
Drought to flooding rains certainly characterises our climate this season, not to mention pests and diseases!

Industry & Investment NSW (I&I NSW), along with the Livestock Health and Pest Authority (LHPA), are currently preparing for what is expected to be one of the worst plague locust outbreaks for many years. Information on the Australian Plague Locust, including situation reports, forecast hatching dates and more, can be found on the I&I NSW website.

Crop diseases and weeds are very prevalent this year and research on improved control and integrated management are critical to avoid resistance spreading. Updates on cereal disease and weed suppression research are included in this issue.

We have had a very busy couple of months with our Beef and Sheep Field Days and the launch of the Graham Centre Field Site. In total, over 400 people attended these – not to mention the many that visited our stand at the Henty Machinery Field Days.

Centre members have participated in a number of workshops and meetings during the last few months such as the Future Farm Industries Perennial Wheat Workshop and the National Brassica Germplasm Improvement Program (NBGIP) canola meeting.

Staff and students recently attended national and international conferences and a number of their reports are in this Issue. Attendance at such meetings is essential for researchers to keep up-to-date with the latest developments in their discipline and research areas. Also, these opportunities support the development of collaborative links with other scientists. We especially encourage our PhD students to deliver papers as posters or oral presentations, providing feedback from a broad range of colleagues.

We are continuing to review our information delivery pathways, and how to improve our industry links. We have been successful in receiving funds for a number of new projects, and summaries of these are provided inside.

Professor Deirdre Lemerle
Director
**Student News**

**2010 PhD Students**

The following students recently commenced their PhDs.

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<tr>
<th>Name</th>
<th>Project title</th>
<th>Supervisor(s)</th>
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<tbody>
<tr>
<td>Randy Adjonu</td>
<td>Functional properties of food nanoemulsions</td>
<td>Assoc Prof Samson Agboola</td>
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<tr>
<td>Susan Armstrong</td>
<td>Genetic diversity of <em>F hepatica</em> in NSW and Victoria</td>
<td>Prof Terry Spithill and Prof Nick Sangster</td>
</tr>
<tr>
<td>Sosheel Godfrey</td>
<td>Traditional milk marketing domestic supply chains and dairy policy environment in Pakistan</td>
<td>Prof Peter Wynn and Dr Karl Behrendt</td>
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<tr>
<td>David McGill</td>
<td>Breeding Dairy Animals in Pakistan – Modifying selection and analysis for a profitable future</td>
<td>Prof Peter Wynn, Dr Jan Lievaart and Dr Ann Cowling</td>
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<tr>
<td>Shawn McGrath</td>
<td>Effective supplementation of pregnant and lactating ewes grazing dual purpose wheat</td>
<td>Dr Michael Friend, Dr Jim Virgona and Marie Bhanugopan</td>
</tr>
<tr>
<td>Shabzada Shafiullah</td>
<td>The development of an assessment tool to analyse the productivity and financial viability of dairy farms in Pakistan</td>
<td>Prof Peter Wynn</td>
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<tr>
<td>Sunil Singh</td>
<td>Development of targeting, detection and risk assessment capability for exotic pest nematodes in the Australia-Pacific region</td>
<td>Assoc Prof Gavin Ash and Dr Mike Hodda (CSIRO)</td>
</tr>
<tr>
<td>Amir Sohail</td>
<td>Genetic diversity, epidemiology and management of <em>Elsinoe australis</em> on jojoba</td>
<td>Assoc Prof Gavin Ash, Dr John Harper and Dr David Luckett</td>
</tr>
<tr>
<td>Jennifer Spinner</td>
<td>Biopesticides for the control of greenhouse whitefly</td>
<td>Assoc Prof Gavin Ash, Bree Wilson and Dr Ben Stodart</td>
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**Winners are Grinners!**

A team of CSU School of Agricultural & Wine Sciences undergraduate students won the ‘University Teams’ award at the ‘2nd Australian University Crops Competition’.

(Left to right: Jeff McCormick (PhD Student), Victor Clifton, Dwayne Schubert, Andrew Gillett, Dr Sergio Moroni (Lecturer in Agronomy, CSU), Mark Julian, Scott Stoll, James Kanaley, James Whiteley, Andrew Rolfe and George Commins.)
Five of the students placed in the top 10 of the 41 competitors from six universities. The top five place getters are invited to go on a study tour to New Zealand early next year. The competition took place over three days at Temora, during September.

The nine entrants were: Andrew Gillett (2nd), Dwayne Schubert (5th), James Kanaley (6th) Victor Clifton (7th ), James Whiteley (9th), Andrew Rolfe, Scott Stoll, Mark Julian and George Cummins.

The students were tested on: (1) Crop Seed ID; (2) Business Strategy; (3) Pulse ID, Analysis and Classification; (4) Grain Grading; (5) End User- Understanding & Importance; (6) Live Crop ID, Foliar Disease Analysis, Weed ID & Soil Analysis; (7) Live Crop Yield Potential & Production Practices; and (8) Professional & Personal Development.

CSU Agronomy Lecturer, Dr Sergio Moroni and PhD student, Jeff McCormick accompanied the team to the competition and had the privilege to share in their excellent, very relaxed and confident performance during the competition.

**Short Honours Projects, Class of 2011**

The Graham Centre is again sponsoring Short Honours Veterinary Science projects (nine weeks) through the School of Animal & Veterinary Sciences at CSU. The Subject Coordinator for the School’s Honours Program is Dr Kapil Chousalkar.

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<tr>
<th>Name</th>
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<tr>
<td>Stephanie Bullen</td>
<td>Identification of sire lines of Angus cattle in an Australian seed stock enterprise which produce calves phenotypically resistant to and susceptible to internal parasitism</td>
<td>Dr Peter Honey, Prof Peter Chenoweth</td>
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<tr>
<td>Kate Burnheim</td>
<td>Epidemiology and diagnosis on inflammatory airway diseases in local race horses</td>
<td>Dr Sharanne Raidal, Dr Kris Hughes, Dr Jane Heller</td>
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<tr>
<td>Nicole Burns</td>
<td>Pharmacokinetics of parental oxytetracycline in horses and the distribution to the endometrium during oestrus</td>
<td>Dr Scott Norman, Dr Kris Hughes, Dr Scott Edwards</td>
</tr>
<tr>
<td>Rhys Duncan</td>
<td>Echocardiographical effects of pharmacological testing in standard bred racehorses</td>
<td>Dr Kris Hughes, Dr Sharanne Raidal</td>
</tr>
<tr>
<td>Amy Dutton</td>
<td>Comparison of digestive efficiencies in sheep</td>
<td>Dr Gaye Krebs</td>
</tr>
<tr>
<td>Jill Groat</td>
<td>Objective measure to monitor pig welfare</td>
<td>Dr Trish Holyoake, Ms Rebecca Doyle</td>
</tr>
<tr>
<td>Tom Quast</td>
<td>Pharmacokinetics of bromide in sheep</td>
<td>Dr Scott Edwards, Dr Helen McGregor</td>
</tr>
<tr>
<td>Emily Roberts</td>
<td>Does the inclusion of prolactin improve post thaw motility and longevity in frozen extended equine semen</td>
<td>Ms Heather Ip, Dr Scott Norman, Prof Peter Chenoweth</td>
</tr>
<tr>
<td>Felicity Wills</td>
<td>Effect of surgeon experience on patient stress and tissue damage monitored by total blood cortisol and C- reactive protein following ovariohysterectomy in the bitch</td>
<td>Dr Jacob Michelsen, Dr Jane Heller</td>
</tr>
<tr>
<td>Amy Wynn</td>
<td>Defining a safe corridor relative to the dorsal sacral spine the sacroiliac joint within the feline sacrum for the insertion of screw in lag fashion for fixation of sacroiliac luxation</td>
<td>Dr Jacob Michelsen, Prof Bruce Christie</td>
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**Graham Centre Beef and Sheep Field Days, August 2010**

In response to feedback from last year’s Inaugural Graham Centre Beef Field day, the Centre hosted two separate field days for producers on consecutive days; one for beef producers, on 19 August and the second for sheep producers, on 20 August. This was done in conjunction with the Hume Livestock, Health and Pest Authority in Wagga Wagga. The theme for both days was “nutrition” with several interesting presentations during the morning sessions followed by workshops in the afternoon.

Presentations at the Beef Field Day included: macro and trace elements (Professor Ivan Caple, Melbourne University), additional feed on silage (John Piltz and Kate Parry, I&I NSW); existing problems with poisonous plants (Dr Tony Morton, LHPA); and how to feed heifers to prevent dystocia (Paul Cusack, Consultant).
Topics at the Sheep Field Day included: feeding ewes and reproduction (Dr Michael Friend, CSU), pregnancy toxaemia (Tony Morton, LHPA), feed lotting of sheep (Geoff Duddy, I&I NSW Yanco and Matt Muir, CSU), economics of feeding (Assoc Professor Bruce Allworth, Fred Morley Centre, CSU) and optimal lambing time (Geoff Casburn, I&I NSW). A total of 305 people attended the field days, and participated in many good discussions during the morning sessions and interesting interactions in the afternoon workshops.

The feedback from this year’s field days is again very positive from both producers and our sponsors – Pfizer Animal Health, Meat & Livestock Australia, Ancare and Novartis. We look forward to the next Beef and Sheep Field days planned for August 2011. Any suggestions towards future planning would be most welcome.

Henty 2010

The Henty Machinery Field Days were held from 21-23 September 2010 and once again proved to be a very successful event. The Graham Centre’s display had a steady stream of interested visitors, keen to learn more about our activities. At right, Professor Peter Chenoweth and Raylene Heath chat with some of the visitors.

Website to Monitor Soil Moisture Under Crops

An exciting new website, The Soil Moisture Bank, will provide farmers with up-to-date soil moisture readings under indicator crops of canola and wheat in the Henty area. This level of detail will help farmers make informed management decisions based on estimates of soil moisture reserves.

The website is a major outcome of a two-year project run by the Graham Centre and the Eastern Riverina Landcare Network. The project was funded by the Federal Department of Agriculture, Fisheries and Forestry under its Caring for our Country Program. Key Graham Centre staff involved in the project are Soil Scientist, Dr Iain Hume, Research Liaison Officer, Helen Burns, and District Agronomist at Albury, Janet Walker.

The Soil Moisture Bank aims to track the fate of rainfall and the amount of water stored in the soil to a depth of one metre. This information will assist farmers in fine tuning their management decisions allowing for the effect of soil type on soil moisture availability.

A feature of the website is the soil descriptions of the monitored sites. Understanding the differences and limitations of the soil are critical when basing decisions on soil moisture data.

Field Site Launch — 8 September
A Great Success

Field Site for Mixed Farming

www.grahamcentre.net

Charles Sturt University and Industry & Investment NSW

Dr John Williams, Commissioner, NSW Natural Resource Commission, delivered the Opening Address

Professor Ian Goulter, Vice Chancellor, CSU and Ms Renata Brooks, Executive Director, Agriculture & Primary Industries Science & Research, I&I NSW

Lee O’Brien, Chair, Murrumbidgee Catchment Management Authority and Member of Graham Centre Industry Advisory Committee

Mark Harris, Graham Centre Industry Advisory Committee Member & Chair of Field Site Steering Committee
Research Updates

Canola competition for weed suppression

Dr Deirdre Lemerle, Peter Lockley, Technical Manager, Dr David Luckett, Senior Research Scientist and Dr Hanwen Wu, Senior Research Scientist, I&I NSW, Wagga

Competitive crops are an important component of integrated weed management systems to reduce dependence on herbicides and resistance spread. Canola (Brassica napus) is a useful break crop but its potential to suppress weeds such as annual ryegrass (Lolium rigidum) has not been quantified in Australia. A study was conducted in 2009 and 2010 to examine the range in competitiveness available in 15 current canola types with annual ryegrass. Significant differences in grain yield of canola were recorded in weedy and weed-free plots, with percentage yield reductions from weeds of 60-100%. Crop competitiveness was also assessed by weed dry matter suppression at flowering, which was negatively correlated with crop dry matter. The hybrids were higher yielding and were more competitive than the triazine–tolerant cultivars. Competitive genotypes will be especially important for suppressing late emerging weeds, and for enhancing herbicide performance. Future studies will examine factors underpinning strong competitive ability such as early vigour and root growth, rapid ground cover and height.

The results were presented at the 17th Australasian Weeds Conference in September in Christchurch.

Further information: Deirdre Lemerle, 02 6938 1667 dlemerle@csu.edu.au; Peter Lockley, 02 6938 1938, peter.lockley@industry.nsw.gov.au; David Luckett, 02 6938 1835, david.luckett@industry.nsw.gov.au; Hanwen Wu, 02 6938 1602, hanwen.wu@industry.nsw.gov.au.

Disease Updates

Winter cereals

Dr Andrew Milgate, Plant Pathologist, I&I NSW, Wagga

Winter cereal diseases, such as stripe rust, have had an early start this season and are very widespread. Most growers and agronomists have been aware of their variety risks and taken appropriate fungicide actions. Adult plant resistance (APR) by fungicide interaction trials are looking fantastic. Because of continuing mild spring conditions, all leaf diseases pose some threat to susceptible varieties.

A reminder to growers – don’t forget the lesson of history that above average rainfall in consecutive months (August, September, October) promote the rapid development of take-all and this can be a devastating disease in southern
NSW. Consideration of avoiding consecutive winter cereal rotations, combined with the control of grass weeds are important factors in minimising losses from this disease.

Further information: Andrew Milgate, 02 6938 1990, andrew.milgate@industry.nsw.gov.au

**Pulses and Oilseeds**

*Kurt Lindbeck, Plant Pathologist, I&I NSW, Wagga*

A return to more 'traditional' wet and cool conditions over winter and spring has resulted in many pulse and canola growers managing diseases that have not been an issue in recent years. Diseases favoured by cool, wet conditions such as brown leaf spot of lupin, ascochyta blight of field pea and chickpea, sclerotinia stem rot and blackleg of canola, have all re-emerged in 2010.

It will be important for growers in 2011 to implement appropriate disease management practices to minimise the impact of these diseases on crop production. Selection of appropriate paddocks and crop rotation, use of resistant varieties and strategic use of foliar fungicides are all effective in reducing disease risk.

This year has been a valuable reminder that many plant diseases do not ‘disappear’ during dry conditions, and will quickly return when conditions become favourable.

Further information: Kurt Lindbeck, 02 6938 1608, kurt.lindbeck@industry.nsw.gov.au

**Recent Attendances at Conferences**

_Graham Centre members are encouraged to attend and contribute to national and international conferences._

**Landscape Management for Functional Biodiversity Conference, Cambridge, UK**

*Professor Geoff Gurr, School of Agricultural & Wine Sciences, CSU, Orange*

There is increasing worldwide interest in farmlands as sites for the conservation of biodiversity. This is largely pragmatic because agriculture is a dominant land use and only limited space can be ‘locked-up’ in wildlife reserves and similar protected areas. Yet, far from being a burden to farmers, boosting biodiversity can deliver a range of benefits to agriculture including natural pest control, pollination and nutrient cycling. These ‘ecosystem services’ are of great interest to ecologists. The Landscape Management for Functional Biodiversity conference, held in Cambridge, UK, recently brought together researchers from the USA, Australia and many European countries to explore theoretical and applied aspects of this important topic.

The central theme of the meeting was how to manage farmlands at the scale of landscapes rather than individual farms or specific fields. The reason for this is simply that many of the animals that live on farms are highly mobile. Even weed (as seeds) and plant pathogens (as spores or as inocula carried by insect vectors) can be dispersed over long distances.

The paper delivered by Professor Geoff Gurr of the Graham Centre was entitled 'Multi-function agricultural biodiversity in Australian agricultural landscapes.' This addressed a key difference between the way in which farmers are motivated to encourage biodiversity in Australia compared with Europe and the USA. In those countries, government funding schemes specifically reward farmers, compensating them for taking land out of production and allocating land to other forms of vegetation as habitat for wildlife. An example is the strip-like vegetation in place at the Game and Wildlife Conservation Trust’s Allerton...
Project site located at Loddington. As well as the plants in each strip that are selected to provide a particular benefit, such as overwintering habitat for predatory beetles and cover for game birds, the overall area also attracts government payments. No equivalent economic incentives exist in Australia. Here, there is a much greater need to demonstrate to landholders that areas of non-crop vegetation really ‘pay their way’. A good example is the use of shelterbelts. It is well known that as well as providing livestock and crops with shelter from extreme weather, they can also provide timber and help manage catchment hydrology and associated dryland salinity. Work by Geoff Gurr’s group based in Orange and funded by the Rural Industries Research and Development Corporation and the CRC for Cotton Catchment Communities has focussed on shelterbelts and riparian woodland. Over the course of several successful PhD projects, that work has demonstrated how these areas can be managed to simultaneously deliver another ecosystem service: building up communities of predatory and parasitic insects that can control pests.

The Cambridge conference was a valuable opportunity to interact with leading international researchers in the farm biodiversity field. Several of these are contributing chapters to a book ‘Biodiversity for Pest Management’ on which Professor Gurr is now working as the senior editor.

Wildlife Disease Association Conference, Puerto Iguazu, Argentina

Andrew Peters, PhD Student, School of Animal & Veterinary Sciences, CSU, Wagga
(Supervisors: Associate Professor Shane Raidal and Dr David Roshier)

The Graham Centre recently supported PhD student, Andrew Peters’ attendance at the International Wildlife Disease Association Conference in Puerto Iguazu, Argentine. Andrew presented his preliminary findings, which suggest that the important parasitic genus, *Trichomonas*, may have co-radiated with the pigeons and doves.

Compelling South American stories on trypanosomosis (Chiggers disease), Yellow Fever, and environmental contamination with anthropogenic toxins reinforced the growing recognition of a closely intertwined relationship between our health and the health of our domesticated animals and the environment. While the challenges faced globally in the study and management of wildlife disease are significant, especially in the developing world, the conference was evidence that the commitment and innovation of visionary individuals and organisations have made great advancements in this field.

Shortly after the conference, a visit to the vast and extraordinary wetlands of Esteros del Iberá and to the arid central Andes was very revealing. While pigeons and doves are abundant and genetically diverse in South America, it appears that Australasia has a much greater and more spectacular diversity in form and ecology. Furthermore, in our region, several genera of these birds have assumed functions vital to rainforest distribution and diversity such as large seed dispersal.

19th World Congress of Soil Science, Brisbane

Dr Guangdi Li, Senior Research Scientist, I&I NSW, Wagga

Dr Guangdi Li presented a poster paper at the 19th World Congress of Soil Science in Brisbane in early August. The paper, titled “Long-term liming ameliorates subsoil acidity in high rainfall zone in south-eastern Australia” reported the long-term trends of soil acidification and amelioration on a long-term field experiment, known as MASTER. There were 1,900 delegates from 74 countries. The congress received over 1,600 papers in which only 400 presented as oral papers and others presented as posters.

During the conference, Dr Li was able to hold discussions with many scientists on topics relating to his research interests, and explore research opportunities for international collaboration. This
interaction allows for increased understanding of research and development in the field of agronomy, crop and soil research, which aligns with the strategic research initiatives of the Graham Centre.

International Society of Chemical Ecology Meeting, Tours, France

Marja Simpson, PhD Student, School of Agricultural & Wine Sciences, CSU, Orange
(Supervisors: Professor Geoff Gurr and Dr Aaron Simmons)

The meeting of the International Society of Chemical Ecology (ICSE) is held annually, with this year being the twenty-sixth meeting since the association was formed in 1983. The society brings together biologists, ecologists and chemists worldwide. The topics of the conference included: new technologies in chemical ecology, mechanisms of intraspecific communication in animals, chemical communication between, with, and around plants, the diverse roles of non-volatile compounds, evolutionary aspects of chemical communication and chemical ecology of multitrophic interactions. The conference program included 100 oral and 180 poster presentations.

Post doctorate student, Marja Simpson, presented an oral paper in the session ‘chemical ecology of multitrophic interactions’. The title of her paper was ‘herbivore-induced plant volatiles and floral resources increase natural enemy abundance and pest control in field crops’. It reported on research findings from her PhD research conducted during the last three years. This research explores a novel approach to crop pest control by using synthetic versions of naturally occurring volatile compounds at different concentration and flowering plant species in three different field crops to attract and maintain beneficial insects into the crops aiming to enhance biological control of crop pests. Marja found that her oral presentation was an excellent opportunity to improve her presentation skills and to receive feedback on her research. The studies that she presented are strongly aligned with the Graham Centre objective, ‘Australian Bio-Protection’, which aims to develop novel environmentally sustainable agricultural pest control methods.

Her attendance at this meeting was of great benefit as it exposed her to current research in chemical ecology, prospects for practical applications in agriculture, different research techniques and analytical equipment. It was also a great opportunity to meet other chemical ecology researchers to discuss research findings and establish ideas for future projects.

61st Annual Meeting of the European Association for Animal Production Scientific, Crete

Catherine Gulliver, PhD Student, School of Animal and Veterinary Sciences, CSU, Wagga Wagga
(Supervisors: Dr Michael Friend, Dr Edward Clayton, Dr Belinda King, Dr Susan Robertson, Dr Graeme Ball)

The European Association for Animal Production (EAAP) is an internationally recognised meeting in the field of animal nutrition and reproduction and draws attendance of international experts in the field, as well as industry representatives. This year the conference was held in August at Heraklion on the island of Crete with approximately 760 attendees. The central theme of the conference was the “Impact of food demand, quantity and quality wise, on animal production”.

Catherine Gulliver delivered a presentation entitled “Longer time to oestrus in ewes fed a high omega-3 diet”. Her talk was well received and she was later approached by a number of scientists interested in her research. Of particular interest was a group of scientists from the University of Tabriz in Iran who were undertaking similar research in the area of omega-3 fatty acids and sheep reproduction. During the conference she met with a private animal nutrition consultant from Belgium as well as researchers from Argentina, Uruguay, France, Spain, Germany, USA, New Zealand and the Netherlands. The conference was a great success and Catherine established many new links with researchers across the globe.
Presenting at the conference raised the profile of the Graham Centre and helped establish credibility for Catherine's current research project and discuss future potential collaborations. Papers from the conference are published in a Proceedings which have wide readership. The 2010 Proceedings will soon be available online.

Abstracts from the Conference can be downloaded at http://www.eaap.org/Crete/Heraklion_2010_Abstracts.pdf

**New Project — Summaries**

**Strengthening the Cambodian and Australian vegetable industries through adoption of improved production and postharvest practices**

Funding Body: ACIAR  
Chief Investigator: Dr Ben Stodart, Postdoctoral Research Fellow, School of Agricultural & Wines Sciences, CSU

Vegetable consumption in Cambodia is currently one of the lowest in Asia, and what produce is available from local production is heavily supplemented by imports. The Royal Government of Cambodia has a long term plan to replace much of the imports with local production, and significantly increase vegetable consumption. In line with this plan, the strategy of the directly-funded ACIAR programs and the AusAID funded Cambodian Agricultural Value Chain Project (CAVAC) Research and Extension program is to support applied research and development to underpin agricultural diversification. This current ACIAR project is targeting aspects of agronomy, pathology, post-harvest and marketing to provide a whole systems package for vegetable improvement to farmers and researchers. A unique aspect of this work is the collaboration between the General Directorate of Agriculture, the Cambodian Agricultural Research and Development Institute, the Royal University of Agriculture, and a team of international researchers from the Department of Industry and investment NSW, Charles Sturt University and the Asian Vegetable Research and Development Centre.

**Avian migration and movement of pathogens in the Australo-Papuan context: Developing novel methods for the accurate assessment of relevant connectivity between populations**

Funding Body: DAFF (Wildlife Exotic Disease Preparedness Program)  
Chief Investigator: Dr Shane Raidal, Associate Professor in Veterinary Pathobiology, School of Animal & Veterinary Sciences, CSU

This project directly addresses this technological deficiency, by employing the strengths of team members in epidemiology, molecular genetics and spatial analysis to test an avian migratory model, with the objective of validating the technique to allow it more general application by ecologists and other researchers involved in the biosecurity of Australia. It will also develop and refine technologies for the survey, containment and control of wildlife diseases, consistent with the control of emergency animal diseases. It will develop and refine wildlife disease control and surveillance techniques that can be used in an emergency animal disease incident.

**The role of kisspeptins in vernal transition management in mares**

Funding Body: RIRDC  
Chief Investigator: Dr Scott Norman, Senior Lecturer, School of Animal & Veterinary Sciences, CSU

This project proposes to investigate a novel treatment for management of the transition period involving the use of a recently identified neuropeptide called kisspeptin. In this study we will investigate whether the administration of kisspeptin can reduce the duration of spring transition and assist with prediction of the first fertile ovulation for the season. The spring transition period in mares currently requires significant managerial input to ensure early pregnancies and to reduce inefficient use of stallions.
The use of plant derived secondary metabolites in the search for new herbicide templates

Funding Body: GRDC
Chief Investigator: Dr Jim Pratley, Research Professor of Agriculture, School of Agricultural & Wine Sciences, CSU

Australian agriculture is dependant on the use of herbicides to control problem weeds. Annual ryegrass is Australia’s worst weed and is the world’s worst case of herbicide resistance. The occurrence of herbicide resistance threatens the sustainability of the farming systems presently used in Australia. Even though annual ryegrass is a major problem for Australian agriculture there is limited research into developing new technologies for control. Natural herbicides found from plant sources offer a more socially acceptable source of chemical products with a lower likelihood of leaving pesticide residues in the environment and in the final agricultural product.

Demonstrating productive and sustainable mixed farming landscapes under climate change

Funding Body: Murrumbidgee CMA
Chief Investigator: Dr Deirdre Lemerle, Professor of Agricultural Innovation, CSU

New technologies and systems are being developed to assist land managers adapt to climate change, increase biodiversity, add carbon to the soil and improve soil health and water use efficiency, whilst improving productivity and long-term sustainability and community resilience.

The Graham Centre Field Site at Wagga Wagga will demonstrate to farmers, students and the general public the: profitability and environmental benefits of new and improved agricultural technologies for mixed farming systems; role and importance of agriculture for food security, climate change, water use efficiency and bio-security; and opportunities for including native ecosystems within agricultural landscapes.

Assessment and alleviation of adverse stimuli in pigs

Funding Body: Australian Pork Limited
Chief Investigator: Ms Rebecca Doyle, Associate Lecturer, School of Animal & Veterinary Sciences, CSU

Unmitigated pain is associated with suffering, distress and detrimental effects in physical health, representing a welfare concern. Pain management in animals is limited by pain assessment, which remains highly subjective, with producers and veterinarians relying on indirect measures of pain – usually based on clinical and behavioural parameters. There is a need to develop tools to effectively monitor and manage pain in pigs in response to injury, illness and/or heat stress, to optimise their well-being.

In The Limelight

Jeff McCormick

PhD Thesis Title: Dual purpose canola in south eastern Australia

Supervisors: Dr Jim Virgona (CSU), Dr John Kirkegaard (CSIRO)

Relevant Current Employment: Research Agronomist, I&I NSW

Career and studies till now

- Finished undergraduate training in 2001.
- Worked on farm and as an agronomist for farms around the Wagga region.
- Started PhD at Charles Sturt University in 2006.
- Currently completing writing of thesis.
- Recently started working with I&I NSW as a Research Agronomist on the Evercrop program.

Jeff McCormick, receiving the 2009 Canola Breeders Western Australia Pty Ltd prize awarded for Best Student Presentation from Dr Wallace Cowling CEO of CBWA. [Photo: S Moroni].
Currently Studying

Dual purpose canola is an opportunity to graze canola during the vegetative stage while maintaining grain yield. My project has focussed on using existing commercial cultivars of canola within the Wagga region.

Research Interests

Farming systems – the interactions of crops, pastures and livestock on farm and how profitability can be increased.

My main project at the moment is … Evercrop program and completing a thesis.

My favourite part of my studies is … Creating a regression curve with a high R².

When I am not studying … I like to play my guitar for my 9 month old son.

Current CD in my car is … Chris Tomlin – Hello Love.

Phillip Bowden


Supervisors: John Kent (CSU), Dr Mark Stevens and Dr Adrian Nicholas (I&I NSW)

Funding Body: Industry & Investment NSW

Relevant Current Employment: District Agronomist Cootamundra

Career and studies till now

- BAppSc (Agriculture) Hawkesbury Ag College 1975.
- Integrated Pest Management for Horticulture (Gosford HRAS).
- Agronomy Lecturer Murrumbidgee College (Yanco).
- District Agronomist (Cootamundra).

Extension Interests

- Integrated Pest Management in Cropping Systems, particularly encouraging farmers to be aware of the effects that beneficial insects have in their farming systems, to reduce chemical use and increase biodiversity.
- Stubble Management to avoid burning.
- Adaptations for climate change for mixed farming systems.

Professional Links

GRDC National Invertebrate Pest Initiative (NIPI)

A typical day for me includes … Dealing with enquiries from local farmers on crop production issues, preparing regular media articles for rural news, visiting local trial sites and farmer’s crops, organising field days and contact with other agronomists and researchers via email.

My main project at the moment is … Stubble management demonstrations for local Landcare groups funded by Woolworths, Murrumbidgee Landcare and Murrumbidgee CMA.

When I am not studying … I like to play various sports badly (Squash, tennis, surfing, cycling)

Current CD in my car is … (Ipod) Eric Clapton & JJ Cale “Road to Escondido”; anything by Crowded House, Santana, Dire Straits, Rolling Stones or AC/DC is okay.

Phil Bowden bug checking in canola for beneficial insects such as wasps, ladybeetles and hoverflies to control aphids. [Photo: James Baldry].
Graham Centre Internal Grants Scheme

A number of student scholarships are available for 2011 under the Graham Centre’s Internal Grants Scheme.

Honours Scholarships

The Centre has five honours scholarships available for the 2011 academic year. Honours scholarships have a total value of up to $5,000.

To be eligible, students must have achieved an academic standard that will allow entry into the University’s Honours Program. At least one supervisor of the project must be a member of the Graham Centre. Applicants are required to seek joint supervision by an academic staff member of CSU together with an appropriately qualified staff member from Industry & Investment NSW (where available).

Prior to submission, students should discuss their application with their intended supervisor(s).

Applications Open Soon. Closing date: 1 December 2010.

Student Internships 2011

The Graham Centre Student Internship Scheme aims to encourage undergraduate students to engage in research undertaken by the Centre. It also enables students to become familiar with the types of projects and potential supervisors available through the Centre.

Student Internships are valued at $4,000 each (for a period of 12 months). Successful applicants would be required to spend the equivalent of one day (eight hours) per week, during semester, working with Graham Centre team members within a research priority area.

Students enrolled in a degree course at CSU in 2011 are eligible to apply. Preference will be given to students who are nearing completion of their degree and can demonstrate a high level of academic achievement.

Applications Open. Closing date: 4 February 2011.

2011 Full-time Postgraduate Research Scholarship

The Centre is calling for applicants for the 2011 Full-time Postgraduate Research Scholarship.

This scholarship provides financial support for a postgraduate student of exceptional research promise, undertaking a Doctoral program at Charles Sturt University commencing in 2011.

Applications are invited from eligible students intending to undertake research which is closely linked to the Centre’s objectives and research initiatives/priority areas.

Applications Open Soon.

Secretariat

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Summer Edition of The Innovator

The Spring Edition of The Innovator will be available mid January 2011. Submission of articles for this edition closes on Friday, 10 December 2010. Please email articles to Sharon Kiss.