

RESEARCH@UNE

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APRIL 2009

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Spotlight - CLIMATE CHANGE RESEARCH

Dear Colleagues,

I am pleased to introduce the second issue of Research@UNE where we shine the spotlight on climate change research that is currently being undertaken around UNE. When you read though this extensive list of on-going research activities, it will become apparent that we are looking at a very real and tangible strength of UNE research activity that cuts across disciplines (sciences, social/behavioural, legal etc) and is relevant to a diverse range of stakeholders. I anticipate that we will only grow stronger in this area over the next few years, that our research will become even more innovative and multi-disciplinary in emphasis and that connections and collaborations with, and outcomes for, important stakeholder groups will both broaden and deepen.

I know that the Faculties are currently discussing and shaping plans for moving the climate change research agenda forward in more coherent and strategically relevant ways and I look forward to working with them as those plans take shape. Please note that the following list of research activities should not be assumed to be comprehensive but it is fairly representative.

Professor Ray Cooksey
Acting Pro Vice-Chancellor, Research

Northern NSW Climate Change Capacity Building Workshop - 15-16th June 2009

The National Marine Science Centre would like to invite you and your colleagues to attend a capacity building workshop at the National Marine Science Centre, Coffs Harbour, which will focus on the effects of climate change on the marine and coastal habitats of northern NSW.

The two-day workshop, which will be hosted by the University of New England (UNE) and the National Marine Science Centre (NMSC), aims to bring together leaders in the field of climate change impacts, researchers and academic staff from UNE and the NMSC, and staff from management authorities and government agencies.

**For more information or to register for the event please contact Steven Dalton.
PH: 02-6648 3927, Mobile: 0432 946782, sdalton@nmsc.edu.au**

FACULTY OF ARTS & SCIENCES

Recently, the **School of Environmental and Rural Science** was invited to provide a submission to the NSW Legislative Assembly for the 'Managing Climate Change Impacts' Inquiry. **Dr Lalit Kumar** compiled a submission, with the following staff also contributing: **A/Prof. Nick Reid, A/Prof. Peter Clarke, Dr Karl Vernes, Prof. Fritz Geiser, Prof. Brian Sindel, Dr Nigel Andrew, Mr Julian Prior and Prof. Iain Young.**

Dr Nigel Andrew (ERS), Senior Lecturer in Entomology, Zoology and Centre for Behavioural and Physiological Ecology, currently has a range of projects related to the impacts of climate change on insects in both natural and agricultural ecosystems, particularly *ecology of insect herbivore assemblages: influence of climate, evolutionary history and plant traits* (ARC Discovery Grant 2007-2009 \$256,000) and *predicting the effect of climate change on community structure and function: an assessment using temperate grassland invertebrates* (ARC Discovery Grant 2009-2011 \$300,000). A range of other projects related to the impacts of climate change on insects and Insect-plant interactions are currently being initiated.

One of Nigel's PhD students, **Mr Chanthy Pol**, in collaboration with **Prof Bob Martin (PIIC)** and Dr Robin Gunning (NSW DPI) is assessing *Integrated Pest Management strategies for the control of green vegetable bug (GVB) in soybean: The potential influence of climate change on GVB and its parasitoids*. This is an ACIAR funded project won by Professor Martin.

Further information can be found on Dr Andrew's webpage www.une.edu.au/staff/nandrew.php

Prof. Fritz Geiser (ERS), of the Centre for Behavioural and Physiological Ecology, Zoology, holds a current ARC grant with a climate change component - *thermal biology of tropical mammals and how they deal functionally with extreme temperatures*. **For more information contact Professor Geiser on** fgeiser@une.edu.au

Prof. David Cottle (ERS), Animal Science: Methane is a major contributor to greenhouse gases that are thought to lead to global warming and climate change. John Nolan and David Cottle are part of a consultancy with FSA Consulting for MLA entitled: *"Review of Water Use and Greenhouse Gas Emissions from Red Meat Production"*. He has also submitted a paper on genetic selection modelling work entitled *"Is methane production likely to be a FUTURE MERINO SELECTION CRITERION?"* The paper was presented at a GHG breeding workshop held in NZ recently and will be available on the LEARN network. <http://www.livestockemissions.net/>

For more information contact Professor Cottle at david.cottle@une.edu.au

Nazrul Islam, a PhD Candidate, **(ERS)**, is undertaking research on climate change in the context of developing nations like Bangladesh. Nazrul is supervised by Dr. Kuntala Lahiri-Dutt, ANU and Dr. Jacqueline Williams, AgLaw Centre, UNE.

Dr John Nolan (ERS) is investigating two different possibilities for reducing methane outputs from ruminants: elimination of rumen protozoa has been demonstrated to reduce methane production and to increase productivity by approximately 13%; and dietary nitrate is recognised as a potential means of reducing methane output from sheep and cattle. The project is MLA funded (\$600,000) via Federal Department of Climate Change. **Further information can be obtained from Dr Nolan on email:** jnolan@une.edu.au

Professor Yihong Du (S&T) is studying the effect of environmental change on population species in the past 5 years. He and his collaborators use nonlinear partial differential equation theory to investigate competition and predator-prey models (ARC discovery grant). Professor Du also works on ecological models that determine the location of phytoplankton layers in lakes and oceans. In poorly mixed water columns, it has been observed that algae can be heterogeneously distributed, with thin layers of biomass on the surface, at depth, or on the sediment surface. **Professor Du can be contacted on** ydu@turing.une.edu.au

UNE Precision Agriculture Research Group (UNE-PARG) is a multi-disciplinary team of University of New England academic, research and technical staff engaged in the development and application of sensors and practices in precision agriculture (PA). Australia's response to climate change requires PA tools for improving water and fertiliser use efficiency (reducing GHG emissions), maintaining the quality, quantity, stability and biodiversity of woody and non-woody plant species, and reducing land degradation due to overgrazing and clearing of native vegetation. UNE-PARG is working on:

1. formulating enterprise-relevant measures of biomass, water and fertilizer use efficiency in crop and animal production, including plant canopy-based indicators of fertility status and biomass and monitoring animal-land interactions;
2. creating large and small scale tools for managing stocking rate on monoculture and composite grazing lands based on spatially-enabled measures of pasture growth and availability, animal utilisation and soil condition; and
3. exploring and establishing techniques for data acquisition and fusion to describe vegetative carbon and biomass across entire production enterprises (farmscapes), including the development of high-definition carbon and biomass inventory tools for farms.

For more information on UNE-PARG activities go to the webpage at:

<http://www.une.edu.au/study/physics-electronics/precagric.php> , or contact **Prof. David Lamb (S&T)**, by email: dlamb@une.edu.au

Dr Charles Watson (S&T), has an interest in modelling climate change. See

<http://blog.une.edu.au/informationresearchgroup/2007/03/26/could-a-butterfly-in-tahiti-cause-a-drought-in-australia/>

WRaIN Initiative – WRaIN (the interdisciplinary UNE Water Research and Innovation Network) is holding a Water Symposium on 25 and 26th May: "Valuing Water: Perspectives from Northern NSW." The focus of the symposium is to identify and prioritise the water research needs of the Northern Murray Darling Basin region from environmental, cultural and policy perspectives.

Dr Louise Noble (ARTS), WRaIN Convenor can be contacted at: lnoble2@une.edu.au

Assoc. Prof. Robert Baker (BCSS), with a small team of Doctoral and Honours students, is exploring the veracity of currently dominant perspectives on climate change, including sea level rise, via two key projects: 1) fixed biological indicators of past sea level fluctuations; and 2) the role of sun spots and solar cycles in driving macro- and meso-climates in Australia over the past 100 years.

Dr Robyn Bartel and A/Prof Neil Argent (BCSS), in separate projects, are investigating farm-level social and economic responses to increasing aridity in several parts of the Murray-Darling Basin.

Prof. Don Hine, A/Prof. John Scott, and Dr Navjot Bhullar (BCSS) currently have an ARC Linkage Grant, in partnership with Armidale-Dumaresq Council , the Firewood Association of Australia, the Australian Home Heating Association, and SmartBurn Pty Ltd, to investigate the effectiveness of strategies to reduce wood smoke pollution in Armidale.

Darren Bartlett, a Clinical MPSYC student, and Prof. Don Hine (BCSS) are presently conducting a study exploring the relationship between perceived vulnerability to climate change and mental health.

FACULTY OF THE PROFESSIONS

A/Prof. Oscar Cacho's (BEPP) research addresses agricultural and environmental economics, in particular market solutions to environmental problems. He has applied this specialized approach to the economics of invasive species; management of grazing systems; sustainability in agriculture and natural resources; risk management; land degradation; and the role of carbon credits in farm forestry systems. He recently completed a major international project on carbon sequestration and poverty reduction. **For more information contact A/Prof. Cacho at email:** ocacho@une.edu.au

AGLAW RESEARCH CENTRE

The UNE Strategic Initiative in Biofuels and Biorefining is an important research initiative which is intended to provide answers to fundamental policy questions: * how will Australia satisfy its mandated biofuels requirements without creating serious harm to grain-dependent industries?

* what model of biofuel production will optimise the economic gains to producers, and at the same time be most carbon-efficient?

A collaborative research programme on second generation biofuels is well advanced. It involves UNE, DPI and Professor Peter Rogers from University of NSW. That research will identify optimal processing methods for a range of non-food inputs including wood waste and by-products of other farming products. We also intend to provide insights into the life-cycle and policy aspects of biofuels, to assist in developing a more sustainable biofuels sector.

The outputs of this research will be insights into processing technologies, commercial issues, lifecycle methods, policy and regulation. This multi-organisation, multi-disciplinary research is at the cutting edge of this important issue. Details of the initiative are available at

<http://www.une.edu.au/aglaw/TheBiofuelsInitiative.pdf> For more information contact Professor Paul Martin, Director, AgLaw at paul.martin@une.edu.au.

INSTITUTE FOR RURAL FUTURES

The IRF have just completed a large climate change study for Federal department of Climate Change. It is a Coastal Climate change vulnerability assessment of the Hunter coast region as a stand alone case study and part of the National Climate Change Vulnerability Assessment. The work includes new techniques for "triple-bottom" line spatial integration of social-ecological-economic vulnerability and future landscape projections. The report can be found at the following address: http://www.ruralfutures.une.edu.au/downloads/Hunter_DCC.zip

Dr Judy McNeill of the Institute is one of few specialist climate change ecological economists in the country and is developing new conceptual and practical economic approaches to understanding CC vulnerability and adaptation. Judy, **Professor David Brunckhorst**, **Professor Mahindra Siriwardana (Econ)** and a **PhD student, Disna Sajeewani** are starting an ARC Discovery modelling adaptation in regional economics including climate change parameters.

Dr Elaine Barclay and **Dr Ian Reeve** are working on rural and regional social impacts of water resource governance, water trade and climate change.

IRF projects (national and international) also include climate change influences on biosecurity, including Bird Flu and Classic Swine Fever.

JOINT VENTURES

PRIMARY INDUSTRIES INNOVATION CENTRE (PIIC) AND

THE NATIONAL CENTRE FOR RURAL GREENHOUSE GAS RESEARCH (NCRGGR)

The National Centre for Rural Greenhouse Gas Research is a new joint initiative between NSW Department of Primary Industries (DPI) and the University of New England (UNE) under the PIIC umbrella, to provide solutions to the challenges posed to primary industries by climate change, and to take advantage of the opportunities climate change presents. The Centre is based at UNE, Armidale, with activities undertaken throughout NSW. The centre has also established extensive national and international collaborative links. The Director of the centre is Professor Annette Cowie.

The Centre is undertaking research and delivering solutions on a range of key issues – including reducing emissions of methane from ruminant livestock, and nitrous oxide from cropping soils; increasing carbon sequestration in agricultural and forestry systems; managing risk associated with seasonal climate variability; and developing technologies for second generation biofuels from woody biomass.

Climate Change Research Program

The federal Department of Agriculture, Forestry and Fisheries Climate Change Research Program is funding research projects and on-farm demonstrations to help prepare Australia's primary industries for climate change and build the resilience of the agricultural sector into the future. The program involves projects that provide practical management solutions to farmers and industries. Projects are focusing on reducing greenhouse gas emissions such as methane, nitrous oxide and carbon dioxide and improving soil management and determining the potential of sequestration of carbon in agricultural soils – in a variety of soil types, locations and under differing management practices.

The following UNE-DPI projects have received funding in the Climate Change Research Program, as reported in the March edition of Research@UNE:

1. Land – the Carbon Bank; Professor Annette Cowie.
2. Genetic Improvement of Beef Cattle for Greenhouse Gas Outcomes, – NSW DPI – Dr Roger Hegarty.
3. Novel strategies for enteric methane abatement – Dr Roger Hegarty.
4. Mitigating nitrous oxide emissions from soils – Dr Graeme Schwenke.

For more information please contact Professor Bob Martin, Director, PIIC at rmarti27@une.edu.au, or Professor Annette Cowie, NCRGGR at annette.cowie@une.edu.au, or visit the PIIC website at <http://www.une.edu.au/piic/>.

NATIONAL MARINE SCIENCE CENTRE (NMSC)

There are a number of projects related to climate change in marine ecosystems that are being conducted by UNE staff and students based at the National Marine Science Centre, Coffs Harbour.

In mid 2008 **Dr Symon Dworjanyn**, of the National Marine Science Centre, a joint venture between UNE and Southern Cross University, established the Ocean Acidification Laboratory, to test the combined effects of ocean acidification, increased CO₂ and warming on our local marine flora and fauna.

Prof. Alistair McIlgorm is also conducting climate-change-related research and will report this separately.)

Steve Dalton, PhD candidate assessed links between ambient water temperature and the incidence and prevalence of coral bleaching and disease (Australian Subtropical White Syndrome) and used the results of field and laboratory experiments to examine temperature thresholds for the onset of these conditions.

Chris Gillies, PhD candidate, is researching nearshore food webs adjacent to the Antarctic continent. Centred at Casey Station, the objectives of the work are to quantify energy flow through nearshore biotic communities. As sea ice supports a high biomass of algae, which is a fundamental component of ecosystem productivity, the predicted loss of ice cover is hypothesised to have a considerable effect on food webs. The potential effects of sea ice loss on nearshore food webs will be modelled once food webs have been described and quantified.

Hamish Malcolm, PhD candidate, is assessing fish community structure in the Solitary Islands Marine Park. As part of this work, he has been measuring seawater temperature, at a depth of 10m, throughout subtropical NSW.

Glynis Orr, PhD candidate, is investigating the impact of climate change on the hydrological regime of rivers in northern Queensland, in particular, the likely changes in duration and frequency of high flow and low flow sequences. Changes in flow affect the quantity of sediment discharged into the Barrier Reef Lagoon; increases forecast by most climate-change models have the potential to affect the health of coral reefs in the region.

Kelvin Rushworth, BMSM Honours candidate, is evaluating the effects of elevated temperature on the growth and survival of juvenile blue-lipped clown fish *Amphiprion latezonatus*. This species has been targeted as it is a subtropical endemic with a restricted distribution range. As a result, it is potentially at risk from sea temperature rise.

Assoc. Prof. Steve Smith is exploring patterns of community structure of a range of marine taxa over latitudinal and longitudinal gradients in an attempt to model effects of sea-temperature rise on community composition. Long-term data sets, as well as spatially-extensive data sets from ongoing monitoring across northern NSW, are being used for modelling. In collaboration with **Dr Lalit Kumar, (S&T)** and a PhD applicant, Steve is also planning a study of climate change impacts on rocky shore biodiversity.

Facilitated by funding from the Faculty of Arts and Sciences, the **UNE Marine Working Group** will be hosting a 2-day capacity-building workshop on June 15 and 16 focusing on the effects of climate change in the marine and coastal systems of northern NSW. The workshop is open to UNE staff with an interest in the effects of climate change in the marine environment.

For more information contact: Steve Smith at email: ssmith@nmsc.edu.au

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## GRANTS, RESEARCH CONTRACTS AND CONSULTANCIES:

**Grants Successes for April 2009:** Congratulations to all for an outstanding result for April!

**Dr Linda Agnew & Prof Kenneth Watson, (S&T)**, Immunomodulatory effects of Echinacea, Mediherb, \$40,320

**Dr Kierran Maher, (ERS)**, Origin of Hydrothermal Magnetite from Peruvian Skarn Deposits, Xstrata, \$25,000

**Prof Brian Dollery, (BEPP - Centre for Local Government)**, Economics of Local Government in Malaysia, AMI, \$8,900

**Dr Glenn Wilson, (ERS)**, Copeton Dam Safety Upgrade Stage 1 - Review of Environmental Factors, W&W, \$7,440

**Prof Brian Sindel, (ERS)**, Delivery of weed spread and detection findings to peri-urban rural lifestyle landholders, Land & Water Australia, \$64,000

**Prof Alistair Mcilgorm, (NMSC)**, Creating recreational fishing aquariums displays that inspire the public about recreational fishing, NSW DPI, \$19,750

**Dr Drewe Ferguson (CSIRO) & A/Prof Geoffrey Hinch (ERS)**, 2009 UNE/CSIRO Scholarship – Amanda Doughty, CSIRO, \$84,156

**A/Prof Stephen Smith & Mr Steve Dalton, (NMSC)**, Review of underwater volunteer groups in NSW, HCRCMA, \$30,000

**A/Prof Stephen Smith, (NMSC)**, Implementation of a long-term monitoring program in the marine waters of the NRCMS region, NRCMA, \$20,000

**Prof Brian Gibson, Prof Alison Sheridan (BEPP), & Dr Zhu Minshen (TOP Education Group)**, International Research Consortium on Private Firm Governance Issues, TOP, \$130,000

**Dr Christopher Guppy, Prof John Nolan & Dr Darryl Savage, (ERS)**, Isotope techniques in soil-plant-animal research - Fellowship for Wahidin Teguh Sasongko, IAEA, \$13,000

**Dr Christopher Guppy, Prof John Nolan & Dr Darryl Savage, (ERS)**, Isotope techniques in soil-plant-animal research - Fellowship for Frisoni Oesman, IAEA, \$13,000

**Dr Glenn Wilson, (ERS)**, Responses of fish assemblages to flow variability in the Lower Gwydir wetlands ecosystem, 2008/09, BRGCMA, \$33,542

**Dr Brian Wilson & Ms Melinda Mchenry, (ERS)**, Scoping study for review of contrasting regeneration patterns and strategies of key woody species in Northern and Southern NSW, DECC, \$20,000  
**Prof Alistair Mcilgorm, (NMSC)**, Travel grant - Philippines Mariculture Enterprise Development Project, ACIAR, \$3,400

**Dr Ian Reeve, and Dr Elaine Barclay**, *Water Governance, Management and Trade in the Northern MDB, Provision of Advice for Further Research*, Murray-Darling Basin Authority, \$79,970.

**Total for April \$612,478.00**

### **Research Contracts and Consultancies:**

*Contracts have been executed for the following projects (to date for 2009):*

**Dr Elizabeth Ellis**, BCSS/Education, Review and research the impact of Aboriginal English (or Torres Strait Creole) on learning outcomes for indigenous children in ACT preschools and preschool programs, ACT Dept of Education and Training, \$36,212

**Professor Paul Martin**, AgLaw, Sustainable Land Management in the High Pamir and Pamir-Alai Mountains (PALM), United Nations University, \$133,433

*Expressions of Interest submitted:*

**Adjunct Lecturer David Gee**, BEPP & Education, Overseas Short-Term Training (OST) Program - Upper Secondary Education Development - 1a.OST09.FBS.02, Asian Development bank - Vietnam Ministry of Education and Training, \$340,000

**Professor Margaret Sims**, Education, DEECD Research Panel, Vic Dept of Education and Early Childhood Development, (payable when service delivered)

**SiMERR**, Education, DEECD Research Panel, Vic Dept of Education and Early Childhood Development, (payable when service delivered)

### **Grant Applications submitted in April:**

Dr Henry Akplu (University of Cape Coast, Ghana), Mr James Otioku ( University of Ghana) & **A/Prof Bernice Kotey & Prof Brian Gibson (BEPP)**, *Building research and teaching capacity in entrepreneurship and small business management in Ghana*, DelPHE, asking \$165,000

Dr Paul Kristiansen (ERS), Dr Robyn Neeson (NSW DPI) & Prof Brian Sindel (ERS), *Weed management in organic grain production*, RIRDC, FRP, asking \$145,082

**Dr Brett Baker (BCSS)**, A new grammar of Wubuy, AIATSIS, asking \$28,124

Mr Alhaji Abdulai (University of Education, Winneba), **A/Prof Thomas Maxwell (EDUC) & Dr Ahmed Bawa Kuyini-A (EDUC)** & Mr Victor Mante (Ghana Education Service) & Mr Seth Baiden a( Ghana Education Service), *Developing Ghanaian Teacher Trainers in Multi-grade Education*, DelPHE, asking \$19,927

**Dr John Paterson (ERS)**, *Palaeobiogeographical study of the Perigondwanan Margin during the Ediacaran and Cambrian; sedimentological, biostratigraphical and geochemical analyses in areas of the Iberian Peninsula and SE Australia*, SMSI, asking \$244,882

**Dr Christopher Guppy (ERS), Dr Janelle Wilkes (ERS) & Mr Simon Jasper (Rural Properties)**, *Grain & Graze II: Mixed Farming Systems Program*, GRDC, asking \$1,943,400

Prof John Crawford (University of Sydney), **Prof Iain Young (ERS)** & Prof Anthony O'Donnell (University of Western Australia), *The Virtual Rhizosphere*, ARC, Discovery, asking \$726,556

**Prof Margaret Sims, Dr Rhonda Forrest, Dr Nicole Green, Ms Genevieve Noone & Dr Brenda Wolodko (EDUC)**, *Research project to engage children and young people about views on their wellbeing*, CCYP, General, asking \$137,151

**Prof Margaret Sims (EDUC)**, *Adult:Child ratios for infants in child care: do small changes make a difference?*, IPF, General, asking \$75,811

**Dr Glenda Vaughton (ERS)**, *Pollen limitation of plant production: Effects of pollen quality*, HSF general, asking \$74,416

**Dr Nigel Andrew (ERS)**, *Introduction and extension of IPM in Northern NSW*, GRDC, General, asking \$300,000

Dr Glenn Brock (Macquarie University), **Dr John Paterson (ERS)** & A/Prof James Jago (University of South Australia) & Prof Lars Holmer (Uppsala Universitet, Sweden) & Dr Christian Skovsted (Uppsala Universitet, Sweden), *Deciphering the evolution, phylogeny and palaeobiology of the earliest skeleton-bearing bilaterians*, ARC, Discovery, asking \$287,195

Dr Vladimir Ejov (University of South Australia), **Dr Gerd Schmalz (S&T)** & Dr Martin Kolar (Masaryk University, Czech Republic), *Symmetries and normal forms of finite type hypersurfaces*, ARC Discovery, asking \$571,821

**Dr Dianne Shanley, A/Prof Nigel Marsh (BCSS)**, *Evaluating Psychologists' Use of Evidence-Based Treatments for Children's Mental Health Problems*, NHMRC, asking \$217,450

**Dr Rhonda Brown, A/Prof Donald Hine & Dr Einar Thorsteinsson (BCSS)** & Dr Neil McGregor (Uni Melb), *Predictors of fatigue in ME/CFS and MS patients and university student controls*, NHMRC, asking \$86,250

**A/Prof Margaret Katz (S&T)**, *Role of hexokinase-like protein in triggering fungal programmed cell death*, NHMRC, asking \$288,750

**Dr Linda Agnew, Prof Kenneth Watson & A/Prof James Mcfarlane (S&T)**, *Regulation of ovarian follicular development by bone morphogenetic proteins*, NHMRC, asking \$121,500

**A/Prof James Mcfarlane (S&T)**, Dr Ghanim Almahbobi (Curtin University of Technology) & Dr Timothy O'shea & Dr James Stranger (PIVET Medical Centre) & Dr Damien Hewitt (Curtin University of Technology), *Regulation of ovarian follicular development morphogenetic proteins*, NHMRC, asking \$133,500

A/Prof Hilary Carey (University of Newcastle), **Dr David Roberts (HuM)**, *Anti-transportation, Liberty and the Empire of Mortality*, ARC, Discovery, asking \$238,931

**A/Prof Adrian Walsh (HUM), Mr Mark Shephard & Prof Paul Martin (AgLAW)**, *Can Virtue Help Redefine the Boundaries of Farmers' Responsibility and Liability for Natural Resource Management?*, NSV general, asking \$279,644

**Dr Ian Reeve (IRF)**, *Investigation and Synthesis of the Current Understanding of Behavioural Change for Household Energy Efficiency*, DECC, asking \$11,737

**Dr Jeremy Bruhl, De Adele Gibbs (ERS)**, *Ploidy levels in Australian Schoeneae (Cyperaceae) inform their genetic diversity, conservation status and cultivation*, AFF, General, asking \$11,920

**Dr Kim Bunter, Dr Hans Graser (AGBU)**, *Genetics of reproductivity performance and sow longevity - postdoctoral support*, PORK CRC, asking \$198,378

Dr Bronwyn Mcallan (University of Sydney), **Prof Fritz Geiser (ERS)**, *Mammalian reproduction on limited resources: survival strategies in the Australian arid zone*, ARC Discovery, asking \$577,298

Dr Dane Panetta, **A/Prof Oscar Cacho (BEPP)**, *Estimation of investment required to achieve weed eradication*, DAFF, Australian Weeds Research Centre, asking \$7,974

## FELLOWSHIPS, AWARDS AND SCHOLARSHIPS

**Professor Jeff Siegel (BCSS)**, will be taking up a fellowship for three months (May - July) at the Freiburg Institute for Advanced Studies in Germany to work on a research project concerning language complexity.

## NEW POSTGRADUATE PROJECTS:

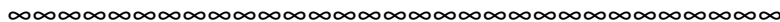
**Fazle Rabbi (PIIC)** has joined the PIIC Soil Carbon Project from the University of Dhaka, Bangladesh, where he works as an assistant professor in soil science. He holds a BSc(Hons) (awarded the Dr. MO Ghoni Gold Medal) and MSc in Soil Science from that university. He will undertake a PhD project to investigate soil carbon at microaggregate scale, in relation to the size fractions that are responsible for strongest protection of soil carbon, and mechanisms of microaggregate generation.

Another PIIC soil carbon PhD student, **Nimai Senapati (PIIC)**, has arrived from West Bengal, India, to undertake his PhD on modelling carbon dynamics in relation to land management and organic inputs. His MSc work (awarded with the Gold Medal from Punjab Agricultural

University) investigated the effect of rice straw and manure application, under rice-wheat systems, on soil organic carbon pools.

Nimai plans to extend this work as part of his PhD project to develop a model for predicting the changes in carbon stock in soils under different land management practices.

**Giregon Olupot's (PIIC)** PhD project will investigate the role that root development plays in sequestering carbon in soil. Giregon has recently arrived from Uganda where he is an assistant lecturer in soil science at Makerere University. He holds a BSc(Hons) and MSc from that university. His ongoing interest revolves around cropping systems and their impact on biomass distribution, in particular root and microbial biomass, and soil physical properties.



***Please forward information for the newsletter to the contacts in your Faculty or Centre:***

|                               |                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------|
| Faculty of Arts and Sciences: | <b>Shelley Harvey</b> , extn. 2726, email: <a href="mailto:sharvey@une.edu.au">sharvey@une.edu.au</a>     |
| Faculty of The Professions:   | <b>Sue Whale</b> , extn. 3848, email: <a href="mailto:swhale2@une.edu.au">swhale2@une.edu.au</a>          |
| Inst. Rural Futures:          | <b>Cathy Coleman</b> , extn. 2220, email: <a href="mailto:ccoleman@une.edu.au">ccoleman@une.edu.au</a>    |
| AGBU:                         | <b>Marlene Youman</b> , extn. 2055, email: <a href="mailto:myouman@une.edu.au">myouman@une.edu.au</a>     |
| PIIC:                         | <b>Elizabeth Davies</b> , extn. 2745, email: <a href="mailto:edavies4@une.edu.au">edavies4@une.edu.au</a> |

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

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