



AGRI CULTURE

ISSUE 01
DECEMBER
2009

THE FACULTY OF
AGRICULTURE,
FOOD AND
NATURAL
RESOURCES
ALUMNI
MAGAZINE

THE DAY
THE DUST
CAME



The University of Sydney
Alumni

100 YEARS OF WORLD-CHANGING AGRICULTURE 1910 – 2010

IN 2010, OUR CENTENARY YEAR, THE FACULTY OF AGRICULTURE, FOOD AND NATURAL RESOURCES IS PROUD TO CELEBRATE ITS RICH AND ILLUSTRIOUS HISTORY.

LOOKING AHEAD, THE FACULTY'S OFFERING IS UNIQUE WITH MODERN, INNOVATIVE DEGREES THAT PRODUCE HIGHLY SKILLED, WORK-READY GRADUATES NEEDED TO ADDRESS THE CHANGING WORLD WE LIVE IN.

OUR FOCUS IS ON PROVIDING THE KNOWLEDGE THAT WILL UNDERPIN SOLUTIONS TO THE MOST SIGNIFICANT AND CHALLENGING ISSUES OF OUR TIME. WE WELCOME STUDENTS AND STAFF WHO SHARE OUR PASSION, AND PROUDLY RECOGNISE OUR ALUMNI WHO HAVE HELPED TO CHANGE THE WORLD.



THE FACULTY OF AGRICULTURE, FOOD AND NATURAL RESOURCES MAGAZINE FOR ALUMNI AND FRIENDS
ISSUE 1, DECEMBER 2009

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We welcome contributions from readers, especially story ideas, photographs, letters and reunion details. And please tell us what you would like to read.

Submissions for publication may be edited. The views expressed are not necessarily the views of the University.

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NEXT ISSUE

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Please send contributions to:
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Deadline for submissions is
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WANT TO BE AN ALUMNI AMBASSADOR?

The Faculty is looking for alumni who wish to share their knowledge and career experience with prospective students, and their influencers. There are many opportunities at high school career evenings, university expos, and business / industry events throughout the year.

Please contact the Editor for more details.

WELCOME FROM THE DEAN



WELCOME TO THE FIRST ISSUE OF AGRI-CULTURE, OUR NEW AGRICULTURE MAGAZINE FOR ALUMNI AND FRIENDS. EACH ISSUE WILL KEEP YOU UP-TO-DATE ON NEWS, VIEWS AND EVENTS RELATED TO THE FACULTY OF AGRICULTURE, FOOD AND NATURAL RESOURCES.

You – our community of more than 8,000 alumni – are the inspiration for our stories. This is your magazine. Only about 5,000 of you are contactable, and I hope we find our 'lost' graduates with your assistance.

It's high time that we recognised, and celebrated, the diversity and achievements of our alumni community, from agribusiness consultants to media commentators, and wine-growers to international researchers. You are an impressive lot who have significantly changed the world of agriculture.

The Faculty turns 100 next year, and it's going to be a year-long celebration and a chance to reconnect with classmates and teachers. I hope you are proud to be an agriculture alumna / alumnus, and feel eager to return to campus, regardless of when you graduated. I look forward to meeting many of you at our Centenary celebrations.

The high point for 2010 will be the Agriculture Centenary Alumni Weekend on Friday 4 and Saturday 5 June, culminating in a Gala Dinner in the Great Hall.

As we enter our second century I invite you to take another look at your alma mater. Do return to your Sydney University home and see our research outcomes and new initiatives for yourself.

Happy Centenary!

Professor Mark Adams
Dean of the Faculty of Agriculture, Food and Natural Resources
www.agric.usyd.edu.au

P.S. Make sure that you let us know your current email address so you don't miss out on e-Sydney, the University's monthly electronic newsletter, and other important messages from the Faculty about the Centenary.

CONTENTS

FEATURES

04 STARTING FROM THE GROUND UP

Professor Mark Adams talks about his plans for the future with Fran Molloy.

06 THE DAY THE DUST CAME

Dr Stephen Cattle on Sydney's recent dust storm.

08 AGRICULTURE FACULTY TURNS 100

09 MEET YOUR STEERING COMMITTEE

REGULARS

10 WHAT'S HAPPENING?

13 RESEARCH MATTERS

14 GRADUATE PROFILE

16 BRIGHT YOUNG MINDS

18 CLASS NOTES

19 MIXED BAG

"AGRICULTURE IS A GREEN BUSINESS – IT'S THE GREENEST OF AUSTRALIA'S INDUSTRIES," SAYS PROFESSOR MARK ADAMS

AGRICULTURE FEATURE:

STARTING FROM THE GROUND UP

By Fran Molloy

AFTER A YEAR AND A HALF AS DEAN, PROFESSOR MARK ADAMS IS READY TO IMPLEMENT HIS FARSIGHTED PLANS TO BRING THE FACULTY OF AGRICULTURE INTO A FAST-PACED FUTURE WHERE SUSTAINABLE AGRICULTURE WILL INCREASINGLY PLAY A CRITICAL ROLE. AND THE FACULTY'S DEPTH OF KNOWLEDGE ACROSS SOIL SCIENCE, PLANT BREEDING, PLANT ADAPTATION TO CLIMATE AND NATURAL SYSTEMS WILL BE THE ACADEMIC HEART FOR FUTURE DEVELOPMENT.

Professor Adams grew up in Melbourne and worked as a jackaroo in Deniliquin before completing a science degree and then a PhD in forest ecology at the University of Melbourne.

"I wanted to understand what makes native forests ecologically sustainable through fires and droughts. How do all those nutrients that end up in the atmosphere in a bushfire get replaced naturally? Why are native forests so productive without the use of fertilisers?"

He has published widely across soil science, plant physiology and forest ecosystems and has conducted field research in the Snowy Mountains, the Pilbara, Tasmania and south-west WA as well as Papua New Guinea, Africa and Europe and comes from Professorial appointments at several Australian universities.

He is well aware that the Faculty of Agriculture must tackle major building works. With no lift in the Faculty building, occupants cart trays of chemicals up and down five flights of stairs. The fully occupied building next door is a temporary structure built in the 1950s.

These renovations, though, are small change compared to the big-picture issues that Professor Adams faces today.

"We need to resolve, not just the dilemmas facing agriculture at the University of Sydney, but those facing agriculture in Australia," he says.

Agriculture still dominates Australian landscapes, he explains, with 400 million hectares – that's 80 percent of Australia – used for agriculture in one form or another.

Professor Adams acknowledges the enormity of the challenge, pointing out that the environmental issues of today are owned by agriculture.

"Agricultural science holds the solutions to problems caused mainly by the urban population, by the power and food they consume and the water they use," he continues.

Australia must continue to play a critical part of world food stocks. "Without contributions from Australia and countries like Canada and Brazil, for example, there will be a lot of very hungry people in the world."

World demand for food will increase beyond population growth as standards of living rise and more people switch to high-protein diets, he adds.

Water remains one of Australia's biggest challenges. He believes that issues such as soil degradation and salinity will be redressed within the next couple of decades.

"Australia will implement technological developments that apply biological knowledge of how soil works and how soil is formed to restore many degraded landscapes to production."

As our understanding of how native flora and fauna cope with salinity, fire and drought grows, this knowledge is being used in agricultural landscapes, he says.

"Farmers are adopting a whole range of management interventions to reduce reliance on chemical interventions. Legume rotation and matching planting to water availability are greatly augmented by remote sensing and soil monitoring technologies. Our farmers are now scientists."

This does not mean the end of the family farmer, he adds. "International evidence shows family farmers are very efficient and able to adapt rapidly to changing conditions."

While industrialised farming will continue to have a significant place, he says that our history of adapting to changing climate and economic conditions has kept Australian farmers very competitive internationally.

"One of the future strategies for Australia is to focus on low intensity agriculture, which is ecologically sustainable, has low water use and in some places, methane neutral production because soils are oxidising the methane."

Professor Adams believes that several recent appointments have consolidated the Faculty's already strong position in sustainable agriculture.

The new Chair of Sustainable Agriculture is Professor John Crawford, a Scots soil biologist. With Professor of Soil Science Alex McBratney and soil microbiology expert Dr Michael Kertesz, Professor Adams believes the Faculty now has formidable clout in research into building the productive potential of our soils.

Two researchers awarded four-year Future Fellowships in plant adaptation to changing climates will be based in the Faculty, Dr Margaret Barbour and Dr Peter Franks.

"With less rain in some southern regions than there was a decade ago and consistent rainfall in places like the Liverpool Plains, we know that simple economics will drive some crops northwards, so this is critical research."

He believes Australia will always be an agrarian place, provided we ensure our agriculture is sustainable and rethink some of the paradigms of the past.

"Agriculture is a green business – it's the greenest of Australia's industries," says Professor Mark Adams – and emphasises how important it is to improve the understanding that urban people have about the sensible use of land.

Professor Adams says that Agriculture students will learn a systems approach and understand the integration of plants and soils and water and climate and the atmosphere, in both agricultural and natural systems.

In the near future, he believes that sequestration of soil carbon will play a huge role in Australia's response to greenhouse gas pollution.

"Agriculture is the greenest industry in Australia – but it also requires systems thinking, a depth of knowledge and the ability to integrate," he says.

"To manage land sustainably, we need knowledge of soils, plants, weather and water supplies and to be able to put it all together. Agriculture in future must be synonymous with sustainability, with green industry and with being a solution to problems, rather than a cause of problems."

Fran Molloy is a regular contributor to the Sydney Morning Herald, Sun Herald and The Age, and various magazines.

THE DAY THE DUST CAME

"SEPTEMBER'S
EVENTS HAVE
DEMONSTRATED THAT
NATURE IS NOT TO BE
UNDER-ESTIMATED".

DR STEPHEN CATTLE
(BSC AGR '91 PHD '95)

SYDNEY UNIVERSITY SOIL SCIENTIST AND RESIDENT DUST EXPERT DR STEPHEN CATTLE ESTIMATED SEPTEMBER'S DUST STORM STRIPPED SEVERAL MILLIMETERS OF TOPSOIL FROM HUNDREDS OF SQUARE KILOMETERS OF NSW FARMS, TURNING SYDNEY'S SKY RED AND THE SUN BLUE.

On the day that health authorities warned people across NSW not to exercise – even indoors – and sent an advisory to preschools and schools to keep children inside; and ferries were cancelled on Sydney Harbour, and flights were diverted away from Sydney airport, Dr Stephen Cattle faced the media to remind the public that for city dwellers, the dust storm was a temporary nuisance, but in rural areas the effects would be long-lasting. Nutrient-rich topsoil had been blown off NSW farming properties, causing more damage to already drought-stricken areas.

"They're looking at a loss in the potential productivity of their topsoil basically," Dr Cattle commented. "They're losing part of their resource of their land, and it's not something easily restored."

The effect on future crop yields and grazing lands was not the only damage caused by the rare weather system.

"That's a problem because that (the topsoil) is where most of our organic carbon is stored and carbon is a big issue in terms of emissions and sequestering carbon," Dr Cattle said.

HERE IS HIS EXPERT TAKE POST DUST STORM.

Using parlance commonly associated with that time of year, the spectacular dust storm events of late September represented a demoralising defeat of the upstart challengers, western NSW pastoralists, by the reigning Premier, Mother Nature.

While it would be easy to apportion blame to climate change or to the land management practices of pastoralists in the far west of NSW for the severity of the storms, neither is necessarily true. Certainly, the ongoing drought in western NSW, leaving the topsoil bare of vegetation and susceptible to entrainment by strong winds, was the dominant causal factor at play here, but we've had prolonged droughts and dust storm activity before. The first decade of the 1900s and the 1940s were both periods of severe droughts and dust storm activity that did not usher in climate change. Only time will tell if September's activity is a harbinger of drier, dustier times for eastern Australia.

Claims that over-stocking of grazing properties in the fragile, arid lands of the western division of NSW brought about these enormous dust storms are also wide of the mark. Through the efforts of researchers, extension officers and

landholders over the past few decades, more sustainable management practices have become common-place in this region. The maintenance of vegetative groundcover, whenever and wherever possible, heads the list of practices adopted by these landholders that reduce the erodibility of their topsoils.

Instead, the blame for this dramatic disaster, where millions of tonnes of topsoil were stripped from the arid lower Lake Eyre Basin and western NSW, and then transported across NSW to the Tasman Sea, lies squarely with Mother Nature. And it's not the first time she's been found to be culpable.

If you look carefully at the soil landscapes across central and western NSW you can find her fingerprints all over a number of apparently anomalous soil types and landscape features. Along tracts of the lower Lachlan River valley near Hillston "fossilised" sand dunes lie dormant among fields of cereal crops when the winter rains come. These old dunes, now colonised by eucalypts, signify the march east of sand dune fields during a previous cold, arid phase of our history. Such phases, known by geologists as "glacials", have occurred relatively regularly over the last couple of million years.

Further south in the Riverina, a red, clayey soil blankets vast areas of the landscape, regardless of the underlying rock type. This type of soil, known as parna, is regarded as a relatively useful and fertile medium for plant growth, and is believed to have formed from dust blown in from the Mallee region of western Victoria during previous glacial periods. The amount of wind erosion and dust entrainment required to produce these quite thick soil profiles is mind-boggling, especially when you consider that the storm that reached Sydney will have only added a fraction of a millimeter of new material to soil profiles.

Some figures on the amount of and type of dust deposited in Sydney on September 23 are now starting to emerge. A dust trap installed on the Fisher Library roof at 8:45 that morning yielded about 2g of deposited dust per metre squared, which is equivalent to 2 t/km². Given that the bulk of the deposited dust probably fell before 9 am, when wind speed picked up substantially, it is not unreasonable to estimate that Sydney received at least 5 tonnes of dust/km² during the event. While that might sound like a lot, in sub-Saharan Africa and northern China, currently the dustiest places

on Earth, annual dust deposition rates are around 275 t/km².

"September's events have demonstrated that nature is not to be under-estimated".

A somewhat unexpected finding regarding the dust deposited during the morning of September 23 was that it was very fine. High resolution particle sizing of the dust revealed two distinct particle populations, one with a modal size of 18 µm and one with a modal size of 5 µm. Dust particles are normally between 10 and 100 µm in size; any bigger and they're too heavy for wind to carry very far, whilst if they're smaller than 10 µm they're so light they stay suspended almost indefinitely. The very fine particles captured in Sydney attest to the long transport distances of this material from its arid zone source.

So while the wetter decades of the late twentieth century may have lulled us into thinking that, with careful management practices, we can effectively harness the natural resources of NSW to grow food and fibre almost everywhere, September's events have demonstrated that nature is not to be under-estimated. Regardless of the precautions we may have taken to prevent excessive wind erosion, the perfect combination of prolonged dryness and gale force winds conspired to put on a show of gigantic proportions. With the scores tied, it was an intercept try on the bell to Mother.

Dr Stephen Cattle (BSc Agr '91 PhD '95) is a soil scientist and dust researcher at the Faculty of Agriculture, Food and Natural Resources, the University of Sydney.



Dust Storm
Over The
Quadrangle

AGRICULTURE FACULTY TURNS 100

100 WORLD-CHANGING YEARS OF AGRICULTURE AT THE UNIVERSITY OF SYDNEY, 1910–2010, BEGAN WITH THE APPOINTMENT OF R.D.WATT, THE FIRST PROFESSOR OF AGRICULTURE.

To celebrate our history, and the achievements of our alumni, staff, students and friends, we promise you year-long Centenary Celebrations bursting with events and activities for all ages. There will be something for everyone!

Our agriculture graduates over the last century have significantly changed the world, and are a testament to the passion and excellence of the Faculty's teaching

and research community. Many of our more than 8,000 living alumni are at the top of their field in areas of agricultural business, climate change, environmental sustainability, forestry, resource economics, land and water management.

Alumni also hold prominent roles in business and industry, humanities and the arts, with particular success in the media and journalism.

SAVE THE DATES IN YOUR DIARY, AND STAY TUNED FOR MORE DETAILS ON THE CENTENARY WEBSITE FROM JANUARY 2010 AT WWW.AGRIC.USYD.EDU.AU

MARCH

March 12
Launch of Centenary,
MacLaurin Hall
(Invitation only)

OCTOBER

Colleges Cocktail Reception
(Date TBC)
For alumni who were also residents of the Colleges

NOVEMBER

Friday 12 November
Camden PBI Open Day
Evening: Bush Dance

APRIL / MAY

Alumni Elders Luncheon, Women's College (Date TBC)
All welcome, especially alumni who graduated 50+ years ago.

SEPTEMBER

ANNUAL SPRING BACK TO SYDNEY ALUMNI REUNION DAY
For all Sydney University Alumni

MARCH 2011

INAUGURAL R.D. WATT LECTURE

Save the dates in your diary!

REGIONAL EVENTS

Tuesday 28 September

Alumni Cocktail Reception, Narrabri

JUNE

AGRICULTURE CENTENARY ALUMNI WEEKEND
100 YEARS,
100 STORIES

Tuesday 1 June

Public Lecture – Part of Sydney Ideas, a forum for intellectual discussion

Friday 4 June

Centenary Research Symposium
Tap into some of the world's, and Australia's, brightest minds

Saturday 5 June

Back To Agriculture Open Day

Saturday 5th June

Centenary Gala Dinner

Drinks in the Quadrangle, followed by Gala Dinner in the Great Hall

Sunday 6 June

Organise a class reunion!
Contact sgulbis@usyd.edu.au to find out how.

Wednesday 29 September

Narrabri Field Day & Sustainability Forum

MEET YOUR STEERING COMMITTEE

THE UNIVERSITY OF SYDNEY CONSIDERS ITS ALUMNI AND FRIENDS AS ONE OF ITS MOST VALUABLE ASSETS.

The Faculty recognises the shortage of agricultural science graduates, and has dedicated resources to actively promote agricultural science as a career, and turn around stereotypes. We call on alumni and friends to assist us with this challenge.

With this in mind, an Agriculture Alumni Steering Committee was established in May 2009 to play an important role in developing an engagement strategy to enlist alumni and friends as ambassadors and supporters of the Faculty in their professional and social circles,

and in their local schools and communities; and advising on the formation of an alumni association. Members include recent, mid-career and retired graduates, from academic, media, business and farming backgrounds. All disciplines within the Faculty are represented, as well as city and regional areas.

Professor David Guest, Associate Dean, Development says, "In planning for the Centenary we have appointed alumni to a forum to advise the Faculty on engaging more regularly with our alumni and friends in the community, to inform the public perception of agriculture, and to help us continue in our role as the major source of teaching and research relevant to agriculture in Australia and the region."

"We have been fortunate that some alumni have come forward to support us with more effective ways of keeping our graduates, and the wider community, in touch with the Faculty."



COMMITTEE MEMBERS

1. Dave Anthony
(BSc Agr '76)

Managing Director and CEO of Auscott Ltd., one of Australia's largest integrated agribusiness organisations with extensive irrigation and cotton processing operations

2. Lucy Broad (BSc Agr '82)
ABC journalist and broadcaster

3. Peter Brown, AM
(BSc Agr '62)
Senior Consultant, GHD Hassall

4. Cassia Ferguson
(BSc Agr '05)

Marketing Officer, The N & A Group Fruit Distributors Pty Ltd, Sydney Markets

5. Dr Brian Fisher, AO PSM
(BSc Agr '73 PhD '78)
Executive Director, Economic Analysis, Concept Economics; and Former Dean of Agriculture

6. Professor David Guest
(BSc Agr '78 PhD '84)
Professor of Plant Pathology, and Associate Dean, Development

7. Skaidy Gulbis
(BA Dip Ed MA Comm Mgt)

Agriculture Alumni Relations Officer

8. Dennis de Kantzow
(BSc Agr '59 Dip Agr Econ '74)

University Alumni Council Agriculture Representative

9. Phil Mulvey (BSc Agr '81)
Managing Director, Environmental Earth Sciences

10. Tiffany Patrick
(BAgr Econ '07)
Goldman Sachs JB Were Pty Ltd – Equities Division

11. Melissa Peart
(BLWS Hons '05)

Project Officer, Contaminated Sites, Environmental Protection and Regulation, NSW Department of Environment and Climate Change

12. Chris Russell
(BSc Agr '76)
Agricultural scientist and broadcaster (currently panellist on ABC's "New Inventors")

CAN YOU SPARE SOME TIME AS A VOLUNTEER?

TRACK DOWN THE OLD GANG (LOST ALUMNI PROJECT)

ORGANISE REUNIONS

MEET & GREET AT ALUMNI EVENTS

Contact the Editor at sgulbis@usyd.edu.au, or write to The Faculty of Agriculture, Food and Natural Resources (Alumni Volunteer).

WHAT'S HAPPENING

POINT OF DIFFERENCE:

NEW DEGREE IN ENVIRONMENTAL SYSTEMS

From 2010 a brand new three-year degree – Bachelor of Environmental Systems (BEnvSys) – will be offered.

It comprehensively examines both natural and agricultural systems, and has as its point of difference a clear focus on building knowledge and skills in quantitative analysis across disciplines, and the application of systems thinking to the issues of the day such as climate change, food security, water and carbon emissions. How we manage carbon and water in our natural and agricultural systems will arguably determine Australia's economic future. Ensuring ecologically-sustainable primary production in natural and managed terrestrial ecosystems is perhaps the single greatest challenge facing human kind. Core units will span across the plant sciences, hydrology, geomorphology, soil science and biosphere-atmosphere interactions.

More information: www.agric.usyd.edu.au

\$6 MILLION EXPANSION TO PLANT BREEDING INSTITUTE IN NARRABRI

A massive \$6 million expansion of the Faculty's Narrabri Plant Breeding Institute (PBI) will commence in 2010, which will confirm Narrabri as the leading grains research facility in Australia. The announcement was made at PBI's annual Field Day by the Chairman of the NSW Wheat Research Foundation (WRF), Richard Clark.

"This will put Narrabri at the forefront of the grains industry for my lifetime at least", he said. The project will be the biggest investment in research infrastructure in Eastern Australia for at least ten years.

Director of the I.A Watson Grains Research Centre Professor Richard Trethowan praised the commitment on both sides – from the WRF and the University of Sydney – which demonstrated strong confidence in agriculture. The Dean, Professor Mark Adams, hoped that this boost would put the Narrabri PBI at the forefront of coping with climate change.



PROFESSOR ROBERT PARK RECEIVES FRIENDSHIP AWARD OF CHINA

GRDC CHAIR OF CEREAL RUST RESEARCH AT THE PLANT BREEDING INSTITUTE AT COBBITTY, AND DIRECTOR OF THE AUSTRALIAN CEREAL RUST CONTROL PROGRAM PROFESSOR ROBERT PARK HAS RECEIVED THE FRIENDSHIP AWARD OF CHINA, THE HIGHEST HONOUR THAT THE CHINESE GOVERNMENT CONFERS TO FOREIGN EXPERTS WHO HAVE MADE OUTSTANDING CONTRIBUTIONS TO CHINA. PARK IS ONE OF ONLY 100 WINNERS IN 2009 OUT OF 480,000 FOREIGN EXPERTS.

He was recognised for ongoing collaborations in wheat breeding and wheat rust control, as well as in training personnel and assisting breeders in this effort. His rust control program is one of the longest running research efforts at the University of Sydney.

"I had a second row seat in Tiananmen Square, in the VIP section for the 60th anniversary celebrations parade and the fireworks, so I was very lucky. I was presented with the award in the Great Hall of the People in Beijing, by the Vice Premier of China. It has been some week...", said Park where he was among 4,000 guests at the official banquet.

Chinese Vice Premier Zhang Dejiang (R) congratulates Professor Robert Park

NEW PHD SCHOLARSHIPS FUNDED BY BUSHFIRE CRC

Australia is already the most fire prone continent in the world. With the effects of climate change impacting rainfall and increasing mean summer temperatures, bushfires could be set to rise. A better understanding of bushfire processes and management is vital. In response to this, the Bushfire Cooperative Research Centre and the Faculty of Agriculture at the University of Sydney, are pleased to announce full (\$30K) and top-up (\$10K) scholarships for students interested in researching key issues for fire-fighting and land management agencies around Australia.

Professor Mark Adams, world expert on mitigation of bushfires, was recently interviewed on ABC's Catalyst program about bushfires. Go to www.abc.net.au/catalyst/bushfires

Scholarship details: Dr Tarryn Turnbull, T: 9351 8840, E: t.turnbull@usyd.edu.au

NEW RURAL SUSTAINABILITY SCHOLARSHIPS

With Australia's rural sector at a turning point, the University of Sydney is offering 25 new scholarships for degrees in sustainable natural and agricultural systems to rural and regional New South Wales residents.

Each scholarship will cover tuition fees for a degree with a focus on sustainability. Scholarships are worth \$10,000 over three years for study commencing in 2010.

"The economy and the environment have changed dramatically, putting the rural sector in the most straitened circumstances it has faced for some time," says Faculty of Agriculture, Food and Natural Resources Dean Mark Adams.

"Droughts, bush fires and the prospect of bearing the cost of greenhouse gas emissions have put huge financial pressure on many in regional and rural NSW.

"Farmers now have to consider food security, water security and carbon emissions as part of their business proposition. Similarly, managers of public land must now take water and carbon much more seriously than they have in the past. We are committed to helping the sector move towards sustainable practice and to bearing some of the costs required to successfully make this transition.

"The best way to do this is to pass on the research and expertise we've developed to those who can put it into practice a few years down the track.

"However, the current economic climate puts studying in Sydney beyond the reach of many students outside of the city.

"These scholarships affirm our commitment to sustainability as the way ahead for Australia, while recognising the encumbrances in achieving it."

Professor Adams says the scholarships lend themselves to studying the Environmental Systems degree but can also include those wishing to enrol in Agricultural Science, and Agricultural and Resource Economics degrees.

"Whatever field they focus on, students will leave the university with a better understanding of how to manage land for the challenges ahead with the likes of carbon sequestering in soil and prescribed fire," he says.

He says students will need to have a passion for sustainability for example the carbon water food debate or climate change.

COLLEGES STEP UP

FACULTY MANAGER, ROBYN TURNER, SAYS THAT THE FACULTY HAS PARTNERED WITH THE UNIVERSITY'S RESIDENTIAL COLLEGES TO OFFER SOME OF THE NEW RURAL SUSTAINABILITY SCHOLARSHIPS AS RESIDENTIAL SCHOLARSHIPS AT THE COLLEGES.

"We recognised that accommodation costs for students coming to live in Sydney can be prohibitive so we talked with our neighbouring Colleges. They applauded the Faculty's initiative, and will step up to help students find other ways to reach the full amount of the accommodation cost, for example, through linking to other scholarships or bursaries available through the college."

WHERE DO OUR GRADUATES GO?

96%

FOUND EMPLOYMENT WITHIN AUSTRALIA.

PROFESSIONAL PATHWAYS INCLUDED RESEARCH ECONOMIST, ENVIRONMENTAL AUDITOR / SCIENTIST, FOOD TECHNOLOGIST, AGRIBUSINESS ANALYST.

AVERAGE GROSS SALARY WAS:

\$43,569

79%

WERE IN PAID EMPLOYMENT.

EMPLOYERS INCLUDED DAFF, TREASURY, DEUTSCHE BANK, ROYAL BOTANIC GARDENS, COMSEC SECURITIES LTD.

Data from 2008 Australian Graduate Destination Report, 4-6 months following final year of study.

WHAT'S HAPPENING

\$4.5 MILLION FOR CENTRE FOR CARBON, WATER AND FOOD

THE L-P CENTRE WILL PROVIDE EVIDENCE-BASED TEACHING AND RESEARCH IN GLOBAL CHANGE BIOLOGY, SUSTAINABLE ECOSYSTEMS AND SUSTAINABLE AGRICULTURE.

Focussing on developing options for the management of rural land, both public and private, that keep people in rural landscapes, the Centre's work will include:

- Murray-Darling Basin (MDB) including the high country of south-east Australia
- Urban-rural interfaces, especially in the Sydney basin and east coast
- Pastoral-mining province of north-west Australia
- How we improve land management to achieve economic and ecological sustainability under future climates, whilst retaining people and livelihoods in rural Australia?

"These regions represent a large proportion of Australia's GDP, are some of the most important examples of declining (south-east) and increasing (north-west) rainfall, and encapsulate critical issues facing rural land management," said Professor Mark Adams, Dean of the Faculty of Agriculture, Food and Natural Resources.

"The big issue is how we can produce more food and manage water and carbon on public and private land – for downstream users as well as locally?" he said.

"For example, the high country provides most of the water to the Murray-Darling system and is the most climatically vulnerable store of carbon in Australia. Major changes in carbon and hydrological cycles across large areas now result from changes in land use (e.g. adoption of plantation forestry), from mining, and from industrial and even urban development," he said.

Agricultural land is threatened by changes in climate and other human-induced changes, but also by the changing global economy. Management of native forests is in dispute in many states as a result of changed public perceptions of appropriate management regimes. Public and private land is now threatened by fire more frequently than ever. Grazing land and rangelands are being overtaken by woody shrubs, as well as depopulated, at an increasing rate. In the vast areas of rangeland, changes in land management, including expansion of mining, are responsible for major changes in hydrology and in vegetation and carbon sequestration.

These challenges are both emphasised and simplified by considerations of the need to produce more food yet better manage our carbon and water. Changes in management have extraordinary implications for water yield and carbon sequestration.

The L-P Centre will build on existing scientific infrastructure and expertise that has been developed and supported by funding from the Australian Research Council and many other government and non-government sources.

In total, the L-P Centre will be a focused and concerted attack on the issues associated with the question: "How do we keep people in the bush and manage it now and in the future for food and fibre production and for carbon and water

"We expect to lay the foundation stone during the Centenary Celebrations next year, and building should be complete by the end of 2010 or early 2011," said the Dean.

More information: www.agric.usyd.edu.au

RESEARCH MATTERS

HORTICULTURE COUP

Dr Gordon Rogers and Dr Jenny Jobling have attracted more than \$1.3M research funds from the horticultural industry for projects looking at nutrient and/or health claim labels and early shelf life indicators for baby leaf spinach and rocket, development of crop scheduling for baby leaf spinach and disease control in rhubarb. The major Australian fresh food processor One Harvest will be the industry partner, with project support also from Horticulture Australia Ltd and industry levy funds.

NARRABRI ANNUAL FIELD DAY

At this year's Field Day the Plant Breeding Institute (PBI) at Narrabri show-cased the Indian Mustard Program. Mustards are being introduced as an improved rotation crop system alternative for the entire north-west region of NSW and will also form the basis of a sustainable feedstock for a viable biodiesel industry. The research seeks to not only release new mustard cultivars within a couple of years, but also demonstrate self-sufficiency in diesel needs for the Institute farm as well. The primary objective is to establish a large commodity-scaled industry for growers in the north-west, which would incorporate regionally-based crushing and processing infrastructure, and associated commercial operations. The program is supported by funding from Tjeerd La Grouw (an industrial partner, Rural Independence Pty Ltd); and overseen by Professor Richard Trethowan assisted by Graeme Rapp, and Jon Lancaster.

MAJOR TEACHING AWARD

The team of Professor Alex McBratney, Dr Damien Field and Dr Tony Koppi has received funding of \$219,000 from the Australian Learning and Teaching Council to research the development of a national soil science curriculum.

NEW RESEARCHERS

The Faculty welcomed four new researchers mid-year: Peter Ampt, Dr Stephen Burgess, Dr Lachlan Ingram and Associate Professor Michael Kertesz.

SOIL SCIENTISTS CREATE GLOBAL SOIL MAP

PROFESSOR ALEX MCBRATNEY IS ONE OF THE UNIVERSITY OF SYDNEY SCIENTISTS BEHIND A TECHNOLOGY THAT WILL MAP MOST OF THE ICE-FREE LAND SURFACE OF THE GLOBE OVER THE NEXT 5 YEARS IN ORDER TO CREATE SOMETHING AKIN TO A 'GOOGLE EARTH' FOR SOIL QUALITY.

The Global soil map project (www.globalsoilmap.net) enlists the expertise of a consortium of scientists in major agricultural organisations across the world. McBratney says that they are calling for greater recognition of the role soil plays in determining the planet's health.

FUTURE FELLOWS

Two new staff appointments in the area of Biosphere-Atmosphere Interactions – Dr Margaret Barbour and Dr. Peter Franks – have both won ARC Future Fellowships, worth up to \$135,000 each year over four years. They join other current Fellows, Dr. Andrew Merchant and Dr. Budiman Minasny, as well as those directly supported by the GRDC, such as Professor Robert Park.

IPDF SUCCESS

The International Program Development Fund (IPDF) provides annual funding to Sydney academics to support initiatives in internationalisation. 2009 winners from the faculty are:

- Sydney-Sheffield Plant Science Initiative: Developing a Joint Climate Change Adaption Research Program – Professor Mark Adams, Dr Peter Franks.
- Soil Carbon: Effects of Land Use and Climate Change across Geographic Gradients – Professor Alex McBratney, Dr Budiman Minasny.
- Sydney-Nanjing Universities Collaborate Work on the Effect of Global Change vis-à-vis Urban Land Use Change on Agricultural Production and Food Security in SE Asia-Dr Inakwu Odeh, Professor John Crawford.

The total combined value of the grants is \$28,500.

BREAKING NEWS: MCBRATNEY INVITED TO COPENHAGEN

At the 15th Session of the Conference of the Parties of the United Nations Convention to Combat Climate (COP15) in Copenhagen in December, Professor Alex McBratney will be participating as a member of the European Commission delegation, in a side event hosted by the EU Presidency. He will be talking on soil carbon auditing (his ARC linkage project topic), and prediction in the Globalsoilmap project; He's on the record as saying that it is quite feasible to audit soil carbon changes on farms for offset purposes. This project will hopefully give a definitive estimate of the world's soil carbon levels.

Internationally renown Professor Alex McBratney is Professor of Soil Science, Director of the Australian Centre for Precision Agriculture and Pro-Dean of the Faculty of Agriculture, Food and Natural Resources.

FUNDING OF \$4.5 MILLION FROM THE FEDERAL GOVERNMENT HAS BEEN SECURED FOR THE ESTABLISHMENT OF THE LAWSON-PATERSON CENTRE (L-P CENTRE) – THE CENTRE FOR CARBON, WATER AND FOOD, AT THE UNIVERSITY'S CAMDEN CAMPUS.

GRADUATE
PROFILE:
BRUCE WATSON
(BAgr Econ '01)



"AGRICULTURE IS A HIGHLY TRANSPORTABLE CAREER OPTION."

"MY YEAR OF INSPIRATION"

FOLLOWING IN THE FOOTSTEPS OF HIS GREAT-UNCLE, AFTER WHOM THE I.A. WATSON RESEARCH INSTITUTE AT NARRABRI IS NAMED, ALUMNUS BRUCE WATSON TALKED UP HIS GLOBAL AGRICULTURAL OUTLOOK AFTER WINNING A NUFFIELD SCHOLARSHIP.

THIS YEAR

I've spent 20 weeks overseas as part of a Nuffield Scholarship, and with the help of my sponsor, Macquarie Bank. Back at my 'day job', running the farm at Parkes, and harvesting this year's crop; and reporting on my findings.

I STUDIED AGRICULTURE

because the applied aspects of agricultural economics were what I was after. With the support of a McCaughey Memorial Scholarship I was able to leave the family farm to come to a big city university.

MEMORABLE MOMENTS

included those field trips with a mix of country and city students putting our learning into action in real-life business scenarios, across a myriad of agricultural industries. My 'aha' moment was mastering the art of communicating my research in a format for a wider public.

WHY THE NUFFIELD SCHOLARSHIP?

I've been examining what drove the increase in global grain prices in '07/'08, and the low risk hedging strategies for Australian grain growers that would cope with our volatile production environment. Experiencing the interconnectedness of agriculture globally in the UK, Ireland, France, Brazil, the USA, Canada, China, Mexico and New Zealand has been valuable, and my business inside-knowledge has multiplied.

THE HOT ISSUES

for me, and the biggest one facing Australia at the moment, is climate variability/shift or change. With record low inflows in the Murray Darling Basin, compounded by drought across much of Australia, production variability and resilience of that production is a big issue. I don't believe the world is going to run out of food, assuming governments let markets operate freely and don't try and interfere too much.

My second big issue is the threat of climate change, a potential ETS, and what that means to the potential profitability of agriculture in Australia. Increasing production essentially means having to purchase more carbon credits. This means that an ETS, in its current form, is essentially a tax on production and business expansion.

The third issue is attracting intelligent, committed and passionate people into agriculture to help address these challenges, and ensure the government make the correct decisions for the agricultural industry in Australia as a whole, and don't sacrifice it to ensure Kyoto or potentially Copenhagen protocols are met.

Agriculture is still central to a global push to lift people out of poverty. So food security is critical to the future. We also need to ensure that policies aren't put in place that mean the farmer is not receiving an acceptable return on investment for the risks they are undertaking in their business.

HAPPY ABOUT

Sydney University growing its agriculture and land management program to ensure that young people are equipped to meet the challenges facing the industry today. Agriculture is a highly transportable career option.

Bruce Watson pictured above on the Great Wall of China with his wife Karina.

FIVE
MINUTES
WITH:



MICHAEL KERTESZ,
ASSOCIATE
PROFESSOR OF SOIL
MICROBIOLOGY

MELBOURNE EDUCATED ASSOCIATE PROFESSOR MICHAEL KERTESZ STILL CALLS AUSTRALIA HOME AFTER 25 YEARS AS AN EXPAT IN THE U.K, MOST RECENTLY AT THE UNIVERSITY OF MANCHESTER.

HE IS AN AUTHORITY ON THE APPLICATION OF MOLECULAR TECHNIQUES TO SOIL MICROBIOLOGY AND HAS WORKED EXTENSIVELY ON THE ROLE OF MICRO-ORGANISMS IN MOBILISING PLANT NUTRIENTS SUCH AS SULPHUR AND PHOSPHORUS.

RESEARCH INTERESTS:

Really interested in how plants and microbes interact, especially the community dynamics of microbial populations around roots. I've spent a lot of time looking at microbial sulphur metabolism in soils and how this affects plant growth. Also doing research in the biodegradation of organic pollutants and how changes in soil nutrients supply (especially sulphur and phosphorus) affect microbial gene expression.

NEW ROLE:

It's a great fit. This Faculty provides world-class people to work and collaborate with on all three of my research fronts- interactions between soils, microbes and plants. I'll be leading the establishment of molecular facilities in our new labs at ATP, Redfern.

'HOT ISSUES:

The recent explosion in genomic and meta-genomic data has revolutionized our view of microbial ecology. We are at a crossroads in this field. Suddenly we can ask questions we could never have dreamed of before! Microbes are at the very base of all ecosystems and now we have the tools to look at their function and activities in greater depth.

RANDOM FACT:

I'm a secret choral singer, with ambitions to perform in a choir at the Sydney Opera House (again).

HAVE YOU
ACTIVATED
ALUMNIONLINE
YET?

ALL YOU NEED TO ACTIVATE YOUR ALUMNIONLINE ACCOUNT IS YOUR STUDENT ID NUMBER, WHICH APPEARS ON YOUR ALUMNI CARD.

It's your new University of Sydney alumni online networking community so join in and:

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BRIGHT YOUNG MINDS



ALISON BENTLEY

PLANT SCIENTIST DR ALISON BENTLEY HAS WON THE BRITISH SOCIETY FOR PLANT PATHOLOGY'S '2009 BEST STUDENT PAPER' AWARD FOR HER RESEARCH ON CROWN ROT IN WHEAT, A MAJOR DISEASE IN THE AUSTRALIAN GRAIN BELT.

Currently at the National Institute of Agricultural Botany (NIAB) in the U.K., Alison completed her first degree with First Class Honours, followed by a PhD. Professor Lester Burgess describes her as one of the Faculty's exceptional undergraduates who published a remarkable 6 papers from her PhD.

"In Australia most farmers use no-tillage methods to retain soil moisture and prevent erosion. Soil and stubble-borne diseases, including crown-rot, are common," explains Dr Bentley. Her work focused on understanding the dynamics of the fungus, proving that the disease spreads along rows in crop stubble from the point of infection.

Contact: alison.bentley@niab.com

CAMBRIDGE PLANT SCIENTIST
WINS PRESTIGIOUS RESEARCH PRIZE

CONVOCATION MEDAL NOMINEE

JAMES AUSTIN



Brand new graduate and Faculty 2009 Convocation Medal nominee James Austin (BScAgrHons 1 '09) has combined academic excellence with strong engagement in university life and extra-curricular challenges. His academic passion has been precision agriculture, and how science could be used on a broad farm scale to improve productivity and save producers money. Under his direction (as President) the Sydney University Agriculture Society (AGSOC) won an annual 'Best Student Club' award.

Associate Dean (Teaching & Learning) Dr Stephen Cattle, commented that "The performance by James in all aspects of the research project unit was absolutely first-rate, and he has provided a great example of how undergraduate research can be strongly applied, rigorous and of benefit to the agricultural sector".

James went straight into employment following his final year, as do 90% of our alumni. He works for GPS-Ag in Victoria, where he puts his precision agriculture knowledge into practice using satellites to assist farmers in being more efficient with input usage.

James Austin with Her Excellency, the Chancellor Marie Bashir.

MELISSA LAUFF



RURAL ACHIEVERS

TWO OUT OF EIGHT 2009 FINALISTS IN THE ROYAL AGRICULTURAL SOCIETY OF NSW (RASNSW) RURAL ACHIEVERS AWARDS TO RECOGNIZE FUTURE LEADERS WERE RECENT GRADUATES MELISSA LAUFF (BSC AGR '06), AND KELLIE COOKE (BSC AGR '08).

Camden local Melissa is currently living in Orange, and is employed by Nufarm Australia, one of the world's leading crop protection companies, as a Territory Manager for the Central West, Hunter Valley and Sydney Basin. She is passionate about raising greater awareness of the struggle that farmers face, and helping farmers make a decent living whilst combating problems such as reduced water allocations and increasing input costs.

"I see the Rural Achievers Awards as an opportunity to be able to communicate to the general public my passion for agriculture, and attract young, intelligent and pro-active people into the industry," she said.

CLASS NOTES

CLASS OF '57 – '61



PAUL DUANE (BSC AGR '57)
ALISON NICHOLLS (BSC AGR '57)

The three members of the class of 1957 who attended the September 2009 Reunion (hosted by Dennis de Kantzow) spent their time sharing details of the 52 years of their lives since graduation. Harry Lock, Alison Nicholls, and Paul Duane are keen to find their 21 missing classmates for the Centenary.

Please email duanepj@bigpond.com or alisonmichael@bigpond.com.

1960's

PROFESSOR ROBERT (BOB) MCINTOSH
(BSC AGR '60 MAGR '63 PHD '69) AO

2009 Queen's Birthday Honours went to wheat genetics expert Bob McIntosh who was appointed an officer in the General Division (AO) for service to agricultural science in Australia and internationally, particularly for research in areas of wheat genetics and rust disease, and as an educator and mentor. Bob did all his formal university training, and spent his professional career (total of 41 years), at The University of Sydney, beginning as a Technical Officer in 1960 and retiring in 2000 as Director of Rust Research at Cobbitty. However he is still hard at work most days at PBI sharing his expertise on genetic aspects of rust resistance, and as curator of the catalogue of gene symbols for wheat.

1980's

Sue Martin (nee Batten) (BSc Agr '87) is organizing a Class of '83 – '87 reunion during the Centenary. Classmates, and family, are invited to a BBQ at The Martin's, 'Bundara' Raym Rd Kenthurst, on Saturday February 13, 2010 (BYO). If you can't make it please send your reunion suggestions to Sue.

The planning team Sue Martin sue.martin@lgsa.org.au 9654-1013 or 0407-240-646; Harvey Gaynor hgaynor@auscott.com.au 6754 2104 or 0428 591 726; and Deb Taylor deborah.taylor@bathurst.nsw.gov.au 0263316612 or 0488241933 want to hear from you.

1940's



KENNETH E HUTTON
(BSC AGR '46)

Kenneth and Marie Hutton joined more than 240 alumni from '35 to '55 who were VIP guests at a morning tea with the Vice-Chancellor, in the MacLaurin Hall, on Spring Back To Sydney Alumni Reunion Day, on Saturday 19 September 2009. The couple first met as students at the University.

DICK CONDON
(BSC AGR '46)

As an "old boy" of St John's College, Dick Condon is looking forward to reuniting during the Centenary with classmates, especially those who held James Murphy Bursaries, which required recipients to study agricultural science and reside at John's. Please email sgulbis@usyd.edu.au to reconnect with Dick.

(From the Editor: My personal thanks go to Dick for his assistance with the Centenary!)

CONTRIBUTE TO CLASS NOTES

Dear Alumni,

Tell us what you are up to and where your University degree has taken you personally and professionally.

Write home to sgulbis@usyd.edu.au

MIXED BAG

BOOKS, BIOS, BLOGS AND BUZZ



ABOUT THE BOOK



SOIL IN SPACE AND TIME – EARTHSCAN REFERENCE COLLECTIONS

This four-volume set, edited by leading experts in soil science, brings together in one collection a series of papers that have been fundamental to the development of soil science as a defined discipline. Some of the papers were first published many years ago, but they remain classics in their fields and retain their relevance to the understanding of current issues. The papers have been selected with the assistance of an eminent international editorial board. The range of subject matter is considerable, including traditional subjects such as soil genesis, physics and mineralogy, applied disciplines such as soils and hydrology, land degradation and plant nutrition, as well as more contemporary topics such as soil pollution, land use and environmental change.

Perfect for students and teachers as a ready-made selection of and commentary on the most important key writings in soil science. It will be an essential reference for libraries concerned with earth sciences, environmental studies, agriculture and forestry.

"This innovative way of compiling seminal papers in soil science provides a very useful retrospective as soil science moves into the 21st century."

Pedro A. Sanchez, *The Earth Institute at Columbia University, US*

Box Set 4 volumes, Price: \$950.00

Edited by Alfred E Hartemink, Alex. B McBratney, Robert E White
Publisher: Earthscan Publications Ltd. October 2009

ABOUT THE EDITOR

Professor Alex McBratney is Pro-Dean, and Professor of Soil Science in the Faculty of Agriculture, Food and Natural Resources, and Director of the Australian Centre for Precision Agriculture.

ABOUT THE BOOK

ADVENTURES OF AN ANTIPODEAN ADVISER – THE INTERNATIONAL ASSIGNMENTS AND EXPERIENCE OF AN AUSTRALIAN AGRICULTURAL CONSULTANT

An entertaining read about the ups and downs, and 'on ground projects' of an international agricultural consultant. Like that other international man of mystery – Bond, James Bond – Hassall has a wealth of travel tales and tricks of the trade, spanning more than 45 action-packed years consulting in Asia, the Middle East, The Pacific, China and Indonesia. The Foreword is written by Neil Inall, nephew of Lorna Byrne, one of the first two female alumnae.

Publisher: Ligare 2009, Paperback

ISBN 978-0-646-50853-5

\$25 including postage, order from Box 472 Moruya NSW 2537 or hfhassall@aapt.net.au

ABOUT THE AUTHOR

Huon Hassall FAIAST, OAM (BSc Agr '56), is regarded as Australia's pioneer of agricultural consultancy. He founded Hassall and Associates in 1964, and has undertaken 88 consultancies in 18 different countries.

His life-long commitment to helping farmers in less-developed countries has been recognised by numerous awards including a University of Sydney Alumni Award, and an Order of Australia Medal (OAM) for service to primary industry, particularly farm business management, and international development. The author lives in Moruya.

AGRICULTURE
CENTENARY
ALUMNI WEEKEND
2010

100 WORLD-CHANGING
YEARS OF
AGRICULTURE

100 YEARS,
100 STORIES

4th

FRIDAY 4 JUNE
CENTENARY
RESEARCH
SYMPOSIUM

5th

SATURDAY
5 JUNE
BACK TO
AGRICULTURE
OPEN DAY

5th

SATURDAY
5 JUNE
CENTENARY
GALA DINNER

6th

SUNDAY 6 JUNE
ORGANISE A
CLASS REUNION!

