MONELEC ALUMNI NEWS

Newsletter of the Society of Monash Electrical Engineering Alumni
Department of Electrical and Computer Systems Engineering, Monash University

From the President of SMEEA

One of the events to mark Monash University's 50th birthday was held at Government House, Melbourne, in August 2008 to celebrate research achievements. **Doug Lampard** was honoured posthumously for his early work in electrical measurement (the Lampard capacitance theorem) and for his later work in biomedical engineering. Roslyn Lampard and the two Lampard girls, Debby and Mandy, were able to attend the ceremony.

The Dean of Engineering, Tam Sridhar, held a function in October 2008 to honour alumni. **Steve Blanch (BE 69)** won an award for lifetime contributions in the power industry and **Doron Ben-Meir (BE 87)** as a newer graduate for contributions in telecommunications. Congratulations to both!

We recently lost a great friend, colleague, researcher and teacher. **Dr Khee Pang** had retired in 2005 and died in March this year at the age of 67. The eulogy delivered by Kim Ng at Khee's funeral can be found on the department's alumni website. It was great to see so many of his former students and colleagues at the funeral.

Ed Cherry and his wife Diana were at their home in Marysville on black Saturday when the fire raged through. Thankfully they survived and managed to save their home. It must have been a terrifying experience.

Alan Finkel (BE 75, PhD 81) is still doing a great job as Chancellor of the University. He writes a regular column for all alumni. It can be found at http://www.monash.edu.au/alumni/enews/

Our **SMEEA dinner** this year is scheduled for Wednesday evening 1st July at the usual venue. You will have received a separate email notice about the occasion or you can see it on the alumni website. Our speaker will be **David Morgan (PhD 75)** who will reminisce about his career in biophysics. He joined Doug Lampard as a PhD student in 1973 and has spent his whole research life in muscle physiology, where he has made enormous contributions. I hope to see you at the dinner!

Bill Brown

From the Head of Department

I am delighted to announce that **Jean Armstrong** has been promoted to Professor and **Malin Premaratne** is now an Associate Professor. Jean is well known worldwide for her work on OFDM (Orthogonal Frequency Division Multiplexing), firstly for broadcasting and (RF) wireless, but more recently as an inventor of many innovations that have enabled OFDM to be used over optical channels. She has also worked tirelessly to update the course structure – enabling a broad elective choice with less teaching load and aligning the course with industry needs – and in developing a new and exciting first-year unit to attract students to ECSE. Malin has been working on bio-photonics and has authored fundamental papers on how light interacts with human tissue and fluids. He is also working on Silicon Photonics with the universities of Rochester and Los Angeles.

Nemai Karmakar has been exceptionally successful with three ARC Linkage grants with three local commercial companies. Nemai's Linkage project "Chipless RFID for Banknotes" (with Securency and Satnet) was selected as one of the top ten proposals out of over 1000 across Australia. Last October Nemai went to Canberra to meet Senator Kim Carr to accept the grant. Nemai is also working with SP-Ausnet (switchyard monitoring).

Grahame Holmes and **Brendon McGrath** have been furiously organizing for the 2009 "Future Energy Challenge". This is a worldwide competition for undergraduate teams, with an emphasis on power electronics. Teams will descend on Monash to test their power converter designs this winter. Just to keep them cool, Grahame has arranged for a real wind-turbine to be set up in Monash's Wind Tunnel (biggest in the southern hemisphere, in case you did not know), so they can convert wind energy back into electrical energy. Hopefully, the wind tunnel can be driven from the energy generated by the wind turbine, or our power bills will be large!

I have had a bit of success in becoming an IEEE Fellow, for *leadership in computer modelling of optical communications systems*. There was a nice ceremony at the Optical Fiber Communications conference in San Diego in March. We also managed to get an experimental post-deadline paper on 100 Gbit/s per wavelength transmission, using 5.6 GHz Analog to Digital Converters (and Ed Cherry's famous front end on a 20GHz oscilloscope). Also, the start up based on

Jean and my work has recently raised $6M in Venture Capital (see ofidium.com) and has repatriated Australians to the glorious state of Victoria to actually build the idea.

I look forward to meeting you all again at the dinner.

Arthur Lowery
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The Douglas Lampard Prize for 2008

The Douglas Lampard Electrical Engineering Research Prize and Medal for 2008 is awarded to David Rawlinson for his PhD thesis entitled **'Autonomous topological navigation using egocentric, visuo-spatial perceptions'**. The work was carried out under the supervision of Ray Jarvis.

David's thesis explores the notion of guiding a mobile robot on the basis of its topological understanding (machine intelligence) of its working environment, thus permitting a human familiar with that environment to instruct the robot to carry out navigation tasks based solely on topologically structured terminology. This approach is in distinct variance with the more conventional robot navigation methodologies which are based on metrically specified geometric mappings of the environment. The work developed in this thesis represents, not only a novel and effective robot navigation strategy, but also a means of natural human-machine communication in the context of mobility actions.

One of David's PhD examiners, Professor S Yuta of the University of Tsukuba, states 'The proposed method is efficient and effective in real indoor and outdoor environments, to navigate, explore and make maps autonomously. It is also effective as a good human operator interface.' Another, Prof. Dr. R Dillman of the Universität Karlsruhe, states 'This thesis contributes successfully to the field of autonomous mobile robot navigation at large. More specifically it contributes to the field of autonomous mapping and topological navigation as well as to the field of topological localization and topological situation discovery based on egocentric perceptions and the classification of the observed topological areas.'

David was awarded a Monash Graduate Scholarship in 2003 to pursue his PhD. He came to Monash having been awarded a First Class BSc Joint Hons. Degree in Computer Science and Artificial Intelligence in the School of Cognitive and Computing Sciences at Sussex University.

During the period of his studies at Monash David undertook a professional volunteer role for the Victoria State Emergency Service (SES). He worked in this capacity on a number of incidents, including forensic investigations, missing-persons land-watch, structural collapse, fire and road crash rescue. He was also flown to NSW to lead a team during a large-scale flood/high winds disaster operation. His CV also includes a large variety of jobs he has worked at in the IT and other industries. He lists amongst his general interests 'exploring and making things', which is not a bad definition of engineering in general. During his PhD candidature David showed a considerable talent for original and independent thinking and the skills to get things working to prove his research ideas.

From the 60s

Norm Gale (BE 69) was another Monash Graduate who made his start at the PMG (now Telstra) Research Labs. Instead of getting carted off to Vietnam, he decided to join the staff at the University of Science in Penang, Malaysia, where he lectured in the Applied Science School (now Industrial Science). He completed an MBA at the University of Melbourne in 1984, after having a crack at a journalism degree at RMIT back in the seventies - (they used to say "injinures coodent spel").

The MBA started a transition from engineering to marketing and sales, via a stint as a consultant after he left Telstra in 1988. This transition commenced with a job in Strategy (with Chris Beare and Dr Terry Cutler) in 1985-6 and led to Norm playing a leading role in the strategic planning, market positioning and introduction of ISDN, while still at Telstra.

His working life since 1988 has consisted of a series of leaps from start-up companies (Jtec, HarvestRoad, Open Telecommunications) to large multi-nationals (Nortel and Alcatel) in no particular order. His time at Nortel included working from Singapore in an AsiaPac role as marketing manager for data networks – in those days largely Frame Relay and ATM, though with some introduction to IP networks.

He has a continued interest in the telecommunications industry through his role as a Director and active committee member on the TSA (Telecommunication Society of Australia) and his modest consulting activities (Clearbreeze Associates). In addition to his lifetime interest and continued activity in telecommunications technology adoption and marketing, Norm is currently also working part-time for a not-for-profit organization. The life-change is in progress.

From the 70s

Ian Taylor (BE 71, MEngSc 83) retired in 2001 from paid employment but he still skis, flies light aircraft, plays golf, gives U3A lectures and is a 'lay person' on the Human Research Ethics Committee of the Avenue Hospital.

Ian gained diplomas from RMIT and worked for the Bureau of Meteorology before enrolling at Monash. After graduation he joined the Antarctic Division where he designed a VHF radar system for the study of disturbances in the ionosphere associated with auroral currents. He installed and operated this equipment at Mawson where he was a member of the 1973 winter party.

He then worked for several years as deputy leader of the Alfred Hospital's Medical Electronics Department. This position involved the supervision of a group who maintained and constructed equipment for patient monitoring and treatment. He also took an active part in the introduction of new equipment and procedures into intensive care wards and operating theatres and the preparation and presentation of training programs for both nursing and medical staff. The establishment

and enforcement of standards of electrical safety were also included in his responsibilities.

Ian then moved to the CSIRO Division of Mineral and Process Engineering. Originally responsible for computer and instrumentation support of mineral processing research, his activities moved to a more direct research involvement in a new ironmaking process. He retired as Senior Principle Research Scientist and Program manager for ferrous smelting research.

From the 80s

Geoff Ramadan (BE 81) undertook his first commercial venture during his last year of University in the design and development of a microprocessor-based production monitoring system for a major carpet weaving company. In 1983 he founded Unique Micro Design (UMD) with partners Harry Ramadan and **Alan Walker (BE 81)** and has become its lead solution architect and Managing Director and is supported by a highly skilled team of engineering and software professionals.

Initially focused on the design and manufacturing of microprocessor-based devices and interfaces the company has now evolved into an engineering ICT solutions company in data capture and supply chain applications including RFID. UMD have been involved in RFID for over six years initially with the development of control systems for cattle drafting. This has led to various other projects covering all major RFID spectra in LF, HF and UHF technology. It has included the custom design of hand-held RFID devices to read implants in two-year-old thoroughbreds developed for Racing Victoria.

Geoff was instrumental in the development of *'UMD-EDGE – Edgeware Application Development Device Platform'* and its derivative *'UMD-VAST – Venue Access System for Turnstiles'* a middleware and application software development platform designed to collect and manage RFID devices and terminal data. *UMD VAST* was successfully deployed at the VRCs Melbourne Cup carnival in 2006. It has also been installed in AAMI Stadium in Adelaide and in the Caulfield and Moonee Valley racecourses. *UMD EDGE* has been deployed in the Metropolitan Fire Brigade in Victoria, tracking over 30,000 garments and providing real time visibility and reporting.

As the chief solutions architect much of Geoff's current work involves assisting customers develop 'viable' RFID and 'intelligent sensor network' solutions.

Geoff was a founding member of the *'RFID Association of Australia'* and Chairman of *'Automatic Data Capture Australia (ADCA)'* for several years, a leading reference source for automatic data capture technology in Australia. ADCA has merged with Australia's largest industry association, *The Australian Industry Group* and in particular the *Digital Technology Forum* of which Geoff is an Executive Committee member and *Data Capture/RFID* Industry Sector Head.

From the 90s

Victor Koss (BE 92) won the Graham Beard Prize at the end of his BE course in 1992. He has just passed 16 years with the same firm, Booz & Co. Having joined as a junior analyst in 1993, he is now a Partner in the Financial Services practice, based in London. A solid engineering and science education has come to good use over the years, given the process management, analytics, and systems/operations skills and insights that good business and management consulting requires. Specifically, he has been involved in a very wide range of consulting engagements, from (currently) advising governments on how to address the financial crisis, through global growth and market entry strategies, operations restructuring, core banking systems platform replacement, new technologies and innovation (e.g. speaking at banking conferences on m-payments), and business performance improvement.

From the pleasant and calm surrounds of the Clayton Campus, he has had the pleasure of working across most of Europe (spending most time in the UK and The Netherlands), the US, Brazil, Middle East, Thailand, Australia, New Zealand, and even the Caribbean for 4 months! Although having a stint at Harvard Business School to do an MBA in 1996/97, he enjoys being involved in the Monash alumni network in London, especially the excellent events typically held at Australia House.

The next ambition is to slow down the frenetic pace and travel associated with management consulting and seek to deliver a course at Cranfield University which is only a few miles from where he lives. Cranfield is a specialised engineering technology and management theory university – hopefully a good match for Victor's knowledge and skills!