



Congratulations

The 2021 Clarivate HiCi's (highly cited researchers) have been announced and congratulations go out to Adrienne Nicotra (E&E), Robert Furbank (PS), Barry Pogson (PS) and Minh Bui (Lanfear Group, E&E now CECS). Full list of HiCi's can be found [here](#).

The Vice-Chancellor's awards to celebrate the achievements of our colleagues was a virtual event this year. RSB's very own Alexander Maier (BSB) has been awarded the Vice-Chancellor's award for Education Excellence. Alex is no stranger to awards receiving the CoS Dean's Commendation for Excellence in Education last year, amongst many other awards during his career.



The RSB HDR conference was held online this year and the students delivered high caliber presentations of their research. The winners of the Hiroto Naora Graduate Student Travel Scholarship \$500 best presentation prizes were Daniel Yu (Williams Group, PS) and Audrey Prasetya (Moritz Group, E&E). Due to the closeness of the competition, the judges decided to award a \$250 runner up award to Andrew Almonte (Fahrer Group, BSB). Congratulations to all the presenters for such amazing presentations.



Congratulations to Paul Helliwell (Compliance Services Team) has received his 25 years of service certificate.

Director's Seminar Series

This month Ben Corry (BSB) will be presenting a seminar 'Relating protein structure to function with computer simulations'. In this talk, Ben will discuss how recent technological advances have led to an explosion of protein structures being determined. But proteins are not static structures, and must move and change conformations over a large variety of time and length scales. Computer simulations provide a mechanism to understand this motion and determine how conformational changes can yield the function of a given protein. He will describe how we have used simulations to understand the function of a variety of membrane proteins including ion channels that sense mechanical and electrical forces. In addition, Ben will give examples of how we can use these techniques to aid in the rational design of drugs and the mechanistic understanding of inherited diseases. The seminar will be face to face on December 6 at 12.30pm in the Eucalyptus Seminar Room. The seminar will be preceded by lunch at 12noon.



PhDs submitted



Brad Posch (Atkin Group, PS) 'Wheat respiration and photosynthesis in a warming world'.

Farewell

Jana Sperschneider (Rathjen Group, PS & BDSI) has left to take up a position with CSIRO as Senior Research Scientist.



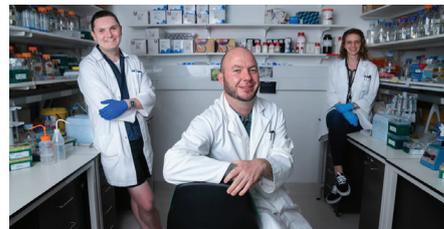
Haochen Wei (Solomon Group, PS) has left to take up a position in China.

New appointments



Karen Scholte (BLTC) has been appointed the Student Administration Manager in the Biology Teaching and Learning Centre. This is a new position, as recommended as part of the BLTC review.

In the media



Dr Benjamin Schwessinger, centre, Emma Crean, right, and Dr Ashley Jones, left, are part of a team who have mapped the genomics of Canberra's COVID-19 outbreak. Picture: Tracey Nearnby (ANU).

Benjamin Schwessinger (PS) and his team featured in the [Canberra Times](#) and two ABC radio interviews about their genomic sequencing of the ACTs COVID outbreak. Benjamin's team mapped almost every single case of COVID-19 in the ACT.

News

Shukla Promite (Brock Group, BSB) has had her abstract accepted for the 2021 Victorian Infection and Immunity Network Young Investigator Symposium Conference. This acceptance is her first PhD abstract submission. Congratulations!



Viridiana Silva-Perez (ex Furbank Group, PS) Photosynthesis has become a new "frontier trait" for crop breeding, regarded by some as the last untapped component of yield to allow us to supercharge our cereal crops. A major impediment to breeding for improved leaf photosynthesis has been the time it takes to measure. Anyone who has fired up a LiCor knows how slow and tricky Co2 assimilation measurements can be.

Viri Silva-Perez, during her PhD at RSB with John Evans and Bob Furbank (she graduated in 2016), developed a new protocol which used machine learning to predict photosynthetic parameters from the light reflected from a wheat leaf. This protocol takes 60s per leaf instead of 20 min of LiCor time and has now been widely adopted to screen wheat varieties in the field. Recently her models have been revamped and improved with deep learning and neural networks, and built into a web server so that researchers and breeders can upload their reflectance data for hundreds of wheat varieties and receive their photosynthetic traits back, even without learning to code in R!

Grants Awarded

Ben Corry (BSB) was part of a successful grant application with the DFAT-ANU Australian Science and Technology for Climate Partnership (to be administered through the School of Engineering) with Juan Felipe Torres, Yuerui Lu, Mona Mahani: 'Solar desalination to improve irrigation and crop productivity', \$750k over 2 years (2022-2023).

Papers

Alexander SPH, Kelly E, Mathie A, Bröer S *et al.* The concise guide to pharmacology 2021/22: Transporters. *British Journal of Pharmacology*. <https://doi.org/10.1111/bph.15543>.

Andrew SM, Strzepek RF, Whitney SM, Chow WS, Ellwood MJ. Divergent physiological and molecular responses of light and iron limited Southern Ocean phytoplankton. *Limnology and Oceanography Letters*. <https://doi.org/10.1002/lol2.10223>

Anwer H, Morris MJ, Noble DWA, Nakagawa S *et al.* Transgenerational effects of obesogenic diets in rodents: A meta-analysis. *Obesity Reviews*. <https://doi.org/10.1111/obr.13342>

Ashman LG, Shin S, Zwick A, Ślipiński A *et al.* The first phylogeny of Australasian *Lamiinae* longhorn beetles (oleoptera: *Cerambycidae*) reveals poor tribal classification and a complex biogeographic history. *Systematic Entomology*. <https://doi.org/10.1111/syen.12526>

Ball EE, Hayward DC, Bridge TCL & Miller DJ. Acropora — The Most-Studied Coral Genus. In: *Handbook of Marine Model Organisms in Experimental Biology*. <https://doi.org/10.1201/9781003217503-10>

Buyan A, Whitfield AA & Corry B. Differences in the binding of local anaesthetics and anti-epileptics in the inactivated state of the human sodium channel nav1.4. *Biophysical Journal*. <https://doi.org/10.1016/j.bpj.2021.11.014>.

Card DC, Shapiro B, Giribet G, Moritz C *et al.* Museum Genomics. *Annual Review of Genetics*. <https://doi.org/10.1146/annurev-genet-071719-020506>

Chen L, Ganguly DR, Shafik SH, Ermakova M, Pogson BJ, Grof CPL, Sharwood RE, Furbank RT. Elucidating the role of SWEET13 in phloem loading of the C4 grass *Setaria viridis*. *The Plant Journal*. <https://doi.org/10.1111/tbj.15581>

Chen T, Fang Y, Jiang Q, Price GD, Long BM *et al.* Incorporation of functional Rubisco activases into engineered carboxysomes to enhance carbon fixation. *ACS Synthetic Biology*. <https://doi.org/10.1021/acssynbio.1c00311>

Fan Y, Asao S, Furbank RT, von Caemmerer S, Day DA, Tcherkez G, Sage TL, Sage RF, Atkin OK. The crucial roles of mitochondria in supporting C4 photosynthesis. *New Phytologist*. <https://doi.org/10.1111/nph.17818>

Gould N, Thorpe MR, Taylor JT, Boldingh HL *et al.* A Jasmonate-induced defense elicitation in mature leaves reduces carbon export and alters sink priority in grape (*Vitis vinifera* Chardonnay). *Plants*. <https://doi.org/10.3390/plants10112406>

Hawkes F, Zeil J & Gibson G. Vision in mosquitoes. In: *Sensory Ecology of Disease Vectors*. Wageningen Academic Publishers.

Hayward JA, Rajendran E, Makota FV, van Dooren G *et al.* Real-time analysis of mitochondrial electron transport chain function in *Toxoplasma gondii* parasites using a Seahorse XFe96 flux analyser. *Bio-protocol*.

Lodoen MB, Smith NC, Soldati-Favre D, van Dooren G *et al.* *Nanos gigantium humeris insidentes*: old papers informing new research into *Toxoplasma gondii*. *International Journal for Parasitology*. <https://doi.org/10.1016/j.ijpara.2021.10.004>.

Murai M, Henmi Y, Matsumasa M, Backwell PRY *et al.* Attraction waves of male fiddler crabs: A visual display designed for efficacy. *Journal of Experimental Marine Biology and Ecology*. <https://doi.org/10.1016/j.jembe.2021.151665>

Odom K, Cain K, Hall M, Langmore NE *et al.* Sex role similarity and sexual selection predict male and female song elaboration and dimorphism in fairy-wrens. *Ecology and Evolution*. <http://doi.org/10.22541/au.162550292.29286625/v1>

Pisokas I, Rössler W, Webb B, Zeil J *et al.* Anaesthesia disrupts distance but not direction of path integration memory. *Current Biology*.

Rahimi F & Abadi ATB. The third booster vaccination dose against COVID-19: indication for circulating SARS-CoV-2 variants. *Future Virology*. <https://doi.org/10.2217/fvl-2021-0240>.

Rahimi F, Kamali N & Abadi ATB. The Mu strain: the last but not least circulating 'variant of interest' potentially affecting the COVID-19 pandemic. *Future Virology*. <https://doi.org/10.2217/fvl-2021-0269>.