



Our agrifood sector is sitting on a \$200 billion opportunity, but capturing it will take more than good fortune. Crowds gathered at The UWA Institute of Agriculture's 20th annual Industry Forum to discuss how to turn this potential into prosperity.

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The UWA Institute of Agriculture



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**

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From the Director

The UWA Institute of Agriculture is a flurry of activity as we head towards a big date on our calendar – the UWA Farm Ridgefield Open Day on 11 September. After a three-year break, we are excited to open the farm gates and invite the public to see our research and innovation in action.

While I am certainly hoping the sun shines on Ridgefield for our Open Day, my greater wish is that we finish this season with plenty more rain. Dry winter conditions are once again putting pressure on crops across the grainbelt, providing a timely reminder of why our UWA-led agricultural research matters. The Best Practice Farming Systems Project mission to deliver robust farming systems that are economically viable and environmentally credible has never been more important.

In this edition, we introduce some innovative new faces in UWA research (pages 5 and 11), share a snapshot of my international travels (pages 6 and 10), and catch you up on some fantastic recent events and initiatives across the Institute. In particular, we recently celebrated two

significant milestones: hosting the 20th annual iterations of our Postgraduate Showcase (page 13) and Industry Forum (pages 8 and 9), which tackled the big question: ‘2030 Agrifood opportunity: Can we capitalise on \$200 billion growth?’

We were very pleased to welcome our Communications Officer Rosanna Candler back from parental leave in June. Rosanna is job-sharing with our newest team member, Kat Long. They will join me in chatting with growers and industry at our information stall at the Dowerin Machinery Field Days, getting out into the field at the UWA Farm Ridgefield Open Day, and welcoming CIMMYT Director General Dr Bram Govaerts to our shores for the Hector and Andrew Stewart Memorial Lecture on 13 October.

It promises to be a very busy next few months. As always, there is plenty of important work to be done. If you are joining us at Ridgefield, I look forward to seeing you there.

Hackett Professor Kadambot Siddique
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Front cover photo: Industry Forum speakers RaboResearch Food & Agribusiness Australia and New Zealand General Manager Stefan Vogel, Craig Mostyn Group chief executive Wayne Crofts, agriculture consultant Carly Veitch, Wilson International Trade Director Peter Wilson, Hackett Professor Kadambot Siddique, Elders chief executive Mark Allison and Planfarm agronomy consultant Rob Grima.

Annual Research Report a slice of success

What’s a celebration without cake?

More than 40 staff and students came together for a special morning tea in July to celebrate a major milestone – the launch of The UWA Institute’s 2025 Annual Research Report.

With more than 300 peer-reviewed journal articles and book chapters published throughout 2025, the report captured multidisciplinary UWA research that is responding to some of the world’s most pressing agricultural challenges.

In 2025, UWA secured \$17.7 million in new research funding in agriculture and related areas, while the Institute’s externally funded portfolio remained strong.

The Institute’s Director Hackett Professor Kadambot Siddique said more than two decades-long partnerships and



associations continued to help deliver powerful research and development impact from Western Australia to the world.

“I extend my heartfelt thanks to our staff, researchers, associates, students, board members, research theme leaders, collaborators and funding partners,” Professor Siddique said.

Annual Research Report editor Ximena Shaw and Professor Kadambot Siddique cut the cake.

“Their dedication, creativity, and commitment elevate The UWA Institute of Agriculture as a global leader in agricultural research, development and education.”



Members of the UWA Winthrop Society, emeritus professors and UWA staff at the farmhouse.

Tour delivers an inside look at sheep research

Most visitors to UWA Farm Ridgefield expect to see sheep grazing in the paddocks, but during a recent tour, spotting tiny lambs on an ultrasound screen was an unexpected delight.

In July, The UWA Institute of Agriculture welcomed members of the UWA Winthrop Society and emeritus professors for a behind-the-scenes look at the agricultural research and teaching taking place on the farm.

The highlight was a presentation from Dr Kelsey Pool and Professor Jane Pillow, who shared how their collaborative

research was helping to improve outcomes for preterm birth and reduce potential complications.

Seeing this work brought to life through ultrasound scanning of pregnant ewes demonstrated how agricultural research at Ridgefield was contributing to scientific advances in both animal and human health.

Farm Manager Tim Watts also spoke with the group about the wide range of farm activities through the Best Practice Farming Systems Project.

Institute Director Hackett Professor Kadambot Siddique said it was pleasure to share our facilities, research, and the passionate people behind it.

Highschoolers get a taste of Ridgefield research

A group of students from John Calvin Christian College in Armadale descended upon UWA Farm Ridgefield in May for the school's third consecutive year.

Led by Emerita Professor Lyn Abbott and facilitated by teacher Nathan Howeling, students pondered the importance of rainfall capture, inspected pasture grazing options including use of perennial native shrubs, and learnt about the integration of cropping and sheep production enterprises.

Emerita Professor Abbott said the students were keen to expand their understanding of agriculture and farming.

"They listened eagerly and asked insightful questions," Emerita Professor Abbott said.

Mr Howeling said the annual visit was a chance to integrate agricultural contexts into classroom learning.

"It helps students more deeply understand the landscape around them."

"Concepts that may otherwise remain abstract become tangible, visible, and relevant," he said.

John Calvin Christian College students and staff outside Avery's Shearing Shed.



Event trumpets delight of agriculture

Curious high school and university students gathered at the Claremont Showgrounds to discover pathways to careers in agriculture at the Ag Institute Australia WA Division's Annual Careers Night in March.

The UWA Institute of Agriculture was among the 23 organisations in attendance, with a shared goal of promoting agriculture in industry and high research as viable and attractive career opportunities.

Institute Director Hackett Professor Kadambot Siddique and Business Manager Diana Boykett had plenty of interesting conversations with the agricultural leaders of tomorrow.

Once of the many highlights was Institute Associate Director Professor Wallace Cowling showing off his impressive trumpeting skills to indicate students' time at each station was up.

In addition to Professor Cowling's musical stylings, the 80-strong crowd enjoyed nourishing pizza and networking opportunities throughout the night.

Professor Kadambot Siddique, Priscilla Achieng, Annuarite Uwera, Fiona Adada-Edia, Diana Boykett and Oletetseng Ofana Mahubaneng.



Better payment systems could boost ag bottom line

The UWA Institute of Agriculture Director Hackett Professor Kadambot Siddique highlighted the importance of efficiency and regulation in cross-border payment systems in strengthening Western Australia's agricultural competitiveness in global markets.

In March, Professor Siddique contributed to a roundtable discussion at UWA as part of the Black Swan Summit Australia 2026.

The summit brought together leaders from industry, government, academia and investment to explore emerging technologies shaping the digital economy.

With agriculture contributing around \$12-13 billion annually in exports, Professor Siddique said inefficiencies in cross-border payments had tangible consequences for WA's agricultural sector.

"Cross-border payment inefficiencies are not abstract issues," he said.

"Transactions are high-volume but operate on tight margins (so) delays in settlement and foreign exchange costs directly affect farmgate returns, and smaller exporters bear a disproportionate burden of compliance and transaction costs."

Professor Siddique joined representatives from fintech, policy and research organisations for the discussion, emphasising that strengthening cross-border payment systems is not only a financial innovation challenge, but a strategic priority.

Professor Kadambot Siddique during the Black Swan roundtable.



From farm, to Forrest Fellow, to the frontiers of microplastics research

For UWA researcher Dr Nishita Narwal, some of the most important environmental challenges are among the hardest to see.

The 2026 Forrest Fellow is investigating microplastics in agricultural soils and grain crops, including how they move through soil-plant systems and how sustainable technologies can reduce their impact.

Growing up in a farming family in India sparked Dr Narwal's interest in agriculture and environmental sustainability.

After graduating from Botany and Environmental Science, she completed a PhD in India investigating emerging contaminants, including microplastics, in urban water systems.

At the UWA School of Biological Sciences, Dr Narwal is collaborating with Dr Kosala Ranathunge, Hackett Professor Kadambot Siddique and Professor Nanthi Bolan.

The team are investigating both the environmental behaviour of microplastics and sustainable approaches for reducing their impacts in soils and crops.

Essential to her research is how modified biochar, including microbe-enhanced biochar, may help reduce microplastic impacts while supporting sustainable agricultural practices.

While the public's perception of microplastics largely centres around aquatic environments, she said their presence was much more insidious.

"Microplastics can also accumulate in agricultural soil through sources such as degraded agricultural plastics, contaminated irrigation water, wastewater-derived fertilisers, and plastic waste breakdown," she said.

"Because many microplastics are microscopic, their presence is not always visible, making detection and monitoring essential."

"The goal is not to create fear but to improve understanding. By identifying sources, pathways, and impacts, scientists can develop effective strategies to reduce risks and protect ecosystems and food systems."

Beyond supporting her research, Dr Narwal says the Forrest Fellowship had provided a strong sense of belonging.

"Professionally, the Fellowship has opened doors that go well beyond funding my research," she said.

"The Forrest Fellowship is not simply an award, it's a lifelong community that empowers me to pursue impactful research while growing into the best version of myself, both professionally and personally."

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Dr Nishita Narwal is a 2026 Forrest Fellow.



China twice as nice for Institute Director

Researchers and students attending a workshop on the role of biochar in sustainable agriculture in Urumqi.

Two trips to China in two months has kept The UWA Institute of Agriculture Director Hackett Professor Kadambot Siddique busy as he strengthened longstanding research partnerships and shared expertise in sustainable agriculture.

Following his visit to Northwest A&F University (see page 10), Professor Siddique travelled to Xinjiang Agricultural University in Urumqi, where he presented on crop residue management and sustainable agriculture before joining researchers from the Xinjiang Academy of Agricultural Sciences to tour the Grey Desert Soil Experimental Station.

The group inspected a field experiment that has been running continuously for 37 years – examining fertiliser, organic manure and crop residue management across wheat, maize and cotton production.

Professor Siddique also participated in a workshop on biochar in sustainable agriculture before delivering a presentation on its global applications.

The visit also included discussions with the OAE Publishing team in Professor Siddique's role as Editor-in-Chief of the new *Food Ecology* journal.

Several weeks later, Professor Siddique returned to China with his PhD student Jin Zeng, where he reconnected with

longtime collaborator Professor Fengmin Li at Nanjing Agricultural University.

He delivered a lecture on carbon neutral farming and engaged with early-career researchers at Jiangsu Academy of Agricultural Sciences in Nanjing.

A trip highlight was visiting Bajiao Village, Tonghai County in China's Yunnan Province with colleagues from the Yunnan Innovation Team for Smart and Low-Carbon Utilization of Agricultural Waste Technologies and Equipment at Yunnan Normal University.

The Global Environment Facility and United Nations Development Programme-supported Zero Carbon

Village Initiative showcased how renewable energy technologies can deliver clean, reliable electricity while creating new income opportunities for rural communities.

In early August, Professor Siddique participated in a highly productive 3rd International Summer School jointly organised by China Agricultural University and the Xinjiang Academy of Agricultural Sciences.

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Professor Kadambot Siddique in the field as part of the Zero Carbon Village Initiative in Yunnan Province.



Lupins for early sowing and longer growing seasons

More than 10 years of hard work reached full bloom in early May, when UWA researchers officially handed over a new lupin backcross seed to Australian Grain Technologies (AGT).

Narrow-leaved lupin was historically bred to flower early, making current lupin varieties unsuitable for early sowing and longer growing seasons in higher-rainfall zones.

CSIRO team leader and UWA Adjunct Professor Matthew Nelson and (then) UWA PhD student Dr Candy Taylor discovered a more suitable flowering gene in a wild lupin P22660.

Dr Nelson then identified the genomic sequence of the new flowering allele in P22660.

The UWA Institute of Agriculture Associate Director Professor Wallace Cowling said the project was successfully completed with grant funding from COGGO (since 2019) and GRDC (since 2023).

In 2020, the researchers transferred the new gene from wild lupin P22660 to elite sweet lupin cultivars by backcrossing with molecular markers developed by the group.

"We now anticipate that AGT will release productive sweet narrow-leaved lupin varieties with the new flowering gene, that we at UWA have backcrossed into elite cultivars," Professor Cowling said.



COGGO Research Fund Project Manager Ian Longson, GRDC Genetic Technologies Manager Dr Camilla Hill, AGT Lupin Breeder Dr Matthew Aubert, UWA researcher Karen Nelson, CSIRO team leader Dr Matthew Nelson, UWA researchers Dr Aneeta Pradhan, Dr Renu Saradadevi and Professor Wallace Cowling.

Not your garden-variety science display



Wild plants, drones, space crops and a scarecrow named Gabriel proved a winning combination for a cross-disciplinary UWA team at the 2026 Perth Garden Show.

The joint initiative stall between UWA's Australian Plant Phenomics Network (APPN), Plants for Space and Biodiversity Genomics 'Wild Plants, Big Harvests & Cosmic Super Crops' won the Silver Medal for Best in Show.

APPN business manager Lydia Brazzale said the display was inspired by passionate UWA research addressing food security, climate change, sustainability, and food production.

Scarecrow mascot Gabriel oversees the silver prize-winning UWA exhibit.

"It was incredibly rewarding to see how strongly the display resonated with visitors and the many conversations it inspired about plants, scientific research, and the future of plant science," Ms Brazzale said.

Biodiversity Genomics ARC Senior Industry Research Fellow Cornelia Hooper said the award was an important recognition of their work with industry and community to make science engaging, relevant and impactful.

"Every species has evolved unique solutions to survive our harsh climate, and by understanding these adaptations we can help protect biodiversity, develop more resilient crops, create sustainable gardens and even support future life in space," Dr Hooper said.

From boiling frogs to billion dollar growth:

Industry Forum explores agrifood opportunity



Keynote speaker Mark Allison.

More than 220 people gathered for The UWA Institute of Agriculture's 20th Industry Forum on July 8, which posed the question: 2030 Agrifood opportunity - Can we capitalise on \$200 billion growth?

In his opening address, Institute Director Hackett Professor Kadambot Siddique reflected on the milestone achievement of 20 consecutive industry forums.

"I am grateful to all the talented, passionate people who have presented on this stage over the past two decades, and our dear friends and collaborators who have attended year after year."

Professor Kadambot Siddique

Planfarm agronomy consultant Rob Grima and Institute Industry Advisory Board (IAB) member served as Master of Ceremonies.

Elders chief executive Mark Allison set the tone with his keynote address, calling on national leaders to recognise the strategic importance of the sector.

Mr Allison likened the gradual way Australia was unknowingly at risk of losing its globally competitive edge to 'a frog in a boiling billy'.

"The capability of our farmers and agribusiness is extraordinary," he said.

"But the real question is not whether farmers can adapt – they always have.



Communications officer Kat Long, Professor Wallace Cowling, executive assistant Jith Nair, Professor Kadambot Siddique and business manager Diana Boykett.

IAB member Carly Veitch leads the panel discussion.

"The question is whether our national leaders will recognise that agriculture is strategically important to Australia's economic and sovereign stability before the water gets too hot."

Mr Allison said fragmentation had led the agricultural sector to "suffering neglect at a policy level".

"Australia has many organisations speaking on behalf of agriculture, commodity bodies, state organisations and industry associations, but collectively the result is often fragmentation rather than influence," he said.

Wilson International Trade Director Peter Wilson then took to the stage to posit that Australian pulse crops could be used to supply nutritious, low-cost food to wider institutions.

"Pulses have a role to play in reducing the cost-per-meal in aged care and hospitals, the defence force and prisons," Mr Wilson said.

"There's no reason why we can't put several million tonnes of pulses into genuinely value-added hands."

Peter Wilson

RaboResearch Food and Agribusiness Australia & New Zealand general manager Stefan Vogel built upon Mr Allison's frog analogy in his market research talk, which explored building competitive advantage in Australian foods.



"We heard about the frog, and now I want to look at it from the perspective of the little mouse in the milk pot, and we want to pedal hard and make some cream," Mr Vogel said.

Craig Mostyn Group chief executive Wayne Crofts rounded out the formal talks by exploring recent significant investments in the food chain in Western Australia.

"There is enormous opportunity right here on our doorstep in the next 25 years," Mr Crofts said.

A thought-provoking panel discussion was facilitated by IAB member and

agriculture consultant Carly Veitch, with closing remarks from The WA Minister for Agriculture and Food, the Honourable Jackie Jarvis MLC.

"The key issue is how this \$200 billion opportunity translates into benefits for businesses, regions and the broader WA community," Mrs Jarvis said.

"That relies on collaboration across the value chain; producers, processors, researchers, investors and of course government."

Watch the 2026 Industry Forum on the [Institute's YouTube channel](#).

Key to plastic reduction is on our plate

Reducing plastics along the food supply chain could significantly lower levels of harmful chemicals in the human body in as little as one week.

The UWA Plastic Exposure Reduction Transforms Health (PERTH) Trial spent three years investigating plastic chemical exposure among 211 adults in Perth.

Every single participant had at least six different plastic chemicals detected in their system on any given day.

Researchers worked with more than 100 farmers and food producers to drastically reduce plastic and plastic chemical exposure along the food supply chain, which led to substantial reductions including in chemicals linked to infertility and cardiometabolic disease.

The levels of BPA and BPS dropped by more than half.

Principal investigator, UWA Medical School Clinical Professor Michaela Lucas said she was cautiously optimistic.

"This trial has delivered a message of hope that we can actively reduce plastic chemical levels in our bodies but is linked to significant changes in the way we produce and package our food," Professor Lucas said.

Decades of collaboration with more to come

The UWA Institute of Agriculture Director Professor Kadambot Siddique travelled to China's Northwest A&F University (NWAUFU) to visit long term collaborators and postgraduate students in June.

The trip followed the renewed signing of the Memorandum of Understanding between the two universities just weeks prior at UWA's Crawley Campus.

The MOU was re-signed by UWA Deputy Vice Chancellor (Research) Professor Anna Nowak and NWAUFU President (Vice Chancellor) Professor Wu Pute, in addition to dignitaries from both universities.

There he delivered a lecture on 'Adaptation to Climate Change in Agriculture: Success Stories', drawing on experiences from Australia, China and India to explore challenges and opportunities for dryland agriculture.

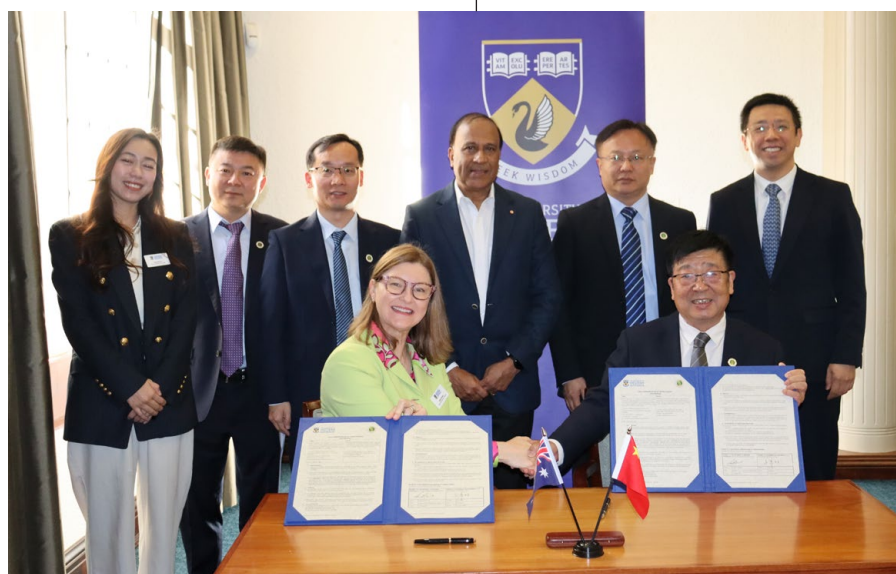
Twenty years of friendship and collaboration between Professor Siddique and Professor Xiaoliang Qin from NWAUFU's College of Agronomy informed productive discussions about maize and wheat research during his visit.

Enthusiastic NWAUFU postgraduate students, many of whom are co-supervised by Professor Siddique, were present for discussions with Professors Zhaouhi Wang and Mao Hui from the College of Natural Resources Management.

Husband-and-wife team professors Congfeng Bu and Shufang Wu from the College of Water Resources and

Architectural Engineering were pleased to discuss critical issues such as water conservation and nutrient management in dryland environments.

UWA DVCR Professor Anna Nowak and NWAUFU President (Vice Chancellor) Professor Wu Pute shake on continued collaboration between the two institutions.



New discovery awakens for sleep hormone

Melatonin has become increasingly popular as a sleep aid for humans, but its role in regulating biological rhythms is far from new – particularly in sheep.

In recent years, it has become clear that melatonin plays an even wider variety of roles in reproductive biology – affecting processes in the ovary, the testis, the embryo and fetus.

Emeritus Professor Graeme Martin recently co-edited a collection of articles that addresses this developing area of melatonin biology in relation to sheep fertility.

In 1958, the discovery of this 'hormone of the night' led to the development of

subcutaneous implants that continually release melatonin.

These implants subsequently became a commercial product for sheep industries that could be used to control the timing of the breeding season, improve fecundity, and advance puberty.

Professor Martin said the newfound roles of melatonin involve it acting as an antioxidant – for example, protecting sperm and thus improving the ability of ram sperm to emerge from freezing in good condition.

"On a completely different tack, research in South Australia is suggesting that treating pregnant ewes with melatonin can improve the survival of twin-born lambs," he said.

"It is early days, but we might have an intriguing option for preventing postnatal mortality, a major industry problem."

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UWA postgraduate student Ryan Hall in a potato field.



Researcher digs for the root of potato disease

Getting out into the field and talking with growers is the ‘best classroom in the world’ for UWA postgraduate candidate and self-professed potato enthusiast Ryan Hall.

“Growers basically run an experiment with each crop, so hearing their learnings and ideas gives me so much inspiration,” he said.

When his supervisors Professor Brajesh Singh and Dr Juntao Wang started new roles at UWA this year, Mr Hall decided to take the plunge and transfer his studies from Western Sydney University.

“I’d never been to WA before and definitely see it as a bit of an adventure,” he said.

“It’s definitely been a bit of a whirlwind picking up and starting again somewhere new, but I have found the people at UWA incredibly welcoming.”

Mr Hall’s research is focused on disease management in potatoes, in particular working with the soil biology to help reduce the impact of diseases.

“Diseases are really important to growers,” he said.

“I used to work with potato growers in an extension capacity and almost everywhere it came up in the top three topics of focus.

“At the same time, access to chemical controls are being reduced, either through consumer demand, regulation or resistance.”

“I’m hoping that by finding ways growers can promote healthier and more resilient systems we can reduce chemical use and increase productivity on farms.”

The timing of his project is spud on – with Australian potato growers recently funding the largest investment into managing diseases in the past 10 years through Hort Innovation.

“We’re looking at collecting soil and plant samples to conduct a multi-omic study of the soil biology associated with Australian potatoes,” Mr Hall said.

“I want to explore the opportunities of using this information to develop new biological management for soilborne diseases.

“We’re currently getting stuck into sampling across WA, soon we’ll analyse these samples and conduct some lab and greenhouse trials.”

This month, Mr Hall was among six young researchers to receive a WA Agricultural Research Collaboration top-up scholarship to tackle priority challenges and opportunities across WA.

“It’s been a fantastic way to connect with other students and agricultural industry members and researchers,” he said.

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Postgraduate Showcase presenters with Associate Professor Bryan Boruff, Professor Brajesh Singh, Professor Kadambot Siddique, UWA Pro-Chancellor Bob Olivier, and Emeritus Professor Graeme Martin.

Showcase celebrates innovation from early-career researchers

A full house gathered at The University of Western Australia's Bayliss Lecture Theatre on 27 May for The UWA Institute of Agriculture's 20th annual Postgraduate Showcase.

In his opening address, UWA Pro-Chancellor Bob Olivier discussed his farming upbringing and lifelong commitment to supporting the WA agricultural landscape through research and innovation.

"People often say Western Australia grows wheat where wheat shouldn't grow," Dr Olivier said.

"What made this possible is the partnership between courageous farmers, research and higher education institutions like UWA and industry leadership."

Session chair UWA School of Agriculture and Environment (SAGe) and The UWA Institute of Agriculture Professor Brajesh Singh introduced the first speaker of the day Amber Balfour-Cunningham, who presented her research into promising insights on biological pest control in canola crops.

School of Molecular Science PhD candidate Patrick Gong then shared his research on 'Engineering genetic circuitry for programmable control of plant traits and biomolecule production'.

To conclude the first session, Bryan Hau from the School of Molecular Science presented his postgraduate research into the molecular quality of malting barley.

"Over the past 20 years, this event has showcased a total of 144 postgraduate students and many of them are occupying prominent positions with Australia and globally."

Professor Kadambot Siddique

The second session was chaired by Head of SAGe Associate Professor Bryan Boruff.

SAGe postgraduate student Oanh Nguyen explored the adoption of digital platforms in wineries, followed by Yadav Padhyoti, whose talk was focused on helping to understand the gap between Australian farmers and agricultural markets stakeholders.

The final speaker, School of Engineering PhD candidate Stephanie Lye, captured the audience with her research on 'Investigating the mechanics of seedling emergence of Australian native species to improve restoration outcomes in degraded landscapes'.

Watch the event recording on the [Institute's YouTube channel](#).

Better future the focus of World Food Forum

The world's top agricultural minds assembled at the United Nations Food and Agriculture Organization Asia (UN FAO) Pacific Food Forum in Brunei Darussalam in April to discuss increasing effectiveness of agrifood systems.

A panel including The UWA Institute of Agriculture Director Hackett Professor Kadambot Siddique discussed the One Country One Priority Product (OCOP) initiative.

Questions probed ways to leverage science and innovation and navigate policy in order to enhance value chains of Special Agricultural Products (SAPs).

While the need for greater investment in agrifood systems emerged as an evident challenge, Professor Siddique said he was heartened by the commitment amongst key players to address it.

"The forum convenes Ministers, development partners, financial institutions, private sector leaders, scientists, innovators, women, farmers and youth, reflecting both the scale of the challenges we face and the shared commitment to address them," he said.

Professor Siddique emphasised UWA's contributions to the productivity of SAPs in the Asia Pacific through supporting crop improvement and agronomic solutions tailored to local environments, and investing in capacity building through working with researchers, extension staff and farmers to co-develop solutions.

"Continued regional and global collaboration will always be key as we work towards inclusive and resilient agrifood systems for all," he said.

Professor Kadambot Siddique (far right) and fellow delegates inspect artisan cooking utensils at the World Food Forum.



Rising concerns over rising groundwater

As Perth's urban footprint continues to expand, balancing housing needs with the long-term viability of agricultural land is becoming an increasingly important challenge.



Professor Sally Thompson.

The UWA Institute of Agriculture theme leader and School of Engineering Professor Sally Thompson recently attended the Swan Valley Community Forum to explore this complex topic.

Organised by the Swan Communities Environmental Alliance, the forum brought together growers, landholders and residents who shared concerns about rising groundwater levels occurring alongside rapid urban development in Perth's north-eastern growth corridor.

At one site examined by Professor Thompson and her team, observations collected by landowners over more than a decade documented substantial groundwater increases affecting the productivity of a tree nursery operation.

Professor Thompson emphasised the importance of combining scientific investigation with local knowledge.

"Many of the people I've been working with have lived on and managed this land for decades, generations, even," she said.

"They know what's normal, they know what's changed, and those observations are an important part of understanding what's happening in the landscape.

"The more we can understand about how these groundwater systems respond to development, the better equipped we'll be to make good decisions in the future."

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Growing grain, gaining knowledge: Dr Craig Scanlan joins UWA

A successful crop hinges on the right nutrients being available at just the right time, and Dr Craig Scanlan has spent more than two decades working on strategies to master this balancing act.

Having built a longtime career at the Department of Primary Industries and Regional Development, Dr Scanlan is an agronomist who specialises in nutrient management – turning complex soil science findings into practical solutions for farmers.

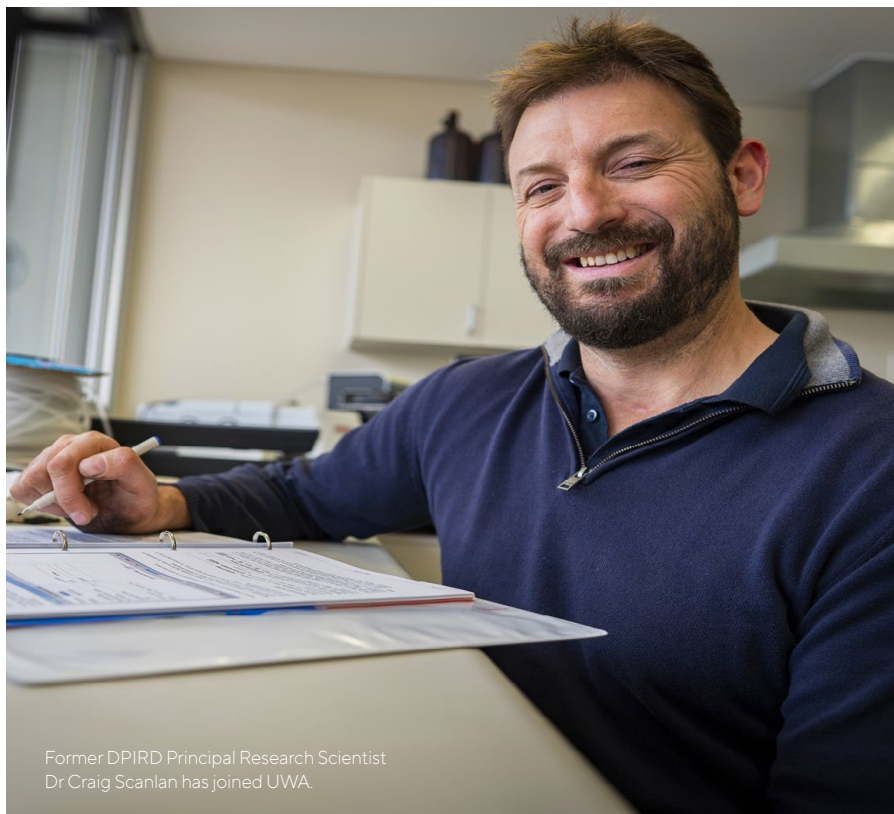
Having joined the UWA School of Agriculture and Environment as a senior lecturer earlier this year, his research explores how nitrogen, phosphorus, and potassium interact with soil properties and climate to affect grain yield, grain quality, and environmental outcomes.

Dr Scanlan's current focus is on improving fertiliser nitrogen use efficiency, understanding nitrous oxide emissions associated with crop residue decomposition, and phosphorus management of crops grown on high P fixing soils.

His experience in field-based research has provided a sound understanding of the role of nutrient management in crop yield and quality.

"In dryland cropping, the response to nutrient management is almost always dependent on climate and soil conditions," he said.

"I am excited about expanding the research I am doing with my colleagues at UWA on



Former DPIRD Principal Research Scientist
Dr Craig Scanlan has joined UWA.

nutrient use efficiency in crop production.

"My hope is that my research work makes a contribution to food production that uses nutrients more efficiently and minimises off-site effects."

Throughout his career, Dr Scanlan has led numerous Grains Research and Development Corporation-funded projects that brought together numerous industry and university partners,

and regularly shared his findings at conferences and industry events.

Having co-supervised many students over the years, he said he was looking forward to accepting new PhD and Higher Degree by Research students at UWA.

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Innovation in vertical farming takes root at UWA

Researchers are hopeful two state-of-the-art Vertical Farm Simulator Units recently installed at the UWA Australian Plant Phenomics Network (APPN) could fast-forward essential research into controlled-environment agriculture.

The technology allows growing conditions to be precisely managed using pulse lighting, advanced environmental sensing and automated control systems with a view to creating more efficient, resilient and sustainable production methods to optimise crop growth.

It will help develop new production methods for high-density farming systems and rich detailed phenotypic datasets.

The installation of the simulators will allow for ongoing research and ultimately strengthen Australia's capability in high-density agriculture, helping to shape the future of global food production.

The facilities will also provide hands-on training for the next generation of agriculturalists working with advanced vertical farming systems.

The APPN is supported by the Australian Government's National Collaborative Research Infrastructure Strategy.



Conference attendees outside the UWA Business School.

UWA conference serves up perfect blend

A packed conference program, field trips to the Swan Valley and Margaret River, and numerous networking opportunities were 'full bottle' on WA's world-class wine industry and research capability in July.

The UWA Centre for Agricultural and Viticultural Economics (CAVE) hosted the 18th annual Conference of the American Association of Wine Economists (AAWE) in Perth from July 8 to 13.

Leading researchers, industry experts and students from around the world explored the economics of wine, food, wine tourism, and related industries.

Event organiser UWA School of Agriculture and Environment microeconomist Associate Professor James Fogarty said delegates shared new insights into consumer behaviour, wine markets, sustainability, climate change, production, tourism, health, marketing, and international trade.

"Beyond the formal program, the conference provided a valuable

opportunity for researchers to build international collaborations, exchange ideas, and strengthen connections between academia and industry," Associate Professor Fogarty said.

Associate Professor Fogarty said hosting the AAWE conference reflected CAVE's commitment to advancing research that supports a sustainable, innovative, and globally competitive wine sector.

"The event also reinforced the Centre's growing international reputation in agricultural and viticultural economics, while providing opportunities for our researchers and students to engage with many of the world's leading wine economists," he said.

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Six wineries from the Great Southern presented a wine tasting showcase during the conference.

Awards and industry recognition

Name	Award
E/Prof Lynette Abbott	Inducted into WA Women's Hall of Fame
E/Prof Rana Munns	Elected to the US National Academy of Sciences
Australian Plant Phenomics Network, Biodiversity Genomics, ARC Centre of Excellence in Plants for Space	Silver Medal for Best in Show at the Perth Garden Show
Professor Ryan Lister	Member of the Order of Australia in 2026 King's Birthday Honours
E/Prof Lynette Abbott	Member of the Order of Australia in 2026 King's Birthday Honours
Zeeshan Ahem	Rod Tallis Youth Award at the 54 th annual Conference of International Plant Propagator Society
Ryan Hall	WA Agricultural Research Collaboration (WAARC) scholarship
Angad Singh	WA Agricultural Research Collaboration (WAARC) scholarship

Visitors to IOA

Name of visitor	Visitor's organisation and country	Host details	Dates of visit
Dr Opinder Singh Sandhu	Punjab Agricultural University, Ludhiana Punjab, India	IOA	April to October 2026
Associate Prof Magalie Dubois	Burgundy School of Business, France	UWA Centre for Agricultural and Viticultural Economics	July 2026
Antoine Pinede	University of Geneva, Switzerland	UWA Centre for Agricultural and Viticultural Economics	July 2026

New postgraduate research students (PhD)

Student	Topic	School	Supervisor(s)	Funding body
Alfred Demianus Mayor	Deciphering drought responses of Cassava (<i>Manihot esculenta</i>) varieties grown in Indonesia and Australia.	School of Molecular Science	Associate Prof Nicolas Taylor and Dr Owen Duncan	Lembaga Pengelola Dana Pendidikan – LPDP Indonesia Scholarship and the Endowment Fund for Education Agency Indonesia Scholarship
Ryan Hall	New tools to manage soil-borne disease in potato farms	UWA School of Agriculture and Environment	Prof Brajesh Singh and Dr Juntao Wang	UWA and WAARC
Angad Singh	Developing a hyperspectral imaging technique to predict nutritive, fermentative and methanogenic potential of forages in the Australian northern rangelands	UWA School of Agriculture and Environment	Dr Zoey Durmic, Dr Nicolas Taylor, Dr Clinton Revell, and Dr Iman Tahmasbian	UWA, Zero Net Emissions Agriculture CRC, and WAARC
Dagmawit Arega	Topic TBD	UWA School of Agriculture and Environment and IOA	Prof Wallace Cowling, Dr Renu Saradadevi and Prof Kadambot Siddique	UWA
Alfu Laila	Exploration of soil and plant iron dynamics for biofortification and yield of wheat in acidic soil	UWA School of Agriculture and Environment and IOA	Dr Zakaria Solaiman and Prof Kadambot Siddique	UWA

Memorandum of understanding

Name	Date
Northwest A&F University, China	May 2026

Research grants

Title	Funding period	Funding body	Investigators
Improving PUE and ROI in high P-fixing soils of Southern and Western Regions	January 2026- May 2030	GRDC	Prof Nanthi Bolan, Prof Kadambot Siddique, Associate Prof Louise Barton, Prof Matthias Leopold, and Dr Craig Scanlan
Effect of Diatomaceous Earth on Wheat and Canola Growth, Grain Yield, Nutritional Status, and Soil Health in Sandy Soil	April 2026- April 2028	Terranexx Pty Ltd	Associate Prof Zakaria Solaiman and Prof Kadambot Siddique
High-throughput and modular plant phenotyping systems.	2026-2028	Australian Plant Phenomics Network	Dr Agyeya Pratap and Associate Prof Nic Taylor
Automated phenotyping pipeline and AI-driven modelling for chickpea and wheat under optimal and stress conditions in controlled environments	2026-2027	Australian Plant Phenomics Network	Dr Dat Pham, Dr Viola Devasirvatham, Prof Mark Tjoelker, Josef Garen, Dominique Wilson (WSU Node), Dr Agyeya Pratap, Dr James Kelly, Associate Prof Nic Taylor, Prof Nik Callow (UWA Node) and Dr Tao Hu (ANU Node)
Optimizing temporal sampling and smoothing strategies for plant growth measurement using imaging data from controlled environment facilities.	2026	Australian Plant Phenomics Network	Associate Prof Bettina Berger, Dr Reddy Pullanagari, Dr David Field, Dr Chris Brien, Clayton Forknall, Dr Ricarda Jost, and Associate Prof Nic Taylor

UWA IOA 2026 Publications

April to August

Peer Reviewed Journals

Ahmed AI, Cantila AY, and Chen S (2026). Towards Stress-Resilient Canola via Genetic Engineering Approaches. *Agronomy* **16**(8), 769 doi: 10.3390/agronomy16080769

Akter S, Mia MS, Prodhan MA, Azam G, Solaiman ZM, and Siddique KHM (2026). Effects of Soil Amelioration on Wheat Growth, Nutrition, and Soil Microbiome Dynamics in Sandy Soil. *Journal of Soil Science and Plant Nutrition* doi.org/10.1007/s42729-026-03275-9

Ali B, Rehman A, Latef A A H A, Imran M, Javed M A, Wise N, and Imin N (2016). Engineering abiotic stress tolerance in cereal crops: Current advances and future directions. *Cereal Research Communications* doi: 10.1007/s42976-026-00804-1

Belt K, Harvie S, Mickan BS, Ang RA, Abbott LK, and Millar H (2026). Evaluating biostimulant products for wheat production in weathered soils and dry environments. *Soil Ecology and Environment* doi: 10.1002/sae2.70197

Bolan N, Kumar M, Gupta J, Rao CS, Hou D, Huang C, Bolan S, Chandana M, Jagadesh M, Mukherjee S, Kirkham MB, and Siddique KHM (2026). Sources, distribution, stability and management of deep soil carbon in agricultural systems. *Carbon Research* **5**(1) 30 doi.org/10.1007/s44246-026-00270-8

Bolan N, Mukherjee S, Bolan S, Sharma S, Spokas K, Melo J LM, Padilla JT, Houben D, Veloso M, Gross A, Chadalavada S, and Siddique KHM (2026). Weathering of biochar: implications to soil health, carbon sequestration and soil remediation. *Biochar* **8**:102 doi.org/10.1007/s42773-026-00615-x

Bolan N, Ndlovu N, Sharma S, Spillane C, Bolan S, Mukherjee S, Nagarajan J, Kumar M, Gupta J, Srinivasa Rao C, and Siddique KHM (2026). Reconciling soil health benefits with the carbon sequestration potential of organic carbonaceous amendments. *Advances in Agronomy* **197** doi.org/10.1016/bs.agron.2026.03.001

Bolan N, Lv X, Xu Y, Mondal T, Bolan S, Smith P, Campbell GA, Mukherjee S, Kelbel G, Chadalavada S, and Siddique KHM (2026). Fertiliser use and carbon sequestration in agricultural soils. *Agriculture, Ecosystems and Environment* **407** 110462 doi.org/10.1016/j.agee.2026.110462

Busi R, Goggin D, Eyres N, Runge F, Porri A, Flower K (2026). A Trp574-Leu substitution confers resistance to three classes of

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Caguiat JD, Mia MS, Liu H, Yan G, and Siddique KHM (2026). Development and characterization of near-isogenic lines for quantitative trait locus qDT.3B.1 underlying drought tolerance in wheat. *The Plant Genome* **19** doi.org/10.1002/tpg2.70186

Calver MC, Crawford HM, Kurz, T, Watson J, and Webber, BL (2026). It's premature to encourage working cats for rodent control on Australian dairy farms. *Animals* **16**(3), 417 doi: 10.3390/ani16030417

Cao M, Duan Y, Li M, Tang C, Kan W, Li J, Zhang H, Zhong W, Wu L, and Wu L (2024). Manure substitution improves maize yield by promoting soil fertility and mediating the microbial community in lime concretion black soil. *Journal of Integrative Agriculture* **23**(2), 698–710 doi: 10.1016/j.jia.2023.05.040

Feng X, Clode P L, Li S, Liu S T, Pang J, Glauser G, Siddique KHM and Lambers H (2026). Leaf tissue-specific phosphorus allocation is linked to leaf lifespan in chickpea accessions. *Plant, Cell & Environment* doi: 10.1111/pce.70704

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26 and 27 August

UWA Farm Ridgfield Open Day
11 September

Hector and Andrew Stewart Memorial Lecture
13 October



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