



R-IQ

Research Institutes
Quarterly A summary of key
happenings in University of
Adelaide research institutes

FEBRUARY 2021

The University's Research Institutes materially contributed to raising \$65M, or 35% of the University's \$185M of research income in 2019, from a direct University investment of \$6M into the Research Institutes. This excludes the Stretton Institute and AIML which had either not commenced, or only recently commenced in 2019.



AUSTRALIAN INSTITUTE FOR MACHINE LEARNING

- The University of Adelaide has moved to #2 in the international ranking for Computer Vision Research from CSRankings, a metric-based ranking of top computer science institutions around the world.
- The NHMRC Centre of Research Excellence in Healthy Housing has been awarded to a team including Professors Emma Baker and Anton van den Hengel. The Centre will use machine learning to inform policy in order to ensure that those with greatest need are targeted by new housing intervention programs.
- AIML members Tat-Jun Chin, Thomas Rowntree, Andrew Du, Sam Bahrami, Kiet To and Ian Reid are part of a University of Adelaide-led team which was one of only two teams from outside of the US to qualify for phase two of the [NASA Space Robotics Challenge](#).

Professor Simon Lucey joined AIML as co-Director late in 2020. Previously a Professor at Carnegie Mellon University, Simon's research interests include computer vision, machine learning, robotics and artificial intelligence.



ENVIRONMENT INSTITUTE

- Congratulations to Professor Sarah Wheeler, elected as a Fellow in the Academy of the Social Sciences.
- A team including members of the Environment Institute, Dominic McAfee and Heidi Alleway, was awarded the Australian Museum 2020 NSW Environment, Energy and Science Eureka Prize for Applied Environmental Research, for work on rebuilding Australia's lost shellfish reefs.
- The 'One Basin' CRC bid on the Murray-Darling Basin proceeded to Stage 2. If successful it will provide ~\$9M research funding to the University. See also the IMER highlights regarding the HILT CRC bid.

Congratulations to Phill Cassey and Thomas Prowse who were awarded an ARC Discovery Project on ['Drivers of the live pet trade in Australian reptiles'](#). Congratulations also to seven other EI members who received ARC Discovery Project funding across five other projects (Frank Gruetzner, Juraj Farkas, Alan Collins, Francesca McInerney, Jodie Conduit, Georgina Drew & Douglas Bardsley).





INSTITUTE FOR MINERAL AND ENERGY RESOURCES

- The University's bid for a 'Heavy Industry Low-carbon Transition (HILT)' CRC, led by Professor Gus Nathan, is one of only five bids nationally to progress to Stage Two of the process. The bid has secured \$45M of industry and other partner contributions (\$5.5M more than in Stage One) and seeks an additional \$39M of CRC funding.
- Two ARC Linkage Projects and one ARC Discovery Project (\$1.4M total) were awarded to IMER researchers in November (first CIs, Murat Karakus, Juraj Farkas and Nigel Cook). Congratulations also to Nesimi Ertugrul, Wen Soong and Ali Pourmousavi Kani for being awarded \$900k from the [Future Battery Industries CRC for a mine electrification project](#).
- The 'ARC Hub for Copper Uranium' received a Commendation at the South Australian 2020 Premier's Awards in Energy and Mining for Innovation and Collaboration.

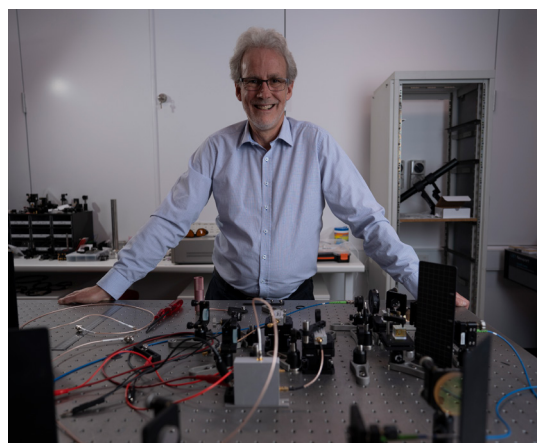
University of Adelaide wireless technology for mapping heat flow is set to be on Australia's Seven Sisters moon mission with Fleet Space Technologies.



INSTITUTE FOR PHOTONICS AND ADVANCED SENSING

- \$2M in NHMRC Ideas Grants has been awarded under the leadership of two female IPAS ECRs:
 - Katharina Richter et al. 'Improving clinical outcomes of antimicrobial resistant infections with a drug-free intervention' (\$999,581)
 - Jiawen Li et al 'Serial imaging of molecular and microstructural changes in atherosclerosis: tracking plaques towards destabilisation' (\$992,112).
- IPAS Director, Professor Andre Luiten, has been elected as a Fellow of the Australian Academy of Technology and Engineering (ATSE).
- The following paper, first authored by IPAS PhD student Faisal Karim, featured as an Editors' suggestion (i.e. of particular interest, importance, or clarity) in Physical Review Applied: Faisal Karim et al., '[Ultrahigh-Resolution Direct-Frequency-Comb Spectrometer](#)'.

Professor Peter Veitch, joint winner of the 2020 Prime Minister's Prize for Science for Gravitational Wave Discovery.



ROBINSON RESEARCH INSTITUTE

- Members of the RRI attracted \$6.5M in NHMRC Ideas Grants (three to EMCRs and three to senior researchers), comprising nearly half of the awards to the University.
- Professor Darryl Russell was awarded \$2.4M from the Gates Foundation to develop novel non-steroidal contraceptives. This is the third tranche of funding from the Foundation.
- Professors Alastair MacLennan and Jozef Gecz led an international collaborative team to publish in Nature Genetics on [sporadic or 'de novo' gene mutations that contribute to cerebral palsy risk](#).

Associate Professor Louise Hull and Professor Gustavo Carneiro are leading a collaboration between the RRI and AIML to develop a rapid, less invasive diagnosis for the common and debilitating condition of endometriosis, using machine learning tools (image shows a pelvic scan).





STRETTON INSTITUTE

- On World Anti-Corruption Day last year (9 December 2020), Prof. Adam Graycar was jointly awarded the [2020 Sheikh Tamim Bin Hamad Al Thani International Anti-Corruption Excellence Award](#) for Academic Research and Education.
- A recently published AHURI report, '[Rental Insights: A COVID-19 Collection](#)', was co-edited by Professor Emma Baker and Dr Lyrian Daniel, and features leading thinkers from housing, economics, policy and epidemiology.
- Research undertaken by Professor Chris Leishman and colleagues, which modelled a range of economic and housing outcomes as a consequence of COVID-19, and the Australian Government's response, [was featured in national news, including The Australian](#).

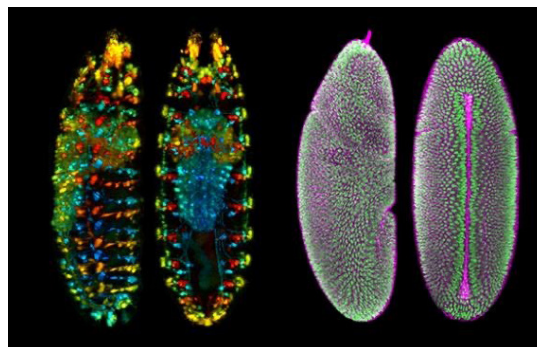
The Stretton Institute Policy Brief series was launched in October 2020. Topics covered to date include Corruption in Fisheries and Food Security, Countering Foreign Interference and Integrity in Government.



WAITE RESEARCH INSTITUTE

- In November 2020, seven [ARC Discovery grants](#) were awarded to University researchers across the agriculture spectrum; the most ever won in a single year.
- International research on unlocking new genetic variations for [breeding higher-yielding wheat and barley varieties](#), involving Waite Research Institute members, was published in [two separate articles in Nature](#).
- The SA Drought Hub bid, a multi-node proposal involving 59 partners and focussed on adoption of resilient and innovative farming practices in SA, has been submitted to the State Government.

The WRI led a successful \$1.2M ARC equipment (LIEF) grant for a light sheet microscope involving all three SA universities and SAHMRI. [Image shows fruit fly embryo marked with calcium sensors](#).



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