26 March 2025

Welcome to the March 2025 Phytogen!

This month is a special issue: Women shaping the future of plant science in Australia. We are grateful to have two amazing guest editors for this issue Beth Loveys and Alison Bentley. In this issue, we have Conversations between early carrier scientist and established researchers, and Research Profiles of women making an impact with plant science research. We hope you enjoy this special issue we put together to celebrate International Women's Day.

Global Plant Council (GPC) webinar showcases one of our own! Prof Danielle Way (ANU) will be presenting on the effects of climate change on forests and crops.

The editorial team **accepts contributions anytime** for publication in Phytogen. Please get in touch with editors Raz (razlin.azman@csiro.au) or Lucas (L.Auroux@latrobe.edu.au) if you are interested in contributing to Phytogen.

Reminder: The new ASPS website is currently underway, and we need plant science images! Consider sending us your plant science-related research photos to be used on the new website. For copyright reasons, please do not send any images that have been published or that you are planning to publish. Images for consideration for the new website can be sent to Phytogen editors or Janet Wheeler.

Women shaping the future of plant science in Australia

Celebrate women: today and everyday

March 8th marks International Women's Day, a day dedicated to women's rights. Theresa Malkiel is credited as the founder of the International Women's Day movement, having organised its precursor, National Women's Day in the United States in 1909. It is both sobering and inspiring to realise that the movement has existed and been driven forward by the courageous and unwavering passion of many women and allies, for so long. At a time when changing politics is attempting to push back against important progress in promoting diversity, equity and inclusion we feel it is timely and important to highlight just a few of the female scientists shaping Australian plant science (and science more broadly). Women have long contributed to plant sciences around the world. Beccy Saunders experimented with Biscutella laevigata providing evidence of Mendellian segregation, Barbara McClintok revolutionised understanding of transposable elements in maize and Jean White-Henry developed biological controls for prickly pear but to name a few. This continues today, with the women we highlight here, and many others who you will know in your institutions, organisations and communities, all making diverse and important contributions to plant science. Here we take a wide view of plant science: from the lab, to the glasshouse, to the field, and into many spaces above and beyond. In this respect it is notable that as well as being an equality activist, Theresa Malkiel was an advocate for education. It is therefore fitting that we showcase several women in our community and across career stages who are dedicated to training and empowering the next-generation. We hope that you enjoy this special issue celebrating women shaping the future of plant science in Australia and that you take it as an invitation to acknowledge and support the women around you, today and everyday.

Beth & Alison

Meet our Guest Editors



Before becoming an Education Specialist, Beth Loveys had a traditional path in academia. She gained her PhD in plant ecophysiology in 1998. Her postdoctoral positions at the University of York (UK), and then at the Australian National University, examined the effects of climate change on plant growth, specifically temperature elevated CO2. In her current position Beth supports the next generation of Agricultural Science and Viticulture and Oenology students in the School of Agriculture Food and Wine at The University of Adelaide. Improving learning outcomes and student engagement has been Beth's motivation in recent years. Beth's success has been recognised by: Office of Learning and Teaching Citation for Outstanding Contribution to Student Learning, SA Science STEM Educator finalist, Stephen Cole the Elder Award for Excellence & Vice Chancellors and Presidents Award for Excellence & the Australian Awards for University Teaching.



Crop scientist Alison Bentley's research aims to understand the plant processes that can be used as an engine-room to drive agricultural productivity and build climate resilience for a more food secure future. Alison works primarily on major staple cereal crops given their global significance and has experience in a range of research environments in Australia, Vietnam, the USA, the UK and Mexico. Alison has a doctorate in agricultural science and a PhD in agriculture from The University of Sydney. She founded and leads Women in Crop Science, a network to boost connections, increase visibility, and foster greater gender equity in crop science. Alison is a passionate science communicator and a Superstar of STEM, aiming to open doors for more women to pursue and thrive in STEM careers. This month sees her move from her current role as a Research Group Leader and Deputy Director of the Agrifood Innovation Institute at the Australian National University to become the Deputy Director, Science in Agriculture and Food at CSIRO.

Conversations

There are so many amazing women working across the breadth of Australian plant sciences at all career stages. Although it isn't possible for us to showcase them all in this Special Issue, we wanted to introduce you to a range of women from different backgrounds working in plant science across the country. To do this we recruited a batch of brilliant early career scientists who we co opted into having a chat with women within and beyond their networks. Here's what they heard.

Sadia Majeed met Dr Rachel Walshe



Sajid Majeed (L) meet with Dr Rachael Walshe(R)

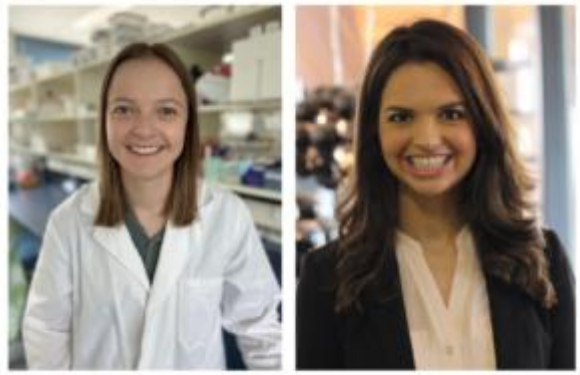
I am a PhD student in the ARC Training Centre for Future Crops Development at the Australian National University. I completed my training at The Islamia University of Bahawalpur in Pakistan, where I also worked as an Agriculture Officer in the Department of Agriculture Extension. In 2023, I moved to Australia to begin a PhD in the Furbank lab, focusing on improving canola productivity by enhancing photosynthesis. My research explores genetic and physiological strategies to optimize carbon assimilation and growth efficiency in canola, with the goal of increasing yield potential under future climate scenarios.

I had the opportunity to talk to Dr Rachael Walshe, a food systems researcher and educator at the University of Canberra and a Project Officer at Sustain, a health promotion charity and social enterprise. We met as participants on an International Women's Day panel at the ANU celebrating the women shaping the future of agriculture. Rachael shared the motivations behind her work on community gardens as crucial spaces for food resilience and engaging the next generation, particularly in urban environments. She highlighted how important it was for her to ensure that people, especially children, can eat and feed themselves and develop pride in growing things and eating them. Beyond community gardens, Rachael shared that her favourite plant is currently purslane (*Portulaca oleracea*), an invasive but edible weed. Racheal is keen on wild and urban foraging and purslane is currently top of her list as a resilient, under-valued resource (she enjoys it pickled). Rachael's father, a rebel and disruptor, has played an inspiring and influential role in her career, growing up on a 100-acre organic garlic farm in the bush embedded in Rachael a love for hands-on food production. Meanwhile her Pop, a medical doctor, conveyed the importance of systemic change and the need to start with listening.

Connect with Sadia: Sadia Majeed | ANU Research School of Biology

Connect with Rachael: Rachael Walshe | LinkedIn

Dr Alison Gill met Dr Tatiana Soares de Costa



Dr Ali Gill (L) chatted with Dr Tatiana Soares de Costa (R)

I am a Postdoctoral Research Fellow with the ARC Centre of Excellence in Plants for Space at the University of Adelaide. My interests include plant physiology, optimising photosynthesis to improve crop productivity, and plant responses to abiotic stress, with a particular focus on controlled environment agriculture. I chatted with Dr Tatiana Soares da Costa, an ARC Future Fellow and Head of the Herbicide and Antimicrobial Innovation Lab at the University of Adelaide. Coincidentally, both Tatiana and I had inspirational female year 12 teachers that ignited our interests in science and led us both to pursue a Bachelor of Science. Though Tatiana's background is in drug discovery, biochemistry and chemistry, her career path has taken her into novel herbicide development by leveraging expertise she had gained in biomedical research. Tatiana describes her career journey as "non-traditional", with experiences in both academia and industry. She credits her transferable skills developed in drug discovery with helping to transition into herbicide research, highlighting the shared biochemical building blocks of plants and bacteria.

During her career, particularly as she moved into plant science, Tatiana has been grateful for the mentorship and support of many female plant scientists who provided advice and training. She is most motivated by teaching and mentoring students to help shape their journey. I was especially inspired by her optimism and willingness to take risks, both of which have led into a career she could never have imagined. Tatiana's advice is to not be disheartened by negative results and setbacks but rather embrace them as opportunities for new directions.

Connect with Ali: @aligill_ (X), @aligill.bsky.social (Bluesky), www.linkedin.com/in/ali-gill-plantscience

Connect with Tatiana: @Tatiana_Biochem (X), @tatiana-biochem.bsky.social (Bluesky), www.linkedin.com/in/dr-tatiana-soares-da-costa-7061ba120

Hanh Vo met Dr Tory Clarke



PhD candidate Hanh Vo (R) and Dr Tory Clarke (L)

As a woman who just started her research journey working on plant responses to low humidity at UTAS, I'm curious about what's waiting ahead. I had a wonderful catch up with Dr Tory Clarke, a plant physiologist working in sustainable agriculture at UTAS Tasmanian Agriculture Institute. She was my summer research and Honours supervisor at ANU, now a dear friend of mine, and I wanted to talk more with her about being a woman in science.

We started off with a couple of general questions to prompt discussion and soon got sidetracked into the pros and cons of working in academia on the small island of Tasmania. We agreed it's often a double-edged sword, and navigating academia is both challenging yet exciting and sometimes rewarding. For instance, being at the only University on an island can be limiting, but because we are so far away, surrounded by nature, we can often escape the politics and just focus on our research. Similarly, academia doesn't offer the stability of an office job, so you're constantly worrying about the next grant or where to find your next position, but it also gives you flexibility in your day-to-day work, and there's excitement as a new project or job can open up new possibilities and ideas.

We talked about how science can feel a bit isolating: sometimes it is just you and a plant, and you don't really share with anyone about your struggles. A grant application is rejected, you get negative feedback on a manuscript, or you feel left behind after career breaks. You look around and see that everyone else seems to be doing much better than you: this person is publishing another paper, and that person just got a permanent position. The imposter syndrome kicks in, and you don't want to tell anyone, because what if you just aren't actually good enough? In academia, it's hard not to feel inferior when we are constantly judged and rated for "success". But if you are brave enough to share your challenges, you realise everyone has struggles, and we're all just trying to do our best. Maybe you feel brave enough to ask for mentoring from a woman who balances kids and her career, or a colleague who's also moved across the world to do science in a new language? We both agreed that the mentorship we've had from women who have navigated these waters too has been a huge part of our story. So find the people who lift you up with them, find other women, and speak up about what needs to change. Maybe your story will help someone else feel like they belong here too?

Connect with Hanh: @HanhPlantGene (X), @hanhplantgene.bsky.social, https://www.linkedin.com/in/hanh-minh-vo10/

Connect with Tory: @Curious_Tory (X), https://www.linkedin.com/in/tory-clarke-b30940173/

Gabriella Jessica and Eleanor Imlay met Professor Christine Beveridge



L to R: Gabrielle Jessica and Elenor Imlay chatted to Prof Christine Beveridge

Professor Christine Beveridge is not only an accomplished researcher but also an enthusiastic and welcoming presence, no small feat in the rush of today's busy lifestyle. She is a fellow of Australian Academy of Science, an ARC Georgina Sweet Laureate Fellow, a Clarivate Highly Cited Researcher, a former President of the International Plant Growth Substances Association, and the Director of the ARC Centre of Excellence for Plant Success in Nature and Agriculture. Her work seeks to understand the developmental processes underlying shoot growth and dormancy. Highlights from this research include uncovering the roles of strigolactone and sugar signalling in branching. More recently, Christine has been excited to develop a working model to understand how different genetic and physiological networks co-contribute to shoot development. We were lucky to be able to sit down with her and discuss her experience as a woman in research.

Christine came to science in a non-linear fashion. In an era where women embarked on traditionally feminine career pathways, she enrolled to study teaching at university only to find "through processes of elimination" that she enjoyed the natural sciences. Her supervisor ignited her fascination with plants' intelligence and adaptability, and she began her journey as a plant scientist. She views research as an exploration, and her enthusiasm leaves us with the impression that no barrier cannot be re-framed as an opportunity. Chrisitine remarks that she perceives one of the biggest challenges for early career researchers today is the feeling of overwhelm that comes from entering a well-established field saturated with data from new technological advances. Simultaneously, she highlights how these same technologies have encouraged people to collaborate and find community in their work, thereby promoting a shared curiosity and passion for any given field.

When asked about her advice for women in research, Christine stresses the importance of endurance, authenticity and enjoying what you do. She draws inspiration from her peers in as much as her predecessors by appreciating and learning from their strengths. "I think what happens as a consequence of that [authenticity] is that everyone's got a unique take on what's going on in science. I think it's worth remembering that you really do bring that unique perspective… I really believe that if you're bringing a true self to work, you're going to do your best work.". As our interview draws to a close, Christine directs us to the 'Women in Research" project led by Professor Sharon K. Parker. It's a choice that draws into sharp focus the kind of leader Christine is, one who celebrates the achievements of those around her and gracefully inspires us towards a common goal.

Gabriella Jessica and Eleanor Imlay are PhD candidates at the University of Sydney, where they work to uncover the role of TALE homeodomain transcription factors in Brassicae leaf

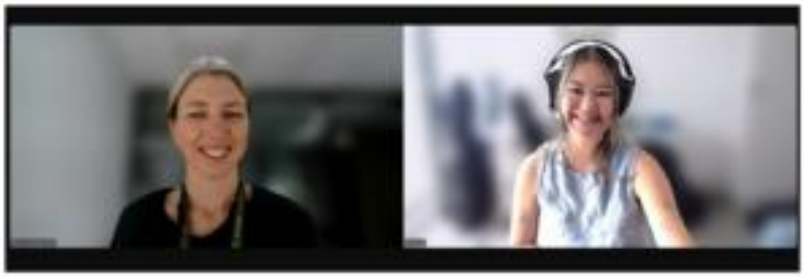
development. They are supervised by Associate Professor Mary Byrne, who inspires them as a woman in science every day.

Connect with Eleanor: https://www.linkedin.com/in/eleanor-imlay-8128ba199

Connect with Gabriella Jessica: https://www.linkedin.com/in/gabriellajessicausyd

Connect with Christine Beveridge: https://www.linkedin.com/in/christine-beveridge-89947783

Amy Liu met Dr Kim Johnson



PhD candidate Amy Liu (R) met up with Dr Kim Johnson (L)

Hi Phytogen readers! I'm Amy, a second year PhD candidate investigating the regulation of nicotianamine biosynthesis genes in soybean, in the Plant Nutrition and Plant Cell Signalling Labs at the University of Melbourne. In my second year of my BSc, I was inspired by the wonders of plant genetics, and how we can use what we know about their environmental adaptations to develop better crops to battle ongoing worldwide food crises. I am particularly interested in biofortification – enhancement of the nutritional value of staple crops to better our diets. I have recently had the wonderful opportunity to interview an established plant scientist in this area – Dr Kim Johnson from La Trobe University – who currently works within the Institute for Sustainable Agriculture and Food. Kim started her career graduating with a PhD in plant cell glycoproteins from Melbourne University, then conducted postdoctoral research at the University of Edinburgh and the John Innes Centre. Afterwards, she moved back to Melbourne University as part of an ARC Centre of Excellence, researching cell wall integrity sensing. In 2018, Kim started her own lab at La Trobe University where she currently investigates a plethora of questions regarding changes in the cell wall in response to abiotic and biotic stress tolerance, flowering time regulation, and secondary metabolite production.

In our conversation, Kim and I touched on many topics, but two things stood out to me during our interview which will be our focus here. First was our shared ethos that collaborating with like-minded people in our areas of interest is a crucial part of staying engaged in our career paths. Working with wider general audiences, and students just starting out has been extremely rewarding for Kim, as she understands the importance of her community role in disseminating opportunities for keen future scientists. Furthermore, collaboration with other researchers has been a highpoint for Kim, the opportunity to work and converse with academics, and the privilege of being able to continuously learn new things has helped shape her journey. I have personally always likened the age-old adage, "it takes a village" to not only mean raising children but also in research careers, and it's comforting to hear that still stands even after a PhD.

Second was our shared love for plants, I've always admired those that have found a passion and are able to make careers out of them. Kim is one of those people, with her endless love of

learning and curiosity influencing her career journey, she has not lost her sense of awe regarding the incredible things that plants do. She notes that there is still so much we don't know about our plant friends and endeavours to find out as much as she can (all the while juggling the responsibilities of running a lab, teaching at the University, and having a family!). Kim cites the driving forces for her career are knowing that her research can have an impact on the world, as well as the freedom of being able to ask and answer her own questions. These motivators for her career resonate greatly with me, I think back to my own experiences where I was fascinated by all the mechanisms plants employ for environmental adaptation and how we can use this to our advantage, and I am reminded that despite my own fears and anxiety over choosing this difficult career, it is an endeavour worth pursuing. Kim left me with some parting advice, for me and the rest of the future generation of plant scientists – be passionate, and make sure you enjoy what you're doing in this life, it makes all the trials and tribulations that much more worth it.

Connect with Amy: https://www.linkedin.com/in/amy-liu-721479188/

Connect with Kim: https://www.linkedin.com/in/kim-johnson-18478577/

Dr Nipuni Peththa Thanthrige met Dr Rebecca Thistelwaite



Dr Nipuni Peththa Thanthrige (L) chatted with Dr Rebecca Thistelwaite (R)

As a plant molecular biologist and postdoctoral research fellow at the Institute for Molecular Bioscience, University of Queensland, I am passionate about harnessing plant biotechnology for sustainable solutions. My research at the ARC Centre of Excellence for Innovations in Peptide and Protein Science focuses on using plants as biofactories to produce next-generation peptide-based medicines, including anti-malarial therapeutics. Through molecular farming, we aim to develop scalable plant-based systems for pharmaceutical and agricultural innovations, addressing both global health challenges and sustainable agriculture. My PhD research at Queensland University of Technology focused on improving the resilience and productivity of chickpea by identifying novel molecular mechanisms that enhance nodulation and abiotic stress tolerance without compromising yield. I have since expanded my expertise to include crop species such as sorghum, soybean, cowpea and mungbean in my postdoctoral work. My broader interests lie in molecular farming, genetic engineering, crop improvement and sustainable agriculture.

As part of this special issue, I had the pleasure of interviewing Dr. Rebecca Thistlethwaite, a dedicated plant breeder and research associate at the University of Sydney's Plant Breeding Institute in Narrabri. With a PhD in wheat heat tolerance, Dr Thistlethwaite has devoted her career to developing climate-resilient crops. Her current research focuses on breeding wheat varieties that can withstand high temperatures and drought—an increasingly urgent challenge

as global temperatures rise. She is deeply motivated by the goal of sustainable food production and values working closely with farmers and industry partners to ensure her research translates into real-world impact. She is particularly passionate about international collaborations, helping introduce hybrid wheat technologies to developing countries such as Pakistan, Bangladesh, and Ethiopia. She finds immense fulfillment in training scientists in these regions and seeing agricultural advancements take root. When asked about her greatest influences, Dr Thistlethwaite credits her family, who encouraged her to pursue a meaningful and sustainable career along with her supportive team, and the broader agricultural community. She also acknowledges the vital role of growers, whose challenges and insights drive her research forward. For Dr Thistlethwaite, the most rewarding part of her job is working with a diverse range of people. She enjoys learning from farmers, industry experts, and fellow researchers, emphasizing that knowledge exchange goes both ways. While she appreciates lab work, she prefers the field, where she can directly engage with industry stakeholders and witness the real-world impact of her research. Her advice to the next generation of scientists is to be confident in forging their own paths: "If you can't follow in someone's footsteps, do it yourself." She encourages young researchers to ask questions, build strong networks, and develop the communication skills needed to translate research into real-world solutions. With her strong industry ties, international impact, and commitment to agricultural innovation, Dr Thistlethwaite is shaping the future of Australian plant science—driving innovation in wheat breeding and sustainable agriculture.

Connect with Nipuni: https://www.linkedin.com/in/nipuni-thanthrige-9939788a/

Connect with Rebecca: https://www.linkedin.com/in/rebecca-thistlethwaite-19426354/?originalSubdomain=au

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Research Profiles: W**omen delivering plant science impact**

What is plant science? Where does the discipline start and end? As an education professional and a crop scientist we are both connected to some degree in the core of plant science but our work also embraces other disciplines and scales from the classroom, lab, field and beyond. In our minds, plant science is a broad church and everyone is invited – the more the merrier as we seek to tackle some of the big challenges facing the world. Here we highlight the work, motivations and advice of some of the women in Australian plant science who inspire us. This includes people working directly in plant sciences, but also in a range of plant science-aligned areas. As the challenges facing the planet become more complex it is important that we look for opportunities to maximise the potential reach of our understanding of plants, their environmental impacts, and their transformative potential. We hope that you enjoy reading these profiles of amazing women shaping the future of plant science (and beyond) in Australia.



Meet inspiring women shaping the future of Australian plant science. Top row L-R: Beth Penrose, Eloise Foo, Bonnie Armour. Bottom row L-R: Sophie Peterson, Xiaoxiao Zhang, Marta Peirats-Llobet

Beth Penrose is an Associate Professor at Charles Darwin University in the Northern Territory. Her work is focused on improving the sustainability and profitability of pasture and livestock systems in Australia and Asia.

What does your job involve? My job is super varied – I can have 5 meetings a day about different things! Generally, there's a lot of mentoring and supervising research students, field work, lab work (though less so nowadays), meeting with industry to co-develop research, data analysis and writing papers and grants as well as presenting results to the public, industry and other scientists.

What motivates you? I wrote myself a 'Research philosophy' a few years ago – I like to do cool science that helps people/the world with kind people…. that's what motivates me.

What do you see as the biggest opportunities for Australian plant science? Agriculture, forestry and aquaculture are such important industries in Australia – there's so many opportunities to do awesome plant science in any of those industries. Also, Australia is a botanist's dream – there are so many plants we know almost nothing about. The country is our oyster!

What is your favourite piece of advice for the next generation of Australian plant scientists? Think and read widely – most of the world's biggest problems need multiple disciplines to solve them. Knowing a little about how physics or maths or chemistry or sociology (or any other discipline) works is increasingly important. And be kind, always be kind… in the end your kindness (or lack thereof) will be what you will be remembered for.

Connect with Beth: https://www.linkedin.com/in/beth-penrose-22541760/

Eloise Foo is a lab leader and lecturer in the School of Natural Sciences at the University of Tasmania.

What does your job involve? I teach undergraduate and diploma courses in plant development and genetics, lead research into how plants form beneficial symbioses with soil microbes, and mentor undergraduate, postgraduate and early career researchers to achieve their goals in this research area. Much of this research currently occurs in the ARC Centre of Excellence in Plant Success where I am a Chief Investigator. I also lead outreach activities to teach kids and wider community about the power of plants

What motivates you? I am motivated by curiosity and helping others. I love finding gaps in our understanding of the natural world and designing and carrying out experiments that help us understand the complex and beautiful interactions between plants and microbes. I also find a lot of satisfaction in mentoring students and researchers to build their skills and achieve goals. Seeing people grow in confidence and capacity and having an impact on the world of science and society is very fulfilling.

What do you see as the biggest opportunities for Australian plant science? Innovations in plant science will underpin some of the big challenges coming, such as meeting the demands of a changing climate and making agriculture more efficient and sustainable. Australia has exceptional research and translating that into innovative industry and policy is our biggest challenge but also our biggest opportunity. In Australia we have unique resources and environments, such as our wealth of crop wild relatives, that have a huge capacity to drive innovation in crop adaptation.

What is your favourite piece of advice for the next generation of Australian plant scientists? Follow your interests, seek out mentors that are excited to see you succeed and be a strong advocate for yourself. Be clear on your goals and be single minded in aiming for them- you may not always succeed but this will put you on a path to other great opportunities. The plant science community in Australia is an amazing, welcoming network and engaging with others with a generous attitude and spirit of collaboration should keep this alive for the next generation.

Connect with Eloise: https://www.linkedin.com/in/eloise-foo-6b576b2a0/

Bonnie Armour is the Carbon Farming and Soil Extension Officer for the Hills and Fleurieu Landscape Board, based in Adelaide.

What does your job involve? Part of my role involves engaging with farmers around my region and bringing them up to speed on the latest with carbon farming. There are a lot of misconceptions and negativity in the carbon farming space and some of the information is really important for farmers to understand and so my role is to deliver the cold, hard, facts. The other part of my role is soil extension, where I engage with farmers to find out what they need to know about in terms of soils. What's the latest season's hot spots, soil conditions, farmer's best interests etc and how can I facilitate learning around this.

What motivates you? Sustainable agriculture is the only way forward in my opinion. Agriculture plays such a large part in the environment and so finding a balance between productivity and

healthy environments in an already challenging climatic space is the key. Half of my family are farmers and the other half are beach bums, and that's what sparked my passion between no-till and surfboards. I plan on dedicating my life to helping farmers in engaging ways and hopefully educating to the wider world the importance of sustainable agriculture. If a person walks out of the room, or field, learning just one thing, I've done a good job.

What do you see as the biggest opportunities for Australian plant science? I think linking climate projections and plant science together is an area farmers may really benefit from, i.e. plant breeding of varieties with higher tolerances to drought, lower-fertility and linking this with where the climate is heading. There is some really good research undertaken at Turretfield Research Centre now, where they're looking at methane-reducing plant varieties (clovers and fresh-water plants that can be grown on dams in remote and regional areas). All signs point to the market focusing on accessing producers that may have lower carbon footprints, so research to help farmers with this external pressure, like these methane-reducing plants for livestock will only aid them if proven to reduce emissions and add to productivity. The key here is productivity! Also anything to do with soil health, as that's the first link in the chain. Finding the most suitable companion plants for different soil types and environments, will help boost soil health and increase productivity.

What is your favourite piece of advice for the next generation of Australian plant scientists? Follow your nose and listen. That's what I did. I started with PIRSA, in the Oat Breeding group while I was in uni. After a lecture from a scientist at the Genomic Research Facility, I then hunted her down and started interning, learning about gluten free plant varieties that were native and more drought tolerant. I then stumbled upon a group close to the research facility who worked with drones and also interned there. This landed me my first full-time job out of university, calculating carbon for planting projects. And listen. If you end up working in agriculture, always try to find a way to listen to farmers, the people on the ground. Often, decisions are made for them, without consulting or finding out what they know or need. And they're full of knowledge and wisdom about the land. Listen, ask them questions, then listen again.

Connect with Bonnie: https://www.linkedin.com/in/bonnie-armour-74432219a/

Sophie Peterson is the Pacific Engagement Manager for Plant Biosecurity and the Director of Pacific Engagement and International Plant Health in the Plant Protection and Environmental Biosecurity Division in the Department of Agriculture, Fisheries and Forestry. When she is not traveling in the Pacific or globally supporting plant biosecurity she is based in Canberra, ACT.

What does your job involve? In my role I lead and support a team engaging with counterpart agriculture agencies across the Pacific on issues related to plant biosecurity, collaborate with governments across the globe to develop and implement international standards to support the safe trade of plant products and work closely with near neighbours on plant health survey activities.

What motivates you? The people I work with – plant biosecurity is all about preparedness and prevention, food security and preserving economic and cultural prosperity which are all critical motivators in their own right but for me, the people I work with who share the enthusiasm to

improve all of these aspects of this multifaceted concept is what motivates me to work with them to make improvements.

What do you see as the biggest opportunities for Australian plant science? Australia is in the fortunate position to have the opportunity to use cutting edge technology to improve diagnostic detection methods, but many in our region and globally do not have these options available. Development of broad ranging "lower tech" diagnostic tools that are suitable for field use (including sea and airports) and less established diagnostic laboratories have the potential to enhance the ability of a large number of countries to improve their ability to check and test surveillance and inspection

What is your favourite piece of advice for the next generation of Australian plant scientists? Take opportunities! Don't be afraid to take a step onto a different path if the chance arises – it does not have to be a "forever change" but will only expand your horizons.

Connect with Sophie: https://www.linkedin.com/in/sophie-peterson-756b0ba1/

Xiaoxiao Zhang is a Group Leader in the Research School of Chemistry at the Australian National University in Canberra. Her work uses synthetic biology to engineer novel disease resistance in cereal crops.

What is a typical day like in your job? My work day consists of varied tasks from designing and developing research projects, writing grants and manuscripts to teaching undergraduate courses and supervising students. I just recently started as a new PI and I really miss the time working in the lab and am keen to get back to that soonish.

What motivates you? What's your favourite part of the job? My main motivation as a researcher is solving problems facing our world and people, such as food insecurity and infectious diseases. My favourite part of the job is interacting with enthusiastic and dedicated groups of people and working towards a common goal. They could be colleagues or students.

What do you see as the biggest opportunities for Australian plant science? Thanks to the hard work from everyone in the field, we have accumulated comprehensive knowledge of how plants work to produce energy and survive in challenging conditions. It is time to exploit this fundamental knowledge to engineer and future-proof our important crops.

What is your favourite piece of advice for the next generation of Australian plant scientists? Make sure you grab a coffee with your peers at least once a week and talk to each other!

Connect with Xiaoxiao: https://www.linkedin.com/in/xiaoxiao-zhang-a9a0b199/

Marta Peirats-Llobet is a Research Fellow at La Trobe University. Her research uses spatial technologies to understand seed development and germination.

What is a typical day like in your job? I start my day by checking my emails with a cup of "café con leche," a coffee with milk that's typical in Spain. My mornings are usually dedicated to experimental work, which could involve a variety of tasks such as growing seeds and checking plants growing, processing tissues for sectioning, checking some samples under the microscope or optimizing reagents for an experiment. After a social lunch with my colleagues in

the communal kitchen at Agribio, I either return to writing if I have a manuscript in progress or head back to the lab to continue with experiments until it is time to go home for the day.

What motivates you? What's your favorite part of the job? Curiosity is my biggest motivator. I've always been fascinated by understanding how things work, no matter how challenging they are. Problem-solving is another aspect of science that I find incredibly appealing. I enjoy discussing daily work-challenges with my colleagues because you never know what might spark the idea that makes an experiment successful.

What do you see as the biggest opportunities for Australian plant science? Australian plant science is a thriving sector with numerous funding opportunities, especially for applied sciences that enhance crop production, food nutrition, and plant security. Industries play a crucial role in powering Australian plant science by providing the extra financial support needed for our research projects.

What is your favorite piece of advice for the next generation of Australian plant scientists? "Be curious and don't fear hard work." A career in academic science can be particularly tough, but if you're genuinely curious and willing to work hard, it can be incredibly rewarding. You'll have the chance to meet people from various cultures, travel to conferences and research visits around the world, and if you work hard, make a meaningful impact.

Connect with Marta: https://x.com/peirats_marta

Global Plant Council Webinar



The Global Plant Council upcoming webinar session, titled **"**Winners and losers: Climate change effects on forests and crops**"**, will feature Professor Danielle Way, researcher at the Australian National University on April 11th at 9 am CEST.

Register here: https://us02web.zoom.us/webinar/register/WN_spce8CB6TuiafOAttYrqVQ

Editors' note

It has been a real joy to guest edit this special issue of Phytogen. Through it we have had the opportunity to interact with a range of women shaping the future of plant science in Australia. This has demonstrated to us the excitement, passion and diversity in our community. It has also identified many common themes across the importance of collaboration with like-minded people, the encouragement to take risks and try things out for size, and most importantly the value of connection. We hope you enjoyed reading this special issue as much as we enjoyed editing it. Let's all commit to embracing diversity and working together to shape a bright future for Australian plant science.

Beth & Alison, Guest Editors

Beth and Alison's editorial work brought together an exceptional collection of women scientists that highlighted the passion, diversity, and collaborative spirit driving Australian plant science forward. Thank you, Beth and Alison. We would also like to thank all the scientists who contributed to this special issue.

Phytogen will return at the end of April, stay tuned!

