Engineering Sydney Alumni of the Year Awards

Winners of the inaugural Engineering Sydney Alumni of the Year Awards were announced at a ceremony that was part of the university-wide Spring Back to Sydney Reunion on October 27.

The ceremony featured addresses from the Dean, Professor Gregory Hancock, alumnus and President of the Aeromechanical, Mechanical and Mechatronic Engineering Foundation, John Young and current student and President elect of SUEUA, Nathan Byrnes. The speakers reflected on the large role that the faculty has played in their lives and encouraged alumni and current students to maintain connections with the faculty.

The awards were established to acknowledge alumni of the Faculty of Engineering and IT who have shown exceptional dedication, creativity or leadership in their field of professional endeavour.

From a range of very high calibre nominations, Charles (Sandy) Longworth (BE Civil 1955) and Dr Greg Roger (ME 1990) were named joint Engineering Sydney Alumni of the Year and Davina Rooney (BE Civil 2002) was named Engineering Sydney Young Alumna of the Year.

For more information on the award recipients, please see their profiles on page 4.

Places at the next Engineering Sydney Engineering and IT Careers Fair on 2 April 2008 are filling fast!

See page 8 for booking details
Alumni of the year awards

Dean’s Report

Alumni Profiles

Oxford DPhil for John Pickhaver

Research Conversazione

Careers Fair 2008

Professor Ronald Bracewell AO

Honours and Awards

Dean’s Advisory Committee

editorial

Editor
Susanna Smith

Contributor
Professor Gregory Hancock

Design
Susanna Smith

Advertising
Keiran Passmore
02 9351 5768
kpassmore@eng.usyd.edu.au

Printing
Paragon Group
Dean’s Report

The Faculty has begun planning for the next 5 years with a Strategic Planning Forum held at the Sebel Spa at Windsor on 4th and 5th November. The Faculty Dean’s Advisory Committee, Engineering Sydney Board, and younger members of staff were invited making a total cohort of about 50 people. The opening session was addressed by Emeritus Professor Robin King who is undertaking the Carrick Institute Project on Engineering Education. His address highlighted the initial findings of the project entitled “Rethinking Engineering Education: to address the supply and quality of engineering graduates for the new century”. The Forum was facilitated and led by Professor Ron Johnston of ACIIC. Major issues discussed included research intensity and performance, teaching programs including undergraduate and postgraduate, teaching quality and delivery, engagement with external stakeholders and infrastructure.

It was a pleasure to present the Alumni of the Year Awards on 27th October. I was very impressed by the entries and was disappointed that there could be only 3 winners given the outstanding alumni we have from this faculty. I look forward to the 2008 entries, and hope that some of those submitted this year can be resubmitted in 2008.

The Faculty was very successful in the recent announcement of the Australian Research Council grants for 2008 and beyond. The Faculty received $10.2m from a University total of $45m making it the third best research Faculty in the University after Medicine and Science. The Faculty was also ranked Band A2 in the Department of Education, Science and Technology (DEST) Teaching and Learning Performance Fund (TLPF) in a University cluster including Science, Architecture and Agriculture. This also leads directly to increased funding to support quality teaching. We are working on plans to create integrated learning in the Faculty particularly through the Conceive, Design Implement and Operate Initiative (CDIO) being advanced by Associate Professor David Levy in Electrical and Information Engineering.

Professor Gregory Hancock
Dean, Faculty of Engineering and Information Technologies
Alumni of the Year Award Winners

Sandy Longworth
Engineering Sydney Alumni of the Year Award Winner (joint)

Charles (Sandy) Longworth graduated as a civil engineer in 1955 before going on to a very distinguished career that includes 6 ACEA Awards of Merit for his work in the coal mining industry, a Department of Trade and Resources Services Export Award and professional memberships that include: Fellow Institution of Engineers Australia, Fellow Institute of Civil Engineers, Fellow Australasian institute of Mining and Metallurgy. Longworth started an engineering practice with Alan McKenzie in 1957, Longworth was interested in the mining and resources industry and had the foresight to see a need for geotechnical services. The company grew to become a leader in the field. Longworth remains active in the engineering community particularly through projects conducted by the Warren Centre for Advanced Engineering for which he was awarded a 2007 Vice Chancellor’s Medal.

Dr Greg Roger
Engineering Sydney Alumni of the Year Award Winner (joint)

Dr Greg Roger trained as a medical doctor before completing a Masters degree in mechanical engineering with the aim of designing better medical prostheses for surgery. He worked with Dr Mervyn Cross to design an artificial knee that has revolutionized knee replacement surgery.

Dr Roger founded and directs Sydney based Australian Surgical Design and Manufacture and continues to work as a medical practitioner.

He was named Entrepreneur of the Year by Engineers Australia Sydney Branch in 2006. He was presented with a Clunies Ross award in 2004 and in 2005 was names a Warren Centre for Advanced Engineering Hero of Innovation.

Davina Rooney
Young Alumni of the Year Award winner.

Davina was an outstanding student who graduated with 1st Class Honours in Civil Engineering in 2002. She now works as Manager – Sustainability for Stockland. She spent the previous five years at Arup where she emerged as a leader in her actions and work.

Davina is also heavily involved in the wider engineering community through her role as a board member of ACEA and her memberships of Architecture for Humanity and Red R. She worked in Ladakh, India, helping to build and earthquake-proof school for the community. She also worked for Ausaid, assisting with relief efforts after the Pakistan earthquake. She is currently involved in the design of a school in Uganda.
Oxford DPhil for John Pickhaver, BE Civil 2000

Civil Engineering alumnus, John Pickhaver, spent three years at Balliol College, Oxford completing his DPhil entitled *Numerical Modelling of Building Response to Tunneling*.

John describes his time at Oxford as “extremely rewarding”, citing academic and social reasons for his enthusiasm. The academic and research links that he was able to form at Oxford were extremely valuable and his supervisors and teachers very dedicated and talented.

John also savoured the “intense intercollegiate” sporting and social opportunities available at Oxford. He participated in cricket, rugby, tennis and rowing, representing the Australia/New Zealand Society at the Varsity Games and was voted MCR (postgraduate social president) of Balliol, organizing balls, sporting events and other social fixtures.

Now back in Sydney, John is working for the infrastructure section of Macquarie Bank. He sees this as an opportunity to get involved with projects at an early stage and therefore have more input into the end result. John’s experience in the corporate world has taught him how powerful an engineering qualification can be. Project management, communication and team leadership skills are all qualities that make engineers highly sought after.

John sees his immediate future in financial infrastructure and would one day possibly like to move into the corporate side of heavy infrastructure, but he has not given up on academia just yet. He plans to continue publishing papers on his research and work on projects organized by the Warren Centre for Advanced Engineering and Infrastructure Partnerships Australia.

John studied at Oxford as part of the Commonwealth Scholarship Commission Scheme.
The 2007 Research Conversazione drew a large crowd to the Seymour Centre on October 26. The change of venue and format was well received, allowing guests increased time to view the range of research projects displayed by individual schools.

The Research Conversazione aims to bring industry and students together and gives guests the chance to meet with researchers about their work.

The 2007 Research Conversazione lunch was proudly sponsored by Shelston IP.

School of Chemical and Biomolecular Engineering PhD student, Nasim Annabi, discusses her research poster with a visitor.

Cai Ying Zhe (left) and Bazouni Christopher (right) with Dr Itai Einav in the School of Civil Engineering

School of Civil Engineering
Undergraduate award winners
1st - Cai Ying Zhe, Reduan Foss
2nd - Bazouni Christopher, Hamad Steven, Saman Daniel, Hanna Mirwan
3rd Timothy Laing-Peach, Brendan McMahon, Nicholas Spear

Postgraduate award winners
Ben-Nun Oded
Tayakorn (Korn) Chandrangsu
Matthew Mason
2007 Research Conversazione

Prize Winners

School of Information Technologies
Postgraduate prize winners:

Masters by Coursework degree: Bulat Gafurov

Knowledge Management and Language Technologies:
Bojan Djordejevic

Multimedia Computing: Cherry Ballangan

Networks and Systems: Mohsin Iftikhar

Undergraduate (Honours) prize winners:

Natural Language Processing and Information Systems:
Laura Ingram

Networks and Systems: David Helstroom

Software Development: Timothy de Vries

Multimedia and Visualisation: Matthew Chen

Computer Science: Robert Little

School of Aeromechanical, Mechanical and Mechatronic Engineering $300 Prizes

Roxane Jacobs
Campbell Pegg
Annika Van Hummel
The next Engineering Sydney Engineering and Information Technologies Careers fair will take place on Tuesday 2 April 2008 in the Seymour Centre at University of Sydney.

The Engineering and Information Technologies Fair is a unique annual fair that offers employers the opportunity to liaise with students who are specifically interested in engineering and information technology positions.

The 2007 event attracted large numbers of students seeking graduate employment and vacation placements.

As demand for space at the fair is high, employers are advised to book early to secure a position.

Want to know who is participating? consult the fair website at :


For further information and bookings, please contact Keiran Passmore, Executive Director of Engineering Sydney on +61 2 9351 5768 or email kpassmore@eng.usyd.edu.au
Ronald Bracewell’s interests ranged from Radio Astronomy to trees and his passion for scientific exploration led to important developments in technology including MRI imaging.

Ronald Bracewell, who died in August 2007, completed a Bachelor of Engineering (Mechanical and Electrical) degree in 1943 and a Master of Engineering degree in 1948. After graduation Ron joined AWA and later the CSIRO before completing his PhD in physics at Cambridge in 1950. He returned to the CSIRO for four years before moving to the United States to work at UCLA Berkeley and in 1955 he moved to Stanford University where he spent the remainder of his career.

With his colleagues at Stanford, Bracewell designed the spectroheliograph telescope to receive and evaluate microwaves emitted by the sun. In 1961 he built a serious of 32 radio telescope dishes to monitor the sun’s surface. These produced daily maps of surface temperature for 11 years. The information could be sent world wide by teleprinter and was relied upon by NASA as a warning system for sunspot eruptions during the first Apollo lunar landing. In the 1970s the dishes were replaced by five larger dishes and named the Bracewell Observatory.

Bracewell adapted a complex mathematical process called the Fourier Transformation to extract images from Radio signals. In 1965 he published the text book *The Fourier Transformation and its applications*, a classic engineering text that is still widely used today. Other scientists were able to use the techniques to develop X-ray imaging tomography and other forms of medical imaging that scan electromagnetic and radio waves. He became the first Australian associate of the Institute of Medicine for his contributions to medical imaging.

Bracewell took great interest in the possibility of discovering other intelligent life in the universe and in 1975 he published *The Galactic Club: Intelligent Life in Outer Space*. He proposed that any possible extraterrestrial civilizations that did exist would contact earth using robotic probes. Such automated craft are now known as Bracewell probes.

In the 1980s Bracewell combined his expertise in Astronomy with an interest in Geology to examine Australia’s red sandstone. He theorized that dark layers are connected with solar activity. Along with other researchers, he proposed that sunspots had affected temperatures on earth, leading to periods of melting permafrost 650 million years ago.

Bracewell taught at Stanford until 1991, but continued to work in the role of Emeritus Professor of Electrical Engineering. He took an interest in trees and in 2005 published *Trees of Stanford and Environs*. He claimed “that if people try to become acquainted with their trees, it would enhance their life.”

In 1992 Bracewell was one of the University of Sydney’s inaugural alumni award recipients for his contributions to brain scanning. In 1994 he received the Heinrich Herz Medal from the IEEE for pioneering work in antenna aperture synthesis and image reconstruction as applied to radioastronomy and to computer assisted tomography. He was named Officer of the Order of Australia in 1998.
Honours and Awards

Students

Engineers Australia Public Speaking Competition and Awards Night

Industrial Training Campus Winner and Young Student Engineer of the Year
Michael Bewley

Public Speaking Final
Anita Ho

Senior Bachelor of Engineering (Thesis)
Amrita Singh

Women in Engineering Scholarship
Winey Suen

Aker Kvaerner Design Prize

Adam Carr, Lilian De Melo, Yi-Hsia Koh, Jemma Nokes, William Naderi and Ven Chian Quek from the School of Chemical and Biomedical Engineering won the Aker Kvaerner Prize Design Prize. The prize is awarded annually to the best final year design project as part of the Chemical Engineering suite of degree streams in all the universities in Australia and New Zealand. The team designed a Sulphuric Acid production plant. The students were supervised by Associate Professor Don White as part of the MIPPS program.
Honours and Awards

Staff

2007 Cosmos Bright Sparks Award

Dr Andrew Harris, Lecturer in the School of Chemical and Biomolecular Engineering, won a Cosmos Bright Sparks Award. The awards are presented by Cosmos magazine and recognises the top ten Australian scientists under the age of 40.

Fellow of the Optical Society of America

Professor Robert Minassian, Head of the School of Electrical and Information Engineering, has been elected a Fellow of the Optical Society of America for his contributions to the fundamental understanding of photonic signal processing of microwave signals.

STAY CONNECTED!

ONLINE, ANYTIME

Your alumni email forwarding service now allows you to link your private email address to a University alumni email address:

Yourname@alumni.sydney.edu.au

Email forwarding is just one of the many services available via the Alumni Web Community.
Deans Advisory Committee

Professor Gregory Hancock AM      Dean
Professor John Small                   Pro Dean
Professor Assaad Masri               Associate Dean Research
Dr Liaquat Hossain                  Associate Dean Postgraduate
Professor Liyong Tong               Associate Dean International
Dr Doug Auld                            Associate Dean Undergraduate
Dr Marjorie Valix                   Associate Dean First Year T&L
Dr Tim Wilkinson                    Associate Dean ICT
Associate Professor David Airey             Associate Dean Learning and Teaching
Professor Lin Ye                       Head of School Aerospace, Mechanical and Mechatronic Engineering
Professor Robert Minasian           Head of School Electrical and Information Engineering
Professor Albert Zomaya              Head of School of Information Technology
Professor Kim Rasmussen             Head of School of Civil Engineering
Associate Professor Geoff Barton        Head of School of Chemical Engineering

Professor Hugh Durrant Whyte               Director Australian Centre for Field Robotics
Professor Ron Johnston                 Director Australian Centre for Innovation and International Competitiveness Limited
Keiran Passmore                      Executive Director, Engineering Sydney™
Eric van Wijk                               Faculty Executive Officer

Presidents and Executive Officers of Foundations and The Warren Centre

George Maltabarrow                        President Electrical and Information Engineering Foundation
Professor Michael Dureau                  Executive Director Warren Centre for Advanced Engineering
Alex Dronoff                                President Chemical Engineering Foundation
Peter Thornton                           President Civil Engineering Foundation
John Young                                   President of the Aerospace, Mechanical and Mechatronic Engineering Foundation

Peter North AM                            Chairman, Warren Centre for Advanced Engineering
John Doherty                                President, Engineering Sydney Alumni Association
Nathan Byrnes                                  President, SUEUA (Student Organisation)

Please let Engineering Sydney know if you have changed address, telephone number, email or job so that we can update our records and keep you up-to-date with Engineering Sydney information.

Please complete the following information and return to:
Susanna Smith
Rm 231, Building J13
Faculty of Engineering
University of Sydney NSW 2006
Fax : 02 9351 4654 Email: susanna@eng.usyd.edu.au

Name_________________________________________ Degree and Year _____________________________
Address__________________________________________________________________________________
Telephone (home)_____________________ (work)_______________________ (mobile)__________________
Job Title________________________________Organisation________________________________________
Email Address_____________________________________________________________________________