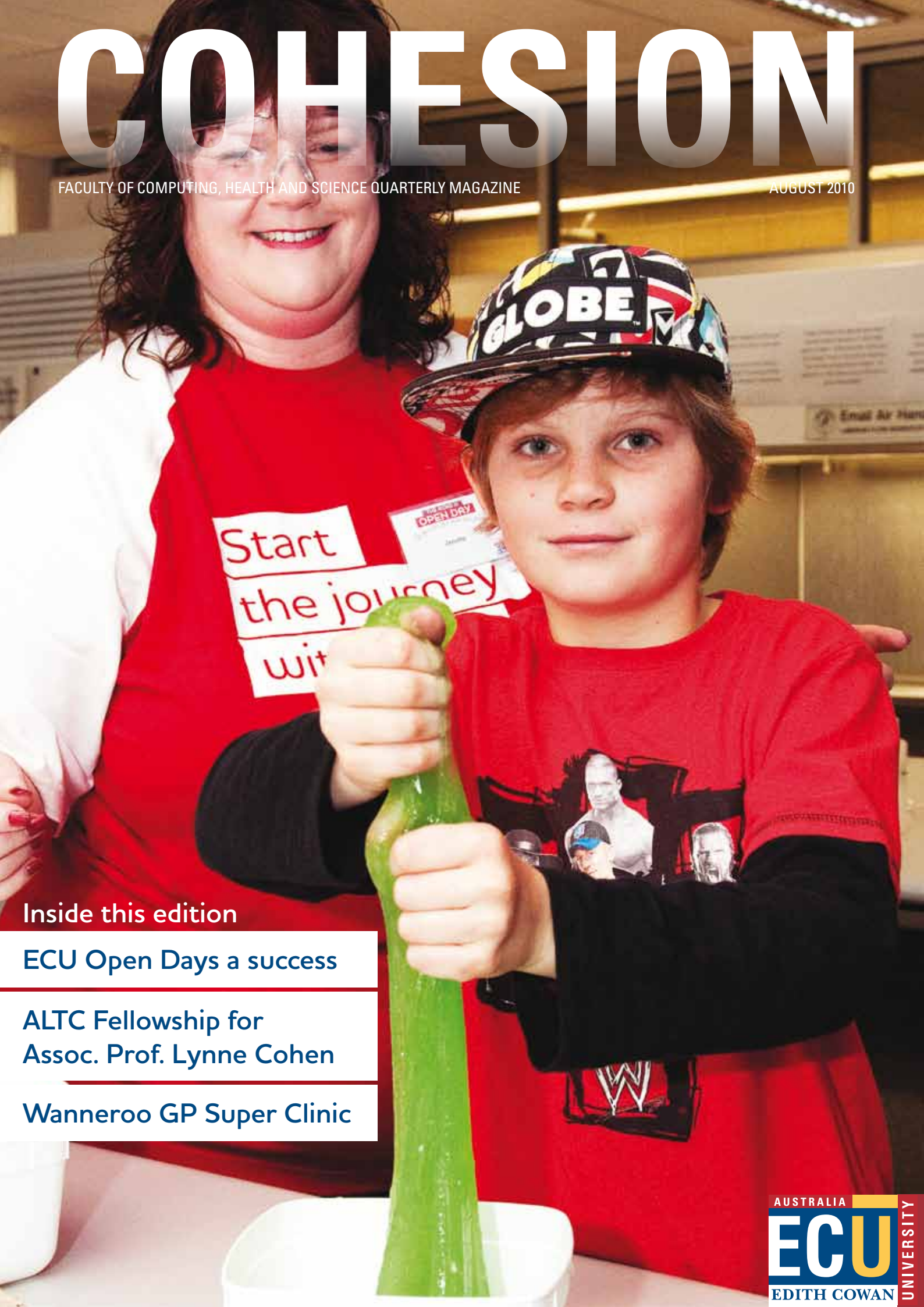


COHESION

FACULTY OF COMPUTING, HEALTH AND SCIENCE QUARTERLY MAGAZINE

AUGUST 2010



Inside this edition

ECU Open Days a success

ALTC Fellowship for
Assoc. Prof. Lynne Cohen

Wanneroo GP Super Clinic

Executive Dean's Message



Dear Colleagues and Friends,

The commencement of second semester has been the usual busy start with a lot of student based activity and research progress. The Open Day programmes at Mt Lawley and Joondalup Campuses were a success for the Faculty demonstrating our comprehensive facilities and some of the research outcomes. We had Faculty boats, racing cars, science laboratories Occupational

Therapy and Physiotherapy equipment, the nursing laboratories and computing facilities on display to mention a few.

The new Engineering and ICT building has now reached the second floor of three floors and should be ready for occupancy at the end of 2011. The new facility will house some specialist engineering facilities expanding mechanical and civil engineering here at ECU. The Electron Science Research Institute (ESRI) and secaru Security Research Centre groups will also have a "clean room" and other specialist resources located in the building enabling research which is currently not possible.

The second edition of "ECU Health: Making a Difference" is to be published in September and further illustrates the health related research in the Faculty. The new Inter Professional Learning Disease Management Unit has also commenced functioning in this second semester and will provide a broad range of services in conjunction with a range of partners. This initiative is linked to ECU's involvement in the new Wanneroo GP Super Clinic.

On the international front the Faculty continues to receive a range of visitors from China, Thailand, the US, Korea, Iran, Oman, and several other countries as international research projects are being developed. The secaru Security Research Centre is part of a large security project in Europe, the Electron Science Research Institute a project in China, Nursing and Midwifery in Singapore, and the Faculty of Computing, Health and Science student activities are occurring in China, India, Tanzania, Laos and Thailand. On the reverse side the number of international students studying in the Faculty in 2010 exceeded the numbers in 2009 with particular growth in Engineering and Exercise Science.

This month the School of Computer and Security Science, the ACS Centre of Excellence for Security, and Mercury Technologies will host the "Cyber Resilience Conference" and given the problems experienced in some parts of industry the timing is excellent to air some of the national concerns.

The School of Psychology and Social Science this month hosted the Australian Psychological Accreditation Council who undertook an extensive audit of the psychology courses and have provide constructive advice on further curriculum development. The panel provided very positive feedback regarding the Psychology Clinic conducted at ECU.

The School of Natural Sciences is relocating its headquarters to the second floor of building 19 on the Joondalup Campus and the Faculty's new Student Information Centre will be located on the ground floor of building 19. It is anticipated this will be operational before the end of the year.

Best wishes,
Professor Tony Watson



CONTACT DETAILS

Editor Bryan Garnett-Law
Telephone: (61 8) 6304 3452
E-mail: b.garnett_law@ecu.edu.au

COHESION Magazine is a quarterly publication of the Faculty of Computing, Health and Science.

Previous editions of COHESION Magazine are available electronically at: www.chs.ecu.edu.au/cohesion.

CRICOS IPC 00279B



Associate Professor Lynne Cohen awarded ALTC Fellowship

Congratulations to Associate Professor Lynne Cohen, Associate Dean of Teaching and Learning in the Faculty of Computing, Health and Science, who has been named a 2010 Teaching Fellow by the Australian Learning and Teaching Council (ALTC).

With only nine awarded in 2010, the prestigious Fellowships recognise outstanding leaders from universities across Australia who are constantly working to improve academic standards and the student experience.

Associate Professor Cohen will use her Fellowship to investigate how to better build leadership capacity in undergraduate students, aiming to equip students with skills and insights that will help them to lead, inspire and positively influence their professions and workplaces.

Her research will adopt a model of distributed leadership to conduct trials across diverse disciplines and professions in four Australian universities.

Associate Professor Cohen said she was pleased that the ALTC had recognised the need for work in a previously under-researched and debated area.

"I'm absolutely thrilled to receive the award, and I believe it is not only a reflection on my work, but also on how much ECU has achieved in the learning and teaching space in recent years," she said.

In congratulating Associate Professor Cohen on her Fellowship, ECU Vice-Chancellor, Professor Kerry Cox, said it provided fitting recognition for her exemplary work over many years.

"Those of us at ECU know Associate Professor Cohen to be an inspirational colleague, with great vision and know-how.

"This fellowship is a well-deserved honour, and will help Associate Professor Cohen to continue with her transformational work on building leadership capability in our undergraduate students, for the benefit of those in the communities ECU was established to serve," he said.

"I feel sure that the late Edith Cowan would have been very pleased."



Child Health Promotion Research Centre welcomes leading Canadian scholar, Professor Michel Boivin

In May 2010, the Child Health Promotion Research Centre (CHPRC) was honoured to welcome leading child health scholar, Professor Michel Boivin. Professor Boivin holds the Canada Research Chair on Child Social Development and is Professor of Psychology at Université Laval, Québec, where he leads research into the biological, psychological and social components of early child development.

Professor Boivin is director of the Research Unit on Children's Psychosocial Maladjustment (GRIP) at Université Laval, a multi-disciplinary inter-university research centre aimed at understanding and preventing the development of adjustment problems in children. He is also leader of the Strategic Knowledge Cluster on Early Child Development (SRC-ECD), which aims to mobilize knowledge on this issue. The SRC-ECD supports the Encyclopedia on Early Childhood Development <http://www.child-encyclopedia.com/en-ca/home.html> a free online encyclopedia that presents the most up-to-date scientific knowledge on 39 topics related to the psychosocial development of the child, from conception to the age of five.

The highlight of Professor Boivin's visit to the CHPRC was his public lecture: School readiness and the early trajectories of school achievement: Findings from two Quebec birth cohorts. The lecture was held at ECU Mt Lawley Campus and attended by more than 90 Western Australian education, psychology and public health researchers and practitioners.

During the lecture Professor Boivin discussed results from two large-scale longitudinal studies: the Quebec Study of Newborn Twins (QSNT) and the Quebec Longitudinal Study of Child Development (QLSCD). These world first studies documented both environmental and genetic influences on children's readiness for school. Results showed that: (1) school achievement trajectories are established early in school and can be monitored reliably; (2) school difficulties can be accurately predicted from child-level school readiness indicators at the end of the preschool period; and (3) these school readiness indicators mediate the contribution of earlier preschool risk factors to school difficulties.

Professor Boivin explained findings showing environmental factors shared by twins from the same family (such as family resources and income, parents' behaviour with respect to learning, and twins' child care experiences) were responsible

for many of the individual differences in the children's school readiness skills. The influence of environmental factors was seen as stronger than the influence of genetic factors. These shared factors influenced school readiness in both general and specific ways. That is, they were found to be significant for each component of school readiness, as well as for the core abilities underlying overall school readiness.

Genetic factors played a significant role in the children's core abilities underlying the four components of school readiness, but the environment shared by twins of the same family remained the most important factor overall. Both genetic and environmental factors were found to influence the association between children's school readiness and later school achievement.

"Our results have important implications for preventive interventions. They should be seen as a further incentive for continued implementation and evaluation of preventive intervention programs aimed at improving the level of school readiness in children from at-risk families," said Professor Boivin.

During the remainder of his visit, Professor Boivin met with researchers from CHPRC and participated in a series of roundtable discussions focusing on bullying and social aggression prevention and was shown some of the many spectacular sites of Perth, including a bicycle tour of the Swan River. Professor Boivin concluded his visit by thanking CHPRC staff and researchers, "It's been a pleasure to meet with the special mix of researchers gathered at CHPRC and to hear about the very impressive work being done at the centre. I hope to visit this beautiful city again soon."

For more information on Professor Boivin's visit, or to request a list publications from his studies, please contact Dr Debora Brown, debora.brown@ecu.edu.au or Cailyn Rogers c.rogers@ecu.edu.au.

Children's Exposure to Metals in Esperance – A Community Initiated Study

In 2007 it was discovered that the shipping of lead and nickel through Esperance Port had resulted in elevated concentrations of these metals in the region. Initial testing of soil, air, rainwater tanks, fish, birds and blood of volunteers was undertaken and a clean-up strategy implemented by the Department of Health and the Department of Environmental and Conservation. The focus of the initial exposure assessment in Esperance was restricted to the area around the Port and those individuals with elevated blood lead. Little attention was given to nickel nor to overall metals exposure of the community in the area.

In April 2009 in response to ongoing community concern regarding the possible exposure of children to lead and nickel, Dr Andrea Hinwood and her research group from the School of Natural Sciences undertook a cross sectional study of 39 children aged 1-12 years residing in the Esperance region. Each child via their parents was requested to provide a sample of hair, toenails, first morning void urine sample, soil, dust and complete a questionnaire requesting information about lifestyle, activities and diet. The environmental and biological samples were analysed for all metals.

The study found that the concentrations of both nickel and lead in biological and environmental samples, and those of other metals, were generally low, suggesting that children's exposure to metals in Esperance no longer appears to be a

cause for concern. The concentrations of nickel in urine, soil and dust were found to decrease with increasing distance from the participants' residence to the port as did soil lead concentrations. Nickel dust concentrations and nickel and copper soil concentrations were found to be significantly higher in properties ≤ 2 km from the Port, but concentrations of those metals in urine and hair were not. Although the focus of this study was the investigation of the levels of nickel and lead in biological and environmental samples, a number of other metals were included in the analyses. Concentrations of lead were higher in the hair samples of children who lived in properties where smoking occurred and children who ate home grown produce had higher hair copper concentrations.

A small number of participants had elevated concentrations of aluminium, copper or manganese in their hair or urine samples. It was not possible to determine the source of these elevated concentrations, it is likely that the diet of those children may have been involved and the researchers would like to explore metals exposure and diet more thoroughly.

If you would like more information about this study please email ahinwood@ecu.edu.au.



PhD Graduate awarded ESSA Medal

Dr Prue Cormie, a recent PhD graduate from the School of Exercise, Biomedical and Health Sciences has been awarded the nationally competitive Exercise and Sports Science Australia (ESSA) Medal. ESSA is the peak professional organisation promoting excellence in, and recognition of, the exercise and sports science professions in Australia. The prestigious and highly competitive ESSA Medal recognises the most outstanding PhD thesis in this field across all universities in Australia. Nominated by principle supervisor and Foundation Professor in Exercise and Sports Science Professor Rob Newton, Dr Cormie's winning thesis included a series of studies investigating the neuromuscular adaptations to resistance exercise. Five publications arising from these studies have been published in two of the top journals in the field, *Medicine and Science in Sport and Exercise* and *Sports Medicine*. Dr Cormie is now a Post Doctoral Research Fellow at ECU's Vario Health Institute.





Foundation Chair of Ageing and Alzheimer's Disease, Professor Ralph Martins awarded Melvin Jones Fellowship

ECU's Foundation Chair of Ageing and Alzheimer's Disease, Professor Ralph Martins, has been awarded the Lions International Melvin Jones Fellowship for dedicated humanitarian services including his research on Alzheimer's disease.

Lions International recognizes outstanding individuals by bestowing on them an award that is named for its founder, Melvin Jones. He founded Lions in Chicago USA in 1917 and it is now the world's biggest service club. The Melvin Jones award is Lions highest award and is generally awarded to those who give service over and above the norm in either Lions or in the general public. It also recognises outstanding individuals whose contribution to society is usually enormous. The recipient of this award becomes a model because of the exemplary service to his club and the community for which it serves.

A Lions club must nominate someone who they consider deserving of a Melvin Jones award. That club nominates the person to Lions International headquarters in Chicago. They approve the nomination and forward a plaque in recognition.

Since 2006 The Claremont/Nedlands Lions Club have been involved in raising funds for Professor Ralph Martins and his dynamic team in their quest for the "Holy Grail" - " THE CURE FOR ALZHEIMERS."

The grand sum of \$35,000 has so far been raised by the Claremont/Nedlands Lions Club mainly through the now famous Sportsman's Club Luncheons. Other clubs in District 201W1 have also contributed significant amounts. A Quiz Night, selling of The Alzheimer's Rose Pin, Scrap Book Conventions and countless sausage sizzles have assisted this cause. The grand total raised so far is in excess of \$70,000.

Raising Community awareness is another project undertaken by club members, who have travelled far and wide spreading the word of the research work into this dreadful affliction, whilst informing people of where research is currently at.

Professor Martins was presented with the plaque at the Claremont/Nedlands Lions Club on Tuesday, 23 March following his speech on Alzheimer's disease to club members.



Wanneroo GP Super Clinic+

In April 2010 the Minister for Health and Ageing, the Hon Nicola Roxon MP, announced that a contract had been signed with Edith Cowan University to lead the development of the Wanneroo GP Super Clinic.

The Wanneroo GP Super Clinic, which is being jointly funded by the Commonwealth and Western Australian governments, will be established in the Wanneroo Town Centre with support from the City of Wanneroo.

GP Super Clinics provide infrastructure in which teams of health professionals work together to deliver quality services in local communities, particularly to people with, or at risk of, chronic diseases.

The Wanneroo GP Super Clinic will bring together GPs, practice nurses, nurse practitioners, and allied health professionals including psychologists, physiotherapists, occupational therapists, exercise physiologists and speech pathologists in one convenient location.

ECU Deputy Vice-Chancellor (Research), Professor John Finlay-Jones, said "ECU is committed to engaging with the communities it serves, and with that the Wanneroo GP Super Clinic provides an opportunity to build a new model for health and wellness development. The model has been developed following extensive local community consultation from May 2008 onwards and will offer multidisciplinary team-based care, with a strong focus on inter-professional education and training for students and graduates. The Clinic will open up new realms of research and development programs in the provision of health services, and new approaches to disease prevention, in partnership with government, industry and the community."

The Minister visited the proposed site of the Wanneroo GP Super Clinic on Wednesday 14 July 2010, taking an opportunity to review concept plans with ECU senior staff and Labor candidate for the Federal seat of Cowan, Mr Chas Hopkins (pictured left).

Associate Dean of Health, Professor Cobie Rudd said the facility is being developed based on extensive local community consultation and is a collaboration project with multiple parties.

"The Clinic will provide integrated multidisciplinary team-based care and thus will have a strong focus on inter-profession education and training for ECU students and graduates," she said.

ECU Vice-Chancellor, Professor Kerry Cox said "ECU is committed to engaging with the communities it serves, and that the Wanneroo GP Super Clinic provides an opportunity to build a new model for health and wellness development."

"It also opens up new opportunities for research and development programs in health services provision and disease prevention in partnership with government, industry and the community," he said.

The Australian Government has allocated \$275.2 million over five years, from 2007-08, to establish GP Super Clinics in 36 locations across Australia. The GP Super Clinics are a key element in building a stronger national primary care system, providing greater focus towards health promotion and illness prevention as well as better coordination between General Practitioners and allied and community health services.

Palm Oil: Is it bad for birds?

Palm oil has recently been in the spotlight for the devastating impact it is having on biodiversity in some tropical countries. Palm oil is extracted from the fruit of one of two tropical palm species. The trees are high yielding in wet tropical environments, and produce up to 24kg of oil for every 100kg of fruit. Palm oil is widely used in foods and cosmetics and the average Australian consumes 10kg of palm oil per year.

With over 14 million Ha of palm oil planted in tropical countries, there has been extensive land-clearing, particularly of coastal lowland forests, and this has had a devastating impact on biodiversity.

A team of scientists, led by ECU researcher Dr Rob Davis from the School of Natural Sciences, and including Dejan Stojanovic from the Australian National University and biologists Erika Wagner, Henry Cook and Gina Barnett, had the opportunity to investigate the impacts of palm oil plantations on the native birds of New Britain in Papua New Guinea. The island of New Britain in the Bismarck Archipelago is the world's sixth largest island and is

characterized by 37 species of bird that are confined to this island or the immediate region. Many of these birds are endangered and poorly known and are reeling from the impacts of massive habitat loss due to palm oil. It is estimated that some 20% of all lowland forest on New Britain was cleared for palm oil between 1989 and 2000.

The bird research team conducted surveys in lowland rainforest and palm oil plantations over a five week period in January and February 2010. Some valuable information was collected including records of several threatened species that have been rarely recorded. Unfortunately many of the island's rare species were not seen at all, adding further weight to the idea that they have become extinct in many areas, due to habitat loss from palm oil and illegal logging.

The surveys revealed that palm oil plantations supported only around half the number of bird species of lowland forest: 32 species, compared to 61. However, most of the birds that were recorded in palm oil on a daily basis were one of just four common species. The remaining birds were all rare in palm oil and likely passing through or flying over the plantations. By contrast, native lowland forest contained 34 species of bird that depended on the forest for their survival and were not recorded anywhere else. These species have an uncertain future given the past and ongoing loss of lowland forest for plantations.

The pilot study was a great success, despite the project team suffering from malaria, other tropical illnesses and being overcome by 2 weeks of rain and associated flooding! It is hoped that there will be opportunities for future postgraduate studies to follow up on this work. This study was made possible by support from the School of Natural Sciences and Faculty of Computing Health and Science at ECU, Walindi Plantation Resort in New Britain and New Britain Palm Oil Ltd.



ECU, DVI and CSI - a tale of three letter acronyms

Tsunamis, earthquakes, plane crashes, terrorist bombings, massacres all have at least two things in common they are normally disastrous and they usually contain unidentified human victims. The task of reconciling these human remains is more commonly referred to as DVI or Disaster Victim Identification and often very expensive, prolonged, arduous and dangerous work.

Professor Craig Valli, Reino Karvinen and Chris Holme from the School of Computer and Security Science (SCSS) are working with Queensland Health Pathologist Professor Peter Ellis and Griffith University Forensic Dentist Associate Professor Alex Forrest to produce a radio frequency identification (RFID) based information system to expedite processing of disaster victim identification. The research work being undertaken is part of a \$1.2 million total value grant in the Australian Future Forensic Innovation Network (AFFIN) program run from Queensland.

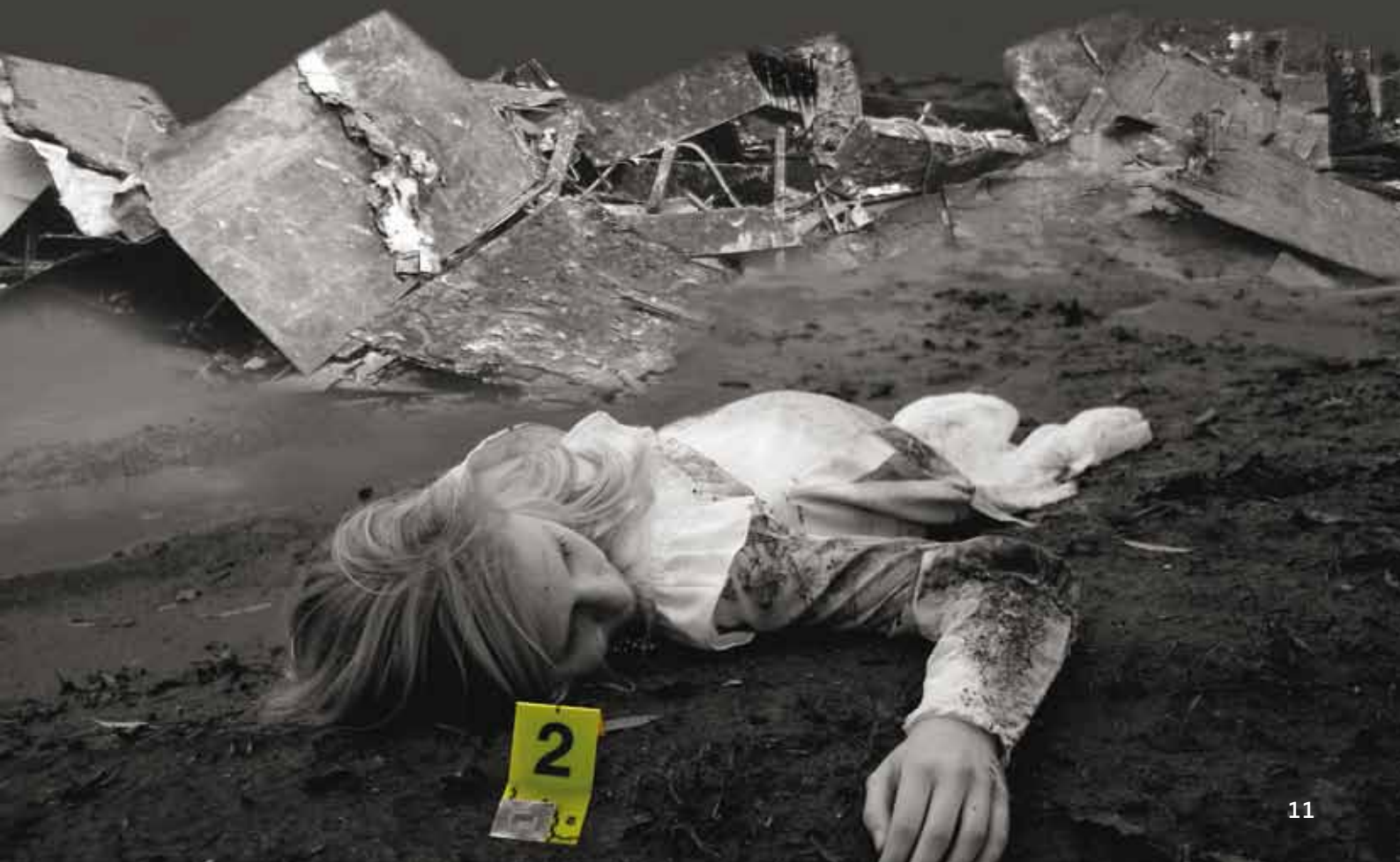
The program was initiated through contact from Peter Ellis who was one of the leading pathologists in the 2004 Thailand tsunami. Peter saw French teams trialling the use of very rudimentary RFID technology to try and track bodies and body parts that were being examined. The technology used was similar to current pellet based technology used to track household pets. Through the secau engagement with law enforcement there was knowledge that ECU had developing expertise in the area of RFID and forensics and Peter contacted SCSS in 2007 on this basis.

The initial system has evolved from expertise initially gained in the now patented FoxTrakka/CowTrakka system that has been developed by SCSS. The current research essentially

aims to replace the cliché toe tag with an RFID enabled tag that can store autopsy information, medical records, interview notes and other relevant documents and artefacts for the autopsy.

The research has been challenging as many of the environments in which these final systems work will be conducted in present unique challenges some of which are not immediately obvious. One of the biggest challenges is tuning the antenna on the tags to be working in temperature ranges of -30°C up to 60°C . The other is providing low-power systems that can be sustained for up to 18 months or longer without data loss for the tags until the bodies themselves are reconciled and released. With this system now considering the whole mortuary supply chain other challenges are now being overcome. This includes for instance sourcing power sources that upon incineration will not turn into high-speed deadly projectiles or ones that will produce highly toxic fumes. Many modern mortuary systems and processes now include the use of CAT and MRI scans to perform non-invasive autopsies, the high energy that these systems produce has significant issues for some of the circuitry and semiconductors used in these tags.

There are already several patents in the pipeline that have come out of the initial systems designs and bench based experiments and should produce commercialisable products. The primary objective has never been far from all of our minds when producing the system and that is the development of a system in hands through IT that will allow a more efficient reconciliation of bodies so that grieving relatives and friends can get on with the process of living.





Year 10 Hands on Training (HOT) **Nursing Course**



SIRCH onto another winner with HOT

Edith Cowan University's Systems and Intervention Research Centre for Health (SIRCH) in collaboration with the Department of Health of WA is celebrating another successful Hands On Training (HOT) course. This is the fourth year the program has been conducted. More than 30 Year 10 students volunteered to give up the first week of their school holidays in April to take part in the Joondalup-based course.

The course provides Year 10 students who have an interest in nursing as a possible career choice with four days of practical, 'hands-on' and fun experiences, which give them a taste of the profession.

'HOT' coordinators Danni Urzillo and Janet Jenkins organise sessions with undergraduate and postgraduate lecturers (from the School of Nursing, Midwifery and Post Graduate Medicine) and industry nurses who take the students on tour in Joondalup Health Campus and Osborne Park Hospital. Students enjoy seeing "what goes on behind the scenes" at the hospitals and talking to professionals from various fields of nursing.

Sessions include a focus on healthcare hygiene (hand-washing, gowning and gloving), disability (students experience simulated blindness and mobility impairment), manual handling (e.g. lifting properly) and emergencies (students

learn about cardiopulmonary resuscitation (CPR) and also get a 'hands-on' trial on a simulated patient). They also do health assessments (taking blood pressures and temperatures) and procedures such as wound care. The undoubted 'hit of the week' is the midwifery session, which includes simulated midwifery birthing.

Parents and career advisors attend the final session of the week where students are presented with certificates and students showcase sessions experienced throughout the program.

Danni Urzillo remarked that the last day was very relaxed and rewarding for everyone involved and the opportunity to be involved was a very humbling experience. "When you hear the students and their families tell you how much they've enjoyed the week and how they would do it again a heartbeat – it makes it all worthwhile."

Due to an overwhelming response, with more than double the number of students compared with places available, further funding has been sought and provided by the Department of Health to run another course during the September school holidays to accommodate all the applicants from the April recruitment. The SIRCH team are hoping this year's success will enable them to continue with the program next year – funding permitted.



ECU researchers work with Woodside to study heat stress on an off-shore rig

Joseph Mate, a PhD candidate within the School of Exercise Biomedical and Health Sciences, recently conducted research towards his PhD in the off-shore oil and gas industry this summer in Karratha. Dr Jacques Oosthuizen, one of his supervisors, negotiated access for Joe to travel to the rigs to gather data in a real working environment.

Joe developed an ice slurry intervention that has been shown in a climatic chamber to reduce core body temperature in people engaged in exercise during hot and humid conditions when compared to drinking cool liquids. With the outcomes observed in the laboratory, Woodside agreed to collaborate with ECU to validate these findings in-situ.

In addition to the logistical and testing challenges of conducting research off-shore, Joe was able to successfully complete his research and identify several important findings. Primarily, it was found that the ice slurry intervention was able to reduce heat stress in the workers. Comparing heart rates

between ice slurry and a cool drink, it was again observed that the ice slurry better attenuated the rate of rise and maximum heart rate in workers. Feedback from workers was positive. Anecdotally, they felt better, felt less hot and they enjoyed the different texture of ice slurry. An unexpected but important finding was the level exposure to heat loads were not uniform for all workers despite the small work area of the platform. This finding prompts additional health and safety questions to be answered in future investigations.

Joe's research is being supervised by a multi-disciplinary team of researchers within the School. Dr Oosthuizen is from the Public Health (OSH) area of the school while Dr's Greig Watson and Paul Laursen are from Exercise Sports Science.

Creating cultural empathy and challenging attitudes through Indigenous narratives

The Systems and Intervention Research Centre for Health (SIRCH) has received the largest Australian Learning and Teaching Council (ALTC) grant ever awarded to ECU as part of a contribution towards improving the health experience of Indigenous people. Australian Indigenous health outcomes are among the worst in the developed world. A lack of understanding and negative attitudes can prevent health professionals from working effectively with Indigenous people.

The grant of \$220,000 will help to increase understanding and empathy between healthcare professionals and Indigenous people using a story-based approach to influence the underlying attitudes of health students. The project will help to address a federal priority of 'closing the gap' between the health outcomes of Indigenous and non-Indigenous peoples. Through the collection of narratives about Indigenous people's experience of health services, students will be engaged, and will learn to develop empathy through a genuine understanding of their issues and experiences. Storytelling is a powerful teaching and learning tool. The project will contribute to the evidence base in respect to the efficacy of narratives to reduce racial bias and enhance relationships and the understanding of diversity.

The ECU team leading this initiative are Professor Cobie Rudd, Associate Professor Moira Sim, Professor Colleen Hayward and Ms Toni Wain. This collaborative project across all Western Australian universities has involvement from Indigenous leaders and other experts from the University of Western Australia, the Health Consumers' Council, University of Notre Dame, the Combined Universities Centre for Rural Health, Curtin University and Murdoch University. With strong Indigenous governance, the project will create a range of narrative resources which do not currently exist.

Students across all areas of health, such as medicine, paramedicine, psychology, nursing, midwifery, physiotherapy and occupational therapy will benefit from the project. The project will map where the narratives are best suited within a range of curricula and in different university contexts.



Educators across Australia will be invited to join the national network hosted by ECU which will give them access to the stories. Network members will be able to contribute educational materials to accompany the stories and as a collective create a resource which is a library of stories and learning materials and activities. Aboriginal stories will be embedded throughout curricula, increasing the likelihood of widespread and sustainable improvements as a result. Already there is a strong interest from within ECU and across the health and university sector.



For further information about this project, contact altc.betterhealth@ecu.edu.au



Promoting excellence in higher education



ECU contributing towards a national program of health workforce innovation and reforms

ECU researchers are working to gain a national consensus about the validity and application of simulated learning environments in nursing education.

Simulated learning environments aim to provide an authentic opportunity to improve individual skills in learning situations that traditionally had to be gained in the clinical environment. For students within the health professions this can mean the difference between practicing in a safe but simulated environment, not on real patients in real life.

The research project, led by Associate Dean of Health, Professor Cobie Rudd, comprises a national and international team of inter-professional simulation experts, and will engage with all relevant professional groups, as well as Indigenous, medical, mental health, and Chief Nurse networks.

Funding for the project, entitled The Use of Simulated Learning Environments in Nursing Curricula has been provided by Health Workforce Australia, through a nationally competitive process.

Professor Rudd said the researchers would first identify and gain national agreement on aspects of the existing professional entry curricula that could be delivered via simulated learning programs (SLP), and then look to map all such programs currently being delivered.

"This will allow us to identify curricula elements that could be delivered via SLPs in the future to meet clinical placement objectives," she said.

The project team will then analyse national university survey data regarding current use of SLPs in the clinical training of nursing students and the potential future use, and identify research opportunities for expanded use of SLPs to achieve learning outcomes of clinical placements using national and international examples.

Vice-Chancellor, Professor Kerry Cox said this funding is tangible evidence of the strong national reputation of ECU's health programs and expertise in simulated learning environments.

"We've been committed for some time now to exploring new ways to complement and expand clinical training capacity across health disciplines."

"This project is another example of how we can work across sectors, Australia and globally to determine better ways of addressing the pressing issue of how best to prepare students for the 'real world' and thus assisting health systems to provide safe and high quality health services," he said.



ECU Students overseas making a difference

Health Science students from ECU have recently had the opportunity to extend their studies beyond Australia by participating in practicum placement for a non-government organisation (NGO) in Bali, Indonesia. Health promotion students lived and worked within the Balinese village of Tulikup with local NGO Heartline Bali FM, a community oriented radio station aimed at positively impacting the health and social needs of the village and surrounding region. Students learnt the basic principles, skill and knowledge of conducting public health interventions via radio then teamed up with locals, who also acted as translators, and conducted a community public health project.

A previous placement of Curtin students conducted a small needs assessment and found the priority issues for the community were the environment and nutrition issues. In turn, the recent placement of ECU students focussed on environment issues and developed a program where they partnered with another local NGO, called "Say No To Plastic," to develop and implement a program focussed on environment issues. The team developed a strategy where they generated a series of community service announcements (CSAs) and talk show programs to be played on-air at strategic times looking to reduce the amount of plastic that is consumed on the tropical island. It is estimated that Bali's plastic waste is between 600 and 750 tonnes, or 167 large truck loads per day. The project began airing messages and programs on Heartline Bali FM and in

partnership with the local NGO received national exposure and recognition through the Jakarta Globe, a national newspaper.

Students stayed in the village for 3 weeks experiencing the village life that many tourists do not get to experience. Students expressed that it was such a valuable opportunity to learn many new skills and knowledge, gain perspectives into international health promotion and development, experience a new culture and develop many new international colleagues and friends. A new group of practicum students will be travelling to Bali to work on nutrition and physical activity focused projects in September 2010. This program would not be possible without the assistance of Australian based NGO, Health Communication Resources (HCR) which has had a long standing relationship with Heartline Bali FM seeking to build the capacity of the organisation. The director of HCR, Dr Ross James is also an Adjunct Associate Professor with ECU and the program coordinator and Australian Youth Ambassador for Development Dane Waters is a recent ECU Honours graduate.

For further information regarding this placement please contact practicum supervisor:

Jill Darby Lecturer Health Promotion
j.darby@ecu.edu.au



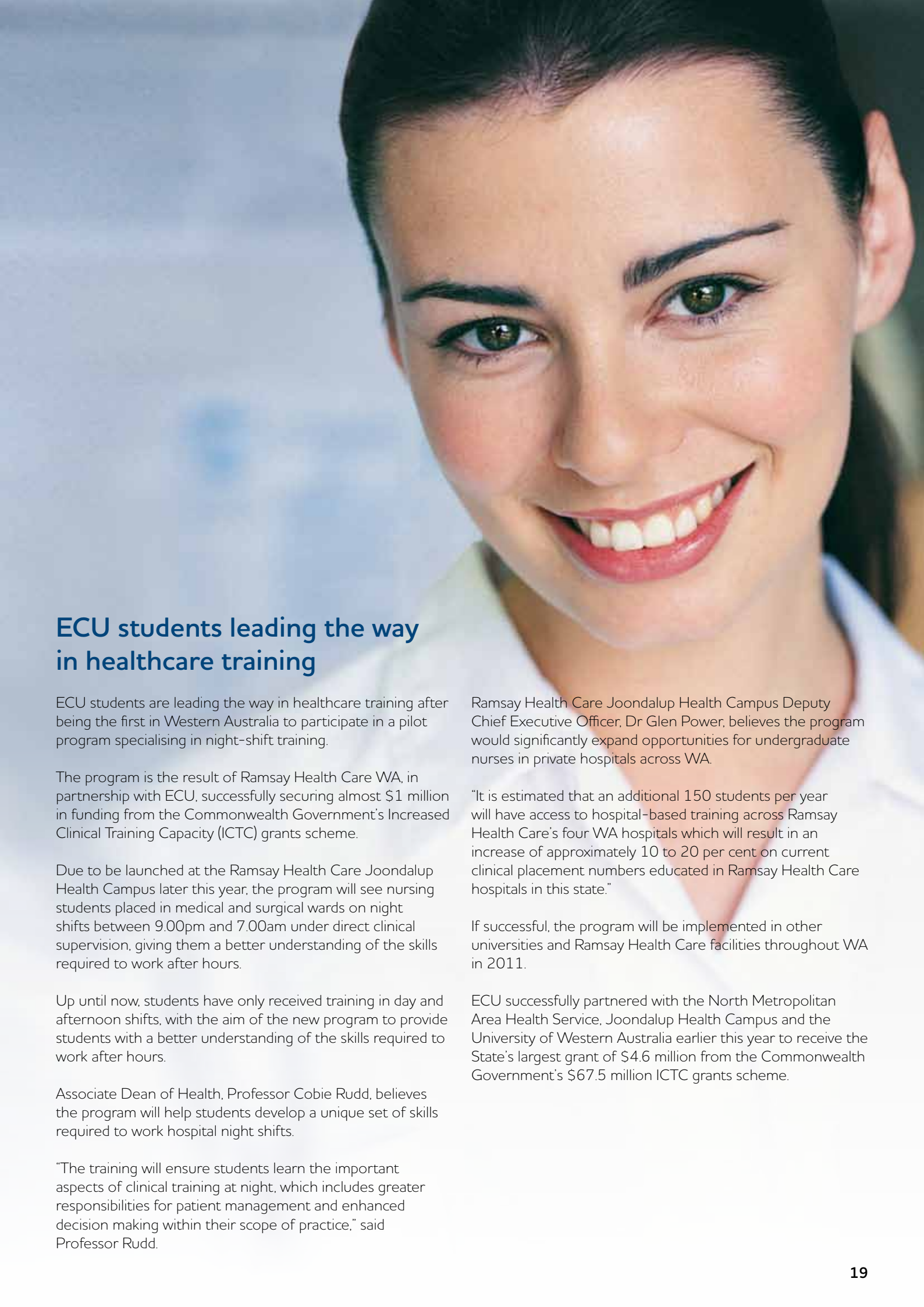
ECU Open Days a success

ECU welcomed in excess of 10,000 prospective students and their families to the Open Days held at the Joondalup and Mt Lawley Campuses on July 18 and 25 respectively.

The Open Days were a huge success at which visitors took advantage of the chance to meet with the teaching staff, as well as past and present students, discuss course and career options, and explore the University's campuses and their state-of-the-art facilities.

Information sessions were well attended, providing prospective students with insights into campus life, admissions processes, fees, scholarships and alternative entry pathways. The nursing demonstration wards were a popular attraction with visitors able to interact with patient simulators, whilst the interactive chemistry and physics demonstrations also proved popular attractions.





ECU students leading the way in healthcare training

ECU students are leading the way in healthcare training after being the first in Western Australia to participate in a pilot program specialising in night-shift training.

The program is the result of Ramsay Health Care WA, in partnership with ECU, successfully securing almost \$1 million in funding from the Commonwealth Government's Increased Clinical Training Capacity (ICTC) grants scheme.

Due to be launched at the Ramsay Health Care Joondalup Health Campus later this year, the program will see nursing students placed in medical and surgical wards on night shifts between 9.00pm and 7.00am under direct clinical supervision, giving them a better understanding of the skills required to work after hours.

Up until now, students have only received training in day and afternoon shifts, with the aim of the new program to provide students with a better understanding of the skills required to work after hours.

Associate Dean of Health, Professor Cobie Rudd, believes the program will help students develop a unique set of skills required to work hospital night shifts.

"The training will ensure students learn the important aspects of clinical training at night, which includes greater responsibilities for patient management and enhanced decision making within their scope of practice," said Professor Rudd.

Ramsay Health Care Joondalup Health Campus Deputy Chief Executive Officer, Dr Glen Power, believes the program would significantly expand opportunities for undergraduate nurses in private hospitals across WA.

"It is estimated that an additional 150 students per year will have access to hospital-based training across Ramsay Health Care's four WA hospitals which will result in an increase of approximately 10 to 20 per cent on current clinical placement numbers educated in Ramsay Health Care hospitals in this state."

If successful, the program will be implemented in other universities and Ramsay Health Care facilities throughout WA in 2011.

ECU successfully partnered with the North Metropolitan Area Health Service, Joondalup Health Campus and the University of Western Australia earlier this year to receive the State's largest grant of \$4.6 million from the Commonwealth Government's \$67.5 million ICTC grants scheme.

Joint Research Project with Rio Tinto Iron Ore

Mathematics is an integral part of the modelling needed to be successful in mining ore. Apart from traditional areas of mathematics like calculus and statistics, the newer areas operations research and geostatistics are used in the modelling. Geostatistics deals with the estimation and simulation of spatial data such as mineral grades or material types. ECU is one of only two universities in Australia where formal study in this field is possible. Many students who have completed geostatistics study at ECU work in the mining industry and the employers include Rio Tinto, BHP Billiton, Xstrata, and Snowden's Mining Consultants.

An exciting current research project in the School of Engineering is aimed at investigating the use of geostatistical simulation in mine planning and risk analysis. Rio Tinto Iron Ore has provided funding for a Masters Research Scholarship for a student to work with ECU mathematicians Ute Mueller and Steven Richardson on this project. The plan is to use geostatistical simulation of iron ore material types in conjunction with an existing resource block model to optimize the classification of the material type distribution at block level. Each simulation results in a possible distribution of material types that is consistent with the material types at the sampled locations. Repeating the simulation several times will result in plausible, but different distributions of material types. Knowledge of the distributions will then be used to compute block material type compositions using techniques from operations research.

Mathematics honours graduate Jacqueline Ferreira has just started work on the project. As part of her familiarisation with the context (which also included learning basic geology of iron ore deposits) she flew to one of Rio Tinto's mine sites to learn about the ways in which material types are logged and to get a clear mental picture of the scale of a mining operation. "I thought seeing a mine and the actual samples on which my study is based really put things into context for me...very interesting and valuable experience."



Child Health Promotion Research Centre Staff Participate in World-first European/Australian Research Training School to Address Cyber Bullying

Nine ECU staff from the Child Health Promotion Research Centre (CHPRC) recently participated in a world-first collaboration between Australian and European researchers to address innovation and sustainability in cyber bullying prevention research, at a Training School held in Melbourne in April 2010. The Training School is part of a larger Action under COST (European Cooperation in Science and Technology), an intergovernmental framework for allowing the coordination of nationally-funded research at a European level. COST Action IS0801 'Cyberbullying: Coping with the negative and enhancing positive uses of new technologies, in relationships and educational settings' (2008-2011) aims to share expertise on cyber bullying in educational settings and move towards a common set of guidelines to address the issue. Donna Cross is a member of the COST management committee representing Australia. This is the first time a COST funded training school was held outside of Europe. At this training Australia was acknowledged as a leading nation in terms of quality research investigating cyber bullying prevention and management.

Cyber bullying is a psychologically damaging form of covert bullying used primarily by adolescents to inflict harm on others through electronic and digital media, such as: emails, chat-rooms, mobile phones, websites and web-cams. To date, a general lack of empirical evidence on effective interventions has been a key factor in the failure to convert growing concerns regarding this new and insidious form of bullying into practical interventions to reduce its health consequences on adolescents.

The Training School, entitled 'From research to policy and practice: Innovation and sustainability in cyber bullying prevention' brought together 50 postgraduate students and early career researchers, along with 10 experienced faculty, from 14 European countries and from Australia. The Training School comprised 5 days of intensive study and interaction, focussed on addressing innovation and sustainability in cyber bullying prevention, and the sharing of knowledge and expertise across multi-disciplinary areas related to cyber bullying, including: definition and measurement of cyber bullying; risk and protective factors; legal issues and cyber bullying; interventions and cyber bullying; engaging the student voice to reduce cyber bullying; cyber bullying policy; media literacy, and; research methods and cyber bullying.

The CHPRC staff won nearly one half (9) of the 20 limited places available to Australian attendees. CHPRC staff from ECU represented the largest contingent from any University that attended the Training School, and included: Dr Debora Brown, Ms Dionne Paki, Ms Helen Monks, Ms Kate Hadwen,



Ms Laura Thomas, Mr Mitch Read, Ms Natasha Pearce and Ms Stacey Waters. Professor Donna Cross was involved in the Training School as part of the Training School Organising Committee and one of the 10 Faculty.

COST IS0801 Management Committee Members and leading bullying and cyber bullying researchers who presented at the event included Australian Faculty: Professor Donna Cross (ECU), Professor Phillip Slee (Flinders University, South Australia), Dr Marilyn Campbell (Queensland University of Technology) and Dr Barbara Spears (University of South

Australia). European members who presented included the COST IS0801 Management Committee Chair, Professor Peter K Smith (Goldsmiths College, University of London), Professor Georges Steffgen (University of Luxembourg), Professor Maritta Valimaki (University of Turku, Finland), Professor Ersilia Menesini (University of Florence, Italy) and Professor Tolya Stoitsova (New Bulgarian University). The COST cyber bullying training school provided an opportunity for CHPRC staff to showcase their past and present cyber bullying research, including the Cyber Friendly Schools Project (2008-2009, funded by the Public Education Endowment Trust), the development of parent education resource materials to reduce cyber bullying (2008-2010, funded by the Telstra Foundation) and, most recently, an empirical trial to reduce cyber-bullying in adolescents (2010-2012, funded by Healthway). The Training School enabled CHPRC staff to network with fellow early career researchers and experienced faculty from Australia and Europe. This networking has already contributed to cross-cultural research collaborations and the writing of cross-cultural papers. Key outcomes of the Training School included the need for better translation of cyber bullying research into evidence based policy and practice and the importance of engaging young people in this research. An identified research priority was to work with young people to formulate a definition of cyber bullying that is relevant for young people and to ensure measurement of the phenomenon is consistent and meaningful across countries to enable the cross-cultural comparison of cyber bullying. CHPRC staff have scheduled meetings in the coming months to develop new collaborative research ideas with other Australian and European attendees to further our understanding of cyber bullying and its effects on young people.

More information about the COST IS0801 Action and Training School can be found at <http://sites.google.com/site/costis0801/>. For further information, please contact the CHPRC's media coordinator Dr Debora Brown 08 9370 6383 (debora.brown@ecu.edu.au).

The researcher/practitioner in Psychology – what a useful creature!

Psychology students need to have a relevant four year degree before they can complete the next phase of becoming a practitioner in this field, that is, as a Registered Psychologist. At ECU students who have successfully completed three years of the Psychology program full-time will often do their fourth year as an Honours year. This not only leads towards registration but also prepares the student for undertaking a future research award.

There is, of course, that very interesting creature who wants to be both a researcher and a practitioner in Psychology. One such person is Sue G. Miller. Sue completed her honours year in 2007 at ECU, within a Bachelor of Arts, with a well received thesis on "The role and meaning of spirituality among older adults in Western Australia." Sue decided to study psychology after already having had a substantial career in business with Peters & Brownes, the dairy company. This background fostered her organizational and interpersonal skills, particularly by interacting with people filling a wide range of roles in the company. Having completed her Honours she has continued to work part time with Lifeline, an organization which is at the coal face of dealing with "the human condition."



Sue feels that "being a researcher helps me to be a better practitioner." (An equivalent viewpoint in a University would be that "research informs teaching.") She has commenced a four year PhD in Clinical Psychology by coursework and research at ECU. Provided she also completes three relevant 45 day supervised placements, Sue will be qualified as both a researcher and a practitioner.

Sue's proposed PhD project is a very interesting one entitled "Interpersonal psychotherapy for retirees experiencing depression in the adjustment to retirement: A case series." It was, in part, motivated by the difficulty she experienced in transitioning from a significant career to being a full time undergraduate student at 28. The project would involve developing and evaluating a psychotherapy approach for dealing with what is, internationally, a common problem.

The Principal Supervisor for both Sue's honours and doctoral projects is Dr Eyal Gringart, a Senior Lecturer in the School of Psychology and Social Science.

ECU researchers finalists in worldwide robotics competition

Researchers from ECU, in collaboration with the University of WA, Flinders University and primary sponsor Thales Australia, have been announced as finalists in a multi-million dollar competition run by the Australian Defence Science and Technology Organisation (DSTO) and the US Department of Defence.

Known as the Multi-Autonomous Ground-robotic International Challenge, or MAGIC 2010, the competition aims to attract the most innovative solutions from around the world to address a technology gap faced by coalition forces operating in urban combat zones.

The Western Australian MAGIC 2010 Robotics Team or WAMBOT are one of only six international teams chosen for the finals, which consists of teams from America, Turkey and Japan.

The WAMBOT team were shortlisted from a group of 12 semi-finalists, who underwent a hectic period of testing by both Australian and USA officials over several weeks.

The teams were tested on a range of activities, which highlighted their robots' ability to demonstrate certain



capabilities, including the ability to operate autonomously and to map their surroundings digitally.

WA team coordinator and lecturer at ECU's School of Computing and Security Science, Dr Adrian Boeing, is thrilled that the team has made the finals.

"I am very proud of our team's efforts and to be the only remaining

Australian team in the competition is a fantastic achievement. We are all very excited about the finals and are looking forward to bringing the first place prize to WA."

Twenty three teams from five countries submitted entries in this year's competition.

The six finalists will compete in a final challenge later this year, with the results to be announced at the end of November.

For more information, visit the WAMBOT team website <http://www.wambot.org/robot.html>.



Intelligence careers for ECU graduates?

How many students think about careers in intelligence? Probably not as many as might seriously have considered such a career. One reason may be the perception that the intelligence community recruits only from a pool of recognised professional degrees, instead it recruits from a very broad church of diverse undergraduate backgrounds. The community may be comprised of students from backgrounds such as international relations, politics, history, psychology, engineering, environment or even computer science. Other backgrounds include theology, math, geography, and even education to name but a few.

In the past intelligence careers were often located within major intelligence agencies such as the Australian Security Intelligence Organisation (ASIO), the Australia Secret Intelligence Service (ASIS) or Defence, but now intelligence functions exist across a diverse range of agencies; law enforcement agencies and Customs being two major employers. Other major employers within the intelligence field include the Office of Climate Change, state environment agencies, the Australian Taxation Office, Centrelink, departments of health and various fisheries agencies. Intelligence as a function is embedded in most governance and compliance focused agencies and as a result the opportunity for careers in the intelligence field has opened right up.

Recognising the growing opportunity, and building on the successful security science program already in place, the School of Computer and Security Science has introduced a new minor in Intelligence. This four unit set offers students from all discipline areas an opportunity to get a solid grounding in intelligence and provides a point of differentiation for those that may want to consider a career in the intelligence world. The minor, developed and taught by Jeff Corkill – a career intelligence officer with over 27 years experience in defence and the private sector, consists of:

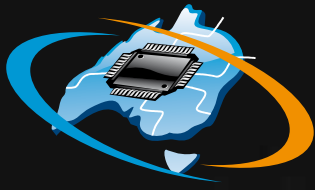
SCY1117 Intelligence Foundations: a unit designed to introduce students to the structured process of information collection, collation, analysis production and dissemination. Students will be introduced to the various concepts involved in the intelligence process. The relevance of the intelligence and information cycle, and its relationship with other contexts such as national security, crime and law enforcement and commerce are core elements of the unit. Students will also be introduced to methods of analysis and the production of intelligence products.

SCY2120 Applied Intelligence: this unit introduces students to intelligence analysis methodologies commonly used by national security and law enforcement agencies. Students will explore fundamental issues in information evaluation and the role of ethics in intelligence analysis. The development of intelligence products appropriate to both tactical and operational requirements will be emphasised.

SCY3107 Intelligence Analysis: this unit introduces students to intelligence analysis methodologies commonly used in the strategic environment. Students will explore fundamental issues of strategic warning, surprise and the role of uncertainty as it pertains to strategic assessment. The relationship between intelligence and the creation of policy will also be explored. The students will be required to develop a strategic intelligence product as a part of this unit.

SCY3506 Counter Intelligence: this unit introduces students to counter intelligence. Students will explore fundamental issues in defensive and offensive counter intelligence operations. They will also explore in depth the role of ethics in counter intelligence operations, investigations and analysis. There will be an introduction to the human factor in counter intelligence and the nature of security vetting. The students will also be introduced to the counter intelligence investigation and development of counter intelligence analytical products. Throughout the unit the multi disciplinary nature of counter intelligence will be emphasised.

For further information about this minor and other courses e-mail enquiries@ecu.edu.au or contact 134 ECU (134 328).



SECAU
Securing Australia's Future



secau Security Congress

“Informing Security”

30 November - 2 December 2010
The Duxton Hotel, Perth

8th Digital Forensics Conference

8th Information Security
Management Conference

11th Australian Information
Warfare and Security Conference

3rd Australian Security and
Intelligence Conference

1st Australian Counter Terrorism
Conference

conferences.secau.org



Centre of Excellence