26 February 2013 (Article in Press DOI: 10.1016/j.ijmedinf.2013.01.005)
89. J. Arenas-Garcia, K. Petersen, G. Camps-Valls, **L.K. Hansen**. *Kernel Multivariate Analysis Framework for Supervised Subspace Learning: A Tutorial on Linear and Kernel Multivariate Methods*. IEEE Signal Processing Magazine **30**(4):16-29 (2013).
90. R. Dragusin, P. Petcu, C. Lioma, B. Larsen, H.L. Jørgensen, I.J. Cox, **L.K. Hansen**, P. Ingwersen, O. Winther. *Specialized tools are needed when searching the web for rare disease diagnoses*. Rare Diseases **1**(2):528-38 (2013).
91. (\*) T.J. Abrahamsen, **L.K. Hansen**. *Variance Inflation in High Dimensional Support Vector Machines*. Pattern Recognition Letters. (2013).
92. J. Montoya-Martínez, Artes-Rodríguez, A., Pontil, M., **L.K. Hansen**. *A regularized matrix factorization approach to induce structured sparse-low-rank solutions in the EEG inverse problem*. EURASIP Journal on Advances in Signal Processing, **2014**(1):1-13 (2014).
93. **I. Konvalinka**, M. Bauer, C. Stahlhut, **L.K. Hansen**, A. Roepstorff, C.D. Frith. *Frontal alpha oscillations distinguish leaders from followers: multivariate decoding of mutually interacting brains*. Neuroimage **94**:79-88, (2014).
94. A. Stopczynski, C. Stahlhut, J.E. Larsen, M.K., Petersen, **L.K. Hansen** *The smartphone brain scanner: a portable real-time neuroimaging system*. PlosOne, **9**(2) e86733 (2014).
95. A. Stopczynski, C. Stahlhut, M.K. Petersen, J.E. Larsen, C.F. Jensen, M.G. Ivanova, T.S. Andersen, **L.K. Hansen**. *Smartphones as pocketable labs: Visions for mobile brain imaging and neurofeedback*. International Journal of Psychophysiology **91**(1):54-66 (2014).
96. (\*) T.J. Hansen, T.J. Abrahamsen, **L.K. Hansen**. *Denoising by semi-supervised kernel PCA preimaging*. Pattern Recognition Letters **49**:114-120 (2014).
97. K. Winther, Andersen, K.H. Madsen, H.R. Siebner, M.N. Schmidt, M. Mørup, **L.K. Hansen**. *Non-parametric Bayesian graph models reveal community structure in resting state fMRI*. NeuroImage **100**:301-315 (2014).
98. (\*) Kamronn, S., A.T. Poulsen, **L.K. Hansen** *Multiview Bayesian Correlated Component Analysis* Neural Computation **27**(10):2207-2230 (2015)
99. R.P. Woods , **L.K. Hansen**, S.C. Strother. *How Many Separable Sources? Model Selection In Independent Components Analysis*. PloS one 10(3) (2015).



100. T. Adali, C. Jutten, **L.K. Hansen**. *Multimodal Data Fusion [Scanning the Issue]*. Proceedings of the IEEE 103(9):1445-1448 (2015).
101. Knudsen, G.M. P.S. Jensen, D. Erritzoe, W.F.C. Baare, A. Ettrup, P.M. Fisher, N. Gillings, H.D. Hansen, **L.K. Hansen**, et al.: *The Center for Integrated Molecular Brain Imaging (Cimbi) database*. NeuroImage 124:1213-1219 (2016).
102. S.T. Hansen, S. Hauberg, **L.K. Hansen**. *Data-driven forward model inference for EEG brain imaging* NeuroImage, 139(1):249-258 (2016),
103. T. Andrillon, A.T. Poulsen, **L.K. Hansen**, D. Leger, S. Kouider. *Neural Markers of Responsiveness to the Environment in Human Sleep* The Journal of Neuroscience 36(24):6583-6596 (2016).
104. (\*) N. Bak, **L.K. Hansen**. *Data driven estimation of imputation error - A strategy for imputation with a reject option*. PloS one Accepted (2016).

- **Monographs w/ peer review**

105. P.M. Nørgaard, O. Ravn, N.K. Poulsen, and **L.K. Hansen**: *Neural Networks for Modelling and Control of Dynamic Systems*. Advanced Textbooks in Control and Signal Processing, Springer-Verlag Ltd. (2000).

- **Full conference papers w/ peer review**

106. D. Baeriswyl, **L.K. Hansen**, *Non-Local Forces in Charge-Density Wave Systems*. Springer Lecture Notes in Physics **217**, 149, (1985).
107. K. Demandt, **L.K. Hansen**: *Real-time X-ray System with Fully Automatic Defect Detection and Quality Classification*. In "X-ray Real-time Radiography and Image processing", 96-125, (The British Institute of Non- Destructive Testing, London, 1989). (1989).
108. **L.K. Hansen** and P. Salamon, *On Collective Decisions of Neural Network Ensembles*. Proceedings of "Symposium on Applied Statistics Ed. Jannik Godt, UNI.C Copenhagen, 327-41 (1990).
109. P. Salamon and **L.K. Hansen**: *Predicting the Performance of Neural Network Ensembles*. Proceedings of '8'th International Congress of Cybernetics and Systems', (Ed. C.N.Manikopoulos), New Jersey Institute of Technology Press, 9-15, (1992).
110. **L.K. Hansen**, C. Liisberg, and P. Salamon: *Ensemble Methods for Recognition of Handwritten Digits*. In 'Neural Networks For Signal Processing'; Proceedings of the 1992 IEEE-SP Workshop, (Eds. S.Y. Kung, F. Fallside, J. Aa. Sørensen, and C.A. Kamm), IEEE Service Center, Piscataway NJ, 540-549, (1992).

111. **L.K. Hansen**: *Boltzmann Learning of Parameters in Bayes Visual Reconstruction*. Proceedings of the First Danish Conference on Pattern Recognition and Image Analysis. Ed.: S.I.Olsen. Department of Computer Science, University of Copenhagen, 92/8,21-26 (1992).
112. **L.K. Hansen**: *Boltzmann Learning of Parameters in Cellular Neural Networks*. Proceedings of Second Int. Workshop on Cellular Neural Networks and Applications CNNA'92, Munich (1992). IEEE Service Center, Piscataway NJ, 62-67, (1992).
113. C. Svarer, **L.K. Hansen**, and J. Larsen: *On Design and Evaluation of Time-Delay Neural Network Architectures*. The 1993 IEEE Int. Conference on Neural Networks, San Francisco. Eds. H.R. Berenji et al., p 45-51, (1993)
114. C. Svarer, **L.K. Hansen**, J. Larsen, and C.E. Rasmussen: *Designer Networks for Time Series Processing*. The 1993 IEEE Workshop on Neural Networks for Signal Processing (NNSP'93) Baltimore. Eds. C.A. Kamm et al., 78-87, (1993).
115. **L.K. Hansen** and M. With Petersen: *Controlled Growth of Cascade Correlation Nets*. Proceedings of ICANN'94 International Conference on Neural Networks, Sorrento, Italy, 1994. Eds. M. Marinaro and P.G. Morasso, 797-800, (1994).
116. **L.K. Hansen**, C. E. Rasmussen, C. Svarer, and J. Larsen : *Adaptive Regularization*. "Neural Networks for Signal Processing IV" Proceedings of the IEEE Workshop, Eds. J. Vlontzos et al., IEEE Service Center, Piscataway NJ, pp. 78-87, (1994)
117. S. von Spreckelsen, P. Grumstrup, J. Johnsen, and **L.K. Hansen**: *Modeling of Glaucoma Induced Changes in the Retina and Neural Net Assisted Diagnosis*. "Neural Networks for Signal Processing IV" Proceedings of the IEEE Workshop, Eds. J. Vlontzos et al., IEEE Service Center, Piscataway NJ pp. 490-498, (1994)
118. T. Fog, L. Hupfeldt Nielsen, **L.K. Hansen**, S. Holm, I. Law, C. Svarer, O. Paulson: *Neural Estimation of Kinetic Rate Constant from Dynamic PET Scans*. "Neural Networks for Signal Processing IV" Proceedings of the IEEE Workshop, Eds. J. Vlontzos et al., IEEE Service Center, Piscataway NJ, pp. 616-623, (1994)
119. J. Larsen and **L.K. Hansen**: *Generalization Performance of Regularized Neural Network Models*. "Neural Networks for Signal Processing IV" Proceedings of the IEEE Workshop, Eds. J. Vlontzos et al., IEEE Service Center, Piscataway NJ, pp. 42-51, (1994)
120. C. Linneberg, P. Salamon, C. Svarer, **L.K. Hansen**, and J. Meyrowitsch: *Towards Automatic Seemen Quality Assessment*. "Neural Networks for Signal Processing IV" Proceedings of the IEEE Workshop, Eds. J. Vlontzos et al., IEEE Service Center, Piscataway NJ, pp. 509-511, (1994).
121. M.W. Pedersen, **L.K. Hansen**: "Recurrent Networks: Second Order Properties and Pruning" in *Advances in Neural Information Processing Systems 7*, 1995, pp. 673-680
122. B. Lautrup, **L.K. Hansen**, I. Law, N. Mørch, C. Svarer, S.C. Strother: *Massive Weight Sharing: A cure for Extremely Ill-posed Problems* Workshop on Supercomputing in Brain Research: From Tomography to Neural Networks, HLRZ, November 21-23, pp 137-144, (1994).

123. T.L. Fog, J. Larsen, **L.K. Hansen**: *Training and Evaluation of Neural Networks for Multi-Variate Time Series Processing* in Proceedings of 1995 IEEE International Conference on Neural Networks, Perth, Australia, Nov. 27–Dec. 1, vol. 2, pp. 1194-1199 (1995).
124. N.J.S. Mørch, U. Kjems, **L.K. Hansen**, C. Svarer, I. Law, B. Lautrup, and S. Strother: *Visualization of Neural Networks Using Saliency Maps*. in Proceedings of 1995 IEEE International Conference on Neural Networks, Perth, Australia, Nov. 27–Dec. 1, vol. 2, pp.2085-2090 (1995).
125. J. Larsen, **L.K. Hansen**: *Empirical Generalization Assessment of Neural Network Models* in F. Girosi, J. Makhoul, E. Manolakos and E. Wilson (eds.), Proceedings of the IEEE Workshop on Neural Networks for Signal Processing V, Piscataway, New Jersey: IEEE, 1995, pp. 30–39.
126. M. Hintz-Madsen, **L.K. Hansen**, J. Larsen, E. Olesen, K.T. Drzewiecki: *Design and Evaluation of Neural Classifiers Application to Skin Lesion Classification* in F. Girosi, J. Makhoul, E. Manolakos and E. Wilson (eds.). Proceedings of the IEEE Workshop on Neural Networks for Signal Processing V, Piscataway, New Jersey: IEEE, 1995, pp. 484–493.
127. N. Blackburn, AA. Hagstroem, B. Hygum, P.K. Sørensen, R. Massana, C. Pedros-Alio, C. Svarer, **L.K. Hansen**; S. Hietanen, J. Kuparinen: *DIADEME: Digital Image Analysis Development in European Marine Ecology* Proceedings of MARINE SCIENCES AND TECHNOLOGIES. Second MAST days and Euromar market -1995- vol II 1409-1424. European Commission 1995.
128. C. Svarer, I. Law, S. Holm, N.J.S. Mørch, O. Paulson, **L.K. Hansen**, And T. Fog: *Estimation of the Glucose Metabolism from Dynamic PET-scans using Neural Networks*. in F. Girosi, J. Makhoul, E. Manolakos and E. Wilson (eds.). Proceedings of the IEEE Workshop on Neural Networks for Signal Processing V, Piscataway, New Jersey: IEEE, 1995, pp. 439-448.
129. P.A.. Philipsen, **L.K. Hansen**, P. Toft: *Mean Field Reconstruction with Snaky Edge Hints*. Proceedings of the Interdisciplinary Inversion Conference on Methodology, Computation and Integrated Applications (IIC'95). Springer Verlag, pp 312-319, (1996).
130. P.A. Philipsen, **L.K. Hansen**, P. Toft *Mean Field Reconstruction with Snaky Edge Hints* Proceedings of the Fourth Danish Conference on Patterns Recognition and Image Processing. Computer Science University of Copenhagen pp 155-161 (1995).
131. L.N. Andersen and **L.K. Hansen**: *Parameter Estimation in Inhomogeneous Markov Fields*. Proceedings of the Fourth Danish Conference on Patterns Recognition and Image Processing. Computer Science University of Copenhagen (1995).
132. H. Klebæk, J.A. Jensen, and **L.K. Hansen**: *Neural Networks for Sonogram Gap Filling*. in Proceedings of the 1995 IEEE International Ultrasonics Symposium (UFFC'95), Seattle, vol 2, pp 1553-1556, 1995
133. C. Svarer, I. Law, S. Holm, N. Mørch, S. Hasselbalch, **L.K. Hansen**, and O.B. Paulson: *An Artificial Neural Net Approach to Estimation of the Glucose Metabolism Using PET*. In Quantification of Brain Function Using PET, Eds R. Myers, V. Cunningham, D. Bailey, and T. Jones. Academic Press, Chapter 53, p 271-276. (1996)

134. S.C. Strother, J.J. Sidtis, J.R. Anderson, **L.K. Hansen**, K. Schaper, and D.A. Rottenberg: *15-O Water PET: More "Noise" than signal?* In Quantification of Brain Function Using PET, Eds R. Myers, V. Cunningham, D. Bailey, and T. Jones. Academic Press, Chapter 73, p 378-383. (1996).
135. J.E. Wilhjelm, K. Rosendahl, M-L.M. Grønholdt, S.K Jespersen, **L.K. Hansen**, and H. Sillesen: *Digital Image Analysis of Ultrasound B-mode images of Carotid Atherosclerotic Plaque.* In Proceedings of the 10'th Nordic-Baltic Conference on Biomedical Engineering Tampere, Finland, June 9-13, 1996.
136. S.K Jespersen, M-L.M. Grønholdt, J.E. Wilhjelm, B. Wiebe, **L.K. Hansen**, H. Sillesen, and K. Rosendahl: *Correlation Between Ultrasound B-Mode Images Of Carotid Plaque and Histological Examination.* In proceedings of the IEEE 1996 International Ultrasonic Symposium, San Antonio, Texas, November 3-6, 1996.
137. **L.K. Hansen**, L.N. Andersen, U. Kjems, J. Larsen: *Revisiting Boltzmann Learning: Parameter Estimation in Markov Fields* in Proceedings of IEEE ICASSP-96, Atlanta, GA, vol. 6, pp. 3395-3398, 1996.
138. M.W. Pedersen, **L.K. Hansen**, J. Larsen: *Pruning with Generalization Based Weight Salencies:  $\gamma$ -OBD,  $\gamma$ -OBS* In D.S. Touretzky, M.C. Mozer and M.E. Hasselmo (eds.) Advances in Neural Information Processing Systems 8, Proceedings of the 1995 Conference, Cambridge, Massachusetts: MIT Press, pp. 521-528, 1996.
139. P. Sørensen, M. Nørgård, **L.K. Hansen**, J. Larsen: *Cross-Validation with LULOO* in Proceedings of 1996 International Conference on Neural Information Processing, ICONIP'96, Hong Kong, Sept. 24-27, (Eds. S.I. Amari, L.-W. Chan, I. King, K.-S. Leung). Vol. 2, 1305-1310, 1996.
140. J. Larsen, **L.K. Hansen**, C. Svarer and M. Ohlsson: *Design and Regularization of Neural Networks: The Optimal Use of a Validation Set* in Proceedings of Neural Networks for Signal Processing VI, IEEE Press, NJ, Eds. S Usui et al., IEEE Piscataway, New Jersey, 62-71, 1996.
141. M. Hintz-Madsen, M.W. Pedersen, **L.K. Hansen**, J. Larsen: *Design and Evaluation of Neural Network Classifiers* in Proceedings of Neural Networks for Signal Processing VI, IEEE Press, NJ, 1996.
142. M. Hintz-Madsen, **L.K. Hansen**, J. Larsen, E. Olesen and K.T. Drzewiecki: *Detection of Malignant Melanoma using Neural Classifiers* in A.B. Bulsari, S. Kallio and D. Tsaptsinos (eds.), Solving Engineering Problems with Neural Networks, Proceedings of EANN'96, London, UK, June 17-19, pp. 395-398, 1996.
143. **L.K. Hansen** and J. Larsen: *Unsupervised Learning and Generalization* in Proceedings of IEEE International Conference on Neural Networks, Washington DC, pp. 25-30, June 1996
144. M. Nørgaard, P.H. Sørensen, N.K. Poulsen, O. Ravn, **L.K. Hansen**: *Intelligent Predictive Control of Nonlinear Processes Using Neural Networks.* Proceedings of the 11th IEEE International Symposium on Intelligent Control (ISIC), Dearborn, Michigan, USA, 301-306, 1996

145. M. Nørsgaard, O. Ravn, N.K. Poulsen, **L.K. Hansen**: *NNCTRL - A CANCSD ToolKit for MATLAB*. Proceedings of the 1996 IEEE Symposium on Computer-Aided Control System Design, Dearborn, Michigan, USA, 368-373, 1996.
146. M. Nørsgaard, O. Ravn, **L.K. Hansen**, N.K. Poulsen: *The NNSYSID Toolbox - A MATLAB Toolbox for System Identification with Neural Networks*. Proceedings of the 1996 IEEE Symposium on Computer-Aided Control System Design, Dearborn, Michigan, USA, 374-379, 1996.
147. P. Toft, P. Alshede Philipsen, **L.K. Hansen**, and U. Kjems: *Brain Mapping by Positron Emission Tomography* in Proceedings of the Interdisciplinary inversion Workshop 4, Lyngby 1996. Ed. P.C. Hansen. Dept. Mathematical Modelling, Technical University of Denmark ISBN 87-88306-24-0 p.39-48 (1997).
148. U. Kjems, P. Alshede Philipsen, **L.K. Hansen**, and Chin-Tu Chen: *A Non-linear 3D Brain Co-registration Method* in Proceedings of the Interdisciplinary inversion Workshop 4, Lyngby 1996. Ed. P.C. Hansen. Dept. Mathematical Modelling, Technical University of Denmark ISBN 87-88306-24-0 p.49-58 (1997).
149. J. Larsen, **L.K. Hansen**, and C. Svarer: *Regularization of Neural Networks* in Proceedings of the Interdisciplinary inversion Workshop 4, Lyngby 1996. Ed. P.C. Hansen. Dept. Mathematical Modelling, Technical University of Denmark ISBN 87-88306-24-0 p.59-66 (1997).
150. L. Nonboe Andersen, J. Larsen, **L.K. Hansen** and M. Hintz-Madsen: *Adaptive Regularization of Neural Classifiers* Neural Networks for Signal Processing VII - Proceedings of the 1997 IEEE Workshop (Florida), September 1997, pp. 24-33.
151. **L.K. Hansen**, J. Larsen, and T. Fog: *Early Stop Criterio from the Bootstrap Ensemble*. in Proceedings of IEEE Proceedings of ICASSP'97, vol. 4, pp. 3205-3208, Munich, Germany, April 1997.
152. N. Mørch, **L.K. Hansen**, S.C. Strother, C. Svarer, D.A. Rottenberg, B. Lautrup, R. Savoy, O.B. Paulson: *Nonlinear versus Linear Models in Functional Neuroimaging: Learning Curves and Generalization Crossover*. Proceedings of the 15th International Conference on Information Processing in Medical Imaging, 1997, Eds. J. Duncan and G. Gindi. Lecture Notes in Computer Science **1230**, Springer Verlag 259-270, 1997.
153. F.Å. Nielsen and **L.K. Hansen**. *Interactive Information Visualization in Neuroimaging*. NPIVM'97 - Workshop on New Paradigms in Information Visualization and Manipulation. David S. Ebert, Charles K. Nicholas (eds.) ACM ISBN 1-58113-051-1. (1997)
154. J. Larsen, L.N. Andersen, M. Hintz-Madsen and **L.K. Hansen** *Design of Robust Neural Network Classifiers* in Proceedings of ICASSP'98, vol. 2, pp. 1205-1208, Seattle, USA, (1998).
155. J.A. Benediktsson, J. Larsen, J.R. Sveinsson, and **L.K. Hansen**: *Optimized Combination, Regularization, and Pruning in Parallel Consensual Neural Networks* in Proceedings of European Symposium on Remote Sensing, Barcelona, Spain (1998).
156. **L.K. Hansen**, N. Mørch, and F.Å. Nielsen: *Neural Net in Functional Neuroimaging*. Tutorial Paper for NORSIG'98. In Proceedings of the IEEE Nordic Signal Processing Symposium, Vigsø, Denmark 1998. Eds. P. Dalsgaard and S.H. Jensen, pp. 1-8, (1998).

157. **L.K. Hansen** and J. Larsen: *Source Separation in Short Image Sequences using Delayed Correlation* In Proceedings of the IEEE Nordic Signal Processing Symposium, Vigsø, Denmark 1998. Eds. P. Dalsgaard and S.H. Jensen, pp. 253-256, (1998)
158. L.N. Andersen, W. Au, J. Larsen, **L.K. Hansen**: *Sonar discrimination of cylinders from different angles using neural networks* in Proceedings of IEEE ICASSP'99, Phoenix, AZ, March 15-19, vol. 2, pp. 1121-1124, (1999).
159. T.L. Fog, **L.K. Hansen**, J. Larsen, H.S. Hansen, L.B. Madsen, P. Sørensen, E.R. Hansen and P.S. Pedersen: *On Condition Monitoring of Exhaust Values in Marine Diesel Engines* in Y.H. Hu, J. Larsen, E. Wilson, S. Douglas (eds.) Proceedings of the IEEE Workshop on Neural Networks for Signal Processing IX, Piscataway, New Jersey: IEEE, pp. 554-563, (1999).
160. L.N. Andersen, W. Au, J. Larsen, **L.K. Hansen**: *Discrimination of Cylinders with Different Wall Thicknesses using Neural Networks and Simulated Dolphin Sonar Signals* in Y.H. Hu, J. Larsen, E. Wilson, S. Douglas (eds.) Proceedings of the IEEE Workshop on Neural Networks for Signal Processing IX, Piscataway, New Jersey: IEEE, pp. 477-486, (1999).
161. P.A. Philipsen and **L.K. Hansen**: *PET Reconstruction with a Markov Random Field Prior*. Proceedings of BrainPET'99, To appear, (2000).
162. P.A.d.F.R. Højen-Sørensen, **L.K. Hansen** and C.E. Rasmussen: *Bayesian Modelling of fMRI Time Series* In S.S. Solla et al. (eds.) Proceedings of NIPS\*99, Denver, November 29 - December 4, 1999, 754-760 (2000).
163. **L.K. Hansen**: *Bayesian Averaging is Well-Tempered* In S.S. Solla et al. (eds.) Proceedings of NIPS\*99, Denver, November 29 - December 4, 1999, 265-271 (2000).
164. F.Å. Nielsen and **L.K. Hansen**: *Experiences with Matlab and VRML in Functional Neuroimaging Visualizations*, In Proceedings of Visualization Development Environment (VDE2000) Princeton Plasma Physics Laboratory, Princeton, New Jersey, USA, 2000 April 27-28.
165. **L.K. Hansen**, S. Sigurdsson, T. Kolenda, F.Å. Nielsen, U. Kjems and J. Larsen: *Modeling Text with Generalizable Gaussian Mixtures* in proceedings of IEEE ICASSP'2000, Istanbul, Turkey, June 5-9, 2000, vol. VI, pp. 3494-3497. (2000)
166. P.A.d.F.R. Højen-Sørensen, O. Winther and **L.K. Hansen** *Ensemble Learning and Linear Response Theory for ICA* Advances in Neural Information Processing Systems 13 (NIPS\*2000) (2000).
167. U. Kjems, **L.K. Hansen**, S.C. Strother: *Generalizable Singular Value Composition of Ill-posed Datasets*. In proc. of Advances in Neural Information Processing Systems 13 (NIPS\*2000) Eds. Leen T.K., Dietterich T.G., Tresp V., Cambridge, MA: MIT Press. 13:549-555 (2001).
168. K. Petersen, **L.K. Hansen**, T. Kolenda, E. Rostrup, S. Strother. *On the Independent Components of Functional Neuroimages*. In Proceedings of ICA-2000. Eds. P. Pajunen and J. Karhunen, 615-620 (2000).
169. J. Larsen, **L.K. Hansen**, A. Szymkowiak, T. Christiansen and T. Kolenda. *Web-mining: Learning from the World Wide Web*. Invited contribution for Proceedings of Nonlinear Methods and Data Mining 2000, Rome, Italy, Sept. 25-26, 106-125 (2000)

170. T. Kolenda, **L.K. Hansen** and J. Larsen. *Signal Detection using ICA: Application to Chat Room Topic Spotting*. In proceedings of ICA'2001, San Diego, USA, December 9-13, 2001, pp. 540-545 (2002).
171. A. Szymkowiak, J. Larsen and **L.K. Hansen**. *Hierarchical Clustering for Datamining*. Special Session on Neural Networks and Datamining in N. Babs, L.C. Jain, R.J. Howlett (eds.) Proc. KES-2001 Fifth International Conference on Knowledge-Based Intelligent Information Engineering Systems & Allied Technologies, Osaka and Nara, Japan, September 6-8, 261-265 (2001).
172. A. Szymkowiak, P.A. Philipsen, J. Larsen, **L.K. Hansen**, E. Thieden and H.C. Wulf. *Imputating Missing Values in Diary Records of Sun-exposure Study*. In D. Miller, et al. (eds.) Proceedings IEEE Workshop on Neural Networks for Signal Processing XI Falmouth, Massachusetts, Sept. 10-12, 489-498 (2001).
173. J. Hørlyck, J. Larsen, **L.K. Hansen**, and T. Christiansen. *Are All E-customers Alike?*. In 1st Nordic Workshop on Electronic Commerce, Halmstad, May 28-29, (2001).
174. **L.K. Hansen**, J. Larsen, T. Kolenda. *Blind Detection of Independent Dynamic Components*. In Proceedings IEEE ICASSP'2001, Salt Lake City, Utah, USA, SAM-P8.10, **5** 3197-3200 (2001).
175. T. Fabricius, P. Kidmose and **L.K. Hansen**. *Dynamic Components of Linear Stable Mixtures from Fractional Low Order Moments*. In Proceedings of IEEE ICASSP'2001, Salt Lake City, Utah, USA, SAM-P8.10, **5** 3957-3960 (2001).
176. S. Sigurdsson, J. Larsen and **L.K. Hansen**. *On Comparison of Adaptive Regularization Methods*. In B. Widrow et al. (eds.). Proceedings of the IEEE Workshop on Neural Networks for Signal Processing X, Piscataway, New Jersey: IEEE. Sydney, Australia, Dec. 11-13, 221-230 (2001).
177. P.A.d.F.R. Højen-Sørensen, **L.K. Hansen** and O. Winther. *Mean Field Implementation of Bayesian ICA* In proceedings of 3rd International Conference on Independent Component Analysis and Blind Signal Separation (ICA2001).
178. S. Sigurdsson, J. Larsen, **L.K. Hansen**, P.A. Philipsen and H.C. Wulf. *Outlier estimation and detection: Application to Skin Lesion Classification*, accepted for ICASSP'2002, Orlando, Florida, USA, May 13-17, 2002, vol. I, pp. 1049-1052, (2002).
179. T. Kolenda, **L.K. Hansen**, J. Larsen and O. Winther: *Independent Component Analysis for Understanding Multimedia Content* In H. Bourlard et al. (eds.) Proceedings of IEEE Workshop on Neural Networks for Signal Processing XII Matigny, Valais, Switzerland, Sept. 4-6, 2002, pp. 757-766 (2002).
180. A. Szymkowiak-Have, J. Larsen, **L.K. Hansen**, P.A. Philipsen, E. Thieden, H.C. Wulf: *Clustering of Sun Exposure Measurements*. In H. Bourlard et al. (eds.) Proceedings of IEEE Workshop on Neural Networks for Signal Processing XII Matigny, Valais, Switzerland, Sept. 4-6, 2002, pp. 727-735 (2002).

181. A.S. Lukic, M.N. Wernick, **L.K. Hansen** and S.C. Strother: *An ICA Algorithm for Analyzing Multiple Data Sets*. In proc. of IEEE 2002 Int. Conf. on Image Processing (ICIP-2002). M. Tekalp et al. (eds) (2002).
182. A.S. Lukic, M.N. Wernick, **L.K. Hansen** and S.C. Strother: *Spatially Robust ICA Algorithm for Multiple fMRI Data Sets*. IEEE International Symposium on Biomedical Imaging, (2002).
183. S. Sigurdsson, J. Larsen, **L.K. Hansen**, P.A. Philipsen, H.C. Wulf, *Outlier estimation and detection: Application to Skin Lesion Classification*. In Proc. International conference on acoustics, speech and signal processing, 1:1049-1052 (2002).
184. J. Quinonero-Candela, **L.K. Hansen**: *Time Series Prediction Based on the Relevance Vector Machine with Adaptive Kernels*. International Conference on Acoustics, Speech, and Signal Processing, 1:985-988, (2002).
185. T.F. Pedersen, **L.K. Hansen**: *Bayesian Multichannel Tracking of Periodic Signals: A New Way to Determine the Running Speed of Mechanical Systems* Proc. Seventh Int. Sym. on signal Processing and its applications PARIS, FRANCE, VOLUME II 511-514 (2003).
186. **L.K. Hansen** and M., Dyrholm. *A prediction matrix approach to convolutive ICA*. Proceedings of IEEE Workshop on Neural Networks for Signal Processing XIII Toulouse, France, Sept. 17-19, 249-258, IEEE Press, (2003)
187. **L.K. Hansen** and K.B. Petersen: *Single channel separation of white noise sources is hard* The international conference on blind signal processing ICA 2003 815-820 (Japan).
188. V.D. Calhoun, T. Adali, **L.K. Hansen**, J. Larsen and J.J. Pekar: *ICA of Functional MRI Data: An Overview*. Invited review paper for Fourth International Symposium on Independent Component Analysis and Blind Source Separation, Nara, Japan, April 1-4, 281-288, (2003).
189. J. Larsen, **L.K. Hansen**, T. Kolenda and F.A. Nielsen: *Independent Component Analysis in Multimedia Modeling*. Invited review for Fourth International Symposium on Independent Component Analysis and Blind Source Separation, Nara, Japan, April 1-4, 687-696 (2003).
190. M.S. Pedersen, U. Kjems, K.B. Rasmussen, **L.K. Hansen**: *Semi-blind source separation using head-related transfer functions* Int. Conf. on Acoustics, Speech, and Signal Processing 2004, 713-716, (2004).
191. T. Lehn-Schiøler, **L.K. Hansen**, J. Larsen, J., *Mapping from Speech to Images Using Continuous State Space Models*. Joint AMI/PASCAL/IM2/M4 Workshop on Multimodal Interaction and Related Machine Learning Algorithms, 2004
192. R.E. Madsen, S. Sigurdsson and **L.K. Hansen** *Enhanced Context Recognition by Sensitivity Pruned Vocabularies*. ICPR Cambridge, UK, vol. 2, pp. 483-486, (2004).
193. R.E. Madsen, S. Sigurdsson, **L.K. Hansen** and J. Larsen *Vocabulary Pruning for Improved Context Recognition*. International Joint Conference on Neural Networks, IJCNN, Budapest, Hungary, 80-85, IEEE Press (2004).
194. R.E. Madsen and **L.K. Hansen** *Part-of-Speech Enhanced Context Recognition*. Proc. Machine learning for signal processing, Brazil, 635-644, IEEE Press (2004).



195. M. Dyrholm, **L.K. Hansen**. *CICAAR: Convolutive ICA with an Auto-Regressive Inverse Model*. Independent Component Analysis and Blind Signal Separation, vol. 3195, pp. 594-601, Springer, (2004).
196. R.K. Olsson and **L.K. Hansen**: *Estimating the number of sources in a noisy convolutive mixture using BIC*. 5'th International Conference on Independent Component Analysis and Blind Signal Separation, pp. 618-625, Springer Berlin, (2004).
197. R.K. Olsson and **L.K. Hansen**: *Probabilistic blind deconvolution of non-stationary sources* EUSIPCO 2004, 12th European Signal Processing Conference, 07.09.2004 - 10.09.2004, Vienna-Austria. 1697-1700 (2004)
198. **L.K. Hansen**, P. Ahrendt, and J. Larsen, *Towards cognitive component analysis*. In T. Honkela et al. (eds), Proc. Int. Conference on Adaptive Knowledge Representation and Reasoning AKRR'05, 148-153, (2005). **Best paper award**.
199. M. Vester-Christensen, D. Leimberg, B.K. Ersbøll, **L.K. Hansen**. *Towards emotion modeling based on gaze dynamics in generic interfaces*. HCI International 11th International Conference on Human-Computer Interaction, Las Vegas, USA, (2005).
200. L. Feng and **L.K. Hansen**. *On low level cognitive components of speech*. International Conference on Computational Intelligence for Modelling (CIMCA'05), vol. 2, pp. 852-857, (2005).
201. T. Lehn-Schiøler, **L.K. Hansen**, J. Larsen. *Mapping from Speech to Images Using Continuous State Space Models*. Lecture Notes in Computer Science, vol. 3361, pp. 136 - 145, Springer (2005).
202. R.K. Olsson and **L.K. Hansen**. *A harmonic excitation state-space approach to blind separation of speech*. Advances in Neural Information Processing Systems, vol. 17, pp. 993-1000, MIT Press, (2005).
203. **L.K. Hansen**, L. Feng. *Cogito Componentiter Ergo Sum*. ICA2006 - 6th International Conference on Independent Component Analysis and Blind Source Separation, 446 - 453, (2006).
204. L. Feng, **L.K. Hansen**. *Phonemes as short time cognitive components*. International Conference on Acoustics, Speech and Signal Processing (ICASSP'06) (2006)
205. A.B. Nielsen, **L.K. Hansen** and U. Kjems. *Pitch Based Sound Classification*. IEEE International Conference on Acoustics, Speech, and Signal Processing, (2006).
206. M. Dyrholm, S. Makeig, **L.K. Hansen**. *Model structure selection in convolutive mixtures*. 6th International Conference on Independent Component Analysis and Blind Source Separation, (2006)
207. R.K. Olsson and **L.K. Hansen**. *Blind separation of more sources than sensors in convolutive mixtures*, ICASSP, (2006).
208. T. Bøvith, A.A. Nielsen, **L.K. Hansen**, R.S. Gill, and S. Overgaard. *Detecting Weather Radar Clutter by Information Fusion With Satellite Images and Numerical Weather Prediction Model Output*. IEEE Geoscience and Remote Sensing Symposium (IGARSS) 2006, (2006)

209. T. Bøvith, R.S. Gill, S. Overgaard, **L.K. Hansen**, A.A. Nielsen: *Detecting weather radar clutter using satellite-based nowcasting products*. Proceedings of the Fourth European Conference on Radar in Meteorology and Hydrology (ERAD) 2006, pp. 153-156, (2006).
210. D. Jacobsen, K.H. Madsen, and **L.K. Hansen**. *Identification of non-linear models of neural activity in BOLD fMRI*. Proc. 2006 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, (2006).
211. J. Arenas-García, K.B. Petersen, **L.K. Hansen**: *Sparse kernel orthonormalized PLS for feature extraction in large datasets* NIPS 2006, Vancouver CA (2006).
212. J. Arenas-Garcia, J., Larsen, **L.K. Hansen**, A. Meng: *Optimal filtering of dynamics in short-time features for music organization* Proc. 7th Intl. Conf. on Music Information Retrieval, ISMIR 2006, pp. 290-295, Victoria, Canada, Oct. (2006).
213. T. Lehn-Schiøler, J. Arenas-García, K.B. Petersen and **L.K. Hansen**: *A Genre Classification Plug-in for Data Collection*. Proc. 7th Intl. Conf. on Music Information Retrieval, ISMIR 2006, pp. 320-321, Victoria, Canada, Oct. (2006).
214. **L.K. Hansen**, K.H. Madsen, T. Lehn-Schiøler: *Adaptive regularization of noisy linear inverse problems*, Eusipco 2006, Florence, Italy, (2006).
215. K.W. Jørgensen, L.L. Mølgaard, **L.K. Hansen**: *Unsupervised Speaker Change Detection for Broadcast News Segmentation* Eusipco, 2006 Florence, Italy, (2006).
216. L.L. Mølgaard, K.W. Jørgensen, **L.K. Hansen**, *Castsearch - Context Based Spoken Document Retrieval*. ICASSP, IEEE International Conference on Acoustics, Speech, and Signal Processing, Honolulu, Hawaii, (2007).
217. A.B. Nielsen, S. Sigurdsson, **L.K. Hansen**, J. Arenas-Garcia: *On the relevance of spectral features for instrument classification* IEEE International Conference on Acoustics, Speech, and Signal Processing, Honolulu, Hawaii, (2007)
218. L. Feng, **L.K. Hansen**: *Cognitive components of speech at different time scales* In Proc. of CogSci 2007, the International Conference on Cognitive Science, 983-988 (2007).
219. **L.K. Hansen**, T. Lehn-Schiøler, K.B. Petersen, J. Arenas-Garcia, J. Larsen, and S.H. Jensen: *Learning and clean-up in a large music database*. Accepted for EUSIPCO 2007, European Conference on Signal Processing, Poznan (2007).
220. B. Bodvarsson, **L.K. Hansen**, C. Svarer, G.M. Knudsen: *NMF on positron emission tomography* In Proc. ICASSP 2007, the IEEE International conference on Acoustics, Speech and Signal Processing, Honolulu, Hawaii (2007).
221. H. Laurberg, **L.K. Hansen**: *On affine non-negative matrix factorization*. In Proc. ICASSP 2007, the IEEE International conference on Acoustics, Speech and Signal Processing, Honolulu, Hawaii (2007).
222. J. Arenas-García, A. Meng, K.B. Petersen, T.L. Schiøler, **L.K. Hansen**, J. Larsen: *Unveiling Music Structure Via PLSA Similarity Fusion*. In Proc. IEEE International Workshop on Machine Learning for Signal Processing, IEEE Press 419-424, (2007).

223. M. Mørup, K.H. Madsen, **L.K. Hansen**: *Shifted Independent Component Analysis ICA2007*, London, 89-96, (2007).
224. M. Mørup, K.H. Madsen, **L.K. Hansen**: *Shifted Non-negative Matrix Factorization* In Proc. IEEE International Workshop on Machine Learning for Signal Processing, IEEE Press, (2007).
225. M. Mørup, K.H. Madsen, **L.K. Hansen**: *Approximate L0 constrained Non-negative Matrix and Tensor Factorization*, In Proc. ISCAS 2008, 1328 - 1331, special session on Non-negative Matrix and Tensor Factorization and Related Problems, (2008)
226. P.M. Rasmussen, M. Mørup, **L.K. Hansen**, S.M. Arnfred: *Model Order Estimation for Independent Component Analysis of Epoched EEG Signals*. In Proc. BIOSIGNALS (2) 3-10 (2008).
227. L. Feng, **L.K. Hansen**: *On Phonemes as Cognitive Components of Speech*. In Proc. The 1st IAPR Workshop on Cognitive Information Processing, (2008)
228. L. Feng, **L.K. Hansen**: *Is Cognitive Activity of Speech Based On Statistical Independence?*, In Proc. CogSci 2008 - 30th Annual Meeting of the Cognitive Science Society, (2008)
229. S. Halling, M.K. Sigurdsson, J.E. Larsen, S. Knudsen, **L.K. Hansen**: *MuZeeker: A domain Specific Wikipedia-based Search Engine*. In Proc. First International Workshop on Mobile Multimedia Processing. Tampa, USA (2008).
230. L. Feng, A.B. Nielsen, **L.K. Hansen**: *Vocal Segment Classification in Popular Music*. ISMIR 2008 Ninth International Conference on Music Information Retrieval. Drexel Univ. USA, (2008).
231. A.B. Nielsen, **L.K. Hansen**: *Synchronization and comparison of Lifelog audio recordings* IEEE Workshop on Machine Learning for Signal Processing, MLSP 2008, 474-479, (2008).
232. T. Bjerre, J. Henriksen, C. Nielsen, P.M. Rasmussen, **L.K. Hansen**, K.H. Madsen: *Unified ICA-SPM analysis of fMRI experiments : Implementation of an ICA graphical user interface for the SPM pipeline*. In proceedings of Biosignals 2009 Proceedings (2009).
233. A. Petersen, S. Kyllingsbæk, **L.K. Hansen**: *Towards a neural network model of the visual short-term memory*. In A. Howes, D. Peebles, R. Cooper (Eds.), In proceedings 9th International Conference on Cognitive Modeling ICCM2009, Manchester, UK, 354-359 (2009).
234. B. Wilkowski, M. Szewczyk, P.M. Rasmussen, **L.K. Hansen**, F.Aa. Nielsen *Coordinate based meta-analytic search for the SPM pipeline: The BredeQuery plugin for SPM5*. HEALTHINF 2009 proceedings (2009).
235. M.N. Schmidt, O. Winther, **L.K. Hansen**: *Bayesian non-negative matrix factorization*. In Proc. Independent Component Analysis and Signal Separation, International Conference on Lecture Notes in Computer Science (LNCS) 5541, 540-547 (2009).
236. C. Stahlhut, M. Mørup, O. Winther, **L.K. Hansen**: *SOFOMORE: Combined EEG source and forward model reconstruction* In Proc. IEEE International Symposium on Biomedical Imaging: From Nano to Macro ISBI'09, 450 - 453, (2009)
237. M.K. Petersen, M. Morup, **L.K. Hansen**: *Sparse but emotional decomposition of lyrics* In Proc. LSAS 2009, International workshop on learning semantics of audio signals, Graz, Austria (2009).

238. M.K. Petersen, **L.K. Hansen**, A. Butkus: *Semantic contours in tracks based on emotional tags* In Proc. Computer Music Modeling and Retrieval: Genesis of Meaning in Sound and Music, Springer Lecture Notes in Computer Science **5493**:45-66 (2009).
239. M. Mørup, **L.K. Hansen**: *Tuning Pruning in Sparse Non-negative Matrix Factorization*. In Proc. EUSIPCO 2009, 17th European Signal Processing Conference, August 24-28, 2009, Glasgow, Scotland, UK.
240. C. Stahlhut, M. Mørup, O. Winther, **L.K. Hansen**: *Hierarchical Bayesian Model for simultaneous EEG Source and Forward Model Reconstruction (SOFOMORE)*. In Proc. 2009 IEEE Workshop on Machine Learning for Signal Processing.
241. M. Mørup, **L.K. Hansen**: *Sparse Coding and Automatic Relevance Determination for Multiway models*. In Proc. Signal Processing with Adaptive Sparse Structured Representations Spars09 (2009).
242. T.J. Abrahamsen, **L.K. Hansen**: *Input Space Regularization Stabilizes Pre-Images For Kernel PCA De-Noising*. In Proc. 2009 IEEE Workshop on Machine Learning for Signal Processing, 204-209 (2009).
243. I.J. Cox, R.X. Fu, **L.K. Hansen**: *Probably Approximately Correct Search* In Proc. 2nd International Conference on Theory of Information Retrieval, Cambridge, ENGLAND. Lecture Notes in Computer Science **5766**:2-16 (2009).
244. B. Wilkowski, M. Szewczyk, P.M. Rasmussen, **L.K. Hansen**, F.Aa. Nielsen *BredeQuery: Coordinate-Based Meta-analytic Search of Neuroscientific Literature from the SPM Environment* In Proc. Biomedical Engineering Systems and Technologies Communications in Computer and Information Science, 2010, **52**(4):314-324 (2010)
245. I. Cox, J.H. Zhu, R.X. Fu, **L.K. Hansen**: *Improving Query Correctness Using Centralized Probably Approximately Correct (PAC) Search* In Proc. 32nd European Conference on Information Retrieval Research, Milton Keynes, ENGLAND. Lecture Notes in Computer Science **5993**:265-280 (2010).
246. M.K. Petersen and **L.K. Hansen**: *Latent semantics as cognitive components* In Proc. 2nd International Workshop on Cognitive Information Processing. Elba Island, Italy (2010).
247. B.S. Jensen, J.E. Larsen, K. Jensen, J. Larsen, **L.K. Hansen**: *Estimating Human Predictability From Mobile Sensor Data* In Proc. IEEE International Workshop on Machine Learning for Signal Processing MLSP (2010).
248. B.S. Jensen, J.E. Larsen, K. Jensen, J. Larsen, **L.K. Hansen**: Proc. 21st European Conference on Machine Learning, Mining Ubiquitous and Social Environments Workshop. Barcelona, Spain (2010).
249. C. Stahlhut, H.T. Attias, D. Wipf, **L.K. Hansen**, S.S. Nagarajan: *Sparse spatio-temporal inference of electromagnetic brain sources*. In Proc. Machine Learning in Medical Imaging (MLMI), Lecture Notes in Computer Science (LNCS) **6357**:157-164 (2010).
250. M. Mørup, **L.K. Hansen**. *Archetypal Analysis for Machine Learning*. In Proc. IEEE Workshop on Machine Learning for Signal Processing MLSP (2010).

251. M. Mørup, K.H. Madsen, H. Siebner, **L.K. Hansen**. *Infinite Relational Modeling of Functional Connectivity in Resting State fMRI*, In Proc. Advances in Neural Information Processing Systems (NIPS), Vancouver, CA (2010).
252. **L.K. Hansen**, S.G. Karadogan, L. Marchegiani. *What to measure next to improve decision making? - On top-down task driven feature saliency.*. 2011 IEEE Symposium on Computational Intelligence, Paris, France. CCMB Cognitive Algorithms, Mind, and Brain pp. 81-87 (2011).
253. **L.K. Hansen**, A. Arvidsson, F.A. Nielsen, E. Colleoni, M. Etter. *Good Friends, Bad News - Affect and Virality in Twitter*. In Proc. International Workshop on Social Computing, Network, and Services (SocialComNet 2011). Springer Communications in Computer and Information Science **185**:34-43 (2011).
254. S.G. Karadogan, L. Marchegiani, **L.K. Hansen**, J. Larsen. *How efficient is estimation with missing data?*. In proc. ICASSP'2011 Prague Czech Republic (2011).
255. T.J. Hansen, T.J. Abrahamsen, **L.K. Hansen**. *A Randomized Heuristic For Kernel Parameter Selection With Large-Scale Multi-Class Data*. In Proc. Machine Learning for Signal Processing 2011, Beijing (2011).
256. B.Ø. Wahlgreen, **L.K. Hansen**. *Large Scale Topic Modeling Made Practical*. In Proc. Machine Learning for Signal Processing 2011, Beijing (2011).
257. M. Mørup, M.N. Smith, **L.K. Hansen**. *Infinite Multiple Relational Models For Complex Networks* In Proc. Machine Learning for Signal Processing 2011, Beijing (2011).
258. S.G. Karadogan, L. Marchegiani, J. Larsen, **L.K. Hansen**. *Top-Down Attention With Features Missing At Random* In Proc. Machine Learning for Signal Processing 2011, Beijing (2011).
259. T.J. Hansen, M. Mørup, **L.K. Hansen**. *Non-Parametric Co-Clustering Of Large Scale Sparse Bipartite Networks On The GPU*. In Proc. Machine Learning for Signal Processing 2011, Beijing (2011).
260. M.K. Petersen, C. Stahlhut, A. Stopczynski, J.E. Larsen and **L.K. Hansen**. *Smartphones get emotional: mind reading images and reconstructing the neural sources* In Proc. Affective Computing and Intelligent Interaction Lecture Notes in Computer Science **6975**:578-587 (2011).
261. A. Stopczynski, J.E. Larsen, C. Stahlhut, M.K. Petersen, **L.K. Hansen**. *A Smartphone Interface for a Wireless EEG Headset with Real-Time 3D Reconstruction*. In Proc. Affective Computing and Intelligent Interaction Lecture Notes in Computer Science **6975**:317-318 (2011).
262. M.K. Petersen, **L.K. Hansen**. *Emotional nodes among lines of lyrics* In Proc. of 9th IEEE Conference on automatic face and gesture recognition p. 821-826, (2011).
263. L. Marchegiani, S.G. Karadogan, T. Andersen, J. Larsen, **L.K. Hansen**. *The Role of Top-Down Attention in the Cocktail Party: Revisiting Cherry's Experiment after Sixty Years*. In Proc. 10th International Conference and Workshops on Machine Learning and Applications (IEEE ICMLA) **1**:183-188 (2011).
264. M. Mørup, **L.K. Hansen**, K.H. Madsen. *Frequency constrained ShiftCP modeling of neuroimaging data*. In Proc. Conference Record of the Forty Fifth Asilomar Conference on Signals, Systems and Computers (ASILOMAR IEEE) (2011).

265. M. Mørup, **L.K. Hansen**, K.H. Madsen. Modeling latency and shape changes in trial based neuroimaging data. In Proc. Conference Record of the Forty Fifth Asilomar Conference on Signals, Systems and Computers (ASILOMAR IEEE) (2011).
266. J. Montoya-Martinez, A. Artes-Rodriguez, **L.K. Hansen**, and M. Pontil. *Structured Sparsity Regularization Approach to the EEG Inverse Problems*. Workshop on Cognitive Information Processing CIP, Baiona, Spain (2012).
267. **L.K. Hansen**. *Attention as a Machine Learning Problem*. Workshop on Cognitive Information Processing CIP, Baiona, Spain (2012).
268. P. Garcia-Moreno, A. Artes-Rodriguez, and **L.K. Hansen**. *A Hold-out Method to Correct PCA Variance Inflation*. Workshop on Cognitive Information Processing CIP, Baiona, Spain (2012). **IEEE Spain Section Best Student Paper Prize**.
269. M.K. Petersen and **L.K. Hansen**. *On an emotional node: modeling sentiment in graphs of action verbs*. In Proc. 3rd International Conference on Audio, Language and Image Processing, ICALIP 2012, Shanghai (2012).
270. M.K. Petersen and **L.K. Hansen**. *Cognitive Semantic Networks: Emotional Verbs Throw a Tantrum but Don't Bite*. Workshop on Cognitive Information Processing CIP, Baiona, Spain (2012).
271. T. Herlau, M. Mørup, M.N. Schmidt, and **L.K. Hansen**. *Detecting Hierarchical Structure in Networks* Workshop on Cognitive Information Processing CIP Baiona, Spain (2012).
272. K.W. Andersen, M. Mørup, H. Siebner, K.H. Madsen, **L.K. Hansen**. *Identifying Modular Relations In Complex Brain Networks*. In Proc. IEEE Machine Learning for Signal Processing (2012).
273. T. Herlau, M. Mørup, M.N. Schmidt, **L.K. Hansen** *Modelling Dense Relational Data*. In Proc. IEEE Machine Learning for Signal Processing (2012).
274. P. Mondrup Rasmussen, T. Schmah, K.H. Madsen, T.E. Lund, G. Yourganov, S.C. Strother, **L.K. Hansen**. *Visualization of Nonlinear Classification Models in Neuroimaging - Signed Sensitivity Maps*. In Proc. BIOSIGNALS 2012:254-263 (2012).
275. T.J. Hansen, **L.K. Hansen**, K.H. Madsen. *Decoding Complex Cognitive States Online by Manifold Regularization in Real-Time fMRI*. In Proc. NIPS Workshop on Machine Learning and Interpretation in Neuroimaging Lecture Notes in Computer Science Volume **7263**:76-83 (2012).
276. T.J. Abrahamsen, **L.K. Hansen**. *Restoring the Generalizability of SVM Based Decoding in High Dimensional Neuroimage Data*. In Proc. NIPS Workshop on Machine Learning and Interpretation in Neuroimaging. Lecture Notes in Computer Science **7263**:256-263, Springer Berlin Heidelberg (2012).
277. K.W. Andersen, K.H. Madsen, H. Siebner, **L.K. Hansen**, M. Mørup. *Identification of Functional Clusters in the Striatum Using Infinite Relational Modeling*. In Proc. NIPS Workshop on Machine Learning and Interpretation in Neuroimaging Lecture Notes in Computer Science Volume **7263**:226-233 (2012).

278. P.M. Rasmussen, T. Schmah, K.H. Madsen, T.E. Lund, G. Yourganov, S.C. Strother, **L.K. Hansen**. *Visualization of Nonlinear Classification Models in Neuroimaging-Signed Sensitivity Maps*. In Proc. BIOSIGNALS 2012, SciTePress, pp. 254-263 (2012).
279. J.E. Larsen, A. Stopczynski, C. Stahlhut, M.K. Petersen, **L.K. Hansen**. *A Cross-Platform Smartphone Brain Scanner*. In Proc. Personal Informatics in Practice Workshop CHI2012 pp. 4., (2012).
280. M.K. Petersen, **L.K. Hansen**. *On an emotional node: modeling sentiment in graphs of action verbs*. In Proc. International Conference on Audio, Language and Image Processing (ICALIP) 2012, pp. 308-313. IEEE (2012).
281. C. Stahlhut, H. Attias, A. Stopczynski, M.K. Petersen, J.E. Larsen, **L.K. Hansen**. *An evaluation of EEG scanners' dependence on the imaging technique, forward model computation method, and array dimensionality*. In Proc. Annual International Conference of the IEEE, Engineering in Medicine and Biology Society (EMBC) 2012, pp. 1538-1541. IEEE (2012).
282. B.S. Jensen, R. Troelsgaard, J. Larsen, **L.K. Hansen**. *Towards a universal representation for audio information retrieval and analysis*. In 38th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), IEEE (2013).
283. C. Stahlhut, H.T. Attias, K. Sekihara, D. Wipf, **L.K. Hansen**, S.S. Nagarajan. *A hierarchical Bayesian M/EEG imaging method correcting for incomplete spatio-temporal priors*. In Proc. IEEE 10th International Symposium on Biomedical Imaging (ISBI), pp. 560-563, IEEE (2013).
284. C.B.F. Jensen, M.K. Petersen, J.E. Larsen, A. Stopczynski, C. Stahlhut, M.G. Ivanova, T. Andersen, **L.K. Hansen**. *Spatio temporal media components for neurofeedback*. In 3rd IEEE International Workshop on Multimedia Services and Technologies for E-Health (Must-EH 2013), 2013 IEEE International Conference on Multimedia and Expo (ICME), IEEE (2013).
285. S.T. Hansen, C. Stahlhut, **L.K. Hansen**. *Sparse Source EEG Imaging with the Variational Garrote*. In Proc. PRNI 2013, 3rd International Workshop on Pattern Recognition in NeuroImaging (2013).
286. M.R. Andersen, S.T. Hansen, **L.K. Hansen**. *Learning The Solution Sparsity Of An Ill-Posed Linear Inverse Problem With The Variational Garrote*. In Proc. 2013 IEEE Machine Learning for Signal Processing Workshop, (2013).
287. S.T. Hansen, C. Stahlhut, **L.K. Hansen**. *Expansion of the Variational Garrote to a Multiple Measurement Vectors Model* In Proc. Scandinavian Conference on AI 2013, (2013).
288. B.O. Fruergaard, **L.K. Hansen**. *Compact Web browsing profiles for click-through rate prediction*. In Proc. 2014 IEEE International Workshop on Machine Learning for Signal Processing (MLSP), pp.6. IEEE, (2014).
289. R. Bonnevie, **L.K. Hansen**. *Fast sampling from a Hidden Markov Model posterior for large data*. In Proc. 2014 IEEE International Workshop on Machine Learning for Signal Processing (MLSP), pp.6. IEEE, (2014).
290. M.R. Andersen, O. Winther, **L.K. Hansen**. *Bayesian Inference for Structured Spike and Slab Priors*. In Proc. NIPS 2014 (Advances in Neural Information Processing Systems), pp. 1745-1753. (2014).

291. S.T. Hansen, **L.K. Hansen**. *EEG source reconstruction using sparse basis function representations*. In Proc. 2014 International Workshop on Pattern Recognition in Neuroimaging, pp.4. IEEE, (2014).
292. A.T. Poulsen, S. Kamronn, L.C. Parra, **L.K. Hansen**. *Bayesian Correlated Component Analysis for inference of joint EEG activation*. In Proc. 2014 International Workshop on Pattern Recognition in Neuroimaging, pp.4. IEEE, (2014).
293. S.T. Hansen, **L.K. Hansen**, *EEG source reconstruction performance as a function of skull conductance contrast*. In Proc. ICASSP 2015 IEEE pp. 827-831, (2015).
294. M.C. Axelsen, N. Bak, **L.K. Hansen**. *Testing Multimodal Integration Hypotheses with Application to Schizophrenia Data* In Proc. Pattern Recognition in NeuroImaging (PRNI), 2015 pp.37-40, (2015).
295. S. Hauberg, O. Freifeld, A.B. Lindbo Larsen, J.W. Fisher III, **L.K. Hansen**. In Proc. of the 19th international Conference on Artificial Intelligence and Statistics (AISTATS) 51:342-350 (2016).
296. S.T. Hansen, I. Winkler, **L.K. Hansen**, K.R. Muller, S. Dahne. *Fusing Simultaneous EEG and fMRI Using Functional and Anatomical Information* in Pattern Recognition in NeuroImaging. In Proc. Pattern Recognition in NeuroImaging (PRNI), 2015 pp.33-36, (2015).
297. G. Arvanitidis, **L.K. Hansen**, S. Hauberg. *A Locally Adaptive Normal Distribution*. Accepted NIPS 2016, Preprint: arXiv:1606.02518 (2016).

- **Book chapters w/ peer review**

298. J. Larsen, C. Svarer, L. Nonboe Andersen and **L.K. Hansen**: *Adaptive Regularization in Neural Network Modeling* in “The Book of Tricks”, Eds. Klaus Robert Müller et al., Lecture Notes in Computer Science 1524, Germany: Springer-Verlag, (1998).
299. J.A. Jensen, O.T. Andersen, J.E. Wilhjelm, B. Kofoed and L.K. Hansen: *Biomedical Engineering at the Technical University of Denmark* In: Dansk Medikoteknisk Forening - 25'th Anniversary Celebration Book. pp. 51-60. (1998)
300. **L.K. Hansen**, J. Larsen and T. Kolenda: *On Independent Component Analysis for Multimedia Signals* To appear in L. Guan, S.Y. Kung and J. Larsen (eds.) *Multimedia Image and Video Processing*, CRC Press (2000).
301. **L.K. Hansen**: *Blind Separation of Noisy Image Mixtures*. In “Advances in Independent Component Analysis”, Perspectives in Neural Computing, Springer-Verlag p. 165-187 (2000).
302. T. Kolenda and **L.K. Hansen**: *Independent Components in Text*. In “Advances in Independent Component Analysis”, Perspectives in Neural Computing, Springer-Verlag p. 237-259 (2000).
303. **L.K. Hansen**: *Thinking Machines - Thinking Images*. In ‘Festskrift i anledning af Olaf B. Paulson’s 60 års fødselsdag’. Eds. G.M. Knudsen et al., 34-43 (2000).



304. M. Hintz-Madsen, **L.K. Hansen**, J. Larsen, and K.T. Drzewicki: *A Probabilistic Neural Network Framework for Detection of Malignant Melanoma*. In R.N.G. Naguib and G.V. Sherbet (eds.) *Artificial Neural Networks in Cancer Diagnosis, Prognosis and Patient Management*, CRC Press, ISBN 0-8493-9692-1, Chap. **13**: 141-183, (2001).
305. **L.K. Hansen**, A. Purushotham, and S.G. Kim. *Testing competing hypotheses about single trial fMRI* Explorative methods in Neuroimaging (Ed.) F. Sommer, MIT Publishing Co., Chap **3**: 49-62 (2003).
306. **L.K. Hansen** *Networking real and virtual brains*. Bridging from technology to society, pp. 166-175, Technical University of Denmark (2004).
307. **L.K. Hansen**: *On Bayesian Transduction - Implications for the Covariate Shift Problem* In J. Quinero Candela, M. Sugiyama, A. Schwaighofer and N.D. Lawrence (eds) (2009) *Dataset shift in machine learning*, MIT Press, (2009).
308. J.E. Larsen, S. Halling, M. Sigurdsson and **L.K. Hansen**: *MuZeeker - Adapting a music search engine for mobile phones*. Springer Lecture Notes in Computer Science 'Mobile Multimedia Processing: Fundamentals, Methods, and Applications', Selected papers from First International Workshop on Mobile Multimedia Processing, Tampa, USA, p. 154-169 (2010).
309. B. Wilkowsi, M. Szewczyk, P.M. Rasmussen, **L.K. Hansen**, F.A. Nielsen: *BredeQuery: Coordinate-Based Meta-analytic Search of Neuroscientific Literature from the SPM Environment*. In Biomedical Engineering Systems and Technologies: International Joint Conference, BIOSTEC 2009, Porto, Portugal, January 14-17, 2009, Revised Selected Papers, pp. 314-324, Springer-Verlag New York Inc (2010).
310. S.C. Strother, P.M. Rasmussen, N.W. Churchill, **L.K. Hansen**. Stability and Reproducibility in fMRI Analysis. In *Practical Applications of Sparse Modeling*, Ed. I. Rish et al. MIT Press 99-120 (2014).

**Fortegnelse over bedømmelsesudvalg til  
stilling 42233 Associate Professor in Small Antennas ved Department of Electronic Systems**

**Navn:** Associate Professor Jan H. Mikkelsen

**Arbejdssted:** Department of Electronic Systems, AAU

**E-mail:**

**Navn:** Associate Professor Ville V. Viikari

**Arbejdssted:** Department of Electronics and Nanoengineering, Aalto University, Finland

**E-mail:**

**Navn:** Udviklingschef Mikael Bergholz Knudsen

**Arbejdssted:** Elektronik og computerteknologi, Ingeniørhøjskolen, Aarhus University

**E-mail:**

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

## Associate Professor in Small Antennas

**Position No.** 42233

Godkendt d. 12-6-17  
  
 Eskild Holm Nielsen  
 dekan

At the Technical Faculty of IT and Design, Department of Electronic Systems, Section for Antennas, Propagation and Radio Networking (APNet), a position as Associate Professor in Small Antennas is open for appointment from August 1st, 2017 or as soon as possible thereafter.

The Department of Electronic Systems is one of the largest departments at Aalborg University with a total of more than 250 employees. The department is internationally recognized in particular for its contributions within Information and Communication Technology (ICT). The research and teaching of the Department of Electronic Systems focus on electronic engineering and the activity areas are organized in the sections: Antennas, Propagation and Radio Networking section (APNet), Automation Control section (Control), Signal and Information Processing section (SIP), Wireless Communication Networks section (WCN) and Communication, Media and Information technologies (CMI).

The department focuses on maintaining a close interplay with the university's surroundings - locally, nationally and internationally - as well as producing unique basic research and educating talented and creative engineers. The department collaborates with leading ICT researchers all over the world.

### Job description

The Antennas, Propagation and Radio Networking (APNet) section focuses on antennas and propagation transceiver solutions for emerging radio communication systems. Our focus in all aspects is largely upon small terminal devices.

Our research areas include:

Antenna  
 Radio Propagation  
 RF/Milimeter circuits and systems  
 Electromagnetics  
 Bioelectromagnetics  
 MIMO Communications

The group is mainly focused on research and has a very strong research record and has conducted and are conducting a very large number of large research projects (> 1 M EUR) often jointly with the international industry.

The research topics of the position include (but are not limited to):

Electrically small Antennas  
 Antenna designs for integrated antenna solutions  
 Small Millimeter-wave antennas  
 Antennas for mobile terminals  
 Antennas for Nano Satellites

Further it is expected that the successful candidate will be:

- Leading the AAU Antenna research including the new large Antenna facility.
- Writing successful applications for research funding
- Supervising students and to a minor degree teaching (mainly master, PhD level)

The position is mainly focused on research, but will also include teaching. The teaching will be within the BSc/MSc study programmes at the School of Information and Communication Technology and the Technical Doctoral School of IT and Design. At Aalborg University, the teaching is based on problem based learning.

The successful candidate should demonstrate strong publication records in top international journals and strong research activities within ideally, all the aforementioned research areas. Further demonstrate research management, have experience with industrial research and cooperation and with experimental antenna measurements. The candidate shall also be able to coordinate and manage junior

researchers working on various aspects of antennas for small mobile terminals.

You may obtain further professional information from Professor Gert Frølund Pedersen, phone +45 9940 8660, e-mail gfp@es.aau.dk

### **Qualification requirements:**

The level of qualification for Associate Professors shall correspond to the level, which can be achieved on the basis of the appointment as Assistant Professor, but may be achievable in other ways. The appointment presupposes that the applicant can demonstrate original scientific production at an international level as well as documented teaching qualifications. Appointment to the position requires that both research and teaching qualifications are at the requested level. The two qualifications will be given equal and principal priority in the overall assessment.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 10 publications.
- Teaching qualifications described in the teaching portfolio. If this is not enclosed the applicant must include an explanation for its absence.
- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position.
- References/recommendations.
- Personal data.

The applications are only to be submitted online by using the "Apply online" button below. An assessment committee will assess all candidates.

For further information concerning the application procedure please contact XXXX XXXX by mail [XXXX@adm.aau.dk](mailto:XXXX@adm.aau.dk) or phone (+45) 9940 XXXX / (+45) 9940 XXXX.

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen [here](#). (ENGINEERING) [here](#). (TECH) [here](#) (sund).

### **Workplace**

Aalborg

### **Agreement**

Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

### **Deadline**

26/06/2017

### **Apply online**

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

[top](#)



- Born in 1979, Finland, Finnish citizen, male
- URL for web site: [https://people.aalto.fi/index.html?language=english#ville\\_viikari](https://people.aalto.fi/index.html?language=english#ville_viikari)
- ResearcherID: G-2471-2013
- Associate Professor at Aalto University, School of Electrical Engineering, Department of Electronics and Nanoengineering, 2016–present
- Deputy Head of Department, Aalto University, School of Electrical Engineering, Department of Electronics and Nanoengineering, 2017-present

### EDUCATION AND DEGREES

- Title of Docent: Wireless sensors and antenna measurements, Helsinki University of Technology (TKK), Department of Radio Science and Engineering, June 30, 2009
- D.Sc. (Tech.) degree (with distinction<sup>1</sup>), Helsinki University of Technology (TKK), May 21, 2007. Title of Dissertation: Antenna pattern correction techniques at submillimeter wavelengths
- M.Sc. degree, TKK, Major subject: Radio engineering, Mar. 29, 2004

### LINGUISTIC SKILLS

- Finnish: native
- English: very good (self-assessment)
- Germany: basics (self-assessment)
- Swedish: basics (self-assessment)

### CURRENT POSITION

- Associate Professor (tenured), Department of Electronics and Nanoengineering, Aalto University, School of Electrical Engineering, Finland, Feb. 2016–

### PREVIOUS WORK EXPERIENCE

- Assistant Professor (2<sup>nd</sup> level), Department of Radio Science and Engineering, Aalto University, School of Electrical Engineering, Finland, Oct. 2012–Jan. 2016
- Senior Scientist at VTT Technical Research Centre of Finland, Sensing and wireless devices, 2007–2012
- Visiting Post-Doc Researcher at University of California in San Diego, 2010
- Post-doctoral Researcher of the Academy of Finland, 2010–2012
- Researcher at TKK (now part of Aalto-University), 2004–2007

### MOST IMPORTANT RESEARCH FUNDING (during the past 5 years)

- Principal investigator, “Co-design of radar antennas and front ends,” contract research, 2016-2017, in total 140 k€
- Principal investigator, “Antennas for metal-covered phones,” contract research, 2016-2017, in total 87 k€
- Partner, “5G transceivers for base stations and mobile devices,” Finnish Funding Agency for Technology and Innovation (TEKES), 2016 – 2018, in total 574 k€
- Partner, “Millimetre-wave front-ends for 5G wireless backhaul and access networks,” Finnish Funding Agency for Technology and Innovation (TEKES), 2016 – 2018, in total 437 k€
- Principal investigator, “5G Antennas” contract research, 2015-2016, in total 119 k€

---

<sup>1</sup> Dissertation has particular merits and belongs to top 10-15 %.

- Principal investigator, “RF-powered ubiquitous computing,” Academy of Finland, 2015-2019, Academy of Finland, in total 953 k€
- Principal investigator, “Horn antenna phased-array,” contract research, 2015-2016, in total 272 k€
- Principal investigator, “Sensor RFID,” contract research, 2014-2015, in total 157 k€
- Principal Investigator, “MEMS sensor concept based on ultrasound resonance”, Academy of Finland, 2011-2014, in total 597 k€
- Partner, “Advanced Radar Tracking and Classification for Enhanced Road Safety ARTRAC”, EU FP7, 2011-2014, in total 580 k€
- Partner, ”Demining tool-BOX for humanitarian clearing of large scale area from anti-personal landmines and cluster munitions”, EU FP7, 2013 – 2015, in total 410 k€
- Principal Investigator, “Social Media for Amateur Tennis (SMART)”, Finnish Funding Agency for Technology and Innovation (TEKES), 2012 – 2013, in total 351 k€
- Principal Investigator, “Zero power sensor network”, Finnish Metals and Engineering Competence Cluster (FIMECC) Strategic Centre for Science, Technology and Innovation, 2011 - 2014, in total 725 k€
- Principal Investigator, Post-doctoral research project, Academy of Finland 2010–2012, in total 254 k€

## OFFICIALLY APPOINTED SUPERVISOR TO DOCTORAL STUDENTS

### Supervised Dissertations

- Jinsong Song, “On passive wireless sensors based on intermodulation communication,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Oct. 2015, main-supervisor.
- Zhou Du, “Development of characterization methods for antennas and quasi-optics,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Jan. 2015, co-instructor.
- Janne Ilvonen, “Multiband and environment insensitive mobile terminal antennas,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Dec. 2014, co-supervisor.
- Azremi Abdullah Al-Hadi, “Multi-element Antennas for Mobile Communication Systems: Design, Evaluation and User Interactions,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Nov. 2013, co-supervisor.

### Currently supervised post-docs and doctoral students

- Vasilii Semkin, Post-doc
- Kimmo Rasilainen, “Passive wireless sensors and sensor antennas,” exp. grad. in Sept. 2017
- Mazidul Islam, “Sensor RFIDs based on frequency modulation,” exp. grad. in Sept. 2017
- Colm McCaffrey, “Wireless sensors and detectors for inaccessible locations,” exp. grad. in 2018
- Jari-Matti Hannula, “Mobile antennas and antenna measurement techniques,” exp. grad. in 2020
- Joni Kurvinen, “Antennas for 5G mobile phones,” exp. grad. in 2021
- Tauseef Siddiqui, “RF-powered ubiquitous devices,” exp. grad. in 2021
- Sabin Karki, “Antennas for 5G base stations,” exp. grad. in 2021
- Resti Montoya, “Mm-wave beam-steerable handset antennas,” exp. grad. in 2021

## MERITS IN TEACHING AND PEDAGOGICAL COMPETENCE

### Pedagogical training and competence

- Aalto University pedagogical training I, 25 ECTS credits, completed in 2015

### Curriculum planning

- Chair of Degree Programme Committee for Radio and Nanosciences, Aalto University School of Electrical Engineering, 2017-
- Vice-chair of Degree Programme Committee for Radio and Nanosciences, Aalto University School of Electrical Engineering, 2014-2017
- Member of quality of education committee, Aalto University School of Electrical Engineering, 2015-
- Participation in the Master degree reform of the Aalto University, School of Electrical Engineering, 2012–2014
- Participation in the BioIT Master program development committee, Aalto University, 2013
- Participation in the Bachelor degree reform of the Aalto University, School of Electrical Engineering, 2012–2013

## Supervised Theses

- 17 supervised Master's Theses in Aalto University School of Electrical Engineering

## Implementation of courses

- Microwave engineering II, grad. level, 5 ECTS credits, 3/2017-5/2017
- Antennas workshop, grad. level, 5 ECTS credits, 9/2016-12/2016
- Microwave engineering II, grad. level, 5 ECTS credits, 3/2016-5/2016
- Antennas workshop, grad. level, 5 ECTS credits, 9/2015-12/2015
- RF and microwave engineering, grad. level, 5 ECTS credits, 1/2015-5/2015, 1/2014-5/2014, 1/2013-5/2013
- Antennas – Practice, grad. and post-grad level, 5 ECTS credits, 9/2014-12/2014, 9/2013-12/2013
- Parts of Radiocommunications Systems, undergrad. level, 3 ECTS credits, 1/2013-5/2013
- Antenna measurements at millimetre and submillimetre wavelengths, post-grad. level, 2-4 ECTS credits, international intensive course (1 week), 5/2015, 5/2013, 5/2011, 5/2009, 5/2007, 5/2005
- Radio engineering, laboratory course, grad. level, 7 ECTS credits, 9/2005-12/2005
- Fundamentals of Radio Engineering, grad. level, 5 ECTS credits, 9/2004-12/2004

## Teaching evaluation

- Teaching demonstration related to tenure track professorship at the Aalto University, School of Electrical Engineering, Department of Radio Science and Engineering. The demonstration was titled: "Plane Wave" and it was evaluated "good" (3 in 1-5 scale) by the evaluation board, 2012.
- Teaching demonstration related to Docentship at the Radio Laboratory of TKK (now the Department of the Radio Science and Engineering in the School of Electrical Engineering of Aalto University). The demonstration was titled: "Wireless readout techniques of passive sensors" and it was evaluated "really good" (4 in 1-5 scale) by the evaluation board, 2009.
- Evaluated as **the best teacher** (out of 7-9) in the course "European school of antennas: Antenna measurements at millimeter and submillimetre wavelengths" in 2007, 2009, and 2013.

## Teaching awards

- AP-S 2016 Student Design Contest, among semi-finalists, Mentor to the Aalto ELEC team, Aalto University, (Mikko Leino, Henri Partanen, Rasmus Luomaniemi, Niko Lindvall), 2016.
- AP-S 2015 Student Design Contest, 3<sup>rd</sup> prize, Mentor to the Aalto ELEC team, Aalto University, (Gaurav Khairkar, Sampo Salo, Minja Axelsson, Juho Kortekangas, Joonas Rahkonen), 2015.
- AP-S 2014 Student Design Contest, 2<sup>nd</sup> prize, Mentor to the Aalto ELEC team, Aalto University (Aapo Oksman, Aapo Vienamo, Mikko Heino, Jalmari Toivanen), 2014.

## AWARDS, PRIZES AND HONOURS

- Young Researcher Award of the Year 2014, presented by the Finnish Foundation for Technology Promotion.
- FIMECC Prize 2013 for the project: "Zero Power Sensor Network (2010-2013)," awarded by the Finnish Metals and Engineering Competence Cluster, I was the project manager from 2010 to 2012.
- IEEE Sensors Council 2010 Early Career GOLD Award with citation: "*for substantial contributions to the advancement of wireless sensor technology,*" 2010.
- The best presentation at the conference by young scientist, XXXI Finnish URSI Convention on Radio Science, Electromagnetics, 2008.
- Student Paper Award, Antenna Measurement Techniques Association, 2005.

## SCIENTIFIC ACTIVITY AND ITS IMPACT

### Current research activities

- **Antennas for mobile devices:** We continuously develop electrically small antennas especially for the future personal communication needs. Our research results will partly enable wireless broadband communication of the future, for instance.
- **Beam-steerable millimeter-wave antennas:** We develop beam-steerable millimeter-wave antennas for future 5G base stations and military applications.
- **RF-powered devices:** We develop wireless sensors and other devices that are powered by ambient radio waves. These devices use either the modulated back- or re-scattering principle for communication.

## Publications

- 42 international peer-reviewed journal articles (authored or co-authored), 50 international peer-reviewed conference publications
- Author/co-author in 22 patents or patent applications and 6 granted patents
- H-indices: Scopus/13, ISI Web of Science/11, Google Scholar/16

## Scientific expert tasks

- Assessment committee member for a doctoral dissertation: Emil Buskgaard, "The dynamics of the user effect on electrically small antennas," Aalborg University, Denmark, 2017.
- Pre-examiner of two doctoral dissertations: (Erja Sipilä, "Novel manufacturing methods and materials for UHF RFID tags in identification and sensing applications," Tampere University of Technology, Finland, 2016; Arto Korpisalo, "Geotomographic research on attenuating material using the middle radio frequency band," University of Helsinki, Finland, 2016)
- Committee member for IEEE Sensor Council GOLD initiative, 2013-2014
- Reviewer of many scientific journals, such as: IEEE Transactions on Antennas and Propagation; IEEE Transactions on Microwave Theory and Techniques; IEEE Journal of Solid State Circuits; IEEE Microwave and Wireless Components Letters; IEEE Sensors Journal; IEEE Transactions on Industrial Electronics; IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control; IEEE Transactions on Intelligent Transportation Systems; URSI Radio Science Bulletin; Sensors
- Evaluator for funding applications: Technology Foundation STW, The Netherlands, 2014; Innovation Fund Denmark, 2015

## Organisation of international conferences

- TPC member of the European Microwave Week 2017.
- TPC member of the European Conference on Antennas and Propagation, 2017.
- Chair of the Technical Program Committee, 7<sup>th</sup> ESA Workshop on Millimetre-Wave Technology and Applications, Espoo, Finland, 2016.
- Chair of the Technical Program Committee, 9<sup>th</sup> Global Symposium on Millimeter Waves (GSMM 2016), Espoo, Finland, 2016.
- Chair of the Technical Program Committee, 6<sup>th</sup> ESA Workshop on Millimetre-Wave Technology and Applications, Espoo, Finland, 2011.
- Chair of the Technical Program Committee, 4<sup>th</sup> Global Symposium on Millimeter Waves (GSMM 2011), Espoo, Finland, 2011.

## Commercialization merits

- Startup Sauna program, an acceleration program for early stage startups, 2013
- Best Business Plan-Award, Venture Cup Finland, Business plan competition, 2008

## SCIENTIFIC POSITIONS OF TRUST AND ADMINISTRATION

- Chair of the IEEE Finland Section joint Chapter of Antennas and Propagation, Electronic devices, and Microwave Theory and Techniques, 2013-
- Committee member for IEEE Sensor Council GOLD initiative, 2013 and 2014
- Senior member of IEEE
- Board member, Finnish signals officers' association



# Mikael Bergholz Knudsen

Udviklingschef

- [Oversigt](#)
- [Publikationer](#)
- [CV](#)

Mikael Bergholz Knudsen

Udviklingschef

- Ingeniørhøjskolen Aarhus Universitet - Elektronik og computerteknologi

**Postadresse:**

Finlandsgade 22  
5125, 328  
8200  
Aarhus N  
Danmark

**E-mail:** mbk@ase.au.dk

**Mobil:** +4521745355

## Career and professional experience

2013: Head of Electronic and Computer Engineering at ASE

2009-2013: Project Manager at Intel Mobile Communication, Denmark.

2005-2009: System architect for RF engines at Infineon Technologies Aalborg, Denmark.

2004-2005: Manager for RF and antenna group at FL-Telecom Aps in Aalborg, Denmark

2004: Associate research professor on 4G mobile phones project at Aalborg University

2001-2004: Project manager and line manager, Maxon Telecom, Denmark

1998-2001: Industrial Ph.D. student at Siemens Mobile Phones in Aalborg, Denmark

1993-1998: R&D engineer, Maxon Cellular Systems A/S in Aalborg, Denmark

1991-1992: Teaching assistant, Aalborg University Centre in Aalborg, Denmark

1989-1990: Biomedical engineer, Siemens A/S in Ballerup, Denmark

1985-1986: Internship, Stibo Datagrafik A/S in Aarhus, Denmark

## Educational background

2012: Executive MBA “Master in Management of Technology” from Aalborg University.

2001: Ph.D. titled “Antenna Systems for Handsets” from Aalborg University

1992: M.Sc.E.E from Aalborg University in telecommunications

1989: B.Sc.E.E from Aarhus Teknikum

1985: Svagstrømsteknisk Værkstedsskole from Aarhus Tekniske skole

1984: Studentereksamen, mathematic and physics from Viby Amtsgymnasium

1981: High School Graduation, Mora High School, Minnesota, USA.

1980: Primary School Graduation, Tranbjerg skole, Aarhus, Denmark

## Publikationer

- 2017
- Udgivet

[\*\*ENERGISING ELECTRONICS ENGINEERING: IMPROVING LEARNING BY FLIPPING THE CLASSROOM AND GOING ONLINE.\*\* / Godsk, Mikkel; Hansen, Hans Jørgen; Slavensky, Henning; Lysgaard, Per; Lindhardtzen, Mette Ramsing; Knudsen, Mikael Bergholz.](#)

INTED2017 Proceedings. 2017. s. 8523-8530 (11th International Technology, Education and Development Conference).

Konferencebidrag i proceedings

- Udgivet

[\*\*ENERGISING ELECTRONICS ENGINEERING: IMPROVING LEARNING BY FLIPPING THE CLASSROOM AND GOING ONLINE.\*\* / Godsk, Mikkel; Hansen, Hans Jørgen; Knudsen, Mikael Bergholz; Lindhardtzen, Mette Ramsing; Lysgaard, Per; Slavensky, Henning.](#)

2017. Abstract from INTED 2017, Valencia, Spanien.

Konferenceabstrakt til konference

- 2014
- Udgivet

[Antenna Tuning via Multi-Feed Transceiver Architecture.](#) / Alrabadi, Osama N. (Opfinder); Tatomirescu, Alexandru D. (Opfinder); [Knudsen, Mikael Bergholz \(Opfinder\)](#); Pedersen, Gert F. (Opfinder); Pelosi, Mauro (Opfinder); Caporal Del Barrio, Samantha (Opfinder); Olesen, Poul (Opfinder); Bundgaard, Peter (Opfinder).

Patentnummer: US20140062813 A1;CN103684501A; DE102013108274A1;. mar. 06, 2014.

Patent

- Udgivet

[Antenna system, method and mobile communication device.](#) / Pelosi, Mauro (Opfinder); Tatomirescu, Alexandru D. (Opfinder); [Knudsen, Mikael Bergholz \(Opfinder\)](#); Pedersen, Gert F. (Opfinder); Alrabadi, Osama N. (Opfinder); Caporal Del Barrio, Samantha (Opfinder); Olesen, Poul (Opfinder); Bundgaard, Peter (Opfinder).

Patentnummer: US20140043201 A1; CN103579778A, DE102013108132A1. feb. 13, 2014.

Patent

- Udgivet

[Probe Selection in Multi-probe OTA Setups.](#) / Fan, Wei; Sun, Fan; Nielsen, Jesper O.; De Lisbona, Xavier Carreno Bautista; Ashta, Jagjit S.; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

I: I E E E Transactions on Antennas and Propagation, 2014.

Tidsskriftartikel

- 2013
- Udgivet

[Channel verification results for the SCME models in a multi-probe based MIMO OTA setup.](#) / Fan, Wei; Carreño, Xavier; Ashta, Jagjit S.; Nielsen, Jesper; Pedersen, Gert F.; [Knudsen, Mikael Bergholz](#).

IEEE Vehicular Technology Conference. 2013. 6692133.

Konferencebidrag i proceedings

- Udgivet

[3D channel model emulation in a MIMO OTA setup.](#) / Fan, Wei; Kyösti, Pekka; Sun, Fan; Nielsen, Jesper; Carreño, Xavier; Pedersen, Gert F.; [Knudsen, Mikael Bergholz.](#)

IEEE Vehicular Technology Conference. 2013. 6692020.

Konferencebidrag i proceedings

- Udgivet

[Antenna pattern impact on MIMO OTA testing.](#) / Fan, Wei; Nielsen, Jesper O.; Franek, Ondrej; Carreño, Xavier; Ashta, Jagjit S.; [Knudsen, Mikael Bergholz;](#) Pedersen, Gert F.

I: I E E E Transactions on Antennas and Propagation, Vol. 61, Nr. 11, 6587285, 25.11.2013, s. 5714-5723.

Tidsskriftartikel

- Udgivet

[Agile and Adaptive transmitter-Receiver Isolation.](#) / Alrabadi, Osama N. (Opfinder); Tatomirescu, Alexandru D. (Opfinder); [Knudsen, Mikael Bergholz \(Opfinder\);](#) Pedersen, Gert F. (Opfinder); Pelosi, Mauro (Opfinder); Caporal Del Barrio, Samantha (Opfinder); Olesen, Poul (Opfinder); Bundgaard, Peter (Opfinder).

Patentnummer: US 20130244593 A1, DE102013102799 A1. sep. 19, 2013.

Patent

- Udgivet

[Agile and Adaptive Wideband MIMO Antenna Isolation.](#) / Alrabadi, Osama N. (Opfinder); Tatomirescu, Alexandru D. (Opfinder); [Knudsen, Mikael Bergholz \(Opfinder\);](#) Pedersen, Gert F. (Opfinder); Pelosi, Mauro (Opfinder); Caporal Del Barrio, Samantha (Opfinder); Olesen, Poul (Opfinder); Bundgaard, Peter (Opfinder).

Patentnummer: US20130244594 A1;CN103326738A, DE102013102799A1;. sep. 19, 2013.

Patent

- Udgivet

[Minimizing Mutual Coupling.](#) / [Knudsen, Mikael Bergholz \(Opfinder\);](#) Adler, Bernd (Opfinder); Bundgaard, Peter (Opfinder); Mueller, Jan-Erik (Opfinder); Pedersen, Gert F. (Opfinder); Pelosi, Mauro (Opfinder).

Patentnummer: US8521107 B2; US2010304688-A1; DE102010029314-A1; US8170510-B2.  
aug. 27, 2013.

Patent

- Udgivet

[\*\*Impact of system non-idealities on spatial correlation emulation in a multi-probe based MIMO OTA setup.\*\*](#) / Fan, Wei; Nielsen, Jesper O.; Carreno, Xavier; Ashta, Jagjit S.; Pedersen, Gert F.; [Knudsen, Mikael Bergholz.](#)

2013 7th European Conference on Antennas and Propagation, EuCAP 2013. 2013. s. 1663-1667  
6546559.

Konferencebidrag i proceedings

- Udgivet

[\*\*Test setup for anechoic room based MIMO OTA testing of LTE terminals.\*\*](#) / Carreno, Xavier; Fan, Wei; Nielsen, Jesper O.; Ashta, Jagjit Singh; Pedersen, Gert F.; [Knudsen, Mikael Bergholz.](#)

2013 7th European Conference on Antennas and Propagation, EuCAP 2013. 2013. s. 1417-1420  
6546511.

Konferencebidrag i proceedings

- Udgivet

[\*\*Verification of emulated channels in multi-probe based MIMO OTA testing setup.\*\*](#) / Fan, Wei; Carreno, Xavier; Nielsen, Jesper O.; Ashta, Jagjit S.; Pedersen, Gert F.; [Knudsen, Mikael Bergholz.](#)

2013 7th European Conference on Antennas and Propagation, EuCAP 2013. 2013. s. 97-101  
6546223.

Konferencebidrag i proceedings

- Udgivet

[\*\*Emulating spatial characteristics of MIMO channels for OTA testing.\*\*](#) / Fan, Wei; De Lisbona, Xavier Carreno Bautista; Sun, Fan; Nielsen, Jesper Ødum; [Knudsen, Mikael Bergholz;](#) Pedersen, Gert Frolund.

I: I E E E Transactions on Antennas and Propagation, Vol. 61, Nr. 8, 6514488, 07.05.2013, s.  
4306-4314.

Tidsskriftartikel

- Udgivet

[\*\*3: it's the magic number.\*\*](#) / Fan, Wei; Sun, Fan; Kyösti, Pekka; Nielsen, Jesper O.; De Lisbona, Xavier Carreno Bautista; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

I: Electronics Letters, Vol. 49, Nr. 9, 25.04.2013.

Letter

- Udgivet

[\*\*3D channel emulation in multi-probe setup.\*\*](#) / Fan, W.; Sun, F.; Kyösti, P.; Nielsen, J.; Carreño, X.; [Knudsen, Mikael Bergholz](#); Pedersen, G.

I: Electronics Letters, Vol. 49, Nr. 9, 25.04.2013, s. 623-625.

Tidsskriftartikel

- Udgivet

[\*\*Breaking the transmitter-receiver isolation barrier in mobile handsets with spatial duplexing.\*\*](#) / Alrabadi, Osama N.; Tatomirescu, Alexandru D.; [Knudsen, Mikael Bergholz](#); Pelosi, Mauro; Pedersen, Gert Frolund.

I: I E E E Transactions on Antennas and Propagation, Vol. 61, Nr. 4, 6376102, 16.04.2013, s. 2241-2251.

Tidsskriftartikel

- Udgivet

[\*\*Wireless Communication Device Antenna with Tuning Elements.\*\*](#) / [Knudsen, Mikael Bergholz \(Opfinder\)](#); Adler, Bernd (Opfinder); Bundgaard, Peter (Opfinder); Mueller, Jan-Erik (Opfinder); Pedersen, Gert Frølund (Opfinder); Pelosi, Mauro (Opfinder).

IPC nr.: US2010302123-A1; DE102010029265-A1; US 8405568 B2. mar. 26, 2013.

Patent

- Udgivet

[\*\*Over-The-Air performance optimization and testing of LTE devices.\*\*](#) / [Knudsen, Mikael Bergholz](#); Ioffe, Anatoliy; De Lisbona, Xavier Carreno Bautista.

2013.

Paper

- 2012
- Udgivet

[Automatic fuse architecture.](#) / [Knudsen, Mikael Bergholz \(Opfinder\)](#); Jalili, Feridoon (Opfinder); Wilhelm, Michael (Opfinder); Adler, Bernd (Opfinder).

Patentnummer: US8331889 B2. dec. 04, 2012.

Patent

- Udgivet

[Impact of probe placement error on MIMO OTA test zone performance.](#) / Fan, Wei; [Nielsen, Jesper](#); Carreño, Xavier; Franek, Ondrej; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

LAPC 2012 - 2012 Loughborough Antennas and Propagation Conference. 2012. 6402968.

Konferencebidrag i proceedings

- Udgivet

[Measurement verification of plane wave synthesis technique based on multi-probe MIMO-OTA setup.](#) / Fan, Wei; Carreño, Xavier; Nielsen, Jesper O.; Olesen, Kim; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

IEEE Vehicular Technology Conference. 2012. 6398925.

Konferencebidrag i proceedings

- Udgivet

[MIMO OTA Absolute Data Throughput Concept.](#) / Szini, Istvan; Ioffe, Anatoliy; De Lisbona, Xavier Carreno Bautista; [Knudsen, Mikael Bergholz](#).

2012.

Paper

- Udgivet

[Simulation and measurement of narrow-band antennas for small terminals.](#) / Pelosi, Mauro; Franek, Ondrej; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

IEEE Vehicular Technology Conference. 2012. 6240039.

Konferencebidrag i proceedings

- Udgivet

[Impedance Tuning of Transmitting and Receiving Antennas.](#) / [Knudsen, Mikael Bergholz](#) (Opfinder); Bundgaard, Peter (Opfinder); Mueller, Jan-Erik (Opfinder); Pedersen, Gert F. (Opfinder).

Patentnummer: US008232925B2 US; DE102010029258-A1; US2010302106-A1. jul. 31, 2014.

Patent

- Udgivet

[Smart Antenna Front End.](#) / Olesen, Poul; [Knudsen, Mikael Bergholz](#); Bundgaard, Peter.

2012.

Paper

- Udgivet

[Radio Frequency Communication Devices and Methods.](#) / [Knudsen, Mikael Bergholz](#) (Opfinder); Bundgaard, Peter (Opfinder); Mueller, Jan-Erik (Opfinder).

Patentnummer: US8112043 B2. feb. 07, 2012.

Patent

- Udgivet

[Multiple antenna systems with inherently decoupled radiators.](#) / Pelosi, Mauro; [Knudsen, Mikael Bergholz](#); Pedersen, Gert Frølund.

I: I E E E Transactions on Antennas and Propagation, Vol. 60, Nr. 2 PART 1, 6060886, 01.02.2012, s. 503-515.

Tidsskriftartikel

- 2011
- Udgivet



[Passive component network for antenna isolation in MIMO systems for handheld terminals.](#) / Tatomirescu, Alexandru; Pelosi, Mauro; [Knudsen, Mikael Bergholz](#); Franek, Ondrej; Pedersen, Gert F.

IEEE Vehicular Technology Conference. 2011. 6093117.

Konferencebidrag i proceedings

- Udgivet

[Port isolation method for MIMO antenna in small terminals for next generation mobile networks.](#) / Tatomirescu, Alexandru; Pelosi, Mauro; [Knudsen, Mikael Bergholz](#); Franek, Ondrej; Pedersen, Gert F.

IEEE Vehicular Technology Conference. 2011. 6093119.

Konferencebidrag i proceedings

- Udgivet

[Mutual coupling in MIMO antennas with transceiver separation.](#) / Pelosi, Mauro; [Knudsen, Mikael Bergholz](#); Pedersen, Gert F.

Proceedings of the 5th European Conference on Antennas and Propagation, EUCAP 2011. 2011. s. 131-133 5781750.

Konferencebidrag i proceedings

- Udgivet

[Multiband RF Device.](#) / bagger, oluf (Opfinder); Adler, Bernd (Opfinder); [Knudsen, Mikael Bergholz \(Opfinder\)](#); Wilhelm, Michael (Opfinder).

Patentnummer: US20110117862 A1. maj 19, 2011.

Patent

- Udgivet

[Data transmission method for a communications system like a mobile telephone network transmits data to a subscriber terminal/mobile telephone via an air interface.](#) / [Knudsen, Mikael Bergholz \(Opfinder\)](#).

Patentnummer: DE10243345 B4. feb. 17, 2011.

Patent

**Fortegnelse over bedømmelsesudvalg til  
stilling 42234 Associate Professor in Radio Propagation ved Department of Electronic Systems**

**Navn:** Associate Professor Cedomir Stefanovic  
**Arbejdssted:** Department of Electronic Systems, AAU  
**E-mail:**

**Navn:** Associate Professor Ville. V. Viikari  
**Arbejdssted:** Department of Electronics and Nanogengineering, Aalto University, Finland  
**E-mail:**

**Navn:** Associate Professor Per Thorsen  
**Arbejdssted:** Elektronik, Ingeniørhøjskolen i Aarhus  
**E-mail:**

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.



Punkt: Beslutningstagning

Type: Kan frit distribueres

Rektorsekretariatet

Sagsbehandler:  
Signe Hernvig

Sagsnr: 2017-021-00096

Dato: 30-05-2017

**Sagsfremstilling til møde i akademisk råd**

Fastlæggelse af retningslinjer for behandling af sager om videnskabelig uredelighed (herunder tilfælde af tvivlsom forskningspraksis) og høring over medlemmer til Praksisudvalget AAU (PU AAU)

Bilag: A: Revideret forslag til reorganisering af praksisudvalgsstrukturen på AAU  
B: Oversigt over høringssvar med udvalgets bemærkninger

Sagsfremstilling: 1. del:  
Direktionen har efter skriftlig forelæggelse godkendt forslag fra det interimiske AAU Praksisudvalg om reorganisering af praksisudvalgsstrukturen på AAU (bilag A), herunder udvalgets forslag om, at det vil være hensigtsmæssigt for AAU, hvis den nye struktur for praksisudvalg på AAU er klar, når den nye lov om videnskabelig uredelighed træder i kraft den 1. juli 2017.

Reorganiseringen forudsætter en ændring af universitetets vedtægt § 24, stk. 1, nr. 6, 2. led, idet kompetencen til at fastlægge retningslinjer for behandling af sager om videnskabelig uredelighed i dag ligger hos de akademiske råd.

En vedtægtsændring skal forelægges til vedtagelse af bestyrelsen og skal derefter godkendes af Ministeriet for Forskning og Innovation. En længere proces, der ikke kan nå inden den 1. juli 2017.

Som varslet skal rektor derfor hermed bede akademisk råd om at godkende, at der centralt fastlægges retningslinjer for behandling af sager om videnskabelig uredelighed (og tilfælde af tvivlsom forskningspraksis) i overensstemmelse med forslaget om reorganisering af praksisudvalgsstrukturen på AAU, herunder at rektor nedsætter et samlet praksisudvalg og i samarbejde med fakulteterne fastlægger procedurer for sagsbehandlingen.

2. del:  
Såfremt akademisk råd kan godkende ovenstående, skal rektor bede om indstilling af medlemmer til nedsættelse af det nye samlede praksisudvalg for AAU (PU AAU).

Hvert fakultet skal indstille 1 basismedlem og 1 suppleant til PU AAU. Begge indstilles af dekanen (eller den han bemyndiger hertil) efter høring af akademisk råd og udpeges af rektor for en 4-årig periode.

Jf. forslag til reorganisering af praksisudvalgsstrukturen på AAU skal både basismedlem og suppleant opfylde følgende betingelser for at kunne udpeges:

- Må ikke være del af linjeledelse eller institution (akademisk råd, ph.d.-skole), der vil skulle sanktionere en given sag.
- Bør som hovedregel være fastansat på mindst lektorniveau og have opnået ph.d.-grad for mindst 10 år siden.



- 
- Skal være aktivt udøvende forsker og have erfaring med vejledning og vurdering af ph.d.-afhandlinger fra AAU og andre institutioner, review-arbejde for tidsskrifter og projektansøgninger til forskningsråd, fonde og lignende.

---

Indstilling: Del 1: Det indstilles, at akademisk råd godkender, at der fastlægges retningslinjer for behandling af sager om videnskabelig uredelighed i overensstemmelse med forslag til reorganisering af praksisudvalgsstrukturen på AAU.

Del 2: Det indstilles, at akademisk råd drøfter kandidater til PU AAU.

---

## Reorganisering af praksisudvalgsstrukturen på AAU

- revideret efter høring i organisationen.

### Indhold

Reorganisering af praksisudvalgsstrukturen på AAU .....	1
1. Organisation .....	1
1.1. Praksisudvalgets nedsættelse og sammensætning .....	2
1.2. Sekretariatsbistand/sagsbehandling .....	5
1.3. Ressourcer/omkostningsdækning .....	6
2. Kompetence.....	7
2.1. Udvalgets portefølje .....	7
2.2. Sanktioner.....	7
3. Yderligere institutioner til fremme af institutionens arbejde med forskningsintegritet .....	8
3.1. "Named persons" ordninger .....	8
3.2. Review Boards .....	8
3.3. Løbende monitorering af arbejdet med forskningsintegritet .....	8
4. Regelværk/vejledninger/politikker.....	8
5. Information/kommunikation.....	9
5.1. Hjemmeside.....	9
6. Implementering .....	9
7. Afledte konsekvenser af forslaget.....	9

### 1. Organisation

Nærværende forslag beskriver en reorganisering, som tager udgangspunkt dels i den eksisterende struktur og det erfaringsgrundlag, som findes hos de eksisterende praksisudvalg ved fakulteterne, samt Oddershede rapportens anbefalinger og lov om videnskabelig uredelighed.

Nærværende forslag kombinerer behovet for et fast centralt udvalg med reference til rektor og rapporteringspligt til det kommende Nævnet for Videnskabelig Uredelighed med behovet for stærk faglig repræsentation fra det hovedområde, som en given sag kommer fra.

Nærværende forslag afkobler i stort omfang den eksisterende linjeledelse fra selve behandlingen af givne sager, dog undtaget forhold, hvor der kræves beslaglæggelse, bortvisning, sikring af materialer,

begrænsning af IT adgang og lignende. Linjeledelsen vil fortsat være ansvarlig for sanktionering samt evt. enhver anden opfølgning på en given sag.

### **1.1. Praksisudvalgets nedsættelse og sammensætning**

Praksisudvalget (PU AAU) nedsættes af rektor og rapporterer årligt til rektor samt Nævnet for Videnskabelig Uredelighed (NVU) jvf. nærmere instrukser fra Forsknings- og Innovationsstyrelsen.

Alle PU AAU's medlemmer, såvel basismedlemmer som suppleanter og ad hoc-medlemmer, udpeges af rektor efter indstilling fra fakulteterne.

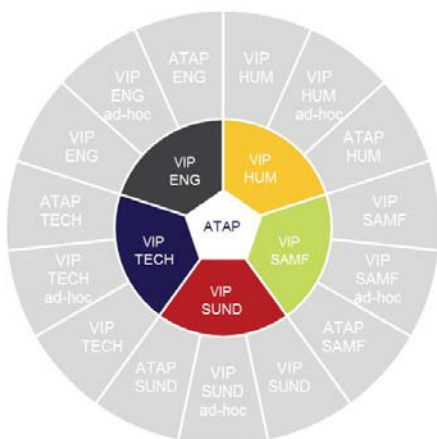
Udvalgets kerne består af fem basismedlemmer (et medlem fra hvert fakultet), iblandt hvilke rektor udpeger en formand og en næstformand (næstformandens funktion er at træde i formandens sted ved inhabilitet eller længerevarende fravær). Basismedlemmerne deltager i behandlingen af alle sager, medmindre der foreligger inhabilitet, samt i de evt. rådgivende opgaver for udarbejdelse af politikker, vurdering af institutionens arbejde med Den danske kodeks for integritet i forskning, fastlæggelse af rammer for evt. "named persons"<sup>1</sup> ordning, oprettelse af evt. Review boards, eller andet, som rektor måtte ønske at delegerer til udvalget. Basismedlemmerne udpeges for 4 år med mulighed for 4 års forlængelse.

Udover basismedlemmerne indstiller hvert fakultet en suppleant. Suppleanten deltager i basismedlemmets sted i sager, hvor der foreligger inhabilitet eller længerevarende fravær (længerevarende sygdom, udlandsophold eller orlov) af basismedlemmet. Suppleanten deltager endvidere som siddende medlem i sager, som stammer fra det givne fakultet. I forbindelse med disse sager har suppleanten desuden en selvstændig rolle i sagens indledende behandling (se afsnit 1.2.). Suppleanterne udpeges for 4 år med mulighed for 4 års forlængelse.

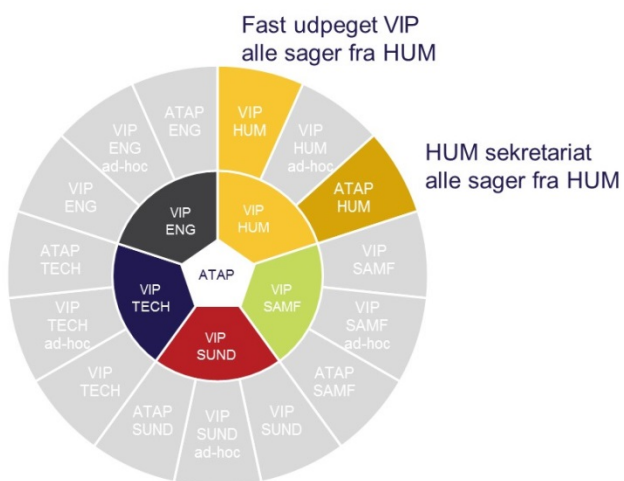
Endelig indstiller fakultetet et ad hoc-medlem til deltagelse i en given sag. Såfremt der er tale om inhabilitet eller fravær af basismedlem eller suppleant, udpeges yderligere ad hoc-medlemmer, så der altid deltager tre medlemmer fra det fakultet, en given sag stammer fra. Det bør ved indstilling af ad hoc-medlemmer sikres, at udvalget repræsenterer den faglighed, der er i spil, således at jo tættere anklagen går på forskningsmetode, jo tættere skal udvalgets medlemmer være knyttet til forskningsområdet.

---

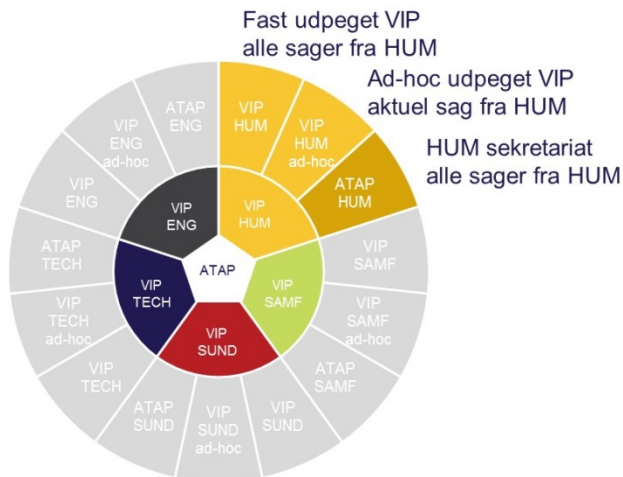
<sup>1</sup> Begrebet "named persons" stammer fra Den danske kodeks for integritet i forskning, appendiks 1, afsnit 1, der foreskriver, at "enhver person med en begrundet mistanke om forekomsten af et brud på ansvarlig forskningspraksis bør have mulighed for at anmode om personlig, upartisk og professionel rådgivning angående mistanken, f.eks. via en "named person" eller lignende."



Figur 1: Fremtidigt samlet PU AAU, basismedlemmer. Disse deltager i alle sager. En af dem er formand, en anden næstformand(udpeget af rektor).



Figur 2: Fremtidigt samlet PU AAU i forbindelse med anmeldelse af sag ved HUM (eksempel). Det fast udpegede medlem fra HUM (suppleanten) og sekretariatet fra HUM deltager i det indledende arbejde.



Figur 3: Fremtidigt samlet PU AAU ved behandling af sag fra HUM (eksempel). De to fast udpegede medlemmer (basisedlem og suppleant) deltager sammen med et ad hoc udpeget medlem. Udvalget sekretariatsbetjenes centralt og fra det fakultet, som sagen kommer fra (HUM)

Dekanerne eller den de måtte have bemyndiget hører de akademiske råd forud for indstilling af basisedlemmer og suppleanter. Dekanerne kan aftale andre procedurer for ad hoc-indstillingerne.

PU AAU's medlemmer bør som hovedregel være fastansat på mindst lektor niveau, have opnået Ph.D. grad for mindst 10 år siden, være aktivt udøvende forskere og have erfaring med vejledning og vurdering af Ph.D. afhandlinger fra AAU og andre institutioner, review-arbejde for tidsskrifter og projektansøgninger til forskningsråd, fonde og lignende.

PU AAU's medlemmer må ikke indgå i den linjeledelse, eller i de interne institutioner (akademisk råd, Ph.D.-skoler), som vil skulle være sanktionerende for en given sag. Ph.D.-skoleledere kan ikke indgå i praksisudvalget, når Ph.D. studerende fra det givne fakultet er involveret i en given sag.



Oversigt over praksisudvalgets medlemmer					
SUND sag	HUM sag	SAMF sag	TECH sag	ENG sag	Kommentarer
VIP fra SUND					Basismedlemmer er faste medlemmer i alle sager samt udvikling og rådgivning på politikker, etc. i det omfang, rektor ønsker det.
VIP fra HUM					
VIP fra SAMF					
VIP fra TECH					
VIP fra ENG					
VIP SUND	VIP HUM	VIP SAMF	VIP TECH	VIP ENG	Suppleanter. Faste medlemmer ifm. givne sager for det pågældende fakultet. Bistår TAP ifm. første sagsfremstilling til PU, indhentning af evt. supplerende materiale undervejs i sag, sonderer behov for beslaglæggelse af materiale, etc. I tilfælde af inhabilitet, rådfører TAP sig med den anden faste VIP (basismedlemmet).
VIP SUND	VIP HUM	VIP SAMF	VIP TECH	VIP ENG	Ad-hoc udpegede medlemmer for den givne sag. Bistår med sagsudredning fra udpegningsstidspunkt. I tilfælde af inhabilitet udpeges yderligere ad hoc-medlemmer som suppleanter for basismedlemmer eller suppleanter.
TAP-AAU					Sekretariatsbetjening fra AAU ledelse. Sekretariatsbetjener alle sager i samarbejde med nedenstående. Bistår desuden praksisudvalget i øvrige anliggender, inkl. udvikling og rådgivning, rapportering til Nævnet for Videnskabelig Uredelighed, m.m.
TAP SUND	TAP HUM	TAP SAMF	TAP TECH	TAP ENG	Sekretariatsbetjening fra det fakultet, som sagen kommer fra

Tabel 1: Oversigt over praksisudvalgets medlemmer og sekretariatsbetjening.

## 1.2. Sekretariatsbistand/sagsbehandling

Et forretningsudvalg bestående af formand og suppleanten fra det givne fakultet (eller basismedlem, hvis der er tale om inhabilitet eller fravær af suppleanten) bistået af fak. TAP og RS-TAP er ansvarlige for at foretage den indledende behandling af sagen, herunder:

- Orientering af indklagede.
- Efter en konkret vurdering af behovet herfor evt. kan anmode om beslaglæggelse eller begrænsning af indklagedes adgang til eks. laboratorier, materialer, data, eller lignende. Begrænsning eller beslaglæggelse aftales i givet fald med hhv. dekan og institutleder for indklagede, og institutlederen sørger for, at der træffes de nødvendige foranstaltninger.
- Iværksætte evt. screening og indhente faglig vurdering heraf.

- Iværksætte andre nødvendige indledende undersøgelser til afgørelse af, hvorledes forholdet skal kategoriseres efter lov om videnskabelig uredelighed
- Indgå i dialog med NVU.
- Vurdere om sagen er åbenbart grundløs og træffe afgørelse herom.

I tilfælde af formandens inhabilitet eller fravær indtræder næstformanden midlertidig som formand for udvalget til behandling af den konkrete sag.

PU AAU sekretariatsbetjenes af Rektorsekretariatet og det fakultet, som en given sag stammer fra.

Fakultetets sekretariatsmedarbejder(e) er – i samarbejde med de videnskabelige medarbejdere fra det givne fakultet, der deltager i behandlingen af en given sag, samt sekretæren fra Rektorsekretariatet - ansvarlige for at indhente det relevante materiale for en given sag, herunder at foretage evt. plagiatscreening og fagligt vurdere denne.

Sagsfremstillingen til udvalgets 1. mødebehandling af sagen udarbejdes af sekretariatsmedarbejderne (fra hhv. Rektorsekretariatet og fakultetet) i samarbejde med nævnte videnskabelige medarbejdere. Det skal af denne sagsfremstilling fremgå, om sagen vurderes at opfylde de grundlæggende kriterier for at udgøre en sag om forfalskning, fabrikation eller plagiater jf. lov om videnskabelig uredelighed, § 3, stk. 1 eller en sag om et tilfælde af tvivlsom forskningspraksis, det vil sige, om der foreligger et videnskabeligt produkt, om det implicerer en forsker jvf. lovens definition, etc. Ved udvalgets indledende mødebehandling af sagen træffes afgørelse om, om sagen skal:

- Videresendes til NVU
- Realitetsbehandles ved PU AAU
- Afvises og henvises til behandling ved andre institutioner/linjeledelse på AAU

Hvis PU AAU beslutter at optage sagen til behandling, forberedes sagen til 2. møde, herunder evt. yderligere undersøgelser, evt. partshøring af den indklagede og udfærdigelse af sagsfremstilling. Efter mødet skrives udvalgets udtalelse i sagen. Det aftales i forbindelse med behandlingen af den givne sag, hvem der skriver udtalelsen. Udtalelsen afgives til rektor (se videre i afsnit 2.2. om sanktioner)<sup>2</sup>.

### 1.3. Ressourcer/omkostningsdækning

Det vurderes, at institutionen skal afsætte ressourcer til såvel TAP som de faste VIP og de ad hoc udpegede medlemmers deltagelse i praksisudvalgets arbejde efter et løbende skøn over omfanget, vurderet i forbindelse med den årlige rapportering.

I forbindelse med særlige udviklingsopgaver afsætter rektor på forhånd særlige midler, eks. i forbindelse med større interne undersøgelser af forskellige satsningers effekter, nedsættelsen af evt. "named persons" infrastrukturer, særlige Review Boards, afholdelsen af interne konferencer, deltagelsen i nationale netværksmøder og lignende.

---

<sup>2</sup> Forud for implementering af ny struktur skal der på baggrund af forslaget udarbejdes et regelsæt for praksisudvalgets arbejde og procedurer for sagsbehandlingen (retningslinjer for behandling af tilfælde af tvivlsom forskningspraksis, jf. lov om videnskabelig uredelighed § 20).

## 2. Kompetence

### 2.1. Udvalgets portefølje

Udvalget skal have til opgave at:

1. Behandle konkrete sager om tilfælde af tvivlsom forskningspraksis, inkl. sager om selv-plagiering
2. Viderevende evt. sager om fabrikering, forfalskning eller plagiering til Nævnet for Videnskabelig Uredelighed (NVU) i overensstemmelse med lov herom,
3. Bistå NVU i det fornødne omfang jvf. lov herom og retningslinjer herfor,
4. Udarbejde en opsummerende rapport om de sager om tilfælde af tvivlsom forskningspraksis, udvalget har behandlet, en gang om året til rektor, de akademiske råd og NVU jvf. lov herom og gældende retningslinjer herfor,
5. Foreslå konkrete udviklingsbehov i forhold til efterlevelsen af Den danske kodeks for integritet i forskning på Aalborg Universitet,
6. Forestå evt. udviklingsforløb, der ikke naturligt er forankret andetsteds i organisationen,
7. Udarbejde rapport for de evt. udviklingsforløb, udvalget meddeles ansvar for (jvf. konkret aftale).

Definitioner af udvalgets sagsportefølje:

- Indledende behandling af sager om brud på ansvarlig forskningspraksis, der opfylder kriterierne: FFP begået forsætligt eller groft uagtsomt vedrørende et videnskabeligt produkt (frembragt med hel eller delvis dansk støtte) og begået af en VIP omfattet af lovforslagets forskerdefinition, og som senere afgives til NVU til behandling af spørgsmålet om videnskabelig uredelighed,
- Fuld behandling af sager om brud på ansvarlig forskningspraksis, som opfylder kriterierne: FFP som er begået simpelt uagtsomt (bagatelgrænsen jf. lovforslagets § 3, stk. 2, nr. 1) eller som på anden vis ikke er omfattet af NVU's kompetence (selvplagiering, forfatterskaber) vedr. et videnskabeligt produkt (frembragt med hel eller delvis dansk støtte) og begået af en VIP omfattet af lovforslagets forskerdefinition,
- Fuld behandling af sager om brud på ansvarlig forskningspraksis, der opfylder kriterierne: FFP begået forsætligt, groft uagtsomt eller simpelt uagtsomt, vedr. et videnskabeligt produkt (frembragt med hel eller delvis dansk støtte) og begået af en tidligere eller nuværende VIP-ansat på AAU som ikke er omfattet af lovforslagets forskerdefinition.
- Udvalget afviser sager om brud på ansvarlig forskningspraksis, der ikke opfylder ovennævnte kriterier for behandling ved NVU eller PU AAU og henviser dem til behandling ved relevante institutioner/linjeleder.
- Udvalget kan afvise at behandle en sag: der anses for åbenbart grundløs; formodes ikke at kunne føre til en afgørelse om, at der foreligger tvivlsom forskningspraksis; hvis behandlingsomkostninger ikke står i rimeligt forhold til dens betydning eller som har en meget lille tilknytning til Danmark. Sådanne sager kan henvises til behandling ved relevante institutioner/linjeleder.

### 2.2. Sanktioner

I sager vedr. videnskabelig uredelighed (fabrikering, forfalskning og plagiering, FFP), træffes den endelige afgørelse jvf. lov om videnskabelig uredelighed af NVU. Når en sag modtages retur fra NVU går den direkte til rektor, der almindeligvis, jf. delegationsinstruksens punkt 4.5 og 4.6., vil viderevende sagen til opfølgende behandling hos dekanen. I vurderingen af sanktion vægtes omfang og karakter af tilfældet,

medarbejderens anciennitet og forventede kendskab til de relevante forhold, evt. svigt fra vejleder eller institution, og evt. yderligere forhold, gentagelser og lignende.

I sager vedr. tilfælde af tvivlsom forskningspraksis udarbejder PU AAU en beskrivende udtalelse for sagens udfald, som synliggør den indklagede forskers evt. rolle i tilfældet, samt evt. forhold vedr. institutionens svigt ift. kodeks, som bør tages i betragtning og evt. forbedres.

Når en sag er blevet behandlet i PU AAU orienteres anklagede samtidig med, at der afgives udtalelse til rektor. Dekanen orienteres samtidig. Efterfølgende videresender rektor sagen til dekanen til opfølgende behandling jvf. ovenfor.

Er der tale om videnskabelig uredelighed vedrørende et videnskabeligt produkt afgivet i forbindelse med tildeling af en akademisk grad, sender dekanen sagen til det relevante akademiske råd, der træffer beslutning om evt. omgørelse af afgørelsen om tildeling af graden. Er der tale om videnskabelig uredelighed vedrørende et videnskabeligt produkt afgivet af en person indskrevet eller tidligere indskrevet ved en Ph.D.-skole, træffer Ph.D.-skolelederen bestemmelse om evt. studiemæssige konsekvenser, mens dekanen som i andre sager træffer afgørelse om evt. ansættelsesmæssige konsekvenser.

### **3. Yderligere institutioner til fremme af institutionens arbejde med forskningsintegritet**

#### **3.1. "Named persons" ordninger**

Udvalget kan også bistå udviklingen og den løbende vurdering af eks. "named persons" ordninger, ifald der er ønske om en sådan. Et sådant set up bør være uafhængigt af PU AAU, så der ikke opstår tvivl om, hvorvidt der er givet råd fra de individer og/eller det udvalg, som efterfølgende skal behandle en evt. sag. Et evt. set up for "named persons" bør administreres af fakulteterne under hensyntagen til de eksisterende institutioner (eks. forskerskoler, Review Boards etc.), som i øjeblikket løfter en tung byrde med hensyn til arbejdet med forskningsintegritet.

#### **3.2. Review Boards**

Udvalget kan også bistå ved vurderingen af eks. institutionens forskellige interne Review Boards, som måtte være nødvendige af hensyn til kvalitetssikringen af ansøgninger til etisk komité, forskningsråd, eller som dokumentation af institutionens godkendelse af forsøgsprotokoller (imødekommelse af eks. EU eller andre eksterne krav om en sådan godkendelse).

#### **3.3. Løbende monitorering af arbejdet med forskningsintegritet**

Udvalget kan også forestå vurderinger af institutionens arbejde med forskningsintegritet, og eks. tilknyttes givne udviklingsprojekter, som igangsættes af ITS, fakulteterne, institutterne, forskerskolerne eller andre. Sådanne evalueringsopgaver vil skulle tilrettelægges, så der ikke sker sammenblanding af udvalgets mulighed for at vurdere evt. FFP- og/eller sager om tvivlsom forskningspraksis.

### **4. Regelværk/vejledninger/politikker**

Udvalget foreslår, at der ud fra nærværende forslag udformes et egentligt regelsæt for praksisudvalgets virke, og at praksisudvalget fastsætter sin egen forretningsorden, der godkendes af rektor.

Udvalget har forslag om:

- At udvalget kan mødebehandle en sag, når der er 2 ud af 3 medlemmer fra det givne fakultet samt mindst to yderligere basismedlemmer, herunder formanden, til stede.
- At beslutning træffes ved almindelig stemmeflerhed, og at formandens stemme ved stemmelighed er afgørende for udfaldet.
- At der afholdes 6 faste møder om året, og at formanden herudover indkalder til møder med sagsbehandling efter behov.
- At formanden og suppleanten fra det givne fakultet meddeles særlige kompetencer i den indledende sagsbehandling (se punkt 1.2.), og at denne sagsbehandling kan ske skriftligt.
- At PU AAU kan træffe afgørelse om, om en given sag skal behandles parallelt med en tilknyttet sag ved NVU.
- At sagsbehandlingen ved PU AAU omfattes af lignende frister som er angivet i lovforslaget vedrørende NVU (lovforslagets §§ 14 og 15 – afvisning indenfor 3 måneder, færdigbehandling så vidt muligt indenfor 12 måneder).

## 5. Information/kommunikation

### 5.1. Hjemmeside

Siden oprettes og vedligeholdes af Rektorsekretariatet. Siden skal indeholde information om praksisudvalgets arbejde og møder (dagsordener, referater m.v.), regelsæt, politikker m.v. (retningslinjer for behandlingen af tilfælde af tvivlsom forskningspraksis på AAU, jf. lov om videnskabelig uredelighed § 20). Evt. et forum, hvor man kan følge arbejdet med forskningsintegritet på AAU – historier om undervisningsforløb, nyt om datamanagement m.v.

## 6. Implementering

Udvalget skal foreslå, at ny struktur træder i kraft samtidig med ny lovgivning (jf. lovforslaget forventet 1. juli 2017). Overgangen skal ske gradvist, således at det nye praksisudvalg kun optager sager til behandling, som anmeldes efter lovens ikrafttræden. Allerede igangværende sager behandles færdig i de lokale praksisudvalg på fakulteterne og efter de regler fastsat af akademiske råd, som var gældende, da sagerne blev anmeldt.

## 7. Afledte konsekvenser af forslaget

Jf. vedtægten for AAU § 24, stk. 1, nr. 6 ligger kompetencen til at fastsætte retningslinjer for behandling af sager om videnskabelig uredelighed på AAU i dag hos de akademiske råd.

Vedtægtens § 24, stk. 1, nr. 6 lyder: "De akademiske råd for de videnskabelige hovedområder har ansvar for at udvikle og vedligeholde en høj akademisk standard og har herunder til opgave: ... 6) at fastlægge retningslinjer til fremme af en god videnskabelig praksis og for behandling af sager om videnskabelig uredelighed.

De akademiske råd har i medfør af bestemmelsen bl.a. nedsat praksisudvalg og vedtaget procedurer gældende for fakultetets behandling af sager om videnskabelig uredelighed.

Såfremt udvalgets forslag skal gennemføres, foreslår udvalget i tillæg hertil, at bestyrelsen forelægges forslag om ændring af universitetets vedtægt, så ansvaret for at fastlægge retningslinjer for universitetets

behandling af sager om brud på god forskningspraksis, herunder sager om videnskabelig uredelighed, fremover tillægges rektor.

Konkret foreslår udvalget, at vedtægtens § 24, stk. 1, nr. 6 fremover affattes: "De akademiske råd for de videnskabelige hovedområder har ansvar for at udvikle og vedligeholde en høj akademisk standard og har herunder til opgave: ... 6) at fastlægge retningslinjer til fremme af god videnskabelig praksis."

Og at det tilføjes som nyt § 9, stk. 10 "Rektor nedsætter et praksisudvalg og fastsætter retningslinjer for universitetets behandling af sager om brud på god videnskabelig praksis".

Udvalget foreslår, at de akademiske råd, frem til vedtægtsændringen er godkendt, anmodes om at overlade deres kompetence jf. vedtægtens § 24, stk. 1, nr. 6, 2. del til rektor. Rektor vil dermed kunne nedsætte et praksisudvalg og fastsætte retningslinjer for behandling af tilfælde af tvivlsom forskningspraksis jf. forslaget, så PU AAU kan påbegynde sit arbejde fra lovens ikrafttræden den 1. juli 2017.

## Oversigt over hørings svar

### Der er afgivet hørings svar fra:

Rasmus Waagepetersen (RWP), Institut for Matematiske fag

Jacob Glensvang (JG), Ledelsessekretariatet ENG/SUND/TECH

SUND fakultetet (bidrag fra SUND akademisk råd og SUND ph.d.-skoleleder)

Ph.d.-skolerne ved ENG/SUND/TECH

HUM/SAMF fakulteterne

Institut for Økonomi og Ledelse (bidrag fra institutrådet på Institut for Økonomi og Ledelse)

Oprindeligt forslag:	Hørings svar:	Udvalgets bemærkning:
<b>Afsnit 1:</b>		
"Nærværende forslag afkobler i stort omfang den eksisterende linjeledelse fra selve behandlingen af givne sager, dog undtaget forhold, hvor der kræves beslaglæggelse, bortvisning, sikring af materialer, begrænsning af IT adgang og lignende.	RWP: Begrebet linjeledelse bør defineres. Det er ikke et begreb, der er velkendt udenfor administrative kredse. Jeg kunne ikke slå det op i en ordbog.	1. Udvalget finder, at linjeledelse er et gængs begreb. Begrebet dækker i forslaget ledere på niveau 1-5, jf. rektors delegationsinstruks (ledere, der har/kan have personaleledelse af VIP).
<b>Afsnit 1.1.:</b>		
"Fem af praksisudvalgets syv videnskabelige medlemmer udpeges af rektor"	RWP: Hvad så med de sidste 2? Det er meget uklart hvor de sidste 2 medlemmer kommer fra.	2. Afsnittet er omformuleret for større klarhed og suppleret med figurer til illustration.

<p>"udpeges af rektor efter indstilling fra fakulteterne"</p>	<p>RWP: Der tales i flæng om at "fakulteterne indstiller" eller "dekanerne indstiller". Er det dekan eller fakultet?</p>	<p>3. Forslaget er rettet igennem, så der står "fakultetet indstiller". Det er op til dekanen som fakultetets øverste leder, om han selv vil beholde indstillingsretten, eller om han vil delegere den til fx prodekan for forskning.</p>
<p>"Derudover indstiller hvert fakultet et medlem til rektor til deltagelse i en given sag (ad hoc-udpegelse). I tilfælde af inhabilitet indstilles yderligere medlemmer, så der altid deltager tre medlemmer fra det fakultet, en given sag stammer fra."</p>	<p>RWP: Dette afsnit er meget uklart. Skal der i alt stilles 5 ad hoc medlemmer til en given sag? (jf. <i>hvert fakultet indstiller...</i>)</p>	<p>4. Se bemærkning nr. 2</p>
<p>"_"</p>	<p>HUM/SAMF fakulteterne: "Vedr. sammensætning af praksisudvalget, foreslår fakulteterne, at det er tilstrækkeligt med et basisedlem og et ad hoc-medlem (fagperson) fra hvert fakultet, når en sag fra det givne fakultet skal i AAU Praksisudvalg, fremfor forslaget om to fagpersoner som ad hoc-medlemmer." <i>Fakultetet er efterfølgende kontaktet for uddybning. Der menes, at det kun ønskes, at det enten er basisedlem eller suppleanten samt et ad hoc-medlem, som er fagperson, der deltager, dvs. at behandlingen af en given sag foretages af 5 basisedlemmer + et ad hoc-medlem.</i></p>	<p>5. Udvalget ønsker at fastholde den foreslåede sammensætning. Udvalget lægger vægt på, at PU på denne måde får en faglig tyngde til det fagområde, hvor sagen stammer fra og en robusthed i forhold til at kunne arbejde kontinuerligt og hurtigt på trods af fx inhabilitet hos enkelte medlemmer.</p>
<p>"_"</p>	<p>SUND fakultetet: " Det bemærkes, at AAU PU involverer et forholdsvis stort antal personer min. 7 VIP'er (5 faste VIP, 1 fakultetsspecifik VIP + 1 eller flere ad hoc indkaldte VIP'er fra det pågældende fakultet) + sekretariatsbetjening i samtlige sager. Dette vurderes umiddelbart at være et stort setup, i det der må forventes, at hovedparten af sagerne vil være sager om mindre brud på god forskningspraksis. "</p>	<p>6. Se bemærkning nr. 5.</p>
<p>"_"</p>	<p>Institut for Økonomi og ledelse: "Da det faste udvalg umuligt kan dække alle fagligheder, bør det sikres, at ad-hoc udvalget repræsenterer den faglighed, der er</p>	<p>7. Udvalget er enig i, at der bør være opmærksomhed herpå. Bemærkningen er tilføjet i forslagets afsnit 1.1.</p>



	i spil, således at jo tættere anklagen går på forskningsmetode, jo tættere skal udvalgets medlemmer være knyttet til forskningsområdet, da der er forskellige traditioner knyttet til fagområderne”	
”..., dog kan dekanerne aftale andre procedurer for ad hoc-indstillingerne.”	RWP: Der er ikke som sådan beskrevet en procedure for indstillinger, så ordvalget ”andre procedurer” virker malplaceret. Menes der simpelthen at dekanen ikke behøves at konsultere AR i forbindelse med indstilling af ad hoc medlemmer?	8. Se bemærkning nr. 9.
”I det omfang, det lader sig gøre, indstiller dekanerne medlemmer i samråd med Akademisk Råd, dog kan dekanerne aftale andre procedurer for ad hoc-indstillingerne.” ... ”Ph.D.-skoleledere bør derfor kun undtagelsesvist indgå i praksisudvalget, når Ph.D. studerende fra det givne fakultet er involveret i en given sag.”	HUM/SAMF fakulteterne: ”Der er flere uklare formuleringer i dette afsnit, der rejser tvivl om den konkrete håndtering af sager, eksempelvis her: ”Ph.d.-skoleledere bør kun undtagelsesvis indgå i praksisudvalget ...” og ” <b>I det omfang, det lader sig gøre, indstiller dekanerne medlemmer i samråd med Akademisk Råd, dog kan dekanerne aftale andre procedurer for ad hoc-indstillingerne</b> ”. Det er uklart, hvad der menes med undtagelsesvist, og hvad der menes ”i det omfang, det lader sig gøre”. Der bør anvendes entydige formuleringer, så ingen er i tvivl om, hvem der gør hvad og i hvilke sammenhænge.”	9. Det er nu defineret præcist i forslaget, at AR skal høres, før dekanen eller den han bemyndiger hertil, indstiller til udpegning af basismedlemmer eller suppleanter, mens der kan aftales andre procedurer for indstilling af ad hoc-medlemmer. Begrundelsen for at fastholde muligheden for andre procedurer for indstilling af ad hoc-medlemmer er, at det skal sikre en mere smidig og fleksibel indstillingsprocedure.  Udvalget har gendrøftet ph.d.-skolelederens rolle og har rettet forslaget til, så det nu fremgår eksplicit, at ph.d.-skolelederen ikke kan indgå i PU, når ph.d.-studerende fra det givne fakultet er involveret i en given sag. Begrundelse for at ph.d.-skolelederen i denne situation ikke bør indgå i PU er, at der ønskes en adskillelse mellem den, der vurderer sagen og den, der efterfølgende sanktionerer. Det vil fortsat være muligt at udpege ph.d.-skolelederen som ad hoc-medlem ved behandling af andre sager fra fakultetet.
”_”	JG: ” Den skarpe adskillelse mellem praksisudvalg og alle der har et ledelsesansvar giver store udfordringer i praksis, da fx ph.d. skolelederen ikke kan have armlængde i alle sager. Derudover kan det være vanskeligt at få udpeget folk til deltagelse i det forberedende arbejde, når	10. Udvalget har med forslaget lagt vægt på, at den stedlige ledelse ikke skal være involveret i vurderingen af en given sag. Bliver en leder bekendt med en sag omfattet af PU’s kompetence, bør han/hun overgive den til PU til vurdering (adskillelse af dømmende/vurderende og

	ledelsen er dekoblet. Hvem skal udpege eller beordre folk til at indgå i arbejdet, hvis det ikke er linjeledelsen? ( <i>JG kontakten for uddybning. Med forberedende arbejde menes ikke det indledende arbejde i PU forretningsudvalg, men det arbejde, der sker på fakultetet, inden en sag sendes til PU, fx en forelæggelse af en ph.d.-afhandling for en ph.d.-skoleleder til afklaring af mindre små-fejl).</i> )	udøvende/sanktionerende magt).  Om behandlingen af ph.d.-afhandlinger henvises til udvalgets bemærkning nr. 21-23 nedenfor.
Generelt til afsnit 1.1. Praksisudvalgets nedsættelse og sammensætning	HUM/SAMF fakulteterne: "Der bør anvendes konsekvent sprogbrug i oversigten over praksisudvalgets medlemmer. Der bliver både anvendt termen basismedlemmer og faste medlemmer.	11. Afsnittet og tabellen er omformuleret, så det bliver tydeligere i hvilke sammenhænge basismedlemmer og suppleanter er faste medlemmer af PU.
<b>Afsnit 1.2.:</b>		
"Et forretningsudvalg bestående af formand, basismedlemmet fra det givne fakultet (eller suppleant, hvis der er tale om inhabilitet, fravær eller sammenfald mellem formand og basismedlem) bistået af fak. TAP og RS-TAP er ansvarlige for at foretage den indledende behandling af sagen, herunder:"	RWP: I tabellen ovenfor står, at suppleanten skal bistå med første sagsbehandling. Men her står, at basismedlemmet er ansvarlig for den indledende behandling?	12. Formand og suppleant foretager indledende sagsbehandling. Der er rettet til i afsnit 1.2  Begrundelse for, at det er suppleanten, der bistår formanden er, at denne kun skal forholde sig til den konkrete sag, mens basismedlemmet vil skulle forholde sig til alle sager, der verserer ved udvalget.
"_"	HUM/SAMF fakulteterne: "Fakulteterne forstår forslaget således, at forretningsudvalget erstatter de eksisterende praksisudvalg på fakultetsniveau. For at undgå uhensigtsmæssig overlevering og dermed unødvendigt lange sagsgange, foreslår fakulteterne i forlængelse heraf, at sagsbehandlingen fremadrettet foregår samlet på et niveau. Det er afgørende, at der ikke med forslaget tilføjes et ekstra led i processen, da kort sagsbehandlingstid er alfa og omega – særligt for den anklagede. Såfremt man alligevel vælger at fastholde den skitserede ansvarsfordeling mellem Rektorsekretariatet og fakultetssekretariatene, bør denne inden implementeringen af forslaget beskrives utvetydigt for så vidt angår roller og ansvar – ikke mindst af	13. Udvalget ønsker at fastholde forslaget. Der er ikke tale om en overlevering. Fakultets-TAP bliver på sagen i hele forløbet.  Udvalget er enig i, at sagsgange og ansvar for sagsbehandlingen skal beskrives i detaljer inden implementering.

	hensyn til sagsbehandlingstiden.”	
”_”	SUND fakultetet: ” TAP fra Rektorsekretariatet har i samarbejde med TAP fra det fakultet, hvor sagen er hjemmehørende, ansvar for den administrative sagsbehandling. Der opfordres til at der udarbejdes en klar arbejdsgangsbeskrivelse eller tilsvarende, så det er tydeligt hvad hhv. Rektorsekretariatet og fakultetskontoret har ansvar for.”	14. Se bemærkning nr. 13
”_”	JG: ”(Der bør) komme fælles retningslinjer ud af praksisudvalgets forberedende arbejde. Det er meget efterspurgt, når der behandles sager og de ph.d. studerende skriver fx under på at de er indforstået med retningslinjerne.” JG: ” Skabes større tydelig over hvad det forberedende arbejde på fakultetsniveau består i og samtidig vurderes hvordan involveringen af et overordnet praksisudvalg påvirker sagsbehandlingstiden.”	15. Se bemærkning nr. 13.
”Det skal af denne sagsfremstilling fremgå, om sagen vurderes at opfylde de grundlæggende kriterier for at udgøre en FFP-sag eller en sag om et tilfælde af tvivlsom forskningspraksis jvf. den givne lov, det vil sige, om der foreligger et videnskabeligt produkt, om det implicerer en forsker jvf. lovens definition, etc.”	RWP: Forkortelsen FFP ej defineret.	16. Forslaget er omformuleret, så det nu er tydeligt, hvad der menes med FFP-sager.
Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling	Institut for Økonomi og Ledelse: ”Der må ikke blive tale om omvendt bevisbyrde. Ligeledes bør anklager og den anklagede stilles lige mht. mulighed for at udtale sig om sagen. Eksempelvis kunne man tilføje, at hvis den, der har indbragt sagen udtaler sig om sagen, før den er afgjort i udvalget, så bortfalder anklagen.”	17. Anklager vil, jf. lov om videnskabelig uredelighed ikke være part og skal ikke stilles lige med den indklagede.  Det er ikke muligt at pålægge hverken den indklagede eller anklager tavshedspligt om sagen, og det er ikke muligt at indføre en regel om, at sagen bortfalder såfremt anklager udtaler sig om den (iflg. loven har universitetet <u>pligt</u> til at behandle sager om tvivlsom forskningspraksis og at sende sager om videnskabelig uredelighed videre til NVU).

		Udvalget noterer sig, at procedurerne bør forholde sig til spørgsmålet om fortrolighed/orientering.
Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling	JG: "Være fortrolighed omkring sager, der behandles. Den anklagede skal informeres om at der foreligger en anklage, så snart anklagen realitetsbehandles (dvs. at den ikke afvises som åbenlys grundløs). Skal andre vide det? Institutlederen?"	18. Se bemærkning nr. 17.
Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling	Institut for Økonomi og ledelse: "Allerede i det indledende arbejde, men også senere, skal udvalget tage stilling til, hvilke incitamenters der kan ligge bag at indbringe en sag for udvalget, herunder hvilken kontekst klagen er indgivet i. Har klager eksempelvis privatøkonomiske eller karrieremæssige interesser i at miskreditere andres forskning? Umiddelbart kan det virke som om, det er uden konsekvenser for klager at indbringe en sag for udvalget, mens det kan have store faglige og menneskelige konsekvenser at blive anklaget."	19. Oddershede har anbefalet, at NVU ikke forholder sig til falske anklager.  Udvalget finder, at PU AAU på linje hermed heller ikke bør forholde sig til falsk anklage. Tværtimod bør udvalget være meget bevidst om, at det forhold, at klager kan have en særlig interesse i sagen ud over det rent forskningsfaglige, <u>ikke</u> skal indgå i udvalgets vurdering af sagen. Udvalget skal objektivt forholde sig til sagens aspekter.  Spørgsmålet om falske anklager må henvises til behandling i ledelsen. Ligesom ledelsen vil skulle forholde sig til sanktion i forbindelse med videnskabelig uredelighed/tvivlsom forskningspraksis, vil den også skulle forholde sig til medarbejdere, der falsk har anklaget en kollega.
Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling	JG: "Drøfte hvordan man håndterer anonymitet. Vil praksisudvalget fx behandle materiale fra anonyme anklagere? Hvad hvis de er åbenlyst velbegrandede og en afvisning af materialet vil kunne skade AAUs omdømme?"	20. Institutionerne har iflg. lov om videnskabelig uredelighed § 19 pligt til at behandle spørgsmål om tvivlsom forskningspraksis uanset om forholdet bliver institutionen bekendt anonymt eller med kendt anmelder.  Udvalget har noteret sig, at spørgsmålet om anonyme anklager bør behandles i procedurerne.
Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling	HUM/SAMF fakulteterne: "Fakulteterne ønsker at påpege vigtigheden af, at AAU Praksisudvalg i forslaget tager højde for eksisterende procedurer på ph.d.-området. Erfaringer viser, at langt	21. Udvalget finder, at den nødvendige kvalitetssikring af ph.d.-afhandlinger og rådgivning og vejledning af de ph.d.-studerende om korrekt kreditering, citering m.v. bør finde sted i ph.d.-

	<p>hovedparten af de sager om tvivlsom forskningspraksis, der behandles i fakulteternes praksisudvalg, udspringer af det rutinemæssige plagiattjek af ph.d.-afhandlinger. Af hensyn til en effektiv sagsbehandling og muligheden for at give en hurtig afklaring til de anklagede, bør sager om selyplagiering af simpel karakter fortsat behandles på fakultetsniveau, hvorfor der i disse sager kan være behov for at inddrage såvel ph.d.-skoleleder samt evt. fagpersoner.”</p> <p>”I det beskrevne set-up synes ph.d.-skolelederens rolle uklar. På nuværende tidspunkt sparrer fakultetssekretariatene med ph.d.-skoleleder, når der er mistanke om plagiat i en ph.d.-afhandling. Det er nødvendigt for den almene sagsgang i dagligdagen, at der er et første led (VIP) at sparre med for fakultetssekretariatet i den indledende sagsbehandling. Endvidere er det hensigtsmæssigt, at dette led er ph.d.-skolelederen, fordi det er nødvendigt med en vis erfaring i håndtering af sagerne samt et fleksibelt nærvær til sagsbehandlingen.”</p>	<p>skolerne, hos vejleder og i ph.d.-skolesekretariatene i ph.d.-forløbet og <u>inden</u> indlevering af afhandlingen.</p> <p>Når en ph.d.-afhandling er indleveret til bedømmelse er den, jf. praksis ved UVVU, et videnskabeligt produkt og vil dermed være omfattet af PU AAU's eller NVU's kompetence, såfremt der efter indlevering opstår mistanke om brud på god videnskabelig praksis.</p> <p>Udvalget finder derfor ikke, at der bør indføres en speciel procedure til behandling af sager af simpel eller utvivlsom karakter, som det hidtil har været praktiseret ved fakulteterne/ph.d.-skolerne, men at der i stedet som nævnt bør ske en kvalitetssikring af ph.d.-afhandlingerne langt tidligere i forløbet.</p>
<p>”_”</p>	<p>Ph.d.-skolerne ved ENG/SUND/TECH: ”I forhold til den konkrete beskrivelse af sagsforløbet og behandlingen i praksisudvalget (herefter PU AAU) virker den i hovedsagen rettet mod de tilfælde, hvor der foreligger en konkret anmeldelse. Der ses ikke i forslaget at være taget højde for den obligatoriske screeningsproces, som i dag finder sted i regi af ph.d.-skolerne. I dag er proceduren således, at alle ph.d.-afhandlinger køres igennem plagieringsværktøjet Ithenticate, inden de sendes til bedømmelse hos det fagligt kompetente bedømmelsesudvalg. Plagieringsrapporterne tjekkes administrativt på ph.d.-kontoret. Alle rapporter skal gennemgås manuelt – det er ikke tilstrækkeligt at lade vurderingen hvile alene på en given procentsats</p>	<p>22. Se bemærkning nr. 21.</p>

i plagieringssystemet. I tvivlstilfælde kontakter administrationen ph.d.-skolelederen, som anlægger en foreløbig faglig vurdering af de fundne sammenfald. I flere tilfælde kan sagen herefter afvises som grundløs, fordi den enten falder under bagatelgrænsen, eller fordi der for eksempel er tale om fagsprog, terminologier, som ikke kan skrives anderledes.

Det virker uklart, om ph.d.-skolens administration med det nye forslag til organisering skal kontakte PU AAU direkte for afklaring. Hvis det er tilfældet, kan det for det første give en væsentlig arbejdsbyrde for PU AAU og for det andet fjerne den fleksibilitet, der ligger i, at sagen håndteres lokalt. Når en afhandling indleveres, skal der i henhold til bekendtgørelsen, være afholdt forsvar inden for tre måneder. Dette kan ph.d.-skolerne i langt de fleste overholde, også selvom der faktisk har været mindre tilfælde af QRP (konkret selvplagiering fra artikler til sammenfatning). Med et forslag der lægger op til en sagsbehandlingstid på mellem 3-12 måneder, vil det have store konsekvenser for ph.d.-studerende, hvis afhandlinger bliver fanget i plagieringstjekket. Selv med en intention om, at QRP-sager skal være behandlet inden for tre måneder, er det lang tid at vente – især fordi de ph.d.-studerende ofte har et nyt job på hånden, som er afhængigt af ph.d.-graden.

Man kan ydermere frygte, at en afledt konsekvens er, at man hæver bagatelgrænsen – fordi der er for store omkostninger forbundet med at gå videre med en sag, som ligger på grænsen. Derfor anbefaler ph.d.-skolerne, at den nuværende praksis videreføres, hvor ph.d.-skolelederen fortsat behandler og sanktionerer i simple og utvivlsomme sager vedr. ph.d.-studerende. Så snart sagerne

	<p>hæver sig op over det simple og utvivlsomme, skal sagerne sendes videre til PU AAU, således som det også er praksis i dag, hvor en sådan sag vil overgå til behandling ved det pågældende fakultets praksisudvalg.</p> <p>I forhold til volumen af sager kan det berettes, at der på tværs af de tre ph.d.-skoler har været 17 sager inden for en periode på otte måneder (efter indførelse af Ithenticate som plagieringsværktøj). Der er tale om 15 sager, som er sagsbehandlet og sanktioneret af ph.d.-skolelederen (simple og utvivlsomme) samt to sager, som er videregivet til det pågældende fakultets praksisudvalg. I tillæg hertil skal formentlig (der findes ikke præcise tal) lægges omkring 15 tilfælde, hvor administrationen har haft spørgsmål til screeningen, som efterfølgende er vurderet og afvist af ph.d.-skolelederen.</p>	
"_"	<p>SUND fakultetet: "Det bemærkes, at det kan blive problematisk, at alle sager skal forelægges AAU PU. Der bør være en bagatelgrænse, så mindre og trivielle overtrædelser håndteres decentralt (som det er tilfældet i dag) for at bibeholde en smidighed i systemet. Dette er eksempelvis klassisk selvplagiering for en ph.d. studerende, som opfanges ved fakultetets rutine-check og giver anledning til, at afhandlinger afvises og indleveres kort efter i revideret form. En sagsbehandlingstid på over 3 måneder til mindre og trivielle overtrædelser vil være meget problematisk i forhold til et ph.d. forløb."</p>	23. Se bemærkning nr. 21.
Generelt til afsnit 1.2 Sekretariatsbistand/sagsbehandling	<p>HUM/SAMF fakulteterne: "Det er afgørende at forslaget i sin helhed afspejler, at sagernes karakter kan spænde fra simple sager til sager af grov karakter, og at forslagets retorik afspejler princippet om, at de, der anklages for tvivlsom</p>	24. Udvalget er enig i, at man ved behandling af sagerne skal arbejde ud fra en formodning om, at den indklagede er uskyldig indtil sagen er belyst og man evt. har fundet belæg for det modsatte.

	<p>forskningspraksis, antages uskyldige indtil det modsatte er bevist. ... Et eksempel herpå er den retorik, der anvendes i forbindelse med 1.2. Sekretariatsbistand/sekretariatsbetjening, hvor der i forbindelse med den indledende behandling af sagen, nævnes anmodning om beslaglæggelse eller begrænsning af indklagedes adgang med videre. Det forslås, at der tilføjes et punkt om sikring af den anklagedes retssikkerhed og støtte for den indklagede, herunder en henvisning til universitetets personalepolitik og en mere udførlig beskrivelse af institutlederens rolle, som må forventes at række ud over beslaglæggelse med videre. I forlængelse heraf bør forslaget forholde sig mere eksplicit til snitfladerne mellem det arbejdsretslige kontra det forskningsfaglige system. Eksempelvis med retningslinjer for, hvornår og hvor længe en given sag og sanktion journaliseres på en ansats personalesag.”</p>	<p>Udvalget har noteret sig, at procedurene skal afspejle dette.</p> <p>Der er ikke noget i forslaget, der ændrer ved de rammer, rettigheder, forpligtelser af ansættelsesretlig karakter, som lederne allerede følger i dag. Det er måske mere HR, man skal have på banen her, hvis der er usikkerhed blandt lederne om, hvordan sådanne sager skal håndteres – bl.a. sanktioner.</p> <p>Indklagede vil formentlig også kunne hente støtte hos deres TR.</p>
<p>Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling</p>	<p>JG: ” Være meget større tydelig i materialet om at man er uskyldig indtil andet er bevist. Fx nævnes der under punkt 1.2. at der kan beslaglægges materiale, udstyr osv. Det virker som urimelige sanktioner på baggrund af en anklage.”</p>	<p>25. Udvalget har forståelse for, at det konkret for den indklagede vil kunne opfattes som en sanktion men skal understrege, at der ikke er tale om en sådan men om nødvendig sikring af bevis eller forhindring af, at den indklagede gør mere skade.</p> <p>Under afsnit 1.2. om forretningsudvalgets kompetencer, at det tilføjet, at forretningsudvalget ”Efter en konkret vurdering af behovet herfor evt. kan anmode ....” for at understrege, at der ikke ligger en automatik i muligheden.</p>
<p>Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling</p>	<p>JG: ” Stilles krav til anklagere om at sikre et ordentligt grundlag for anklager mod AAU ansatte.”</p>	<p>26. Der skal udfærdiges en skabelon til hjemmesiden, som anklager kan udfylde til sikring af betingelserne i lov om videnskabelig uredelighed § 11, stk. 1.</p>
<p>Generelt til afsnit 1.2. Sekretariatsbistand/sagsbehandling</p>	<p>JG: ” Hvordan man (personalepolitisk) støtter medarbejdere, der er under anklage. Er det alene et ansvar for institutlederen? Og hvor henter institutlederen så hjælp?</p>	<p>27. Se bemærkning nr. 24.</p>



<b>Afsnit 1.3 Ressourcer/omkostningsdækning</b>		
<p>Generelt til afsnit 1.3. Ressourcer og omkostningsdækning</p>	<p>HUM/SAMF fakulteterne: "I afsnittet er det kun ressourcetrækket på de faste VIP og de ad hoc-udpegede medlemmer, der er beskrevet. Derfor er ressourcetrækket på FAK-TAP uklart, og det ønskes således nærmere at få beskrevet inden implementeringen af det nye set-up. Fakulteterne gør i den forbindelse opmærksom på, at sekretariatsbetjeningen af området vedrørende det rutinemæssige plagiattjek og behandling af sager om tvivlsom videnskabelig praksis med videre har udgjort en kraftigt stigende administrativ belastning siden indførelsen af det nye scanningsprogram iThenticate, der, som nævnt, gør, at der kommer langt flere sager, og at området forventes at trække yderligere ressourcer i de kommende år. Hertil kommer at området vedrørende etiske godkendelser også er vokset, og forventes at vokse fremadrettet, som led i mere internationale publiceringsprofiler i miljøerne og skærpede krav i EU-systemet (H2020)."</p>	<p>28. Udvalget finder, at institutionen overordnet set bør forholde sig til ressourcer til området.</p> <p>TAP er nu skrevet ind i afsnit 1.3.</p>
<b>Afsnit 2. Kompetence</b>		
<p>Generelt til afsnit 2. Kompetence</p>	<p>HUM/SAMF fakulteterne: "Det bør fremgå klart, hvorvidt orienteringspligten også vedrører verserende sager og fortrolighed (eksempelvis i forbindelse med årsberetning), ligesom det skal fremgå tydeligt, om behandlingen i udvalget har opsættende virkning i forhold til eksempelvis forsvar."</p>	<p>29. Spørgsmålet om fortrolighed og orientering af interessenter, skal behandles i de procedurer, der skal udarbejdes efter forslaget. Se bemærkning nr. 17.</p> <p>Som udvalget har forstået det betyder en behandling i fakultetets praksisudvalg i dag normalt, at forsvaret udsættes. Dette er ph.d.-skolelederens afgørelse. Reorganisering af praksisudvalgsstrukturen vil ikke ændre på dette.</p>
<b>Afsnit 2.1. Udvalgets portefølje</b>		
<p>"4. udarbejde en opsummerende rapport om de sager om tilfælde af tvivlsom forskningspraksis, udvalget har behandlet, en gang om året til rektor</p>	<p>HUM/SAMF fakulteterne: "Såfremt den vedtægtsændring, der er lagt op til, bliver en realitet, ønskes det, at der årligt også afrapporteres</p>	<p>30. Udvalget er enig i forslaget og har tilføjet det til punkt 4 under PU's opgaver.</p>

<p>og NVU jvf. lov herom og gældende retningslinjer herfor,”</p>	<p>til de akademiske råd og ikke kun til rektor og Nævnet for Videnskabelig Uredelighed. Dette giver mening i forhold til at: ”De akademiske råd for de videnskabelige hovedområder har ansvar for at udvikle og vedligeholde en høj akademisk standard og har herunder til opgave: ... 6) at fastlægge retningslinjer til fremme af god videnskabelig praksis.”</p>	
<p>”Udvalget afviser sager om brud på ansvarlig forskningspraksis, der ikke opfylder ovennævnte kriterier for behandling ved NVU eller PU AAU og henviser dem til behandling ved relevante institutioner/linjeleder.”</p>	<p>SUND fakultetet: ”Det bemærkes, at der i det fremsendte materiale særligt fokuseres på FFP sager, som må forventes at forekomme yderst sjældent, mens de mere hyppigt forekommende sager vedrørende brud på ansvarlig forskningspraksis i mindre grad omtales. I afsnit 2.1 omtales, at</p> <p><i>”Udvalget afviser sager om brud på ansvarlig forskningspraksis, der ikke opfylder ovennævnte kriterier for behandling ved NVU eller PU AAU og henviser dem til behandling ved relevante institutioner/linjeleder.”</i></p> <p>Fakultetet ønsker en tydeliggørelse af hvordan sager som ikke håndteres af PU AAU håndteres i linjeledelsen, i og med, at det forstås ud fra fremsendte, at fakulteternes egne praksisudvalg nedlægges.”</p>	<p>31. Efter vedtægtsændringen ligger ansvaret for at fastlægge retningslinjer for universitetets behandling af sager om brud på god forskningspraksis, herunder sager om videnskabelig uredelighed, hos rektor.</p> <p>Rektor forholder sig bl.a. til det ved at nedsætte et praksisudvalg, der skal tage sig af visse brud som defineret i forslaget. Brud, der falder uden for disse definitioner, skal fortsat håndteres, som de bliver det i dag af linjeledere og institutioner, fx ph.d.-skoler.</p>
<p>Generelt til afsnit 2.1. Udvalgets portefølje</p>	<p>JG: ” Drøfte hvor langt man vil gå i sager om anklager mod tidligere AAU ansatte. Hvad hvis hovedforfatteren ikke er ansat længere, men øvrige forfattere er? Hvad hvis den anklagede ikke er ansat på AAU længere, men det videnskabelige produkt er udgivet i AAU-tiden, men den anklagede er ikke umiddelbart kontaktbar i udlandet?</p>	<p>32. Udvalget noterer sig, at spørgsmålet bør adresseres i procedurerne.</p> <p>Jf. lov om videnskabelig uredelighed har institutionerne pligt til at sende sager videre til NVU, hvis de er omfattet af definitionerne for FFP, ligesom tilfælde af tvivlsom forskningspraksis iflg. loven skal håndteres på institutionerne. Forarbejderne til loven angiver ikke en forældelsesfrist.</p>

		<p>Udvalget vil ifølge sit forslag kunne afvise at behandle en sag som formodes ikke at kunne føre til en afgørelse om, at der foreligger tvivlsom forskningspraksis, hvis behandlingsomkostninger ikke står i rimeligt forhold til dens betydning, eller som har meget lille tilknytning til Danmark.</p>
<p><b>Afsnit 2.2 Sanktioner</b></p>		
<p>”Er der tale om videnskabelig uredelighed vedrørende et videnskabeligt produkt afgivet af en person indskrevet ved en Ph.D.-skole, træffer Ph.D.-skolelederen bestemmelse om evt. studiemæssige konsekvenser (advarsel eller bortvisning fra Ph.D.-studiet), mens dekanen som i andre sager træffer afgørelse om evt. ansættelsesmæssige konsekvenser.”</p>	<p>Ph.d.-skolerne ved ENG/SUND/TECH: ” I forhold til sanktioner står der, at <i>”ph.d.-skolelederen træffer bestemmelse om evt. studiemæssige konsekvenser (advarsel eller bortvisning fra ph.d.-studiet), mens dekanen som i andre sager træffer afgørelse om evt. ansættelsesmæssige konsekvenser”</i>. Her er det vigtigt at være opmærksom på, at en bortvisning fra ph.d.-studiet har den afledte konsekvens, at en eventuel ansættelse som ph.d.-stipendiat ophører, hvorved en sanktion fra ph.d.-skolelederen får en ansættelsesmæssig konsekvens.</p> <p>I forhold til ph.d.-bekendtgørelsens § 13 ophører den ph.d.-studerendes indskrivning ved indlevering af afhandlingen. Det foreslås derfor præciseret, at ph.d.-skolelederen også sanktionerer i tilfælde, der omhandler ph.d.-afhandlinger indleveret til bedømmelse, men inden ph.d.-graden er tildelt (<i>ph.d.-skolen har uddybet, at sanktioner overfor ikke indskrevne fx er fastsættelse af en karenperiode eller afgørelse om, at afhandlingen ikke kan genindleveres</i>), hvorefter sanktioner henhører under Akademisk Råd. Man kunne anvende følgende forslag til definition af ph.d.-studerende:</p> <p><i>”Ph.d.-studerende defineres herefter som indskrevne ved fakultetets ph.d.-skole, herunder også ansatte ph.d.-studerende, samt ph.d.-studerende og forfattere, som har indleveret en afhandling til bedømmelse, jf. § 13 og § 15, stk. 2 og 3 i bekendtgørelse nr. 1039 af 27. august 2013 om</i></p>	<p>33. Udvalget har med forslaget ikke ønsket at ændre den eksisterende fordeling af sanktionering mellem dekan og ph.d.-skoleleder. Udvalget finder som nævnt i forslaget, at sanktionering skal ligge hos linjeledelse og være adskilt fra den faglige vurdering, der sker i PU.</p> <p>I forslaget er tilføjet ”... et videnskabeligt produkt afgivet af en person indskrevet <i>eller tidligere indskrevet</i> ved en ph.d.-skole, ...” for tydeliggørelse af ph.d.-skolelederens kompetence. Eksemplerne på sanktioner er fjernet. Se bemærkning nr. 34.</p>

<i>ph.d.-uddannelsen ved universiteterne og visse kunstneriske uddannelsesinstitutioner."</i>		
Generelt til afsnit 2.2. Sanktioner	JG: "Drøfte et "sanktionskatalog" samt hvordan forholdet skal være mellem (større eller mindre) videnskabelige foreteelser og de arbejdsretlige sanktioner. Hvad skal der til for at en sag nævnes i personalemappen, hvor længe skal den opbevares og hvem skal kunne få adgang til den?"	34. Udvalget finder, at sanktionsniveauet bør fastlægges af de sanktionerende. I lighed med andre udviklingsopgaver kan rektor bede PU om at bidrage med vurdering.  Spørgsmålet om opbevaring af akter i personalesagen bør af de sanktionerende rejses overfor HR, hvis der er tvivl herom.
Generelt til afsnit 2.2. Sanktioner	JG: " Praksisudvalget indfører en kategorisering af sine afgørelser. Så graden af QRP fx kan gå fra "Mild" over "Nogen" til "Grov" eller lignende kategorisering, da dette er afgørende for de, der efterfølgende skal udmåle sanktioner. Derudover kan nævnes, at vi mange gange har diskuteret i praksisudvalget om vi vurderer at foreteelserne har været uagtsomme eller groft uagtsomme.	35. Udvalget er enig i, at der naturligt vil blive behov for en graduering, hvilket PU's udtalelser vil komme til at afspejle. Udvalget finder ikke, at det er muligt forlods at lægge sig fast på denne graduering. Den må udvikle sig over tid.
<b>Afsnit 3.1. Named persons ordninger</b>		
"Named persons ordninger"	RWP: Hvad er en "Named Persons" ordning? Definer venligst begrebet.	36. Begrebet stammer fra Den danske kodeks for integritet i forskning, appendiks 1, afsnit 1. I forslaget er der nu henvist hertil i en note.
<b>Afsnit 3.2. Review Boards</b>		
"institutionens forskellige interne Review Boards"	RWP: Hvad med blot at skrive bedømmelsesudvalg?	37. Udvalget har valgt termen review boards for at udsondre de bedømmelsesudvalg, der nedsættes til faglig bedømmelse af videnskabeligt arbejde (fx ph.d.-bedømmelsesudvalg) eller kvalifikationer hos videnskabelige medarbejdere (udvalg nedsat til bedømmelse af ansøgere til videnskabelige stillinger). Termen review boards er inspireret af anvendelsen af Institutional Review Boards (IRB) som de kendes fra amerikanske universiteter.
"institutionens forskellige interne Review Boards"	HUM/SAMF fakulteterne: "Det Samfundsvidenskabelige Fakultet og det	38. Spørgsmålet er ikke umiddelbart vurderet til at ligge inden for udvalgets kommissorium. Som

	Humanistiske Fakultet havde foretrukket, at forslaget indeholdte en afklaring i forhold til spørgsmålet om håndteringen af etiske godkendelse af de forskningsprojekter, der falder uden for Den Videnskabsetiske Komité for Region Nordjyllands ressortområde og godkendelser i regi af Datatilsynet. Fakulteterne finder det vigtigt, at AAU Praksisudvalg adresserer dette spørgsmål i det videre arbejde ligesom fakulteterne ønsker, at der opstilles en tidshorisont for afklaringen af dette spørgsmål.”	bemærket i afsnit 3.2. vil udvalget, såfremt rektor måtte ønske det, kunne bistå ved vurdering af evt. interne Review Boards som måtte blive udviklet af andre institutioner på AAU  Udvalget finder, at spørgsmålet måske kunne tages op i de akademiske råd, der jf. vedtægtens § 24, stk. 1, nr. 6 fortsat har ansvaret for fastlæggelse af retningslinjer til fremme af god videnskabelig praksis.
<b>Afsnit 4:</b>		
<ul style="list-style-type: none"> <li>• <b>”At sagsbehandlingen ved PU AAU omfattes af lignende frister som er angivet i lovforslaget vedrørende NVU (lovforslagets §§ 14 og 15 – afvisning indenfor 3 måneder, færdigbehandling så vidt muligt indenfor 12 måneder).”</b></li> </ul>	Institut for Økonomi og ledelse: ”I baggrundsnotatet fremføres det, at sager skal søges afklaret senest 12 måneder efter nævnet har modtaget en sag. Hvis man er anklaget, så er et år lang tid at vente på en afgørelse. For at afkorte sagsbehandlingstiden mest muligt foreslås det, at ad-hoc medlemmer med ekspertise på feltet inddrages allerede i det indledende arbejde. Ved ikke at inddrage ad-hoc medlemmer i det indledende arbejde, kan forretningsudvalget næsten kun træffe afgørelse om, at sagen skal sendes til videre undersøgelse, og derved øges risikoen for lang sagsbehandlingstid.”	39. Udvalget har noteret sig bekymringen men finder, at forretningsudvalget i det foreslåede set up vil være hurtigere til at sagsbehandle, fordi det består af allerede udpegede medlemmer. Det er i øvrigt udvalgets klare forventning, at sagerne som udgangspunkt sjældent vil versere så længe som et år.
”_”	Ph.d.-skolerne ved ENG/SUND/TECH: ” Sagsbehandlingstiden er i forslaget angivet, som følger: ” <i>afvisning indenfor 3 måneder, færdigbehandling så vidt muligt indenfor 12 måneder</i> ”. Det er en lang sagsbehandlingstid. Som nævnt tidligere i nærværende høringssvar skal der i henhold til ph.d.-bekendtgørelsen (§ 20, stk. 3) være afholdt forsvar inden for tre måneder efter indleveringen af afhandlingen. Denne frist vil ikke kunne overholdes med de sagsbehandlingstider, der angives i høringssvaret.	40. Der henvises til bemærkning nr. 29 vedr. ph.d.-skolelederens afgørelse om udsættelse af forsvar samt bemærkning nr. 39 om forventet sagsbehandlingstid.
<b>Afsnit 5. Information/kommunikation</b>		
Generelt til afsnit 5.	JG: ” Etableres en fælles indgang på <a href="http://www.aau.dk">www.aau.dk</a> for	41. Er indeholdt i forslagets afsnit 5.1. Institutionen

Information/kommunikation	anklagere/interessenter udenfor AAU, der tydeligt tilkendegiver hvordan AAU håndterer sager om mistanke om brud på god videnskabelig praksis (herunder krav til anklagere) og hvem der er kontaktpersoner. ”	har jf. lov om videnskabelig uredelighed § 20 pligt til at offentliggøre retningslinjer for behandling af tilfælde af tvivlsom forskningspraksis på sin hjemmeside.
<b>Afsnit 7:</b>		
”Såfremt udvalgets forslag skal gennemføres, foreslår udvalget i tillæg hertil, at bestyrelsen forelægges forslag om ændring af universitetets vedtægt, så ansvaret for at fastlægge retningslinjer for universitetets behandling af sager om brud på god forskningspraksis, herunder sager om videnskabelig uredelighed, fremover tillægges rektor.”	RWP: Der flyttes kompetencer fra en instans til en anden. Det synes på sin plads at forklare motivationen for dette.	42. Udvalget henviser til baggrundsdokumentet og beskrivelsen under anbefaling 2.
<b>Baggrundsnotatet:</b>		
Generelt til baggrundsnotatet	JG: ” Sikres at begreberne i reorganiseringensnotatet anvendes konsekvent. Fx er QRP det samme som ”Tvivlsom forskningspraksis”? Hvis ja, hvad skal så bruges på AAU? Derudover bør der i mange flere tilfælde tilføjes ”mistanke”...om tvivlsom forskningspraksis. Altså at vi konsekvent taler om en mistanke (eller anklage, eller påstand, eller.....). Begreberne skal bruges konsekvent i materialet og i det daglige arbejde.”	43. Udvalget er enig i, at begrebet QRP bør udgå helt og i alle fremtidige skrivelser bør erstattes med sager om/tilfælde af tvivlsom forskningspraksis og dermed følge lovens terminologi.  Mistanke – se bemærkning nr. 24



AALBORG UNIVERSITET

Fakultetskontoret for  
ENGINEERING, SUND og TECH

Dokument dato: 24-05-2017

Dokumentansvarlig: ACH

Senest revideret:

Senest revideret af:

Sagsnr.:

Anledning / mødeforum og dato:	Akademisk Råd TECH
--------------------------------	--------------------

## Sagsfremstilling

Overskrift og varighed:	Høring af forslag til bedømmelsesregler ved adjungering af lektorer og professorer
Sagsbehandler:	Anne Christoffersen, HR-centeret
Sagsfremstilling:	<p>Jf. bekendtgørelse om tildeling af titlerne adjungeret professor og adjungeret lektor af 20.05.2013, BEK nr. 502, skal universitetet fastsætte regler for faglig bedømmelse (§ 6).</p> <p>Der har på tværs af fakulteterne på AAU og med HR-afdelingen som tovholder været nedsat en arbejdsgruppe, som har samlet input fra dekanerne på AAU.</p> <p>Ultimo 2015 blev der lavet et fælles udkast, som i første omgang blev vendt med dekanerne og efterfølgende forelagt rektor og rektorsekretariatet.</p> <p>Rektoratet vendte tilbage med det opdrag, at der også skulle udarbejdes en fælles administrativ procedure om tildeling af titlen adjungeret professor/lektor på tværs af fakulteterne ved AAU. På den baggrund trådte udvalget sammen igen.</p> <p>Forslag til bedømmelsesregler og den fælles administrative procedure blev primo maj 2017 forelagt rektor, som ikke har haft kommentarer til det.</p> <p><i>Bemærkning:</i> Den fælles administrative procedure er en rammesætning for det administrative arbejde i forb. med en adjungering og er med den baggrund ikke genstand for yderligere behandling.</p>
Indstilling:	Det indstilles til, at forslaget til de fælles AAU-bedømmelsesregler i adjungeringssager godkendes.
Bilag:	<ul style="list-style-type: none"><li>• "Nye bedømmelsesregler ved adjungeringer af lektorer og professorer" - fremstilling af HR-afdelingen</li><li>• Bekendtgørelse om tildeling af titlerne adjungeret professor og adjungeret lektor af 20.05.2013</li></ul>



AALBORG UNIVERSITET

HR-afdelingen  
Fredrik Bajers Vej 7F  
9220 Aalborg Ø

Telefon: 9940 9940  
Email: [hr@adm.aau.dk](mailto:hr@adm.aau.dk)

Dato: 22.05.2017  
Sagsnr.: -  
Sagsbehandler: Søren Vaagholt  
Nielsen

Til akademisk råd

## Nye bedømmelsesregler ved adjungeringer af lektorer og professorer

### Baggrund

Pr. 1. juni 2013 bekendtgjorde Ministeriet for Forskning, Innovation og Videregående Uddannelser nye regler om tildeling af titlerne adjungeret professor og adjungeret lektor (BEK nr. 502 af 20.05.2013). Reglerne adskiller sig ikke nævneværdigt fra de tidligere, bortset fra § 6, hvoraf det fremgår, at "(...) *Universitetet fastsætter regler for faglig bedømmelse af disse personer.*"

Indtil universitetet har fastsat egne regler, skal bedømmelsesreglerne fra den forudgående bekendtgørelse (BEK nr. 622 af 28.06.2000) anvendes:

*§ 6. Forslag om tildeling af titlen adjungeret professor til en bestemt person kan fremsættes over for rektor. Hvis rektor anser forslaget for velbegrunderet, **nedsætter rektor et sagkyndigt udvalg bestående af 3 personer**, der må anses for at besidde faglig indsigt på tilsvarende niveau.*

*§ 7. Udvalget afgiver en motiveret vurdering til rektor af, om titlen bør tildeles.*

*Stk. 2. Rektor kan kun tildele titlen, hvis mindst 2 medlemmer af det sagkyndige udvalg indstiller dette.*

Ændringen, der giver mulighed for, at det enkelte universitet fastsætter egne regler for faglig bedømmelse, kommer i naturlig forlængelse af regelændringen i Ansættelsesbekendtgørelsen (der fastlægger den faglige bedømmelse ved ansættelse af videnskabeligt personale), hvor der i 2012 blev mulighed for, at universiteterne selv fastsatte bedømmelsesregler.

### Forslag til fælles AAU-bedømmelsesregler i adjungeringssager

Ønskerne fra de videnskabelige hovedområder har været at fastsætte overskuelige og nemt anvendelige bedømmelsesregler, mens der samtidig værnes om den legitimitet, der ligger i den faglige bedømmelse af en adjungeret professor eller lektor.

En arbejdsgruppe er kommet frem til følgende forslag. Forslaget er afstemt med de enkelte dekaner og været forelagt rektor:



I henhold til gældende bekendtgørelse vedr. tildeling af titlerne adjungeret professor og adjungeret lektor (for tiden bek. nr. 502 af 20.5.2013) fastsættes følgende regler for faglig bedømmelse af personer, som Aalborg Universitet ønsker at tildele ovenstående titler:

Akademisk Råd nedsætter, efter anmodning fra Rektor eller den af rektor bemyndigede, et bedømmelsesudvalg, som skal foretage en samlet bedømmelse af kandidaten. Bedømmelsesudvalgets medlemmer skal være sagkyndige inden for det videnskabelige område på et niveau, der minimum svarer til niveauet for adjungeringstitlen.

Bedømmelsesudvalget skal bestå af tre personer, hvoraf et internt medlem er formand.

Ved tildeling af titlen som adjungeret lektor kan bedømmelsesudvalget nedsættes med interne medlemmer, såfremt kandidaten tidligere er blevet bedømt lektorkvalificeret ved AAU eller et af AAU anerkendt universitet. I modsat fald sammensættes bedømmelsesudvalget med et internt og to eksterne medlemmer.

Ved tildeling af titlen som adjungeret professor kan bedømmelsesudvalget nedsættes med interne medlemmer, såfremt kandidaten tidligere er blevet bedømt professorkvalificeret ved AAU eller et af AAU anerkendt universitet. I modsat fald sammensættes bedømmelsesudvalget med et internt og to eksterne medlemmer.

Bedømmelsesudvalg skal så vidt muligt have medlemmer af begge køn.



**AALBORG UNIVERSITET**

**HR-afdelingen**  
Fredrik Bajers Vej 7F  
9220 Aalborg Ø

Telefon: 9940 9940  
Email: [hr@adm.aau.dk](mailto:hr@adm.aau.dk)

Dato: 02.05.2017  
Sagsnr.: -  
Sagsbehandler: Søren Vaagholt  
Nielsen

## **Administrativ procedure ved tildeling af titlerne adjungeret lektor og adjungeret professor**

Proceduren for tildeling af titlerne som hhv. adjungeret lektor og adjungeret professor, som er gældende for alle videnskabelige hovedområder ved Aalborg Universitet, er fastsat i henhold til den til enhver tid gældende bekendtgørelse om titlerne (aktuelt BEK nr. 502 af 20.5.2013, *Bekendtgørelse om tildeling af titlerne adjungeret professor og adjungeret lektor*).

Det bemærkes, at de enkelte hovedområder fortsat har mulighed for at fastsætte en lokal politik for udnævnelser, fx hvis hovedområdet strategi kan understøttes gennem brugen af adjungerede lektorer/professorer.

I bekendtgørelsen er det rektor, der håndterer sager om og tildeler titlerne som adjungeret lektor eller professor. Det bemærkes, at rektor ved Aalborg Universitet har delegeret beføjelserne vedr. adjungeringer til dekanerne ved fakulteterne/direktøren ved SBI, jf. [delegationsinstruksen](#).

### **Indstilling af personer til titlerne *adjungeret lektor* eller *adjungeret professor***

Jf. bekendtgørelsen fremsættes et forslag om tildeling af den ene eller anden titel til en person til rektor.

Det er universitetets ønske, at en adjungeret lektor/professor forankres i et af universitetets fagmiljøer, hvorfor et forslag om adjungering af en navngiven person i første omgang stilles til en institutleder, der fagligt dækker det videnskabsområde, som forslaget vedrører. Institutleder kan anmode om, at forslaget fremsættes skriftligt.

Institutleder formaliserer forslaget og indhenter frit tilgængelige oplysninger (fx CV, publikationsoversigter mv.), inden forslaget fremsendes til dekanen med en skriftlig motivation.

Såfremt dekanen vurderer, at forslaget skal fremmes, tager dekanen kontakt til den foreslåede person for at indhente accept fra denne. Hvis personen accepterer at gennemgå en faglig bedømmelse med henblik på at blive udnævnt til adjungeret lektor/professor, indhentes fra personen grundlæggende dokumentation til brug ved den faglige bedømmelse, fx CV, publikationsliste mv.

## Processen vedr. den faglige bedømmelse

Såfremt man igangsætter en faglig bedømmelse med henblik på adjungering, oprettes en personsag i Workzone i journalgruppe 574 (adjungerede professorer). Man skal sikre, at HR-afdelingen og det relevante institut, foruden hovedområdet, har indblik i sagen – konkret sætter man HR-indblik på for hhv. HR-afdelingen, hovedområdet samt instituttet/tjenestestedet.

Sagerne navngives med angivelse af, om det er en adjungeret lektor eller professor, vedkommendes fulde navn, navngivelse af det relevante institut samt udpegningsperiode, jf. følgende eksempler på sagstitler:

- *Adjungeret lektor, Peter Jensen, Institut for Elektroniske Systemer (udpeget 1.6.2017-31.5.2022)*
- *Adjungeret professor, Ida Phil, Juridisk Institut (udpeget 1.12.2009-30.11.2019)*

Dekanen indstiller, evt. på grundlag af forslag fra institutleder, et bedømmelsesudvalg til Akademisk Råd, jf. AAU's bedømmelsesregler vedr. adjungeringer. Når Akademisk Råd har godkendt bedømmelsesudvalgets sammensætning, påbegyndes den faglige bedømmelse. Bedømmelsesudvalget laver en skriftlig bedømmelse, hvoraf det fremgår, om pågældende er kvalificeret eller ej til den påtænkte adjungering. Såfremt der er uenighed i bedømmelsesudvalget, træffes en flertalsafgørelse. Den endelige bedømmelse fremsendes til dekanen.

Eksterne medlemmer af et bedømmelsesudvalg honoreres med 5 censortimer ved bedømmelse uanset om der er tale om en bedømmelse af en adjungeret professorer eller lektor.

Hvis bedømmelsen er negativ, fremsendes bedømmelsen til kandidaten, som får mindst 10 dages frist til at forholde sig til bedømmelsens indhold og konklusion. Såfremt der kan påpeges faktuelle fejl, som måtte kunne forventes at have indflydelse på bedømmelsens konklusion, videresendes disse til bedømmelsesudvalget med henblik på fornyet stillingtagen. Fremkommer kandidaten ikke med korrigerende bemærkninger eller er bedømmelsen fortsat negativ efter fornyet overvejelse, kontaktes den pågældende af dekanen, som meddeler, at man pt. ikke finder grundlag for at gå videre i forhold til en adjungering.

I workzone tilføjes *Annulleret*: i begyndelsen af sagstitlen, og sagen lukkes.

## Processen vedr. udpegning som adjungeret lektor/professor

Hvis bedømmelsen er positiv, vurderer dekanen, om hovedområdet fortsat ønsker at gå videre med adjungeringen, hvilket meddeles kandidaten snarest muligt, hvor også bedømmelsesudvalgets skriftlige bedømmelse medsendes.

Ønsker man at gå videre med adjungeringen, indhenter dekanen endeligt tilsagn hos pågældende, hvorefter dekanen bekræfter adjungeringen i et udpegningsbrev til kandidaten.

En udpegning skal altid annonceres på institutionsniveau. Det pågældende hovedområde er ansvarligt for at kontakte AAU Kommunikation med henblik på offentliggørelse af udpegningen på AAU inside. AAU Kommunikation kan annoncere udpegningen både på engelsk og dansk. Oversættelsen kan udarbejdes af AAU Kommunikation. Der er udarbejdet en lon: <http://www.inside.aau.dk/nyheder/navne/?page=1>, som udfyldes af fakultet eller institut med de informationer som er relevante i forhold til annonceringen. AAU Kommunikation informerer kontakt-

personen vedr. adjungeringer på fakultetskontoret om, hvornår nyheden kommer på AAU Inside. Derudover kan hovedområdet/instituttet efterfølgende selv annoncere yderligere via egne kommunikationskanaler, hvis de ønsker det.

Det forventes at den adjungerede professor/lektor afholder en tiltrædelsesforelæsning. Instituttet er ansvarlig for dette.

Instituttet sørger for at oprette personen i ScanPas (konsulentoprettelse), så vedkommende kan fremsøges med personprofil på aau.dk. Institutterne sørger for, at der tillige er brugeradgang til VBN for personen.

Derudover vurderer instituttet behovene for og aftaler nærmere vedr. it-oprettelse, kontorplads, adgangskort mv.

Kontakten mellem AAU og den adjungerede lektor/professor i løbet af udpegningsperioden varetages som oftest af en sektionsleder, forskningsgruppeleder eller lignende, der fungerer som kontaktperson på det faglige område. Kontakten til/fra universitetet af mere administrativ og praktisk karakter sker til en sekretær på institutniveau.

Udgifter forbundet med udnævnelse samt øvrige udgifter i forbindelse med den adjungerede kandidats aktiviteter ved AAU afholdes altid af instituttet (evt. en specifik sektion eller afdeling).

### **Processen vedr. afslutning af adjungering**

Ønsker institutlederen ved periodens udløb at genudpege den adjungerede fremsendes dette ønske til dekanen med en begrundelse herfor. Sker der en genudpegnings, sendes et genudpegningsbrev til den adjungerede.

Såfremt der ved periodens udløb ikke sker genudpegnings skal vedkommende afsluttes. Dette sker ved at instituttet sletter konsulentoprettelsen i ScanPas. Ligeledes at personens oprettelse i AdmDb og VBN afsluttes på ordinær vis af instituttet.

## **Bekendtgørelse 2013-05-20 nr. 502**

### **om tildeling af titlerne adjungeret professor og adjungeret lektor**

I medfør af § 29, stk. 3, i universitetsloven, jf. lovbekendtgørelse nr. 367 af 25. marts 2013, fastsættes:

**§ 1.** Universitetet kan tildele titlen adjungeret professor til anerkendte forskere, som universitetet ønsker at hædre med denne titel og derved knytte nærmere til sig. Universitetet kan også tildele titlen til personer, som uden at være anerkendte forskere har kvalifikationer på højt fagligt niveau.

**§ 2.** Ret til at anvende titlen tildeles for en periode på højst 5 år.

**§ 3.** Tildeling af titlen er ikke forbundet med aflønning. Honorering af ordinære arbejdsopgaver er fortsat mulig.

**§ 4.** Efter nærmere aftale med universitetet kan en adjungeret professor holde forelæsninger, indgå i bedømmelsesudvalg m.v. og deltage i universitetets forskning eller samarbejde med dette om forskningsprojekter.

**§ 5.** Sager om tildeling af titlen adjungeret professor behandles lige som ansættelsessager for lukkede døre og under iagttagelse af tavshedspligt.

**§ 6.** Forslag om tildeling af titlen adjungeret professor til en bestemt person kan fremsættes over for rektor. Universitetet fastsætter regler for faglig bedømmelse af disse personer.

**§ 7.** Træffer rektor beslutning om tildeling af titlen, skal rektor sikre sig, at vedkommende er villig til at modtage titlen og meddeler herefter den pågældende ret til at betegne sig adjungeret professor ved universitetet.

*Stk. 2.* Rektor kan tildele en adjungeret professor titlen på ny ved udløbet af en periode.

**§ 8.** Rektor sørger for passende bekendtgørelse af tildelingen af titlen.

**§ 9.** Universitetet kan endvidere tildele titlen adjungeret lektor til anerkendte forskere, som universitetet ønsker at hædre med denne titel og derved knytte nærmere til sig. Universitetet kan også tildele titlen til personer, som uden at være anerkendte forskere har kvalifikationer på højt fagligt niveau.

*Stk. 2.* Ved tildeling af titlen adjungeret lektor følges bestemmelserne i §§ 2-8.

**§ 10.** Styrelsen for Universiteter og Internationalisering kan i særlige tilfælde godkende fravigelser fra bekendtgørelsens § 2.

**§ 11.** Bekendtgørelsen træder i kraft den 1. juni 2013.

*Stk. 2.* Bekendtgørelse nr. 622 af 28. juni 2000 om tildeling af titlen adjungeret professor m.v. ved universitetslovsinstitutioner under Forskningsministeriet ophæves.

*Stk. 3.* Indtil universitetet fastsætter regler i henhold til § 6, anvendes reglerne i §§ 6 og 7 i bekendtgørelse nr. 622 af 28. juni 2000.



AALBORG UNIVERSITET

Fakultetskontoret for  
ENGINEERING, SUND og TECH

Dokument dato: 17-04-2017

Dokumentansvarlig: KVN/BV

Senest revideret: 07-06-2017

Senest revideret af: KVN

Sagsnr.:

## **TECH budgetmodel 2018**

### **Rammerne for TECH budgetmodel 2018**

#### **Økonomiske rammer**

Universitetets budgetmodeller skal jf. direktionsudmelding understøtte, at alle niveauer i organisationen arbejder strategisk på at nå universitetets mål og sikrer optimering af den løbende drift. Sikring af den ønskede strategiske retning på alle niveauer i organisationen kræver et samspil mellem flere elementer i fakultetets styring. Fakultetets strategiske ledelse skal baseres på en udmelding fra fakultetets ledergruppe om strategisk retning, og fakultetets økonomimodel skal gennem det optimale mix af incitamentsstruktur, herunder optimal organisatorisk omkostningsplacering, strategipuljer og måltal understøtte den ønskede strategiske retning.

Fakultetets økonomiske rammevilkår er fra ministeriet underlagt en forventning om løbende produktivtetsforbedring på 2% samt afløb af omprioriteringsbidrag fra 2016, hvor der skete en væsentlig nedsættelse af taksterne for færdiggørelsesbonus. Dette betyder, at afregningen af hver enhed i fakultetets uddannelsesproduktion er udsat for faldende afregning – faldende takster, særligt faldende STÅ-takst påvirker fakultetets fremtidige økonomiske rammer. Internt på universitetet er TECH-fakultetets rammer til og med 2018 begrænset af den afsatte implementeringspulje.

Fakultetets samlede økonomimodel må tage højde for dette for ikke at miste momentum i fakultetets strategiske udvikling. Samtidig er det vigtigt for fakultetet løbende at arbejde med at skabe økonomisk rum til de nødvendige strategiske tiltag.

#### **Råderum til strategiske satsninger**

På AAU er der igangsat flere strategiske initiativer, der involverer finansiering fra det enkelte fakultet. P.t. er der igangsat talentprojekter og tværvideenskabelige projekter, der kræver betydelig medfinansiering fra fakultetet og flere strategiske satsninger på tværs af AAU er på vej. Fakultetet arbejder herudover med egne initiativer, som ligeledes kræver særlig finansiering. Fakultetets styringsmodel skal sikre, at der skabes økonomisk råderum til disse fælles initiativer og samtidig giver plads til, at der arbejdes med egne strategiske udviklingsprojekter i de enkelte institutter.

## Strategisk ledelse

Den nye budgetmodel skal understøtte *en sammenhængende strategisk ledelse* på fakultetets forskellige niveauer. Fakultetets ledelse skal som én enhed sikre udmøntning af universitetets strategi og fakultetets fortsatte udvikling og forfølgelse af fælles mål.

Til at sikre en samlet strategisk ledelse skal følgende mål forfølges

- Fælles strategiske mål og retning formuleres af ledergruppen gennem fokuspunkter formuleret til AAU's årsbudget samt fælles strategiske projekter
- Transparens på tværs af institutter af stillingsplaner og investeringsplaner for at sikre ressourceoptimering og undgå parallelbygning
- Hvert institut afsætter hvert år op til 5% af deres samlede økonomiske råderum til reelle, nye strategiske tiltag. Institutternes forslag til strategiske tiltag præsenteres for den samlede ledergruppe
- Transparens bag økonomistrømme, der sikrer sammenhæng mellem aktivitet og indtjening samt forståelse for finansiering af fakultetets fælles aktiviteter, herunder skoleaktivitet
- Transparens på tværs af skoler og uddannelser for rekvisitionspraksis med særligt fokus på rekvirerede timer pr. STÅ, der sikrer, at mer-/mindrekvisition pr. uddannelse er afstemt i fakultetsledelsen
- Omkostningseffektivitet, hvor omkostningsafholdelse sker på det optimale niveau i organisationen (fakultet eller institut), hvor effektivitet giver mulighed for at omdisponere sparede ressourcer til understøttelse af fakultetets strategiske mål
- Budgetsikkerhed for de decentrale enheder, så al fokus kan være på at sikre strategisk målopfyldelse
- Flerårige disponeringsrammer, som indeholder tolerancebånd for ressourceanvendelse, hvorved fakultetet vil arbejde med en reel egenkapital på alle niveauer

Samlet skal implementering og fastholdelse af ovenstående elementer medføre legitimitet bag strategiske ledelsesbeslutninger, der sikrer følgeskab på tværs af hele organisationen.

## TECH-fakultetets primære fokuspunkter

- Forskningsbaseret undervisning understøtter universitetets nødvendige institutionsakkreditering og sikrer fokus på fakultetets uddannelser som en kerneaktivitet af meget stor vigtighed for fakultetets fremtidige indtægtsgrundlag
- Ekstern virksomhed er fakultetets mulighed for at udvikle sin forskning i den kommende periode, hvor basismidlerne ikke forventes at ville vokse i omfang
- Publikationer af høj kvalitet skal understøtte fakultetets fortsatte videnskabelige udvikling

Fastholdelse af ph.d.-uddannelse på et højt niveau vil være et yderligere element, som skal adresseres i drøftelsen af fakultetets nye budgetmodel.

## Incitamentsstruktur

TECH's budgetmodel skal understøtte en incitamentsstruktur, der sikrer det nye fakultets optimale strategiske udvikling. Incitamentsstrukturen drejer sig om at understøtte de primære fokuspunkter bedst muligt. Gennem det særlige fokus på forskningsdækning af leveret undervisning, fakultetets eksterne virksomhed og høj kvalitet i publicering sikres den bedst mulige undervisning og forskningsmæssig impact.

Fakultetet skal sikre en tilpas understøttelse af fremtidens VIP-rekruttering gennem et fortsat fokus på ph.d.-uddannelse, og fakultetet ønsker at understøtte fastholdelse og udvikling af unikke laboratorier.

Det skal generelt kunne betale sig at øge aktivitet inden for fakultetets kerneaktiviteter. Flere studerende, mere forskning og mere ekstern virksomhed skal understøttes af budgetmodellens ressourcetildeling.

EU-finansieret forskning vurderes at kræve en særlig opmærksomhed de kommende år, da det er et område, hvor der kan forventes stor vækst i tilgængelige midler.

#### *Transparens af budgetmodeller og modeller bag undervisningsrekvisition på tværs af organisationen*

Den af fakultetsledelsen fastlagte incitamentsstruktur skal understøttes af institutternes budgetmodeller, ligesom den besluttede strategiske retning skal understøttes af institutternes ordinære stillingsplaner og investeringsplaner. På samme måde skal aftalt rekvisitionsmodel understøttes af skolens rekvisitionspraksis.

#### **2-strengt struktur opretholdes**

Fakultetets 2-strengede kvalitetssikringsmodel opretholdes. Fakultetets skoler bibeholder dermed en selvstændig autoritet for planlægning af sine uddannelsesaktiviteter, hvor uddannelsernes kvalitet er omdrejningspunktet. Skolen tildeles timer og sikres mulighed for at rekvirere den nødvendige undervisning på tværs af universitetets enheder uanset modellen for fordeling af uddannelsesmidler. Det er vigtigt, at skolen har et særligt fokus på at sikre undervisning med den bedste forskningsbaseret, og via sine rekvisitioner er med til at modvirke parallelbygning af kompetencer på universitetet.

#### **Omkostningseffektivitet**

Fakultetet ønsker at forfølge placering af omkostninger så decentralt som muligt. For at sikre driftsoptimering bør omkostningsafholdelse og konsekvens ved mer-/mindre forbrug bør hænge sammen, da det giver den højeste grad af omkostningseffektivitet. I dag finder dette i høj grad sted. Fakultetet har i dag nogle få områder, hvor princippet om at omkostningsafholdelse ligger på den disponerende enhed ikke gælder. Omkostninger til seminarrum og auditorieanvendelse betales af fakultetet, hvorved optimal anvendelse er afhængig af institutternes opbakning med kun en indirekte økonomisk fordel gennem mindre betaling til fællesfakultære omkostninger.



## Budgetmodellen 2018

### Sikre sammenhæng mellem leveret aktivitet og ressourcetilførsel

Institutterne har gennem flere år oplevet at værdien af deres leverancer er blevet udhulet grundet det generelle fald i de takster, som ministeriet afregner fakultetets produktion med. En præmis bag fakultetets kommende budgetmodel bør være, at fakultetet gennem effektivisering af studiernes undervisningsbehov og følgeomkostninger, primært arealanvendelse generelt kan afregne leverancer med den generelle lønstigning, således at de tilførte ressourcer reelt kan dække lønomkostningen bag den leverede ydelse. Samtidig skal der sikres økonomisk råderum til at understøtte både AAU-, fakultets- og institutinitierede strategiske satsninger.

Da rammevilkårene for den modtagne betaling for uddannelsesproduktionen de kommende år fremgår af Finanslovens takstkatalog, er det muligt at lave en følsomhedsanalyse, der sikrer, at det alt andet lige er muligt at honorere den leverede undervisningsydelse til kostpris. Et særligt element i analysen er implementeringspuljen. Rektors nye model fra 2019 udgør en væsentlig risikofaktor.

Analysens primære elementer vil være rekvisitionsomfang og arealanvendelse. Har fakultetet styr på disse omkostningselementer, vil institutternes ressourcetilførsel for deres basisleverancer via budgetmodellen være anderledes reel end i den nuværende budgetmodel, hvor taksterne i takstkataloget mere er udtryk for fakultetets betalingsmulighed end institutternes omkostningsstruktur.

Beregningerne vil tage udgangspunkt i det forventede fald i honorering af uddannelsesaktivitet, som fremgår af Finanslovens takstkatalog, samt et fald i tildelte timer pr. STÅ til skolerne fra i dag 86 timer pr. STÅ til i 2019 80 timer pr. STÅ og en beregning af det nødvendige fald i arealanvendelsen for at sikre værdien af leverancen.

Analyse af skolernes rekvisitionsomfang har vist, at der er uhensigtsmæssigt store udsving i undervisningsrekvisition mellem uddannelser. Skolerne skal i samarbejde med institutterne fremover sikre, at deres rekvisitionspraksis forfølger en optimering frem mod gennemsnitligt 80 timer pr. STÅ og ligeledes forfølger, at de enkelte uddannelser nærmer sig en samlet rekvisition på 80 timer pr. STÅ. Ledergruppen udpeger uddannelser, hvor rekvisitionsomfang kan afvige i op- og nedadgående retning fra den gennemsnitlige rekvisition. Hvert semester fremlægges den enkelte skoles rekvisitionspraksis på ledermøde. Manglende tilretning af rekvisitionspraksis efter fakultetsledelsens udstukne retningslinjer kan betyde, at afregning af (forsknings-)tillæg til undervisningsleverance reguleres.

### Understøttende analyser

#### *Behov for studieeffektivisering*

Studieeffektivisering skal analyseres med udgangspunkt i den nuværende rekvisitionspraksis. Der udarbejdes et notat indeholdende en plan, der udstikker rammerne for at sikre studieeffektivisering, så fakultetet rammer en ressourceanvendelse på '80 timer pr. STÅ'. Fakultetet arbejder inden for denne ramme med at analysere uddannelsers økonomiske robusthed som input til optimering af fakultetets uddannelsesportefølje.

### *Behov for effektivisering af arealanvendelse*

Arealanvendelse skal analyseres med udgangspunkt i det nuværende flerårige huslejobudget. Med stigende indtægt pr. produceret enhed og viden om huslejens andel af fakultetets samlede økonomi kræver området en særlig opmærksomhed.

### *Forskeruddannelse og basis for rekruttering*

Forskeruddannelse er vigtig for fakultetets fremtidige rekruttering og fakultetets bidrag til samfundets behov for viden. Det rette mix mellem ph.d.-uddannelse og post doc er vigtigt for fakultetets fortsatte udvikling. Der er p.t. en bevægelse mod flere post docs og færre ph.d.-studerende. Der skal laves en analyse, der fokuserer på ønsket omfang af ph.d.-studerende på fakultetet og sammensætningen af ph.d.-studerende mellem lønnede ph.d.-studerende og waivers.

### **Fordeling af basismidler**

Rektors forskningsfordelingsmodel anvender den vægtning af parametre, som kendes fra ministeriets model (45% fordeles til fakulteterne efter deres andel af universitetets samlede uddannelsesindtægter, 20% pba. eksterne forskningsindtægter, 25% pba. BFI-point og 10% pba. tildelte ph.d.-grader).

TECH's model til fordeling af tilførte basismidler skal understøtte TECH's primære fokuspunkter – forskningsbaseret undervisning, videreudvikling af omfanget af ekstern virksomhed og høj kvalitet i fakultetets publicering.

## **Budgetmodellens ressourceudløsende elementer**

### ***Uddannelse***

#### **Timer og kr. til skolerne**

Skolerne tilføres timer pba. STÅ og færdiggjorte dimittender. Herudover tilføres skolerne et kr.-beløb til dækning af censur, studerendes studierejser mm.

#### **Afregning af undervisningsleverancer**

Den undervisning, institutterne leverer internt til TECH-skolerne og til andre fakulteter, afregnes med en gennemsnitspris pr. leveret time. En analyse af rekvisitionspraksis på fakultetet har vist, at der er uhenigtsmæssigt store udsving mellem uddannelser. En mere balanceret rekvisitionspraksis vil være et fokuspunkt frem mod budget 2019.

#### **Afregning af administrative timer, rekvireret af fakultetet (herunder forskerskolen)**

Administrative timer rekvireret af fakultetet indgår på lige fod med leveret undervisning i beregningen af tilførte basismidler.

#### **Afregning af husede STÅ**

Institutter, der huser studerende tilføres ressourcer til dækning af denne udgift. Ressourcerne udløses via en norm pr. huset STÅ.

### ***Basismidler***

#### **Forskningsbaseret undervisning - kvalitetssikring af uddannelser**

Forskningsbaseret undervisning er et primært fokuspunkt for fakultetet. En stor del af basismidlerne skal fordeles med udgangspunkt i fakultetets uddannelsesbevilling, så uddannelse anerkendes som en kerneaktivitet for fakultetet med stor betydning for fakultetets fremtidige indtægtsgrundlag.

#### **Gode rammer for forøgelse af eksternt forskningsfinansiering**

Øget hjemtag af eksternt finansierede forskningsprojekter er det andet primære fokuspunkt for fakultetet. En stor del af basismidlerne skal fordeles med udgangspunkt i institutternes omsætning af eksternt finansieret forskning.

#### **Høj kvalitet i fakultetets publicering**

Høj kvalitet i den videnskabelige publicering er ligeledes et primært fokuspunkt for fakultetet. BFI-point opgøres på flere niveauer. I fakultetets budgetmodel vil en del af basismidlerne blive fordelt med baggrund i institutternes leverance af niveau 2 BFI-point.

Opnåelsen af en ph.d.-grad indeholder et selvstændigt incitament. Styring af et rimeligt årligt optag foreslås i stedet at ske via årlige måltal pr. institut.

### ***Yderligere incitamentsstyrende elementer***

- Eksternt finansierede forskningsprojekter betaler det af rektor årligt udmeldte bidrag til Fælles Service men friholdes for betaling af bidrag til fakultetets øvrige fællesomkostninger
- Udstyrsmedfinansiering (fakultetet bidrager til den samlede investering)
- Ph.d.-medfinansiering (fakultetet bidrager ved eksternt finansiering)
- Laboratoriehuseleje (fakultetet finansierer en andel af institutternes laboratoriehuseleje)

***Den enkelte enheds påvirkning ved overgang til ny model***

Implementering af TECH's nye budgetmodel kan betyde, at nogle af fakultetets decentrale enheder i den rene model vil opleve en væsentlig ændring af deres økonomiske ramme udmeldt fra fakultetet. Fakultetets ledelse vurderer omfanget og beslutter eventuel korrektion.

## Fællesbidrag

### FAKULTET-FÆLLES og AKTIVITETER PÅ TVÆRS

	UDD	FORSK	EKS.PROJ
<b>Fællesservicebidrag</b>			
FS-bidrag ekskl. bidrag for ekstern virksomhed (133.418.000-27.400.000)	x	x	
FS-bidrag - ekstern virksomhed (133.418.000-27.400.000)			x
<b>Implementeringspulje</b>			
Bidrag til implementeringspulje	x		
Tilskud fra implementeringspulje	x		
<b>Aktiviteter på tværs</b>			
Skolebudget - kr.	x		
Deltidsuddannelse (deltagerbetaling+taxameterindtægt ekskl. FS-bidrag)	x		
Skoleadministration/studienævnadministration	x		
Husleje, seminarrum, auditorieanv, tomgang	x		
CAS-bidraget	x	x	
Husede STÅ	x		
Første studieår - administration	x		
Indtægt ENG + SUND ifm. Første studieår	x		
Tilskud Adgangskursus - "Underskudsgaranti"	x		
Levering til/fra Fakultetet (adjunktpæd./andre akt.)	x		
Afregning timer leveret fra andre hovedområder	x		
Indtægt timer leveret til andre hovedområder	x		
Medfinansiering - udstyr	x	x	
Medfinansiering - Laboratoriehuseleje	x	x	
Medfinansiering - Ph.d.		x	
Afskrivninger	x	x	
Indtægt anlæg dekan / nulstilling	x	x	
Forskingskolebevilling inkl. timer		x	
<b>Strategisk puljer</b>			
Dekanaftaler - allerede indgået		x	
Strategipulje	x	x	
<b>Fakultet-fælles</b>			
Fakultetskontor Omkostning	x	x	
Ledelse (dekaner, IL, SL)	x	x	
Fak. Fælles	x	x	
Øvrige tilskud (fra FFL)	x	x	
Feriepenge (+/-)	x	x	
Kompensation fra FS- ny huslejemodel	x	x	
Resultatmålsikring	x	x	
<b>Fællesbidrag i alt</b>			

## Oversigt over Institutindtægt på baggrund af ny TECH-budgetmodel

### Uddannelsesindtægt i alt

	CS	CREATE	PLAN	ES	Total
Leverede undervisningstimer i alt					
Leverede timer fakultet og forskerskolen					
Uddannelsesindtægt i alt					

### Forskningsindtægt i alt

	CS	CREATE	PLAN	ES	Total
BFI-point - Niveau 1					
BFI-point - Niveau 2					
Basismidler - uddannelse					
Basismidler - ekstern omsætning					
Basismidler i alt					

### Husleje + Andet i alt

	CS	CREATE	PLAN	ES	Total
Kompensation - 50% af laboratoriehuselejen					
Kompensation - husede STÅ					
Strategistøtte					
Dekanaftaler					
Andet i alt					

### Fælles bidrag eksterne projekter (-)

	CS	CREATE	PLAN	ES	Total
Fællesservicebidrag (18,3% af omsætning på eksterne projekter)					
Fællesbidrag i alt					

<b>Samlet institutbevilling</b>					
---------------------------------	--	--	--	--	--

## Associate Professor in Radio Propagation

Godkendt d. 12-6-17

  
Eskild Hoim Nielsen  
dekan

Position No. 42234

At the Technical Faculty of IT and Design, Department of Electronic Systems, Section for Antennas, Propagation and Radio Networking (APNet), a position as Associate Professor in Radio Propagation is open for appointment from August 1st, 2017 or as soon as possible thereafter.

The Department of Electronic Systems is one of the largest departments at Aalborg University with a total of more than 250 employees. The department is internationally recognized in particular for its contributions within Information and Communication Technology (ICT). The research and teaching of the Department of Electronic Systems focus on electronic engineering and the activity areas are organized in the sections: Antennas, Propagation and Radio Networking section (APNet), Automation Control section (Control), Signal and Information Processing section (SIP), Wireless Communication Networks section (WCN) and Communication, Media and Information technologies (CMI).

The department focuses on maintaining a close interplay with the university's surroundings - locally, nationally and internationally - as well as producing unique basic research and educating talented and creative engineers. The department collaborates with leading ICT researchers all over the world.

### Job description

The Antennas, Propagation and Radio Networking (APNet) section focuses on antennas and propagation transceiver solutions for emerging radio communication systems. Our focus in all aspects is largely upon small terminal devices.

Our research areas include:

Antenna  
Radio Propagation  
RF/Milimeter circuits and systems  
Electromagnetics  
Bioelectromagnetics  
MIMO Communications

The group is mainly focused on research and has a very strong research record and has conducted and are conducting a very large number of large research projects (> 1 M EUR) often jointly with the international industry.

The research topics of the position include (but are not limited to):

Over The Air (OTA) testing  
Millimeter-wave radio propagation  
Propagation measurements  
Research in the aforementioned areas

Further it is expected that the successful candidate will be:

- Leading the AAU radio propagation research including the new MIMO-OTA facility and the radio propagation LAB with the multi-channel radio sounder equipment.
- Writing successful applications for research funding
- Supervising students and to a minor degree teaching (mainly master, PhD level)

The position is mainly focused on research, but will also include teaching. The teaching will be within the BSc/MSc study programmes at the School of Information and Communication Technology and the Technical Doctoral School of IT and Design. At Aalborg University, the teaching is based on problem based learning.

The successful candidate should be able to demonstrate strong research activities within all the aforementioned research areas. The successful candidate should

demonstrate strong publication records in top international journals. Applicants with proven ability to attract external funding are desirable. The successful candidate should demonstrate research management, have experience with industrial research and cooperation and with experimental propagation measurements. The candidate shall also be able to coordinate and manage junior researchers working on various aspects of radio propagation.

You may obtain further professional information from Professor Gert Frølund Pedersen, phone +45 9940 8660, e-mail [gfp@es.aau.dk](mailto:gfp@es.aau.dk)

#### **Qualification requirements:**

The level of qualification for Associate Professors shall correspond to the level, which can be achieved on the basis of the appointment as Assistant Professor, but may be achievable in other ways. The appointment presupposes that the applicant can demonstrate original scientific production at an international level as well as documented teaching qualifications. Appointment to the position requires that both research and teaching qualifications are at the requested level. The two qualifications will be given equal and principal priority in the overall assessment.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 10 publications.
- Teaching qualifications described in the teaching portfolio. If this is not enclosed the applicant must include an explanation for its absence.
- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position.
- References/recommendations.
- Personal data.

The applications are only to be submitted online by using the "Apply online" button below. An assessment committee will assess all candidates.

For further information concerning the application procedure please contact XXXX XXXX by mail [XXXX@adm.aau.dk](mailto:XXXX@adm.aau.dk) or phone (+45) 9940 XXXX / (+45) 9940 XXXX.

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen [here](#). (ENGINEERING) [here](#). (TECH) [here](#) (sund).

#### **Workplace**

Aalborg

#### **Agreement**

Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

#### **Deadline**

28/06/2017

#### **Apply online**

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.





- Born in 1979, Finland, Finnish citizen, male
- URL for web site: [https://people.aalto.fi/index.html?language=english#ville\\_viikari](https://people.aalto.fi/index.html?language=english#ville_viikari)
- ResearcherID: G-2471-2013
- Associate Professor at Aalto University, School of Electrical Engineering, Department of Electronics and Nanoengineering, 2016–present
- Deputy Head of Department, Aalto University, School of Electrical Engineering, Department of Electronics and Nanoengineering, 2017-present

### EDUCATION AND DEGREES

- Title of Docent: Wireless sensors and antenna measurements, Helsinki University of Technology (TKK), Department of Radio Science and Engineering, June 30, 2009
- D.Sc. (Tech.) degree (with distinction<sup>1</sup>), Helsinki University of Technology (TKK), May 21, 2007. Title of Dissertation: Antenna pattern correction techniques at submillimeter wavelengths
- M.Sc. degree, TKK, Major subject: Radio engineering, Mar. 29, 2004

### LINGUISTIC SKILLS

- Finnish: native
- English: very good (self-assessment)
- Germany: basics (self-assessment)
- Swedish: basics (self-assessment)

### CURRENT POSITION

- Associate Professor (tenured), Department of Electronics and Nanoengineering, Aalto University, School of Electrical Engineering, Finland, Feb. 2016–

### PREVIOUS WORK EXPERIENCE

- Assistant Professor (2<sup>nd</sup> level), Department of Radio Science and Engineering, Aalto University, School of Electrical Engineering, Finland, Oct. 2012–Jan. 2016
- Senior Scientist at VTT Technical Research Centre of Finland, Sensing and wireless devices, 2007–2012
- Visiting Post-Doc Researcher at University of California in San Diego, 2010
- Post-doctoral Researcher of the Academy of Finland, 2010–2012
- Researcher at TKK (now part of Aalto-University), 2004–2007

### MOST IMPORTANT RESEARCH FUNDING (during the past 5 years)

- Principal investigator, “Co-design of radar antennas and front ends,” contract research, 2016-2017, in total 140 k€
- Principal investigator, “Antennas for metal-covered phones,” contract research, 2016-2017, in total 87 k€
- Partner, “5G transceivers for base stations and mobile devices,” Finnish Funding Agency for Technology and Innovation (TEKES), 2016 – 2018, in total 574 k€
- Partner, “Millimetre-wave front-ends for 5G wireless backhaul and access networks,” Finnish Funding Agency for Technology and Innovation (TEKES), 2016 – 2018, in total 437 k€
- Principal investigator, “5G Antennas” contract research, 2015-2016, in total 119 k€

---

<sup>1</sup> Dissertation has particular merits and belongs to top 10-15 %.

- Principal investigator, “RF-powered ubiquitous computing,” Academy of Finland, 2015-2019, Academy of Finland, in total 953 k€
- Principal investigator, “Horn antenna phased-array,” contract research, 2015-2016, in total 272 k€
- Principal investigator, “Sensor RFID,” contract research, 2014-2015, in total 157 k€
- Principal Investigator, “MEMS sensor concept based on ultrasound resonance”, Academy of Finland, 2011-2014, in total 597 k€
- Partner, “Advanced Radar Tracking and Classification for Enhanced Road Safety ARTRAC”, EU FP7, 2011-2014, in total 580 k€
- Partner, ”Demining tool-BOX for humanitarian clearing of large scale area from anti-personal landmines and cluster munitions”, EU FP7, 2013 – 2015, in total 410 k€
- Principal Investigator, “Social Media for Amateur Tennis (SMART)”, Finnish Funding Agency for Technology and Innovation (TEKES), 2012 – 2013, in total 351 k€
- Principal Investigator, “Zero power sensor network”, Finnish Metals and Engineering Competence Cluster (FIMECC) Strategic Centre for Science, Technology and Innovation, 2011 - 2014, in total 725 k€
- Principal Investigator, Post-doctoral research project, Academy of Finland 2010–2012, in total 254 k€

## OFFICIALLY APPOINTED SUPERVISOR TO DOCTORAL STUDENTS

### Supervised Dissertations

- Jinsong Song, “On passive wireless sensors based on intermodulation communication,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Oct. 2015, main-supervisor.
- Zhou Du, “Development of characterization methods for antennas and quasi-optics,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Jan. 2015, co-instructor.
- Janne Ilvonen, “Multiband and environment insensitive mobile terminal antennas,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Dec. 2014, co-supervisor.
- Azremi Abdullah Al-Hadi, “Multi-element Antennas for Mobile Communication Systems: Design, Evaluation and User Interactions,” Doctor’s Dissertation, Aalto University, School of Electrical Engineering, Nov. 2013, co-supervisor.

### Currently supervised post-docs and doctoral students

- Vasilii Semkin, Post-doc
- Kimmo Rasilainen, “Passive wireless sensors and sensor antennas,” exp. grad. in Sept. 2017
- Mazidul Islam, “Sensor RFIDs based on frequency modulation,” exp. grad. in Sept. 2017
- Colm McCaffrey, “Wireless sensors and detectors for inaccessible locations,” exp. grad. in 2018
- Jari-Matti Hannula, “Mobile antennas and antenna measurement techniques,” exp. grad. in 2020
- Joni Kurvinen, “Antennas for 5G mobile phones,” exp. grad. in 2021
- Tauseef Siddiqui, “RF-powered ubiquitous devices,” exp. grad. in 2021
- Sabin Karki, “Antennas for 5G base stations,” exp. grad. in 2021
- Resti Montoya, “Mm-wave beam-steerable handset antennas,” exp. grad. in 2021

## MERITS IN TEACHING AND PEDAGOGICAL COMPETENCE

### Pedagogical training and competence

- Aalto University pedagogical training I, 25 ECTS credits, completed in 2015

### Curriculum planning

- Chair of Degree Programme Committee for Radio and Nanosciences, Aalto University School of Electrical Engineering, 2017-
- Vice-chair of Degree Programme Committee for Radio and Nanosciences, Aalto University School of Electrical Engineering, 2014-2017
- Member of quality of education committee, Aalto University School of Electrical Engineering, 2015-
- Participation in the Master degree reform of the Aalto University, School of Electrical Engineering, 2012–2014
- Participation in the BioIT Master program development committee, Aalto University, 2013
- Participation in the Bachelor degree reform of the Aalto University, School of Electrical Engineering, 2012–2013

## Supervised Theses

- 17 supervised Master's Theses in Aalto University School of Electrical Engineering

## Implementation of courses

- Microwave engineering II, grad. level, 5 ECTS credits, 3/2017-5/2017
- Antennas workshop, grad. level, 5 ECTS credits, 9/2016-12/2016
- Microwave engineering II, grad. level, 5 ECTS credits, 3/2016-5/2016
- Antennas workshop, grad. level, 5 ECTS credits, 9/2015-12/2015
- RF and microwave engineering, grad. level, 5 ECTS credits, 1/2015-5/2015, 1/2014-5/2014, 1/2013-5/2013
- Antennas – Practice, grad. and post-grad level, 5 ECTS credits, 9/2014-12/2014, 9/2013-12/2013
- Parts of Radiocommunications Systems, undergrad. level, 3 ECTS credits, 1/2013-5/2013
- Antenna measurements at millimetre and submillimetre wavelengths, post-grad. level, 2-4 ECTS credits, international intensive course (1 week), 5/2015, 5/2013, 5/2011, 5/2009, 5/2007, 5/2005
- Radio engineering, laboratory course, grad. level, 7 ECTS credits, 9/2005-12/2005
- Fundamentals of Radio Engineering, grad. level, 5 ECTS credits, 9/2004-12/2004

## Teaching evaluation

- Teaching demonstration related to tenure track professorship at the Aalto University, School of Electrical Engineering, Department of Radio Science and Engineering. The demonstration was titled: "Plane Wave" and it was evaluated "good" (3 in 1-5 scale) by the evaluation board, 2012.
- Teaching demonstration related to Docentship at the Radio Laboratory of TKK (now the Department of the Radio Science and Engineering in the School of Electrical Engineering of Aalto University). The demonstration was titled: "Wireless readout techniques of passive sensors" and it was evaluated "really good" (4 in 1-5 scale) by the evaluation board, 2009.
- Evaluated as **the best teacher** (out of 7-9) in the course "European school of antennas: Antenna measurements at millimeter and submillimetre wavelengths" in 2007, 2009, and 2013.

## Teaching awards

- AP-S 2016 Student Design Contest, among semi-finalists, Mentor to the Aalto ELEC team, Aalto University, (Mikko Leino, Henri Partanen, Rasmus Luomaniemi, Niko Lindvall), 2016.
- AP-S 2015 Student Design Contest, 3<sup>rd</sup> prize, Mentor to the Aalto ELEC team, Aalto University, (Gaurav Khairkar, Sampo Salo, Minja Axelsson, Juho Kortekangas, Joonas Rahkonen), 2015.
- AP-S 2014 Student Design Contest, 2<sup>nd</sup> prize, Mentor to the Aalto ELEC team, Aalto University (Aapo Oksman, Aapo Vienamo, Mikko Heino, Jalmari Toivanen), 2014.

## AWARDS, PRIZES AND HONOURS

- Young Researcher Award of the Year 2014, presented by the Finnish Foundation for Technology Promotion.
- FIMECC Prize 2013 for the project: "Zero Power Sensor Network (2010-2013)," awarded by the Finnish Metals and Engineering Competence Cluster, I was the project manager from 2010 to 2012.
- IEEE Sensors Council 2010 Early Career GOLD Award with citation: "*for substantial contributions to the advancement of wireless sensor technology,*" 2010.
- The best presentation at the conference by young scientist, XXXI Finnish URSI Convention on Radio Science, Electromagnetics, 2008.
- Student Paper Award, Antenna Measurement Techniques Association, 2005.

## SCIENTIFIC ACTIVITY AND ITS IMPACT

### Current research activities

- **Antennas for mobile devices:** We continuously develop electrically small antennas especially for the future personal communication needs. Our research results will partly enable wireless broadband communication of the future, for instance.
- **Beam-steerable millimeter-wave antennas:** We develop beam-steerable millimeter-wave antennas for future 5G base stations and military applications.
- **RF-powered devices:** We develop wireless sensors and other devices that are powered by ambient radio waves. These devices use either the modulated back- or re-scattering principle for communication.

## Publications

- 42 international peer-reviewed journal articles (authored or co-authored), 50 international peer-reviewed conference publications
- Author/co-author in 22 patents or patent applications and 6 granted patents
- H-indices: Scopus/13, ISI Web of Science/11, Google Scholar/16

## Scientific expert tasks

- Assessment committee member for a doctoral dissertation: Emil Buskgaard, "The dynamics of the user effect on electrically small antennas," Aalborg University, Denmark, 2017.
- Pre-examiner of two doctoral dissertations: (Erja Sipilä, "Novel manufacturing methods and materials for UHF RFID tags in identification and sensing applications," Tampere University of Technology, Finland, 2016; Arto Korpisalo, "Geotomographic research on attenuating material using the middle radio frequency band," University of Helsinki, Finland, 2016)
- Committee member for IEEE Sensor Council GOLD initiative, 2013-2014
- Reviewer of many scientific journals, such as: IEEE Transactions on Antennas and Propagation; IEEE Transactions on Microwave Theory and Techniques; IEEE Journal of Solid State Circuits; IEEE Microwave and Wireless Components Letters; IEEE Sensors Journal; IEEE Transactions on Industrial Electronics; IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control; IEEE Transactions on Intelligent Transportation Systems; URSI Radio Science Bulletin; Sensors
- Evaluator for funding applications: Technology Foundation STW, The Netherlands, 2014; Innovation Fund Denmark, 2015

## Organisation of international conferences

- TPC member of the European Microwave Week 2017.
- TPC member of the European Conference on Antennas and Propagation, 2017.
- Chair of the Technical Program Committee, 7<sup>th</sup> ESA Workshop on Millimetre-Wave Technology and Applications, Espoo, Finland, 2016.
- Chair of the Technical Program Committee, 9<sup>th</sup> Global Symposium on Millimeter Waves (GSMM 2016), Espoo, Finland, 2016.
- Chair of the Technical Program Committee, 6<sup>th</sup> ESA Workshop on Millimetre-Wave Technology and Applications, Espoo, Finland, 2011.
- Chair of the Technical Program Committee, 4<sup>th</sup> Global Symposium on Millimeter Waves (GSMM 2011), Espoo, Finland, 2011.

## Commercialization merits

- Startup Sauna program, an acceleration program for early stage startups, 2013
- Best Business Plan-Award, Venture Cup Finland, Business plan competition, 2008

## SCIENTIFIC POSITIONS OF TRUST AND ADMINISTRATION

- Chair of the IEEE Finland Section joint Chapter of Antennas and Propagation, Electronic devices, and Microwave Theory and Techniques, 2013-
- Committee member for IEEE Sensor Council GOLD initiative, 2013 and 2014
- Senior member of IEEE
- Board member, Finnish signals officers' association

# Curriculum Vitae

## Per Thorsen

### 1. Personlige data

Title: Lektor

Name: Per Thorsen

Privat adresse: Ormslevvej 354, 8260 Viby J.

Tel: +45 41893288

Fødselsdag: August 9, 1953

### 2. Resumé:

Mit arbejdsliv har haft et erhvervsfagligt og et akademisk forløb. Min første uddannelse var elektriker, hvor jeg blev udlært hos Carlo Leth, Rødkærsgade (1972 – 1976). Herefter begyndte jeg mit akademiske forløb, der afsluttedes med en erhvervs Ph.D. (1987). I min akademiske karriere har jeg haft fokus på forskning og udvikling af optiske fibre til kommunikations- og sensorformål, elektroniske design samt undervisning på videregående uddannelser. Mit første job var som erhvervs Ph. D. studerende (1984 – 1987) og senere ansat ved Jydsk Telefons laboratorium, hvor jeg i samarbejde med NKT udviklede en computermodel for et samlet optisk kommunikationssystem. I studieperioden havde jeg et ophold ved Bell Core, en afdeling af AT&T Bell Labs, New Jersey. Her udviklede jeg sammen med et forskerhold modellen for modepartition-støj, som jeg senere brugte i min computermodel. I min ansættelsesperiode (1987 – 1995) hos Jydsk Telefon udviklede jeg målemetoder til karakterisering af lasere, optiske fibre og optiske detektorer. Desuden har jeg deltaget i Nordiske og europæiske standardiseringsudvalg. Under min uddannelse og ansættelse har jeg været medforfatter på videnskabelige publikationer med emnerne laserspektroskopi og optiske fibre.

Efter tiden hos Jydsk Telefon blev jeg ansat som lektor ved Ingeniørhøjskolen i Aarhus i 1995. Fokus for min ansættelse var opbygning af en udviklings- og undervisningsaktivitet indenfor fiberoptiske sensorer. Som indledning til dette udviklede jeg sammen med kolleger fra ingeniørhøjskolerne i Aarhus, Sønderborg og Herning en række fiberoptiske måleopstillinger, der senere blev rygraden i undervisningsøvelser og samarbejde med virksomheder, der havde et behov for specialiserede måleopstillinger. I årene 1995 – 1999 havde jeg et tæt samarbejde med Kirk Acoustic, B&O Medico og Vestas. Dette samarbejde udgjorde ca. halvdelen af min tid og havde en omsætning på 1,6 Mio kr over 2,5 år. I perioden var jeg vejleder for 5 – 8 studerende pr. Semester, ofte i samarbejde med andre lærere. Jeg har undervist i fagene matematik, fysik, elektronik, transmissionslinjer og optik. I perioden 2000 – 2011 har jeg deltaget i planlægning og implementering af 3 studieordninger. I alle tilfælde har det været muligt at indføre og afprøve nye pædagogiske metoder. Jeg har fra 2006 anvendt billeder af mine undervisningstavler som støtte til de studerende, fra 2008 anvendt elektronisk multiple choice som deleksaminer i undervisningstiden, fra 2011 anvendt video til instruktion af pc-værktøjer, fra 2012 anvendt tablet som tavle og videooptagelser af udvalgte dele af undervisningen, fra 2012 indført en integreret kreds med digital- analog- elektronik og mikroprocessor i elektronikundervisningen, fra 2014 anvendt pc-baseret elektroniklaboratorie, der muliggør gennemførelse af elektronikøvelser på klassen og mindsker behovet for specialiserede elektroniklaboratorier.

Fra 2000 har jeg været ansat ved Carlo Gavazzi Industri A/S i udviklingsafdelingen med fokus på design af elektronik og optiske linser, samt udvikling af testopstillinger. Jeg har ved Gavazzi deltaget i vidensudveksling med firmaets internationale afdelinger og afholdt seminarer indenfor design af optiske sensorer. Belastningen ved Gavazzi var i perioden 2000 – 2012 50% og er i 2014 20%. Vekselvirkningen mellem arbejde i industrien og undervisningen ved ASE har været meget positiv, og mange måleopstillinger ved Gavazzi har direkte inspireret til øvelser i min undervisning. Jeg er opfinder på 2 patenter, Fremstillingsmetode for optisk strain-gauge (Vestas) og Metode til test af camera-chip (Gavazzi).

Foruden mine professionelle aktiviteter har jeg siden 1971 været aktiv i foreningsliv.

I perioden 1971 – 1983 været aktiv i Dansk Amatørteater Samvirke, hvor jeg 1973 – 1979 sad i bestyrelsen for Viborg Amts afdeling. Jeg har i perioden 1972 – 1979 deltaget i 2-3 teaterforestillinger pr. år fordelt mellem Sdr.Rind Amatørscene, Vestermarkens Amatørteater og Komplotgruppen i Viborg.

I perioden 1984 – 2005 har jeg været aktiv indenfor sejlsport, og har 1989 – 1999 været medlem af Egå Sejlklubs kapsejlsudvalg. I perioden 1995 – 2005 har jeg været medlem af Dansk Sejlunions Tekniske Udvalg, hvor jeg igangsatte og udviklede et nyt simuleringsprogram til beregning af kapsejlsbådes teoretiske fart. Dette program er kernen i Handikapreglen der findes under [www.websejler.dk](http://www.websejler.dk). For dette arbejde har jeg modtaget Dansk Sejlunions guldnål.

Siden 1999 har jeg været aktiv i Dansk Sportsdykkerforbund. Jeg er uddannet dykkerinstruktør, og kan uddanne dykkere til højeste niveau med atmosfærisk luft samt teknisk dykning med iltberiget luft. Jeg har i en årrække uddannet nye dykkerinstruktører for Dansk sportsdykker Forbund.

### 3. Ansættelse

2014- Eget firma: Thorsen Optik CVR. 35497129

Konsulentvirksomhed med:

- Linsedesign
- Udvikling af måleopstillinger til test
- elektronikdesign
- analyse af sensorsystemer

2000-

Ansæt i udviklingsafdelingen for Carlo Gavazzi Industri A/S

Arbejdsområde:

- linsedesign
- elektronikdesign
- teknologiundersøgelse
- computeralgoritmer
- testopstillinger for optiske sensorer

1995-

Lektor ved Ingeniørhøjskolen i Aarhus

Arbejdsområde:

- Undervisning i matematik på 1. Semester
- Undervisning i mekanisk fysik 1. semester
- Undervisning i kredsløbsteknik 1. semester
- Undervisning i matematik på 2. semester
- Undervisning i mixed signal elektronik 3. semester
- Undervisning i elektrofysik 4. semester
- Undervisning i transmissionslinjer 4. semester
- Undervisning i optik 6.-7. semester
- Vejleder for afgangprojekter
- Vejleder for kandidat specialer
- Vejleder for semesterprojekter
- Udvikling af fag-øvelser
- Konsulentarbejde for eksterne virksomheder

1987-1995:

Jydsk Telefons optiske laboratorium

Arbejdsområde:

- Test af optiske fibre
- Test af lasere
- Test af detektorer
- Udviklingsprojekter for optisk kommunikationsudstyr
- Standardisering

1984-1987:

Erhvervs Ph. D. ved Jydsk Telefon, Nordisk Kabel og Tråd og Danmarks Tekniske Universitet, EF138 ”Transmissionsforhold – teoretisk og eksperimentel undersøgelse af transmissionsforholdene på eksisterende og fremtidige fiberoptiske transmissionssystemer”

Emner:

- Karakterisering af halvlederlasere
- Karakterisering af optiske detektorer
- Karakterisering af elektronisk frontend
- Udvikling af modeller for lasere
- Udvikling af beregningsalgoritmer for simulering
- Fejlfinding på eksisterende transmissionssystemer

1983-1984:

Timelærer Ingeniørhøjskolen i Aarhus 20 timer/uge i et år

Fag:

- Mekanisk fysik adgangskursus

1982:

Sommerstudent ved NKT's fiberoptiske udviklingsafdeling, 4 mdr.

Arbejdsområde:

- Karakterisering af multimode fibre
- Mikrobøjningstab i kablede fibre
- Splidsemetoder for optiske fibre
- Trækbelastning af optiske fibre

1980-1982:

Lastbilchauffør ved Aarhus Kommune, 7 uger pr. år

Arbejdsområde:

- Asfaltkørsel for vejarbejdere
- Kørsel af sand til byggeprojekter
- Forefaldene arbejde på materielgården Daugbjergvej, Aarhus

1980:

Folkeskolevikar Aarhus skolevæsen, 3 mdr.

1979:

Elektriker ved Dansk Signalindustri, 7 uger

Arbejdsområde:

- Automatisering af jernbanestrækningen Aarhus-Hadsten

1978:

Elektriker ved Carlo Leth, Rødkærsgade, 7 uger

1976-1978:

Taxachauffør ved Viborg, 2x12 timer natten fredag og lørdag

1970:

Arbejdsdreng ved Andersens Amaturfabrik Vangede, 6 mdr.



## 4. Uddannelse

- 1998: Ingeniørskolernes pædagogiske uddannelse  
1986: Erhvervs Ph.D. med titlen "Transmissionssystemer", Jydsk Telefon, NKT, DTU  
1992: M.Sc.Fysik fra Aarhus universitet
- Hovedfag 10 på 13-skalaen
  - Speciale 10 på 13-skalaen
- 1979: Gymnasialt niveau:
- Gymnasialt suppleringskursus i Matematik, fysik, kemi, Aarhus Akademi, gns. 11,8 på 13-skala
  - HF kursus, Overlund Gymnasium, gns 11,0 på 13-skala
- 1976: Elektrikeruddannelsen, Carlo Leth Rødkærsgade, karakter: veludført  
1972: Realeksamen Overlund skole, gns: 9,7 på 13-skalaen

### Kurser

- 1985: Grundlæggende ledelse, Danske Ingeniørers Efteruddannelse, 5 dage  
1976: HF-enkeltfag tilvalg i Spansk, Viborg aftenskole 2 år, karakter 8 på 13-skalaen  
1974: Latinprøve, Viborg aftenskole 1 år, karakter 11 på 13-skalaen  
1976: Erhvervskørekort til taxa, turistbus og lastbil

### Foreningskurser

- 2005: Nitrox-dykkerinstruktør, Dansk Sportsdykker Forbund, 2 dage  
2005: 3-stjernet dykkerinstruktør, Dansk Sportsdykker Forbund, 4 dage  
2004: 2-stjernet dykkerinstruktør, Dansk Sportsdykker Forbund, 4 dage  
2002: 3-stjernet fridykker, Dansk Sportsdykker Forbund, 10x4 timer  
2001: 3-stjernet flaskedykker, Dansk Sportsdykker Forbund, 20x4 timer  
2000: 2-stjernet flaskedykker, Dansk Sportsdykker Forbund, 20x4 timer  
1990: Målerkursus. Dansk Sejlunion, 2 dage  
1989: Dommerkursus, Dansk Sejlunion, 2 dage  
1982: Duelighedsprøve, Direktoratet for Søfartsuddannelsen, 14x4 timer  
1976: Commedia dell'arte maskespil, Dansk Amatørteater Samvirke Hald Hovegård, 2 dage  
1975: Liturgisk Kirkespil, Dansk Amatørteater Samvirke Løgum Kloster, 4 dage  
1973: Sminkekursus, Dansk Amatørteater Samvirke Vestermarkens forsamlingshus, 2 dage  
1972: Instruktørkursus, Dansk Amatørteater Samvirke Viborg Gymnastikhøjskole, 2 dage

## 5. Udviklingsaktiviteter

- 2014: Implementering af Analog Discovery pc-elektronik målestation i undervisningen ved ASE. Med Analog discovery kan de fleste elektronikøvelser på 1-4 semester udføres i et vilkårligt undervisningslokale, hvilket mindsker behovet for faste øvelseslokaler og tider. Mit forbrug 50 timer.
- 2013: Teknologiundersøgelse for Xtel, Konsulentarbejde Thorsen Optik, mit forbrug 20 timer.
- 2012: Implementering af Tablet-pc som elektronisk tavle i undervisningen ved ASE. Mit forbrug 30 timer.
- 2012: Teknologiundersøgelse for Carlo Gavazzi, Konsulentarbejde Thorsen Optik, mit forbrug 10 timer.
- 2011: Implementering af video-vejledning med kamera til øvelser på ASE. Mindsker behovet for gentagne svar til mange grupper. Mit forbrug 30 timer.
- 2011: udvikling af algoritmer til kurvede døre i Guardian II, Garlo Gavazzi's kamerabaserede automatiske døråbner, konsulentarbejde Thorsen Optik. Mit forbrug 20 timer.
- 2010: Implementering af videovejledning med pc-optagelser til Multisim simuleringstværværktøj. Mit forbrug 20 timer.
- 2009: Udvikling af Carlo Gavazzi's automatiske kamerabaserede døråbner Guardian I. Mit forbrug 20 mand-uger.
- 2008: Implementering af Multiple Choice del eksaminer i undervisningstiden på ASE. Specielt på 1. semester er det værdifuldt for den studerende at få denne form for feedback tidligt i forløbet. Der er blevet taget ca. 11000 enkelteksaminer af studerende i perioden 2008-2014. Mest kritiske situation opstod, da ASE's netværk var ude af drift. Dette blev løst ved at starte den normale undervisning og udsætte prøven. Det havde ingen konsekvenser for resultatet. Mit forbrug 50 timer.
- 2008: Revitalisering af 1. Semester ved elektro-afdelingen på ASE. Mit forbrug 20 timer.
- 2007: Udvikling af optisk afstandsmåler PD30 til industrielt formål ved Gavazzi. Mit forbrug 20 mand-uger.
- 2004: Udvikling af optisk dør-sensor MPF for Gavazzi. Mit forbrug 10 mand-uger.
- 2002: Udvikling af polariseret retro-reflektiv optisk sensor PM12 ved Gavazzi. Mit forbrug 3 mand-uger.
- 1999: Udvikling af optisk hjertelydssensor for B&O-medico. Budget 400 kkr.
- 1999: Udvikling af optisk strain-gauge for Vestas. Budget 400 kkr.
- 1998: Udvikling af spektroskopisk udstyr til hud-skanning for B&O-medico. Budget 400 kkr.
- 1998: Udvikling af interferometrisk måleudstyr til bestemmelse af membran-bevægelser. Budget 400 kkr.
- 1997: Udvikling af optikkursus med øvelsesopstillinger ved ASE. Mit forbrug 20 mand-uger.
- 1994: Udvikling af måleudstyr til polarisations-mode-dispersion i optiske fibre ved Jydsk Telefon. Mit forbrug 10 mand-uger.
- 1991: Udvikling af kohærent optisk transmissionssystem til langdistance. Mit forbrug 35 mand-uger.
- 1988: Udvikling af polarisationsmåleopstilling ved Jydsk Telefon, Mit forbrug 3 mand-uger.
- 1987: Udvikling af måleopstillinger og computermødelser for et optisk transmissionssystem ved Jydsk Telefon, NKT, DTU. Mit forbrug 2 mand-år.
- 1983: Udvikling af Michelson farvestoflaser til spektroskopiske dobbeltresonans eksperimenter ved Fysisk Institut Aarhus Universitet. Mit forbrug 7 mand-uger.
- 1982: Udvikling af måleopstilling til bestemmelse af modefordeling i multimodefibre ved NKT. Mit forbrug 8 mand-uger.

## 6. Publikationer:

### Patenter:

#### **Digital camera and method for testing the function of a digital camera**

Application number: 20100265336

Abstract: The invention refers to a digital camera 1 which can be used in a motion sensor 4. In order to be able to test the function of the camera, a light source 3 is provided which irradiates at least a part of the sensing matrix 2. The processor device 5 of the camera judges whether the output signal of the sensing matrix 2 corresponds correctly to the light which has irradiated the sensing matrix 2. Various test methods are disclosed, such as using varying wavelengths, ON/OFF-modulation, dependence on shutter time and illumination of various regions of the sensing matrix 2.

Type : Application

Filed: April 19, 2010

Issued: October 21, 2010

Assignee : Carlo Gavazzi Services AG

Inventors : Kent Sørensen, Per Thorsen, Nikolaj Wehner, Keld Benner Valbjørn

#### **Fibre-optical strain-gauge**

Patent number: 6834552

Abstract: In a fiber-optical strain-gauge of the kind comprising a mechanical construction providing a linear, strain-dependent relative movement of oppositely positioned spaced-apart first and second optical fiber-holding elements in a direction substantially perpendicular to the axial direction of the optical fibers, and in which the varying transmission of light between the two fibers is used as an indication of the strain, the main new feature is that the strain-gauge is manufactured using the following steps: a) prestressing an optical fibre by applying a pulling force, or prestressing the mechanical construction by applying a compressing force; b) fixing said optical fiber to the fiber-holding elements in the mechanical construction; and c) cleaving the optical fiber at the interspace between the fiber-holding elements.

Type : Grant

Filed: April 30, 2002

Issued: December 28, 2004

Assignee : Vestas Wind Systems A/S

Inventor: Per Thorsen

## Artikler:

### **All Optical frame synchronisation recovery**

Electronics Letters , VOL 30, NO15 July 1994  
M. Øbro, P. Thorsen, S.B. Andreasen

### **Gain Tilt of Erbium –Doped Fiber Amplifiers Due to Signal-Induced Inversion Locking**

IEEE Photonics Technology Letters, VOL 5, NO 4 April 1993  
Steffen Lomholt Hansen, Svend Bank Andreasen, Per Thorsen and Kristen Dybdal

### **Experimental Verification of New EDFA Gain-Tilt Distortion Theory**

IEEE Photonics Technology Letters, VOL 5, NO 12 December 1993  
Steffen Lomholt Hansen, Svend Bank Andreasen, Per Thorsen and Kristen Dybdal

### **Design Considerations for 1.55 $\mu\text{m}$ Loss Minimized 1.3 $\mu\text{m}$ Zero-Dispersion Single-mode Optical Fiber Submarine Cables**

Journal of Optical Communications, VOL 13, NO 2, June 1992  
G. Jacobsen, E. Bødtker, B. Christensen, N.G. Jensen, H.J. Olsen, P.W. Madsen, S. Sørensen, H. Dickow, J. S. Madsen, S. K. Nielsen, B. F. Skipper, P. Thorsen, B. Hoffmann, T. Jensen

### **Dispersive line shapes and optical pumping in a three-level system**

Phys . Rev . A 32, 207 – Pub lished 1 July 1985  
Matti Kaivola, Per Thorsen , and Ove Poulsen

### **$^{235}\text{U}$ II hyperfine structures measured by collinear fast-beam-laser and radio-frequency-laser double-resonance spectroscopy**

JOSA B, Vol. 1, Issue 2, pp. 284-292 (1984)  
Ulrik Nielsen, Per Thorsen, Ove Poulsen, and Hannah Crosswhite

## Priser:

### **DANSK SEJLUNIONS GULDNÅL**

maj 2005

### **AARHUS UNIVERSITETS JUBILÆUMSFONDS PÆDAGOGISKE HÆDERSPRIS**

sept. 2014

## 7. Undervisning

### ASE:

2012 -	Mixed signal elektronik 3. semester
2012 -	Elektrofysik 4. semester
2012	Transmissionslinjer 4. semester
2001 -	Vejleder for semesterprojekter
1999 -	Kredsløbsteknik 1. semester
1998	Matematik på 1. Semester
1998	Vejleder for kandidat specialer
1997 -	Optik 6.-7. semester
1997	Matematik på 2. semester
1996 -	Vejleder for afgangprojekter
1995 – 1998	Mekanisk fysik 1. semester

### World Robot Olympiad:

2008	Vejleder for Robot-holdet HTX-faktor fra HTX, Viby Resultat: Vinder af den danske konkurrence. 7. plads ved den internationale konkurrence i Yokohama, Japan ud af 43 deltagere.
2009	Vejleder for Robot-holdet HTX-faktor fra HTX, Viby Resultat: 2. plads ved den danske konkurrence.

## Det Tekniske Fakultet for IT og Design - Fortegnelse over sager godkendt af Dekanen i perioden 09.05.2017-12.06.2017

---

### Kodeforklaring

A1: Ansættelse med opslag

A2: Ansættelse u/ opslag (tidsbegrænset)

1F: 1. forlængelse

2F: 2. forlængelse

3F: Forlængelse pga barsel/orlov/fastansættelse

G: Genansættelse

O: oprykning

(i) intern ansættelse (u) ekstern ansættelse

	Periode Fra Til		Institut	Kode
<b>Ansættelse/genansættelse af videnskabelige assistenter</b>				
Heidi Simone Kristensen	01.07.17	31.08.17	PLAN	A2
Muhammad Aamir	01.06.17	30.11.17	CS	A2
Maria Simonsen	18.05.17	17.07.17	ES	A2
Madalina Christina Bucur	01.06.17	31.05.18	ES	A2
Jens Stokholm Høngaard	01.07.17	30.06.18	Create	1F
Aldo Ivan Parra Sanchez	01.06.17	31.07.17	PLAN	A2
Rasmus Ploug Jenie	01.06.17	31.07.17	PLAN	A2
Anastassia Andreassen	15.08.17	14.08.18	Create	A2
Tine Buch-Andersen	01.09.17	31.03.18	Create	A2
Andrei Ducu Predescu	16.08.17	15.08.18	Create	A2
Kasper Steen Fischer Topp	01.07.17	30.06.18	Create	1F
Jacob Møller Hjerrild Hansen	01.07.17	30.06.18	Create	A2
Ioannis Kapetanakis	01.06.17	31.05.18	PLAN	A2
Brian Walther Skovgaard Jensen	01.07.17	30.06.18	Create	A2
Maria Kjærup	01.08.17	31.07.18	CS	1F
Eleftherios Papachristous	01.08.17	31.07.18	CS	1F

### Ansættelse/genansættelse af adjunkter (tidsbegrænset)

Charlotte Louise Jensen	01.07.17	30.06.20	PLAN	A1
-------------------------	----------	----------	------	----

### Ansættelse/genansættelse af adjunkter (ikke tidsbegrænset)

### Ansættelse af studieadjunkter

### Ansættelse/genansættelse af PostDoc

Achintya Kumar Sarkar	01.06.2017	31.12.2017	ES	1F
Dong Min Kim	01.08.2017	31.07-2018	ES	2F
Bolong Zheng	01.09.2017	31.08.2018	CS	A2
Mohammad Sabet	01.09.2017	31.08.2018	Create	A2
Andrea Jelic	01.08.2017	31.07.2018	Create	A2
Michele Geronazzo	01.09.2017	31.08.2018	Create	A2
Adrien Le Coent	01.09.2017	31.08.2018	CS	A2

Eleftherios Papachristous	01.08.17	31.07.18	CS	1F
Lu Chen	01.10.2017	30.09.2020	CS	A2

#### **Ansættelse af lektorer (tidsbegrænset)**

Hendrik Purwins	01.08.2017	31.07.2018	Create	A2
-----------------	------------	------------	--------	----

#### **Ansættelse af lektorer (tidsubegrænset)**

#### **Ansættelse af studielektorer**

#### **Ansættelse/genansættelse af professorer**

Barry Quinn	01.08.2017	30.09.2017	Create	A2
-------------	------------	------------	--------	----

#### **Ansættelse/genansættelse af professorer MSO**

Inge Røpke	01.08.17	31.07.20	PLAN	1F
------------	----------	----------	------	----

#### **Ansættelse/genansættelse af adjungerende professorer (tidsbegrænset)**

#### **Professor Emeritus**

#### **Lektor Emeritus**

#### **Orlov**

Rikke Dorothea Huulgaard	01.10.2017	31.07.2018	Plan	100%
Vinay Setty	01.08.2017	31.07.2018	CS	92%
Jeni Paay	01.08.2017	31.07.2019	CS	100%
Francesco Grani	01.09.2017	28.02.2018	Create	100%

#### **Opsigelser**

Aldo Sanchez	30.06.17		Plan	
Lotte Christiansen	30.06.17		Create	
Erik de Graaff	30.06.17		Plan	

#### **Opslag af stillinger**

Assistant Professor in Urban Design			Create	
Postdoc in Computer Science			CS	
Postdoc -Intelligent Recognition Technologies			Create	
Associate Professor in Signal Processing ...			ES	

#### **Overflytninger, ændring i timetal**

Anne Kristine Munk Mouritsen	01.08.2017	31.10.2017	PLAN	22 t./ugentlig
Henrik Riisgaard	01.06.17	31.05.18	PLAN	18,5 t/ugentlig

PHD: Godkendte sager af dekanen TECH fra den 19.04.2017 – 30.05.2017.

**Stipendieopslag:**

Wireless Communications, Institut for Elektroniske Systemer (8-17030)

Electrical and Electronic Engineering, Institut for Elektroniske Systemer (8-17036)

Electrical and Electronic Engineering, Institut for Elektroniske Systemer (8-17038)

Computer Science and Engineering, Institut for Datalogi (16-17043)

**Tildeling af stipendium:**

Suela Shuaip Isaj, Institut for Datalogi, pr. 15. august 2017 (ERASMUS MUNDUS)

Ida Maria Reiter, Institut for Planlægning, pr. 15. august 2017 (20-17018)