

InFoST

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A message from the Executive Dean

Professor John Yearwood, Executive Dean, Faculty of Science and Technology

This final InFoST newsletter for 2014 marks the end of a very successful year for FoST. The newsletter stories have documented many of the successes in the Faculty throughout the year. There have been 4 books published by staff with a number of successful book launches and there have been successes with OLT awards, the E J Barker Fellowship Award, our Faculty Student

Awards, the formation of two new Industry Advisory groups in IT and in Mining.

On the Learning and Teaching front, substantial progress has been made in transforming curricula across the Schools so that students are supported in their learning by rich online digital content and significant progress has been made in making all programs in the Faculty available online. Already many programs are offered online and by 2016 all programs will be available online. 2014 has seen delivery of a single IT degree across both campuses and online and staff developing models for doing this very effectively.

With the engagement of new staff, the Bachelor of Engineering (Mechatronic Systems) will commence next year at Churchill with pathways from Certificate and Diploma programs at Federation Training. There will be a single Bachelor of Science program and a single Bachelor of Biomedical Science commencing in 2016.

On the research front the Faculty has been working with Research Services to ensure a high quality ERA submission for 2015. There are still strategic decisions being made about the final set of 4 digit FOR codes to be put forward but an extraordinary meeting of the Faculty Board has made recommendations to the DVC (RI).

I would like to thank all staff for the great work done on curriculum and delivery renewal and on the preparation for the ERA submission. I would also like to recognise a very large number of staff that have taken the opportunity to engage with industry, the community and schools. This is vital for a regional University.

On the International front, the IT numbers at our onshore partners shows signs of being strong and we are about to start offering Engineering programs in Sydney and our Environmental Science program in China with future prospects for Food and Nutritional Sciences.

There have been many successes throughout 2014, many new staff and some staff retirements. It has again been a turbulent year. 2015 is shaping up to be a very challenging year financially and there is the specter of the 20% cut to the University sector and how that will play out. On a more positive note, I do think that the Chief Scientist is starting to get some traction with recognition that Australia has to lift its game in the STEM disciplines across the board.

Thanks to each and every one of you for the enormous effort that you have put in this year; I did not mention the AQF. A special thanks to our administrative staff and technical staff who again have been able to play as a team to get the jobs done in circumstances where administrative structures remain unresolved. Have a peaceful and restful holiday period and make it a great New Year.

FedUni student discovers new springtail species

A new species of springtail has been discovered in Western Australia by **Penelope Greenslade**, a PhD graduate from Federation University Australia.

Dr Greenslade, 76, was only recently awarded her PhD and was likely the oldest higher degree graduating student in Victoria at the time – but 93 year-old Elizabeth Kirkby has just been awarded this degree in New South Wales.

“The new species, *Australotomurus morbidus*, is only found on the Perth sand plains, which is now effectively completely urbanised except for a few tiny pockets of the original heathland,” Dr Greenslade said.

“The species name, morbidus, is because the species was first found in a cemetery.

“This discovery extends the distribution of the genus 2000 km to the west of previous sightings.”

Australotomurus morbidus, is the first species in the genus found to possess male secondary sexual characters on antennal segment III as well as on antennal segment I.

“Typical habitats for the *Australotomurus* species are long undisturbed native grasslands and heathland at low and high elevations,” Dr Greenslade said.

“*Australotomurus morbidus* is the only species in the genus currently vulnerable to extinction because of its restricted distribution to only four localities, all of which are subject to considerable human disturbance.”

It was listed as critically endangered when it was known from only the cemetery but was delisted a few years later when three other locations for the species were found.

“The history and records of this species suggest that listing species using current Western Australian legislation does not necessarily protect vulnerable species,” Dr Greenslade said.



Dr Greenslade with Professor Peter Gell after her graduation

Awards and Recognitions

Congratulations to:

- **Dr Jessica Reeves** who has been awarded the 2014 E J Barker Fellowship Award. The E J Barker Fellowship was established by the University Council to support the professional development of academic and teaching staff. The Fellowship is awarded biennially.
- **Dr Lara Wakeling** who is a recipient of an award for Teaching Excellence as part of the Vice-Chancellor's Teaching Excellence and Citation Awards for Contributions to Student Learning 2014

Lara's award is for the development and implementation of innovative curricula and resources designed to prepare future food science professionals to work safely and competently in laboratory settings.

- **Andrew Greenhill** who recently won the **Rising Star Golden Apple Award**. This is an annual award, with staff nominated and voted for by the students on the Gippsland campus. Four other staff from the Faculty were nominated: **Wendy Wright, David Piedrafita, Janee Hoch** and **Barbie Panther**.
- **Dr Harpreet Kandra** who graduated recently with his PhD from Monash University in the area of Performance Assessment of Porous Pavements/Fine Media Filter Systems.
- Student, **Craig Bolitho**, who was recently awarded the **Canavan Award**.

The **Frank Canavan Award** was set up in 1996 by Mrs Canavan in honour of her late husband Frank, a well-known Victorian geologist who was very active in promoting geological education and was a member of the Education Subcommittee of the Division. The Award is a cash sum for the purchase of geological textbooks, and is awarded to the most promising student who has finished second year geology at a Victorian university, as judged by the student's academic performance.

- HDR Student **Nusrat Nowsheen** and her PhD supervisors - **Dr Gour Karmakar** and **A/Prof Joarder Kamruzzaman**, all from the School of Engineering and Information Technology (Gippsland campus), who have been presented with the **Asia-Pacific Conference on Communications 2014 (APCC2014) Best Paper Award**. Their joint paper titled '*MPDF: Movement Predicted Data Forwarding Protocol for Underwater Acoustic Sensor Networks*' was selected as the top paper among all papers presented at APCC2014 in October.
- Fed Uni's Collaborative Research Network (CRN) Research Fellow, **Dr Giri Kattel** received the Natural Science Foundation of China (NSFC) Visiting Scientist Fellowship at the Nanjing Institute of Geography and Limnology Chinese Academy of Sciences.

PhD student success with VC's citation for Excellence in Research



Dr Sachindra Dhanapala recently graduated with a PhD from Victoria University where he was awarded the Vice Chancellors Citation for Excellence in Research. Only 3 citations were given from a pool of 80 PhD graduates. Sachindra was co-supervised by FedUni staff member **Dr Andrew Barton** and his thesis was

titled *"Catchment Scale Downscaling of Hydroclimatic Variables from general Circulation Model Outputs"*. The project was funded by an Australian Research Council Linkage Project with further financial support from Grampians Wimmera Mallee Water Corporation.

The Vice Chancellors Citation reads: *"For exemplary achievement and contribution as a graduate researcher. This has included a very highly rated thesis project in an area of great Australian and international significance that has generated high quality publications and raised Victoria University's external profile in climate change impact studies of water resources, as well as outstanding industry engagement."*

University to host prestigious international conference

Federation University Australia has been announced as the host of the IEEE International Conference on Mechatronics which will be held at the Gippsland Campus in February 2017. The conference will be a great boost to the profile of FedUni nationally and internationally. "The conference also will help the marketability of our new mechatronics program and draw attention to the engineering programs at FedUni," **Professor Yousef Ibrahim** said.

Hosting this international event in the Latrobe Valley will create many economic and social benefits to the region by promoting regional Victoria internationally and lifting the profile of FedUni nationally.

Trips throughout the region also will be available for conference delegates. "Catering, social functions and hotel accommodation will feature Latrobe Valley suppliers, which will assist the economy of the region," Professor Ibrahim said.

"An industrial exhibition also will be available within the conference to promote the technical enterprises in regional Victoria.

"The conference will expose the local industry to the latest in industry automation for enhancing sustainability and profitability."

Professor Ibrahim acknowledged the letters of support to host this international event in Australia received from Minister Louise Asher; Minister Russell Northe; the Mayor of Latrobe City; Professor David Battersby, Vice-Chancellor of FedUni; the Chair of Regional Development Australia, Gippsland; and the Head, AGL Loy Yang Generation.

Melbourne Convention Bureau also helped in the professional compilation of the successful bidding document.

AusIMM Technical Seminar

Larissa Koroznikova

Federation University Australia hosted an Australian Institute of Mining and Metallurgy (AusIMM) Technical Seminar, 24th of October, in the Science and Engineering Building at the Mt Helen Campus.

The Annual Seminar of the Central Victorian Branch of AusIMM saw industry professionals from across the country come to Ballarat. Twelve technical presentations aimed to update members on current and new aspects of metallurgical developments. Presenters included Gekko Industries, Stawell Gold Mine, Fosterville Gold Mine, Costerfield Mining, Newcrest Mining, BHP Billiton and Townsville Nickel Refinery.

The seminar focused on the application of new technology aimed at better understanding of ores and how the potentially commercial metals may be extracted from them. This is a most vexing area of the mining industry as there are many resource rich deposits that have failed to be developed due to the lack of profitable recovery processes. As always, better outcomes are dependent on a myriad of factors and this seminar looked at the role of metallurgy in enhancing mine performance with a greater emphasis a creating a deep understanding of the more difficult ores.



This Seminar was well attended, 50 professionals and 50 students. This metallurgical seminar offered a great opportunity for students to witness the development and application of cutting edge methods and systems in metallurgy.

For some of the professionals involved it was a return to the university where they gained their degrees and went on to forge their successful careers.

Federation University welcomed back former students such as **Mark Davis** and **Justin Spalding** from Castlemaine

Goldfields Project and **Damon Buchanan** and **Sam Madin** from Mandalay Resources, **Matt Shaw** from CBH Resources – Rasp Mine all of whom have gone on to have successful careers in the Industry.



Ilan MacCulloch and Prof Mark Sandeman at the Seminar

Following the Technical Update Seminar, attendees attended an AusIMM Directors Dinner at the George Hotel, where **Ian Plimer** launched his new book 'Not for Greens'. Professor Plimer is a renowned geologist and Professor (Emeritus) of Earth Sciences at the University of Melbourne. He is Professor of Mining Geology at the University of Adelaide, and the director of multiple mineral exploration and mining companies. Ian has published 130 scientific papers, six books and edited the Encyclopedia of Geology.

GB O'Malley Presentation Evening

The Central Victoria Branch has a proud history of supporting the Student Chapter of the Australian Institute of Mining and Metallurgy (AusIMM) at Federation University. The University AusIMM Student Chapter was formed in the mid-1990s and provides a direct link between the University, its students and the mining industry.

The Chapter also provides the students with personal and professional development opportunities. An important one is the GB O'Malley Medal award in which students compete in presenting their 3rd year and honours project to mining professionals.

The O'Malley award is an annual national competition in which each State branch holds its own presentation event with the winners presenting their paper to the annual congress of AusIMM.

This year's Central Victoria Branch competition was held in Ballarat on 7th of November and 7 papers were presented. The jury of professionals selected **Esther Stewart** for the first prize, **Barry Tuncks** for second and **Matt Mason** for third prizes. Congratulations to all who presented and we wish Esther good luck in the next phase of the competition.

About GB O'Malley:

Geoff B O'Malley joined The Institute in 1927 as a student member becoming an inaugural committee member of the Melbourne Branch when it was created in 1936. He worked as a Senior Lecturer in mining and metallurgy at the School of Metallurgy at Melbourne University.

Joining the AusIMM Council in 1940 he was selected as

Vice-President from 1943-1946 and in 1948 as Honorary Executive Officer. His focus was liaison with branches, canvassing new membership and initiation of new technical activities.

He was elected President in 1950 and was awarded the Institute Medal in 1957.

Geoff was a member of all Institute committees at one time or another and was made an Honorary Member in the 1970's.

He retired in 1976 and died in 1990.

The **GB O'Malley Medal** award was established in 1986 to recognise his contribution made to professional development within the industry and it was first awarded in 1987.

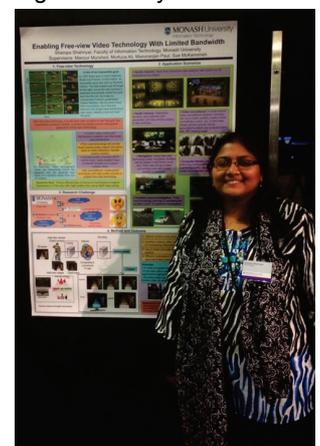


Outstanding effort from Information Technology HDR student

Gippsland PhD student **Shampa Shahriyar** has been making a great impression on several fronts lately, winning the Monash University Faculty of Information Technology HDR Poster Competition, as well as winning the Faculty of IT 3 Minute Thesis round also held by Monash University. Both of these presentations were focused on enabling free view on digital TV within a limited bandwidth.

Shampa, who is in her second year of thesis writing competed against an extremely strong field for both competitions and is very proud and pleased with her efforts. "Shampa's progress in her PhD candidature has been impressive and exemplary. Her recent successes in receiving the GHC Scholarship and winning two faculty-level competitions are recognition of her enthusiasm and persistence" said Shampa's supervisor, **Professor Manzur Murshed**.

Earlier this year, Shampa was one of 25 women selected from hundreds of applicants for a Facebook scholarship to attend the Grace Hopper Celebration of Women in Computing for 2014 in Phoenix Arizona. Her extra efforts truly are outstanding



University promotes environmental science in China

Federation University Australia has embarked on a series of environmental science programs in China.

Led by **Dr Giri Kattel** and **Professor Peter Gell**, the campaign utilises FedUni expertise to help address ecological problems and environmental issues in China.

Dr Kattel is preparing a report for China's Kunming University on its Dianchi Lake Water Pollution Prevention Research Program.

Dianchi Lake, the eighth largest lake in China and the largest in Yunnan Province, is 39 km long from north to south with an average depth of 4.4 metres. It is facing a severe environmental problem with critical management issues in recent decades as a result of industrial pollution and urbanisation.

"Our report will look at the best way the Chinese authorities can optimise the water resources in Dianchi Lake," Dr Kattel said.

"We will be looking at environmental science, water engineering, geology, and 'cultural ecology', how urban people perceive the value of the lake in their daily life, throughout our report."



Dr Kattel has just completed a three-week visit to Vietnam and China.

"I also visited a number of wetlands in the Hebei Province, as well one of the 11 member institutions of the local government endorsed our research on the environmental issues of Hebei Province" Dr Kattel said.

Professor Peter Gell visited the Hebei University of Science and Technology to meet with government environmental authorities and to discuss research projects.

This trip included a field visit to Hengshui Lake and discussions about research directed to improve the lake's management.

"Hengshui Lake has many features similar to our own lakes," Professor Gell said.

"Many of our own wetlands have lost productive aquatic plant communities owing to the water becoming more cloudy.

"Hengshui Lake may benefit greatly from measures to increase the clarity of the water to enable submerged plants to get enough light to grow actively.

"This would greatly enhance the condition of the system for birds and other animals.

"Such a change may also create algal problems, so any management needs to be supported by a strong research base," Professor Gell warned.

"By sharing our experiences of shallow, floodplain systems, both communities can strengthen their knowledge base to inform management."

Global Lakes Research Group

Professor Peter Gell will lead a global research group that will investigate the impact of humans on the state of the world's lakes.

The working group proposal, recently accepted by the executive of the International Geosphere Biosphere Program project 'Past Global Changes', is devised by Professor Gell and will use long term records of change to understand the impact of people on aquatic systems and the responsiveness of the lakes themselves to human pressures.

"Our project, Aquatic Transitions, has two main priorities," Professor Gell said.

"Firstly, we will assemble records of the earliest impact of humans on aquatic systems, as well as the maximum level of impact in more recent, intensive industrial times. This will be very early in Europe and later in the Pacific," Professor Gell said.

"Secondly, we will examine the nature of food web changes that may have occurred as a result of human pressures. Sensitive lakes change rapidly, and sometimes due to internal mechanisms, in response to small human pressures. Others are more resilient and can absorb a great deal of human impact."

Over the next three years the group will work to collate long term records of lake change across the globe, beginning with meetings in the UK in April, and in China next August.

"Australia has been a leader in documenting the impact of people on our wetlands using historical, and pre-historic, records of change archived in the layers of sediment in lakes," Professor Gell said.

"This line of research is gradually showing that few Australian lakes have resisted the pressures of recent catchment disturbance.

"We are able to quantify human impact using an unusual array of tools – time machines effectively, that provide a memory of our environments that has otherwise passed. We rarely underestimate our impact when we lay out the longer record of change that is now available."

The group aims to collate similar records of change from parts of the world where such records exist, and work to increase the capacity of those examining change in other parts of the world so that they can better understand the condition of their aquatic systems as well.

Nomination for Award

Dr Francine Marques has been nominated for the High Blood Pressure Research Council Australia early career oral award at the national conference which will take place in Adelaide in late November. Francine's study involves small endogenously produced molecules called microRNAs.

During her PhD, Francine had found that one of these molecules, called miR-181a, was associated to high blood pressure in human kidneys, through the regulation of renin, an important enzyme of a well-known system involved in the regulation of blood pressure. Francine and **Prof Fadi Charchar**, together with other researchers from the Baker IDI Heart & Diabetes Institute, Melbourne, have followed this up now in larger cohorts and also in a model of high blood pressure. The sympathetic innervation (responsible for the "fight-or-flight response") in the kidney is involved in the regulation of blood pressure, and renal denervation to decrease sympathetic activity is being used as a treatment for those with high blood pressure that cannot be treated by the use of medication (called "resistant"). In the present study, they denervated the renal sympathetic nerves of a model of high blood pressure. This resulted in changes in blood pressure and the levels of miR-181a and renin, suggesting that sympathetic nerves regulate both molecules. This is important because treatments targeting directly miR-181a could be used as an alternative treatment for high blood pressure.



FedUni to help develop an environmental watering management plan for the Ovens River.

A consortium consisting of Lloyd Environmental, FedUni and Independent Ecological Consulting has been awarded a \$65,000 contract from North East Catchment Management Authority to develop an environmental watering management plan for the regulated Ovens River system. This is great news and a positive reflection on the water engineering expertise of FedUni. This work will also help consolidate the strong relationship FedUni has with leading specialists Lloyd Environmental and Independent Ecological Consulting.

Work will commence in late November with the final deliverables due in April 2015. **Dr Andrew Barton** will lead the work by FedUni.

Faculty researchers joined by Chancellor and DVC Frank Stagnitti on field trip to Nanya Station



In early November **Chancellor Paul Hemming and DVC Research, Professor Frank Stagnitti** travelled to the Federation University Australia research facility, Nanya Station, in the far west of New South Wales to join a team of Faculty researchers and volunteers.

Nanya was purchased by the university in 2004, with government support, and is a valuable resource in the

University's research, conservation and education programs. Nanya Station is a magnificent 40,000 hectare property in far western New South Wales. Its unique system of natural salt lakes, old growth Mallee, and variety of intact ecosystems, makes Nanya a significant refuge for biological diversity. Nanya can accommodate more than 40 staff and students since the Station's original buildings were refurbished, and an accommodation block, ablution block and solar power system added.

Ass Prof Singarayer Florentine, Dr Grant Palmer, Em Prof Martin Westbrooke, Tim Simpson and Rosie Grundell along with six volunteers had a full program of fieldwork associated with two significant research projects.

Dr Hemming and Prof. Stagnitti took the opportunity to get involved in the research program which included a monitoring program for mammals, birds and reptiles, linked to a long-term research project investigating the biodiversity impacts of ground tank closure and recording of tree regeneration in a project funded by Environment Australia investigating techniques for restoration of arid woodlands.



L – R Prof Frank Stagnitti, Jenny Sedgwick, Louise Tomlinson, Dr Paul Hemming, Peter Sedgwick, Don Rowe, Emeritus Professor Martin Westbrooke

The research work was very successful with over 70 bird, 30 reptile and eight native mammal species being recorded during fauna surveys. Extensive regeneration of Belah, Rosewood, Sugarwood, Hakea and Mulga seedlings were recorded within grazing enclosures established as part of the

arid woodland research which highlighted the importance of passive restoration.

Following the trip Dr Hemming said "This FedUni site is clearly extremely important from an Australian perspective, but also represents some amazing and exciting opportunities for our students and for the university as a whole. I am extremely honoured and proud to be the Chancellor of FedUni, as we work in such an exciting and important area".

Regional University Network (RUN) Maths and Science Digital Classroom Project

The Regional University Network (RUN) Maths and Science Digital Classroom Project has its official launch at the University of Southern Queensland (Toowoomba) on December 11th, 2014. This project was designed to engage Year 9 and 10 maths and science students with university scientists and mathematicians. Fed Uni is a project partner in this initiative and **Tara Draper** presented our course "Time-trekking through climate change" at the launch. This project would not have been a success without the considerable help of **Dr Jessica Reeves** and assistance from **Ms Lydia Kinghorn** as well as **Mr Bruce Armstrong**, **Dr Mani Naiker**, **Dr Savin Chand** and **Dr Stephen Carey**.

Tara also represented FedUni, presenting a workshop at the Earth Ed Climate Classroom Conference on December 5th. This conference is aimed at helping secondary teachers effectively teach climate change from within their classrooms with the keynote address given by Professor Tim Flannery!

Associate Professor Madhu Chetty attends Prime Minister's Reception

The Honourable **Mr. Tony Abbott**, Prime Minister of Australia recently hosted a reception in honour of **Mr Narendra Modi**, Prime Minister of the Republic of India, in the Olympic Room, Melbourne Cricket Club, Melbourne Cricket



(past and present).

Associate Professor Madhu Chetty, from the School of Engineering and Information Technology, Gippsland was among the select few to be invited to this function – in his capacity as the Australian chief investigator administering the large Indo-Australian joint research project, "*Solar Bio-fuel*

and carbon sequestration with cyanobacteria: Role of Genetic Networks". Just briefly, this grant totals approximately \$A0.6 Million, and is funded jointly by both the Government of India and the Australian Federal Government.

Apart from the honour of being invited to such a high profile event, Madhu and other guests had the opportunity to "meet and greet" (and take autographs) with the two Prime Ministers. The reception was attended by a number of celebrities including famous cricketing legends such as **Sunil Gavaskar**, **Allan Border**, **Kapil Dev**, **Dean Jones** and also current leading politicians including **Bill Shorten**, **Daniel Andrews**, **Dennis Naphine** and others. Equally breathtaking was the big opportunity to hold and be photographed with the "real" ICC World Cup 2015. It was a really momentous occasion which Madhu, we are sure, will cherish for long time! If you are interested in seeing further photographs, please feel free to contact Madhu directly madhu.chetty@federation.edu.au

IT Discipline within the Faculty of Science and Technology

Richard Dazeley

With the new School formed the IT Discipline has been settling in to the new structure. It has been great to see the positive attitude with which staff from both campuses have embraced the new School, with many teaching and research collaborations emerging even in the first year.

Teaching

This year many staff have enjoyed the freedom they have been provided in being able to explore innovative approaches to teaching. We have seen staff introduce and experiment with new technologies and teaching pedagogies more rapidly than ever before. Many staff have enjoyed the creative process of finding new ways to present their material, with students also enjoying the new approach. For instance, we have many staff developing innovative and engaging videos, ebooks, forum discussions, quizzes with embedded support, etc. With all the additional online material many staff have been introducing new active class room activities. Some have reported how they have used more flipped class room approaches, open discussions, group discussion, Socrative or Moodle quizzes in the class room etc. This year has seen one of the largest transformations in teaching the IT discipline has seen.

Accreditation of IT programs

The Australian Computing Society (ACS) have released their final report on the University's Information Technology offerings. The Panel has recommended conditional and/or provisional accreditation of all the submitted programs. This is great news for the School and means any prospective students will know that completing our programs allows them to graduate at a professional level. This successful accreditation has required a significant amount of work by a number of both academic and administration staff. This process has been very long and has involved a significant amount of extra work to prepare documentation and resolve issues that have arisen.

Curriculum

Now that the year is closing the discipline will be getting together to discuss the curriculum in the IT programs. This will be an exciting opportunity to review the suit of streams

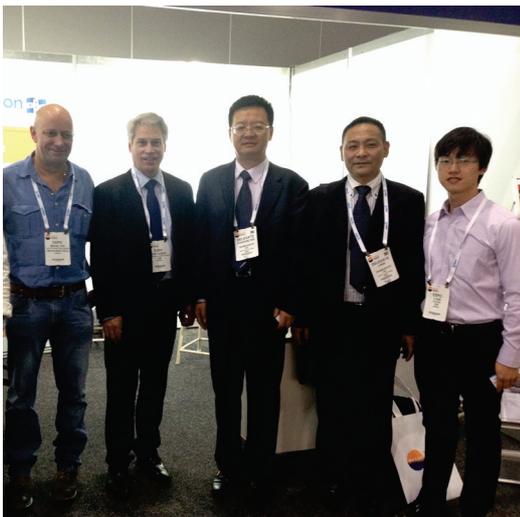
and offering and to ensure what we offer is relevant to our future graduates, appealing and engaging to students, and can be delivered effectively across each of our campuses and partners. These discussions will help provide direction to the future direction of the IT curriculum.

International Mining and Resources Conference 2014 (IMARC)

The IMARC Conference was held at the Melbourne Convention and Exhibition Centre on 9 – 13 September and is a major event for international and Australian mining leaders. The Faculty provided presentations from staff and students on key aspects of our research and capabilities related to mining.

Some of the main outcomes were:

- Enabled us to raise the profile of FedUni capability and research in mining areas.
- Establish further links with mining related industry including the China Mining Association.
- Further promote our work to the Minister Russell North and government department representatives such as AusTrade, AusIndustry and DSDBI.
- Feedback on graduate attributes for input to the Industry Advisory Group.
- Discussion of tailored courses into industry.



L-R Mick Tuck, John Yearwood, Changzhong Tang, President Beijing SD Company, Ji Wang, President Zhejiang CNGEO & Yi Chen at the conference

BiG Day In IT Careers Conference 2015 – Building Opportunities for Successful Students

The ACS Foundation and Federation University (through the Faculty of Science and Technology) are delighted to host the BiG Day In IT Careers Conference in the Founders Hall, Caro Convention Centre, Federation University on Thursday 24 March 2015.

There will be leading speakers from companies such as Westpac and WiseTech Global plus loads more to come, talking about the future of technology and how students can get involved in shaping the future. Students will hear from industry speakers and visit exhibitor stands to learn about

where a career in IT can take them – speakers and exhibitors to be confirmed in early 2015.

If you are aware of any IT students who might be interested in helping out as ambassadors, or have industry contacts who may be interested in exhibiting please let **Kara Hodgson** know at: k.hodgson@federation.edu.au
Find out more: www.thebigdayin.com.au

Annual Meeting of AMSI

The Annual Meeting of the Australian Mathematical Society (AMSI) is the largest regular gathering of mathematicians in the country. The 2014 meeting took place last week at the University of Melbourne and was held jointly with the New Zealand Mathematical Society, and attracted a record 470 participants. Amongst them were six staff and students from FedUni: **Jo-ann Larkins, Alexander Kruger, Musa Mammadov, Soorena Ezzati, David Yost and Thao Nguyen**. Between them, they delivered seven short talks, in the Optimization, Education and Geometry sessions. As a member of the Society's governing Council, **David Yost** also took part in the all day council meeting on 7 December.

Best wishes to Marijke Groothuis on her retirement

We would like to wish **Marijke Groothuis** all the best for her retirement. Marijke has been at FedUni for over 20 years, most of which she has spent in GSITM, SITE and the Faculty of Science and Technology.

Marijke has been a lecturer in the IT and multi-media web development area and would have seen many changes as higher education has evolved over the years and was very passionate about learning and teaching.

FoST Lecturers visit Shaoguan University

Grant Meredith and **Sasha Ivkovic** have recently been lecturing at Shaoguan University, China for the second intake of students into the Advanced Diploma of Computing.

This was part of an intensive two week period of lectures in Business Information Systems and Communication and Technology.

There was a healthy intake with more students to take part in the future.

Shaoguan University was very excited about our upcoming research partnership with them.



Grant Meredith at Shaoguan University

Centre for Informatics and Applied Optimisation (CIAO)



Associate Professor Alex Kruger
Research Director, CIAO

Ph: 5327 9804

E: a.kruger@federation.edu.au

Appointments in CIAO & ICSL

We welcome **Associate Professor Alex Kruger** as the new Research Director of CIAO. Alex holds a PhD in mathematics. He first joined CIAO and the University in 2003. Before that we had worked at several universities, research institutions as well as for industry.

Alex has published more than 80 research articles in the area of variational analysis and optimisation, participated in several research projects funded by the Australian Research Council, INTAS, Fulbright Foundation, and other funding bodies. He is well known nationally and internationally. Among his co-authors are leading experts from Belarus, the Czech Republic, France, Germany, Poland, Russia, Spain, Switzerland, Taiwan, and Vietnam.

Dr Julien Ugon has been appointed as Deputy Director and brings to the position skills in working with industry and large projects.

New Research Director for Internet Commerce Security Laboratory

CIAO would like to congratulate **Associate Professor Iqbal Gondal** who has been appointed the new Research Director of the Internet Commerce Security Laboratory (ICSL) after acting in that position for several months.



ICSL is a research group within CIAO working on cybersecurity issues. Iqbal has extensive experience in remote condition monitoring, cyber-security analytics and networks. He also held positions at Monash as Director ICT Strategy and Director of Post Graduate Studies.

Alex Rubinov Memorial Lecture 2014

A free public seminar is held annually to celebrate the life and contribution to Federation University Australia of the late Professor Alex Rubinov who was a professor of mathematics between 1998 and 2006 and was the founding Director of the Centre for Informatics and Applied Optimisation (CIAO).



L-R John Yearwood, Geoff Prince & Chancellor Paul Hemming

This year's seminar was held Thursday 6th November 2014 with guest presenter Professor Geoff Prince, Director of the Australian Mathematics Sciences Institute whose topic was **Do maths not medicine!**

Geoff spoke on how Australia desperately needs more maths graduates: more statisticians, more meteorologists, more epidemiologists, more maths teachers, more optimisers. Mathematicians and statisticians influence almost every part of our public and private lives and to a far greater extent than do the medical profession. In this lecture Geoff will paint a picture of Australia's current mathematical capacity, the challenges and opportunities and discuss how our future wellbeing depends significantly on our willingness right now to support and not neglect mathematics.

NICTA Summer Research Scholarship 2014/2015

CIAO would like to congratulate student **Lizhao Liu** for being awarded a NICTA Summer Research Scholarship of \$5000. Lizhao will be working on a project over summer in Melbourne. She will also participate in the NICTA Summer Scholars Showcase in Sydney on 4 & 5 December. These scholarships are a great opportunity for students to advance their research skills.

Cybercrime & Trustworthy Computing Conference 2014

The Internet Commerce Security Laboratory (ICSL) as part of the organizing committee saw the Cybercrime and Trustworthy Computing Conference held at Massey University, New Zealand this year. The conference runs over two days with the first day for presentation of academic papers and the second day hosting industry presentations.

While the academic papers were down this year there was excellent participation from industry and there was interest in the ICSL work from New Zealand Police.

ICSL is hoping to host the 2015 CTC conference in Melbourne and people can register their interest to receive information as soon as it is available to Helen Wade, h.wade@federation.edu.au

Two CIAO PhD students graduate

Two CIAO students were presented with their PhD testamurs at the FedUni graduation ceremony on Thursday 11 December 2014.

Dr Jing Tian whose PhD thesis topic was “Global Optimality Conditions and Optimization Methods for Polynomial Programming Problems and Their Applications”



Dr Alia Al Nuimat whose PhD was in Applied Mathematics, Operation Research with thesis topic: “Hyperbolic smoothing in nonsmooth optimization and applications”

New AMSI Internship

PhD student **Madhi Zarei** is about to undertake an Australian Mathematical Sciences Institute (AMSI) Internship commencing in the new year and working with Darwin company Universal Site Monitoring and working on research into the mathematical modeling around the trilateration of a personal location device.

Madhi’s mentor for the project will be **Dr Zari Dzalilov**.

CIAO Visitors

We have farewelled **Panu (Tee) Yimmuang**, Thailand and **Visana Chandrekesara**, Sri Lanka who have been visiting us since September.

Thidaporn (Fern) Seangwattana, Department of Mathematics, Faculty of Science, Naresuan University has been visiting since September and will be departing soon.

During the December/January period we will be welcoming two visitors to CIAO:

Professor Anatoli Ivanov, Professor of Mathematics at Pennsylvania State University, USA who will be collaborating with **Dr Zari Dzalilov** and **Dr Musa Mammadov**.

Professor Albert Ferrer, Polytechnic University of Catalonia), Barcelona Spain who will be collaborating with **Assoc Professor Adil Bagirov**.

Books published:

Lozanovsky’s Notebooks Part II

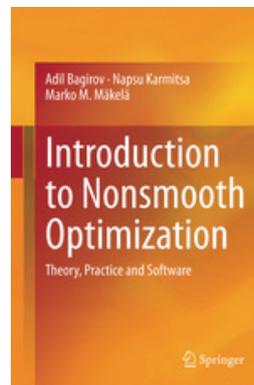
Grigori Yakovlevich Lozanovsky was a mathematician's mathematician, with friends saying he used to work on mathematics 365 days a year, except in leap years.

He passed away in 1976, before reaching the age of 40 leaving behind 25 handwritten notebooks with 2223 problems, some of which have been solved in recent decades.

The project of editing these into publishable form began in 1998 under the supervision of Marek Wójtowicz, now at Uniwersytetu Kazimierza Wielkiego (Kazimierz the Great University) in Bydgoszcz. Notebooks 1 to 8 (Problems 4–609) were published first, in 2000.

Lozanovsky’s Notebooks Part II which has recently been published is the second part of the project, comprising his notebooks 9 to 22 (problems 610 to 1469). They were translated again by Marek Wójtowicz, this time with editorial assistance and scientific comments by **Associate Professor David Yost** from the Centre for Informatics and Applied Optimisation (CIAO) at Federation University. We acknowledge the significant time and effort of all people involved in preserving the work of this great mathematician including Lech Maligranda, Mieczysław Mastyło and Witold Wnuk.

Introduction to Nonsmooth Optimization, Theory, Practice and Software, recently published by Springer.



Congratulations to **Associate Professor Adil Bagirov** and co-authors, Napsu Karmitisa and Marko Makela on publication of their book.

This book is the first easy-to-read text on nonsmooth optimization (NSO, not necessarily differentiable optimization). Solving these kinds of problems plays a critical role in many industrial applications and real-world modeling systems, for example in the context of image

denoising, optimal control, neural network training, data mining, economics, and computational chemistry and physics. The book covers both the theory and the numerical methods used in NSO, and provides an overview of different problems arising in the field.

Best Paper Award

Congratulations to **Dr Venki Balasubramanian** and **Surender Sharma** on receiving the Best Paper Award at the 6th International Conference on Information Technology and Multimedia at UNITEN held in Malaysia in November.

InFoST articles can be submitted to the Coordinator, School Operations, site.operations@federation.edu.au. All articles, profiles and reports are welcome.

Back issues of this newsletter can be found on the Faculty of Science and Technology website.