HoS Foreword

This edition sees another cohort of successful graduates depart the School of Engineering destined for professional careers in Engineering, Construction Management and Industrial Design.

There has also been considerable achievement in research activity in the School of Engineering and Civionics Research Centre with many of our research staff receiving recognition of achievement, professional honorary appointments and research grant funding.

Important has been the announcement of a Schools merger between the School of Engineering and the School of Computing and Mathematics to form the School of Computing, Engineering and Mathematics effective from 1 January, 2012. Prof Simeon Simoff will be the new Dean for the School of Computing, Engineering and Mathematics while I will take up the role as Foundation Director of the Institute of Infrastructure Engineering.

This has also been a busy time for events and community engagement activities. The annual Science and Engineering Challenge was held on 30 June with 225 local high school students participating; staff attended a Mid Year School forum on 29 July; the Civionics Research Centre hosted the International Workshop on Steel and Composite Structures on 9 August; UWS Open Day was held on 28 August with more than 310 prospective students attending presentation sessions; the Honorary Christopher Pyne MP visited the Civionics Research Centre on 27 September; UWS graduation ceremony was held on 28 September and the annual Honours Conference was held on 30 September.

We welcome a new staff member to the Civionics Research Centre, Assoc Prof Sergiy Kharkovsky and announce five new academic appointments to the School of Engineering.

We congratulate Dr Gu Fang on receiving a Learning and Teaching Citation Award for his contribution to and excellence in teaching postgraduate engineering programs.

As the School of Engineering and Civionics Research Centre take on new directions and structures we look forward to keeping you updated of our activities.

Professor Brian Uy
Head, School of Engineering & Director, Civionics Research Centre

Upcoming Events
UWS Day Penrith
9 November 2011

Engineering, Medicine
& Science Experience
6-8 December 2011

Honeywell Summer School
8 December 2011
Institution of Structural Engineers, UK (Australia Division) Chairman

Professor Brian Uy has been elected the Australia Division Chairman of the Institution of Structural Engineers, UK (IstructE) after serving as Vice Chairman since the Division was formed in 2008. He previously served on the NSW Branch since 1992. The Institution of Structural Engineers was established in 1908 and gained its Royal Charter in 1934. It is a professional body for structural engineering based in the United Kingdom and has 27,000 members in 105 Countries with over 500 members in Australia. The Institution provides professional accreditation for structural engineers and publishes a twice monthly journal, The Structural Engineer. The Institution is an internationally recognised source of expertise and information concerning all issues that involve structural engineering and public safety within the built environment. The core work of the Institution is supporting and protecting the profession of structural engineering by upholding professional standards and acting as an international voice on behalf of structural engineers. As Australia Division Chairman Professor Uy will serve on the Council of the IstructE which provides governance to the Institution.

International Visitor

Associate Professor Michele Greco from the Department of Physics & Environmental Engineering, Basilicata University, Italy visited the School of Engineering on 22 September. He made a presentation on various water resources research projects he and his colleagues are engaged in. Prof. Greco is in Australia as a part of the Italian delegation team to explore potential collaborations (research and student exchange) with Australian universities.

World Habitat Award 2011

Christian Tietz was an integral part of the team that won this years prestigious World Habitat Award. His role of Industrial Designer and Research Manager developed criteria, assessed, tested and designed products to improve the quality of life for Indigenous Australian Communities. This work was delivered nationally by Health Habitat through the Fixing Houses for better Health program and funded by FAHCSIA. The World Habitat Awards were established in 1985 by the Building and Social Housing Foundation as part of its contribution to the United Nations International Year of Shelter for the Homeless.

Journal Publication - European Journal of Engineering Education

Dr Ragbir Bhathal’s paper on the retrospective perceptions and views of engineering students about physics and engineering practicals was published in the latest issue of the European Journal of Engineering Education. Hands-on practical work in physics and engineering has a long and well established tradition in Australian universities. The research showed that the majority of students found hands-on physics and engineering practicals were much more preferable to simulations on a computer and that practical work is useful not only for linking theory to practicals but also for gaining technical skills.

ALTC Grant

Dr Swapan Saha, Mary Hardie and colleagues, Prof Anthony Mills (Deakin University), Dr Patricia McLaughlin (RMIT) and Prof Peter Davis (Curtin University) have been successful with an ALTC grant application for ‘Clearing the Pathway: Improving the Transition for Students Moving Between AQF levels 5, 6, and 7’. This project examines pathways between vocational education and higher education in the built environment that account for successful high retention student transitions between these levels. Funding of $101k has been approved over two years.

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http://www.istructe.org/
HKIE Outstanding Paper Award for Young Engineers/Researchers 2011
A paper co-authored by Prof Kenny Kwok with one of his 2007–2008 final year project students at HKUST has won the HKIE Outstanding Paper Award for Young Engineers/Researchers 2011: Cham, C, S.Y. and Kwok, K.C.S., “Terrain characterisation and design wind profiles for Hong Kong”. The paper will be published in HKIE Transactions later this year and will be presented at a HKIE Technical Seminar on 14 September. The award will be presented at the HKIE Presidential Dinner on 15 September.

SFPE Award
Dr Yaping He has been awarded the Jack Bono Award by Society for Fire Protection Engineers for his solo-authored paper entitled “Linking Safety Factor and Failure Probability for Fire Safety Engineering” published in Journal of Fire Protection Engineering (Vol. 20, pp.199-216, 2010). The Jack Bono Award for Engineering Communications was established by SFPE in 1994 to recognize the author(s) of the paper published in the Journal of Fire Protection Engineering during the prior year that has most contributed to the advancement and application of professional fire protection engineering.

UWS IRIS
The following Centre for Civionics – Infrastructure Engineering staff and members have been successful obtaining International Research Initiative Scheme grants from UWS.

Associate Professor Chin Leo, (Centre for Civionics – Infrastructure Engineering) – International Link – University of Lyon, France – Coupled thermo-hydro-mechanical processes in the porous media – $5 000.

Associate Professor Zhong Tao (Centre for Civionics – Infrastructure Engineering) – International Link – TsingHua University, China – Behaviour and Design of Composite Steel-Concrete Beams with Different Degrees of Shear Connections when Subjected to Fire – $15 441.

Professor Brian Uy (Centre for Civionics – Infrastructure Engineering) – International Link – National University of Singapore, Singapore – Australia – Singapore Collaboration on Application of Nanomaterials in Civil Engineering – $14 200.

Professor Yang Xiang (Centre for Civionics – Infrastructure Engineering) – International Link – City University of Hong Kong, China – Micro-nano sensors considering size effects and long range forces – $10 250.

UWS Seed Grants
The following Centre for Civionics – Infrastructure Engineering staff and members have been successful obtaining Seed Grants from UWS.

Dr Wonhee Kang (Centre for Civionics – Infrastructure Engineering) – UWS Seed Grant – Rapid Risk Assessment of Large and Complex Civil Infrastructure.

Dr Ee Loon Tan (Centre for Civionics – Infrastructure Engineering) – UWS Seed Grant – Design of composite steel-concrete beams with partial shear connection for curved bridges and highways.

Dr George Vasdravellis (Centre for Civionics – Infrastructure Engineering) – UWS Seed Grant – Assessment of the dissipative capacity of stainless-steel hourglass pins for use in high-seismic-performance steel structures.

UWS Research Partnership Grant
Dr Dharma Hagare and Associate Professor Muttucumaru Sivakumar from the University of Wollongong together with Dairy Australia have been awarded a UWS Research Partnership grant to develop a dynamic model for sustainable management of dairy shed effluent using stabilisation ponds and recycling system. Titled, ‘Development of a dynamic model for sustainable management of dairy shed effluent using stabilisation ponds and recycling System’, the value of the grant is $40k.

UWS Research Scholarship Recipient
Mr Ian Henderson (PhD candidate), has received a Research Scholarship and commenced with the Centre for Civionics – Infrastructure Engineering on 4 July 2011. He is undertaking a research project, “The Use of Innovative Anchors for the Achievement of Composite Action for Rehabilitating Existing and Deployment of Demountable Steel Structures” under the supervision of Professor Brian Uy, Dr Xinqun Zhu and Dr Olivia Mirza. The project is funded by an Australian Research Council Discovery Grant.

Aboriginal Astronomy
Dr Ragbir Bhathal delivered an invited public lecture on Aboriginal Astronomy on 24 July 2011 at the University of Utrecht’s Sonnenborg Observatory. Founded in 1636, the University of Utrecht is one of the oldest universities in the Netherlands and boasts ten Nobel prize winners of whom six are physicists. Dr Bhathal informed the audience that the Aboriginal people had been observing the night sky for over 40,000 years and in that time they have built an astronomical knowledge system which allowed them to use the stars for telling the seasons and seasonal food cycles, for illustrating family relationships, for using the phases of the Moon for ritual purposes and other aspects of their culture and society. In all probability they were the first people in the world to name the celestial objects. Dr Bhathal’s book on Aboriginal Astronomy was published in 2011.

SAGE Citations
School Merger and Establishment of the Institute of Infrastructure Engineering.

An announcement was made by the Vice Chancellor following the Board of Trustees meeting on 20 July to advise of the merger of the Schools of Engineering and the School of Computing and Mathematics to become the School of Computing, Engineering and Mathematics effective from 1 January, 2012. This is part of the broader UWS management change proposal which sees sixteen schools merged into ten schools.

The Board of Trustees also approved the establishment in principle of a research institute in Infrastructure Engineering. The Dean for the School of Computing, Engineering and Mathematics was announced on 3 August and will be Prof Simeon Simoff (currently Head of School – Computing and Mathematics) and Prof Brian Uy will take on the full time role as Foundation Director of the Institute of Infrastructure Engineering from the beginning of 2012.

EAC Meeting

The Engineering External Advisory Committee held a meeting on the Parramatta Campus on Thursday, 28 July. Members were informed of the recent leadership and management changes, the provisional accreditation of the new Construction Engineering Key Program and the Engineers Australia (EA) accreditation visit in 2012. Presented at the meeting were variations to our engineering programs based on EA recommendations. These include variations to the Electrical and Telecommunications Key Programs and the introduction of integrated design themes into three units, namely, Engineering and Design Concepts, Professional Practice and Engineering Projects. The proposed variations were endorsed by the committee.

School of Engineering Mid-Year Forum

School staff attended a mid year forum on 29 July at the Pullman Hotel in Homebush. Topics presented were the management change proposal; upcoming Engineers Australia accreditation and School research initiatives. Heads of Program presented course level learning outcomes using Engineers Australia’s stage one competency and ALTC threshold learning outcomes.

SURF – Bike to Uni Project

Administration staff and Dr Dharma Hagare will receive $15k funding from the Sustainable UWS Rolling Fund to provide secure bike parking facilities and loan bikes for staff and students with the aim to encourage more staff and students to use a bike for transport to and around UWS. Over the coming months, the project team will determine an appropriate site and design for secure bike lockers and bike racks to be installed as well as purchase share bikes to be available for loan and hope to launch the project in time for the UWS Ride to Uni day on October 12, 2011.

Learning and Teaching

Citation Awards

Dr Gu Fang has received a Learning and Teaching Citation Award from UWS for his contribution to and excellence in teaching postgraduate engineering programs.

Master of Fire Safety Engineering

The Master of Fire Safety Engineering course offered at the School of Engineering, University of Western Sydney has received another international recognition. The University is listed by the Society of Fire Protection Engineers, USA, along with other 16 institutes worldwide that offer degrees in fire protection engineering. See http://www.careersinfireprotectionengineering.com/pathways_highschool.htm

Our course is already recognised by Singaporean and Malaysian authorities.

Mid Year Orientation

Orientation sessions for the mid year intake of Engineering and Industrial Design students was held on 28 July. The School expects 90 new students to commence their studies this semester.

College of Health and Science Awards

Presentation Night

This annual event was held on the Parramatta Campus on July 13 and School prizes were announced by Dr Swapan Saha and presented by prize donors.

Dean’s Medals were awarded to two School of Engineering postgraduate students; Ali Kattoub (M Eng) and Susan Scott (M Fire Safety Eng).

The Australian Steel Institute Undergraduate prize was awarded to Jude Rodricks (B Eng Civil). Susan Scott of Eagle Consulting Group received this year’s Eagle Award for the first place graduate in Master of Fire Safety Engineering course. Mr Geoff Davis, Director of Eagle Consulting presented the award. The Electrical Energy Society Australia (NSW Chapter) Award in Energy Systems was won by Rue Li (B Eng Telecoms). Melanie Taylor (B Eng Civil) was presented the Engineers Australia Civil and Structural Engineering Award. The Charles and Alison Scott Memorial Award was won by Mohamed El-Kawagoe (B Eng Civil) and Christopher Whale (B Eng Civil) was presented the Steel Reinforcement Institute of Australia Award in Concrete Structures.

Prizes were also awarded to the prize winners from the Research Futures Forum held on June 10 as listed in the June edition of the School of Engineering News.

School of Engineering News
Member of Parliament Visits Civionics Research Centre

The Civionics Research Centre was host to a visit on 27 September by the Honorary Chris Pyne, MP. Christopher Pyne is the Federal Member for Sturt, Shadow Minister for Education, Apprenticeships and Training and Manager of Opposition Business. The Minister was accompanied on his visit to the research centre by Professor Wayne McKenna (Deputy Vice Chancellor, Academic and Research), Mr Angelo Kourtis (Executive Director Engagement and Partnerships) and Dr Sev Ozdowski (Director, Equity & Diversity). Professor Brian Uy gave a brief presentation of the current Civionics Research Centre research activities and future research plans for the Institute for Infrastructure Engineering. Professor Brian Uy, A/Professor Sergiy Kharkivskiy, Dr George Vasdravellis, Dr Mithra Fernando and Mrs Magdalene Wong-Borgefjord then hosted a tour of the facilities and highlighted some key research.

Professor Uy and Dr Fernando also attended a Penrith Business Alliance meeting on 27 September hosted by Paul Brennan (Chairman, Penrith Business Alliance) where the Hon. Chris Pyne, Senator Marise Payne and Stuart Ayres (State Member for Penrith) listened to members about current issues regarding apprentices and training in the Penrith region.

Outstanding Industry Partner Award

The Outstanding Industry Partner Award was presented to Scott Jameson of Mulgoa Quarries by Dr Jeffrey Zou on 23 June. Mr Jameson was nominated for the award by School of Engineering graduate, Phira Na who undertook a paid internship at Mulgoa Quarries and who has since been offered permanent employment. Phira’s internship was the first link Mulgoa Quarries has had with UWS.

Science and Engineering Challenge

Another successful Science and Engineering Challenge was held on June 30. Two hundred and twenty five students from seven local schools participated in this year’s challenge. Schools competed in a number of fun and interesting activities including “Back to the Future”, “Confounding Communications”, “Eco-Habitech”, “Future Power”, “Escape from the Lost World”, “The Dish”, “Gold Fever” and “Mission to Mars”. All activities were designed to show students the practical side of careers in science and engineering. The Challenge got underway around 9:30am and concluded at about 2:45pm with the spectacular testing of the bridges. Students became highly engaged in their respective tasks to the extent where many students delayed having lunch to continue working on their projects. This year’s event was won by Patrician Brothers College, Fairfield. Dr Sasha Alexander, Associate Head of School, was the guest of honour who highlighted the importance of team work in Science and Engineering during his speech.
Honours Conference 2011
The UWS School of Engineering Bachelor of Engineering (Honours) and Bachelor of Construction Management (Honours) Conference held on 30 September provided this year’s Honours students with an opportunity to present their research work to industry guests, staff in the School and other units of the University, their peers and prospective honours students. The event also provided industry guests with an opportunity to meet the students and staff, and to discuss the research undertaken in the School.

This year 27 Honours students in Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, Robotic & Mechatronic Engineering, Telecommunication Engineering and Construction Management programs gave oral presentations on their research topics.

September Graduation Ceremony
School of Engineering graduates celebrated the September graduation ceremony on September 28, 2011 at the UWS Parramatta campus. This ceremony saw 126 of our students graduate.

It is a great achievement for the School to see our undergraduate students successfully complete their degrees to become graduates on the verge of their professional careers, and to see our postgraduate students complete their degrees further developing their professional careers and opportunities.

Congratulations to all our graduating students for all their hard work and dedication and a very special congratulations to our graduating PhD students, Pushpika Wijesinghe and Paul Morrison.
Honours Conference 2011
Prizes were awarded to the following students for best presentation in their program:

**Presenter:** Jude Rodricks
Damage Detection of Steel-Concrete Composite Structures Using Vibration Measurements

**Presenter:** Adrian Conditsis
Investigation of Recycled Concrete Stainless Steel Filled Tubes in Construction

**Presenter:** Kumar Parikh
Timing Synchronisation of OFDM Systems

**Presenter:** Albert Mahoney
Corner Joint Seam Detection in Robot Welding

International Workshop on Steel and Composite Structures
The International Workshop on Steel and Composite Structures was held on 9 August 2011 at the Centre for Civionics – Infrastructure Engineering. Professor Lin-Hai Han from Tsinghua University, China presented a keynote paper on “Analysis on CFST Column to RC Beam Joints under Fire”. There were seven presentations, including two keynote speakers which attracted more than 20 members and PhD students to attend.

Electronics News Future Awards
Prof Jonathan Tapson attended the Electronics News Future Awards, which recognise excellence in Australian and New Zealand electronics and was a keynote speaker at the breakfast. He gave a presentation on Innovation and Entrepreneurship, in which he discussed the strengths and weaknesses of the Australian electronics industry from an entrepreneurial perspective. The Future Awards are intended to help raise the profile of electronics innovation and give designers and system integrators across the country a stage on which to promote their electronics design and ingenuity. The winners were announced at an Awards Breakfast, which included a networking breakfast and panel discussion on the future of the Australian electronics industry. A full report on the event and the panel discussion will be carried in the October or November issue of Electronics News.
New Academic Appointments for the School of Engineering

Dr Vute Sirivivatnanon has accepted the position of Associate Professor of Construction Materials and will commence in January 2012. Dr Sirivivatnanon’s area of expertise is in concrete construction and waste utilisation and he was formerly employed by the CSIRO as a research scientist. He is currently the Research Manager of the Cement, Concrete and Aggregates Australia and is considered Australia’s foremost concrete technologist.

Dr Helen Wu has accepted the position of Senior Lecturer in Structural Control and Dynamics and will commence in January 2012. Helen’s areas of research expertise includes earthquake engineering, vibration health monitoring and evaluation of large civil infrastructures and vibration diagnostics of machine faults. Helen is currently a Lecturer at Edith Cowan University and has previously worked for Hyder Consulting including work on the world’s tallest building, the Burj Khalifa in Dubai.

Dr Chunhei (Richard) Yang has accepted the position of Associate Professor in Smart Structures and will commence in January 2012. Richard’s areas of research expertise include smart materials. Richard joins us from Deakin University holding the rank of Senior Lecturer.

Dr Xiaohua (Sean) Jin has accepted the position of Senior Lecturer in Project Management and will commence in October 2011. Sean’s area of research expertise is in construction project management and he joins us from Deakin University where he is currently a Lecturer.

Dr Jing (Rebecca) Yang has accepted the position of Lecturer in Project Management and will commence in January 2012. Rebecca has recently completed her PhD titled, ‘A Framework for Stakeholder Management in Construction Projects’ and she joins us from Deakin University where she is currently a Research Fellow.

New Academic Appointment for the Centre for Civionics

Dr Sergiy Kharkivsky has been appointed to the position of Associate Professor in Sensor Technologies and commenced on 1 July 2011. Dr Kharkivsky received a Diploma in Electronic Engineering from Kharkov National University of Radioelectronics, Ukraine, in 1975, and his Ph.D. and D.Sc. degrees in Radiophysics from the Kharkov National University, Ukraine, and from the Institute of Radio-Physics and Electronics (IRE) of National Academy of Sciences of Ukraine, Kharkov, in 1985 and 1994, respectively. Prior to joining UWS in July 2011, he was a Member of the Research Staff at IRE from 1975 to 1998, a Professor in the Electrical and Electronics Engineering Department at the Cukurova University, Adana, Turkey, from December 1998 to February 2003, and a Research Associate Professor in the Applied Microwave Nondestructive Laboratory (amntl), the Electrical and Computer Engineering Department at Missouri University of Science and Technology, Rolla, USA, from March 2003 to June 2011.

Visiting Research Fellows

Dr Linren Zhou, from the Dalian University of Technology arrived on 30 August and will be a visiting fellow with the Centre for Civionics – Infrastructure Engineering over the next year. He will be working with Dr Grace Yan on her research project, Structural Health Monitoring and Damage Detection of Cable-Stayed Bridges.

Professor Lin-Hai Han, Professor of Structural Engineering and Director of Institute of Disaster Prevention and Mitigation Engineering, Tsinghua University, China visited in August as part of his Eminent Research Visitor Fellowship at UWS. He was working on the research project of “Australian-Chinese Research Collaboration on Concrete-filled Steel Tubular Columns Under Extreme Loads”.

Dr Zhibin Wang, Lecturer of Structural Engineering, Fuzhou University, China is visiting the Centre for Civionics – Infrastructure Engineering from August 2011 to January 2012. He is working on two research joint projects with Associate Professor Zhong Tao, Dr Vivian Tam, Professor Brian Uly and Dr Fidelis Mashiri.

Dr Xingqiang Wang, Associate Professor, Civil Engineering, Jinan Railway Institute of Technology, China is visiting the Centre for Civionics – Infrastructure Engineering from August 2011 to February 2012. He is working with Associate Professor Zhong Tao on research relating to material behaviour of stainless steel at elevated temperatures and after exposure to fire.

Staff Development

Congratulations to Dr Olivia Mirza, Dr Vivian Tam and Dr Khoa Le who have completed the Foundations of University Learning and Teaching program at UWS.

Congratulations to Jodie Clark who has completed the Diploma of Management course offered by the Competency Training Institute of Australia through UWS.

Staff News

Congratulations to Mary Hardie who became a first time grandmother to Lorelei born in September.