SHAKING THE FOUNDATIONS of Geo-Engineering Education

Galway, Ireland
4th-6th July 2012
TUESDAY  
3rd July 2012

19:00  SFGE 2012 Welcome Reception  
College Bar, NUI Galway

WEDNESDAY  
4th July 2012

all sessions in ENGINEERING BUILDING, all plenary sessions in ENG-G017, unless otherwise stated

08.30  Welcome  from Prof. Gerry Lyons, Dean of Engineering and Informatics, NUI Galway

08:40  Welcome and Introduction  from Dr. Bryan McCabe, SFGE 2012 Chair

09:00  KEYNOTE Lecture 1: What should geotechnical professionals be able to do?  
Prof. John Atkinson, Coffey Geotechnics, U.K.  
(introduced by Prof. Iacint Manoliu)

09:45  Lecture Session 1: WHAT SHOULD WE TEACH?  
Session Chair: Prof. Vlasta Szavits-Nossan

1. Geotechnical engineering education – removing the barriers David Muir Wood
2. Geotechnical-structural integration in US foundation engineering curricula Bill Kitch and Donald Coduto
3. Key skillsets for use in geotechnics (a contractor’s view) Matthew Baldwin
5. Rethinking aspects of theory and tradition in soil mechanics teaching Laurie Wesley

10:50  Tea/Coffee Break
**Facilitated Discussion 1: WHAT SHOULD WE TEACH?**

11:15-12:05  Group A (ENG-2001)  
Facilitator: **Prof. David Muir Wood**

Group B (ENG-2002)  
Facilitator: **Dr. Brian Simpson**

12:05-12:15  Plenary session (ENG-G017)  
Rapporteur: **Prof. David Muir Wood**

**Lecture Session 2: THE USE OF CASE HISTORIES IN GEO-ENGINEERING EDUCATION**

Session Chair: **Prof. Colin Leung**

- Teaching the importance of engineering geology using case histories  
  **Rafael Jimenez and Salvador Senent**

- Use of case studies in geotechnical courses: learning outcomes and suitable cases  
  **Trevor Orr and Marina Pantazidou**

- The use of case histories to encourage reflection by civil engineering design students  
  **Kenneth Gavin**

- Use of project-based learning to teach geotechnical design skills to civil engineering students  
  **Kenneth Gavin**

**Lunch**  
Zinc Restaurant, Engineering Building

**KEYNOTE Lecture 2: Quandry in geomaterial characterization: new versus the old**

**Prof. Paul Mayne**, Georgia Tech, U.S.A.  
(introduced by **Prof. David Frost**)

**Lecture Session 3: LABORATORY WORK IN GEO-ENGINEERING**

Session Chair: **Prof. Dominique Ngan-Tillard**

- Activities to raise students’ understanding of pore water pressure, seepage and total head  
  **David Nash**

- The use of online resources to support laboratory classes in soil mechanics  
  **David Airey, Peter Café and Helen Drury**

- Reinventing geotechnical engineering laboratory classes  
  **Mark Jaksa, David Airey, Jayantha Kodikara, Mohammed Shahin and Sam Yuen**  
  / Interactive learning modules in geotechnical engineering  
  **Mark Jaksa**

- Soil mechanics laboratory classes as an integral part of the learning process  
  **Waldemar Hachich**

**Tea/Coffee Break**
16:00 Lecture Session 3 (cont.): FIELDWORK IN GEO-ENGINEERING
Session Chair: Prof. Margarida Pinho-Lopes

14. The BMG Ignimbrite quarry; case study of an undergraduate field exercise in engineering geology Stephen Fityus and John Gibson
15. The use of field visits in graduate geotechnical teaching Rafael Jimenez and Wenceslao Martin-Rosales
16. TU Delft Spain fieldwork and other outdoor activities Dominique Ngan-Tillard, Leon van Paassen, Pieter Michiel Maurenbrecher and Aline Concha i Dimas

16:40 Facilitated Discussion 2: LABORATORY AND FIELDWORK IN GEO-ENGINEERING

16:40-17:30 Group A (ENG-2001) Facilitator: Prof. Waldemar Hachich
Group B (ENG-2002) Facilitator: Dr. Declan Phillips
17:30-17:45 Plenary session (ENG-G017) Rapporteur: Prof. Waldemar Hachich

17:45 End
KEYNOTE Lecture 3: Equilibrium, strength, strain, dilation and superposition  
*Dr. Brian Simpson*, Arup Geotechnics, U.K.  (introduced by *Mr. Paul Quigley*)

Lecture Session 4: COMPUTING AND TECHNOLOGY IN GEO-ENGINEERING  
Session Chair: *Prof. Rafael Jimenez*

17. Dunmore Bridge case study: an introduction to geotechnical engineering via finite element analysis  
*Andrew Abbo, Stephen Fityus and Sam Mackenzie*

18. Learning issues related to basic concepts in geotechnics: a teacher’s perspective  
*Vlasta Szavits-Nossan*

19. Implementation of computing and software in undergraduate soil mechanics courses  
*Margarida Pinho-Lopes*

20. Integrating a major excel exercise into an introductory soil mechanics course  
*David Airey, Peter Café and Abbas Elzein*

21. The use of electronic voting systems to enhance deep learning  
*Daniel Barreto*

10:45  
Tea/Coffee Break

Facilitated Discussion 3: COMPUTING AND TECHNOLOGY IN GEO-ENGINEERING  
11:10-12:00  Group A (ENG-2001)  Facilitator: *Prof. Stephen Fityus*  
Group B (ENG-2002)  Facilitator: *Prof. Mark Jaksa*  
12:00-12:10  Plenary session (ENG-G017)  Rapporteur: *Prof. Stephen Fityus*

Lecture Session 5: RESEARCH AND TEACHING EXPERIENCES IN ENGINEERING EDUCATION  
Session Chair: *Prof. William Kitch*

22. Challenges in teaching geomechanics to the next generation  
*Stephen Fityus*

23. A tour through education sites for an engineering instructor: major stops and impressions  
*Marina Pantazidou and David Frost*

24. Lecturers’ perceptions of students’ learning needs  
*Rafael Monroy, Francisco Javier Torrijo and Fuensanta Hernandez-Pina*
25. Intellectual synergy in the education of geo-engineering  
   Richard Ray, Peter Scharle and Robert Szepeshazi

26. The LARAM School: teaching LAndslide Risk Assessment and Mitigation to PhD students  
   Leonardo Cascini, Giuseppe Sorbino, Michele Calvello and Sabatino Cuomo

13:15  Lunch       Zinc Restaurant, Engineering Building

14:15  KEYNOTE Lecture 4: Using Questioning to enhance student engagement  
   Prof. Stephen Ressler, U.S. Military Academy at Westpoint, U.S.A.  
   (introduced by Dr. Declan Phillips)

15:00  Tea/Coffee Break

15:20  ASCE ExCEEd (Excellence in Civil Engineering Education) Workshop  
   Delivered by Prof. Robert O'Neill and Prof. Tanya Kunberger, Florida Gulf Coast University, U.S.A.  
   ENG-G047, Engineering Building

18:00  End

20:00  SFGE 2012 Conference Dinner  
   Aula Maxima, The Quadrangle, NUI Galway
09:15    KEYNOTE Lecture 5: Engineering education: A tale of two paradigms
        Prof. Richard Felder, North Carolina State University, U.S.A.  (introduced by Prof. David Elton)

10:00    Lecture Session 6: STUDENT-CENTRED LEARNING IN GEO-ENGINEERING
        Session Chair: Prof. David Airey

        27. Experiences from revising a course to promote significant learning Tanya Kunberger
        28. Context, rigour and enjoyment in geotechnical education Declan Phillips
        29. Sport and soil mechanics – analogies to aid student learning Bryan McCabe and Mark Jaksa

10:45    Tea/Coffee Break

11:15    Lecture Session 6 (cont.): STUDENT-CENTRED LEARNING IN GEO-ENGINEERING
        Session Chair: Dr. Laurie Wesley

        30. Promoting active learning in geotechnical engineering Colin Leung
        31. Some reflections on the use of a co-operative learning model in soil mechanics courses Margarida Pinho-Lopes
        32. Integrating professional practice into the curriculum David Nash

12:00    Facilitated Discussion 4: STUDENT-CENTRED LEARNING IN GEO-ENGINEERING

        12:00-12:50  Group A (ENG-2001)    Facilitator: Prof. Marina Pantazidou
                     Group B (ENG-2002)    Facilitator: Dr. David Nash
        12:50-13:00  Plenary session (ENG-G017)    Rapporteur: Prof. Marina Pantazidou

13:00    Lunch    Zinc Restaurant, Engineering Building
FRIDAY 6th July 2012

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14:00  SFGE 2012 SPECIAL INVITED LECTURE
Keep it engaging, keep it simple, keep it rigorous
Prof. John Burland, Imperial College London, U.K. (introduced by Prof. Trevor Orr)

15:00  Tea/Coffee Break

15:20  CLOSING SESSION
Lessons learned from SFGE 2012 – the way forward?
Prof. Mark Jaksa and Dr. Bryan McCabe

16:00  END OF CONFERENCE

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16:00  Option tour of New Engineering Building

17:30  Meeting of ISSMGE TC 306 Technical Committee on Geo-engineering Education
Boardroom ENG-3052, Engineering Building, NUI Galway

SATURDAY 7th July 2012

09.00  Conference Tour of Connemara

17.00  Return to Galway City
www.sfge2012.com

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