Phytogen June 2019

ASPS2019 registration, abstract submission and ASPS student travel grant deadline in 1 week.,

24 June 2019

Hello ASPS members,

The deadline for ASPS2019 early bird registration, abstract submission and student travel grant applications are the end of this week.

You can register for ASPS2019 here.

You can submit an abstract here.

If you are a student or supervisor of a student who has been meaning to apply there is still time. Application here.

Extension to ASPS student travel grants, Phytogen and GPC E-Bulletin June editions

16 June 2019

Hello ASPS members,

The deadline for 2019 ASPS student travel grant applications has been extended to 5.00pm June 28th 2019. If you are a student or supervisor of a student who has been meaning to apply there is still time. Application attached.

You can also download the June edition of Phytogen here.

The Global Plant Council June E-Bulletin is available here.

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Phytogen – June 2019

16 June 2019

Welcome all to Phytogen for June 2019. I know it gets busy this time of year. Hopefully you can manage a couple of brain breaks and send some images and enjoy reports from students and researchers who attended ComBio 2018 in Sydney 2018. Keep reading.....

In this issue we would like to collect images from you for banners to be displayed at the upcoming Translational Photosynthesis Conference 2019, Brisbane June 30 – July 3. We will also use them at our November meeting too. The images will be inserted into this mask:

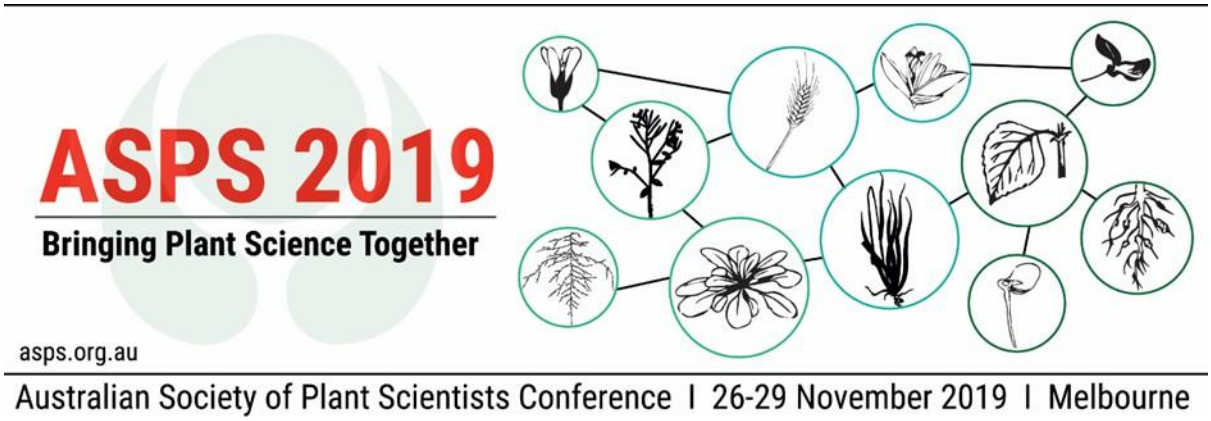




We can only accept images until Friday 21st June. Please email images to Tam Salter and ensure they are .PNG , .jpg, .TIFF, or .pdf, with greater than **300 dpi**,
email: william.salter@sydney.edu.au

If the images have people, they will have to sign a permission form: ASPSphotopermission Please print the permission form and have them sign then send along with your entry to Tam, we look forward to receiving your images.

Here is a reminder to register for our meeting this year:



Early registration will apply until 30 June 2019 register

Four ASPS Award Lectures:

- Peter Goldacre Award Presentation & Lecture: **Simon Williams, Australian National University**
- Jan Anderson Award Presentation & Lecture: The Australian Society of Plant Scientists congratulates **Monika Murcha, University of Western Australia** (https://research-repository.uwa.edu.au/en/persons/monika-murcha) as recipient of the prestigious 2019 ASPS Jan Anderson award. This award acknowledges talented female plant science researchers. Dr Murcha will be presenting the Anderson lecture at ASPS 2019 (https://www.asps.org.au/combio/asps-2019).
- JG Wood Award Presentation & Lecture: **Ros Gleadow, Monash University**
- ASPS Teaching Award Presentation & Lecture: **Sigfredo Fuentes, University of Melbourne**

International Speakers include:

- **Prof George Bassel**, University of Birmingham
- **Prof Dan Szymanski**, Purdue University

ComBio2018 reports

Aruni Alahakoon, PhD candidate, Faculty of Veterinary and Agricultural Sciences, University of Melbourne

I am Aruni Alahakoon, a PhD candidate from Professor Paul Taylor's laboratory of Faculty of Veterinary and Agricultural Sciences, University of Melbourne. Canola, being the second most important oilseed crop in the world and Australia being an important producer, my PhD study focussed on the use of new genes to alleviate abiotic and biotic stresses in canola. During my PhD, I developed and optimised the tissue culture-based transformation of canola using rapid-cycling *Brassica napus* and tested novel candidate genes for frost tolerance and disease resistance in canola.

In 2017, I joined the Australian society for plant scientists (ASPS), a society which helps young plant scientists to connect, publish and choose career pathways. In the same year, I received a travel award from ASPS to attend ComBio 2017, which was held in the Convention Centre, Adelaide, to present some of my research findings. Because of the many positive aspects of the conference, I decided to apply for ASPS travel grant again, to attend ComBio 2018. I received the grant for the second time and attended ComBio 2018, which was held in International Convention Centre Sydney. It was another invaluable experience for me as a graduate researcher. Since I had finished most of my lab work by that time, I was able to share some of the major findings of my project with the scientific community. It was a great opportunity to hear from other researchers around the world and to get to know researchers with similar research interests. I am grateful to the ASPS and the organising committee for providing me funding to attend both ComBio conferences.



Nicholas Booth, Honours student, Flinders University, College of Science and Engineering

During my honours studies I was fortunate enough to attend ComBio 2018. This was one of the first conferences I had attended in my academic career and I am very grateful for ASPS providing me with a student travel award to help alleviate the financial burden of attending an interstate conference.

The highlight of ComBio 2018 for me was the opportunity to present my research findings in the form of a poster presentation. While I was only mid-way through my honours year, this presentation allowed me to focus in on my important findings and refine my research aims. Being one of few honours students to present a poster, I was concerned about the feedback I may receive from senior academics. However this feedback was very positive and any criticism constructive, ultimately helping to improve my final thesis.

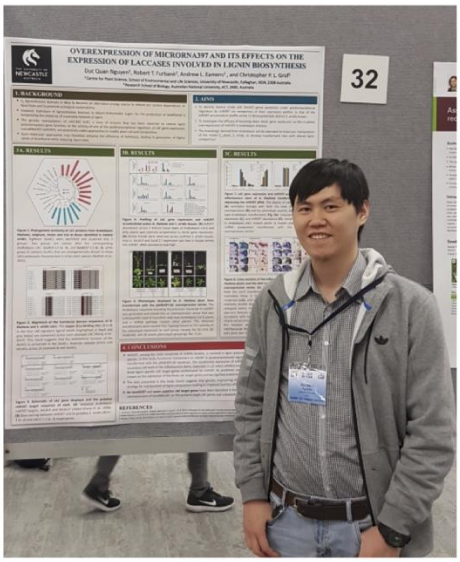
ComBio 2018 was also a fantastic opportunity to network with my fellow plant scientists, over the conference I met numerous fellow students and built contacts with senior academics. I had never had an opportunity to meet so many people interested in a similar field to mine. I really enjoyed the plenary by Dr Michael Udvardi, focusing on the functional genomics of legume symbiotic nitrogen fixation, and the Symposium by Dr Maria Ermakova for improved photosynthetic electron transport in C4 plants.

ComBio 2018 helped to solidify my passion for plant science, and encouraged me to continue my research with further study, as I am now a PhD candidate at Flinders University looking at the transport process involved in the symbiotic nitrogen fixation of legumes.



Duc Quan Nguyen, PhD candidate, School of Environmental and Life Science, University of Newcastle

Combio2018 was the second Combio conference that I attended during my PhD candidature, and it had given me strong impression as a massive conference hosting a large number of experts and researchers from all over the world. In 2 days, nineteen plenary lectures, more than 250 symposia and 146 posters were presented covering a wide range of knowledges as well as providing the most up-to-date information and technologies. Plenary lectures were really informative; I was so inspired with the dedicated works of Prof. Keiko Torii about stomatal differentiation, and Dr. Caitlin Byrt about cell membrane water channels. For those reasons, Combio conference is one of the main conferences that all academics and researchers at Centre of Plant Science, University of Newcastle are eager to attend every year. In 2018, I came to Combio with 4 fellow scientists from different research groups of our Centre. I myself presented a poster highlighting the role of microRNA397 on the expression of *LACCASEs* involved in lignin biosynthesis in *Arabidopsis* and *Setaria viridis*. It had been proven that manipulation of *LACCASEs* expression via controlling the activity of their post-transcriptional regulator, microRNA397, is a viable approach to modify plant cell wall composition and structure, thereby, potentially enhance the yield of bioethanol and reduce input costs. The poster section was very successful as it created a forum for knowledge sharing and open discussion. The poster section was then beautifully ended with an exciting passport draw section. Finally, I am very grateful to ASPS for awarding me the post graduate student travel grant. I am really looking forward to attending the next conference with more results and opportunities.



Duc Quan Nguyen, PhD candidate at Centre for Plant Science, School of Environmental and Life Science, The University of Newcastle.

Sayed Mohammad Mohsin, PhD candidate School of Agricultural Sciences, Ehime and Kagawa Universities, Japan

I am Sayed Mohammad Mohsin, PhD candidate at the United Graduate School of Agricultural Sciences, Ehime University, Japan; affiliated in Laboratory of Plant Stress Responses, Department of Applied Biological Sciences, Faculty of Agriculture, Kagawa University, Japan under Professor Masayuki Fujita.

Plants provide us with our basic necessities (food, fibre, and medicines) and render our atmosphere breathable. They protect us from extreme climatic conditions. Therefore, it is our duty to pay attention and give higher priority to improve our understanding about them. Hence, Plant science is awesome and essential to keep maintaining the environment around us.

COMBIO 2018 was a nice platform where I got the opportunity to present a poster about "Silicon-induced antioxidant defence, methylglyoxal detoxification and metal chelation works coordinately in alleviating nickel toxicity in *Oryza sativa* L." infront of a large number of plant scientists and great scholars, and shared our knowledge.

Happy moment was come when I met with Professor Dr. Sergey Shabala who is the past president of the Australian Society of Plant Scientists (ASPS). In this conference different scientific company also exhibited their instruments and chemicals, which helped to get knowledge about the newly developed laboratory instruments and chemicals as well as field equipments.

Thanks to ASPS for giving me the travel grant to attend COMBIO 2018 and it's really the great initiative to inspire the students and young researchers around the world.



Pei Qin Ng, PhD candidate, School of Biological Sciences, University of Adelaide

"What's sessile may not be as simple as it seems" is how I would describe plants, and this has always been the reason why I continued to pursue research in plant science. I am grateful to have presented a poster from my Master of Philosophy (MPhil) research work titled "Connecting the dots of RNA modifications and small RNA Profiles in Arabidopsis thaliana"at ComBio2018. My travels to Sydney were kindly supported by the ASPS Combio2018 travel grant, and the poster was awarded the ASPS Research Science Award for ComBio2018. The conference itself has a fantastic line of multi-disciplinary speakers, which is a rare find. Among the talks, I really enjoyed the topics small RNA extracellular vesicle trafficking by Nobel Laurette Professor Randy Schekman, the tight-knitted regulation in stomata development by plant scientists and Saruhashi Prize Winner Dr Keiko Torri, and the crosstalk between plants and microbes by ASPS Jan Anderson Award Recipient Dr Eloise Foo. As my MPhil project itself is cross-disciplinary, ComBio2018 allows me to learn about other fields besides my own - plant and bioinformatics. The talks have inspired me with new ideas for my project, and the exchange of thoughts through conversations during the poster session and ASPS dinner were enriching, and I made friends along the way. In summary, being part of ASPS opens up doors to meet and network with Australian plant scientists. The conference experience and being part of the ASPS community has enlightened me with a whole new horizon of plant science research.



Yu Zhou, PhD Candidate, Research School of Biology, ANU

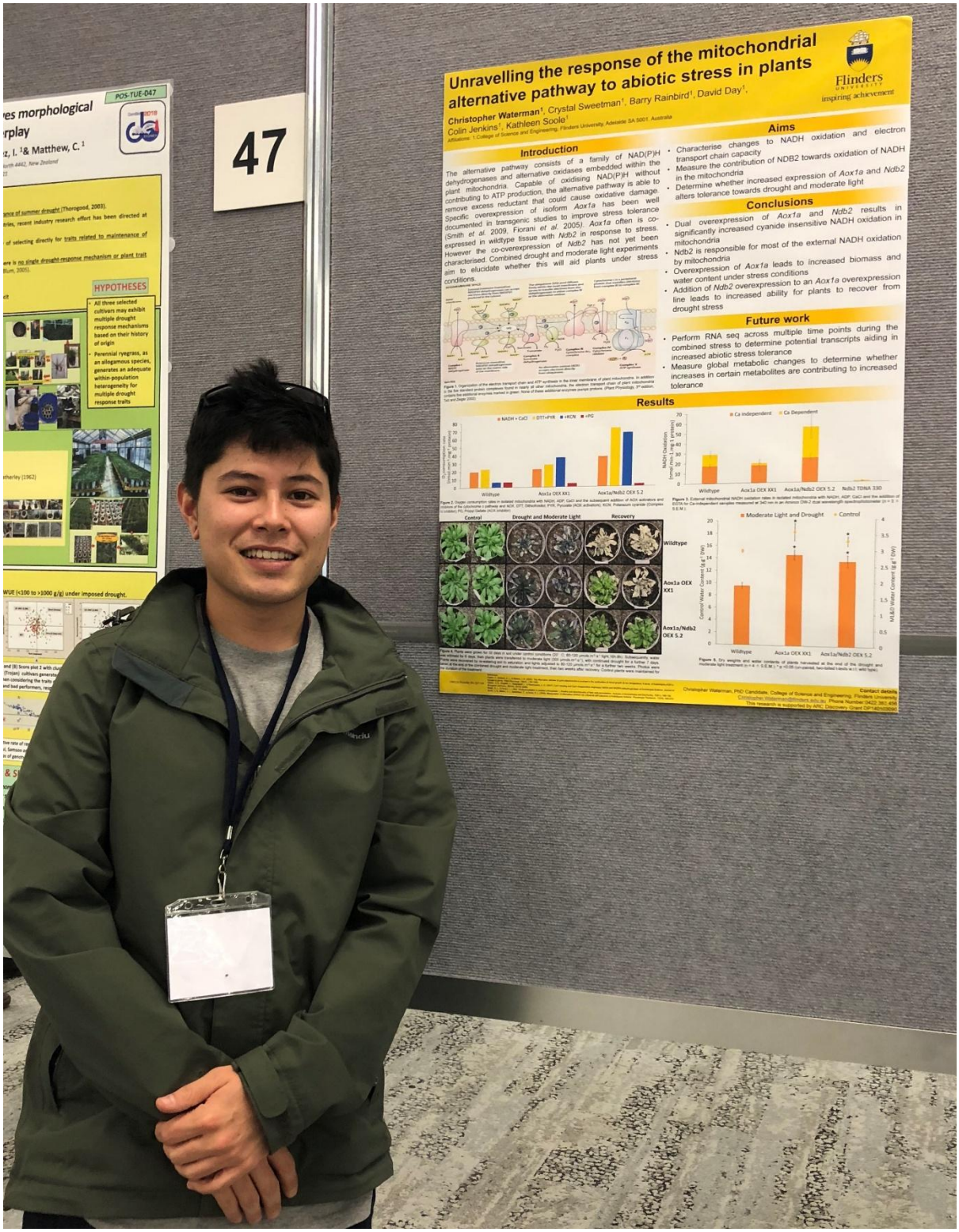
As a PhD student in Plant Sciences at the Australian National University, I attended Combio 2018 as my very first conference because after looking at its program, I felt that much of it was related to work I would be doing. I was slightly intimidated to be in the presence of so many famous scientists, but I'm glad I found a lot of the talks quite interesting and stimulating, thus giving me a chance to mingle and converse with them. My research mainly focuses on improving plant carbon fixation by using synthetic and molecular biology techniques and I had already gotten some promising results at that point, so I presented a poster; this also gave me a good opportunity to talk to people in the field and to get some very helpful feedback.

My experience at Combio 2018 would not have been possible and will remain unforgettable thanks to the Australian Society of Plant Scientists (ASPS). ASPS helps and encourages students to attend the conferences. Through this experience I have realized how fascinating the plant sciences and plant scientists are, which makes my passion for the field even greater. Although different groups of people study different parts or types of plants, their ultimate aim is the same: to enhance crop production and try to resolve the ever-growing population food demands. The scientists share and discuss their research outcomes at the conference and generate worthwhile collaborations. I feel that ASPS is a bridge, linking people from everywhere and giving them a platform to express and promote themselves, something I feel is very important for me as a young woman scientist embarking in the competitive arena of academia.



Christopher Waterman, PhD Candidate, College of Science and Engineering, Flinders University

ComBio 2018 was the final conference for my PhD candidature and was one of the more enjoyable conferences I have attended. Situated on the beautiful darling harbour, the newly built Sydney ICC hosted a wide variety of talks, ranging from plant molecular biology to brain biochemistry and metabolism. As with many conferences, the ability to interact with other PhD candidates and students in similar roles was invaluable. It's always enjoyable to see work presented by others in their own niche fields of interest, especially areas I'm not familiar with. I met several people from interstate who I am now friends with and interact with online regularly. I even had the chance to speak to Professor Peter Waterhouse, a renowned plant biologist famous for demonstrating dsRNA silencing in plants. Being interested in plants at the molecular level, it was great to see so many different strategies employed by non-molecular plant scientists to improve crop yield and tolerance. Being exposed to these new techniques gave me real insight into the potential for plant science in the future. I'm very glad ASPS provided me with the funding to be apart of such an amazing conference. I felt inspired by the potential for advancements in plant science and this conference has galvanised my interest in plant research. I made new contacts and networked with many inspiring and aspiring scientists. I was given the opportunity to present my work and was met with encouraging feedback and new ideas for the future. I encourage all plant scientists to attend ComBio in 2020 as it was a truly great experience.


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HYPOTHESES
Unravelling the response of the mitochondrial alternative pathway to abiotic stress in plants
Flinders
inspiring achievement
Christopher Waterman, Crystal Sweetman, Barry Rainbird, David Day,
Colin Jenkins, Kathleen Soole
Introduction
Aims
Conclusions
Future work
Results
Control
Drought and Moderate Light
Recovery
Wildtype
Aox1a OEX XX1
Aox1a/Ndb2 OEX 5.2
Moderate Light and Drought
Control

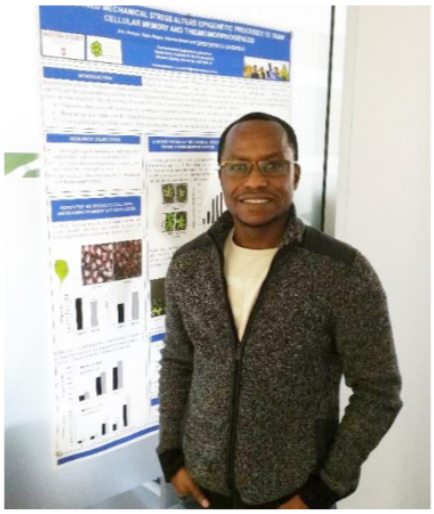
Eric Brenya, PhD Candidate, Hawkesbury Institute for the Environment, Western Sydney University

ComBio conference provided me the opportunity to give a talk about my PhD research on how mechanical stress (MS) from insect herbivory, strong winds and heavy rainfall affects plants. My talk focused on how plants perceive MS via mechanosensitive ion channels. And MS effect on epigenetic processes such as histone and DNA methylation, resulting in morphological changes to priming of pathogen defences. It was exciting as I got positive feedback to improve my research and new ideas on how plants can 'memorize' stress to enhance tolerance upon future encounters.

Several talks emphasized on the importance of plant science in alleviating global food insecurity resulting from extreme weather changes, population growth and diseases. I learnt new approaches to my research and how current technologies are being used to unravel pertinent questions in science. I was excited by numerous talks notably from Prof. Zhu on decoding the epigenetic language of life and how DNA methylation can influence transgenerational inheritance. This was in line with my research on how MS-induced beneficial responses could be inherited across a generation and the practical applications of MS in sustainable agriculture.

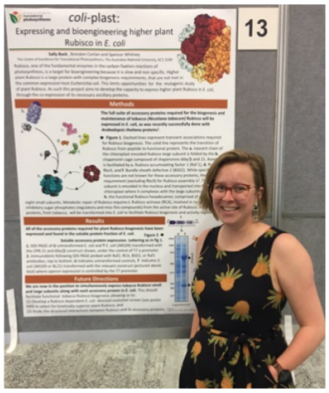
At ComBio, I had the opportunity to meet scientists with diverse backgrounds who are at the forefront of plant research, and networked through social and scientific events. Poster presentation and plenary lectures were informative.

I am grateful to ASPS for the travel grant and for the opportunity to be part of such a wonderful group. I am looking forward to the next conference.



Eric Brenya, PhD candidate,
Hawkesbury Institute for the Environment (HIE), Western Sydney University

Sally Buck, PhD Candidate, Research School of Biology, ANU



Funding from the Australian Society of Plant Sciences helped me to attend the 2019 ComBio Conference in Sydney. This provided me with a chance to connect with plant scientists at all levels, and with it many came opportunities; from learning about other student's research at their posters, to having conversations about women in science with international speakers. The conference not only allowed me to engage with amazing plant scientists, but also with exciting, new plant science. The broad nature of the conference encouraged me to interact with areas of plant science I might not commonly encounter, facilitating new perspectives and ideas. The opportunity to present a poster on my work expressing tobacco Rubisco in the bacteria, *E. coli*, led to many beneficial conversations addressing difficulties I was having with the project and potential applications for the completed system.

It was inspiring to see people using plant science to tackle some of the big problems of the near future. I thoroughly enjoyed my time at ComBio 2018 and it has proven to be an incredibly valuable experience as part of my PhD. I am very grateful to the ASPS for the opportunity to attend.

Dr Nicole Pontarin, Université de Picardie Jules Verne, BIologie des Plantes et Innovation (BIOPI), Amiens, France

Attending ComBio 2018 was an exciting experience. I was given the opportunity to come from the University of Picardie Jules Verne in Amiens, France, from which I have recently obtained my PhD degree. ComBio 2018 caught my interest thanks to its rich program of plenary lectures and for the numerous opportunities to exchange with researchers from many and disparate fields. Even before arriving in Sydney, the ASPS demonstrated an exceptional openness to international students like me, by kindly supporting me with a travel grant. This contribution was priceless and I wish to deeply thank the ASPS for its generosity, of which I have felt and still feel honoured.

During the conference, presenting a part of my research work through a poster and a teaser speech constituted a great way to connect and to enrich my knowledge. I followed with great interest the plenary lectures, plant or biochemistry based. Some of them gave me precious insight for developing my research topic during my thesis writing. Most of all, the conference was to me a highlight of the complexity and the excellence of Australian plant research. I fully enjoyed the variety of research topics, and their connection with agricultural challenges. From plant resistance to stress to the valorisation of local plant bioactive compounds, from molecular biology to metabolomics, I could find many topics which are already dear to me and my research work. In the end, my gratitude goes to all the passionate plant scientists who made my experience unforgettable at ComBio 2018.



Nicole Pontarin, PhD – Cell and Molecular Biology Plant Biotechnology, Université de Picardie Jules Verne, BIologie des Plantes et Innovation (BIOPI), Amiens, France

Dr Yagiz Alagoz, Hawkesbury Institute for the Environment, Western Sydney University

I'm an early career-researcher working on plant molecular biology and biochemistry with Dr. Chris Cazzonelli in the Environmental Epigenetics Laboratory (EEL) at the Hawkesbury Institute for the Environment at Western Sydney University. My PhD research focuses on the discovery of metabolic signaling mechanisms regulating plant carotenoid metabolism. Carotenoids are organic pigments that are naturally synthesized by plants. They are required for photosynthesis, photoprotection, plant hormone biosynthesis and pollination in plants. Carotenoids promote human health due to their antioxidative properties. For example, beta-carotene or provitamin A is a micronutrient required to promote a stronger immune system and healthy eye sight in humans. I've discovered a chemical photo-switch and characterised an RNA structural switch mechanism that allow plants to perceive light and control provitamin-A accumulation. The outcome of my research will be used to develop new biofortification strategies to produce better crop species with improved nutrient quantity.

Last year in 2018, I had an opportunity to attend the COMBIO meeting to communicate my work as a poster presentation at ICC, Sydney. My travel expenses were financially supported by the ASPS Student Travel Award and at the end of the conference; I was honoured with Research Science Award for presenting my work on my recent photo-switch discovery. Contribution of this award to my research and professional carrier has been substantial. It helped me to secure a postdoctoral position at Western Sydney University (WSU) in horticultural plant chemistry to work on the use of photovoltaic technologies in protected cropping. My current research is closely related with my research presented at COMBIO in 2018.

During the meeting, observing how eminent scholars in my field presented their work and the quality of their research inspired me to aim higher and work harder for the benefit of the greater good. Some examples of great talks that inspired me are including Dr Keiko Torii's talk about mechanisms controlling stomatal differentiation and Dr Eloise Foo's work on plant hormones and plant-microbe symbiotic interactions.

I'd like to thank and express my gratitude to ASPS and COMBIO2018 committee to give me this privilege and opportunity to attend this amazing meeting. It was a great chance for me to communicate about my work and expand my network for my future collaborations and I'm looking forward to attend the next one!

Thank you very much.

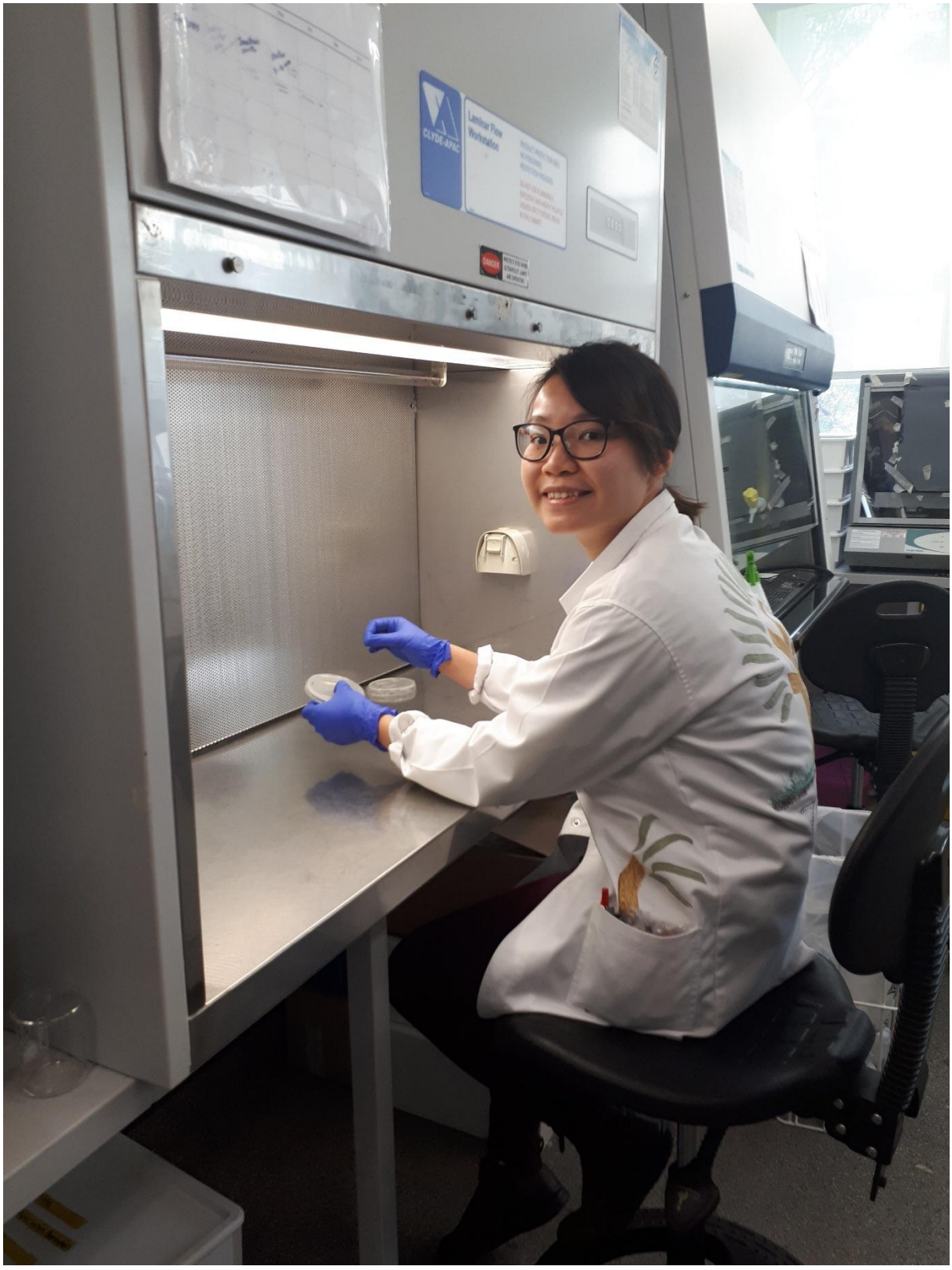
Yagiz Alagoz



Johanna Wong, PhD candidate, The Hawkesbury Institute for the Environment, Western Sydney University

I am a final-year PhD student and my study focuses on understanding the chemical signals that initiate the interaction between eucalypts and a group of beneficial soil fungi, namely ectomycorrhizal fungi. Doing research in plant science has so many perks and I enjoy every bit of it. My research involves metabolomics, transcriptomics, bioinformatics, plant molecular biology and microbiology. I have chances to do experiments using advanced technology in the lab. I got to stretch my legs by going into the field or the glasshouses when I got tired of the desk/bench work. I have also learnt how to grow hundreds of plants at once (or kill them all at once, for research purposes!). Most importantly, seeing how advanced knowledge in plant science has improved agriculture and environment conservation in modern days, I am humbled to be part of the community in plant research.

I am very grateful to receive the travel grant sponsored by ASPS to attend the ComBio 2018 in Sydney. It was the perfect event to meet fellow local and international plant scientists and learn about the latest research in the field. I was fortunate enough to be selected to present my work in the 'Root and Soil Interaction' symposia. It was a great experience sharing my research findings with the plant research community, and I have received very helpful suggestions to improve my study. Through ASPS, I have branched out and networked with like-minded plant researchers. I will look forward to participating more in ASPS events in the future.



[ASPS2019 student travel grants due TODAY]

14 June 2019

Hello all ASPS members,

Just a friendly reminder that ASPS2019 student travel grant applications are due today!

The student and the supervisor need to be financial members of ASPS and the student must present at ASPS2019 (poster or talk). For more details
see https://www.asps.org.au/awards/combio-travel-awards

Best of luck.