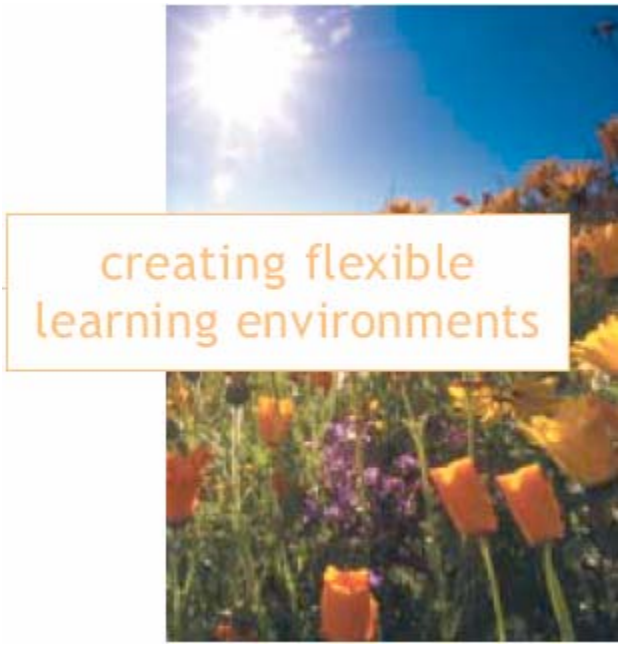
Newsletter of the Australasian Association for Engineering Education

June 2004

Contents

2004 Conference! 1
Annual awards 2
National Executive 3
Mathematics in Engineering Education – Coping with Change 3
Useful Websites 4
Future Conferences 4
Contributions 4

2004 Conference!



The Australasian Association for Engineering Education and the University of Southern Queensland are pleased to invite you to Toowoomba for the 15th Annual Conference for the Australasian Association for Engineering Education and the 10th Australasian Women in Engineering Forum. The conference will commence with a welcome reception on Sunday 26th September and concludes with a plenary session on Wednesday 29th September. Delegates are encouraged to stay over and participate in the Research Collaboration morning to be held on Thursday 30th. The Australian Council of Engineering Deans (ACED) and the Engineering Associate Deans will also be meeting on that day.

Toowoomba is a kaleidoscope of colour in September as the diverse range of flowers, shrubs and trees that grow in the city burst forth in blooms that announce the arrival of spring. The city has celebrated this event for more than 50 years by hosting the annual Carnival of Flowers, which will be held in the week before the Conference. This rich tapestry of colours and textures will provide a beautiful backdrop for the Conference where we will address the issues confronting those who are engaged in engineering education.

conference themes

The central theme for this year's conference is the need to create flexible learning environments that empower the learner as they progress through their lifelong educational journey. The increasing emphasis on flexible learning presents new challenges for students, educators, and practitioners and these will be explored during the conference.

keynote speakers

- Professor Helen Garnett
  Vice Chancellor, Charles Darwin University
- Ms Catherine O'Sullivan
  Executive Director (Schools), Toowoomba District Office, Education Queensland, Queensland Government

- Professor Gary Miller
  Associate Vice President for Distance Education and Executive Director, World Campus, Pennsylvania State University

participate

At the Conference you will have a unique opportunity to:

- Learn how to respond to diversity by creating flexible learning environments;
- Discern the impact of the new technologies on your teaching environment
- Engage in discussions about innovations in learning and teaching;
- Participate in workshops on a wide range of topics
- Collaborate with people from other universities; and
- Enjoy the company of new and old friends at the social events

stop press!

Representatives of the **College of Environmental Engineers** will be launching two important documents during the workshop sessions at the Conference:

- A Sustainability Module for first year Environmental Engineering students; and
- A draft of the new guidelines for the design of undergraduate Environmental Engineering programs

They would welcome the participation of Heads and other academic staff from relevant Schools or Departments in these important discussions

and finally

The members of the organising committee look forward to welcoming you to the Conference in September as it promises to be a rewarding experience for all who attend. The registration brochure will be posted on the Conference website at the end of June - register early to catch the early bird rate, secure accommodation and to avoid the rush!

David Dowling
Chair, AAEE 2004 Conference Organising Committee

conference website

For the latest information, visit: http://www.usq.edu.au/aaee.

This site is also easily accessible from the AaeE website: http://www.aaee.com.au.

Annual awards

Each year, the Association recognises excellent achievement in Engineering Education in a number of categories. The awards for 2004 are:

- Excellence in Teaching and Learning in Engineering Education
- Excellence in Curriculum Innovation in Engineering Education
- Excellence in Inclusive Practice in Engineering Education
- Excellence in a Curriculum Team Project in Engineering Education
- New Educator's Award for Teaching and Learning in Engineering Education
- Excellence in Teaching and Learning in Mechanical / Mechatronic Engineering Education
- Excellence in Teaching and Learning in Industrial / Manufacturing Engineering Education

The award criteria and procedures are described on the website at:
http://www.aaee.com.au/award/aaee%20awards%202004.pdf

National Executive

The Annual General Meeting of the Australasian Association for Engineering Education will be held during the Conference at USQ on Tuesday, 28 September 2004, commencing at 12.45pm sharp. Please check your conference program for the location!

Nominations are now being accepted for election to the Executive Committee of AaeE for 2004/5. Nomination forms are available on the website at http://www.aaee.com.au/about/executiv.htm. Elections will take place at the Annual General Meeting. Nominations should be submitted before the conference.

Mathematics in Engineering Education – Coping with Change

This is a short note from Milton Fuller, Faculty of Engineering and Physical Systems, Central Queensland University, m.l.fuller@cqu.edu.au. It summarises discussion that was held subsequent to last year's AAEE conference in Melbourne. A followup Forum will be held at this year's conference in Toowoomba.

The following action statements will need to be addressed by engineering mathematics educators if they are to continue to contribute meaningfully to undergraduate engineering education in the 21st century, building on the principles defined by the 1996 IEAust Review of Engineering Education – Changing the Culture, and to support changes to the engineering curricula as proposed at the meeting should they be implemented.

1. Greater interaction and co-ordination of activities (including the conferences) between the organisers of the EMA conferences and the AAEE conferences. Future conferences should be organised so that they are timed to run sequentially in the same city or location. This would present greater opportunity for engineers to contribute to mathematics in engineering education and for mathematicians to become more involved in engineering education. In particular there is a real need for greater input by mathematicians to the AAEE conferences.
2. Regional Working Groups should be established to continue work on projects and proposals arising at the two conferences. The Regional Working Groups should draw membership from university mathematics and engineering educators, engineering students, representatives from local engineering industry, representatives from the TAFE sector and secondary (and perhaps primary) schools. The Regional Groups would meet on a regular basis and would give detailed reports to both IMA and AAEE conferences. Details of the current work of the Groups could be listed for general comment on the Networks already set up on the AAEE website (www.aaee.com.au/networks/index.htm) and other networks where the work of the Groups can be discussed by interested individuals. The regional meetings of the Institute of Mathematics & Its Applications (UK) are an example of this type of collaboration.
3. Explore how mathematics (and statistics) can better contribute to the engineering curriculum particularly where there is emphasis on project work (group and individual) and PBL. This implies well planned joint teaching and a marked change from the traditional term long lecture/tutorial presentation of mathematics courses. Constraints include an increase in resources, a major review of assessment with a move to authentic assessment, and changes in attitude so that time and effort can be directed to multidiscipline projects.
4. Greater involvement with schools to promote mathematics in engineering, science and technology. Working with engineering staff to deliver periodic extended learning programs for motivated students in all grades from primary school through to secondary school. Such joint school aimed projects could also contribute to staff development of high school teachers of mathematics, science and technology.
5. Greater effort to be directed into addressing the problems associated with the secondary/tertiary interface. Smoothing the transition by consolidating the pre-requisite knowledge, skills and attitudes of new entrants to engineering undergraduate programs (school leavers and mature age entrants) will require joint contributions from mathematics and engineering staff.

If there is to be a revolution in undergraduate engineering education then it will be essential for the working relationships between mathematics and engineering staff members to take on a new dimension. Creating this

new dimension will present a significant challenge - a challenge which must be overcome if mathematics departments are to be a part of the revolution!

Useful Websites

Education Network Australia (EdNA) online services and resources

Online services and resources for the tertiary education community in Australia, including news, subject specific collections of T&L resources, an extensive listing of conferences and events and other supports for staff development have recently been upgraded. Visit: http://www.edna.edu.au (source: RMIT's Science Engineering and Technology Portfolio's Academic Development Group)

Chalk Talk *with* Jonas Chalk

The GE Master Teachers for Freshman Engineering at Northeastern University:
http://gemasterteachers.neu.edu/chalktalk.htm

This is a great website containing considered responses about teaching matters. It describes itself as: "Advice column to initiate a dialogue on best practices, successes, and frustrations in teaching freshman engineering students", but its appeal goes way beyond first year.

Tomorrow's Professor Listserv

http://ctl.stanford.edu/Tomprof/index.shtml

This is another great spot for advice about teaching, learning and research in higher education. You can subscribe to the listserver and get two articles a week. You can also browse the entire collection at the website. There are more than 500 short articles.

Future Conferences

Expressions of interest are invited for hosting the conference in 2007. A copy of the guidelines for prospective hosts may be obtained from Wageeh Boles at QUT, w.boles@qut.edu.au .

Contributions

Don't forget to share your good ideas, conference announcements, book reviews, great websites, etc with other members. Send them to Roger.Hadgraft@RMIT.edu.au for inclusion in the next Newsletter.