



Image courtesy of Dr William Salter

Digital Agriculture - Driving a \$100 Billion Ag Industry by 2030

Digital Agriculture focuses on the knowledge underpinning, and research required, to deliver a functioning digitally-enabled production and supply chain for agricultural food and fibre. The global mission over the next 10 years and beyond is to produce increased amounts of food and fibre more efficiently, in terms of the use of water, nutrients and physical inputs into the production process. Digital agriculture presents a novel method to meet this global challenge. It is an approach that brings to bear the power of digital and information technologies to the business of agriculture with great potential for success. The introduction of digital agriculture is predicted to have an enormous impact to our economy, including an increase in the gross value of production across the Australia agricultural sector by 25%, and in some parts such as the grains industry, the increase is estimated to be as high as 51%. These figures ignore the enormous social and economic benefits that digital agriculture technologies can bring through embedding provenance, traceability and customer feedback in the supply chain of commodities such as wheat. The Digital Agriculture theme within SIA brings together researchers across the university with expertise and skills to realise these new opportunities.

The Sydney Institute of Agriculture welcomes your attendance at our annual Research Symposium series. This year we highlight the advances in Digital Agriculture at the University of Sydney and across Australia. The Showcase will include the following topic sessions:

- On-Farm Digital Sensing and Analytics
- On-Farm Digital Decision-Support Tools
- Digital Supply Chains

Event details

Date: Tuesday 30 November, 2021
Time: 9.00am to 3.00pm
Register: [Eventbrite](#)
Webinar: Registration is essential so we can provide the Zoom Webinar link

Time	Presentation
9.00am	<p>Welcome <i>Professor Brent Kaiser</i> - Director, Sydney Institute of Agriculture</p> <p>Introduction <i>Professor Tom Bishop</i> - Theme Leader, Digital Agriculture, Sydney Institute of Agriculture</p>
9.10am	<p>Opening: NSW Government and Digital Agriculture <i>Professor Hugh Durrant-Whyte</i> - NSW Chief Scientist & Engineer</p>
<p>Session 1: On-Farm Digital Sensing and Analytics Chair: Professor Tom Bishop</p>	
9.30am	<p>Making the most of agricultural data for research impact and innovation <i>Associate Professor Helen Thompson</i> - Director, Centre for eResearch and Digital Innovation, Federation University Australia</p>
9.50am	<p>Digifarm. From clouds to paddocks <i>Associate Professor Guy Roth</i> - Director of Northern Agriculture, University of Sydney</p>
10.05am	<p>The use of remote monitoring technologies in large scale commercial beef production <i>Christie Pearson</i> - PhD Candidate, University of Sydney</p>
10.15am	<p>Development of weed recognition technologies for ginger crop production <i>Dr William Salter</i>, Postdoctoral Research Fellow in Weed Science, University of Sydney</p>
10.30am	<p>Estimating soil organic carbon content in-situ with a spectropenetrator <i>Dr Edward Jones</i> - Research Associate, University of Sydney</p>
10.45am	<p>GRDC's investment in digital agriculture <i>Liam Ryan</i> - Manager of Transformational Technologies, Grains Research and Development Corporation</p>
11.00am	Break (30 minutes)
<p>Session 2: On-Farm Digital Decision-Support Tools Chair: Associate Professor Brett Whelan, Precision Agriculture, University of Sydney</p>	
11.30am	<p>Mapping the impact of weather and soil constraints on wheat yield across the Murray-Darling Basin with interpretive machine learning <i>Dr Patrick Filippi</i> - Postdoctoral Research Associate, Precision Agriculture, University of Sydney</p>
11.45am	<p>Future farm: improving decisions for targeted nitrogen management <i>Dr Mario Fajardo</i> - Future farm Postdoctoral Research Fellow, University of Sydney</p>
12.00noon	<p>SoilWaterNow: soil water nowcasting for the Australian grains industry <i>Dr Niranjana Wimalathunge</i> - Postdoctoral Research Fellow, University of Sydney</p>
12.15pm	<p>On-farm digital decision-support tools to reduce mortality in ewes and lambs <i>Greg Sawyer</i> - PhD Candidate, University of Sydney</p>
12.25pm	<p>Digital regenerative agriculture <i>Tom O'Donoghue</i> - PhD Candidate, University of Sydney</p>
12.35pm	Break (40 Minutes)

Time	Presentation
Session 3: Digital Supply Chains	
Chair: Dr Patrick Filippi - Postdoctoral Research Associate, Precision Agriculture, University of Sydney	
1.15pm	Agriculture in the University of Sydney Digital Sciences Initiative <i>Professor Patrick Cullen - Director of Research, School of Chemical & Biomolecular Engineering, University of Sydney</i>
1.30pm	Estimating global methane production from paddy fields <i>Professor Budiman Minasny - Professor in Soil Landscape Modelling, University of Sydney</i>
1.45pm	Remote sensing of harvest dates using Sentinel-2 imagery <i>Si Yang Han - PhD Candidate, University of Sydney</i>
1.55pm	Scoping the potential of infra-red techniques in Papua New Guinea's cocoa supply chain <i>Dr Kanika Singh - Research Fellow, University of Sydney</i>
2.10pm	Break (20 minutes)
2.30pm	'180-second spiel' Thesis Challenge Chair: Dr Sabrina Lomax, Senior Lecturer in Livestock Behaviour and Welfare, University of Sydney <ul style="list-style-type: none"> - Sweet wheat in the heat <i>Mitchell Clifton</i> - Investigating soil change in NSW using the soil security framework <i>Ho Jun Jang</i> - Optimising calf development for lifetime performance <i>Sarah Mac</i> - Partners in crime <i>Karen Mathews</i> - Boosting farmer's confidence in rice production with improved technologies <i>Chinaza Onwuchekwa-Henry</i>
2.55pm	Announcement of winners of Poster Competition and '180-second spiel' Thesis Challenge Wrap-up summary <i>Professor Brent Kaiser and Professor Tom Bishop</i>