

# The UWA Institute of Agriculture



For more than 150 people who attended the UWA Farm Ridgefield 2023 Open Day in October, there was simply no substitute for experiencing research first-hand. UWA staff and students, including Critical Zone Observatory Technical Field Officer Allan Williams (above), led site visits that explored seven on-farm research projects. Continued on pages 10 & 11



THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

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## From the Director

**As I reflect on the past 12 months at The UWA Institute of Agriculture, the word that sits at the forefront of my mind is 'gratitude'.**

I could take this opportunity to expand on the dozens of accolades, fellowships, and scholarships that were awarded in 2023. Perhaps celebrate the fact that we hosted almost 20 public lectures, seminars and open days, retained our national number one position in Agricultural Sciences in the Academic Ranking of World Universities, had six academics involved in agriculture named High Cites, and earned more than 25 new research grants.

Instead, I wish to thank and highlight the individuals at the heart of these achievements. To borrow a quote attributed to John F. Kennedy: "Things don't just happen. They are made to happen". I encourage you to turn to page 7 to read about a significant professional and personal milestone in Adjunct Professor William Erskine's esteemed academic career, page 12 to farewell and reflect on the great career of a good friend of the Institute, and page 19 to peruse the long list of awards and grants recently bestowed upon our colleagues.

It is fair to say that one of the most significant days in our calendar this year was the UWA Farm Ridgefield 2023 Open Day. Our centre spread (pages 10 and 11) provides a snapshot of this incredibly busy and rewarding day. You will read about how our passionate researchers tirelessly presented their innovative projects to more than 150 attendees throughout the afternoon. I was especially pleased to tour these site demonstrations with UWA Vice Chancellor Professor Amit Chakma – who was very impressed with all that was on show.

I extend my heartfelt thanks and appreciation to members of the Institute's Management Board, Industry Advisory Board, Theme Leaders, committees, members, and staff. My very best wishes for a restorative festive season and happy New Year.

**Hackett Professor Kadambot Siddique**

AM CitWA FTSE FAIA FNAAS FISPP FAAS FPAS  
kadambot.siddique@uwa.edu.au

## Memorandum of Understanding secures UWA-SKAUST collaboration

**A joint Master's program in Agriculture and Biotechnology between UWA and Sher-e-Kashmir University of Agricultural Sciences and Technology (SKAUST) in Jammu, India is on its way.**



Key leaders from UWA and SKAUST, including Vice Chancellors (seated) after signing the Memorandum of Understanding.

In late November, The UWA Institute of Agriculture welcomed SKAUST delegates to UWA's Crawley campus to discuss and agree upon collaboration in areas of mutual interest – including establishing the Master's program and training high quality SKAUST PhD students at UWA.

UWA Vice Chancellor Professor Amit Chakma and SKAUST Vice Chancellor Professor Bupendra N Tripathi signed a Memorandum of Understanding (MOU) agreement.

The Institute Director Hackett Professor Kadambot Siddique said the MOU was an important milestone for the two universities.

"I greatly look forward to a very rewarding and productive working relationship with SKAUST for many years to come," Professor Siddique said.

The delegation also visited UWA Shenton Park Field Station, plant growth rooms and glasshouses, molecular research facilities, and the UWA Centre for Microscopy, Characterisation and Analysis.

# Drone captures unique perspectives of Ridgefield

**If anyone visiting UWA Farm Ridgefield glanced up at the sky in late August, they may have spotted a small, buzzing drone looking right back at them.**

Armed with his trusty high-tech drone, UWA Media Digital Media Officer Jarryd Gardner spent a day at the farm filming video and images from a rarely seen birds' eye view.

The UWA Institute of Agriculture's Communications Officer Rosanna Candler and former Business manager Debra Mullan joined Mr Gardner to assist with recording footage that showcased advancements in long-term research projects.

After filming a flock of sheep grazing in the fields and the New Farmhouse and surrounds, next on the shooting schedule was the site of the Multiple Ecosystems Services Experiment.

The last time a drone photo was taken of this site was back in 2013, just three years after the research team planted 14,000 trees and shrubs on land previously used for cropping and grazing.

The guide for the restoration plots was to return vegetation that had existed before the land had been cleared – and the new footage proved these native plants were flourishing.

The team then visited Emerita Professor Lynette Abbott's Land Restoration Demonstration Site and her new FutureCarbon13 Project five-year trial site, which commenced this year.



Jarryd Gardner flying his drone at UWA Farm Ridgefield.

Nine years after students and Institute team members spent a day planting native trees at the farm, new drone images of this area of the farm have captured how well the vegetation had grown and spread.

Footage from this visit will contribute to a video on UWA Farm Ridgefield and the UWA Best Practice Farming Systems Project, to be released in 2024.

## Farmers and scientists flock to Alan Sevier Memorial Lecture

**Sheep production systems in New Zealand have adapted and evolved over the past 30 years to match the drivers of on-farm income.**

While delivering the 2023 Alan Sevier Memorial Lecture in September, Massey University Professor Paul Kenyan explored how research coupled with technology transfer and farmer interaction influenced this evolution.



Professor Paul Kenyan presenting at the UWA Agriculture Lecture Theatre.

"Innovative farmers like Alan Sevier led that change, because they predicted how what change was required and where the industry was going," Professor Kenyan said.

Professor Kenyan said lamb production drove farmer decision making.

"Research coupled with technology transfer and farmer interaction has driven the increases observed in ewe reproductive rate, lamb growth rates and carcass weights at slaughter," he said.

**"While the national flock is significantly less than half of its 1980s size, total industry carcass weight has only dropped by 14 per cent."**

Professor Kenyan explained that the sheep industry in New Zealand was traditionally driven by coarse wool (above 30 micron) production.

"However, with the relative and absolute value of wool falling, coupled with increased shearing costs, farmers have needed to adapt to ensure they

remain economically viable – such as opportunities with importing shedding breeds like the Wilshire," he said.

The lecture was attended by animal scientists and farmers, including UWA Farm Ridgefield Farm Manager Dr Tim Watts.

It also explored ewe lamb breeding, management to maximise multiple bearing ewe performance, targeted feeding to maximise return, alternative herbages, and efficiency drivers of the New Zealand system.

The evening ended on a light-hearted note, with the Institute's Associate Director Professor Phil Vercoe – a long-time research collaborator with Professor Kenyan – admonishing his friend for referring to sheep as a 'lawnmower'.

"If your PhD supervisor (UWA Adjunct Associate Professor Dean Revell) had been in the audience, he'd have gone apoplectic," Professor Vercoe said with a laugh.

"As you know, his great saying is 'Sheep aren't lawnmowers, they're mobile biochemical analysers'."

[Watch the 2023 Alan Sevier Memorial Lecture](#) on The UWA Institute of Agriculture YouTube channel.





# CEEP celebrates 15<sup>th</sup> anniversary milestone

**It was an opportune time for reflection and celebration at the UWA Centre for Environmental Economics and Policy (CEEP) 15<sup>th</sup> anniversary event in October.**

Addressing a crowd of about 50 people, CEEP co-directors Professor David Pannell and WA Premier's Mid-Career Fellow Dr Abbie Rogers reflected on how far the Centre had come and what the future had in store.

Professor Pannell said he and his Centre colleagues were especially proud that many outputs from their research had been utilised by environmental and agricultural bodies around Australia and internationally.

These outputs include tools that CEEP developed for evaluating public investments in agricultural and environmental projects, helping users to quantify the monetary-equivalent value of environmental and social benefits, selecting the most appropriate policy mechanism to use for a particular agri-environmental issue, and predicting the uptake of new practices by farmers.

"We've continued because funders and policy makers have seen value in what we do," Professor Pannell said.

"Our work is very much focused on solutions, not just on quantifying the problem.

"We take a decision-making approach to the issues we tackle, which is very often what managers and policy makers need. And we are good at integrating knowledge of various types into our decision-making frameworks."

"The quality and relevance of the work we do depends entirely on the team," he said.

"Our performance in traditional academic terms is really strong, but most importantly, we provide a great example of how innovative research can also be highly practical and useful.

**"Bringing an economic perspective to environmental and agri-environmental issues is critical if we are going to tackle the problems in practical, effective ways."**

Looking to the future, Dr Rogers said she was especially looking forward to expanding their focus beyond the management of Australia's terrestrial environments.

"Our contributions are already recognised among decision makers in this space," she said.

"We are extending this focus with a rapidly growing role in our marine and coastal environments and by providing expertise beyond economics, in other complementing social science disciplines that help to round out our understanding of the human dimensions of environmental policy."

**"The Centre invests time into our stakeholder relationships, which has led to us being a trusted source of environmental policy advice as well as an important contributor of practical research outputs."**

**Dr Abbie Rogers**

Ultimately, Professor Pannell attributed the Centre's long-time success to its wonderful staff.



Professor David Pannell and Dr Abbie Rogers presenting at the event.

**Professor David Pannell**

david.pannell@uwa.edu.au

**Dr Abbie Rogers**

abbie.rogers@uwa.edu.au



# John Dixon drives home urgent call-to-action

**If worldwide food production increased 129 per cent from 1970 to 2010, then surely our current goal to increase 60 per cent by 2050 will be a piece of cake?**

This could not be further from the truth, according to University of Queensland Adjunct Professor John Dixon, who delivered the 29<sup>th</sup> Hector and Andrew Stewart Memorial Lecture in November.

"Sure, we did massively well in increasing food production while the population was growing at just 1.76 per cent," Adjunct Professor Dixon said.

"However, we now face more complex challenges.

"We are losing land to degradation and urbanisation, temperatures are rising with climate change, precipitation is shifting, the amount of fresh water available for irrigation will reduce, and there are mounting geopolitical pressures.

"It is no wonder that progress towards the United Nations' 17 Sustainable Development Goals set off at a slow pace from 2015 and ground to a halt during the pandemic."

Adjunct Professor Dixon argued that it would require more science, more effective implementation, and more collaboration across disciplines, agencies, governments, and regions than in the past to achieve the 2050 goal.

"Given the increasing population, the implications for food demand, supply, and prices are immense," he said.

**"It will be my contention this evening that we have failed our jobs in terms of incorporating sustainability and resilience into our agricultural development and food development systems globally."**

Adjunct Professor Dixon said Sustainable Intensification was required to increase food production from existing land and water resources while minimising pressure on the environment.

"The challenge will be to shift agrifood system development onto trajectories of sustainable and resilience intensification especially in the major food producing bowls of the world, through strengthening natural resource management, integrated production systems and enabling markets, institutions and policies," he said.

Agrifood sustainability and resilience are weak or missing in many regions, and Adjunct Professor Dixon said the challenge was particularly acute in Africa.



Adjunct Professor John Dixon presenting at the UWA Bayliss Lecture Theatre.

"So often it's not the design of our research projects that go amiss, it's the implementation that disappoints," he said.

"Program development and implementation of sustainable and resilience agrifood development in Africa and Asia has benefited from the following checklist: integration of systems, innovation continuously, impact orientation, information sharing, investment in systems, and enabling institutions.

"Positive incentives for farmers, service providers and marketing systems are critical."

[Watch the 2023 Hector and Andrew Stewart Memorial Lecture](#) on The UWA Institute of Agriculture's YouTube channel.



Members of the Stewart family and special guests. This lecture is held in honour of the late Hon Hector J Stewart MLC and his son Andrew Stewart.



# Soil carbon research attracts water industry attention



WaterCorp Technical Advisor Rachael Major, Tessele Consultants' Kendall Ferraro, Water Research Australia Research Manager Sandra Henville, George Mercer, Professor Megan Ryan, Land Use Futures Principal Ian Kininmonth, and Andreas Pfeifle in a UWA glasshouse.

## UWA researchers recently hosted a glasshouse tour of their latest waste-to-resource experiment aimed at building stable soil carbon.

Key members of WaterCorp, Tessele Consultants, Water Research Australia, and Land Use Futures joined the tour, which was led by UWA PhD candidate and Tim Healey Memorial scholar George Mercer.

Guided by the theme 'Enhancing product applications', the industry-supported project is led by Professor Megan Ryan as part of the ARC Centre for the Transformation of Australia's Biosolids Resource.

Mr Mercer said the aim of the research was to refine the delivery of value-added soil amendments from the wastewater treatment process (such as composted biosolids and biochar) and return

much-needed carbon and nutrients to agricultural ecosystems.

"The trick is to optimise the delivery of these products to benefit soil function," he said.

"The stability of soil carbon is highly dependent on activities of soil microbes, so characterising their response to these amendments will help us to understand the best parameters for building persistent soil carbon in these systems."

Mr Mercer said it was often overlooked that the 'hidden cost' of building soil carbon was the surrender of nutrients to long-term pools of soil organic matter.

"The availability of organic matter will impact the cycling of carbon and nitrogen in the system, which will also have an effect on plant yield," he said.

Mr Mercer, who is also the WA Branch President of Soil Science Australia (SSA), emphasised the reciprocity that exists between soil and water research.

"Connecting people from the soil and water industries will ultimately lead to better management of both of these precious resources," he said.

### George Mercer

[george.mercer@research.uwa.edu.au](mailto:george.mercer@research.uwa.edu.au)

## On-farm experience no substitute for textbooks

**Thousands of kilometres from their home in China, a group of Huazhong Agricultural University students and teachers felt their 'horizons were broadened' during a three-week WA study tour in July.**

The UWA Institute of Agriculture resumed its agricultural tour program for students at Chinese universities students this year.

The 20 students and three teachers visited UWA Farm Ridgefield in Pingelly, UWA Shenton Park Field Station and Aquaculture Research Facility, as well as Hillcroft Farms and Banksia Park Alpaca Farm.

UWA academics, including Institute Director Hackett Professor Kadambot Siddique, gave presentations in areas of sustainable food



Huazhong Agricultural University visitors at the entrance to UWA Farm Ridgefield.

production, crop breeding, clean-green-ethical animal production, WA agricultural environment and management, and agricultural economics.

During the study tour, the students commented that they felt fortunate to learn many things they could not read in books by visiting real working farms in WA.

"We saw the challenges faced by farms such as salinisation, drought, water shortage and low farm efficiency," they said.

"We are very lucky to have such an opportunity to open our horizon and to experience the different cultures."



Adjunct Professor William Erskine, Dr Tanveer Khan (back) and Associate Professor Louise Barton.

# Winged bean research takes flight after 50 years



**Time has well and truly flown for the UWA academics whose research into winged bean has spanned more than five decades.**

The UWA Institute of Agriculture Honorary Research Fellow Dr Tanveer Khan first began research into winged bean as an important food legume at the University of Papua New Guinea in the early 1970s.

In 1973, UWA Adjunct Professor William Erskine arrived as a tutor and began assisting the project, later carrying on the work for his PhD (registered at Cambridge University) when Dr Khan returned to Perth.

A report from the National Academy of Sciences' National Research Council in 1975 catapulted the winged bean to international fame, referring to it as a 'supermarket on a stalk' because it combined the desirable characteristics of the green bean, garden pea, spinach, mushroom, soybean, bean sprout and potato.



The winged bean has four wing-like frilled edges running lengthwise.

As decades passed and Adjunct Professor Erskine turned his research attention to other crops – notably running the lentil breeding program at ICARDA for 18 years – he assumed that his time researching the winged bean would be short-lived.

**“During my PhD, the winged bean became my life as PhD projects tend to do, but I never thought I’d return to work on it afterwards. But life is non-linear and unpredictable.”**

Since 2010, Adjunct Professor Erskine has been involved with Australian Centre for International Agricultural Research (ACIAR) projects on food security in Timor-Leste, which provided an opportunity to quietly resume his winged bean research.

Nineteen new crop varieties were produced from two decades of testing by the Ministry of Agriculture and Fisheries and UWA Adjunct Senior Research Fellow Rob Williams under Australian-funded ‘Seeds of Life’ and Agricultural Innovations for Communities (AI-Com) projects, as led by Adjunct Professor Erskine.

Among them were three new varieties of the winged bean, released at a recent ceremony attended by the President of Timor-Leste His Excellency Dr José Ramos Horta.

In an amazing twist, one of these recently released varieties in 2023 was identified by Professor Erskine in the 1970s, via a connection made possible through international cooperation in germplasm exchange.

Adjunct Professor Erskine said it was very satisfying to see research he started more than five decades ago come to fruition through these recent varietal releases.

“It’s gratifying that the PhD grunt work was not entirely wasted in a practical sense,” he said.

AI-Com in-country Research Coordinator Rob Williams said the new varieties had already been readily accepted by smallholder farmers across Timor-Leste.

“Child stunting and malnutrition are widespread in Timor-Leste,” Mr Williams said.

“Encouraging the production of high-protein winged bean (among other options) has been a key driver of AI-Com crop diversification research towards achieving nutritional food security.”

AI-Com is now in its second phase (AI-Com 2) led by UWA Associate Professor Louise Barton and is focused on adoption pathways for technologies and knowledge developed in the first phase.

**Adjunct Professor William Erskine**

[william.erskine@uwa.edu.au](mailto:william.erskine@uwa.edu.au)





Participants and presenters at the Food Quality Workshop in August.

# Workshop builds appetite for industry collaboration

## The development and validation of healthy foods that meet consumer desires is a challenging task for the Australian agri-food industries.

Facing this challenge head-on by emphasising cross-disciplinary collaboration with researchers and industry was discussed at a recent workshop hosted by The UWA Institute of Agriculture and held at the Forrest Research Foundation's Ashburton Room.

The workshop was attended by industry representatives, researchers, and academics.

Co-leader of the Institute's Food Quality and Human Health research theme Professor Trevor Mori presented the

welcome speech, followed by opening remarks from UWA Senior Deputy Vice Chancellor Professor Tim Colmer, Forrest Research Foundation Director Professor James Arvanitakis, and Institute Director Hackett Professor Kadambot Siddique.

UWA Pro Vice Chancellor (Health and Medical Research) Professor Romola Bucks delivered a talk on 'Harvesting wellness: Cultivating the connection between agriculture and health'.

Vegetables WA Business Development Manager Manus Stockdale, Southern Forest Food Council Inc. Marketing and Project Coordinator Jennifer Risley, and Pomewest Executive Manager Nardia Stacey presented from their industry perspectives.

Food Quality and Human Health research theme co-leader and DPIRD research scientist Associate Professor Michael Considine explored some current projects that emphasised the development of a collection of healthy functional foods and ingredients, as well as improved processes for their production and manufacture.

Following a talk from the Head of the UWA Medical School Professor Brendan McQuillan titled 'Eat to live or live to eat?', participants engaged in roundtable discussions before the workshop was formally closed by Professor Mori.

### Professor Trevor Mori

trevor.mori@uwa.edu.au

## Opening the umbrella of sustainable agriculture

### Sustainable agriculture could be seen as a 'time machine' for us to travel back and correct our wrong turns, says Executive Director of the International Competence Centre for Organic Agriculture (ICCOA) Manoj Kumar Menon.

In October, Mr Menon delivered a special lecture for The UWA Institute of Agriculture titled 'The Umbrella of Sustainable Ag: Agroecology, organic & natural farming'.

"The Earth has been around 200,000 years, Homo sapiens followed, and then we have had 12,000 years of agriculture," he said.

"Yet now, 60 years after the Green Revolution, we are calling for sustainability.

"There must be a reason ... we had some done something wonderful, but also we might have slipped somewhere."

The United Nations' Food and Agriculture Organization defines sustainable agriculture as meeting the needs of present and future generations, while ensuring profitability, environmental health, and social and economic equity.

"Whatever we can do to make sure that the present and the future both are taken care of is sustainable," Mr Menon said.

"It is the management of the natural resource base and orientation of technological and institutional change to ensure the attainment and continued satisfaction of human needs for the present and future generations."

During the lecture, a video introduced the audience to the Jaivik Vigyan Kendra Centre for Sustainable and Organic Farming, run by ICCOA, which functions as a model organic farm and training centre near Bangalore, India.



Manoj Kumar Menon presenting at the UWA Agriculture Lecture Theatre.

[Watch Mr Menon's lecture](#) on The UWA Institute of Agriculture's YouTube channel.



# Study Tour a source of fresh perspective and inspiration

**Embarking on the South Australia Study Tour with the Grower Group Alliance and South-West WA Drought Resilience Adoption and Innovation Hub was a transformative experience for UWA Senior Research Officer Roberto Lujan Rocha.**

Mr Lujan Rocha said he was thankful to The UWA Institute of Agriculture and the Australian Herbicide Resistance Initiative for sponsoring his five-day excursion in September.

"The tour not only met but exceeded my expectations, offering a fresh perspective on how my work fits within the broader agricultural system," he said.

"It has inspired me to integrate some of the state-of-the-art equipment and methodologies witnessed into my research."

"The connections I formed, and the potential collaborations conceived, particularly as I embark on a PhD, are invaluable."

**"This tour has been a catalyst for broadening my horizons, reinforcing the importance of innovative, sustainable practices in the face of agricultural challenges."**

The study tour was an in-depth exploration of innovative agricultural practices and a glimpse into the future of farming in challenging environments.

On the first day, a visit to Australian Grain Technologies unveiled more than a decade-long journey to release a new variety, with a yearly genetic improvement of about one per cent.

"The use of insects for biocontrol in their glasshouses and avoiding pesticides, was a revelation to me," Mr Lujan Rocha said.

"University of Adelaide Dr Mariana Caetano's talk on her methane emissions reduction project, employing seaweed-based fodder, was equally enlightening.



The Study Tour team from WA composed of farmers, agricultural consultants, students and researchers. Roberto Lujan Rocha at back, wearing navy blue.



Field trials where participants discussed research on frost management.

"Discussions on potential salinity tolerance of germplasm and frost management provided practical insights into the resilience strategies vital for WA's agriculture."

Mr Lujan Rocha said the Hart Field Day, which attracted more than 500 attendees, was his personal highlight of the second day.

"Engaging talks on strategic nitrogen decisions and herbicide crop safety allowed us to visualise the impact of agricultural chemicals on crops directly," he said.

"The discussions underscored the viability of farming without glyphosate, a topic close to my research interests."

Day three introduced participants to pasture trials and the significant benefits to subsequent crops.

A visit to Bulla Burra farms showcased innovative practices in a low-rainfall area, emphasising the efficacy of deep ripping and precision agriculture.

Water repellence trials and discussions on canola establishment on the fourth day, along with a visit to Thornby's impressive feedlot, underscored the diversity of Mr Lujan Rocha's learning.

The final day brought him to the Plant Phenomics facility, where he said cutting-edge imaging technology presented potential advancements for the laboratories at UWA.

**Roberto Lujan Rocha**  
roberto.lujanrocha@uwa.edu.au





# Robust research harvest at Farm Open Day

**The sun was shining and spirits were high on Friday 6 October when The UWA Institute of Agriculture welcomed more than 150 researchers, farmers, members of the local community and beyond to its UWA Farm Ridgefield 2023 Open Day.**

The Open Day featured in-field visits and project demonstrations that showcased key UWA research related to the Best Practice Farming Systems Project.

Institute Director Hackett Professor Kadambot Siddique delivered the introductory speech at the Old Farmhouse, during which he provided a background on how the 1600 ha mixed-enterprise farm has supposed agricultural research at UWA since 2009.

"You may be interested to hear the following statistics about the farm as we stand here today," Professor Siddique shared.

"There are currently 8115 sheep, 620 hectares sown with barley, canola, lupins and vetch, 190 hectares of remnant vegetation, and no less than 17 active research projects underway at Ridgefield right now."

**"My sister Yvonne and I enjoyed reminiscing our childhood years whilst at the Avery (now Ridgefield) Farm. It was good to see the shearing shed has stood the test of time. The research into the ovine clover disease was of particular interest as in the 1960s this was a major challenge."**

**Attendee Ted Avery**

In his speech, Pingelly Shire President Bill Mulroney shared his personal recollections of UWA Farm Ridgefield and emphasised the important relationship between UWA and the Pingelly community.

UWA Vice Chancellor Professor Amit Chakma then introduced The Nationals WA Member for Central Wheatbelt The Hon Mia Davies MLA to formally open the event.

Following lunch catered by the Pingelly Tourism Group, attendees boarded buses to visit the seven research demonstration sites across the farm.

First on many enthusiastic visitors' agenda was UWA Emerita Professor Lynette Abbott's recently established trial FutureCarbon13 Project 2023-2028, titled 'Grazing into the future for soil carbon sequestration and building soil health'.

A few minutes' drive away, Murdoch University Associate Professor Rachel Standish presented on the long-term Multiple Ecosystems Services Experiment.





“The Open Day was an excellent opportunity for the general public, staff and students to be exposed to on-farm research. It was a great way to increase the transparency around agricultural science at UWA, and to show what we ag researchers do on a day-to-day basis. It was fantastic to see producers, students and academic colleagues all interested in the agriculture space.”

**Dr Kelsey Pool**

“Participating in the farm open day is a great way to share my research with the local farming community and get their perspective on how it will benefit agriculture production.”

**Associate Professor Louise Barton**

UWA Associate Professor Louise Barton and Paul Damon led people around one of four WA field trials as part of the national ‘Predicting nitrogen cycling and losses in Australian cropping systems’ project.

Twelve field trials commenced in 2023 across Australia (those in WA conducted by UWA) in partnership with the Department of Primary Industries and Regional Development.

At Avery’s Shearing Shed, UWA Dr Kelsey Pool and Associate Professor Dominique took turns presenting on their projects; ‘Redefining ovine clover disease: A role for rams?’ and ‘Research into heat stress in livestock’, respectively.

Crowds formed around UWA Associate Professor Sally Thompson and her research team to learn more about The Avon Critical Zone Observatory (CZO) – Western Node of the Australian CZO Network.

Rounding out the site visits was UWA Associate Professor Phillip Nichols and Brad Wintle, who demonstrated the latest findings from their Annual Legume Breeding Australia (ALBA) field trials.

Many passionate and hardworking people helped make the UWA Farm Ridgefield 2023 Open Day such a success; Farm Manager Tim Watts, research leaders and their teams, the Institute staff, student volunteers, members of the Pingelly community, and more.

“It was exciting to share our new capabilities in below-ground monitoring at the Avon Critical Zone Observatory with the field day participants.”

**Associate Professor Sally Thompson**

Photos (clockwise from top left):

The Hon Mia Davies MLA and Hackett Professor Kadambot Siddique chat at the start of the Open Day.

Members of the Pingelly Tourism Group showing off some of the homemade sandwiches on offer for lunch.

UWA Vice Chancellor Amit Chakma presenting his speech to the crowd at the Old Farmhouse.

Hackett Professor Kadambot Siddique, UWA VC Professor Amit Chakma, Farm Manager Tim Watts, Emerita Professor Lynette Abbott and the Institute Business Manager Diana Boykett.

Associate Professor Louise Barton standing in front of one of four WA trials of the national ‘Predicting nitrogen cycling and losses in Australian cropping systems’ project.

Associate Professor Sally Thompson presenting on The Avon Critical Zone Observatory.

A group of Open Day attendees (including UWA VC Professor Amit Chakma and Institute Director Hackett Kadambot Siddique) pose for a photo in the field near Associate Professor Louise Barton’s research site.



ARC Discovery Project research collaborators Institute Director Hackett Professor Kadambot Siddique, Professor Jayasree Krishnankutty and Professor Michael Blakeney outside the lecture theatre.

# Lecture shines light on smallholder farming

**Smallholder farms account for 96 per cent of agriculture in all of Kerala, India – 10 per cent higher than the national rate.**

In November, Kerala Agricultural University Professor Jayasree Krishnankutty delivered a special lecture for The UWA Institute of Agriculture titled 'Leveraging smallholder farmers in a changing agricultural scenario – Perspectives from Kerala'.

Professor Krishnankutty said Kerala stood out from the rest of the Indian states in having the highest Sustainable

Development index, highest density of population, and its people moving more towards the service sector.

"Kerala can be a case study in how a fast-urbanising state can also support and promote agricultural sustainability," she said.

With smallholder agriculture in Kerala currently under transition, Professor Krishnankutty said small emerging farmers were making a positive impact.

"As the traditional pattern of subsistence farming is declining, farming activities by groups, farmer collectives and clusters are on the rise," she said.

"The state promotes agri entrepreneurship, and self-help groups of women are a very lively force in sustaining agriculture related activities among the small holders.

"For a population that is increasingly concerned about food safety and nutrition security, this is a positive sign for its sustainability."

However, although government programs were designed as smallholder inclusive, she warned that evidence showed those support mechanisms may not be inadequate.

Professor Krishnankutty was the principal investigator (India side) of the ARC Discovery Project between UWA and Kerala Agricultural University on food security and the governance of local knowledge.

[Watch Professor Krishnankutty's lecture](#) on The UWA Institute of Agriculture's YouTube channel.

## Loving heart leaves beacon of light

**Although a failing heart took him away from this world, Dr TM Tajul Islam's loving heart inspired a beacon of light for many in the professions of global food industries and agricultural science.**

Dr Islam was a beloved agricultural scientist and plant breeder who completed his PhD in Agronomy at UWA in 1982.

In October, he passed away aged 75 from an unexpected heart attack.

Hackett Professor Kadambot Siddique first met Dr Islam during his PhD in 1981, and they maintained a strong friendship throughout the years.

North South University Professor Nazrul Islam, also an Honorary Senior Research Fellow at The UWA Institute of Agriculture, fondly remembers Dr Islam as a passionate and positive man.

"His cheerful attitude and bright smile will be missed by his colleagues, friends and associates in home and abroad," Professor Islam said.

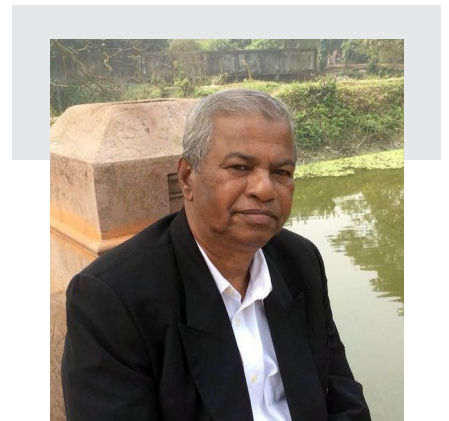
In addition to his studies at UWA, Dr Islam received post-doctoral training on research management from the International Maize and wheat Improvement Centre (CIMMYT) in Mexico, postgraduate research on rural development from the International Center for Mediterranean Agronomic Studies in Italy, and training on supply and value chain management and business development.

He had more than 40 years of experience in research and development, including supply/value chain development, agri-business development and marketing.

Dr Islam worked in Australia, Bangladesh, Pakistan, Nigeria, Mexico, India, and Italy with programs in many developing countries.

He had a successful career at CIMMYT and the International Institute of Tropical Agriculture in Nigeria as a plant breeder and agronomist, and at World Bank (International Finance Corporation) as a Senior Agriculturist and agri-business expert for the South Asia Region.

Additional roles include Managing Director of Hortex Foundation and the



Vale Dr TM Tajul Islam.

National Coordinator (supply chain) for the Bangladesh Ministry of Agriculture.

In recent years, Dr Islam ran an advisory firm for agricultural development and acted as one of the architects in establishing the NSU-UWA Centre of Excellence at North South University in Dhaka.

**Professor Nazrul Islam**

[nazrul.islam03@northsouth.edu](mailto:nazrul.islam03@northsouth.edu)



# Lecturer bridges gap between native and agricultural ecosystems

**A diverse research background and passion for both agricultural and native ecosystems has given newly appointed UWA School of Agriculture and Environment lecturer Dr Caitlin Moore a unique edge.**

Growing up on a beef farm in her home state Victoria, Dr Moore said it was impossible to shake off her 'farm kid roots' when it came time to carve out a career in academia.

"My PhD at Monash University equipped me with skills in measuring ecosystems and their response to climate," she said.

**"When the prospect arose to apply my research skills in the agricultural sector in the USA, I jumped at the opportunity."**

Dr Moore diversified her ecosystem knowledge to include agricultural systems as a Postdoctoral Researcher at the University of Illinois Urbana-Champaign – right in the heart of the high production corn and soybean Midwest region.

She worked at the Center for Advanced Bioenergy and Bioproducts Innovation on quantifying the sustainability of bioenergy crops grown in the USA, and on the Water Efficient Sorghum Technologies project developing high-throughput techniques to measure cropping systems faster.

In early 2020, Dr Moore left the USA to commence as a UWA Research Fellow, working on building research infrastructure and capacity for ecosystem monitoring in WA with the Terrestrial Ecosystem Research Network (TERN) supported by the National Collaborative Research Infrastructure Strategy.

To understand how native and managed ecosystems grow and respond to climate, she uses field measurement techniques including leaf gas exchange,

eddy covariance, micrometeorological observations, and hyperspectral sensing to monitor ecosystem changes over time.

Dr Moore said a cross-disciplinary approach was essential to help our agri-food industry and native ecosystems become more resilient in a future with increased climate variability.

"I am combining knowledge from both disciplines to measure how (agri) ecosystems respond to climate and extreme weather events and develop ways to improve monitoring and early warning systems," she said.

Dr Moore said her new role was an opportunity to combine her research passions in these two disciplines more easily.

"I also get to work with a bunch of talented and motivated colleagues and collaborators here in WA, as well as nationally and abroad," she said.

Looking to the future, Dr Moore said her research priorities were to continue expanding TERN monitoring capabilities in WA through development of an agricultural flux monitoring network and collaborating with new stakeholders working in the agricultural sector.

She is also pursuing research in emerging agricultural practices including linking solar power and food production to decarbonise WA's economy, quantifying the benefits of cover cropping in vineyards and developing WaterSmart dams in collaboration with WA's Grower Group Alliance, and applying rock dust to cropping systems to enhance weathering and improve carbon budgets.

**Dr Caitlin Moore**

[caitlin.moore@uwa.edu.au](mailto:caitlin.moore@uwa.edu.au)

**"Inspiring the next generation of research professionals and equipping them with the skills they will need to innovate solutions for these two sectors is something I look forward to bringing to my teaching at UWA."**



# Digging deep for World Soil Day

**What better way to celebrate World Soil Day than digging a great big hole?**

UWA and PhD students, led by the Head of UWA School of Agriculture and Environment Associate Professor Matthias Leopold and Professor Nanthi Bolan, spent a warm summer's morning at the UWA Shenton Park Field Station digging a soil pit.

Following the back-breaking work, they discussed what they discovered (exploring and determining the layers and soil types), and then enjoyed a well-earned lunch together.

World Soil Day is held annually on 5 December to focus attention on the importance of healthy soil and advocating for the sustainable management of soil resources.

The Soil Science Australia WA Branch held a symposium on World Soil Day under the theme 'Soil and Water: A source of life' at Kings Park Education Centre.

WA Branch President, UWA PhD candidate George Mercer, said the event was an ideal opportunity for scientists to connect with latest projects and hear from leading soil researchers, practitioners, industry and government.



Staff and students working up a sweat at Shenton Park Field Station.



Hackett Professor Kadambot Siddique, Robert Creasey and Professor AK Singh.

## Whirlwind visit makes future collaboration impact

**Getting up close and personal with fascinating active research projects at the UWA glasshouses was the ideal way for Director and Vice Chancellor of ICAR-Indian Agricultural Research Institute (IARI) Professor Ashok Kumar Singh to kick-off his recent visit to UWA.**

UWA Plant Growth Precincts Manager Robert Creasey took the group (including visiting academics and students from India) on a comprehensive tour of the glasshouses and plant growth rooms.

Later in the day, Professor Singh met with university leaders for high-level discussions about our research relationship and exciting future collaborations between UWA and ICAR-IARI, including a joint PhD program.

Joining Hackett Professor Siddique at the meeting were UWA Vice Chancellor Professor Amit Chakma, Head of the UWA School of Agriculture and Environment Associate Professor Matthias Leopold, Head of the School of Engineering Professor Tim Sercombe, Head of the School of Biological Sciences Professor Patrick Finnegan, and Broderick Moncrieff from the Global Engagement Office.

Professor Singh then delivered a lecture on 'Molecular breeding for improvement of biotic stress tolerance & nutritional quality of cereals' to about 40 people at the UWA Bayliss Lecture Theatre.

[Watch Professor AK Singh's lecture](#) on The UWA Institute of Agriculture YouTube channel



UWA leaders with Professor AK Singh outside the Winthrop Hall.



Dr Mahantesha Banvat Nethaji Naika, Tahira Rasheed, Anamika Chandel, Hackett Professor Kadambot Siddique, Professor Jacqueline Batley, Mithraa Thirumalai, Nutan Darandale, Dr Malu Ram Yadav.



# Enriching training and unforgettable memories

**Whether their time at UWA was two months or half a year, each of the students and academics who recently visited from India and Pakistan agree: the experience has been invaluable.**

The UWA Institute of Agriculture helped organise programs for the visiting scholars, which included tours of the glasshouses and plant growth facility chambers, specialised UWA labs and lectures, the Shenton Park Field Station, Centre for Microscopy Characterisation and Analysis, and UWA Farm Ridgefield 2023 Open Day.

Over the past five months, Sri Karan Narendra Agriculture University Assistant Professor Malu Ram Yadav said his UWA training had provided a 'wonderful platform' to interact with many renowned agricultural scientists of the world.

"I came here to meet highly cited researchers Hackett Professor Kadambot Siddique and Professor Nanthi Bolan," Dr Yadav said.

"It has been very rewarding to explore the modern facilities of field experimentations, laboratories and data analytics at UWA," Dr Yadav said.

**"I have achieved here far, far more than my expectations and will try to use this knowledge I gained to improve the research and teaching facilities of my university in India."**

**Dr Malu Ram**

Mithraa Thirumalai is completing a PhD at the ICAR-Indian Agricultural Research Institute (IARI) and the National Bureau of Plant Genetics Resources in New Delhi on 'Genome-wide association studies for key quality traits in vegetable pea'.

"After exploring the knowledge of the team and facilities at UWA, I promise that this is the best place for a student to strengthen their career in science and I wish I could be one among them," Mrs Thirumalai said.

"Apart from the facilities, this Institute has a great teamwork and cordial relation among them, and that is my take home message."

Dr Mahantesha Banvat Nethaji Naika travelled from Bangalore to work alongside the Institute's Food Quality and Human Health theme leader Associate Professor Michael Considine.

During her brief stay, fellow ICAR-IARI PhD candidate Gayatri Bhimappa Kudari trained in Professor Jacqueline Batley's lab.

"I delved into a diverse array of labs, gaining hands-on experience in RNA isolation, quantification using Qubit, and acquiring proficiency in various bioinformatic tools," Ms Kudari said.

Anamika Chandel from ICA-IARI also spent much of her time in the Batley Lab, learning gene expression studies to support her research 'Studies on Or gene associated developmental and hormonal changes in Indian Cauliflower'.

"I got the opportunity to meet and interact with scientists who I used to have to Google to know about them," Ms Chandel said.

Tahira Rasheed, a graduate student from the University of Agriculture in Faisalabad, said her visit to the Institute was an opportunity to build new, specialised and enriching skills in plant cloning, transformation and proteomics.

"It has provided an experience that exceeded expectations, fostering confidence, hope, and peace," Miss Rasheed said.

**"This was a delightful experience for me, just like my dreams come true."**

**Anamika Chandel**



Visiting scholars in the group photo for the Institute's annual end-of-year lunch



# Firsthand insight for Nagoya students



Nagoya University students visiting grain storage at Boortmalt.

**The sheer scale of an enormous container of grain at the Boortmalt food processing factory in Forrestfield made eight students visiting from Nagoya University in Japan appear positively miniature.**

The fascinating factory visit was one of the many highlights from a study tour that The UWA Institute of Agriculture worked with Professor Erik Veneklaas to organise in September.

As potential candidates for the Joint PhD Program between UWA and Nagoya University, the study tour taught the students about agriculture in WA and provided first-hand insight into what it was like to study at UWA.

The program enables students to obtain their PhD from both universities with joint supervision, by completing most of their studies at their home university and spending at least one year at the other.

Accompanied by Nagoya University Program Coordinator Dr Han Wang, the group met with several staff and students at UWA and were acquainted with several research labs and facilities.

Their busy program included trips off-campus, including visits to UWA Farm Ridgefield in West Pingelly, InterGrain, Richgro, Aegic, DPIRD Manjimup, and Boortmalt.

Plans are now underway to provide UWA students the opportunity to participate in a study tour to Nagoya in early 2024.

The study tour was made possible by a grant from the Japan Student Services Organization.

## Unravelling drivers of blackgrass epidemic

**A herbicide resistance epidemic of the grass weed known as blackgrass (*Alopecurus myosuroides*) is sweeping through the UK.**

At his UWA seminar in December, hosted by Australian Herbicide Resistance Initiative (AHRI) with support from The UWA Institute of Agriculture, visiting academic Professor Paul Neve presented results from a large, multi-year and multidisciplinary project that sought to unravel the molecular mechanisms and ecological, evolutionary and agronomic drivers of this epidemic.

Operating from 'field to gene', the project established a large farm network (70 farms) in the UK across which blackgrass populations were mapped, seed

populations were collected, and resistance was characterised at whole plant and molecular levels.

Uniquely, the project also collected extensive, historical field management records to explore drivers of resistance evolution.

The seminar discussed the value of field epidemiological approaches for dissecting the effects of field and farm management practices on the risks, abundance, and mechanisms of resistance to multiple herbicide modes of action in blackgrass.

Now Professor of weed ecology and evolution at University of Copenhagen, Professor Neve spent six years in the early 2000s as a postdoctoral researcher at UWA with AHRI.



Grass weed (*Alopecurus myosuroides*) in the field.



# Travel bonds international connections

**Jet-setting between five countries to attend almost a dozen professional engagements in just two months was no small feat for The UWA Institute of Agriculture Director Hackett Professor Kadambot Siddique.**

In late September, Professor Siddique travelled to Granada in Spain for the fourth International Legume Society Conference where he delivered a keynote presentation on 'Enhancing abiotic stress tolerance in grain legumes: Physiological and molecular approaches'.

He then visited Indonesia to attend the Udayana University (UNUD) International Advisory Board meeting (of which he is a member) and present a motivational lecture to science students on study opportunities at UWA.



A few days after the UWA Farm Ridgefield 2023 Open Day, Professor Siddique returned to Perth Airport to fly to India for the XVI Agricultural Science Congress & Expo in Kerala.

He also delivered a lecture on 'Carbon Neutral Farming: Challenges and Opportunities' at a two-day workshop organised by Directorate of Agriculture Development and Farmers Welfare Government of Kerala, India.

Professor Siddique then presented a plenary session talk at Jamia Hamdard University's international conference in Delhi.

In late October, he flew to China to attend the 7<sup>th</sup> Global Forum of Leaders for Agricultural Science & Technology in Sanya, Hainan Province, as invited by Chinese Academy of Agricultural Sciences President Professor Wu Kongming.

While in China, he participated in a field trip of the Base of National Breeding and Multiplication run by the Chinese Academy of Agricultural Sciences (CAAS) in Zhongliao Village and visited numerous research and training facilities.

In early November, Professor Siddique delivered an online lecture for the Keralaleeyam 2023 Seminar as organised by the Government of Kerala.

Professor Kadambot Siddique in a glasshouse at the CAAS Base of National Breeding and Multiplication.



Hackett Professor Kadambot Siddique, Professor Ashok Kumar Singh, Professor Tim Colmer, Professor Sushil Chaturvedi, Professor Phil Vercoe and Broderick Moncrieff.

## Powerful new connection with central Indian uni

**Research and training synergies between UWA and Rani Lakshmi Bai Central Agricultural University (RLBCAU) in India will continue to grow following the recent signing of a Memorandum of Understanding (MOU).**

The UWA Institute of Agriculture was pleased to host RLBCAU Vice Chancellor Professor Ashok Kumar Singh and Director of Research Professor Sushil Chaturvedi in November.

UWA Senior Deputy Vice Chancellor Professor Tim Colmer and Institute Director Hackett Professor Kadambot Siddique signed the MOU with professors Singh and Chaturvedi.

During their visit, the pair also toured UWA research facilities and interacted with staff and students at the Institute's annual end-of-year lunch.

Professor Sushil Chaturvedi attended UWA for six months in 1999 for project between India and UWA, supported by ACIAR.



Professor Tim Colmer and Professor Ashok Kumar Singh exchange gifts.



Staff and students at UNUD following Professor Siddique's lecture.





In-field demonstrations at Velyere Farm.

# Passion becomes purpose at student crop walk

**When West Midlands Group (WMG) Mixed Farming Systems Officer Melanie Dixon first graduated with her Animal Science degree, she had no background in farming and zero practical 'on the tools' knowledge.**

"I realised the only way I could learn was by asking as many questions as possible," Ms Dixon said.

**"There is so many amazing opportunities in ag that I wouldn't want students to be put off from going into this industry just because they didn't grow up on a farm."**

Inspired by helping university students in a similar position, Ms Dixon has led all three annual WMG Annual Student Crops Walks, including the 2023 event.

About 50 students studying various agriculture-related degrees from UWA, Curtin University and Murdoch University joined WMG at Velyere Farm, Badgingarra in September.

"The Student Crop Walk is all about providing an opportunity for students to meet people from other universities, learning what life is like after study and having the opportunity to see what a trial site looks like," Ms Dixon said.

Murdoch University scientist Jenni Clausen guided the students through a soil pit tour and soil 101 session.

Joining Ms Clausen was UWA PhD candidate Amber Balfour-Cunningham to discuss the world of agricultural entomology, learned from six years working at the Department of Primary Industries and Regional Development.

Campbell Browne introduced the group to the family's working dogs, accompanied by a drone video of the dogs at work created by WMG Project Communications Officer Simon Kruger.

Mr Kruger then facilitated a panel session that included Millie Watson (Rabobank), Kaitlyn Anderson (Facey Group) and Lauren Smith (Australian Meat Processing Corporation).

The panel session had a strong focus on life after university and learning on the job, with each panellist communicating how they had ended up in agriculture, key messages of the day, and why they see growth and opportunity within the industry.



Students engaging with the soil pit session.



## Visitors to IOA

Name of visitor	Visitor's organisation and country	Host details	Dates of visit
Prof Richard Smith Nicholas Warren A/Prof Andre Brito	University of New Hampshire, USA	Dr Kevin Foster	June – July 2023
Dr Noor-Ehsan Gobindram	Food and Agricultural Research and Extension Institute, Mauritius	E/Prof Graeme Martin	September 2023
Avinash Keesoony	Food and Agricultural Research and Extension Institute, Mauritius	E/Prof Graeme Martin	September 2023
Dr Nathalie Nesi Dr Anne Laperche	INRAE Rennes, France	Dr Sheng Chen	September 2023
Prof Paul Kenyon	Massey University, New Zealand	The UWA Institute of Agriculture	September 2023
Prof Shumin Hou Prof Zhongping Hao	Crop Science Institute, Anhui Academy of Agricultural Sciences, China	Dr Sheng Chen	October 2023
Svitlana Omelchuk Maryna Dzuh	Ukrainian Scientific Institute of Plant Breeding, Ukraine	Prof Wallace Cowling Dr Sheng Chen	October 2023
Shire President Bill Mulroney	Shire of Pingelly	The UWA Institute of Agriculture	October 2023
The Hon Mia Davies MLA	The Nationals WA	The UWA Institute of Agriculture	October 2023
Dr Mahantesha Banvat Nethaji Naika	Bangalore, India	A/Prof Michael Considine	October 2023 – December 2023
Anamika Chandel	ICAR-IARI, India	Prof Jacqui Batley	October to December 2023
Dr Malu Ram Yadav	Sri Karan Narendra Agriculture University, India	H/Prof Kadambot Siddique and Prof Nanthi Bolan	July 2023 – December 2023
Manoj Kumar Menon	International Competence Centre for Organic Agriculture, India	The UWA Institute of Agriculture	October 2023
Prof Paul Neve	University of Copenhagen, Denmark	AHRI	November 2023 – December 2023
Prof Jayasree Krishnankutty	Kerala Agricultural University, India	The UWA Institute of Agriculture	November 2023
Prof AK Singh	ICAR-Indian Agricultural Research Institute, India	UWA and The UWA Institute of Agriculture	November 2023
Adj/Prof John Dixon	University of Queensland	H/Prof Kadambot Siddique and Prof Michael Blakeney	November 2023
Prof Bupendra N Tripathi Prof Bhagwati C Sharma Prof Mohinder S Badwal Prof Sushil K Gupta	Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, India	UWA and The UWA Institute of Agriculture	November 2023
High Commissioner for Bangladesh Allama Siddiki	Department of Foreign Affairs and Trade, Canberra	UWA and The UWA Institute of Agriculture	November 2023
Prof Ashok Kumar Singh Prof Sushil Chaturvedi	Rani Lakshmi Bai Central Agricultural University	UWA and The UWA Institute of Agriculture	November 2023



## Awards and industry recognition

Name	Award
H/Prof Kadambot Siddique	Fellow of The World Academy of Sciences
H/Prof Kadambot Siddique	The Australian's 2023 Research Magazine 'Top Researcher' in Agronomy & Crop Science
Prof Sergey Shabala	The Australian's 2023 Research Magazine 'Top Researcher' in Botany
H/Prof Kadambot Siddique	2023 Clarivate Highly Cited Researcher (Agricultural Sciences and Plant & Animal Science)
Prof Jacqueline Batley	2023 Clarivate Highly Cited Researcher (Plant & Animal Science)
Prof David Edwards	2023 Clarivate Highly Cited Researcher (Plant & Animal Science)
E/Prof Hans Lambers	2023 Clarivate Highly Cited Researcher (Plant & Animal Science)
Prof Sergey Shabala	2023 Clarivate Highly Cited Researcher (Plant & Animal Science)
Prof Zed Rengel	2023 Clarivate Highly Cited Researcher (Cross-Field)
E/Prof Graeme Martin	Society for Reproductive Biology Life Membership
Sneha Priya Pappula Reddy	Australian Society of Plant Scientists Student Travel Award
Michael Young	UWA Department of Agricultural and Resource Economics' Award for Best PhD Thesis

## New postgraduate research students (PhD)

Student name	Topic	School	Supervisors	Funding body
Noor Ahmed Shaik	Thesis title to be confirmed	UWA School of Agriculture and Environment	A/Prof Michael Considine H/Prof Kadambot Siddique	UWA-CSC Innovating the Growth of Tropical Table Grapes Scholarship for International Research Fees
Oshadi Hettithanthrige Dona	Novel humate-based calcium formulations to ameliorate subsoil acidity	UWA School of Agriculture and Environment	Prof Nanthi Bolan H/Prof Kadambot Siddique Dr Zakaria Solaiman	UWA Omnia Specialties Ltd
Manika Rani Debnath	Engineered clay-polysaccharide nanocomposites for efficient nutrient delivery	UWA School of Agriculture and Environment	Prof Nanthi Bolan H/Prof Kadambot Siddique Dr Zakaria Solaiman	UWA-ARC Linkage Project
Yadav Padhyoti	Thesis title to be confirmed	UWA School of Agriculture and Environment	A/Prof Marit Kragt Dr Amin Mugeru A/Prof Ben White	Scholarship for International Research Fees ARC TC for Behavioural Insights for Technology Adoption
Olubukola Akangbe	Thesis title to be confirmed	UWA School of Agriculture and Environment	Dr Sebastien Allard Dr Sasha Jenkins Dr Andrea Cipollina Dr Anna Kaksonen	UWA-CSIRO HDR Scholarship Scholarship for International Research Fees
Dinh Khanh Le	Thesis title to be confirmed	UWA School of Agriculture and Environment	Prof Michael Burton Dr Abbie Rogers	University Postgraduate Award (Strategic) Scholarship for International Research Fees
Roberto Lujan Rocha	Thesis title to be confirmed	UWA School of Agriculture and Environment	Prof Ken Flower Dr Michael Ashworth Dr Catherine Borger A/Prof Nik Callow Dr Jonathan Richetti	RTP Fees Offset - Domestic Student



## Research grants

Title	Funding period	Funding body	Investigators
Investigating a novel genetic strategy for insect resistance in crops	2024-2029	ARC Discovery Projects 2024	Prof Jacqueline Batley
Control of crop-microbe symbiosis by new plant hormones	2024-2029	ARC Discovery Projects 2024	Dr Mark Waters Prof Megan Ryan Dr Philip Brewer A/Prof Caroline Gutjahr
Advancing plant synthetic gene circuit capability, robustness, and use	2024-2029	ARC Discovery Projects 2024	Prof Ryan Lister Dr James Lloyd A/Prof Wayne Reeve Dr Julie Ardley
Accelerating pulse breeding using machine learning	2024-2027	ARC Linkage Projects (LP23 Round 1)	Prof David Edwards Prof Jacqueline Batley Dr David Tabah Dr Aanandini Ganesalingam
Zero Net Emissions from Agriculture Cooperative Research Centre	2024-2034	Cooperative Research Centre and Federal Government	Prof Ben Hayes Lynne Turner Prof Philip Vercoe Prof Richard Eckard A/Prof Marit Kragt A/Prof Janelle Wilkes Oliver Frith Dr Ben Biddulph Jackie Bucat A/Prof Erik Veneklaas Dr Caitlin Moore Dr Heather Bray A/Prof James Fogarty Wes Lawrence Damon Buckle Brad Wisewould Dr Neil Canby

## National funding for net-zero ag alliance

**A new national centre to transition Australian agriculture to net-zero, healthy, resilient and profitable food systems has secured \$300 million in funding over 10 years.**

UWA is collaborating on the Zero Net Emissions (ZNE) from Agriculture Cooperative Research Centre, which will be led by the University of Queensland.

The national collaboration includes a Federal Government contribution of \$87 million to create impactful research on sustainable agriculture and drive real-world change.

The Centre aims to drive industry, community and government action to achieve Zero Net Emissions from agriculture from 2040, and below zero net emissions by 2050.

The UWA Institute of Agriculture Associate Director Professor Phil Vercoe

and UWA School of Agriculture and Environment Associate Professor Marit Kragt are bid leaders for the Livestock research program and the Value from Net Zero program.

“Agriculture directly contributes to about 16 per cent of Australia’s national emissions,” Professor Vercoe said.

“Our goal is to ensure Australia’s agricultural industries keep growing, while they simultaneously achieve zero net emissions targets.”

Associate Professor Kragt said emissions reduction needed to be profitable to ensure enduring adoption and the Centre would work closely with producers and



The logo for CRC for Net Zero Emissions from Agriculture.

industry to demonstrate solutions that created economic, environmental and social benefits.

“The ZNE CRC will harness and coordinate opportunities for rapid research, development and adoption of science and technology-led solutions, driven by our industry and government partners,” she said.

# UWA IOA 2023 Publications

## Peer Reviewed Journals

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## UPCOMING EVENTS

### Mike Carroll Travelling Fellowship Presentation Evening

Thursday 14 March  
The University Club of WA

### UWA Open Day 2024

Sunday 17 March  
Crawley Campus, UWA

### Pingelly Astrofest

Saturday 20 April 2024  
Pingelly Recreation & Cultural Centre



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Editor: Rosanna Candler  
rosanna.candler@uwa.edu.au  
The UWA Institute of Agriculture  
+61 8 6488 4717 | ioa.uwa.edu.au  
The University of Western Australia M082  
Perth WA 6009 Australia

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