Draft Program Symposium 
Challenges & Frontiers in 
Engineering Education

Scientific Committee
CLUSTER GA 2015, Lisbon
Recap: Full Program

» 6th SEEEP Workshop
  » Wednesday October 21

» Symposium ‘Challenges and Frontiers in Engineering’
  » Thursday October 22
  » Scientific Symposium on 7 subtopics
  » Key-note speakers
  » 25th CLUSTER Anniversary Celebrations

» Cluster Steering Committee
  » Friday October 23
  » Meeting of the (Networks) Presidents
  » CLUSTER Steering Committee
Recap: Symposium Challenges and Frontiers in Engineering Education

1. Scientific Part
   » Target Group:
     » Scientists, researchers and policymakers (& students)
   » Discussion on different aspects of Engineering Education
     » 7 sub-topics

2. Public Part: end symposium + celebration ceremony
   » Target Group:
     » Scientists, researchers and policymakers
     » Members and associate members
     » Distinguished guests (i.e. other networks, industry, politicians...)
   » Key-note speakers
   » Celebration Ceremony
Recap: Venue Evoluon Eindhoven
Recap: Side program Dutch Design Week

» World class design fair
» Dutch Design
» 80 venues (including the TU/e)
» 300 events
» 9 days
» 250,000 visitors in 2013

» During Symposium and Celebrations!
» Possibility of Expo at the Evoluon!
# Draft Program

8.00-8.30  Registrations

8.30-9.15  **Opening Ceremony**
- Word of welcome by CLUSTER President
- Keynote Speaker 1: Karen Wilcox

9.30-12.00  **Scientific part, Parallel Sessions 1**
- **Topic 1:** Innovative Doctoral Training  
  *Jan Fransoo*
- **Topic 2:** Technology Enhanced Learning  
  *Ludo Fransen*
- **Topic 3:** Involvement of Society  
  *Ramon Wyss*
- **Topic 4:** Internationalization  
  *Stefan Morgenthaler*

12.00-13.30  Lunch break

13.30-15.45  **Scientific part, Parallel Sessions 2**
- **Topic 5:** Gender Balance  
  *Sabine van Huffer*
- **Topic 6:** MOOCs & Outreach  
  *Alexander Wanner*
- **Topic 7:** Entrepreneurship & KICs  
  *Jose Santos Victor*

15.45-16.00  Break

16.00-19.00  **Public part: Closing Ceremony & CLUSTER festivities**
- Keynote Speaker 2: Moedas / Navracics
- Panel Discussion 1
- Panel Discussion 2
- Closing ceremony
- Drinks

19.00-23.00  **CLUSTER Gala dinner (invites only)**

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CLUSTER: Symposium Challenges & Frontiers in Engineering Education
8.00-8.30 Registrations

8.30-9.15 **Opening Ceremony**
Word of welcome by CLUSTER President
Keynote Speaker 1: Karen Willcox

9.30-12.00 **Scientific part, Parallel Sessions 1**
Topic 1: Innovative Doctoral Training
*Jan Fransoo*

Topic 2: Technology Enhanced Learning
*Ludo Froyen*

Topic 3: Involvement of Society:
*Stefan Morgenthaler*

Topic 4: Internationalization
*Ramon Wyss*

12.00-13.30 Lunch break

13.30-15.45 **Scientific part, Parallel Sessions 2**
Topic 5: Gender Balance
*Sabine van Huffel*

Topic 6: MOOC's & Outreach
*Alexander Wanner*

Topic 7: Entrepreneurship & KICs
*Jose Santos Victor*

15.45-16.00 Break

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Keynote Speaker 2: Moedas / Navracics
Panel Discussion 1
Panel Discussion 2
Closing ceremony
Drinks

19.00-23.00 **CLUSTER Gala dinner (invites only)**
Proposed Key-note Speakers

» Karen Willcox
  » Professor of Aeronautics & Astronautics MIT
  » Chairman of the institute-wide task force on the future of MIT education

» Carlos Moedas / Tibor Navracsics
  » EU Commissioners
  » Science, Research & Innovation
  » Education, Culture, Youth and Citizenship
Presentations Subtopics

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<tr>
<th>Subtopic</th>
<th>Responsible Scientific Committee Member</th>
<th>University</th>
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<tr>
<td>1 Innovative doctoral training</td>
<td>Hans van Duijn (chairman)</td>
<td>TU/e</td>
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<td>2 Technology enhanced learning</td>
<td>Ludo Froyen</td>
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<td>3 Involvement of Society: industry &amp; public sector</td>
<td>Stefan Morgenthaler</td>
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<td>4 Internationalization</td>
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<td>5 Gender Balance</td>
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<td>6 MOOCS &amp; outreach</td>
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<td>7 Entrepreneurship &amp; KICS</td>
<td>José Santos-Victor</td>
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Presentations Subtopics

» Aim active discussions!
» General Format 2h 15m without a break
» Details format up to the chairman
  » Suggested:
  » Opening statement including short lectures
  » Panel discussions
  » Wrap-up
» Per subtopic the chairman will appoint a ‘rapporteur’ (moderator) to report during the public part in the panel discussions.
Innovative Doctoral Training

Hans van Duijn

» Discussion on Challenges for Doctoral Training:
  » Career perspectives: how to deal with more diversity of graduating PhD students?
  » How to increase the international European mobility of graduates?
  » How to deal with the underrepresentation of women?
  » How to increase the attractiveness of PhD’s?

» Dean Graduate School TU/e Jan Fransoo prepares the session

» Following General Format with panel discussions
Innovative Doctoral Training

Hans van Duijn

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Technology enhanced learning

*Ludo Froyen*

» Discussion on opportunities of technology enhanced learning:
  » Technological educational *tools* for engineering education (e.g. online courses)
  » New learning *concepts* facilitated by technology (e.g. flipped classroom for large student groups)?
  » Student centered activated learning to form multidimensional engineers

» Speakers: P. Den Brok (TU/e); J. Vander Sloten (KU Leuven); P. Lafleur (EPM); testimonies by 3 students

» Coordination: Ludo Froyen

» Following General Format with panel discussion
Technology Enhanced Learning

*Ludo Froyen*

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Involvement of society: industry and public sector

*Stephan Morgenthaler*

» Should we increase industry relevant skills in the education of engineers?

» How do we expose engineering students to the practical aspects of their work?

» How flexible should we be in our educational processes and programmes?

» To what extent do we encourage industry involvement in PhDs?

Speakers:
Margarete Norell Bergendahl (KTH)
Send suggestions to: stephan.morgenthaler@epfl.ch
Involvement of Society

Stefan Morgenthaler

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Internationalization

*Ramon Wyss*

Discussion on:

- Oversea Branch Campus
- Physical Spaces – ’Design Factories’ International
- Virtual experiences – C-Campus @KTH and Tsinghua
- Added value in engineering education
Internationalization

Ramon Wyss

Program

• Introduction
• Franco Vigliotti, Dean of EPFL Campus Middle East Ras Al Khamaih (UAE)
  ‘Experiences from EPFL Branch Campus in the UAE’
• Kalevi Ekman, Aalto University
  ‘The Design Factory in an International Setting’
• Johan Thorbjörnson
  ‘C Campus – how to use a virtual platform for international cooperation in education and research’

Three (Four presentations) and a panel discussion

• associate partner contribution
Internationalization

Ramon Wyss

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Entrepreneurship & KIC

» Entrepreneurship
  » Teaching topics, impact on teaching, curricula

» Startups, Incubators, Innovation
  » Relation to VCs

» Impact on MSc/PhD programs, projects
  » Industry oriented projects/theses

» Open campuses/industrial Labs
  » Spinoffs, Communities
  » View of Large Corporations

» KIC:
  » Flavor of academic programs
  » Innovation projects
  » Business development

» Format:
  » 4x15mn presentations
  » Panel with a few 5mn teasers, followed by discussions
Entrepreneurship & KIC's

*Jose Santos-Victor*

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MOOCs & Outreach

*Alexander Wanner*

» Gender Balance at Technical Universities
  » Gender balance: Key to sustainable success technical university?
  » Lessons learned over the first 25 years of CLUSTER?
  » University benchmarking as a key for advancing gender balance and gender equality?
  » ....?

» N.N. prepares the session

» Following General Format with panel discussions
MOOCs & Outreach

*Alexander Wanner*

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Gender Balance

Sabine Van Huffel

» Opening Presentation: 35” + 10”
  » e.g. "Gender in Engineering Education and Career”
  » and “The outcomes of the CESAER Gender Equality Survey”
  » Presentation by Manfred Horvat

» 5 examples of Good Practices (5” each)

» Discussion (panel, groups) (45”): 2 topics
  » Gender balance in Engineering education
  » Gender balance in Engineering Careers

» Wrap-up:
  » main take-home messages
Discussion on Gender Balance

Sabine Van Huffel

Gender balance in Engineering education:
» Gender ratio low, no change in 20 years. Why?
» How to attract more female students?
» How to measure effects of gender actions?

Gender balance in Engineering Careers:
» Why do we need more female engineers?
» Career in Academia: how to stop leaking pipes?
» Positive discrimination? Impose quota?
Gender Balance

*Sabine van Huffel*

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Your participation is needed!

Room for 250 participants!

Confirmed Presidents
- KTH
- Grenoble
- TU/e
- EPFL
- IST
- KIT
- UPC
- Aalto
- TUDarmstadt
Questions?
Consortium Linking Universities of Science and Technology in Education and Research