

\$4.8million Collaborative Research Network In Mental Health and Well-being in Rural Regions

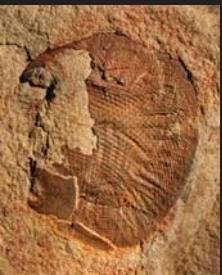
The Minister, the Hon Kim Carr announced the successful recipients of CRNs in June and UNE's proposal for a Collaborative Research Network - Mental Health and Well-being in Rural Regions was fully funded for the amount of \$4.8 million.

The CRN will be led by the University of New England working with five partners, University of Newcastle, University of Sydney, La Trobe University and University of NSW and the Hunter New England Area Health Service. The CRN will expand the emerging Rural Health research strength at UNE, feeding into the education of 1,400 health professionals annually. Partner institutions will extend their reach into and knowledge of rural regions and CRN activities will build links with rural communities and health providers in Northern Inland NSW and Victoria, with focus on investigating mental health and well-being including health workforce sustainability, self-care, suicide, disabilities, sexuality, inclusion, and biomedical science supporting rural mental health.

A number of UNE staff and Schools provided vital input, direction and leadership in formulating the EOI and later, the full submission, and its constituent elements: Professor Annabelle Duncan, DVC Research; Professor Ray Cooksey, who initiated the process whilst acting as PVC Research last year; the two faculty PVC/Deans, Professor Victor Minichiello and Professor Jennie Shaw; Professor Steve Campbell, Professor John Frasier, Dr Rafat Hussain and Dr Myfanwy Maple, from the Schools of Health and Rural Medicine; Professor Don Hine, Dr Gail Hawkes, Dr John Scott and Dr Debra Dunstan from the School of Behavioural, Cognitive and Social Sciences; and Professor Jim McFarlane and Dr Pierre Moens from the School of Science and Technology and the Centre for Bioactive Discovery in Health and Ageing. UNE was also ably assisted in pulling together its CRN submission by Dr. Sandra Welsman, Principal, Frontiers Insight PL, who coordinated the process, compiled and prepared the final documentation for submission.



UNE's CRN Steering Committee: front row from left: A/Prof Rafat Hussain, Mr Mike Quinlan, Prof Annabelle Duncan (Chair), Prof Victor Minichiello. Back row from left: A/Prof Jim McFarlane, Dr Pierre Moens.



ARC Linkage Grant Announcement



Prof Peter Gregg

The ARC Linkage Grant Round successes were announced recently. UNE was successful in gaining funding for the following projects:

1. Development of novel pest management tools for major insect pests - \$135,000 over four years, in collaboration with Agbitech Pty Ltd. Adjunct Professor Peter C Gregg (UNE), Mr Anthony J Hawes. This project will provide new options for environmentally sustainable control of some of the world's worst pests. Cost effective systems will be developed that prevent crop damage, using chemicals identical to naturally occurring plant compounds, combined with tiny quantities of insecticides, to lure and kill adult moths before they lay eggs.



Dr June Ross

2. Alive with the Dreaming! Songlines of the Western Desert - Prof Howard Morphy, Dr Michael A Smith, Dr Libby Robin, Dr June Ross (Adjunct, UNE), Ms Margo Neale. \$810,000 over five years in collaboration with KANYIRNINPA JUKURRPA, Ananguku Arts and Culture Aboriginal Corporation, Archaeological & Heritage, Management Solutions, Department of Sustainability, Environment, Water, Population and Communities, NPY, and WOMEN'S COUNCIL, National Museum of Australia, The Palya Fund, administered by ANU. Songlines that map the Australian continent are of iconic significance and the vision of Western Desert elders and artists is to share with the wider community an understanding of the scale, spiritual and environmental significance of the Tjukurpa Songlines of Australia.

RESEARCH NEWS

\$38,000 for Environmental Research at University of New England

The Minister for the Environment, Robyn Parker, recently announced that the NSW Government's Environmental Trust has approved funding of over \$38,000 to the University of New England for two research projects that will put NSW at the forefront of international efforts to better understand, prevent and measure environmental impacts. The Minister said this was just one of five grants, totalling \$84,770 awarded, under the Seeding Projects stream of the Trust's Research Program. "The Environmental Trust provides Seeding Grants for innovative research to test creative ideas that might lead to significant breakthroughs in managing our natural environment," Ms Parker said. The Environmental Trust is an independent statutory body established by the NSW Government to fund a broad range of organisations to undertake projects that enhance the environment of NSW. Ms Parker said the Environmental Trust's Research Program was created to support research projects that help address environmental problems in NSW.

Extract from the NSW Liberal Party Website - <http://www.nsw.liberal.org.au/news/environment/over-38000-for-environmental-research-at-university-of-new-england.html>

Research in Riverine Landscapes.

Professor Martin Thoms, School of Behavioural, Cognitive and Social Sciences



Prof Martin Thoms

Of the major environmental issues currently affecting Australia degradation of our river systems ranks very high. Australia's river systems are impacted by many components of human-accelerated environmental change, and there is a clear and urgent need to resolve the conflicts of use and abuse of aquatic ecosystems, relative to issues of environmental resilience. Solving the world's water needs represent one of human society's most urgent problems given the critical role of water in the world's economies, politics and general biotic well being.

It is within this context that staff and post students from the Riverine Landscapes Research Lab have been very active over the last 6 months being successful with two research grants and establishing a research-led teaching initiative with the New South Wales National Parks and Wildlife Service (NSW NPWS). A seeding grant from the NSW Environmental Trust to Prof. Martin Thoms and Dr Michael Reid in collaboration with Prof. Mike

Delong from Winona State University, USA, is to investigate ecological thresholds in rivers of the northern Murray Darling Basin NSW. This research will take the novel approach of examining fish specimens collected in the past and by measuring their carbon and nitrogen isotope ratios a series of food webs over different time periods will be established.

The research lab has also teamed up with a local Armidale company, RMTeK Pty Ltd, with a successful NSW DPI technical grant. The grant is to allow the development of data collection from remote areas of Australia. In particular, a series of billabongs will be instrumented including the continuous monitoring of frog calling.

An exciting new collaboration with NSW NPWS will see the development of research led teaching for senior environmental geography students at UNE. Funding from NSW NPWS will allow students to undertake small research projects, the data of which will feed directly into the restoration of high altitude wetlands across the New England Region. High altitude wetlands are recognised as endangered ecological communities and their conservation and restoration is a priority for the New South Government.

Carbon storage potential of National Parks in NSW

Assoc Prof Brian Wilson and Dr Lalit Kumar from ERS have successfully attracted a seeding grant (\$19,160) from the NSW Environmental Trust to investigate the "Carbon Storage potential of National Parks in NSW". The project, a collaboration between UNE and the NSW Office of Environment and Heritage (National Parks and Wildlife Service), will address a key issue identified by State Government regarding climate change and carbon storage. The project aims to estimate current carbon stock and predict future storage potential across the National Parks estate in NSW.



Prof Brian Wilson



Dr Lalit Kumar

Considerable research attention has recently been focused on the storage of carbon in soils and biomass across the Australian landscape to mitigate greenhouse gas emissions and much of this work is already taking place at UNE. While much of this research is focused on agriculture, there is enormous potential to store carbon in non-agricultural systems. This project will extend UNE's existing strengths in climate change and carbon research into the non-agricultural landscape.

The project will combine carbon science and spatial analysis skills in ERS and will utilize existing spatial data layers to estimate current carbon storage in the 6.7 million hectares of the National Parks estate and delineate those areas within parks that are suited to revegetation and restoration and evaluate their potential to store additional carbon. The project will develop the tools and techniques required to generate a modeled "Carbon Layer" for the National Parks system to predict the potential for the mitigation of greenhouse gas emissions, and will provide "proof of concept" for a more extensive evaluation of carbon storage across the State.

RESEARCH NEWS

USD\$3 Million Grant to Extend the International Longitudinal Twin Study of Literacy and Language.

Emeritus Professor Brian Byrne, Psychology, School of Behavioural, Cognitive and Social Sciences

Brian Byrne is a consultant on a recently-awarded grant of USD3 million from the National Institutes of Health in Washington to extend the International Longitudinal Twin Study of Literacy and Language. This project was initiated by Professor Byrne at UNE 12 years ago. It has been following a sample of 2000 twin children in four countries, starting at ages 4-5, as they developed in literacy skills and closely related aspects of language and cognition. The new grant, led by Professor Erik Willcutt of the University of Colorado at Boulder, will enable the researchers to continue to assess the 1000-strong US sample as high-school students in literacy, mathematics and other school subjects, as well as in relevant behavioural and cognitive characteristics. The result will be the most comprehensive available data-base for identifying genetic and environmental influences on crucial aspects of academic development across 10 or more years of schooling.



E/Prof Brian Byrne

Brian has also been invited to give a keynote address at a two-day scientific meeting of the Dutch Dyslexia Program, a ten-year research project that is reaching its end, to be held in December in Amsterdam. The group has been carrying out genetic and intervention studies in dyslexia, as well as a longitudinal study in which they have been following children from risk and non-risk families since shortly after birth until school-age with frequent EEG and other phenotypic measures. Brian will present evidence on the effects of early intervention and the question on cross-language differences and similarities in the manifestations of dyslexia.

Professor Byrne's webpage can be found at: <http://www.une.edu.au/staff/bbyrne.php>

Pilot Aboriginal Literacy Campaign in Western NSW



Dr Bob Boughton



Dr Jack Beetson

The Commonwealth Department of Employment Education and Workplace Relations recently agreed to provide \$266,000 to UNE for a project to trial an innovative adult literacy campaign model in an Aboriginal community in western NSW, managed by Associate Professor Bob Boughton in the School of Education and led on-site by Adjunct Professor Jack Beetson of the Centre for Agriculture Law. This flows on from an initial investigation funded by the Lowitja Institute, formerly the CRC for Aboriginal Health, which led to the establishment in 2009 of a national literacy campaign committee of Indigenous health and education leaders from around the country. Work has begun in July to establish a local Literacy Commission to lead the campaign pilot, which will run for twelve months.

The idea of a mass adult literacy campaign originally emerged from an evaluation done by Boughton, Beetson and others on a similar initiative in Timor-Leste, as part of an ARC Linkage grant to UNE 2007-2010. If the model adopted in Timor-Leste proves similarly successful here and can be upscaled, the resulting higher rates of adult literacy promise to have a substantial impact on a range of indicators of community health and well-being. For further background, see: Boughton, B. (2009). Popular Education for Literacy & Health Development in Indigenous Australia. *Australian Journal of Indigenous Education*, Vol 38, pp103 - 108.

Sheep CRC receives 2011 STAR Award

The Sheep CRC's efforts in working with industry in the key area of genetics has been recognized with a prestigious award. The 2011 CRC Program STAR Award was presented at the Excellence in Innovation Awards event held at the CRC Association Annual Conference in Brisbane in May.

Sheep CRC CEO, Prof James Rowe, says "the Award acknowledges co-operation between researchers and industry, specifically in the CRC's Information Nucleus flock. It is a very deserving outcome for the Sheep CRC's collaborators – represented by Merino breeders Mark & Vicki Murphy and White Suffolk breeders Steve & Debbie Milne - and for the Sheep Genetics team and the MLA and AWI - for their role in coordinating activities between the breeders and the Information Nucleus program. The STAR awards focus on effective cooperation with small and medium sized enterprises."

The research focuses on improved genetic gain and management of more productive, easy-to-manage sheep while re-positioning sheep meat and wool as high value niche products meeting modern consumer's quality expectations. The Information Nucleus (IN) flock Program is central to the CRC's work; it is delivering new and far-reaching genetic information and data for genomic prediction of sheep breeding values. The potential of the new genomic technologies is very significant for the Merino industry. Information from the IN Program has been valuable in providing a comprehensive picture of genetic parameters across all important studs and blood lines in the Australian sheep industry. Co-operation by stud breeders in the IN Program has made a major contribution to its success and is benefiting industry through the rapid delivery of results and widespread utilisation of the new information in commercial breeding programs.



L to R: Dr John Keniry (Sheep CRC Chair), Mark & Vicki Murphy (Karbullah Poll Merino Stud), Steve & Debbie Milne (Waratah White Suffolk Stud), Prof James Rowe (Sheep CRC CEO) Graham Truscott (Sheep CRC Deputy Chair)

RESEARCH NEWS

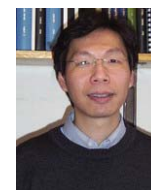
Renewed Funding For Computational Modelling of Disease Spread

Prof ASM Sajeev and Dr Paul Kwan, School of Science and Technology

The Federal Department of Agriculture, Fisheries and Forestry has granted \$99,000 to Professor ASM Sajeev and Dr Paul Kwan to continue the work on computational modelling of livestock disease spread. The funds will be used for a PhD scholarship for the next three years. The group, also involving PhD student Mitchell Welch and staff members Prof. Graham Leedham, Dr Mark Evered and Dr Ashoka Jayawardena, has been working as part of the School of Science & Technology's Centre for Engineering Intelligent and Secure IT Solutions (CEISE-IT) in advanced spatial modelling of spread of animal diseases such as foot and mouth and screw worm fly infections.



Prof ASMSajeev



Dr Paul Kwan

Our man from Intersect: eResearch Analyst Johan Boshoff



UNE welcomes Johan Boshoff to the role of Intersect eResearch Analyst to UNE. While Johan may be a familiar face to some at UNE, his role has changed. As our eResearch Analyst, Johan is the primary interface between UNE and Intersect. Prof Annabelle Duncan said, "we are very keen to deepen our relationship with Intersect, particularly to pursue projects that address the needs of rural and regional researchers in a larger collaborative context". Intersect works with NSW universities to increase the quality, efficiency and visibility of NSW based research by providing advanced and specialised ICT services and solutions. It works to position NSW to compete favourably in the increasingly globalised and on-line world of research. UNE joined Intersect in 2009.

Johan's role as an eResearch Analyst (eRA) is to provide advice and support for researchers using eResearch; access to Intersect's services and engineering portfolios; and access to and advocacy in the various national eResearch bodies (ANDS, AAF, NCI etc.) Last year, Intersect's team facilitated proposals from members to the Australian National Data Service (ANDS), worth over \$4M. These projects relate to the ANDS Data Capture and Seeding the Commons programs. Much of eRA work involves user requirements analysis: working with researchers to elicit needs and convey that to the technical teams at Intersect. The eRAs assist researchers with HPC support: helping new users set up, advising on hardware investments. eRAs can help configure software, or find someone who can.

Johan brings a wide range of industry experience to Intersect after running his own software development company for 17 years. He has worked across business management, livestock & agriculture, data warehousing, biometric systems and the hospitality industry. He is an experienced business analyst who helped design and develop more than 60 business solutions for national and international clients. Johan is also an Oracle DBA with extensive database design experience. Most recently Johan worked as a senior business analyst on the International Livestock Registry at UNE's Agricultural Business Research Institute.

For more information about UNE and Intersect visit: <http://www.intersect.org.au/une>

Getting involved in Biomass Utilisation

Dr Chris Fellows, Chemistry, School of Science & Technology

Research is a bit like Bilbo used to say: "It's a dangerous business, Frodo, going out your door. You step onto the road, and if you don't keep your feet, there's no knowing where you might be swept off to." Dr Fellows started off in radical polymerisation, measuring numbers useful for predicting the rate of reactions to make plastics, but the 2nd quarter of 2011 saw him deeply involved in biomass utilisation. The highlight of the quarter was the presentation by his student Mr Rowan Pranglely at the National Centre for Rural Greenhouse Gas Research's 'Rural Climate Change Solutions Symposium', held at UNE in March, of his work on pervaporation of water/ethanol mixtures—a method that holds promise for greatly increasing the energy efficiency of biofuel utilisation. As a result of this presentation, his group is looking at installing a duplicate of Mr Pranglely's apparatus in line with the Department of Primary Industry research fermenters at Wollongbar.



Dr Chris Fellows

This collaboration with NSW DPI adds to an ongoing collaboration with Drs Bill Doherty and Les Edey at QUT on value-adding to waste lignin (which has seen four publications submitted this quarter). Another project with Dr Mike Sissons, based at the Tamworth Agricultural Institute, has involved extensive collaboration with Dr Elliot Gilbert of ANSTO (and has also seen four publications submitted this quarter). In this project Nisha Aravind, who submitted her PhD thesis last year, developed pasta as a 'functional food' by incorporating various dietary fibres to reduce glycaemic index and impart other health benefits. As the physical properties of pasta are all important – nobody will buy it if it doesn't feel like pasta when you chew it – this work involved examining the effect of fibre incorporation on the microscopic pasta structure using Scanning Electron Microscopy, X-Ray Diffraction, and Small Angle X-Ray Scattering.

Dr Fellows has not abandoned his roots entirely, with acceptance this quarter of a paper on emulsion polymerisation kinetics in "Macromolecular Theory and Simulations" written with Dr Greg Russell of the University of Canterbury and Dr Bob Murison of Statistics. (*Emulsion polymerisation is the industrial process used to make latex paints and is drop-dead fascinating, for more details see the paper published online at: <http://onlinelibrary.wiley.com/doi/10.1002/mats.201100044/pdf>*)

RESEARCH NEWS

Public lecture to explain the impact of a carbon tax

Professor Mahinda Siriwardana, School of Business, Economics and Public Policy

In his Inaugural Lecture to the Armidale community on Wednesday 18 May, the UNE economics professor Mahinda Siriwardana outlined his approach to modelling the impact of a carbon tax.

Professor Siriwardana's lecture, titled "Carbon tax, the economy and carbon dioxide emissions: Measuring the effects", was presented in non-technical terms by a politically neutral, independent expert. It was designed to help members of the community understand this nationally significant issue. Professor Siriwardana (pictured here) is an expert in the "computable general equilibrium" approach to such modelling, and has developed numerous models using this approach over the past 30 years. After considering a range of tax levels (\$5-\$40 per tonne of carbon) he discussed the impact of a \$30-per-tonne tax using a model he has recently developed for this purpose.



Prof Mahinda Siriwardana

"A preliminary analysis undertaken by simulating the impact of a carbon tax of \$30 per tonne using this new model reveals that, in the short run, Australia's real GDP may decline by 0.71 per cent, consumer prices may rise by 0.77 per cent, and the price of electricity may increase by about 29 per cent," he said. The simulation results imply an emission reduction of about 9.2 per cent of the 2005-based emissions."

Extract from UNE News, May 13th, 2011 by Jim Scanlan

Research in the Pharmacy Program

Professor Ieva Stupens, Pharmacy, School of Science and Technology



Prof Ieva Stupens

The Pharmacy program is new for UNE, with students currently in their second year of study. The pharmacy team is working hard to roll out a new and exciting curriculum, and is using the opportunity of running the first Australian pharmacy program by distance to develop innovative teaching approaches for the program and to subsequently evaluate these, contributing to the scholarship of teaching and learning.

Funding has been secured from DEHub (\$100K) to facilitate, in collaboration with UNE social work staff and co-researchers from CSU and JCU, the development of scenarios on Reaction Grid to promote learning around counselling practice. Avatars are being used to simulate pharmacists or social workers and clients in various interactions, and research is also being conducted regarding the use of Adobe Connect as a tool to facilitate tutorials for our distance students.

The program leader (Professor Ieva Stupans) has also recently received funding from ALTC (\$84K) to lead a discipline grant which will bring together all Australian university pharmacy programs in collaboratively developing learning opportunities and their assessment against the new pharmacy competency standards. Pharmacy, unlike other health professions, has previously not used competency based assessment. This will be another excellent opportunity for research into university teaching and learning.

Prof Stupens webpage can be found at: <http://www.une.edu.au/staff/staff/Ieva.php>

Tripping 'the Light Fantastic' in Inaugural Lecture

Extract from UNE News webpage, June 13th, 2011 by James Vicars

Broadband, gigabytes, megabits, SMART houses, fibre and the National Broadband Network (NBN) are terms cluttering our TVs and computers - but why is light important to them all?

In his Inaugural Lecture, entitled "The Light Fantastic", Professor of Physics and Precision Agriculture at the University of New England, David Lamb, sought to enlighten members of the University and the community on the physics of light. Professor Lamb used the occasion to bring together two of his research passions: the development and application of new tools in agriculture, and optical fibre technologies.



Prof David Lamb

"The Light Fantastic" was a one-hour presentation, filled with practical demonstrations, that took the audience through the fundamentals of light, the development of optical technologies and their convergence in the creation of communications systems like the National Broadband Network. Starting with a basic discussion of what light actually is and the rudimentary use of fires and candles for 'signalling', the lecture examined methods of modulating and guiding light signals and what they can be used for. It began with Alexander Graham Bell's 'Photophone', first demonstrated in 1880, and ended with recent technology such as lasers and optical fibres. At each step of the way the lecture explained, at a level suitable for a general audience, the underlying physical principles and the terminology that is finding increasing use on our TVs, personal computers and communication devices. Given the means to communicate large amounts of data and information (there is a difference!), the lecture concluded with a discussion on the application of these technologies in the NBN, and how it can benefit regional communities as well as major cities - including SMART (Sustainable, Manageable and Accessible Rural Technologies) Houses, SMART Communities and SMART Farms.

Professor Lamb's webpage can be found at: <http://www.une.edu.au/staff/dlamb.php>

RESEARCH NEWS

The oldest complex eyes on the planet

Dr. John Paterson, Earth Sciences, School of Environmental and Rural Science



Dr. Paterson and a team of palaeontologists from South Australia, Spain and the UK have discovered half-a-billion-year-old compound eyes fossil from Kangaroo Island, South Australia, demonstrating that some of the earliest animals had excellent vision. The eyes belong to an arthropod – the group consisting of insects, crustaceans, spiders and centipedes – and are more powerful than anything from that period found to date. The eyes have over 3000 lenses and a specialized ‘bright zone’ – similar to many modern insects and crustaceans – which aids binocular vision and the ability to see in low light conditions.



The find also supports the so-called “Light Switch Theory”, which suggests that the advent of vision was a major trigger in animal evolution’s Big Bang, known as the Cambrian ‘explosion’ that began 542 million years ago – a critical phase in the history of life that marks the initial appearance and rapid diversification of most animal groups that exist today. This discovery tells us that whilst the beginning of the Cambrian Period saw the arrival of most modern animal groups and therefore brand new body plans, there was also rapid innovation at finer anatomical scales, with arthropods achieving sophisticated (especially acute) vision in the earliest stages of their evolution. The optical design of these eyes also points to an active, highly mobile predator capable of seeing in dim environments, suggesting that complex predator-prey relationships were already in place during the early Cambrian.

This exciting discovery was published in the prestigious journal *Nature* on the 30th June 2011 and can be found at the following link: <http://www.nature.com/nature/journal/v474/n7353/full/nature10097.html>.

Language and Asylum Research Group

Dr Diana Eades, Adjunct Professor, Linguistics

Diana Eades is continuing research and practical applications in two areas: (i) the use of English by, to and about Aboriginal people in the legal system, and (ii) the use of language analysis in the determination of origin of asylum seekers (LADO). LADO typically starts with the analysis of speech recordings to determine whether an asylum seeker’s speech patterns show expected features of the specific language variety spoken by their claimed group. Governments in many countries are increasingly looking for LADO reports to assist in the often complicated matter of assessing whether an asylum seeker who has arrived without nationality papers is being truthful about their origins. The key question that can be addressed scientifically is not one of nationality but of language socialisation and speech community membership, which is a sociolinguistic matter. While sociolinguists and linguists with other specialisations may sometimes be able to provide analysis relevant to LADO questions, there are many unresearched questions.



Dr Diana Eades

Together with co-convenor Professor Peter Patrick at the University of Essex, Diana has established the international Language and Asylum Research Group (LARG), comprising experts involved in LADO as researchers or practitioners or both. LARG’s website was launched in May this year: <http://www.essex.ac.uk/larg>. Starting in June 2011 Diana will be part of a small group of specialists who will explore the issue of data collection in LADO in a research seminar funded by the UK Economic & Social Research Council at Essex University.

Dr Eades’ webpage can be found at: <http://www.une.edu.au/staff/deades.php>

Human Rights and Democracy funding round with the Pacific Centre for Peacebuilding

Dr Rebecca Spence, Peace Studies, School of Humanities



Dr Rebecca Spence

Dr Spence and Dr Micheal O’Loughlin (a UNE Alumni) run two organisations: Peaceworks, the only peacebuilding learning organisation in Australia, and Evolveris, a not for profit that works with rural communities in PNG and Fiji at present. They recently applied for and were successful in gaining funding of 74,000 Euros in the EU Instrument for Human Rights and Democracy funding round with their partners, the Pacific Centre for Peacebuilding, for the program “Leading Transitions: Building the Capabilities of Local Community Leaders and Enhancing the Skills Sets of Community Based Organisations.”

The objective of the program is to build greater social cohesion through enhanced skills in dialogue, community participative planning, leadership for good governance, and conflict resolution, thus enabling communities to contribute more effectively to the peaceful conciliation of stakeholder interests, and enhance the prospects for equal participation of men and women in social, economic and political life. PCP and Evolveris will work directly with 16 community groups in Vanua Levu, Fiji. Up to 100 emerging community leaders including women and youth will be given the necessary skills to work in villages and settlements on issues such as conflict management, participatory planning and consultation skills.

Dr Rebecca Spence, Peaceworks Pty Ltd, <http://peaceworks.wordpress.com>

RESEARCH NEWS

Poultry CRC - Developing reliable tools for industry - Litter Composting and Viral Pathogen Survival.

Professor Steve-Walkden-Brown, School of Environmental and Rural Sciences



Prof Steve Walkden-Brown

With an increasing cost of litter material coupled with an increase in public awareness of litter re-use issues (particularly pathogen load), the poultry industry is challenged on how to best manage this potential resource.

A previous Poultry CRC project undertaken by Professor Steve Walkden-Brown at UNE focused on viral pathogen survival in multiple batch litter use by broilers. Experiments, using a novel bioassay, investigated pathogen survival in litter over time; to semi-quantify survival rates of pathogens with temperature. This research showed that chicken anaemia virus, infectious bursal disease virus and fowl adenovirus serotype 8 infections were readily transmitted in litter, but infectious bronchitis virus and Newcastle disease virus were poorly transmitted via litter. This project, in collaboration with CSIRO's Dr Peter Hunt, will investigate viral pathogen survival in composted litter over time and in relation to temperature. The ultimate potential benefit is to develop good temperature/time relationships of common viral pathogen survival rates in compost, leading to a higher level of litter reuse without some of the risks associated with it. This will also have the benefit of reducing costs of production and, by utilising this resource to full potential, a smaller ecological footprint for the industry. The research will determine whether molecular tests will mimic pathogen survival curve from prior bio-assay work and a rapid decay of viral load in bioactive, composting conditions will occur and will also develop Standard Operating Practices (SOP) for litter composting (i.e., predictive outcomes at certain composting temperatures) resulting in the development of reliable models that companies/growers can use to achieve predictable and measurable outcomes. This project will tackle part of this important issue facing the poultry industries in the face of an ever increasing urban sprawl and a more stringent regulatory environment.

Poultry CRC - Gaining experience Down Under

Ohio State University PhD student Michael Cressman has recently made the move to UNE at Armidale to work within Professor Steve Walkden-Brown's current litter project. The Ohio State University represents the only university outside of Australia that is a participant in the Poultry CRC. Michael's background includes an undergraduate degree in Animal Science from Pennsylvania State University, with a Masters from Ohio State. Michael is currently half way through his PhD at Ohio State, and will use his one year residence in Australia to investigate bacterial and viral pathogen survival in composted litter, and link this to bird welfare and performance across 2-5 batches (flocks). "Litter reuse in the United States is very common across multiple batches" Michael said. "This is not so in Australia, but as Australian broiler production exceeds 450 million birds annually, the cost and availability of bedding material have created a need to consider reusing poultry litter more frequently. Currently around 70% of bedding material used in Australia is single-use. However, there are justifiable concerns associated with litter reuse. Australian broiler litter (both single-use and reused) has been found to serve as a reservoir for potential foodborne-related pathogens, namely E. coli, Salmonella, and Campylobacter species. It has been previously demonstrated that with continued reuse litter moisture and ammonia levels increase, which has compromised bird welfare.



Michael Cressman

Michael is also looking to duplicate his experiments in Ohio upon his return. "DNA microarray techniques exist at the Ohio State University which would allow me to further characterize the microbial community structure and diversity more completely for litter and gut samples collected in both Australia and Ohio". By gaining a better understanding of pathogen survival in litter (associated with temperature and time) reliable models can be developed to assist industry in further utilisation of this resource, with positive economic and bird welfare outcomes.

Poultry CRC - Implementation of a net energy system for the Australian chicken meat industry

Researchers: Prof Robert A. Swick, Dr Shubiao Wu and Dr Nicolas Rodgers.

A RIRDC funded project examining the effect of dietary nutrients and anti-nutrients on energy and nutrient utilization in poultry has been started. This project is aimed at developing a database of net energy values of raw materials for use by nutritionists in the feed industry. The project will examine heat production in broiler chickens using closed circuit respiration chambers over a wide range of dietary inputs. Currently, the most commonly accepted system for formulation is based on metabolisable energy, which is not capable of accurately accounting for losses of chemical energy in solid, liquid and gaseous excreta or as heat. Competition from the biofuel industry and increasing demand from a more affluent and expanding meat eating population has placed unprecedented demands on renewable energy from grains and oilseeds. Developing a poultry formulation system based on net energy holds promise to significantly improve productivity, energy efficiency and profit in the poultry sector, and better use of precious raw material resources will have additional environmental and social benefits.



Inspecting a test chamber: (L to R) Dr Tim Walker, Dr Jean Noblet, Dr Vivien Kite, Dr David Cadogan, Prof Mingan Choct, UNE PhD student Reza Barekatin (obscured), Prof Bob Swick

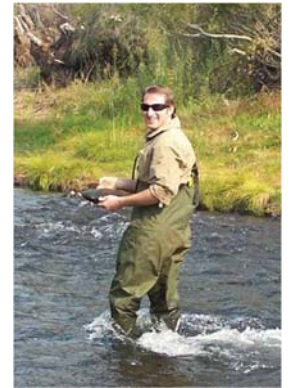
Visit the Poultry CRC website: <http://www.poultrycrc.com.au/>

RESEARCH NEWS

Reporting on River Condition

Dr Darren Ryder, School of Environmental and Rural Science.

A Report Card on the health of the Bellinger River has just been released as the first in a series of Report Cards for 18 coastal catchments in northern NSW. Dr Darren Ryder has led the research-based 'Ecohealth' program for monitoring river and catchment health, supported by the Northern Rivers CMA, NSW Office of Environment and Heritage and the Bellinger Shire Council. The EcoHealth program uses key indicators of ecosystem health such as water quality, riparian vegetation, macroinvertebrate communities, and, scoring each against national guidelines for healthy rivers and awarding a grade to each sampling site. The Report Card grades provide a baseline to which the health of the catchment can be compared over time and is sent to over 6500 land-owners, printed as posters for all schools in the catchment, and hosted on regional council and State government websites. The use of the Report Card format informs local communities of the health of the rivers, why healthy rivers are important and how they can be involved in on-ground activities. Research outputs are also used for State of Environment and State of Catchment reporting for agencies and councils.



Dr Darren Ryder

The Ecohealth program is currently underway in the Port Macquarie-Hastings and Coffs Harbour regions, with sampling in the Clarence catchment commencing in 2012. Linking scientific research and on-ground management is an important component of the research, currently funding a Post-doctoral research fellow (Dr Adrienne Burns) and PhD student (Karlie McDonald) to develop predictive models for regional-scale trigger values for changes in water quality.

The report card is available at <http://www.bellingren.nsw.gov.au/files/24621/File/20110621-CMA-ReportCard-Web.pdf>.

UNE Centre for Local Government researchers tackle infrastructure backlog

UNE Centre for Local Government researchers are undertaking work on addressing the massive local infrastructure backlog afflicting Australian local government. The research project, tentatively entitled The Case for a National Local Government Finance Authority seeks to design a national local government finance authority to tackle the problem.

A series of state and national inquiries into Australian local government over the past ten years have demonstrated conclusively that a massive local infrastructure backlog represents the greatest problem confronting Australian local government; a problem intensified by a series of recent natural disasters in several states. Under existing fiscal arrangements, it is impossible for local government to fund the infrastructure backlog making it imperative to investigate new funding options. Some work UNE Centre for Local Government researchers has already been directed at alternative funding methods. Judy McNeill and Brian Dollery (2000; 2003) have investigated developer charges, Brian Dollery et al. (2007) proposed a Commonwealth asset fund, and Joel Byrnes et al. (2008) considered an Australian municipal bond market. However, this work has ignored the most promising option; a national local government finance authority, which could borrow funds more cheaply than market rates since risk would be pooled and paper underwritten by the Commonwealth government, run on analogous grounds to existing arrangements in Nordic countries, some American states and Canadian provinces, New Zealand and the Australian state of South Australia. Drawing on the theoretical literature, as well as acquired experience, this UNE Centre for Local Government research project seeks to make a case for an Australian national local government finance authority.



Prof Brian Dollery

The Centre's webpage can be found at: <http://www.une.edu.au/clg/>

New Mate Selection method and software poised to take off.

Professor Brian Kinghorn, School of Environmental and Rural Science



Prof Brian Kinghorn

There are many technical, logistical and cost issues to consider when running an animal breeding program. These have been integrated under a unifying framework by UNE researchers. Implementation is now widespread, with two previous generations of software being used in beef, sheep, dairy, poultry and pigs around the world. A key example is the Pig Improvement Company, based in Nashville USA. Weekly automated analyses have been carried out since 2007 in 32 breeding programs covering 17 lines of pigs in 6 countries. The full breeding information system is essentially automatic, with minimal human intervention required between performance recording and delivery of information to dictate animal movements, semen collection, culling, selection and mating.

A new generation of Mate Selection method and software is nearing completion. The new version is initially targeted at beef and sheep in Australia, with funding and support from both private and government sources. However funding for implementation in other species and countries is in the pipeline.

A free basic version can be downloaded at <http://www-personal.une.edu.au/~bkinghor/pedigree.htm>.

RESEARCH NEWS

Incidental Language Learning by Overseas Students

Mark Conroy, PhD candidate in Linguistics, and Jenny Hume, language instructor at UNE English Language Centre are currently researching incidental language learning by overseas students in Armidale. They are investigating whether overseas students on a six week study abroad program at UNE can incidentally acquire specific features of spoken Australian English. The project targets two types of language features: polite request formulae (e.g., I don't suppose you'd mind giving me a bit of a hand), and idiomatic phrasal verbs (e.g., pop in, turn up). The investigation will gather qualitative data about students' experiences and interactions outside the classroom and examine to what extent these experiences and interactions are associated with improvements in their spoken English.



Mark Conroy

The English Language Centre periodically hosts students from overseas universities on short-term language immersion and cultural and educational exchange programs. This project seeks to ensure that students have positive and enriching learning experiences by investigating some of the factors that lead to success in second language learning in these contexts. This research project also marks the first significant steps taken by the English Language Centre to integrate research into its teaching. It is hoped that the project will lead to further research initiatives designed to maintain its high standards of teaching.

Mark has also been selected to undertake survey work for the Austalk Project on behalf of UNE. Austalk is funded by the ARC, the ASSTA (Australasian Speech Science and Technology Association) and the University of Western Sydney. Its goal is to record 1000 speakers across the country, in the development of an audio-visual corpus of Australian English. Mark will be utilising state-of-the-art recording technology to capture the unique voices of the New England region. AusTalk will provide a valuable and enduring digital repository of present day speech as a snapshot of this important time in our linguistic history. As there is a close link between "national self-perception" and how we use language, AusTalk will be a profound cultural resource for all Australians.

Discovering Hidden Patterns in Sheep Movements.

Dr Greg Falzon, Dr Mark Trotter, Prof David Lamb & D Schneider, Precision Agriculture Research Group & C4D – Spatio-temporal Analysis Support Unit.

The researchers of PARG and C4D have been investigating the movement patterns of sheep on UNE properties using GPS-based livestock tracking collars and advanced statistical analysis. The research revealed dependencies between the distance moved by the sheep over different time periods. For instance, the distance moved by the sheep in the previous minute was a good predictor of how far the sheep would move in the current minute.

Of greater interest was the discovery that the distance moved by the sheep thirty minutes before influenced the distance that the sheep would move at the current time. Very weak dependencies may also be present on the order of six to eleven hours. This research provides fundamental advances in both analytical modelling and understanding of sheep movement behaviour. The research could have enormous implications for the livestock sector as it will enable producers to identify what are "normal" behaviours for livestock and then enable monitoring systems to detect abnormal behaviours long before they become obvious to the producer. These systems could detect problems in the disease status of animals, help identify if animals are pregnant, determine if livestock have enough available pasture and even enable farmers to check if their animals are in good welfare state.



Dr Mark Trotter (left) and Dr Greg Falzon

Is Water Different from Biodiversity? - Governance Criteria for the Effective Management of Transboundary Resources

Michelle Lim - IUCN Best Graduate Student Paper winner

Michelle Lim's paper, Is water different from biodiversity? Governance Criteria for the Effective Management of Transboundary Resources, has won the Best Graduate Student Paper prize for the 9th annual IUCN Academy of Environmental Law Colloquium, held in July 2011, in South Africa. This is the second year that Michelle has won the prize. At last year's IUCN Academy Colloquium, Michelle caused a stir with her presentation on Transboundary Biodiversity Protection in High Mountain Areas, causing commentators to remark that 'it was the best paper loaded with ideas they had heard in a long time'. Michelle is a PhD student in the Australian Centre for Agriculture and Law (AgLaw Centre) in the School of Law. Her research focuses on transboundary legal and institutional requirement for achieving sustainable development and biodiversity conservation in mountain areas. Her research is linked to a UN transboundary project in the Pamir mountains between Tajikistan and Kyrgyzstan. The IUCN Academy is a network of university-based law faculties and environmental law centres, each of which is a member institution. Michelle's paper was evaluated by an independent expert Panel organized by the IUCN Academy.



Michelle Lim

RESEARCH NEWS

Important contributions from the Glover Group.



Prof Steve Glover

The Glover group recently contributed publications by invitation to two important compilations, both in honour of the memory of one of Australia's finest organic chemists, the late Prof Athelstan Beckwith FRACI, FAA, FRS, AO who passed away tragically last May. In April a paper on the reaction of mutagenic N-acyloxy-N-alkoxyamides with biological thiols by Prof Glover and a former Honours student Ms Meredith Adams, appeared in the memorial edition of the Australian Journal of Chemistry.¹ This themed edition of the journal, edited by Dr Peter Duggan a former Beckwith Ph.D. student at ANU, and now Principal Scientist at the CSIRO division of Material Science and Engineering, brought together work by "former students, collaborators and colleagues to celebrate the life of a great scientist and friend". Professor Beckwith invited Prof Glover to spend a sabbatical with him in the Research School of Chemistry at the ANU in 1984, from which their association and friendship grew.

The second publication² appeared recently in the Royal Society of Chemistry's edition commemorating the life and enormous contribution made by Professor Beckwith to the area of Free Radical Chemistry, and like the AJC edition, brought together contributions of significant new research on organic free radicals from world renown practitioners in the field from around the globe. Edited by Professor Carl Schiesser of Melbourne University and Director of the Centre of Excellence for Free Radical Chemistry and Biotechnology, the work "constitutes one of the finest themed editions produced by the Royal Society of Chemistry. The overwhelmingly positive responses from members of the international free radical community to invitations to contribute to this issue is a measure of the fondness and esteem that Athel Beckwith was held in". Prof Glover's contribution with Ph.D. student Adam Rosser, former Honours student Jennifer Johns and visiting summer vacation scholar from Miami University, Kate Diganantonio, dealt with a new synthesis of N,N-dialkoxyamides, a rare class of amides discovered at University of New England and which they have found to decompose by a free radical reaction to alkoxyamidyl and alkoxy free radicals.

Prof Glover's webpage can be found at: <http://www.une.edu.au/staff/sglover.php>

INSTITUTE FOR Rural Futures

Improving Economic Accountability when using Decentralised, Collaborative Approaches to Environmental Decisions

Project funded by the Commonwealth Environment Research Facilities (CERF), due for completion in June 2011.

Decentralised approaches to environmental governance emphasising collaboration between interested parties have become popular in Australia in recent years. These approaches recognise that the social-ecological systems of concern are typically complex adaptive systems, rather than mechanistic systems amenable to conventional benefit-cost analysis. Nevertheless, economic accountability in these approaches remains vital for ensuring available resources are allocated optimally. The project focuses on PRA4 (BCA issues, and Governance of the commons), and will use action research involving key local environmental decision-makers and end-users. The research will identify, test and propose cost-effective methods for enhancing economic scrutiny of collaborative environmental decisions. Staff members involved with this project are Dr Graham Marshall, Dr Ian Reeve and Dr Judith McNeill.

Poultry products from biosecure farms launched into supermarkets in Indonesia



Dr Ian Patrick (centre) with two Indonesian farmers in an Indonesian supermarket

Dr Ian Patrick (Institute for Rural Futures) is leading the Australian Centre for International Agricultural Research (ACIAR) Project – Cost-effective biosecurity for NICPS operations in Indonesia. It is just entering its 4th and last year. The project partners from Indonesian universities, national and provincial government and the poultry industry have been working towards identifying economic incentives for smallholder poultry farmers to improve their biosecurity in order to reduce the risk of disease movement and improve smallholder welfare. This has culminated in a total of 60 smallholders (broiler and layer) in Bali, West Java and South Sulawesi implementing biosecurity plans and, after farm auditing, producing a 'branded' product for sale in supermarkets. These products under the 'Healthy Farm' logo are being sold for a premium price and benefiting smallholders, processors, supermarkets and consumers.

The last year of this project will consolidate these 'clean market chains' and provide a description of the process of market development and the lessons learned. It will also continue to train farmers and farm advisors in understanding and implementing biosecurity and assist the industry embed the farm biosecurity planning and auditing process. It is expected that more farmers will enter the market as they realise the potential price and production benefits of improved biosecurity.

For more information on both of the above IRF projects visit the IRF's website at: <http://www.ruralfutures.une.edu.au/>

RESEARCH NEWS

Age Control and Coal Depositional Rates in the Newcastle Coal Measures of the Sydney Basin.



Prof Ian Metcalfe

Professor Ian Metcalfe (ERS) in collaboration with Dr Robert Nicoll (Australian National University) and Dr Jim Crowley (Boise State University) have commenced a one-year industry-funded research project on age control and coal depositional rates in the Newcastle Coal Measures of the Sydney Basin.

Zircon crystals from multiple volcanic ashfall tuffs above, below and within the Fassifern Coal Seam are being dated by the high-precision Chemical Abrasion Isotope Dilution Thermal Ionisation Mass Spectrometry (CA-IDTIMS) method. The volcanic tuffs being dated form a large component of the Late Permian rock sequence in eastern Australia and were derived from a major subduction-related volcanic arc situated offshore eastern Australia in the Permian period, a time of abundant coal formation in Australia.

It is anticipated that the precise ages obtained (with uncertainties of the order of $\pm 50,000$ years for rocks of c. 250 million years of age will provide quantitative estimates of the rates of deposition of individual sections of the seam and to precisely correlate these within the Sydney Basin. Centennial Coal is funding the project as a \$30,000 research grant to Prof. Metcalfe and Dr Nicoll administered through UNE.

The project forms an adjunct to a much larger research program being undertaken by Professor Metcalfe and colleagues entitled "Understanding mass extinctions and deep-time climate change: International Timescale Calibration of the Late Permian-Early Triassic of Australia".

Prof Metcalfe's webpage can be found at: <http://www-personal.une.edu.au/~imetcal2/index.html>

Proletarian Migration in the Asian region

Amarjit Kaur's research is on the proletarian migration in the Asian region (specifically from India) which was intertwined with European industrialization, the spread of capitalism and global economic integration during the period 1870 to 1940. During this period, European imperialism and the spread of capitalism in Asia linked China and India more directly with Southeast Asia and mass migration from these countries was interwoven with the new economic organizations of plantations, mines, and markets and the growth of wage labour in the region. Mobility and migration thus emerged as definitive features of Southeast Asian demographic and labour history, positioning labour migration centrally in the production and circulation of commodities of Empire and the international division of labour.



Prof Amarjit Kaur

The research contributes to world history in two ways: first, it contributes to the integration of world migration into world history. Second, it strengthens research on migration connections among the longer-existing migration networks of the Indian Ocean and South China Sea.

Prof Kaur's webpage can be found at: <http://www.une.edu.au/staff/akaur.php>

Biodiversity Resilience under Climate, Land Cover & Land Use Change



Dr Nigel Andrew (Zoology) and Dr Ian Oliver (OEH Armidale) were recently awarded a \$150,000 NSW Environmental Trust Grant titled Biodiversity Resilience under Climate, Land Cover & Land Use Change. They also received substantial funds from the New South Wales Office of Environment and Heritage the Border-Rivers Gwydir CMA and a UNE Strategic PhD Scholarship (total value \$350,000). NSW land managers affect the resilience of terrestrial biodiversity via land cover and land use change.

Rarely are the impacts of these changes (on the resilience of terrestrial biodiversity) considered under a changing climate.

Dr Nigel Andrew Nigel and Ian will assess the independent and combined influences of climate, land cover and land use on the distribution of major elements of terrestrial invertebrate biodiversity. They will gain this understanding through large scale surveys of terrestrial invertebrate assemblages across altitudinal, land cover and land use gradients in northern NSW, and will use the data generated by these surveys to answer two specific questions: Q1, what is the observed phenotypic plasticity of species sampled across an altitudinal range of 900m and across different land cover and land use states? Q2, what is the potential phenotypic and physiological plasticity of these species when experimentally exposed to predicted climate change scenarios?

Answers to these questions will: (1) enable predictions of the adaptive capacity of terrestrial invertebrates to changes in climate, land cover and land use, and (2) facilitate the design of multiple use landscapes that confer maximum resilience to terrestrial biodiversity in the face of a changing climate.

More research news from the Insect Ecology Lab can be found at www.une.edu.au/ers/research/insect-ecology-lab/.

RESEARCH NEWS

Developing New Approaches in Quantitative X-ray Phase Contrast Imaging

Dr Konstantin Pavlov, School of Science and Technology



Dr Konstantin Pavlov

Dr Konstantin Pavlov has been working on quantitative X-ray phase contrast imaging (with micro – and nanoresolution) and statistical X-ray diffraction. During his study leave stay at Fraunhofer Institute of Applied Solid State Physics (Freiburg, Germany), Dr Pavlov worked on structural characterisation of modern optoelectronics materials by means of wide-angle high resolution X-ray diffraction.

The second part of his study leave stay was at Monash University (Melbourne), where he developed a new approach of X-ray phase contrast 3D imaging for highly heterogeneous materials (e.g., soil). A team of scientists from UNE and Monash University, led by Dr Pavlov, has tested this new approach at SPring-8 synchrotron in Japan. This trip was supported by Dr Pavlov's grant obtained from Australian synchrotron.

In April Dr Pavlov gave two invited talks about his research in X-ray nanoimaging at CERN (Geneva, Switzerland) and DESY/HASYLAB (Hamburg, Germany).

Dr Pavlov's webpage can be found at <http://www.une.edu.au/staff/kpavlov.php>

More support needed to ensure children's access to grandparents

Professor Margaret Sims, Professor of Early Childhood Studies, School of Education

More support is needed to prevent children from suffering the loss of access to their grandparents because of family disputes. Professor Margaret Sims says that while the importance to children of relationships with their grandparents is clear, the legal system could create barriers in cases where the relationship between the child's parents and grandparents has broken down.

In her recent study with Dr Maged Rofail, Professor Sims said that the rights of both grandchildren and grandparents needed to be given higher priority, and that arguments between a child's parents and grandparents could be dealt with by better support for counselling and mediation. Acting in the best interests of the child requires the legal system to put more effort into supporting the grandparent-grandchild relationship rather than allowing the relationship to fracture on the understanding that attempting resolution will stress parents.

The study suggests that this could include "court-ordered (i.e. compulsory) mediation or counselling so that underlying problems exacerbating grandparent-grandchild contact problems (such as disagreements between grandparents and their adult children, and breakdown of in-law relationships) are dealt with in a manner that enables children to maintain relationships with their grandparents." Support needs to be provided that enables difficulties between parents and their children to heal so grandchildren don't suffer.

One of the big problems now prevalent is that children are tending to lose out by being isolated in nuclear families instead of being nourished by an extended family. At the same time, grandparents themselves often go through enormous suffering when denied access to their grandchildren, and this itself could lead to large social as well as personal costs.

Professor Sims has published a number of books in this area, and says that it is important that parents be receptive to dealing with difficulties with their own parents, and to make an effort to ensure that they are involved in the lives of their grandchildren.

Extract from UNE News webpage - Jim Scanlon - July 18th.

Professor Sims webpage can be found at: <http://www.une.edu.au/staff/msims7.php>



Prof Margaret Sims

Can Psychological Interventions Help Us Feel Happier?

John Malouff, PhD, JD, Associate Professor of Psychology



Dr John Malouff

Former UNE psychology student Roxanne Foster and three UNE academics in the School of Behavioural, Cognitive and Social Science, Nicola Schutte, John Malouff, and Einar Thorsteinsson, recently completed a meta-analysis of the efficacy of methods of increasing positive affect.

Across 31 studies with a total of 2,942 participants, the meta-analysis found that a variety of interventions can increase positive affect. Moderator analyses showed significantly higher effect sizes for (a) interventions incorporating cognitive behavioral strategies, mindfulness activities, and positive reminiscence than for most other types of interventions, (b) group delivery of the intervention, (c) interventions that followed manuals, (d) female-only samples versus mixed-gender samples, and (e) longer follow-up.

The findings indicate that it is feasible to increase positive affect significantly and to maintain that increase over a period of time. A report of the results is now under review by a journal.

A/Professor Malouff's webpage can be found at: <http://www.une.edu.au/staff/jmalouff.php>

RESEARCH NEWS

Innovative governance structures for weed control

Controlling weeds in rural and urban areas costs the Australian public and private sectors millions of dollars each year. Although there have been many innovations in better management of the weed problem in Australia, there remain many institutional impediments to effective weed control. At the end of May, the AgLaw Centre was funded by the Rural Industries Research and Development Corporation to research ways of shaping more effective institutions. The project title is: Plan for future funding and institutional arrangement for national investments and management of weeds R & D. The project involves collaborators from within UNE, the NSW Dept. of Primary Industries, UTS, Melbourne University and CSIRO. The Centre will draw on its prior research including a recently completed overview of pest management in Australia for the European Commission, and the research of AgLaw's PhD candidate, Elodie le Gal.



Prof Paul Martin

As part of this research, Professor Paul Martin (Director, AgLaw Centre), Elodie le Gal, Drs Robyn Bartel (UNE) and Sophie Riley (UTS) led a session at the NSW Weeds Conference (Coffs Harbour, 18 July 2011) on the subject: How could reform radically improve weed management.

For further information, contact: Paul.Martin@une.edu.au

UNE Enabling Intentional Innovation

Dr Phillip Thomas, Principal Research Fellow in Innovation in the School of Business Economics and Public Policy.



Dr Phillip Thomas

Some of the main challenges of the 21st century, especially for regional communities, lie in finding ways to put ideas into action, to harness innovation and creativity and to encourage new means of doing business. Political, economic and environmental pressures are forcing communities, businesses and individuals to think and act more innovatively, collaboratively and sustainably but it is not always clear how this can be enabled and perhaps more importantly, achieved. There is also a growing need to meet these challenges by utilising existing resources, research and expertise.

The University of New England is leading the way in helping communities create the opportunities they need to address these ongoing challenges and to improve and ensure ongoing regional prosperity. A new collaboration between the University and the NSW Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) is being rolled out across the New England and North West of NSW. Called 'Unison', it is coordinated by Dr Philip Thomas, Principal Research Fellow in Innovation in the School of Business Economics and Public Policy. The project, which focuses on building Intentional Innovation Communities (IICs), aims to bring people together in a collective process, to share ideas and create environments where ideas can come to fruition. Dr Thomas says 'the process is designed for community ideas and business ideas alike'. The workshops provide a platform for community brainstorming described by Dr Thomas as an ideas 'hothouse' which it is expected will produce exciting prospects and outcomes for the communities involved.

The collaboration with the NSW State Government has enabled the participation of two internationally acclaimed speakers from Penn State University in the USA. Ted Alter is a Professor of Agricultural, Environmental and Regional Economics with research interests in comparative rural development policy, agribusiness economics, community and regional economics and leadership and organisational change. Michael Fortunato's expertise lies in the areas of entrepreneurship, community economic development and innovation communities.

The NSW DTIRIS project funding for the Unison - Intentional Innovation Communities- Workshops has also provided an opportunity to build the UNE/Penn State collaboration through other UNE initiatives including through UNE's AgLaw Centre projects, the NBN seminar series and the launch in August 2011 of the Faculty of the Professions research and teaching centre, the i2A ("Ideas to Action") Centre.

TechVouchers - Building our Innovation Capacity

The University of New England has also been successful in attracting funding through the NSW Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) to take part in their TechVoucher Program. The program aims to link small and medium sized enterprises (SMEs) with public sector research providers (PSROs) and allows them access to research activity and experts, usually only available to significantly larger businesses. Dr Philip Thomas, Principal Research Fellow in Innovation, will take on the role of TechVoucher Connector for UNE. This will see him facilitating the collaborations between businesses and the University's researchers and helping the enterprises navigate through the UNE processes and systems.

There are currently six TechVoucher projects running across a variety of disciplines at UNE and it is anticipated that this initiative will build our strength in innovation and underpin the development of the i2A Ideas to Action Centre being launched in August 2011. One of the participating SME's is Bio Processing Australia. CEO of BPA, John Lockhart says 'for a company like BPA (in an early stage) it is essential to prove its products efficacy and therefore its technology. The TechVouchers initiative allows us to contract the services of UNE and to work together with their researchers to ascertain the best method to achieve the desired outcomes. This type of access would generally only be available to larger institutions, typically the type of companies BPA needs to compete with on a daily basis.'

RESEARCH NEWS

Next generation rural landscape governance

Dr Jacky Williams, AgLaw Centre

The AgLaw Centre's next generation rural landscape governance research project has begun; the official launch will be at the Australian national Botanic Gardens in Canberra on 11 August 2011. The keynote address will be given by visiting Professor Ted Alter from Penn State University: 'Next generation resource governance – the imperative of institutional innovation'. There will also be addresses by project partners: Australian Government (who provide ARC grant funds), Biological Farmers of Australia, and Cotton Research and Development Corporation.



Dr Jacky Williams

The research, to be undertaken over the next three years aims to propose law and other governance reforms to: improve the sustainability performance of farming, including conservation outcomes; reduce the costs (including opportunity costs) of achieving this, and ensure that the costs and benefits are distributed fairly.

The method to be used is 'engaged scholarship'. Three regional case studies will feature: Tamar region in Tasmania; the Namoi region in NSW; and the Barrier Reef catchments in Queensland. The first regional workshop was held on 3 June 2011 in Launceston. Workshops in Narrabri, Canberra and Mackay are planned for July and August.

The principal investigators in this innovative project are Professor Paul Martin, Dr Jacqueline Williams and Dr Amanda Kennedy from the AgLaw Centre. A national steering group (of government, industry and NGOs) will provide project oversight. Four PhD scholars, all to commence in the next few months, will target their topics in the broader research agenda provided by this project. Partners in the case study regions are contributing significantly through in-kind support. International partners include Penn State University, Iceland Soil Conservation Service and the EC Institute of Sustainability. It is planned to establish international case study regions to further the collaboration and extent of this innovative governance research.

For further information, please contact Jacky Williams: Jacqueline.williams@une.edu.au

New book guides students through the research journey

Professor Ray Cooksey, School of Business, Economics and Public Policy



Prof Ray Cooksey

A new book launched at the University of New England earlier this month is likely to become a "must have" for students considering postgraduate research. UNE's Professor Ray Cooksey wrote *Surviving and Thriving in Postgraduate Research* together with Professor Gael McDonald from Deakin University.

Designed specifically for Australian and New Zealand students, as well as for international students studying in Australasia, *Surviving and Thriving in Postgraduate Research* contains practical advice and a guide to resources in an accessible, plain-language style. It helps the reader through the postgraduate research process and the planning and production of a thesis, and assists in addressing the challenges along the way. "The book focuses on the effective design and management of a postgraduate research project - from its inception and the commencement of a relationship with supervisors through to the submission and examination of the dissertation," the publishers say. "We wrote the book to answer all those questions that emerge for students during their postgraduate research journey," Professor Cooksey said.

Extract from UNE News webpage - July 20th, 2011

Prof Cooksey's webpage can be found at: <http://www.une.edu.au/staff/rcooksey.php>

Animal nutrition experts tackle environmental challenges

Scientists and industry representatives from around the world met at UNE in July for the University's biennial "Recent Advances in Animal Nutrition - Australia" conference. Coming from countries including Iran, Egypt, Malaysia, the Philippines, India, China, Fiji, The Netherlands, Singapore and the United States, they discussed ways of improving the nutritional efficiency of animal production while reducing its impact on the environment. "The central feature of this conference is that greenhouse gas emissions, environmental pollution, nitrogen recycling and biofuel production are emerging as drivers of the livestock research agenda," said Dr Pierre Cronjé (pictured here), Chair of the organising committee.

Major themes of the conference were feed conversion efficiency and feed additives in animal nutrition - in the interests of production efficiency, food quality, and the reduction of emissions. One paper dealt with the use of garlic oil in the diet of lactating buffaloes to reduce methane emissions.. The biennial "Recent Advances in Animal Nutrition - Australia" conference has been held at UNE for the past 34 years. It is unique in Australia in facilitating interaction between the commercial and research sectors of the animal nutrition community and promoting discussion and debate on recent advances and future trends in animal nutrition. "It's where science and industry come together," said UNE's Professor of Animal Nutrition, Roger Hegarty, noting that some of the delegates had been attending "Recent Advances" conferences for the past three decades, and one delegate had actually been to every one of them.

Extract from UNE News, July 15th, 2011 by Jim Scanlan

RESEARCH NEWS

New support tool launched at Postgraduate Conference

The Faculty of The Professions at the University of New England has held its sixth annual Postgraduate Conference, titled Shared Pathways to Research. Higher Degree Research (HDR) students not only heard keynote addresses from professors but also benefited from the chance to receive training through skills workshops, present their work to - and share ideas with - fellow students, and be part of the launch of a new support system.

“The conference program supports students in research training and gives them the opportunity to attend specialised workshops and hear expert speakers,” said UNE’s Associate Professor Terrence Hays. “There is also the chance to offer collegial support to each other and provide feedback, as well as to create critical networks of support. This is particularly important as students need exposure to the research frameworks others are using and against which they themselves can check their own frameworks and methodologies. Research does not take place in a vacuum, and it’s extremely important for people to share ideas and learn from each other. This helps them keep their work on track and ground their connection with UNE. It’s their University.”

The conference also saw the launch of the HDR Portal (accessed through the HDR tab on the UNE Web site’s Home Page). Dr Hays said that the portal combined three strands: information and resources for people shopping around and interested in UNE’s expertise and research offerings, support for current students, and a portal for supervisors to access training and information.

In launching the HDR Portal, UNE’s Deputy Vice-Chancellor (Research), Professor Annabelle Duncan, said it was “a timely and much-needed media and information resource for all involved in undertaking or supervising higher degree research”.

Extract from UNE News webpage 15th July, 2011 by Jim Scanlon



Prof Annabelle Duncan (DVC Research) and Prof Victor Minichiello (PVC/Dean) at the launch

UNE historian solves the mystery of Thunderbolt’s lady

Carol Baxter, Adjunct Lecturer in History, School of Humanities

An historian at the University of New England has finally uncovered evidence that dates the death of the “wife” of the New England bushranger Captain Thunderbolt.

Carol Baxter (pictured here), an Adjunct Lecturer in History at UNE, has spent the past few years tracing the life of the part-Aboriginal woman Mary Ann Bugg, who was born at Berrico outstation on the Gloucester River in 1834.



Carol Baxter

Mary Ann roamed for many years with the bushranger Frederick Ward - also known as Captain Thunderbolt - living in the bush with him, helping him to evade the police, and bearing him three or four children including a son, Frederick Jnr. Mary Ann, who has become a legendary historical figure in her own right, was long thought to have died in November 1867. However, Ms Baxter’s research has now determined that Mary Ann lived for another four decades. “A few researchers have suggested that the woman who died in 1867 might not have been Mary Ann,” Ms Baxter said. “But until now the actual date or location of her death has not been positively proven.”

In late 1867, reports in Parliament and the Press announced that Thunderbolt’s “half-caste” female companion had died near the Goulburn River. While the Press reports named the dead woman as Louisa Mason, the fact that she was referred to as Thunderbolt’s “half-caste woman” led most Thunderbolt biographers to declare that the dead woman was in fact Mary Ann Bugg and that “Louisa Mason” was one of her nicknames.

Records uncovered by Ms Baxter show that Louisa Mason, also known as “Yellow Long”, was definitely not Mary Ann Bugg. A few months before her death, Louisa, a Scone district resident, married a labourer named Robert Michael Mason, otherwise known as “Cranky Bob”. Soon afterwards she encountered Captain Thunderbolt. “Louisa was evidently smitten with the bushranger - and he with her,” Ms Baxter said. “She abandoned her husband late in 1867 and eloped with Fred into the bush - an unfortunate decision, as it turned out.”

Ms Baxter, who is a professional genealogist and an expert in colonial Australian history, spent months sifting through original records and birth, marriage and death certificates, finally confirming that Mary Ann died as Mary Ann Burrows at Mudgee in 1905. She had borne at least 15 children.

The discovery may go some way towards setting the record straight about the life and times of the notorious New England bushranger, who was fatally captured at Uralla in 1870. Ms Baxter is currently working with UNE’s Senior Lecturer in Australian History, Dr David Andrew Roberts, to investigate claims raised in the NSW Legislative Council in March 2010 alleging a government censorship of secret police records relating to Thunderbolt’s death.

Ms Baxter’s forthcoming book, *Captain Thunderbolt and His Lady*, to be published by Allen & Unwin in September 2011, will reveal startling new information about the lives of both Mary Ann and Frederick Ward. Some of it is bound to prove controversial.

Extract from UNE News webpage 12th July, 2011 by Jim Scanlan

RESEARCH NEWS

Soil carbon research 'critical' to carbon farming initiative

The research being undertaken on soil carbon assessment at the Primary Industries Innovation Centre (PIIC) at the University of New England has been described as 'critical' to the Australian Government's Carbon Farming Initiative by the Australian Climate Commission's Professor Tim Flannery.

Professor Flannery made his remarks on a visit to UNE and northern inland communities in NSW in which he and fellow Commissioner, Professor Will Steffen, presented their report to community members and discussed the impacts of climate change in the region.

Professors Flannery and Steffen visited the University and its Soil Carbon Laboratory on Friday, July 1st, to acquaint themselves with the facility and the directions of the research being done in the areas of vegetation, soil carbon and greenhouse gas emissions related to agriculture. Professor Flannery described the work being done as 'very impressive and interesting' and that it would be 'critical' to the Carbon Farming Initiative, one of the two major programs being established for greenhouse gas abatement - the other being the carbon tax. The Carbon Farming Initiative is a carbon offsets scheme which aims to provide new economic opportunities for farmers, forest growers and landholders to help the environment by reducing carbon pollution - and 'the research in the Carbon Lab is central to being able to do this properly,' Professor Flannery said.

The Climate Commissioners also briefed and exchanged ideas with researchers from the Schools of Environmental and Rural Sciences, Business, Economics and Public Policy, and Behavioural, Cognitive and Social Sciences at UNE during their visit.

Extract from UNE News webpage, July 3rd, 2011 by James Vicars



From left: Dr Chris Guppy (UNE)
Professor Tim Flannery and
Professor Will Steffen (ANU)

Study on role of temperature changes could lead to obesity treatment

A new study which aims to improve our understanding of the role played by ambient and body temperature in problems such as obesity and depressed mood is being coordinated by Emma van't Hoenderdal, an honours student in the School of Behavioural, Cognitive and Social Sciences. The project will look at the complex relationships between low and high body weight, body temperature, ambient temperature, physical activity/exercise, and mood.

Ms van't Hoenderdal says that a better understanding of these factors may lead to new approaches in the treatment of obesity - for example, using body cooling or cooling of the home to potentially accelerate weight loss via increased physical activity. She said the study is prompted by recent large increases in the incidences of overweight/obesity and recent advances in our understanding of low-weight eating disorders such as anorexia nervosa. For example, anorexia nervosa is now regarded as a secondary response to weight loss which is complicated by mood changes and reduced body temperature, and treated by ambient or body warming, rather than being a primary psychiatric disorder. This knowledge has recently prompted eating disorders experts to ponder whether body-cooling strategies, or strategies which alter thermogenesis (i.e. energy expenditure above the metabolic rate at rest) may promote weight loss in obese people. However, there is very limited available research on this topic.

Extract from UNE News webpage, June 30th, 2011 by James Vicars. Further information: Dr Rhonda Brown, School of Behavioural, Cognitive & Social Sciences. Ph: (02) 6773 2410.

Research could help bipolar patients control mood swings

Research at the University of New England could help people suffering from bipolar disorder to control the debilitating mood swings associated with the illness. Alex Kary, who is studying for a Master's degree in Clinical Psychology at UNE, believes that people with bipolar disorder could learn to dampen the brain activity that causes their massive mood swings by mentally manipulating a visual representation of that brain activity - as it's actually occurring - on a computer screen.

People with epilepsy have benefited from this kind of "neurofeedback" technique, and it has also been used successfully in the treatment of problems such as attention deficit hyperactivity disorder (ADHD) in children and alcohol abuse in adults. Mr Kary pointed out that epilepsy and bipolar disorder both involved periodic episodes triggered by instability in the brain, and that they could often be treated with the same medication. The visual display of electrical activity in the brain is derived from signals detected by an array of electrodes placed against the scalp and organised as a meaningful "graph" by an electroencephalograph (EEG) instrument. Purpose-built software then transforms the "graph" into a display in the form of a computer game: patients observe the movement of characters on the screen as their mood changes, and practise controlling those movements by the voluntary control of their mood. "By playing the game they learn to control their brain activity," Mr Kary said.

Mr Kary and his supervisors in the project at UNE, Dr Graham Jamieson and Dr Tanya Hanstock, are now recruiting subjects for the study - people between the ages of 18 and 65 who have bipolar disorder. This is the first trial of the efficacy of neurofeedback for managing bipolar disorder.

Extract from UNE News webpage, May 25th, 2011 by Jim Scanlan

UPCOMING EVENTS

THE 2011 AMCON CONFERENCE

Armidale Medical Conference

Saturday 13th August, 2011

The 2011 AMCON Conference (Armidale Medical Conference) is on Saturday 13 August 2011 at UNE. 2011 will mark the third year that this highly successful event has taken place.

A diverse organisation committee, bringing together members of various medical and allied health organisations locally have planned and will be delivering the conference program. The committee has devised an interesting program based on consultation and feedback from previous AMCON participants and local interests.

This program has a focus on three broad topics:

- Mental Health,
- Oncology and
- Cardiology

with presentations including:

- Mental Health with a focus on prescribing
- Oncology with a focus on end of life planning
- And GP updates on the AF and interventional cardiology

The conference also has a range of simulated learning opportunities for participants and the ability for medical practitioners to obtain the CPR accreditation.

Access the registration form via the following link: [AMCON 2011 Registration Form](#)

If you have difficulties submitting the form, please print and fax to 02 67764704, attention Jenny Friend.

UNE ASIA-PACIFIC CENTRE CONFERENCE

Regional Responses to Labour Trafficking and Refugee Movements in Asia-Pacific

Conference– 26-27 September 2011

Venue: St. Albert's College, University of New England

This year marks the 60th anniversary of the landmark 1951 UN Convention on the status of Refugees defining their rights and states' legal obligation to protect them. This conference will critically discuss regional processes in the Asia-Pacific region, for example the Bali Process, and examine the wide range of human rights duties and responsibilities accruing to state and non-state actors. It will also explore the case for recognition of available intermediate solutions.

Papers presented by researchers and human rights' defenders will provide an overview of why refugees and undocumented migrants are considered as a threat in most societies and states' migration control strategies. They will also examine the solutions impasse in the Asia-Pacific region as a whole, Southeast Asia, Northeast Asia and South Asia.

The conference will also lay the foundations for an international research network dedicated to developing collaborative investigations on the key themes. A core focus of the conference will be a comparison of the immigration policies of countries in the Asia-Pacific region over time and investigation of the causes and effects of immigration policies as well as their implementation.

For further information, please contact : Amarjit Kaur, Business, Economics and Public Policy, e-mail: akaur@une.edu.au

or Ian Metcalfe, Earth Sciences, School of Environmental and Rural Science, email: imetcal2@une.edu.au

THE PSYCHOLOGY SEMINAR SERIES

The BCSS Psychology seminar series for semester 2 will start with a presentation by Nathalie Wess on Friday 12 August at 2pm in Paul Barratt Lecture Theatre titled, "Have you heard the one where a 'Wort' walks into a lexicon? "

The next scheduled seminar in this series is Professor Michael Smithson from ANU at 11 am on September 22nd on the topic of decision making in the context of uncertainty. The precise title and venue are yet to be confirmed.

UPCOMING EVENTS

PUBLIC LECTURE - VISITING PROFESSOR GENE LIKENS

Water: The challenging interface between scientific understanding and policy

Professor Gene E. Likens, Cary Institute of Ecosystem Studies, Millbrook, New York, USA.

Major issues of Human-Accelerated Environmental Change (Likens 1991) currently affecting our planet include: global climate change, stratospheric ozone reduction, land-use change, loss of biodiversity, invasion of exotic species, toxification (pollution) of the biosphere and infectious disease. These changes are intensified and grossly complicated by their interactions. The human population is now more than 6.9 billion and increasing at about 81 million/year. Never before has one species so dominated our planet, and we clearly have our foot on the accelerator of change! Inland waters are impacted by all components of human-accelerated environmental change, and there is a clear and urgent need to resolve the conflicts of use and abuse of aquatic ecosystems within the context of our planet's finite freshwater resource, and especially, relative to issues of ecological harmony and resilience. For example, eutrophication and acidification continue to degrade both standing and running waters, and global climate change is adding even greater stresses on freshwater resources.

Piecemeal approaches to management do not provide lasting solutions to environmental problems, even though knowledge about the "pieces" is vital to the overall solution. Serious water shortages and water-quality problems have occurred in many areas around the world. And, there are new water problems on the horizon, including contamination by antibiotics, steroids, hormones, other pharmaceuticals and nanoparticles.

Solving the world's water needs represent one of human society's most urgent problems given the critical role of water in the world's economies, politics and general biotic well being.

Professor Gene E. Likens is an ecosystem scientist best known for his discovery of the impact of acid rain in North America. He was responsible for establishing the Hubbard Brook Ecosystem Study and the Institute of Ecosystem Studies in the USA both of which are internationally recognized ecological research and education centers. Dr. Likens is an eminent scientist, educator and science advisor at state, national, and international levels. He has been an advisor to two governors in New York State and one in New Hampshire, as well as one U.S. President. He holds faculty positions at Yale, Cornell, Rutgers, SUNY Albany, Jinan University (Guangzhou) and the University of Connecticut, and has been awarded nine Honorary doctoral Degrees. In addition to being elected a member of the National Academy of Sciences and the American Philosophical Society, Dr. Likens has been elected to membership in the American Academy of Arts and Sciences, the Royal Swedish Academy of Sciences, Royal Danish Academy of Sciences and Letters, Austrian Academy of Sciences, and an Honorary Member of the British Ecological Society. In June 2002, Dr. Likens was awarded the 2001 National Medal of Science, presented at The White House; and In 2003 was awarded the Blue Planet Prize (with F. H. Bormann) from the Asahi Glass Foundation. Among other awards, in 1993 Dr. Likens, with F. H. Bormann, was awarded the Tyler Prize, The World Prize for Environmental Achievement, and in 1994, he was the sole recipient of the Australia Prize for Science and Technology. In 2009, he was awarded the Einstein Professorship from the Chinese Academy of Sciences. Dr. Likens is past President of the International Society of Theoretical and Applied Limnology, the American Institute of Biological Sciences, the Ecological Society of America, and the American Society of Limnology and Oceanography. Dr. Likens is the author, co-author or editor of 23 books and more than 550 scientific papers.

The Lecture will be held on Thursday 25th August commencing at 6.00pm at UNE in the ARTS Lecture Theatre 1.

All Welcome.

Guidelines for submissions to the Research@UNE newsletter

Written article submissions will be accepted from all UNE Staff, including honorary staff, and staff in joint ventures, for inclusion in the newsletter.

Photos are also welcome, especially if it is an event.

However if the photographs have not been taken by the UNE Photographer, please obtain and supply permissions and acknowledgements.

Some photos, logos and news items are sourced directly from UNE webpages.

For feedback and other enquiries with regards to the newsletter please contact the editor:

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