### Upcoming Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-13 Dec</td>
<td><strong>Supplementary and Deferred examination period</strong></td>
</tr>
<tr>
<td>14 Dec</td>
<td><strong>Graduation (Saturday)</strong>&lt;br&gt;When: 10am&lt;br&gt;Where: UQ Centre&lt;br&gt;Staff registration: <a href="http://www.uq.edu.au/graduations/staff-information">http://www.uq.edu.au/graduations/staff-information</a> (closes 29 November)&lt;br&gt;There will be no pre-graduation party this year.</td>
</tr>
<tr>
<td>13 Feb</td>
<td><strong>Official Opening of the Advanced Engineering Building (tentative)</strong></td>
</tr>
<tr>
<td>23 Dec - 6 Jan</td>
<td><strong>School office closed</strong></td>
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### Congratulations

Each semester, the Faculty asks students who were awarded the “Dean’s Commendation for High Achievement” to nominate their most effective teacher in that Semester. School staff received 26 nominations for teaching in Semester 2 2012. Congratulations to **Bill Daniel, Ingo Jahn and Pail Meehan** who received multiple nominations.

Congratulations to **Prof Peter Knights** who received a Teaching Excellence Award at the recent EAIT/Science Teaching and Learning Showcase.

Congratulations to **Doug Malcolm and Jonathan Read** who were nominated for a 2013 EAIT Professional Staff Awards. This event is held annually to celebrate the hard work and dedication demonstrated by our professional staff throughout the year.

Each year the University formally recognises professional staff who have provided long-term service. Congratulations to **Rose Clements** who recently received a 25 Year Service Award.

### ARC Congratulations

Congratulations to staff who were successful in obtaining ARC grants announced early November –

**LEIF**
- Dual column focused ion beam/scanning electron microscope facility: $890,000. **Prof John Drennan, Prof Jin Zou, A/Prof Qian Ma, Prof Robert G Parton; A/Prof Ming-Xing Zhang**; A/Prof Nunzio Motta; Dr Kristy C Vernon, Prof Roland De Marco, Dr Tomer Ventura, Dr David J McMillan.

Advanced laser additive manufacturing system for extended applications to surface engineering, direct manufacturing and new alloy development: $250,000. **A/Prof Ming-Xing Zhang**, Prof Prasad K Yarlagadda, A/Prof Huijun Li, Prof Cuie Wen, Dr Kevin J Laws, **A/Prof Qian Ma, Prof Andrejs Atrens**, Dr Yue Zhao, A/Prof Paul A Meehan, Dr Carlos H Caceres.

**DECRA**
- Estruch-Samper, Dr David Hypervelocity roughness induced laminar-turbulent transition for advanced scramjet flow control: $395,220
- Dr Rowan J Gollan Improving access-to-space vehicles by optimising hypersonic outlets: $288,900
- Lin, Dr Jing Development of new chemically stable boron nitride-protected phosphor nanocomposites for white light-emitting diodes: $389,865
- Pei, Dr Yanzhon Development of high performance silicon-based thermoelectrics through band engineering: $395,220
- Wu, Dr Yueqin J Understanding failure mechanisms in micro-solder joints in 3D IC packaging: $390,572
- Yang, Dr Ya-Feng A novel fundamental approach to enable net shape manufacturing of high performance commercial titanium alloys from powder: $385,720

**DP**
- Microstructural refinement of aluminium and magnesium alloys by the introduction of nano-particles and the application of external fields: $475,000. **Prof David H StJohn, A/Prof Qian Ma, A/Prof Matthew Dargusch**, Prof Dr Dmitry Eskin,; Dr Norbert Hort
Graduate Teaching Assistant program

Experienced, talented and career-focused postgraduate tutors within EAIT Faculty are sought to participate in an exciting program of contextualised professional development. The program will develop understanding and skills regarding motivating and engaging with students, active learning, managing group dynamics, giving and receiving feedback, and assessment and evaluation. The GTA Program will run for six months from March to August 2014 with an average commitment of two hours per week. See page 3 for further details.

Sign-On in semester 1 2014

From Sem 1 2014 the EAIT timetables team, Lou and Sarah, will manage sign-on. Lou and Sarah will liaise directly with you to arrange sign-on.

Variation to Academic Calendar 2014

Due to the 2014 G20 Leaders Summit being held in Brisbane, a public holiday has been designated for Friday, 14 November 2014. There will also be only limited public transport available on Saturday, 15 November 2014. The examination period was currently scheduled to be held from Saturday, 8 November to Saturday, 22 November 2014 inclusive. The loss of the two (2) days from the examination period would have a significant impact on the ability to accommodate the examinations and student sittings across the remaining 11 days. Inevitably this would impact on the student load with a greater number of student clashes and students with more than two (2) examinations on the same day. The Academic Board has approved that the examination period will commence during the revision week, on Thursday 6 November 2014, and conclude on Saturday 22 November 2014 (excluding 14 and 15 November).

Thesis Topics for 2014

The EAIT project database has been updated so projects can be entered for 2014. You can –

- add the projects yourself (via https://student.eait.uq.edu.au/projectdb/), or
- email the following details to enquiries@mechmining.uq.edu.au –
  - Supervisor name
  - Project title
  - Description (up to 350 words)

Research

UQ Grant Writing Skills Seminars - ARC Project and Fellowship Applications

As part of the University’s preparation for the major ARC schemes for funding commencing in 2015, UQ Research and Innovation (UQR&I) will be conducting a series of seminars on strategies and approaches to writing successful grant and fellowship applications for UQ researchers. The seminars will feature presentations from either members of the ARC College of Experts, fellowship holders or senior academic staff with substantial success in securing ARC funding. A brief session on “Bibliometrics” will also be included. There will be a 30 minute Panel Session at the end of the seminar for questions and discussions from the floor, followed by refreshments.

Session One: spanning the ARC panels of Engineering, Mathematics and Informatics (EMI); and Physics, Chemistry and Earth Sciences (PCE)

Date: 3 December 2013
Time: 2:00pm – 4:00pm
Venue: Senate Room, Level 5, Brian Wilson Chancellery, St Lucia Campus (Map showing Building 61)

To register, please click on the following link Session One – EMI and PCE giving your (a) name and title; (b) your Institute, School or Centre; and (c) your e-mail address.

Queensland-Chinese Academy of Sciences (Q-CAS) Collaborative Science Fund - Administrative Amendment

As advised earlier this month, the Queensland Government has invited applications for the latest round of funding under the Queensland-Chinese Academy of Sciences (Q-CAS) Collaborative Science Fund. At that time, only a limited list of CAS Institutes (in life sciences and biotechnology) was eligible for inclusion in this scheme.

Following a request from CAS, the State have agreed to extend the eligibility to all CAS Institutes. This change is aimed at providing more opportunities for better quality Queensland-China collaborative projects and to help raise Queensland’s science profile across the broader science community in China.

The Q-CAS Fund website has been updated following this change. A full list of CAS Institutes is available from the CAS website.
Graduate Teaching Assistant (GTA) Program

INVITATION TO PARTICIPATE - 2014

Experienced, talented and career-focused postgraduate tutors within EAIT Faculty are sought to participate in an exciting program of contextualised professional development. Applicants must have:

- completed a formal program of tutor training such as Tutors@UQ;
- demonstrated tutor experience;
- access to a suitable teaching and learning academic who can be their mentor;
- tutoring organised for semester 1 2014; and
- the time to complete the program (e.g. no long overseas absences).

The GTA Program will run for six months from March to August 2014 with an average commitment of two hours per week, during which participants will:

- attend three workshops hosted by the teaching team;
- complete five online modules;
- observe and reflect on three teaching sessions;
- attend a professional development activity for EAIT academics; and
- receive mentorship.

The program will develop understanding and skills regarding motivating and engaging with students, active learning, managing group dynamics, giving and receiving feedback, and assessment and evaluation.

Outcomes for participants

- Development of knowledge and skills to advance future teaching careers
- Credit towards the UQ Advantage program
- Increase in rate of pay (if employed as GTA rather than tutor)
- Award of a Graduate Teaching Assistant Certificate and updated My Aurion profile
- Dissemination of details to Schools and relevant Course Coordinators to encourage employment as GTA

What do you need to do?

1. Gain approval and commitment to mentor from a Faculty T&L academic. We recommend you talk to the lecturer for whom you usually tutor.
2. Send an expression of interest to Tracey Papinczak - Project Officer by 1 February 2014 (tracey.papinczak@uq.edu.au)

Need more info or can’t find a mentor? Email Tracey for assistance

*Please forward this invitation to anyone who may be interested in the GTA Program*
2014 Wentworth Group Science Program Scholarships

The Wentworth Group of Concerned Scientists is offering scholarships to Australian postgraduate students to assist them in bridging the gap between science and public policy.

Since its inception in 2002, the Wentworth Group of Concerned Scientists has been active in advancing solutions to secure the long term health of Australia’s environment.

Comprised of eminent scientists and thinkers, the Group has three core objectives:

- Driving innovation in the management of Australia’s land, water, coasts and biodiversity;
- Engaging business, community and political leaders in a dialogue to find and implement solutions to the challenge of environmental stewardship facing the future of Australian society; and
- Building capacity by mentoring and supporting young natural resources scientists and resource economists to develop their skills and understanding of public policy.

These scholarships are intended to inspire and motivate. Students studying science, economics, geography, philosophy, law and/or engineering (especially those majoring in environmental science/studies/management/law or ecology) are encouraged to apply.

The scholarship funds are to be used for:

- Direct mentoring with Wentworth Group Members
- Expenses to cover participation at a Wentworth Group Master Class from 3-5 March 2014

Note – the scholarship cannot be used as a stipend

We are seeking students committed to advancing solutions that will secure the long term health of Australia’s land, water, coasts and biodiversity.

Application forms are also available at http://wentworthgroup.org/science-program/, and applications close at 5pm on Friday 6 December 2013.

For further details, please email admin@wentworthgroup.org.
FULL TIME LECTURER WITH POTENTIAL SECURITY OF EMPLOYMENT

DEPARTMENT OF MECHANICAL ENGINEERING

COLLEGE OF ENGINEERING

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

The Department of Mechanical Engineering at the University of California, Santa Barbara seeks applications for a full-time Lecturer with Potential Security of Employment (similar to tenure-track) in the area of Mechanical Design. This position is intended for an innovative individual with an enthusiasm for, and breadth of knowledge in, mechanical design and its emerging applications in diverse fields. A successful applicant should be committed to teaching and mentoring undergraduates, to improving the undergraduate mechanical engineering program, and to recruiting talented and diverse high-school graduates in collaboration with other faculty. The ideal candidate will engage, excite, and challenge students in problem solving with a combination of design creativity and engineering analysis. Teaching assignments may include topics such as machine elements, machine design, joint design and analysis, adhesive bonding and welding, machine dynamics and fatigue, design process, design for manufacturing, teamwork, project planning, creative thinking, engineering graphics, and CAD. Consequently, the ideal candidate should be interested and experienced in teaching in different educational settings - from small, project-oriented, inquiry-based classes, to larger, more traditional, lecture-oriented classes. The teaching load is 3 courses per term with possible load reduction for administrative service. Service will begin with the 2014-15 academic year, and salary will be commensurate with experience.

A Master’s degree in engineering or science and a demonstrated record of teaching excellence is required, and preference will be given to candidates with a PhD. Applications should include a cover letter, curriculum vitae, teaching & education statement, names and contact information for 3 references, and additional supporting material as desired.

Applications must be submitted electronically at: https://recruit.ap.ucsb.edu/apply/JPF00255

Applications received by December 20th, 2013 will be given priority consideration, but the position will remain open until filled. Candidates are urged to learn more about the UCSB Department of Mechanical Engineering at http://www.me.ucsb.edu. The Department is especially interested in candidates who can contribute to the diversity and excellence of the academic community through research, teaching, and service. The University of California is an Equal Opportunity/Affirmative Action Employer.
Lecturer (one-year contract in 2014)

<table>
<thead>
<tr>
<th>Faculty/Division</th>
<th>Faculty of Science and Engineering</th>
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<tbody>
<tr>
<td>Campus Location</td>
<td>Townsville</td>
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<tr>
<td>Classification</td>
<td>Academic Level B</td>
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<tr>
<td>Fraction</td>
<td>100%, one-year contract in 2014 (fixed-term)</td>
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<tr>
<td>Reports To</td>
<td>Head of School, Engineering &amp; Physical Sciences</td>
</tr>
<tr>
<td>Number of positions supervised</td>
<td>Directly: 0</td>
</tr>
</tbody>
</table>

OVERVIEW OF POSITION

Reporting to the Head of the School of Engineering and Physical Sciences, this position works within the Discipline of Mechanical Engineering undertaking teaching, research, supervision and other duties as requested.

PRINCIPAL ACCOUNTABILITIES

The appointee will be required to:
1. Teach into the School’s undergraduate program, in particular the subjects of Finite Element Analysis, Mechanical Design, and Heat and Mass Transfer;
2. Supervise honours students;
3. Carry out research in his or her own areas of strength;
4. Undertake School promotional activities;
5. Complete administrative tasks and other duties as required.

GENERIC ACCOUNTABILITIES

There are generic responsibilities that apply to all James Cook University staff.

1. The Lecturer is required to observe the lawful and reasonable directions, policies and decisions of the University Council, understand and comply with the Enterprise Agreement, the Statutes and Rules of the University, the policies and decisions of the University Council and other appropriate University authorities, as in force from time to time.
2. The Lecturer is required to demonstrate a personal commitment to ensure personal safety and the safety of others and contribute to the continuous improvement of our WHS performance. This includes the effective implementation and compliance with James Cook University WHS policies, procedures and safe systems of work, together with all relevant legislation, duties and obligations. Contribute to the continuous improvement of our WHS performance.
3. The Lecturer is required to exercise proper discretion in all matters affecting the well being of the University which involve public writing or speaking in accordance with the University’s Code of Conduct.

SELECTION CRITERIA

Key Selection Criteria

1. Possession of a PhD in Mechanical Engineering or a related discipline;
2. A capacity for research and scholarship in a field of Mechanical Engineering or other engineering relevant to the interests of the School and Faculty;
3. A capacity for teaching at a University level;
4. A capacity for honours student thesis supervision;
5. Ability to teach across a wide range of topics in engineering, in particular the subjects of Finite Element Analysis, Mechanical Design, and Heat and Mass Transfer;
6. Demonstrated high standard of interpersonal and communication skills, with the ability to work collaboratively in an English language based multi-disciplinary environment;

Desirable Selection Criteria:

1. Ability to collaborate across disciplines;
2. Experience with ANSYS FEA software and SolidWorks solid modelling.

Interested applicants should send, before 20 December 2013, an up-to-date C.V., a statement addressing the selection criteria, a teaching statement, a research statement, and the names and contact details of two referees to:

Associate Professor Wenxian Lin  
Head, Discipline of Mechanical Engineering  
School of Engineering and Physical Sciences  
James Cook University  
Townsville, QLD 4811  
Australia  
Email: wenxian.lin@jcu.edu.au  
Phone: +61 7 47815091  
Fax: +61 7 47816788  
Web: http://www.jcu.edu.au/eps
Dear University of Queensland research Staff and technicians,

Measurement & Analysis Camera Systems Pty Ltd, Australia’s leading supplier of high-speed camera technology and analysis software, lenses and lighting.

Company Profile

Measurement & Analysis Camera Systems Pty. Ltd. (MACS) is a specialist sales, technical support and consulting company staffed by qualified technical camera specialists. MACS was established in 1990 to service the high-speed camera industry in Australia and New Zealand.

MACS sells, rents, services and supports digital high-speed camera equipment, measurement and analysis software for data and images, and high-speed data capture for government, military, research, universities, industry, automotive, biomechanics, sports analysis, medical, mining applications or any high-speed camera application. MACS is a major defence, government, research and manufacturing contractor supplying not only the camera and software systems, but conducting regular training seminars for newly inducted personnel on a regular basis.

Australian Owned and Operated

Measurement & Analysis Camera Systems Pty. Ltd. is entirely Australian owned and operated, originally founded in New South Wales in 1990. Unlike many of our competitors, MACS does not outsource our support overseas, instead choosing to gain factory training for our technical staff resulting in more than 90% of our support services being delivered from within Australia.

Leading the Way for Australia and the World

Our relentless passion for innovation has led to MACS delivering the best cutting-edge, integrated and fully supported high-speed camera technologies available today. The majority of our services operate on software and IT platforms developed in-house or by our equipment suppliers, giving us unmatched reliability and flexibility.

This level of expertise and support has resulted in MACS being involved in many projects which have been awarded 3 international and 10 Australian industry based awards.

Technical Support:

Level 1, 16-18 Carlotta Street, Artarmon, NSW, 2064, AUSTRALIA
Telephone: Australia: 02 9438 5836; International: +61 (2) 9438 5836
Mobiles: David 0418 689 336; Simon 0415 580 704 Ulan 0402 771 446
MACS Principal, David Adermann is a photographic scientist, photographer and cinematographer with more than 45 years experience. He has personally won awards for his work and has been cited in numerous research papers as the high-speed video author.

MACS has trained many scientists and technicians in the defence department and many universities in the science of high-speed imagery and image analysis. MACS can and does assist in the design of critical experiments ensuring customers quickly gain experience and abilities with high-speed video.

All MACS personnel are factory trained so they can service and support the products sold by MACS.

**Budgetary Pricing Only - GST not included - Prices Subject to Currency Fluctuations**

**NAC MEMRECAM HX-3 Colour or Mono:**
High Speed Digital Camera System, 2560 x 1920 pixels@ 2,000fps; Maximum frame rate 1.3million fps; Single piece Camera head and processor Unit, viewfinder, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit download to included Camera Control Unit, and 2 days training on-site.

From Au$ 105,000.00 + GST

**NAC MEMRECAM HX-4 Colour or Mono:**
High Speed Digital Camera System, 1280x720 pixels@ 8,310fps; Maximum frame rate 773,730 fps; Single piece Camera head and processor Unit, viewfinder, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit download to included Camera Control Unit, and 2 days training on-site.

From Au$ 92,000.00 + GST

**NAC MEMRECAM HX-5 Colour or Mono:**
High Speed Digital Camera System, 2560 x 1920 pixels@ 1,370fps; Maximum frame rate 509,000 fps; Single piece Camera head and processor Unit, viewfinder, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit download to included Camera Control Unit, and 2 days training on-site.

From Au$ 85,000.00 + GST

**NAC MEMRECAM HX-6 Colour or Mono:**
High Speed Digital Camera System, 2560 x 1920 pixels@ 1,000fps; Maximum frame rate 370,330 fps; Single piece Camera head and processor Unit, viewfinder, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit download to included Camera Control Unit, and 2 days training on-site.

From Au$ 84,260.00 + GST

**NAC MEMRECAM GX-5 Colour Multi Head:**
High Speed Digital Camera System, 1280 x 800 pixels@ 2,000fps, Multiple Camera heads and processor Unit, viewfinder, J pad, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit cable

From Au$ 45,000.00 + GST

**NAC MEMRECAM GX-3 Colour:**
High Speed Digital Camera System, 1280 x 800 pixels@ 2,000fps, Single piece Camera head and processor Unit, viewfinder, J pad, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit cable

From Au$ 35,000.00 + GST

**NAC MEMRECAM GX-1 Colour:**
High Speed Digital Camera System, 1280 x 1024 pixels@ 2,000fps, single piece Camera head and processor Unit, viewfinder, J pad, operating and playback software; instruction manual; dual shutter & frame rate, Gigabit cable

From Au$ 45,000.00 + GST

**Fastec TS3 S Colour or Mono:**
Digital High-Speed Digital Camera System with speeds to 98,000fps, resolution 1280x1024 pixels @ 500fps, 8 GB memory; operating and playback software; instruction manual

From Au$ 23,557.00 + GST

Fastec Inline 3 100 Colour or Mono:
Digital High-Speed Digital Camera System with speeds to 98,000fps, resolution 1280x1024 pixels @ 500fps, 8 GB memory; operating and playback software; instruction manual

From Au$ 18,918.00 + GST

Revolutionary Plasma Lighting: flicker free lighting – superior to both HMI and LED.

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
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<tbody>
<tr>
<td>HPF-1LK</td>
<td>HORNET Plasma Fresnel System Light Kit</td>
<td>6,670.00</td>
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<td>WPP-1LK</td>
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<td>KPM-1LK</td>
<td>KILLER Plasma 1-Light Mini System</td>
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<td>KPM-1LK3T</td>
<td>KILLER Plasma 1-Light Mini 3 Head Traveller Kit System</td>
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<td>KPM-2LK</td>
<td>KILLER Plasma 2-Light Maxi System</td>
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<td>KPM-4LK</td>
<td>KILLER Plasma 4-Light Maxi System</td>
<td>16,350.00</td>
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<tr>
<td>DPS4-SLRC</td>
<td>DRONE Plasma Source Four lamp</td>
<td>5,980.00</td>
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<tr>
<td>DPS4</td>
<td>DRONE Plasma Source Four™ Retrofit Kit</td>
<td>4,480.00</td>
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</table>

DaiLite 5000 High Intensity Flicker Free LED Lamp, 5,000 to 50,000 lumens, built in Power Supply & Heat Sink, DMX control for brightness adjustment, with 4 different LED Lenses for various Light Beam Spread (10, 25, 40 & 60 degrees). Multiple lights are designed to be banked together to form one light source of a larger size.

From Au$ 1,450.00 + GST

Rentals:

Research budgets are being reduced all the time. Quite often you need a high-speed camera for obtaining the visual data as part of the research but have no budget for it. MACS has a special deal for research groups where by issuing a purchase order for a one month rental you receive a 50% discount on the regular rental rate and you are allowed to take the rental in one week increments, thereby having access to the latest cameras, lenses and lighting while maintaining budget integrity.

Contact us for full details.

Yours faithfully

David A Adermann
Director Research and Technology.