



The Australasian Association for Engineering
Education

NEWSLETTER

July 2011

Lyn Brodie, Editor

President's Report, July 2011

Dear Colleagues

For many, welcome back to AAEE, or to be more precise, welcome AAEE back into your institution. It has come to light that many of our membership have not been receiving emails from AAEE for a number of years (at the least). The enormity of this issue became apparent just recently. We have been working closely with Engineers Australia to resolve this issue and you will shortly receive this first correspondence from AAEE through a new email system.

For those who read this from AAEE as the first time correspondence in a long time, I would like to inform you that AAEE has been very active over the years, none the least, through the annual AAEE conferences, and through our Australasian Journal of Engineering Education (AJEE). We have also been publishing periodic newsletters, of which past issues may be viewed at <http://www.aeee.com.au/>. In fact, you will see much of our activity via this website. There is a link to the AAEE Scholar Wiki with many resources for your teaching and engineering education research. The AAEE website also has past proceedings for the AAEE conference. I encourage you to visit the AAEE website to explore all of the activities and links available.

AAEE is implementing the AAEE Champions scheme whereby engineering Deans in Australia and New Zealand have been asked to nominate champions within their engineering educators to be AAEE points of contact at the ground level (so to speak). We now have had Champions nominated from a number of institutions in Australia and New Zealand, with the remaining expected to be identified soon. Our AAEE Champions will help increase AAEE visibility, and improve communication, community and operational connectivity within our membership, and within your institution. We look forward to welcoming all of our Champions within the next couple of months.

As we head into our second semester, I wish you smooth sailing and greater connection with AAEE.

Kind regards



*Duncan Campbell
2011 President*

AAEE 2011 Member Survey Results

This year's member survey had a smaller turnout than last year's, but it still speaks to the strength that is at the core of our association.

http://www.aeee.com.au/AAEE_2011_Member_Survey_Report.pdf

Check out the report at:

Euan Lindsay

2011 AAEF EA National Workshop Series

AAEF is also pleased to partner with Engineers Australia for the Australian Council of Engineering Deans (ACED) sponsored joint 2011 National Workshops on Australian Engineering Stage 1 Competency Standards. These workshops will be held in Sydney, Rockhampton, Adelaide, Canberra, Perth, Melbourne, Brisbane, Hobart.

Each workshop will present the revised Engineers Australia Stage 1 Competency Standards and their role as a generic foundation for a systematic, outcomes-based approach to engineering education in the Australian context. Expert presenters from the Engineers Australia Accreditation Centre and leading engineering educators nominated by the Australasian Association for Engineering Education will facilitate the workshops.

Topics:

- Outcomes and implications of the recent review of the Stage 1 Competency Standards;
- Addressing the competencies through curriculum design and mapping (processes, examples and outcomes); and
- The Engineers Australia accreditation requirements and process.

Details of these workshops have been sent to your Dean and/or Associated Dean Teaching and Learning.

A copy of the flyer is also at the end of this newsletter.

It is hoped that an equivalent set of workshops can be developed for New Zealand.

*Duncan Campbell
President, AAEF*

IPENZ Update

Gerard Rowe represented AAEF at the 2011 IPENZ Engineering Profession Forum held in Wellington in March. This Forum is intended to be the major annual gathering of all significant engineering organisations in New Zealand. Highlights included opportunities:

- for Technical Interest Groups (TIGs) and serviced Collaborating Technical Societies (CTSs) to receive information and training about IPENZ services.
- to build relationships and networks.
- to participate in the launch of the Retention and Renewal of Women in Engineering document, which can be accessed at: http://www.ipenz.org.nz/ipenz/downloads/RetentionRenewal_WIE.pdf
- to introduce the different engineering organisations (including AAEF) at the Forum and to explain their roles. Summary details can be found at: http://www.ipenz.org.nz/IPENZ/Who_we_are/Organisation/Technical_Groups.cfm

- to participate in a meeting of student representatives from tertiary institutions which improved engagement between the student body and IPENZ.

The Forum occurred soon after the February 2011 Christchurch earthquake. In light of the tragic events affecting Christchurch, the governing Board of IPENZ considered whether to proceed with the 2011 Engineering Profession Forum and the associated 2011 Fellows and Achievers' Dinner. A decision was made to proceed as per programme, bar a change of emphasis. A specific theme was attached to the Fellows and Achievers' Dinner: "reflection, recognition and resolve". The dinner was a time to reflect, to recognise achievement in the profession and then to emphasise the resolve of engineers in their role of service to society. Not surprisingly, a recurring theme in the Forum was defining the role that IPENZ could best fulfil in such natural disaster events.

*Gerard Rowe
AAEF executive*



22nd Annual AaeE Conference 2011

**Developing Engineers for Social Justice:
Community Involvement, Ethics &
Sustainability**



Call for papers

The 22nd Annual Conference of the Australasian Association for Engineering Education invites submissions of papers for peer review. The theme for the conference will be: **Developing Engineers for Social Justice: Community Involvement, Ethics & Sustainability**

There will be four sub-themes for the conference:

- Humanitarian Engineering (aligning with Engineers Australia's 2011 Year of the Humanitarian Engineer)
- Inclusivity
- Ongoing Graduate Professional Development
- Pathways into Engineering

The conference will be held from Monday December 5th to Wednesday December 7th, 2011, at the Esplanade Hotel in Fremantle, Western Australia.

The conference will be accepting a range of submission types:

- Peer-reviewed Full Papers
- 90-minute Workshops to be held at the conference
- Presentations without Papers
- Posters without Papers

Venue

The Esplanade Hotel is located 20 minutes by car/taxi from the City of Perth and 30 minutes from Perth's domestic and international airport terminals. www.esplanadehotelfremantle.com.au



Call for Papers

Planning is well underway for the 2011 conference-"Developing Engineers for Social Justice". Our keynote speakers are confirmed, papers are rolling in and the social program will take full advantage of the historic Fremantle precinct that is hosting our event. We are very pleased to have secured a post-conference eminar from world-renowned Engineering Educators Richard Felder and Rebecca Brent. This two-day workshop will be a valuable opportunity for engineering academics - both new and old - to improve their teaching skills. More details are available at <http://www.aeee.com.au/conferences/2011/page/s/program.html>

The call for papers is available online at <http://www.aeee.com.au/conferences/2011/page/s/papers.html>, with paper submissions are due by July 29.

I look forward to having you join us in Fremantle in December.

*Euan Lindsay
2011 AAEE Conference Chair*





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Achieve International Excellence



Engineering Thresholds: an approach to curriculum renewal

<http://www.ecm.uwa.edu.au/engineeringthresholds>

Knowledge Creation Workshop

All university engineering educators are invited to a workshop on engineering threshold concepts.



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Engineering Thresholds: an approach to curriculum renewal

<http://www.ecm.uwa.edu.au/engineeringthresholds>

Knowledge Creation Workshop

All university engineering educators are invited to a workshop on engineering threshold concepts.

Participants will investigate the thresholds in foundation (1st and 2nd year) engineering courses for all engineering disciplines.

Participants will learn to use threshold concept theory to improve teaching and learning in engineering, and will contribute to engineering education research. Participants from engineering, chemistry, computing, maths and physics are all welcome.

Threshold concept theory is one of the most important recent developments in discipline-based Higher Education research. Meyer, Land and others realised that there were certain concepts, central to the discipline, that would open up required systems and ways of thinking and yet were troublesome for students. It has been discovered that, not only can threshold concept theory help in focusing students' and teachers' attention, it can also be a curriculum development tool where there is a strong tendency to overcrowd the curriculum (Cousin, 2006; Land *et al.*, 2005; Meyer *et al.*, 2006).

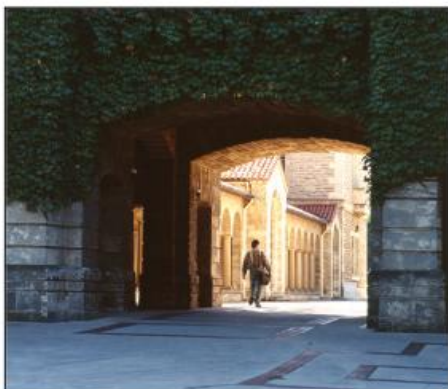
Facilitators

- Dr Sally Male
Workshop Leader, Engineering Thresholds Project
- Professor Cara MacNish,
Deputy Dean (Academic)
- Associate Professor Jeremy Leggoe,
Deputy Dean (External Relations)

The facilitators are academics central to the Engineering Thresholds Project Team at UWA with teaching experience spanning mechanical, chemical, electrical, and software engineering.

Support

The workshop is one of three held in Australia in 2011. They are part of the project *Engineering thresholds: an approach to curriculum renewal* supported by the Australian Learning & Teaching Council. Outcomes will be used to develop resources for engineering educators. The workshops are further supported by The Australian Council of Engineering Deans (ACED). The venue is kindly provided by The University of Melbourne.



Date: Thursday 14 July 2011
Place: Engineering Design Studio 1
Old Engineering Building
The University of Melbourne
Time: 10.00am until 2.00pm
Refreshments: Light lunch provided
Cost: Free to participants
Registration Deadline: 30 June 2011
Further Information: sally.male@uwa.edu.au
Tel +61 8 6488 1242

<http://www.ecm.uwa.edu.au/engineeringthresholds>



THE UNIVERSITY OF
WESTERN AUSTRALIA
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Engineering Thresholds: an approach to curriculum renewal
Knowledge Creation Workshop on Thursday, 14 July 2011
in Engineering Design Studio 1, Old Engineering Building, The University of Melbourne

REGISTRATION

Title (Prof/Dr/Mr/Ms ...): _____ Full Name: _____

University: _____

Position Title: _____

Email: _____ Telephone: _____

Postal Address: _____

Engineering discipline/subject you have taught or studied: _____

Any special dietary or access requirements: _____

How did you find out about the workshop? _____

Please return to Sally Male by 30 June 2011

Email: sally.male@uwa.edu.au (requested details are sufficient without the form)

Fax: +61 8 6488 1015

Post: School of Environmental Systems Engineering (M015),
The University of Western Australia, 35 Stirling Hwy, Crawley Western Australia 6009

References

Cousin, G. (2006), An introduction to threshold concepts, *Planet* No 17, December 2006.

Land, R., Cousin, G., Meyer, J.H.F. and Davies, P. (2005), *Threshold concepts and troublesome knowledge (3): implications for course design and evaluation*, in C. Rust (ed.), *Improving Student Learning – diversity and inclusivity*, Proceedings of the 12th Improving Student Learning Conference. Oxford: Oxford Centre for Staff and Learning Development (OCSLD), pp. 53–64

Meyer, J.H.F., Land, R. and Davies, P. (2006), *Implications of threshold concepts for course design and evaluation*, in Meyer, J.H.F. and Land, R. (eds.), *Overcoming Barriers to Student Understanding: threshold concepts and troublesome knowledge*, London and New York: Routledge, pp. 195–206

Support for this project has been provided from the Australian Learning & Teaching Council Ltd, an initiative of the Australian Government Department of Education, Employment and Workplace Relations.

International Journal of Engineering Pedagogy Launched

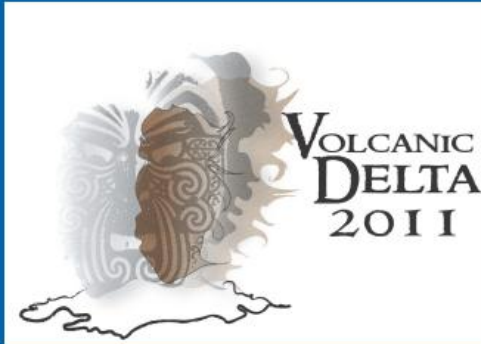
The International Journal of Engineering Pedagogy (IJEP) is an independent, peer-reviewed online journal. It serves as an international forum related to engineering education, published at present four times a year. Teachers, educators and researchers as well as schools and institutions are invited to

discuss their research, experiences, ideas and perspectives in the field of engineering pedagogy at a worldwide level.

For more information check out www.i-ep.org

Euan Lindsay

The Eighth Southern Hemisphere Conference on Teaching and Learning of Undergraduate Mathematics and Statistics



The Eighth Southern Hemisphere Conference on the Teaching and Learning of Undergraduate Mathematics and Statistics

The conference theme is
Te Ara Mokoroa, The Long Abiding Path of Knowledge.

We seek submissions addressing this theme in the undergraduate mathematical sciences (mathematics, statistics and engineering), including transition courses, adult education, and mathematics teacher training.

Keynote speakers

- Peter Adams
Professor of Mathematics, University of Queensland
- Jennifer Brown
Professor of Statistics, University of Canterbury
- David Holgate
Associate Professor, Mathematics, University of Stellenbosch
- John Mason
Professor of Mathematics Education, The Open University

Invited Speakers

Alex James; Víctor Martínez-Luaces;
Chris Sangwin; Caroline Yoon

Registration is now available online

Early Bird registration (Before 31 August 2011) NZ\$640

Registration after 31 August NZ\$740

Postgraduate Registration fixed at NZ\$640

Important submission dates

- May 30 Full, refereed papers for IJMEST
- August 21 Communications papers
- August 31 Abstracts for oral presentations

Teachers' Day 29 November

Enquiries and enrolments from teachers
Craig McFarlane mcfarlanecj@xtra.co.nz

Hosted by Departments of Engineering Science, Mathematics and Statistics



 **THE UNIVERSITY OF AUCKLAND**
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau



2011 NATIONAL WORKSHOP SERIES

AUSTRALIAN ENGINEERING STAGE 1 COMPETENCY STANDARDS A FRAMEWORK FOR QUALITY ASSURED ENGINEERING EDUCATION

ADDRESSING THE STANDARDS THROUGH THE CURRICULUM SYSTEMATIC CURRICULUM DESIGN AND MAPPING

This series of national workshops sponsored by the Australian Council of Engineering Deans will be conducted from July 2011 to February 2012. Each workshop will present the revised Engineers Australia Stage 1 Competency Standards and their role as a generic foundation for a systematic, outcomes-based approach to engineering education in the Australian context. Expert presenters from the Engineers Australia Accreditation Centre and leading engineering educators nominated by the Australasian Association for Engineering Education will facilitate the workshops.

Topics:

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- Addressing the competencies through curriculum design and mapping (processes, examples and outcomes); and
- The Engineers Australia accreditation requirements and process.



The workshops will be offered in key locations around the country. Each workshop will run from 9.30 am through to 3.45 pm and will include a light working lunch. Attendance will be free for all participants.

WORKSHOP SCHEDULE

Sydney:	Friday 15 July	Perth:	Mid October (to be confirmed)
Rockhampton:	Friday 29 July	Melbourne:	Friday 11 November
Adelaide:	Friday 12 August	Brisbane:	Early December (to be confirmed)
Canberra:	Friday 16 September	Hobart:	Friday 3 February, 2012

WHO SHOULD ATTEND?

The primary focus of the workshops is to build an appreciation and commitment to holistic and systematic educational development and delivery. An invitation is therefore extended to all members of academic and professional staff primarily focussed on engineering programs or involved in the accreditation process:



- Members of the teaching team;
- Unit (subject) coordinators;
- Program Leaders;
- Associate Deans (Learning and Teaching);
- Staff involved in upcoming Engineers Australia accreditation visits;
- Industry advisory committee members;
- Accreditation visit panel members.

WHAT TO DO NOW

We ask you to reserve the relevant date in your diary. Further information about the workshops and a registration form will be sent closer to the date of the workshop nearest to you.

FURTHER ENQUIRIES

If you have any further enquiries about the workshops, please contact Dr Peter Hoffmann – Associate Director Accreditation, Engineers Australia - by email at phoffmann@engineersaustralia.org.au.

Contributions for the AEE Newsletter

Do you have something of interest to the Engineering Education community? We welcome contributions from members! If you have something to share, please email the newsletter editor Lyn Brodie at Lyn.Brodie@usq.edu.au

Lyn Brodie