A word from the
SCEM Director of Research and HDR

Thank you for everyone who actively participated in and contributed to the School Research Futures Postgraduate Forum on 6-7 June 2012 Penrith (Werrington South) Campus. I hope that you all had a rewarding and enjoyable time at the forum from the PVCR Professor Andrew Cheetham’s opening speech, keynote speaker Dr Ian Collins from CSIRO, session presentations, panel interviews, and conversation with colleagues and HDR students.

The School would like to thank HDR candidates Win Maung, Maneesh Mathai, and Mahmoud Elkhodr who participated in the School 3 Minute Thesis Competition on 6 June 2012 during the inaugural School Research Futures Postgraduate Forum. I would also like to thank academic staff Andrew Francis, Chin Leo and Janusz Nowotny for serving on the Selection Panel.

The Selection Panel indicated that all three students did an excellent job. Based on the judging criteria and the presenter’s performances, the Selection Panel announced that MHon candidate Mr Maneesh Mathai won the competition with a prize. Maneesh will represent the School of Computing, Engineering and Mathematics to participate in the UWS Final 3 Minute Thesis Competition to be held on 10 August 2012. Congratulations to Maneesh!

At its May meeting, the School Research Committee decided to review the organising of School Research Futures Postgraduate Forum for further improvement. Thus, if you have any comments and suggestions on the School Research Futures Postgraduate Forum, please send them to me and Cheryl Murray c.murray@uws.edu.au

I look forward to your participation in and contribution to next year’s School Research Futures Postgraduate Forum.

Professor Wei Xing Zheng

Star Gazing at Penrith Campus

UWS recently welcomed local star gazers to the Penrith campus Observatory to witness a rare celestial event. The Transit of Venus took place from 8.15am to 2.45pm on Wednesday 6 June, marking the last opportunity for most to observe the planet Venus passing directly between Earth and the Sun.

Associate Professor Miroslav Filipovic, Director of the UWS Observatory, explains that the Transits occur in cycles of more than 100 years, and in pairs.

“The first of our pair occurred in 2004. After the June 2012 Transit, Venus will not pass between Earth and the Sun again until December 2117 and 2125. Captain James Cook sailed to Tahiti to observe a pair of transits occurring in 1761 and 1769, and subsequently discovered the coast of Australia; the next transits took place in 1874 and 1882.”

In order to see the Transit clearly and safely, the use of specialist equipment was recommended. The University’s computerised telescopes were fitted with special solar and prominence filters for the occasion.

Viewed from Australia, Venus appeared as a small silhouette on the surface of the sun.

Observers were delighted to be a part of history as they witnessed the planetary Transit of Venus, the last of the only two occurrences this century.

“The Transit of Venus is an extremely important celestial event. For all of us alive today, this was the last chance to see such an interesting and rare phenomenon,” says Associate Professor Filipovic.

Images from the School’s 2012 Research Futures Postgraduate Forum

Pictured left to right Dr Yang Xiang and Professor Wei Xing Zheng
Dr Ataur Rahman and Dr Yang Xiang
Nabeel Shah, Mazin Aouf, Dr Zhuhan Jiang and Dengji Zhao

Dr Yogesh Deshpande, A/Prof Surendra Shrestha and Dr Seyed Shahrestani
Images from the School’s 2012 Research Futures Postgraduate Forum cont....

Pictured left to right A/Prof Miroslav Filiopovic and Dr Yaping He
Dr Yogesh Deshpande, Mark Tawadros, Chris Young and Pavlick Harutoonian
Heidi Bjering, Prof Anthony Maeder and Dr Jeewani Anupama Ginige
Chris D'Souza, Ashini Wesumperuma and Win Maung
Honours Poster Presentation at the SCEM Research Forum

Innovation in Health Informatics

Avtar Gill and Dr Joanne Curry at the NASSCOM Innovation Student Awards.

University of Western Sydney student Avtar Gill has been awarded the inaugural NASSCOM Innovation Student Award for his sophisticated smart-phone application ‘Step on it Program’ at the CeBIT conference held recently.

Avtar, a student with the School of Computing, Engineering and Mathematics, designed his app as a project with his company ‘Health Pointe’ and with help from his university staff. He believes it is innovative and user-friendly.

“The app is designed to help monitor the smartphone user’s body data, for example height, weight and age,” says Avtar, who is studying the Bachelor of Information and Communications Technology.

“50 per cent of the population is overweight or obese and the app can help them analyse their health by providing rapid feedback, recommending exercise or dietary programs and charting their progress as they undertake the recommended program.”

Information technology is not Avtar’s only area of expertise. Prior to commencing his Bachelor of ICT, Avtar completed a Bachelor of Medicine/Bachelor of Surgery in the United Kingdom, Family Physician Training in Victoria and a Fellowship of the Australian College of Psychology.

Avtar had been a practising doctor for more than 20 years before he moved into IT and believes this has given him a better understanding of the app’s users.

“I changed career paths because I felt ICT would allow me to help working Australians improve their health,” says Avtar.

“My work in medicine has given me an understanding of the health needs of Australian society, especially ‘time poor’ mum and dads who don’t have the time to assess and improve their health.”

With health informatics and technology becoming increasingly important in the medical field, Avtar feels smartphone technology is a path to a healthier population.“Health and well being is important and to combat problems with smarter technology is the way to go,” says Avtar.

“Doctors can use new technologies to be more efficient and give value to time with their patients by utilising data automation tasks, amongst other things.”

Dr Joanne Curry, Director of Academic Program of the Bachelor of Information and Communication Technology, can also see the potential of the ‘Step on it Program’ app.

“The NASSCOM Innovation Student Award recognises Avtar’s hard work and belief in improving the health and wellbeing of Australian society as a whole,” says Dr Curry.

“The app has the potential to make a real difference in the lives of working Australians and I congratulate Avtar on his innovation and achievement.”

Avtar was presented his award by the Hon. Sachin Pilot, Minister of State in the Ministry of Communications and Information Technology, Government of India, The Hon Greg Pearce, Minister of Finance, NSW and Mr Paul Toole, MP and Parliamentary Secretary to the Deputy Premier and for Asia-Pacific Trade.

Avtar will continue to develop and improve his app with ‘Health Pointe’.
Mr Sumudu Wijetunge, PhD candidate in Engineering, attended the International Conference in Computing and Information Sciences (ICCIS 2012) in Kuala Lumpur, Malaysia to present a paper on “Data Transmission Reliability of IEEE 802.15.4 Based Wireless Sensor Networks with Synchronised Periodic Data.” In this paper he investigates the IEEE 802.15.4 MAC protocol, widely used in current wireless sensor networks (WSNs). The protocol shows poor data transmission reliability in delay-sensitive synchronised periodic monitoring applications due to synchronicity in data transmission procedures and a short backoff window length. In this paper, a new transmission strategy is proposed that has an additional random delay to overcome the above synchronicity problem and to increase the waiting time prior to data transmission. The improvements achieved in data transmission reliability with the new strategy are verified using ns-2 simulations. The effects of the strategy on the maximum delay in data transmission and the average power consumption are also discussed. Sumudu Wijetunge’s supervisory panel consists of Dr Upul Gunawardana, Dr Ranjith Liyanapathirana and Dr Qi Cheng. The conference attendance was financially supported by the school.

Dr Ranjith Liyanapathirana, Senior Lecturer in Telecommunications, was the academic opponent (Fakultetsopponent in Swedish) at a PhD thesis defence (spikar) at School of Computing, Blekinge Institute of Technology, Sweden. The thesis was on “Perception-Based Error Protection for Mobile Multimedia” written by M I Iqbal under the supervision of Professor Dr Ing Hans-Jurgen Zepernick, Director of Radio Communications. The defence was successful and it was followed by the colourful ‘spikar’ ceremony where the student physically nailed a copy of the thesis on to the wall where all previous theses have been posted. The examination committee consisted of, in addition to the opponent, three external examiners from Germany, Slovakia and Sweden. The importance and the elaborate nature of the public defence act in Swedish universities is quite different to the process followed at UWS and many Australian institutions.

Ms Madhuka Jayawardana, PhD candidate in Engineering, supervised by Dr Xinzun Zhu and Dr R Liyanapathirana, has been successful in obtaining a research internship at Laboratory of Computer Sciences, University of Pierre and Marie Curie, Paris, France. She will be overseas for a period of three months carrying out research in “Compressed sensing for distributed structural health monitoring”. The project investigates improved damage detection and localization algorithms for civil infrastructure using wireless sensor networks. Madhuka has published two journal articles and a number of conference papers in the area of structural health monitoring.

SCEM Welcomes New HDR Student

The School welcomes Sangeeta Bhatia a new PhD candidate

Qualifications: MSc(Applied Mathematics) University of Tulsa, USA; MSc( Software Engineering) BITS PILANI, India; BSc Fergusson College, India.

Topic: Algebraic modelling of evolution in mitochondrial DNA.

Supervisor: Associate Professor Andrew Francis

PHD Student Wins a Top- up CSIRO Scholarship

Muhit Rahman recently won the 2012 CSIRO top up Postgraduate Scholarship within the Water for a Healthy Country Flagship (position number NO1822).

The purpose of the CSIRO award will be to further assist Muhit in his PhD studies. Congratulations Muhit!

Three Minute Thesis Winner

Mr Maneesh Mathai was the winner of the SCEM three minute thesis competition at the Postgraduate Research Futures Forum held at Penrith in June and will go on to compete in UWS competition at 2:00pm on the 10th August 2012 at the Ian and Nancy Turbot Auditorium, Parramatta Campus.

Good Luck Maneesh!
A word from your School Librarian

Not sure which database to use?

The Library Subject Guides will help you decide. http://library.uws.edu.au/nResources.php

Subject Guides offer a selection of the most relevant databases and discipline specific web resources for each subject area.

Each subject guide contains links to:

- Databases
- Electronic journals
- Web resources
- Additional research tools (including Scopus, Web of Science & Google Scholar)
- Referencing & citation guides and tools

Where to go for help

- Visit your campus Library and speak to a staff member wearing a red shirt
- Contact Information Central on 02 9852 5353

Linda Thornely
l.thornely@uws.edu.au
Computing, Engineering and Mathematics Librarian
Phone: 02 9852 5907 Fax: 02 9852 5918

The Seven Secrets of Highly Successful PhD Students

The seven secrets revolve around the following main Points

- Care and maintenance of your supervisor
- Write and show as you go: This is show and tell not hide and seek
- Be realistic: It’s not a Nobel Prize
- Say no to distractions: Even the fun ones and the ones you think you must do
- It’s a job: That means working nine to five but you get holidays
- Get help: You are not an owner-operator single person business
- You can do it: A PhD is 90% persistence and 10% intelligence

This, and other titles, are available from; http://ithinkwell.com.au/bookshop.php

Editor

To contribute to this newsletter or contact the Editor Cheryl Murray see below:
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