



Australian Government
**Department of Agriculture,
Water and the Environment**

Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry

2020 Award Recipients



We thank our partners for their support and commitment to the 2020 Science and Innovation Awards



Wine
Australia
for
Australian
Wine



Welcome to the Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry

Recognising innovative scientific projects that will contribute to the ongoing success and sustainability of Australia's agricultural industries

The 2020 Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry are coordinated by the Australian Bureau of Agricultural and Resource Economics and Sciences, on behalf of the Department of Agriculture, Water and the Environment.

We thank the panel of judges for their significant contribution to the 2020 Science and Innovation Awards.

If you would like to learn more about the Science and Innovation Awards, visit awe.gov.au/scienceawards.

For information about ABARES, range of work and its publications, visit awe.gov.au/abares.

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From the Chief Scientist

I am delighted to present to you the recipients of the 2020 Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry. As you read their profiles I trust you will find their projects, and the creativity of their approaches to addressing current industry issues, inspiring and a positive signal for the future success and sustainability of our agricultural industries.

At this time we recognise there are current challenges for our agriculture sector and farming communities. We are working with farmers and the wider sector to make sure our policy, programs and services improve the productivity, competitiveness and sustainability of the food and agriculture industry, with immediate assistance packages and longer term programs.

The Science and Innovation Awards grants program is one way in which the department is supporting this goal and investing in the longer term success and sustainability of our agricultural industries.

I am impressed by the passion our 2020 Science Award recipients have for the agriculture sector, and the myriad of ways they are choosing to make their contribution. Their projects range from

- Implementing artificial intelligence to revolutionise quantitative assessment of abalone in production systems.
- Exploring the role of chlamydia pecorum in reproductive wastage (lamb loss) for Australian sheep flocks.
- How the 'rats of the sky' could help keep chickens healthy.
- Total volatile basic nitrogen (TVB-N) use as a freshness indicator for export quality red meat.

- Formulation of compatible coatings for on-seed delivery of nitrogen-fixing bacterial inoculants.
- Priming of cotton defence against soil-borne disease fusarium wilt and the plant-parasitic reniform nematodes using silicon.
- Development of a novel forest sub-canopy aerial robot for physical sample capture and sensor placement.
- Cost benefit analysis of fumigation treatments against brown marmorated stink bug.
- Determining spatial extent and activity of biological soil crusts in the Australian rangelands to improve grazing and pasture management.
- Determining the prevalence of avian hepatitis E virus in commercial layer flocks in Australia.
- The implementation of a water sanitation program on a commercial WA farm to improve finisher pig performance and health.

I am also inspired by the partnerships between the individual recipients, their research communities, industry supporters and our award partners.

Congratulations to our winners of the 2020 Science and Innovation Awards.



Dr Gabrielle Vivian-Smith

(a/g) Agriculture Chief Scientist
and (a/g) Chief Plant Protection
Officer

Department of Agriculture,
Water and the Environment



About the Science and Innovation Awards

The Department of Agriculture, Water and the Environment, with our Award partners, presents the Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry. The Science and Innovation Awards are a competitive grants program that provides funding for innovative research projects to benefit Australia's rural industries.

Attracting applications from young Australians aged 18-35 years, the Science and Innovation Awards aim to:

- assist primary producers to develop more competitive, productive and self-reliant industries through attracting innovative research proposals that will lead to longer term innovation in the sector
- advance the careers of young scientists, researchers, producers and innovators through national recognition and funding of their research ideas
- encourage the uptake of science, innovation and technology in rural industries
- increase interaction between the Award recipients, the Award partners, the tertiary and government sectors.

The Science and Innovation Awards commenced in 2001 and have since provided grant funding for 261 individuals, supporting projects that demonstrate a fresh way of thinking about, and resolving issues for, agriculture. Recipients can build strong networks across their industry while gaining national and international exposure for their work by presenting at conferences and seminars, and publishing papers. Ultimately each has the chance to progress in their chosen career.

In 2020 there were 11 Award categories open to applicants, each generously supported by the leading research and development corporations and industry organisations.

Successful category Award recipients were then invited to apply for additional project funding to pursue their research ideas via an extended research project - the Minister for Agriculture's Award.

Each of this year's recipients have been awarded funding to undertake their project over a 12 month period. The results from their research will contribute to the ongoing success and sustainability of Australia's primary industries. We look forward to sharing those outcomes with you.

Phoebe Arbon



RECIPIENT OF THE

Fisheries Research and Development Corporation Award

After growing up on her family's fish farm and developing a passion for aquaculture, Phoebe Arbon's Science Awards project is bringing artificial intelligence to abalone farming.

Phoebe's project will see her create an AI system that can count and measure abalone in the tank.

She explains how Australian abalone farmers currently measure the size and number of their stock manually.

"[It] involves shucking the abalone off the bottom of the tank and then assessing them," Phoebe says.

"So it's quite labour intensive... and can cause damage to the stock as well."

Instead Phoebe will develop, train and validate an artificial intelligence model that can do the work automatically.

"[It] will be able to identify an abalone from an image and then measure it," she says.

"And be able to push that data onto a report, which the farmers can access and use in management decisions."

Phoebe grew up on her parents' silver perch farm in south-east Queensland.

She studied aquaculture and mathematics before taking on her current role as a research assistant at James Cook University.

Phoebe says her system will apply a scale reference to the bottom of the tank to enable automated measuring.

It's similar to other models being developed for the prawn and barramundi industries.

Phoebe says she's looking forward to her research being available to abalone farmers.

"When I went to an abalone growers' meeting last year, they were very interested in this new technology," she says.

"So it's really exciting that I might be able to help such a huge industry in Australia."

Phoebe believes artificial intelligence is the most up-and-coming area of science today.

"It's really exciting that I get to apply that to a field that I'm so passionate about," she says.



Fisheries Research and Development Corporation



The FRDC's vision is for Australia to have vibrant fishing and aquaculture sectors which adopt world-class research to achieve sustainability and prosperity.

The FRDC recognises that it is vitally important to support young people to develop the knowledge and capabilities to assist the fishing

industry to reach its potential. Across fishing and aquaculture there are challenges, and opportunities where young scientists can make a difference, forging new frontiers and building a rewarding career.

The person we are looking for to receive a FRDC sponsored award will have a great idea, and will be keen to use this opportunity to build their networks with other researchers, the FRDC and with industry.

Visit www.frdc.com.au

Dr Thomas Clune



RECIPIENT OF THE

Australian Wool Innovation Award

Thomas Clune's Science Awards project will investigate how *Chlamydia* is impacting the health and welfare of ewes and their lambs, and develop a simple test for the disease.

Growing up on a sheep farm near Geraldton in Western Australia, Thomas developed an appreciation for the importance of animal health and welfare from a young age.

It led to a career as a veterinarian, and the start of PhD in infectious diseases recognised for causing reproductive losses in sheep.

But in conducting his research, Thomas came across one disease he believes has been overlooked—*Chlamydia*.

In a recent study on ten WA farms, Thomas found *Chlamydia* infections were present in more than half of abortion or stillborn cases.

"The role of this bacteria in reproductive wastage is largely unknown," he says.

"If we do find it is a major cause of losses, then [fixing it] can contribute to increasing the productivity of farms and improving the welfare of sheep."

The *Chlamydia* bacteria that causes disease in sheep is different to the bacteria that causes disease in humans.

It is common in the environment, and often carried by apparently healthy sheep in their gut.

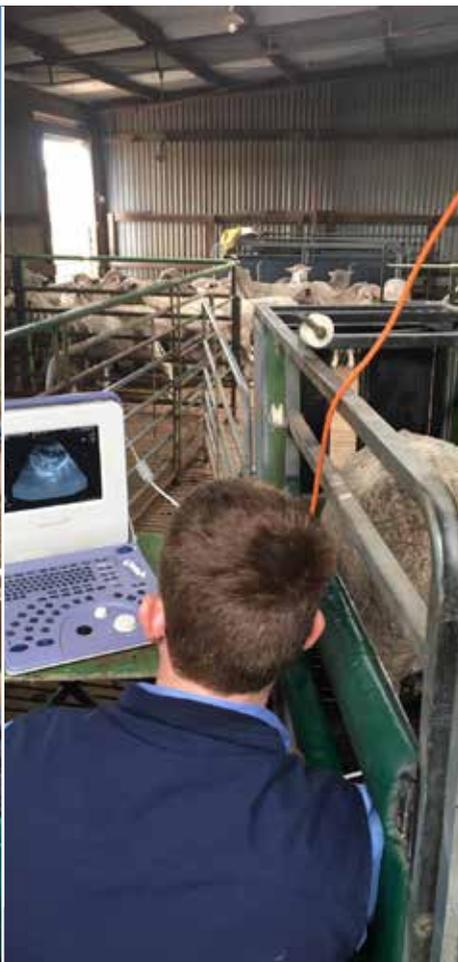
"But the way [sheep] become infected and circumstances that lead to reproductive disease for sheep is not completely understood," Thomas explains.

"That's part of my project as well, understanding that transmission cycle and then how that leads to abortions or stillbirths or the birth of weak lambs."

Thomas also plans to develop a quick, portable tool for diagnosing *Chlamydia* in sheep.

"It takes about 45 minutes to run, so [vets] can either take it out onto the farm... or take samples and take it back to the clinic," he says.

"There are other diagnostic tests available... but this would be much cheaper and have a quicker turnaround so vets can work with the farmer to make timely decisions about controlling an outbreak."



Australian Wool Innovation



Australian Wool Innovation Limited (AWI) is the research, development and marketing (RD&M) organisation for the Australian wool industry.

AWI is responsible for managing and investing levy funds received from over 55,000 levy payers and matching eligible R&D contributions from the Australian Government.

AWI invests in RD&M across the supply chain to enhance the profitability, international competitiveness and sustainability of the Australian wool industry, and to increase the demand and market access for Australian wool.

Visit www.wool.com

Dr Meagan Craven



RECIPIENT OF THE Australian Eggs Award

Meagan Craven is investigating whether pigeon milk can combat deadly *Salmonella* outbreaks on Australian egg farms.

Only three birds produce ‘milk’; flamingos, male emperor penguins and pigeons.

Like human breast milk, it offers a host of benefits to young birds—from the right nutrients to a healthy immune system and gut microbiome.

Meagan, a research fellow at Deakin University, is a world expert in pigeon milk, and believes it could help in the fight against *Salmonella* on chicken farms.

Her research has shown that feeding pigeon milk to chickens helps their immune system and gut bugs.

“It completely changed the microbiome of the chickens,” Meagan says.

Now, Meagan wants to take a family of proteins isolated from pigeon milk and test their effectiveness against *Salmonella* strains isolated from Australian egg farms.

“We want to see whether we could use these as an alternative to antibiotics in chickens,” she says.

“Because it’s been shown in mammals to target bacteria including *Salmonella*.”

Salmonella can cause severe food poisoning in humans, and outbreaks are devastating for egg producers.

Until recently, *Salmonella enteritidis* strains had not been detected on Australian layer farms.

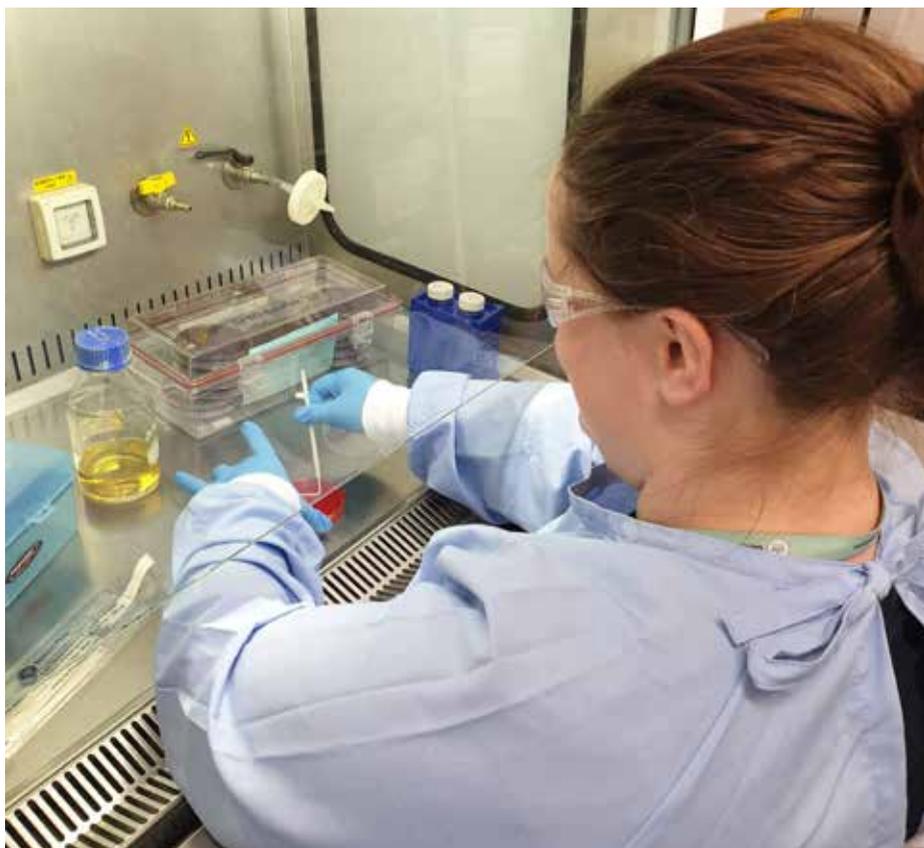
But Meagan says there have been outbreaks at more than a dozen farms in NSW and Victoria in the last two years. There are currently no preventatives or treatments for the bacteria.

“The biggest problem is that it’s really hard to get rid of once it’s on a farm,” Meagan says.

“So all these farms that have had it detected have actually shut down.

“The bacteria can hang around for more than three years... it costs the industry a lot of money.”

Meagan has long held an interest in animal health, wanting to be a vet as a child. Now she’s thrilled that she can combine her two favourite topics – pigeon milk and poultry health, and with her current research, working towards identifying further novel bioactive molecules to benefit the poultry industry.



Australian Eggs



Australian Eggs is a member owned not-for-profit company providing marketing and research and development (R&D) services for the benefit of Australian egg farmers.

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- feed and hen nutrition
- flock health and disease management
- environmental sustainability
- food safety and human nutrition
- animal welfare
- extension, adoption and technology transfer.

Visit www.australianeggs.org.au

Dr Benjamin Holman



RECIPIENT OF THE

Australian Meat Processor Corporation Award

Benjamin Holman is keeping the Australian beef industry on the front foot ahead of proposed changes to freshness standards.

Today, the freshness of Australian beef exports are measured based on microbial load and other attributes including the degree of oxidation.

But some of Australia's major export markets, including China, are poised to introduce new freshness standards based on a measure known as TVB-N, or total volatile basic nitrogen.

"It's a compound that accumulates in beef as it gets older, so its levels will increase as the gap between the cow being killed and the beef being eaten increases" says Ben, a research scientist with the NSW Department of Primary Industries.

In China, a proposed threshold would cap the TVB-N value at 15mg/100g of fresh or frozen meat products.

But Ben says the TVB-N measure was developed in fish, rather than beef.

And little is known about how it relates to current Australian standards.

"The idea of this project is to see how our traditional markers of freshness line up with the TVB-N marker," Ben says.

"If they do line up—brilliant.

"And if they don't line up, [we can] provide industry a scientific response to any potential hurdles or negotiations that might happen in the future."

Ben, who previously travelled to China as part of an exchange program for young scientists, says the comparison of freshness markers can be likened to a currency conversion.

"The idea behind this project is to help industry get on the front foot and keep its market position and market access," he says.

"To compete with other countries... we need to keep our reputation for being the steak of choice."



Australian Meat Processor Corporation



AMPC

is to provide research, development and extension services that improve the sustainability and efficiency of the sector.

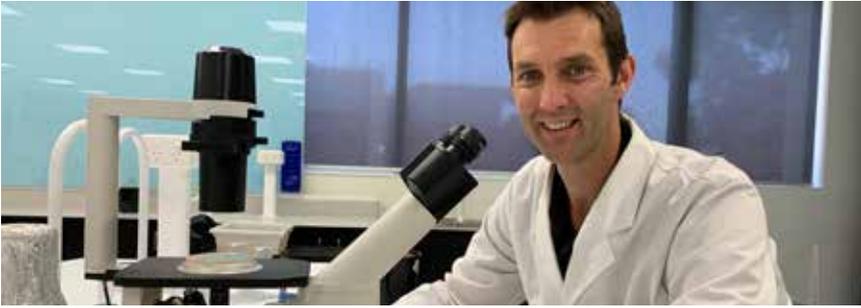
The Australian Meat Processor Corporation (AMPC) is the rural research and development corporation that supports the red meat processing industry throughout Australia. AMPC's mandate

We strategically invest red meat processor levies in research, development and extension programs aligned to targeted marketing initiatives. These programs deliver outcomes and benefits for the Australian red meat processing industry and the broader Australian community.

AMPC supports projects in processing technologies, energy & environment, food safety & meat quality, product integrity and meat science, social licence, education and capability, supply chain management, and market access.

Visit www.ampc.com.au

Dr Lee Hudek



RECIPIENT OF THE

Grains Research and Development Corporation Award

Lee Hudek's Science Award project will look to develop a seed coating that delivers helpful bacteria to crops.

Farmers have long added useful microbes, such as nitrogen-fixing bacteria, to help plants grow.

But putting bacteria in the soil takes time, and the results can be patchy.

Lee, a postdoctoral research associate at Deakin University, is working on a better way—coating the seeds in the bacteria needed for plants to thrive.

He hopes it will overcome some of the supply chain bottlenecks stopping new bacterial strains getting to farmers, and improve the efficiency of existing inoculants.

"It's a pretty big challenge to ensure microbial inoculants are delivered to farm gate in sufficient viable numbers at the time of sowing," he says.

"And then to have the positive benefits from the inoculant throughout germination and seedling development."

Lee's project will focus initially on nitrogen-fixing bacteria in pasture crops.

But if it works, the technique could be applied to different legume crops or on other potential plant growth promoting bacteria for wheat and other broad acre cereals.

"We're trying to deliver a product that better services the industry," Lee says.

"Really what we'd like for all crops is just the one-step process on farm for sowing and inoculation, that's what the on-seed coating of these microbes delivers."

Lee says it's great to contribute to increased agricultural productivity in a way that's both economically and environmentally sustainable.

"Obviously agriculture is a business, we want to make sure that that business is financially secure and stable," he says.

"I think all Australians have a vested interest in making sure that our agricultural exports are at their maximum capacity.

"And if we can do so in a sustainable manner, so we can continue to benefit from those export commodities for generations to come, that's pretty important."



Grains Research and Development Corporation



Investment in grains research, development and extension (RD&E) over the past two decades has had an enormous impact on the Australian grains industry. The gross value of grains production has tripled from approximately \$5 billion to approximately \$15 billion in that time.

RD&E has led to the creation of new, high value crop industries in Australia including canola, chickpeas and lentils, and a doubling of water use efficiency.

Many new constraints to grain production have also evolved over this time including new or increasingly prevalent pests, diseases and herbicide resistant weeds. Grains RD&E has provided grain growers with the tools and solutions that effectively manage these evolving constraints.

The GRDC supports the industry through investing \$174 million in around 760 RD&E initiatives to create enduring profitability for Australian grain growers.

Visit www.grdc.com.au

Dr Dinesh Kafle



RECIPIENT OF THE

Cotton Research and Development Corporation Award

After working in Asia, Europe and the Middle East, Dinesh Kafle is turning his hand to helping the Australian cotton industry fight disease.

Dinesh, an agriculture scientist at Queensland's Department of Agriculture and Fisheries, is set to investigate whether cotton plants can be primed with silicon to boost their defences against fusarium wilt and reniform nematode.

His project will germinate cotton seeds in soil with added silicon, before infecting them with the diseases.

Dinesh says that while silica is present naturally in the soil, it is difficult for crops to absorb.

He plans to examine if there is any priming effect when plants are given soluble silicon as seedlings.

Dinesh says very little work has been done on silicon in the past.

"It's a novel approach," he says. "So, if successful, it's going to be really a great tool... for growers to consider while managing the disease."

The study will trial cotton seeds grown in both seedling trays and pots, to test whether transplanting silicon-primed seedlings provides better defence than direct sowing.

Dinesh says the concept of priming itself is also relatively new, having been studied mostly in ecological settings.

"I'm trying to see if the priming has any implications in agriculture, so it's really exciting," he says.

Dinesh grew up in a small village in Nepal, living next to an agricultural research station whose field trials would inspire him for life.

He trained in Germany and Israel, before turning his attention to Australia cotton in 2018.

Dinesh says it's been amazing to work in such a large, profitable and interesting industry.

"It's a lot of opportunities," he says. "I'm still learning so many things, and it's an exciting field of agriculture."



Cotton Research and Development Corporation



CRDC
COTTON RESEARCH AND
DEVELOPMENT CORPORATION

The Cotton Research and Development Corporation (CRDC) invests in world-leading RD&E to benefit Australia's dynamic cotton industry. We invest in innovation and transformative technologies and programs to deliver impact.

We invest along the entire cotton supply chain – from growers to customers.

One of our core strategic goals is building the adaptive capacity of the cotton industry: ensuring we are enhancing our scientific research capability, acquiring new talent and facilitating the local and global exchange of ideas.

CRDC has long been a supporter of the Science and Innovation Awards, and we continue our involvement to help support and reward young scientists for their exploration of concepts, and creation of new knowledge in the pursuit of scientific breakthroughs.

Visit www.crdc.com.au

Sean Krisanski



RECIPIENT OF THE

Forest & Wood Products Australia Award

Mechanical engineer Sean Krisanski is developing a flying robot to collect samples from the forest canopy.

Currently, collecting samples from the canopy involves hiring an arborist to climb trees and trim the branches with a saw.

It's expensive and time-consuming, and it can be dangerous.

But the University of Tasmania's Sean sees a better way.

He wants to develop a drone with a saw attached that can fly into the canopy and collect a sample within minutes.

One of the major challenges is making sure the drone can tolerate collisions.

"I will be designing a 3D-printed airframe which will protect the rotors and make the system fairly robust to the inevitable collisions with branches," Sean says.

"There will be a small saw integrated into the airframe for the actual cutting."

As part of his PhD research, Sean has already built several drones that fly under the tree canopy.

Those drones are designed for remote sensing—using lasers and cameras to create 3D maps of the forest.

Sean has also previously built a drone to map dangerous areas in underground mines.

He says he's excited to bring the technology to a new field, and give scientists access to samples that until now haven't been feasible to collect in most cases.

"There's a lot of research that you simply can't afford to do because it's hard to justify paying someone to climb a single tree just to get a small branch or leaf sample," Sean says.

"Collecting samples from hundreds of trees is not really a practical option currently."

Sean will be collaborating with other researchers in the forestry sector as well as with forestry companies for field trials.



Forest & Wood Products Australia



Forest & Wood Products Australia Limited (FWPA) is a not-for-profit company that provides national, integrated research and development services to the Australian forest and wood products industry.

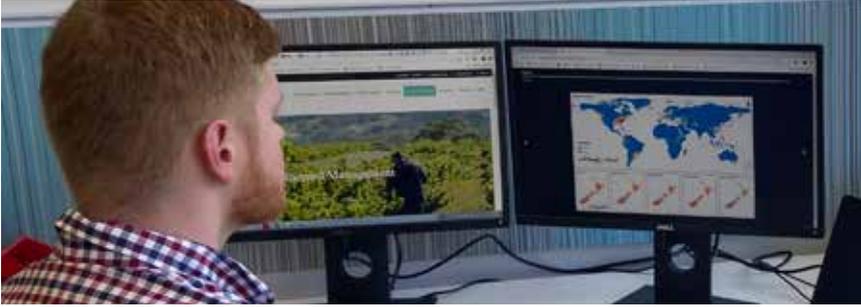
We are committed to helping the forest and wood products industry to be collaborative, innovative, sustainable and competitive against other industries and products available in the marketplace.

We support research and development that promotes internationally competitive and environmentally sustainable practices. We promote activities that enhance employment opportunities and contribute to growing Australia's reputation as an innovative producer of high-quality forest and wood products.

Our mandate is determined by our members, who comprise wood processors, forest growers, and Australian importers of forest products.

Visit www.fwpa.com.au

Hamish McKirdy



RECIPIENT OF THE

Wine Australia Award

Hamish McKirdy will use economic modelling to help tackle one of the wine industry's most feared invasive pests.

The brown marmorated stink bug is the stuff of winemakers' nightmares.

If introduced to Australia, the bug could severely damage vines, impacting the size and quality of the harvest.

Hamish is a PhD student and research assistant at Murdoch University working to find the most effective fumigation treatment for the brown marmorated stink bug.

The pest is typically managed by fumigating high-risk shipping containers when they arrive at Australian ports.

But Hamish felt a piece was missing—being able to weigh the cost of treatment against the likelihood and impact of an invasion.

“The bug was being described as highly-destructive, but no one could give me an exact, quantifiable number as to the amount of damage they were doing,” he says.

“It was very disjointed and there were just so many gaps in the information.”

Hamish will use the Award to learn from one of the country's top biosecurity risk experts, and create a cost-benefit analysis for the wine industry.

He plans to model the price of treating shipments—including the cost of the chemicals, application and costs of flow-on effects.

These could be shipments of general goods as well as winery-related material such as barrels.

This will be weighed against the risk and potential cost of an invasion.

“There's such a strong financial aspect to any biosecurity measure that for me this is key to understanding the whole picture,” Hamish says.

“Going forward, I'll be able to not only recommend the treatment, but I also back it up with the hard data to say, financially, this is going to be the most viable method for both industry and government.”



Wine Australia

Wine Australia for Australian Wine

Wine Australia supports a prosperous Australian grape and wine community by investing in research, development and extension (RD&E), encouraging growth in domestic and international markets and protecting the reputation of Australian wine.

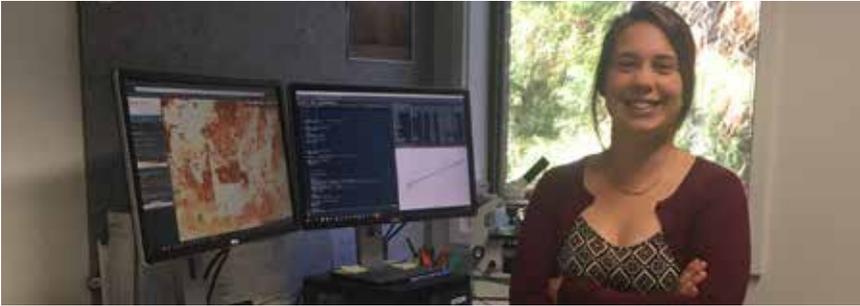
Our long-term goal is for Australia to be recognised as the world's pre-eminent wine producing country, and our support of the

Science and Innovation Awards is one example of our commitment to the development of the next generation of game changers, researchers, experts and leaders who will drive the Australian grape and wine community's future.

We are funded by grapegrowers and winemakers, through levies and export charges, and the Australian Government, which provides matching funding for R&D investments.

Visit www.wineaustralia.com

Anna Reboldi



RECIPIENT OF THE

Meat & Livestock Australia Award

Anna Reboldi's Science and Innovation Award project is using satellite imagery to detect biological activity in the soil.

Biological soil crusts are communities of small organisms like cyanobacteria, lichen and mosses that live in the top few millimetres of soil.

"They're very important because they recycle nutrients from the atmosphere and from organic matter back into the soil," explains Anna, a research officer at the Australian National University.

"They provide nutrients for the plants and pastures for livestock. They also have really important roles for hydrology."

These are fundamental for healthy pastures and, therefore, the livestock industry.

Anna explains that simply looking at paddocks, biological soil crusts look the same as bare soil.

But immediately after rain, the crusts "light up" as a brown-green colour that can be seen in satellite imagery.

"The advance in technology—now we have high temporal resolution satellites right over Australia," Anna says.

"We have images every 10 minutes. So we'll be able to pick up that signal of the crust reactivating... after rainfall."

Anna found a passion for sustainable land and soil management after moving to Australia from Italy eight years ago.

"I feel so privileged about having had this chance, I don't want to waste it," she says.

"I really wanted to give back to Australia because it's been really kind to me. I've had so many opportunities."

Anna also loves research in food security, and hopes to one day work with a group like the UN Food and Agriculture Organization.

"This [project] is a step in that direction," she says.

"It's theoretical but has a tangible outcome of producing maps... that can be fed back into farm productivity and global carbon emissions.

"I find it really rewarding and it's my way of giving back."



Meat & Livestock Australia



Meat & Livestock Australia Ltd (MLA) is a producer-owned, not-for-profit organisation that delivers research, development and marketing services to Australia's red meat industry.

MLA strives to be the recognised leader in delivering world-class research, development and marketing outcomes that benefit Australian cattle, sheep and goat producers.

Working in collaboration with the Australian Government and wider red meat industry, MLA's mission is to deliver value to levy payers by investing in initiatives that contribute to producer profitability, sustainability and global competitiveness.

Visit www.mla.com.au

Dr Angela Scott



RECIPIENT OF THE

Australian Eggs Award

Veterinarian Angela Scott accidentally discovered a poultry disease not commonly seen in Australia since the 1980s. Now she wants to find out more about it.

It started with a chance discovery in South Australia.

Angela, a poultry food production officer with Biosecurity South Australia, was at a farm where the chickens weren't laying well, and some were dying.

In post-mortems, the chickens looked like they had a condition called spotty liver disease.

But a test for the bacteria that causes spotty liver disease came back negative, and the birds weren't responding to antibiotics.

"To me, that was just saying... there's got to be something else that's causing this problem," Angela says.

After an offhand comment from her supervisor, Angela secretly tested for a virus commonly seen in meat breeders in the 1980s—big liver and spleen disease.

To her surprise, it came back positive.

"We had no idea what that meant," Angela says.

There is very little known about the disease in Australian layer birds, and it hadn't been seen as a problem in meat breeders for decades.

Now, Angela wants to work with poultry vets around the country to find out if other farms are affected by big liver and spleen disease.

"There's virtually nothing known about it in the layer side of things in Australia," she says, though there have been recent reports of cases in China and parts of the United States.

Angela admits specialising in poultry was an unusual choice out of vet school, after being introduced to the commercial poultry industry by her poultry lecturer. And with his support, Angela completed her PhD at the University of Sydney in avian influenza risk assessment.

"There's a whole world out there committed to improving poultry health and welfare, and most importantly, producing safe food for people," she says.

"And that just really ticked all the boxes with me in being able to contribute to something that can benefit many people and animals."



Australian Eggs



Australian Eggs is a member owned not-for-profit company providing marketing and research and development (R&D) services for the benefit of Australian egg farmers.

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- flock health and disease management
- environmental sustainability
- food safety and human nutrition
- animal welfare
- extension, adoption and technology transfer.

Visit www.australianeggs.org.au

Dr Diana Turpin



RECIPIENT OF THE

Australian Pork Limited Award

Veterinarian Diana Turpin is investigating whether improving water quality can boost productivity and animal health on pig farms.

Diana, a lecturer at Murdoch University, is studying the impact of a water sanitation program on a commercial farm south of Perth. While the Australian pig industry has invested significant research dollars and time into exploring nutritional, health, genetic, environmental and behavioural strategies, water sanitation has not yet been a major area of focus.

She'll be looking at whether the pigs grow faster and have fewer inflammatory markers when the water quality is improved.

"Water sanitation is quite an expensive process," Diana says.

"So the producer really needs to know that they're going to see improvements in their pigs as a result.

"It also has the potential to reduce antibiotic use on-farm. If we're reducing pathogen load in the water, improving the quality, then potentially the pigs will be healthier as well."

Diana also plans to undertake a cost-benefit analysis.

"We'll know the cost of installing the system, as well as continuously sanitising the water," she says.

"Then we should be able to estimate improvements in production through feed conversion ratio figures."

The project comes as producers and veterinarians are trying to promote antimicrobial stewardship on farms.

"It is an important issue for industry," Diana says.

"You can't remove the support mechanisms of antimicrobial use on farm without making other changes.

"So improving biosecurity and improving hygiene are of some of the key things that we can do."

Diana says she's lucky to work in both academia and private practice.

"It gives me an opportunity to be on farm and find out what producers are really concerned about," she says.

"But then also have the opportunity to provide empirical data to industry to help improve production practices and animal welfare."



Australian Pork Limited



Australian Pork Limited (APL) is the national representative body for Australian pork producers, and is located in Barton, Canberra.

APL is a producer-owned not-for-profit company delivering integrated services that enhance the viability of Australia's pork producers. APL delivers integrated marketing, innovation, and policy services through the pork supply chain, in association with key industry and government stakeholders,

and aims to address five core objectives:

- growing consumer appeal
- building markets
- driving value chain integrity
- leading sustainability
- improving capability.

APL is primarily funded through statutory pig slaughter levies with additional research-specific funds provided by the Australian Government. All levy paying producers are entitled to free membership with APL and those who aren't required to pay levies can apply for associate membership.

Visit www.australianpork.com.au



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