Message from the Dean

Every year our Vice Chancellor Professor Gerard Sutton, (in some Universities this position is called the ‘President’) makes a number of awards to staff to recognize their exceptional contribution to the University. The awards are given at a formal ceremony and this year’s ceremony has just been held on Friday 11th June in our ‘McKinnon Building’ named after our second Vice-Chancellor Professor Ken McKinnon.

There are awards for teaching and research, and also awards to administrative and general staff individuals and teams. This year one of the awards for ‘Outstanding Service for General Staff’ was given to Ron Marshall who is our Operations Manager overseeing all our technical staff, over 35 in number, and who manages all our workshops.

He received his award for the remarkable achievement of also managing the development of the new 12,000 square meter SMART building (http://smart.uow.edu.au). In only 4 weeks over January a large number of teaching and research laboratories had to be moved to temporary premises out of an old building to allow its demolition and the construction of the new SMART building. The laboratories had to be up and running by the time students arrived late February. This was a massive and successfully completed effort, but Ron’s work on SMART continued as it then had to be designed and fitted out with the architects and builders in response to the many and varied requests from users in Engineering. New equipment had to be ordered.

Vice Chancellors Award for Research Excellence

Professor Buddhima Indraratna has been named the 2010 Senior Researcher of the year. This Vice Chancellors Award for Research Excellence is a testimony to Buddhima’s sustained and significant contributions along with his leadership and mentorship of young researchers and students throughout his academic career. Buddhima is considered as a world leading expert in geotechnical engineering. His significant contributions to geotechnical research have been acknowledged through several prestigious national and international awards; over $14 million in research funding; and the publication of five books, more than 350 peer-reviewed articles, and over 25 invited keynote lectures in all continents. Buddhima’s scholarly research has made a real practical contribution to society in many aspects. Two examples are new rail track design methods to improve the safety of rail transport that have already been applied in Bulli and Newcastle areas; and novel solutions to the control of acid soils which have saved several millions of dollars of damage to agriculture and aquaculture in the Shoalhaven floodplain.

Congratulations to Buddhima for his astounding achievement and his dedicated contributions to the University of Wollongong!

Dr Long Nghiem is also to be congratulated on winning the Vice Chancellors Award for Research Excellence for Emerging Researcher. Long is one of the rising stars in Australia in Environmental Engineering. He gained his PhD from UOW in 2005 but some of his experimental work

Inside . . .

| VC Awards | 1-2 |
| VC Golf Day | 2 |
| 2010 Engineering Prize Night | 3-4 |
| Staff News | 4 |
| A/Prof Weihua Li’s new appointment with Prestigious Journal | 4 |
| Book Launch at UOW | 5 |
| Senior High Schools Technology Competitions | 6-7 |
Editorial continued from page 1

and made ready in time for our occupation of the new building in November this year. The award acknowledges Ron’s management abilities, along with his calm, considerate and very effective approach in making decisions within a highly consultative atmosphere.

Several 25 year awards were also made for 25 years of service to the University. These were made to Keith Maywald, our Electronics Technical Officer, to Ron Marshall, and to Associate Professor Bill Zealey whose area is Physics and who has been a Sub-dean, Associate Dean and Head of Physics in a long career at Wollongong.

Our administrative staff were part of a team given an ‘Outstanding Service’ award for their innovative work helping our International students with their English. They set up and ran a Conversation Group which provides our students with the opportunity to speak conversational English in a friendly informal environment. This is the first of its kind on campus. The group meets weekly during session and our students are very enthusiastic about the help these experiences have given them.

A number of our academic staff also received prestigious awards. Professor Gursel Alici received an award for his outstanding contribution to Teaching and Learning in Mechatronics and Mechanical Engineering, and in particular for using his research work and real life examples to inspire students. The University’s single award for ‘Emerging Researchers Excellence’ was given to Dr Long Duc Ngiem for his internationally acclaimed work in Environmental Engineering and his remarkable contribution to the world’s research even though he is only 5 years from receiving his PhD. Finally the University’s single award for ‘Senior Researchers Excellence’ was given to Professor Buddhima Indraratna, Head of Civil Mining and Environmental Engineering, for his sustained and substantial contribution to geotechnical engineering research. Apart from being internationally recognized in many ways by his peers, he has also brought about many practical benefits to the community in areas such as railways and soil improvement.

The Faculty of Engineering had an excellent awards event this year. We are very lucky to have such talented staff and I’m sure we all send our hearty congratulations to the award winners.

VC Awards Continued from Page 1

was carried out in the laboratory of Prof. Menachem Elimelech at Yale University.

Long has since published over forty peer-reviewed articles in top ranking journals in his field, many of them are highly cited. He has also produced two books including one as a sole author on trace organic removal from water using membrane processes.

Long has already attracted over $1 million in external funding from both Competitive Grant sources as well as industrial contracts. Long has quickly built up a significant research group, including being co-supervisor of two post-doctoral fellows and eight PhD students, and has much active international collaboration.

The school of Civil Mining and Environmental Engineering deserves the biggest congratulation of all for bagging both of this year’s Vice Chancellors Research Awards. Congratulations CME!

Faculty of Engineering Winners of VC’s Golf Day

On Friday 11th June, the Faculty of Engineering entered 2 teams in the VC’s golf day held at the Wollongong Golf Club. The event was the largest golf day in its 27 year history with 18 teams entered. After a cold start, the team had fantastic weather for the event and the course was in excellent shape with fast rolling greens, considering the recent heavy rainfalls.

The Faculty of Engineering had a successful day, winning the VC’s shield for 2010!

The 2010 Engineering Teams send out many thanks to Paul Manning for organising a great day, and are looking forward to another great event next year.

The Prize winners were:

1st Net Handicap: Cameron Neilson
2nd Net Handicap: Nando Escribano
2nd Gross Handicap: Rod Thompson
Longest Drive 15th Fairway: -Rhys Sartori

Top Row from left to right: Rhys Sartori, Ian Laird, Cameron Neilson, Robert Rowlan. Bottom Row from left to right: Nathan Hodges, Frank Crabtree, Fernando Escribano.
Engineering Prize Night 2010

In May this year the Faculty of Engineering held its annual Prize Night, an evening where undergraduate and postgraduate students from the Faculty of Engineering and from the Research Institute of Superconducting and Electronic Materials receive rewards for high academic achievement. Students from all Schools and engineering disciplines in the Faculty, including Physics, Mechanical, Materials, Mechatronics, Civil, Mining and Environmental Engineering receive recognition at this ceremony. During the event over $30,000 in cash are given out, plus a wide range of other awards, scholarships, and certificates. The prizes are mostly awarded by Industries and Industry associations, often to reward students’ performance in particular areas. This contribution from industry demonstrates the importance that the Engineering Industry places on University training, and of the recognition of the quality of UOW’s Faculty of Engineering programs, and hard working students.

Listed on the next two pages are some of the 2010 award recipients. For more photos and information on Faculty of Engineering Prize Night 2010 please refer to: http://cmsprd.uow.edu.au/UOW_Main/eng/UOW080890

Peter Schmidt Memorial Scholarship

Gyanendra Regmi, a PhD student from School of Civil, Mining and Environmental Engineering was awarded the Peter Schmidt Memorial Scholarship for best performance postgraduate research in 2009. Gyanendra is pursuing his PhD in Acid Sulphate Soil under the supervision of Prof. Buddhima Indraratna and Dr. Long Nghiem. His thesis title is “Chemical Clogging in permeable reactive barrier for remediating acidic groundwater”. Gyanendra’s research focused on investigation of acid neutralisation behaviour of Recycled concrete and study of chemical clogging and armouring effects on the performance of the barrier. The overall goal of his research is to develop a cost-effective remediation technique in solving the acidic groundwater problem in coastal Australia utilising a waste materials. For his research contribution in acid sulphate soil, he also won the second prize at the Young Professional Geotechnical night 2009 from Australian Geomechanics Society. His research is supported by Department of Education, Employment and Workspace Relations (DEEWR), Australian Government providing him an Endeavour postgraduate Award.

In photo left: Gyanendra Regmi, being presented his award by Professor Buddhima Indraratna

Coffey Geotechnics – UOW Award

Pramod Thakur, another PhD student from School of Civil, Mining and Environmental Engineering was awarded Coffey Geotechnics – UOW Award for best postgraduate performance in geotechnical research in 2009. Pramod is pursuing his PhD on Railway Ballast under the supervision of Dr. Jayan S. Vinod and Prof. Buddhima Indraratna. His thesis title is “Cyclic densification of ballast and associated deformation and degradation”. The main focus of Pramod’s research is to investigate behaviour of ballast under high speed trains. Pramod’s main contribution through his research is to explain ballast breakage and densification mechanism from particulate level using Discrete Element Method. His research and scholarship is supported by Rail-CRC.

In photo: Pramod Thakur (left) being presented his award by Rail-CRC.

Engineers Australia Illawarra/Sutherland Regional Group

This award is presented to the candidate who has completed the degree of Bachelor of Engineering with the Highest Weighted Average Mark for the course. This award was presented to Nathan Casanova, a Civil Engineering student.

In photo: Nathan Casanova being presented his award by Belinda Margetts from Engineers Australia.

Engineering Postgraduate Thesis Award

This award is open to all candidates for the degree of Master of Engineering Research or PhD. This award was presented to Yun Zhang by Professor Chris Cook

Continued on Page 4...
Continued from Page 3...

Dr Yun Zhang joined ISEM in February 2004 as PhD student working on MgB2 superconducting Materials and graduated in December 2009. Her PhD thesis title is “Improvement of critical current density in MgB2 by optimizing process parameters and chemical doping.” During her PhD period she published totally 21 papers, including 11 first-authored papers, in well-recognized scientific journals, such as Physical Review B, Superconductor Science and Technology and J. Nanosci. Nanotechnol. Dr. Zhang has been worked as associate Research Fellow in ISEM since her graduation.

Other ISEM Award Winners:
MD Mokhliesur Rahman - Merit Award
Chao ZHONG - Merit Award
Abbas RANBAR - Merit Award
Krunal RADHANPURA - Best Paper
Jainfeng MAO - Best Paper
Anthony WRIGHT - Excellence Award

For more photos of the Engineering Prize Night 2010 please refer to:

A/Prof Weihua Li Appointed as Associate Editor for Prestigious Journal

The Faculty of Engineering’s Associate Professor Weihua Li, has recently been appointed as an Associate Editor for a prestigious journal; Smart Materials and Structures (SMS). This journal is currently ranked as Tier A by Australian Research Council (ARC) ERA system. SMS is a thriving journal offering papers on all technical areas concerned with smart materials, systems and structures from the micro and nanoscale to the macroscale. The journal has undergone some major changes including the transferal of papers to IOP Publishing’s peer-review management system (which has reduced submission-to-publication times to around 4 or 5 months), as well as the involvement of its Associate Editors in making publication decisions on submitted papers.

Associate Professor Weihua Li’s appointment will extend for a period of just over 2 years from now until December 2012; during this time he will be responsible for defining both the scope and quality of this journal.

Professor Wihua’s Li’s responsibilities as an Associate Editor for the Smart Materials and Structures (SMS) journal will include but are not limited to:

- Direct in the peer review process including referee selection or approval, and making publication decisions on the basis of referee reports receive.
- Providing expertise in the relevant field of interest and assistance in ways to develop the journal’s coverage. This will involve arranging special issues, commissioning high-quality topical reviews, encouraging colleagues and contacts to submit articles, and identifying promising results in their field to be turned into submissions for the journal.
- Publishing a portion of individual work in the SMS journal.
- Acting as an ambassador for the journal wherever possible at conferences and academic meetings.
- Providing advice and guidance to the Editor -in-Chief for the stewardship of the Journal.

The appointment of an Associate Editor for a the journal; Smart Materials and Structures (SMS) is an exciting opportunity, since the impact factor of the journal is already higher than many society journals and other publications. The Faculty of Engineering extends their sincerest congratulations to Associate Professor Weihua Li on this outstanding accomplishment!

Staff News

Professor Roger A. Lewis appointed to the “Materials - Properties and Engineering Specialist Committee” of AINSE

The Faculty of Engineering’s Professor Roger A. Lewis has recently been appointed to the “Materials - Properties and Engineering Specialist Committee” of AINSE (Australian Institute of Nuclear Science and Engineering). Professor Lewis was appointed to this via a vote from the AINSE Executive Committee.

Promotions for Professor Paul Cooper and Professor Zhengyi Jiang:

The Dean of Engineering, Professor Chris Cook announced last month the success of two applicants for professor in the latest University round. Congratulations to Professor Paul Cooper and Professor Zhengyi Jiang on their well deserved promotions.
Book Launch at UOW “GEOTECHNICAL SLOPE ANALYSIS”

The book "Geotechnical Slope Analysis" by Professor Robin Chowdhury, Dr Phil Flentje and Dr Gautam Bhattacharya was launched at the UniCenter Bookshop on June 24 by Professor Chris Cook, Dean of Engineering. The launch was attended by a number of university staff, namely from the Faculty of Engineering. Professor Chris Cook congratulated the authors on producing a significant and impressive body of work and he noted, among other things, that the book was the end-product of many years of research and scholarships. Professor Robin Chowdhury referred to the motivation and process of writing the book and how it had been a most rewarding experience including the smooth collaboration with the co-authors. He also spoke about the significance of books in the engineering profession and the role which should be played by academics in encouraging the writing and reading of such literature:

"Knowledge in engineering disciplines has been growing at an increasing rate. The research output of engineering academics has been growing steadily in the form of research papers in journals and conferences. However, the writing of books has lagged behind considerably except perhaps at conference proceedings. There are of course many types of engineering books such as; text books, books about individual research topics and reference books. All these types of literature are required in increasing quantity and quality. In particular, it is most desirable to encourage scholarly books which can place the growing knowledge in the correct theoretical and practical contexts. Having this launch today gives me the opportunity to talk about the importance of books generally and to our profession in particular."

A brief description of the “GEOTECHNICAL SLOPE ANALYSIS" by Professor Robin Chowdhury, Dr Phil Flentje and Dr Gautam Bhattacharya:

This reference book gives a complete overview of the developments in slope engineering in the past 30 years. Freshly updated and an extended version of Slope Analysis with its multidisciplinary, critical approach and the chapters devoted to seismic effects and probabilistic approaches and reliability analysis, reflect the distinctive style of the original. Subjects discussed are: the understanding of slope performance, mechanisms of instability, requirements for modelling and analysis, and new techniques for observation and modelling. Special attention is paid to the relation with the increasing frequency and consequences of natural and man-made hazards. Strategies and methods for assessing landslide susceptibility, hazard and risk are also explored. Moreover, the relevance of geotechnical analysis of slopes in the context of climate change scenarios is discussed. All theory is supported by numerous examples.

INTERNATIONAL REVIEWS

“I have yet to see a book that excels the range and depth of Geotechnical Slope Analysis... I have failed to find a topic which is not covered and that makes the book almost a single window outlet for the whole range of readership from students to experts and from theoreticians to practicing engineers..."

-Prof. R.K. Bhandari, New Delhi, India

“The experience of the authors, drawing on research over many years, has resulted in an essential volume on theory and practice, of value to both researchers and practising geotechnical engineers involved with studies of slopes and their mechanisms of failure.”

-Dr Robin McInnes OBE FICE FGS FRSA

“This book gives a comprehensive coverage of the subject matter and it is easy to read. The brief examples and case studies are very helpful. It facilitates teaching in schools, in short courses and for self learning by practitioners. The book addresses a variety of common questions and that readers would raise concerning slope analysis.”

-Professor Wilson Tang, Hong Kong University of Science & Technology.
THE FACULTY’S SENIOR HIGH SCHOOLS TECHNOLOGY COMPETITIONS GO FROM STRENGTH TO STRENGTH

The Faculty's Senior High Schools Technology Competitions had a very humble beginning in 2000 when Bob Wheway, in association with the Illawarra/Sutherland Regional Group of Sydney Division of Engineers Australia, organised a trial Year 11 Engineering Studies Competition. The inaugural local Engineering Studies has been expanded to now include 8 Competitions in 4 subject areas across the whole of NSW and ACT. In 2000, with $250 seed money from Sydney Division, a pilot Year 11 Engineering Studies Competition was organised for High Schools between Bulli and Kiama.

Since then, with the support of at least 40 industry sponsors and 3 Vice-Chancellor’s Challenge Grants totalling $50000, the original competition has been expanded to 6 Competitions in NSW and 2 Competitions in ACT.

The 2010 Competitions are:
* The Year 11 NSW Engineering Studies Competition
* The Year 12 NSW Engineering Studies Competition
* The Year 11 NSW Design & Technology Competition
* The Year 12 NSW Design & Technology Competition
* The Year 11 NSW Industrial Technology Competition
* The Year 12 NSW Industrial Technology Competition
* The Year 11 ACT Design and Technology Competition
* The Year 12 ACT Design and Technology Competition

The situation at present with sponsorship of the major Prizes and Awards for these 8 Competitions is summarised below:

The 6 NSW Competitions
Sponsors 38
Sponsorship $28,950
Still required $ 8,000
Total $36,950

The 2 ACT Competitions
Sponsors 5
Sponsorship $3,290
Still required $6,000
Total $9290

The Vice-Chancellor has agreed that, if the Faculty is not able to attract the remaining sponsorship from industry, he will provide up to $14000 so that all the advertised major Prizes and Awards can be awarded. The total sponsorship of $46240 does not include the Finalist Awards of $50 to each entrant who does not win a major Prize or Award. In 2009, there were 130 Finalist Awards presented in the 6 NSW Competitions i.e. a total of $6500 provided by the Faculty.

Through the work of Lyndal Worsfold, the Faculty’s Projects Officer, the NSW Board of Studies has provided us with the details of the 640 NSW High Schools offering at least 1 of the subjects the Faculty is targeting. As a result, Competition materials have been sent to 2040 Senior High Schools Technology classes in NSW. Letters are going to be sent to the Principal and Deputy Principal of each of the 640 High Schools asking them to encourage their TAS/Industrial Technology staff and students to become involved in the Faculty's Competitions.

Materials are currently being prepared for both ACT Design and Technology Competitions. These materials will be sent to every Senior College in the ACT shortly.

*Further details of the 8 Competitions can be found on the Competitions' website www.uow.edu.au/eng/highschoolcompetition which is a work in progress.

Please also refer to the next page of the Newsletter for a list of the Faculty of Engineering 2010 Senior High Schools Technology Competitions Sponsors - (as at 25th June, 2010).

*Additional sponsor not included in following page: HARS-Historical Aircraft Restoration Society Inc
## List of Sponsors for the Faculty of Engineering 2010 Senior High School Technology Competitions

### Industry Sponsors
- Commonwealth Bank
- RTA
- NRE Natural Resources Environment
- GE Healthcare
- SOTO Engineers & Project Managers
- BLUESCOPE Steel
- NOCNOIL
- ibis Wollongong Port Reach
- PEA
- BRADKEN
- tyree
- BAE SYSTEMS
- PHD ENGINEERING
- ILLAWARRACOAL
- HARSOCO METALS
- SHELHARBOUR CITY COUNCIL
- CEA
- ANSTO Nuclear Science Benefits Australia
- HOOKER COCKRAM
- BECA
- JOY MINING MACHINERY
- HYUNDAI
- dux
- Faiveley Transport
- SEA WARRIS
- Sibelco
- Wilbarger Group
- PORT KEMBLA PORT CORPORATION
- Cardno Forbes Rigby
- HATCH
- SWIRE INDUSTRIAL SERVICES
- Jaycar Electronics
- Port Kembla Port Corporation
- Kiama Municipal Council

### University Sponsors
- University of Wollongong
  - Faculty of Engineering
  - Faculty of Informatics

---

CRICOS Provider No: 00102B