All full papers accepted for publication in the Proceedings of the 25th Annual Conference of the Australasian Association for Engineering Education were submitted as full papers and were blind peer reviewed. Authors were given the opportunity to amend their paper in light of these reviews before the decision to accept and publish the paper was made. This process of reviewing is in accord with the criteria set for research papers by the Department of Education, Employment and Workplace Relations (DEEWR) and the Department of Innovation, Industry, Science and Research (DIISR) of the Australian Government.

Author: Australasian Association for Engineering Education Conference (25th: 2014)

Editors: Andrew Bainbridge-Smith, Ziming Tom Qi, Gourab Sen Gupta

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## Programme

**Sunday 7 December 2014**

<table>
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<th>Time</th>
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| 9:30 – 3:00 | Full day Workshop on PSoC (Cypress University Alliance)  
Rangimarie 2, Level 3, Te Papa |
| 9:00 – 4:30 | AAEE Executive Committee Meeting  
Rangimarie 3, Level 3, Te Papa |
| 6:30 - 7:30 | Welcome Reception  
*Signs of a Nation, Level 4, Te Papa, 6.30PM-7.30PM*  
Registration and Exhibition Space 3.00PM -7.30PM, Oceania, Level 3, Te Papa |

**Monday 8 December 2014**

**Maori Welcome:** 8:30AM  
*Sounding Theatre, Level 2, Te Papa Tongarewa National Museum of New Zealand*  
Registration and Exhibition space: 8:00AM – 5:00PM Oceania, Level 3, Te Papa

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<th>Time</th>
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| 9:00 - 10:00 | Steve Maharey – Vice-Chancellor, Massey University. Official Opening  
*Sounding Theatre, Level 2*  
Keynote Speaker Professor Alison Halstead – Sponsored by AKO Aotearoa  
Collaborative Pathways: How do we ensure that all learners are enabled to make connections across areas of learning that support an education in engineering? |
| 10:00 - 10:30 | Morning Tea – Oceania, Level 3, Te Papa |
| 10:30 - 12:00 | Session 1A  
Collaborative Pathways  
Chair: Assoc/Prof Colin Kestell  
Session 1B  
Electrical Engineering  
Chair: Dr Gerard Rowe  
Session 1C  
Global Competitive Supply of Engineers  
Chair: Dr George Banky  
Session 1D  
Student Engagement & Retention  
Chair: Dr Andrew Bainbridge-Smith  
Session 1E  
Introductory Engineering & Computing Courses & Learning Management Systems  
TALE  
Chair: Prof Dale Carnegie  
Session 1F  
Assessment and Evaluation-1 TALE  
Chair: Dr Geunsik Lim  
Session 1G  
Teaching Approaches-1 TALE  
Chair: Dr Stuart Marshall |
| 12:00 - 1:30 | Lunch – Oceania, Level 3, Te Papa |
| 1:30 - 3:00 | Workshop 1A  
Solving wicked sustainability problems: What specific knowledge and skills do students need to have to solve modern sustainability issues and those of the future?  
Chair: Ms Dorothy Missingham  
Session 2E  
Work in Progress  
Chair: Dr Phillip Allen  
Session 2F  
Curriculum Design and Pedagogy-2 TALE  
Chair: Dr Bryan Ng |
| 3 - 3:30 | Workshop 1A (continue)  
Solving wicked sustainability problems.  
Chair: Dr Tom Qi  
Session 3E  
Work in Progress on Student Engagement & Retention  
Chair: Dr Elizabeth Godfrey |
| 3:30 - 5:00 | Workshop 1B (continue)  
Addressing the Publication Review Criteria for the IEEE Transactions on Education  
TALE  
Chair: Dr Andrew Yoong  
Session 3F  
Collaborative Pathways  
Chair: Dr Philip Allen  
Session 3G  
Learning and Teaching Approaches TALE  
Chair: Dr Bryan Ng |
### DAY 2: Tuesday 9 December, 2014

**Registration:** 8:00AM – 5:00PM  
*Oceania, Level 3, Te Papa Tongarewa National Museum of New Zealand*

#### 9:00 - 10:00

- **Keynote Speaker:** Tim Fowler  
  Chief Executive, Tertiary Education Commission, New Zealand  
  **Sounding Theatre, Level 2, Te Papa**  
  Growing the engineering education to employment pipeline: Reflections and future directions

#### 10:00 - 10:30

- **Morning Tea**  
  *Oceania, Level 3, Te Papa*

#### 10:30 - 12:00

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<tr>
<th>Sounding Theatre</th>
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<td>Educational Policy, Leadership and Development-2 TALE</td>
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#### 12:00 - 1:30

- **Lunch**  
  *Oceania, Level 3, Te Papa*

#### 1:30 - 3:00

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<td>MATLAB &amp; Simulink for Project-Based Learning using LEGO MINDSTORM MS NXT -Part1</td>
<td>Student Engagement &amp; Retention (Electrical Engineering)</td>
<td>Assessment and Evaluation-3 TALE</td>
<td>Toward a Modern Curriculum for Computer Engineering - Part1</td>
<td>Reflective Practice in 3 Domains</td>
<td>Thinking Like an Engineer</td>
<td>Special Session on Computer Education by the IEEE Computer Society</td>
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#### 3:00 - 3:30

- **Afternoon Tea**  
  *Oceania, Level 3, Te Papa*

#### 3:30 - 5:00

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<td>(continue) MATLAB &amp; Simulink for Project-Based Learning using LEGO MINDSTORM MS NXT -Part2</td>
<td>Assessment and Evaluation-4 TALE</td>
<td>Engaging, Evaluation and Motivating Learners - 1 TALE</td>
<td>Toward a Modern Curriculum for Computer Engineering - Part2</td>
<td>Good practice guidelines for curriculum, supervision and assessment of final year engineering projects and AQF8 learning outcomes</td>
<td>Indigenous engineering, a pathway to reconciliation/Intercultural competence?</td>
<td>Special Session on Computer Education by the IEEE Computer Society</td>
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<td><strong>Chair:</strong></td>
<td>Dr Susan E. Kowalski</td>
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#### 6:30 - 10:30

- **AAEE Conference Dinner and Awards**  
  *Westpac Stadium (transport departing Te Papa at 6.00PM)*  
  **TALE Conference dinner**  
  *Foxglove, Tuesday 9th December*
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<th>Time</th>
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<td>8:00 - 9:00</td>
<td><strong>Keynote Speaker:</strong> Professor Roger Hadgraft -- Sponsored by Otago Polytechnic CQ University, Australia</td>
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<td><strong>Sounding Theatre, Level 2, Te Papa</strong> Reinventing Engineering Curricula for Personalised Learning</td>
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| 10:00 - 10:30 | **Special topic session 1A**  
Creating Community Change – Llew Mann  
**Special topic session 2A**  
Employment of Cloud Teaching to Help Students Develop Technical Report Writing Competency - Judy Chen  
**Special topic session 3A**  
Approaches to Applied Learning – Antony Dekkers  
**Special topic session 4A**  
Reinventing online engineering education... introduction to the Adaptive Mechanics Network.  
**Special topic session 5A**  
1. An industry oriented math teaching strategy for the Metro Group BEngTech program  
2. An industry oriented course development for the Master of Engineering  
Chair: Dr Tom Qi  
**Special topic session 6A**  
1. Integrating Ecology into the Environmental Engineering Curriculum – The Importance of Engagement  
2. The use of Project Based Learning in Engineering Fundamentals  
Chair: Prof Margaret Greenway  
**Special topic session 7A**  
1. Enhancing Motivation for Homework exercises in Mathematics  
2. Improving Success in Engineering Calculus: Design of a Bridge  
Chair: Arun Patil |
| 10:30 - 11:00 | **Morning Tea** – Oceania, Level 3, Te Papa  
**Session 7B**  
Student Engagement & Retention (Mechanical Engineering)  
Session 7C  
Work in Progress  
Session 7D  
Student Engagement & Retention  
Session 7E  
Online/E-Learning and Blended Learning and Distance, Open and Flexible Education  
TALE Chair: Dr Elke Mackensen  
Session 7F  
Industry Partnerships, Work-Integrated Education  
TALE Chair: Prof. Dale Carnegie  
**Session 7G**  
Engagement and learning for the Intelligent campus* (EBTIC’s selected papers)  
TALE Chair: Dr Jason Ng |
| 11:00 - 12:30 | **Lunch** – Oceania, Level 3, Te Papa  
**AAEE Exec meeting**  
Oceania North, Level 3, Te Papa  
**Session 8A**  
Student Engagement & Retention (Software Engineering)  
Chair: Dr Patricia Kelly  
Session 8B  
Work in Progress  
Session 8C  
Work in Progress  
Session 8D  
Work in Progress on Student Engagement & Retention  
Chair: Prof. Douglas Hargreaves  
Session 8E  
Computer-Based Learning and Courseware Technologies-1  
TALE Chair: Dr Andrew Natalski  
Session 8F  
Curriculum Design and Pedagogy-1  
TALE Chair: Dr Mani Nallasamy  
**Session 8G**  
Engaging, Evaluating and Motivating Learners-2  
TALE Chair: Dr Sascha Nikolic |
| 12:30 - 1:30  | **Afternoon Tea** – Oceania, Level 3, Te Papa  
**Session 9A**  
Student Engagement & Retention (Mechanical Engineering)  
Chair: Dr Llew Mann  
Session 9B  
General Theme  
Chair: Mr John Findlay  
Session 9C  
General Theme  
Chair: Dr Tom Qi  
Session 9D  
Student Engagement & Retention  
Chair: Dr Sally Male  
Session 9E  
Computer-Based Learning and Courseware Technologies-2  
TALE Chair: Craig Watterson  
Session 9F  
Teaching Approaches-2  
TALE Chair: Prof. Dale Carnegie  
**Session 9G**  
Engagement and learning for the Intelligent campus’ (EBTIC’s Keynote and Roundtable)  
TALE Chair: Dr Jason Ng |
| 3:00 - 3:30  | **Wrap Up and Conference Closing**  
**Sounding Theatre, Level 2, Te Papa** |

*EBTIC’s*
Australian Association for Engineering Education Conference
Te Papa Tongarewa National Museum of New Zealand, Wellington
8-10 December 2014
Concurrent Session Schedule
Monday 8 December 2014

Session 1A - Collaborative Pathways
Soundings Theatre   Chair: Associate Professor Colin Kestell

1. Robotics Education in Primary Schools: A Tasmanian Case
   Chen, Y., Faulkner, G.
2. Enhancing Industry Exposure, Discovery-Based and Cooperative Learning in Mechanics of Solids
   Moshiri, F., Gardner, A., Erkmen, E., Jarman, R., Khabbaz, H.
3. Integrating Writing and Structural Engineering – An Exploration
   Lloyd, N., Ramiah, R.
   Lind, G., Seaford, J.
5. Developing a Business Case for New Programs: A National Case Study for Associate Degrees
   Seaford, J., Ayers, R., Lind, G.

Session 1B - Electrical Engineering
ICON   Chair: Dr Gerard Rowe

1. Student Experience of Project and Design Centred Curriculum
   Chandran, J., Chandrasekaran, S., Stojcevski, A.
2. Automatic Circuit Analysis Problem and Solution Generation
   Macindoe, J., Li, J.C.
3. Lessons learned from adopting external online materials for an existing on-campus course
   Moors, T.
4. Work Integrated Learning in Electrical Engineering at a distance Education Institution: Opportunities and Challenges
   Nickola, G., Swart, J.
5. A Project to Adopt Technology in Electrical Engineering and Computing Units: Participants Experience
   Ortega-Sanchez, C., Taylor, D.
6. Development of Laboratories with Virtual and Real Elements for Better Preparation of Telecommunications Engineers
   Lopez-Bautista, M.C., Castro-Martinez, A.N., Gonzalez-Tinoco, J.E., Khotiaintsev, S.
Session 1C – Global Competitive Supply of Engineers
Oceania North
Chair: Dr George Banky

1. Can Simple Ideation Techniques Enhance Idea Generation?
   Belski, I., Hourani, A., Valentine, A., Belski, A.

2. Do Statutory and Professional Bodies in South Africa Threaten
   Academic Freedom at Universities: a Perspective from the Engineering
   Profession
   De Jager, H.J., Emuze, F.

3. Holistically approaching curriculum renewal: A case study of the
   Queensland University of Technology
   Desha, C., Senadjii, B.

4. Lifelong Learning Skills as Essential Attribute for Engineering Graduates
   Uziak, J., Walczak, M., Oladiran, M.T., Gizejowski, M.

5. Invisible writing (practices) in the engineering curriculum?
   Goldsmith, R., Willey, K.

6. An evaluation of the impact of using authentic design and build industry
   projects in project-based learning
   Ferguson, C., Palmer, S.

Session 1D – Student Engagement & Retention
Oceania South
Chair: Dr Andrew Bainbridge-Smith

1. Is Online Goal Setting Mechanisms Effective in Facilitating Self-
   Paper-based Portfolio
   Chang, C-C. Liao, Y.

2. Ten years on: An evaluation of the success of the Master of Engineering
   Practice program
   Dowling, D.

3. Inspiring and stimulating students to learn mechatronics (robotics)
   through authentic projects and co-curricular activities
   Kodagoda, S.

4. How to teach first-year engineering students to learn computing and
   programming effectively?
   Zhang, H., Lemckert, C.

5. Training tutors for undergraduate courses in engineering: The
   importance of context
   Kavanagh, L., Papinczak, T., O’Moore, L.

6. Comparison of use of Echo360 generated materials in maritime
   engineering and nursing disciplines to support student learning
   Chin, C.K.H., Fei, J., Mather, C., Caesar, L.
Monday 8 December 2014

Workshop 1A
Soundings Theatre
Solving wicked sustainability problems: What specific knowledge and skills do students need to have to solve modern sustainability issues and those of the future?
Rosano, M., Hadgraft, R. King, R.

Workshop 1C
Oceania North
Preparing Students for Gendered Workplaces
Male, S., Bennett, D., Figueroa, E., Gardner, A., Khan, N., MacNish, C., Maynard, N., Willey, K.

Workshop 1D
Oceania South
Supporting diverse student cohorts through their engineering studies
Brodie, L., Devine, J., Newman, T.

Session 2E – Work in Progress
Angus Room
Chair: Dr Dorothy Missingham

1. Facilitating student progression through partnerships with industry professional associations
   Pienaar, J., Adams, N., Greensill, C.
2. Transforming multiple stakeholder insights into education action: Developing a pragmatic EIT professional advisory framework
   Ang, K.C.S., Aubrey, T.
3. Let's do it: A framework to investigate the affordances of experiential learning environments
4. Australian Indigenous Culture and Heritage in Engineering Project Planning and the Implications for Engineering Education
   Goldfinch, T., Ilango, A., Roland, A., Willis, J.
5. Cementing engineering student engagement through early program exposure to industry practice using aligned project case studies presented by industry professionals
   Walker, A., Stewart, R.A., Panuwatwanich, K.
6. Engineering Pathways for Regional Australia built through Knowledge Partnering
   Symes, M., Allison, J., Dowling, D., Ranmuthugala, D., Broun, D.
Monday 8 December 2014

Workshop 1A (cont’d)
Soundings Theatre
Solving wicked sustainability problems: What specific knowledge and skills do students need to have to solve modern sustainability issues and those of the future?
Rosano, M., Hadgraft, R., King, R.

Workshop 2C
Oceania North
What goes on, comes around: Exploring the affordances of engineering laboratory venues and how to interpret these for proposed face-to-face and online venues.

Workshop 2D
Oceania South
Cultivating Curiosity: Improving Metacognition and Motivation and Revealing Misconceptions in Engineering Students
Kowalski, F.V., Kowalski, S.E.

Session 3E – Work in Progress on Student Engagement & Retention
Angus Room
Chair: Dr Tom Qi

1. Outcomes of blending project-based and traditional lecture-based teaching approaches in engineering education at the United Arab Emirates University
Chowdhury, R.K.
2. Shared Values: Diverse perspectives – engaging engineering educators in integrating Indigenous engineering knowledge into current curricula
Leigh, E., Goldfinch, T., Prpic, J.K., Dawes, L., Kennedy, J., McCarthy, T.
3. The MeLTS Audience Response System: Student Reception, Benefits and Usage
Sherburn, N., Ng, S., Evans, J.S., Li, J.C.
4. A preliminary investigation of student collaboration to create resources that motivate the relevance of mathematics to first year engineers
Loch, B., Lamborn, J.
5. Strategies to encourage and retain women in engineering: A case study approach
Mendoza, A., Karunasekera, S., Wright, S.
6. Development of a Bachelor Degree Program for Skilled Students
Lee, W-C., Qi, Z.T.
1. CDIO—can it be adapted for Distance Education?  
   Brodie, L., Brodie, I., Lucke, T.
2. High-Impact Engineering Education: Using the LTI to Influence Knowledge and Skills for Sustainable Economy  
   Alehossein, H.
3. The Influence of working memory and practice on student success in Engineering Mathematics  
   Shepstone, N.
4. A Study on the Pre-Service Teachers’ STEM Interdisciplinary Teaching Intention  
   Lin, K., Williams, P.J.
5. Improving Industry Engagement in Engineering Degrees  
   Male, S., King, R.
6. Developing Industry-Oriented Teaching Materials for Industrial Safety Management  
   Wu, T., Chen, C., Lin, C.
Tuesday 9 December 2014

**Session 4A – Global Competitive Supply of Engineers**
Sounding Theatre  
Chair: Associate Professor Jane Goodyer

1. **Analysis of Employability skills for Civil Engineers in New Zealand**  
   *Sharma, M., De Costa, G., Heyzer, D.*

2. **Transforming engineering students into student engineers through multi-course project-based learning**  
   *Foley, B., Willis, C.*

3. **The university sector and the water industry – are we integrating the two for effective education?**  
   *Lemckert, C., Gamaethige, M., Carney, C.*

4. **Pictures and words: Data collection proposal to investigate the affordances of current experiential learning environments**  
   *Vcelka, M., Banky, G.P.*

5. **Developing Professional Skills: You can't leave it all for final year!**  
   *Mills, J.E., Smith, E.*

6. **Typical roles and activities of Civil Engineering Technicians and Technologists in their first three years after graduation.**  
   *Wilson, H.*

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**Session 4B – Collaborative Pathways**
ICON  
Chair: Dr Lynette Brodie

1. **Supporting students through the final year engineering project experience to achieve AQF8 outcomes**  
   *Martin, F., Hadgraft, R., Stojcevski, A., Lawson, J.*

2. **Contextualising research in AQF8 for engineering education**  
   *Lawson, J., Hadgraft, R., Jarman, R.*

3. **Assessment of Final Year Engineering Projects – an AQF8 perspective**  
   *Jarman, R., Henderson, A., Kootsookos, A., Anwar, F., Lawson, J.*

4. **Final Year Engineering Projects: Improving assessment, curriculum and supervision to meet AQF8 outcomes**  
   *Lawson, J., Hadgraft, R., Rasul, M.*

5. **Guidelines for Curriculum development of Final Year Engineering Projects to support achievement of AQF8 Outcomes**  
   *Howard, P., Kestell, C., Rasul, M., Lawson, J.*

6. **Peer Assessment barriers faced by international students engaging in project-based courses**  
   *Chen, S., Kavanagh, L.*
Tuesday 9 December 2014

Session 4C – Collaborative Pathways
Oceania North

Chair: Professor David Dowling

1. The Accidental Collaborator: Participatory Action Research as an Emergent Framework for Sustainable Multi-stakeholder Engagement
   Ang, K.C.S.
2. Building long-term capability in the Australian minerals industry - The MINAD project
   Ayers, R., Dowling, D., Lind, G.
3. Innovative Industry Engaged Project-Based Learning for Civil Engineering Structural Design
   Lloyd, N., Bland, K.
4. Navigating Pathways for Academic Staff Development: Implications for Institutions and Academic Ranks
   Boles, W., Goncher, A.
5. An Industry-Based Project in an Engineering Dynamics Course
   Uddin, M., Male, S.
6. A Program Level Approach to Community-Centred Engineering Education
   Smith, J., Browne, C.

Session 4G – Student Engagement & Retention (Civil Engineering)
Rangimarrie 2

Chair: Professor Mark Milke

1. Effectiveness of on-line resources to enhance student learning and engagement
   Fernando, A., Egodawatta, P.K.
2. Experiences with flipped learning in subjects in consecutive stages of a Civil Engineering programme
   Gardner, A., Willey, K., Vassalas, K., Li, J.
3. Reflections on Different Pricing Strategies for Engineering Degrees and Potential Impacts on Employability of Graduates
   El Hanandeh, A.
4. Differences in First Year Gender Engagement Through Cross-Disciplinary Design Projects
   Marasco, E., Behjat, L., Eggermont, M.
5. The Lecture Checklist: Inexpensively Improving Teaching Performance
   Sinha, R., Rowe, G.B.
6. Predicting Student Success in Statics
   Wilson, K.F., Low, D.J.
Tuesday 9 December 2014

Workshop 5A
Soundings Theatre
MATLAB & Simulink for Project-Based Learning using LEGO MINDSTORMS NXT
Horton, B.

Workshop 5E
Angus Room
Reflective Practice in 3 Domains
Kaya Prpic, J.

Workshop 5F
Rangimarie 1
Thinking Like an Engineer
Missingham, D., Cheong, M., Tonkin, M., Matulessya, S., Lowe, S., Cook, T., Ashby, R.

Session 5B – Student Engagement & Retention (Electrical Engineering)
ICON
Chair: Professor David Lowe

1. Student-Created Dynamic (Video) Worked Examples as a Path to Active Learning
Belski, I., Belski, R.

2. Impact of student’s goal orientation in a flipped learning environment
Willey, K., Gardner, A.

3. First Year Electronics Not Only for First Year Electronics Students - How to Ensure Engagement Through Innovation
Horan, B., Chandrasekaran, S., Stojcevski, A., Littlefair, G.

4. Making Student Experts within a Flipped Mechatronics Class
Joordens, M., Horan, B.

5. Enhancing Classroom Learning by Coupling Interactive Computer Simulations with Real-Time Formative Assessment through Technology-Mediated Open-Format Questioning
Kowalski, F.V., Kowalski, S.E.

6. ConTag (Contextual Tags) in Video-based Collaborative Learning
Rosli, A.N., Supandi, I.A., Lee, K., Jo, G.
Tuesday 9 December 2014

**Workshop 5A (cont’d)**  
**Soundings Theatre**  
MATLAB & Simulink for Project-Based Learning using LEGO MINDSTORMS NXT  
_Horton, B._

**Workshop 6E**  
**Angus Room**  
Good practice guidelines for curriculum, supervision and assessment of final year engineering projects and AQF8 learning outcomes  

**Workshop 6F**  
**Rangimarie 1**  
Indigenous engineering, a pathway to reconciliation/Intercultural competence?  
_Leigh, E., Goldfinch, T., McCarthy, T., Kennedy, J., Dawes, L., Kaya Prpic, J._
Wednesday 10 December 2014

Special Topic Session 1A
Sounding Theatre
Creating Community Change: AAEE Member's Voices within a Shifting Landscape
Facilitator: Llewellyn Mann

Special Topic Session 2A
ICON
Employment of Cloud Teaching to Help Students Develop Technical Report Writing Competency
Facilitator: Judy Chen, Clyde Warden

Special Topic Session 3A
Oceania North
Approaches to Applied Learning
Facilitator: Prue Howard, Fae Martin, Antony Dekkers

Special Topic Session 4A
Oceania South
Reinventing online engineering education... introduction to the Adaptive Mechanics Network.
Facilitator: Dr Fidelis Mashiri, University of Western Sydney & Greg Higgins, Smart Sparrow

Special Topic Session 5A
Angus Room
1. An industry oriented math teaching strategy for the Metro Group BEngTech program
   Qi, Z.T., Louie, K., Cook, F., Robson D. and Hogan D.
2. An industry oriented course development for the Master of Engineering
   Qi, Z.T.

Special Topic Session 6A
Rangimarie 1
Chair: Associate Professor Margaret Greenway
1. Integrating Ecology into the Environmental Engineering Curriculum – The Importance of Engagement
   Greenway, M.
2. The use of Project Based Learning in Engineering Fundamentals
   Harris, T., Bigham, A.

Special Topic Session 7A
Rangimarie 2
Chair: Dr Ramadas Narayanan
1. Enhancing Motivation for Homework exercises in Engineering Mathematics Class
   Pundoor, M., Narayanan, R., Patil, A.
2. Improving Success in Engineering Calculus: Design of a Bridge Program
   Nite, S.B., Morgan, J., Capraro, R.M., Allen, G.D., Capraro, M.M.
Wednesday 10 December 2014

Session 7A – Student Engagement & Retention (Mechanical Engineering)
Sounding Theatre  Chair: Associate Professor Gourab Sen Gupta

1. Investigating the Effectiveness of Lecture Capture on Teaching and Learning
   Rahman, A., Hossain, M.J.
2. Increasing pass rates in introductory mechanics courses
   Jowitt, A.
3. Novel use of video technology to enhance the use of marine simulators to link knowledge and practical skills
   Narayanasamy, S., Garaniya, V., Chin, C.K.H., Ranmuthuga Salter, S.
4. Statistical analysis of correlation between students’ personal characteristics and academic success in Engineering Mechanics course
   Shaeri, S., Guan, H., Howell, S.
5. The Adaptive Virtual Workshop: Maintaining student engagement through an on-line adaptive resource for engineering design education
6. Peer learning and deep learning through online discussion boards
   Zhu, Y., Dao, D.

Session 7B - General
ICON  Chair: Associate Professor Lydia Kavanagh

1. The importance of narrative: helping students make sense of what they’re learning
   Kavanagh, L., Reidsema, C.
2. The Learning Pathway: Online Navigational Support for Students within the Structured Flipped Classroom
   Reidsema, C., Kavanagh, L., Fink, E., Long, P., Smith, N.
3. Outcomes for students working in industry
   Blicblau, A.S., Nelson, T.L., Dini, L.
4. Measuring Creativity in Die Manufacturing Courses for Technological and Vocational Education
   Chen, D., Lai, B., Lee, C.
5. Didactic strategies for final year projects
   Pons, D.J.
6. Graduating Students’ Perceptions of Learning Design in an Undergraduate Engineering Course
   Nepal, K.P.
### Session 7C – Work in Progress
Oceania North

**Chair:** Professor Judy Chen

1. Female Engineering Students’ Perceptions of Recruitment Motivation and Career Development: A Preliminary Study  
   Chou, P.
2. Teacher Reflection on Practice: Teaching Engineering Design Modules in High Schools of Taiwan  
   Fan, S.C., Yu, K.C.
3. Using multidimensional scaling to organize expected outcomes of engineering education  
   Hadgraft, R.G., Tilstra, H., Thebuwana, H.
4. Integrating ‘role play’ in assessment to strengthen professional conduct and accountability of students: a pilot study  
   Rainey, T., Jayasuriya, K., Gottlieb, U.
5. Classroom Seating Arrangement Based on Optimization Theory  
   Shin-Ike, K.
6. A statistical analysis of student backgrounds at a regional university  
   Devine, J., Wandel, A.P.

### Session 7D – Student Engagement & Retention
Oceania South

**Chair:** Dr Lesley Jolly

1. Engineering students’ perceptions of engineers and engineering work  
   Bennett, D., Maynard, N., Kapoor, R., Kaur, R.
2. Staying the Distance - Strategies to Improve Student Retention  
   McBride, W., Downing, N., Pring, R.
3. The Application of Design Methods in Projects to enhance Student Engagement  
   Karmokar, S., Shekar, A.
4. Investigations into Students’ Information Sourcing Patterns in a Postgraduate Blended Learning Course  
   Miller, G., Donald, C.
5. A student project development for multidisciplinary programs at Otago Polytechnic  
   Finnie, D., Fersterer, C., Qi, Z.T., Terpstra, C.
6. Teaching Logic and Decision Making Using Probability & Statistics Course  
   Budiman, R.A.
Wednesday 10 December 2014

Session 8A – Student Engagement & Retention (Software Engineering)  
Sounding Theatre  
Chair: Dr Patricia Kelly

1. Teaching Mathematical Reasoning: From Textbooks to Software  
   Brankovic, L., Muir, A., Giggins, H.
2. Exploring the effect of different usages of technology on the students’  
   using behaviour  
   Huang, Y., Liu, C., Wang, C., Huang, T., Huang, Y.
3. “It runs slow and crashes often”: Exploring engineering students’  
   software literacy of CAD software  
   Khoo, E., Hight, C., Torrens, R., Duke, M.
4. An e-Assessment method based on the Constructive Progressive  
   Alignment Pedagogy  
   Lai, R., Sanusi, N.
5. A Proposed Definition of the Engineering Methodology  
   Cavenett, S.
6. A Remote Laboratory for learning embedded systems & control  
   Weddell, S.J., Bones, P.J., Wareing, N.M.

Session 8B – Work in Progress  
ICON  
Chair: Ms Jo Devine

1. Teaching strategies in a level 2, large class design course  
   Blazewicz, A., Missingham, D., Kestell, C.
2. Baby steps towards flipped learning  
   Dahm, K.
3. Reflection of a female engineering student role-model on engaging  
   school students in the Qld Western-Downs  
   Goh, S., Adams, E.
4. Viva voce for Student Assessment and Learning  
   Parameswaran, N., Gorthi, R., Tiwari, A.
5. Supporting Implementation of Concept-Based Pedagogy by Learning  
   about Faculty use of the AIChE Education Division Concept Warehouse  
   Gilbuena, D.M., Brooks, B.J., Koretsky, M., Silverstein, D.L.
6. Using automated text analysis to evaluate students  
   Goncher, A., Boles, W., Jayalath, D.
Wednesday 10 December 2014

Session 8C – Work in Progress

Oceania North

Chair: Dr Prue Howard

1. Meeting the Communication Skill Needs of Employers with Professional Portfolios
   Milke, M., Comer, K., Koorey, G., Carpenter, L.

2. Reflections on a collaborative Degree: the Metro experience
   Hogan, D., Dantzler, R., Tsui, C., Fair, M., Rodgers, D., Loo, W., Wagg, S.

3. Disaster Week: A case study immersing first year engineering students in a disaster context to measure communication skills
   Bigham, A., Harris, T.

4. The role-playing game: engineering students meeting real world wicked problems
   Sano, M., Lemckert, C.

5. Alternative Approaches to Skill and Assessment Development in a Cooperative Education Program
   Harte, D., Symes, M.

6. Enhancing the role of women in engineering
   Thorpe, D., Delaney, B.

Session 8D – Work in Progress on Student Engagement & Retention

Oceania South

Chair: Professor Douglas Hargreaves

1. Technical Support Role for Project Oriented Design Based Learning in Engineering
   Arisoy, H., Chandrasekaran, S., Stojcevski, A.

2. Implementing a project-based first year engineering systems design subject
   Buskes, G.

3. Supporting Student Engagement with Capstone Project Presentations
   Kist, A.A.

4. Fostering Ownership of Learning in Engineering Education
   Quental, D., Reidsema, C., Kavanagh, L.

5. Effecting Teamwork Outcomes in Online Courses
   Wandel, A.P., Jolly, H.

6. The systematic influences on student evaluation of teaching in engineering education
   Palmer, S.
1. Using Learning Analytics to Evaluate the Effectiveness of the Flipped Classroom Approach
   Lucke, T.
2. Enhancing student learning outcomes in manufacturing engineering through design based learning
   Polishetty, A., Chandrasekaran, S., Goldberg, M., Littlefair, G., Steinwedel, J., Stojcevski, A.
3. Developing Teamwork Competencies in a Design Course – Self-Perceptions of Students
   Smith, W.F., Siddique, Z., Mistree, F.
4. Improving student engagement through content and assessment choice in a common first year
   Hilditch, T., Chandrasekaran, S., Collins, P.
5. Using an International Survey to Inform Scenario of the Future of Engineering Education
   Ohland, M.W., Dicht, B., Froyd, J.E., Lindsay, E.D., Lord, S.M., Prahalla, K.
6. Employability of Engineers Relative to Other Graduates
   Smith, J.V., Jollands, M.

Session 9B - General
ICON

1. Reflection: Can It Be Learned?
   Figueroa, E., Parker, L., Kadi, A.
2. Curriculum drift: A multi-dimensional perspective
   Johns-Boast, L.
3. Proximating Ethics: Perceptions of the engineering profession and implications for learning
   Pons, D.J.
4. Teaching load allocation in a teaching unit: optimizing equity and quality
   Qu, X., Wang, S., Easa, S., Liu, Z.
5. Turning Tedious to Terrific: An Authentic Learning Experience to Engage Engineering Students in Project Management
   Tuladhar, R., Pandey, G.R., Turner, P., Christie, D.
6. Complex Engineering Design: Project Based Learning Incorporating Sustainability and Other Constraints
   Sen Gupta, G., Bailey, D.G.
### Session 9C - General

**Oceania North**  
Chair: Dr Tom Qi

1. A Multi-Perspective Approach to Technical Presentation Assessment  
   *Bhave, P.*, *Topkar, V.*, *Bhonsle, M.*
2. Longitudinal study of the success rates of a cohort of New Zealand Diploma in Engineering (Civil) domestic students  
   *Chai, E.*, *Leaver, J.*
3. Variation of Reading Methods for Positive and Negative Logic AND Gates: Examining Eye Movement  
   *Ho, H.*, *Huang, D.*
4. Beyond ‘Globally Competent’: Preparing Engineers for ‘Wicked Competencies’ and ‘Superdiversity’  
   *Kelly, P.*, *Collett, D.*
5. Global engineering 101: an first year international ambassadorship program  
6. Student Perceptions of Engineering Design Across the Curriculum at a Large Australian University  
   *Sevilla, K.*, *Meyer, J.*, *Perez-Compton, C.*

### Session 9D – Student Engagement & Retention

**Oceania South**  
Chair: Dr Sally Male

1. An analysis of the application of intelligent tutoring systems on students’ self-regulated learning development  
   *Wang, C.*, *Rowe, G.B.*, *Giacaman, N.*, *Gunn, C.*
2. How do university engineering graduates influence high school students through mentoring programs?  
   *Gow, I.*, *Wandel, A.P.*
3. Video Presentations in Engineering-Physics Practicals to Increase the Efficiency of Teaching and Learning  
4. “Don’t know what we’ll be doing yet”: Enhancing career preview and engagement among undergraduate engineering students  
   *Male, S.A.*, *Bennett, D.*
5. Students and industry perspective of group work in a first year engineering curriculum at Queensland University of Technology  
   *Senadjí, B.*, *James, J.*, *Hargreaves, D.*
6. Empowering Undergraduate Educations through Support of Student Societies  