2016 marks the United Nations Food and Agriculture Organization’s International Year of Pulses – a celebration of the importance of these legumes.

Pulses are a valued agricultural crop due to their high seed protein and mineral content and their role in sustainable agricultural practices through a nitrogen-fixing symbiosis with soil bacteria called rhizobia.

Even though pulses are grown and consumed in most regions of the globe, they currently deliver less than 3% of global basic food supplies, which predominantly comes from wheat, maize, rice and soybean.

Since the 1960s, a 200–800% increase in cereal and oilseed yields has been achieved (FAO, 2014), while pulses have only achieved a 54% increase in production over the same period. This lack of growth is primarily due to limited commercial and industrial interest in pulses, in what is commonly considered a ‘specialty crop’ within the general agricultural sector. As continual cropping focuses attention towards sustainable production choices, pulses offer an opportunity to growers to meet this criteria as well as diversify and expand annual plantings.

Coming from a low base, pulses stand at the precipice of achieving rapid expansion in both productivity and quality through targeted research investment.

Australia produces around 3.5% of the global pulse crop (~$1.1 billion AUS), with the majority of commodities being...
exported to India, North Africa and Europe. Expanding sustainable pulse production will help to meet the challenges of food production and environmental sustainability.

**On the Pulse** brings together domestic and international researchers to discuss strategies and advances that are future proofing pulse agriculture, focusing on three themes: pulse diversity, pulse benefits to agronomy and genetic pulse sustainability.

– **Associate Professor Brent N. Kaiser**, Chair, 2016 Research Symposium

Visiting symposium presenters include:

**Professor Douglas R. Cook**, University of California, Davis USA. Director, Feed the Future Innovation Lab - Climate Resilient Chickpea

**Professor Peter M. Gresshoff**, University of Queensland. Professor of Plant Molecular Genetics and Director, Centre for Integrative Legume Research

**Dr Kristy Hobson**, NSW Department of Primary Industries. Chickpea Breeder

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**Event details**

**On the Pulse:**
Faculty of Agriculture and Environment Research Symposium 2016
Tuesday 12 July 2016
8.15am – 6.00pm
Veterinary Science Conference Centre
University of Sydney [Map]

[Register here]
### Master of Ceremonies

**Dr Damien Field**  
Faculty of Agriculture and Environment

### Order of proceedings

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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| 8.15am | Registration  
Tea and coffee will be served on arrival |
| 8.30am | Welcome and Opening Remarks  
Professor Alex McBratney, Dean, Faculty of Agriculture and Environment |
| 8.50am | Managing Legumes in Challenging Environments  
Abiotic Stress in Cool Season Grain  
Professor Kadambot Siddique, Hackett Professor of Agriculture Chair and Director of Agriculture, University of Western Australia  
Stabilising Pulse Yields in Challenging Environments: Genetic Options  
Professor Richard Trethowan, Director, IA Watson Grains Research Centre, Narrabri, Plant Breeding Institute Cobbity, University of Sydney  
Breeding Profitable and Reliable Chickpea Varieties for Australian Growers: PBA Chickpeas  
Dr Kristy Hobson, Leader – Pulse Breeding Australia Chickpea Program, NSW Department of Primary Industries  
Presentation by Dr Helen Bramley, GRDC Lecturer in Agronomy, Plant Breeding Institute, Cobbity, University of Sydney  
Exploring Natural Diversity in Chickpea for Genomic Regions Associated with Salinity Tolerance  
Dr Tim Sutton, Principal Scientist, Crop Improvement, SARDI Sustainable Systems  
Managing Grain Legumes in Challenging Environments  
Associate Professor Daniel Tan, Faculty of Agriculture and Environment, University of Sydney  
Target Traits for Improving Water Use Efficiency in Chickpea Under Water Limited Environments  
Mr Peter Kaloki, PhD student, Faculty of Agriculture and Environment, University of Sydney |
| 11.10am | Morning tea |

Continued overleaf
### Order of proceedings (continued)

11.30am  **Delivering Sustainable Legumes**

**Harvesting Natural Variation for Climate Resilience from Crop Wild Progenitors**
Professor Douglas Cook, Professor of Plant Pathology, Director of Feed the Future Innovation Lab for Climate Resilient Chickpea, UC Davis

**Presentation by** Professor Peter Gresshoff, Plant Molecular Genetics Director, Centre for Integrative Legume Research, University of Queensland

**Presentations by** Associate Professor Brent N. Kaiser, Legume Biology and Molecular, Faculty of Agriculture and Environment, University of Sydney

**Making the Most of High Quality Legume Inoculants**
Dr Rosalind Deaker, Lecturer in Rhizobiology and Biological Nitrogen Fixation, Faculty of Agriculture and Environment, University of Sydney

**Progress Towards Improving Nitrogen Fixation in Chickpea in the Central Dry Zone of Myanmar**
Dr Matt Denton, Senior Lecturer in Agronomy, University of Adelaide

1.30pm  **Lunch and poster session**

2.10pm  **Panel discussion**

**Challenges and Opportunities for Legumes in Agriculture** Facilitated by Professor Les Copeland

Panel members:
- Professor Douglas Cook
- Representative of GRDC
- Professor Peter Gresshoff

2.35pm  **Achieving Benefits from Legume Nitrogen Fixation**

**Rotational Benefits of Legume N2 Fixation – Universal or with Caveats?**
Professor David Herridge, Primary Industries Innovation Centre, School of Environmental & Rural Science, University of New England

**Legumes, Nitrogen, Water and Photosynthesis: Prospects for Genetic Improvement**
Professor Mark Adams, Director of Centre for Carbon, Water and Food, Faculty of Agriculture and Environment, University of Sydney

**Interaction of Nitrogen Fixation and Water Use Efficiency in Chickpeas**
Dr Carola Blessing, Postdoctoral Research Associate, Faculty of Agriculture and Environment, University of Sydney

**Understanding Phenology and Biomass Distribution In Faba Bean (Vicia Faba L.)**
Mr Najeeb Alharbi, PhD Student, University of Sydney

3.55pm  **3-Minute Thesis (3MT) Competition**

**Poster awards and 3MT awards**

4.45pm  **Closing remarks**

5.00pm  **Cocktail reception**

6.00pm  **Event close**

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**For more information**

Liz Kenna  
+61 2 9351 5697  
liz.kenna@sydney.edu.au  
sydney.edu.au/agriculture/outreach/symposium