



# R-IQ

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

OCTOBER 2020



## AUSTRALIAN INSTITUTE FOR MACHINE LEARNING

- AIML was awarded \$20M over four years in the 6 October federal budget in order to establish a Centre for Augmented Reasoning at the University. The Centre will improve the application of machine learning in Australia. Congratulations to Team AIML who have worked long and hard for this funding with strong support from Senator Rex Patrick.
- The AIML-driven Smarter Regions CRC Bid led by Prof. Javen Shi was submitted in late July with \$75M in industry support. If successful, it will empower regional Australia to gain the maximum benefit from the AI revolution.
- Mahdi Kazemi, Ehsan Abbasnejad and colleagues were selected in the [Data Quest 2020 case studies](#) applying machine learning to solve the bushfire crisis. They developed an AI- and ML-based tool that can predict burn areas.

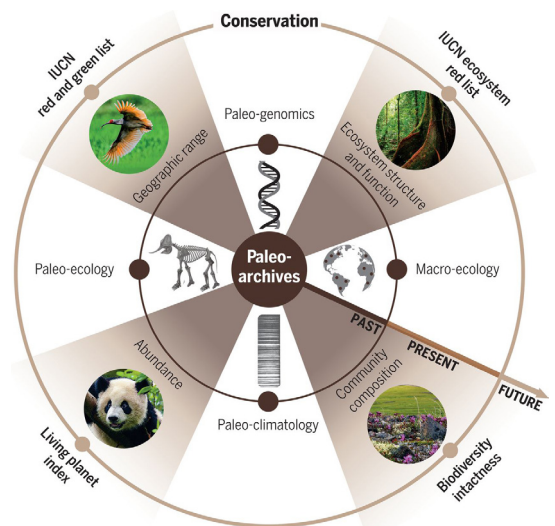
*Prof. Chunhua Shen (pictured) has been listed amongst Australia's top five researchers for Engineering and Computer Sciences as part of the Australian newspaper's [40 Australian Research Superstars](#). R-IQ also congratulates Profs Shizhang Qiao, Shaobin Wang (both School of Chemical Engineering and Advanced Materials) and Peng Shi (School of Electrical and Electronic Engineering) for making the list of Australia's 40 Research Superstars. All the South Australian, and 10% of the nation's 40 Research Superstars, is an impressive outcome for the University of Adelaide.*



## ENVIRONMENT INSTITUTE

- Prestigious ARC Future Fellowship Awards for Dr Martina Demuro 'Shedding light on Neanderthal histories using luminescence chronologies' and Dr Camille Mellin 'Safeguarding coral reef fisheries for food security'.
- Prof. Wayne Broadman (STEMM Educator of the Year) and Dr Erinn Fagan (PhD Research Excellence) are Finalists in the SA Science Excellence & Innovation Awards.
- Profs Ivan Nagelkerken and Sean Connell published 'Trophic pyramids reorganize when food web architecture fails to adjust to ocean change' in the journal 'Science'. DOI:[10.1126/science.aax0621](https://doi.org/10.1126/science.aax0621)

*Al/Prof. Damien Fordham was lead author of the 'Science' paper: 'Using paleo-archives to safeguard biodiversity under climate change'. DOI: [10.1126/science.abc5654](https://doi.org/10.1126/science.abc5654)*





## INSTITUTE FOR MINERAL AND ENERGY RESOURCES

- The IMER-driven [Heavy Industry Low-carbon Transition CRC](#) (HILT CRC) Bid led by Prof. Gus Nathan was submitted in late July with \$28M in industry support. If successful, it will assist energy-intensive heavy industry to transition to a low carbon future.
- Prof Frank Neumann awarded [ARC Future Fellowship](#) with outcomes expected to lead to more effective optimisation methods for complex planning processes in areas of national priority such as mining.
- IMER is facilitating collaboration between CSIRO and the University in the areas of the new CSIRO Missions in hydrogen, critical minerals, magnetite and a net zero emissions mine site pilot. The University has established contacts for each of the new CSIRO Missions.

*Prof. Nigel Cook named Field Leader, and the University of Adelaide named Lead Institution in Australia in Geochemistry and Mineralogy in the [Australian newspaper's Research 2020 analysis](#).*



## INSTITUTE FOR PHOTONICS AND ADVANCED SENSING

- US Air Force Office of Scientific Research grant (US\$1M) awarded to Prof. Heike Ebendorff-Heidepriem and colleagues' project: 'Chaos in fiber lasers and amplifiers: breaking through nonlinear and thermal limits for the near-infrared and beyond'.
- Jiawen Li and colleagues published the paper '[Ultrathin monolithic 3D printed optical coherence tomography endoscopy for preclinical and clinical use](#)' in the Nature Group Journal 'Light: Science & Applications' (IF=14) which featured on the [Channel 10 News](#). Congratulations also to Jiawen for being shortlisted in [InDaily's 40 Under 40](#) stars of Adelaide business.
- IPAS is leading the development of a University Strategic Plan in Quantum Materials.

*The Optofab Adelaide/IPAS team manufactured key specialised elements of the DEWC-SPI payload launched by Southern Launch on 14 September on a TED-01 DART rocket. This tiny payload will conduct an important sensing mission as it descends to Earth, paving the way for future planned developments by DEWC Systems.*



## ROBINSON RESEARCH INSTITUTE

- The University of Adelaide has again scored Lead Institution in Australia in Reproductive Health in the Australian newspaper's Research 2020 analysis.
- RRI Deputy Director, Professor Helen Marshall, collaborating with the University of Sydney, is a key part of a \$3M MRFF award for a [COVID-19 vaccine trial](#) with centres in Sydney, Adelaide and Perth.
- As part of Women's Health Week, the RRI's Dr Jessica Grieger and Dr Pallave Dasari partnered with Your Fertility via a [Facebook LIVE feed](#) to discuss preconception health checks, reaching 55,000 views.

*RRI Research Leader, Dr Kylie Dunning, has won a 2020 SA Young Tall Poppy Science Award for her research into [improving IVF techniques using non-invasive methods](#). Kylie is pictured with SA governor Hieu Van Le who presented the award.*

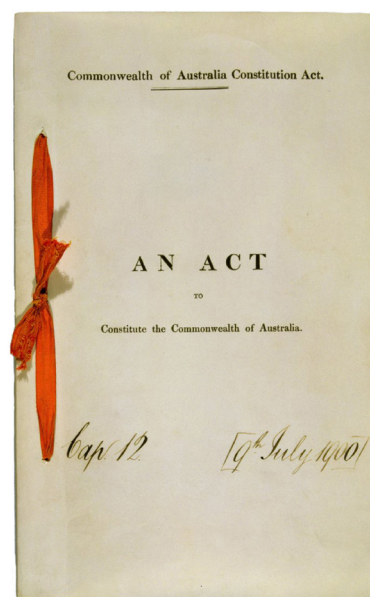




## STRETTON INSTITUTE

- The Stretton Institute has added a fifth Research Program: 'Democracy, Security, Trust and Integrity', with Professor Lisa Hill as Program Director.
- The recently published book '[Handbook on Corruption, Ethics and Integrity in Public Administration](#)' was edited by Prof Adam Graycar, Director of the Stretton Institute.
- The Stretton Institute submitted a proposal for an Australian Awards in Indonesia Short Term Award on 'Democratic resilience: Youth participation in Indonesia's democracy'.

*The Stretton Institute ran a Masterclass on Commonwealth-State Relations in Australia on 2nd and 3rd September attended by 59 state and federal government officials.*



## WAITE RESEARCH INSTITUTE

- Professor Chris Preston will lead a 5-year, \$2.12m GRDC project to develop strategies to mitigate resistance to key herbicides, with other partners including SARDI and UWA.
- Dr Rhiannon Schilling has won a [2020 Tall Poppy Award](#). She is developing agronomic solutions to improve crops to overcome soil constraints such as high salinity and is building an excellent record in science communication and outreach.
- [OzBarley](#), a \$400K project funded by the Australian Research Data Commons, will deliver a publicly available genotypic and phenotypic datasets (G2P) to benefit both researchers and breeders.

*A thriving Industrial Hemp trial crop at the Waite Campus, the subject of a widely viewed talk by Professor Rachel Burton in the [WRI's new webinar series](#).*



## RESEARCH INSTITUTE DIRECTORS

**Professor Anton van den Hengel**  
Director, Australian Institute for Machine Learning  
Phone: 8313 5309  
Email: [anton.vandenhengel@adelaide.edu.au](mailto:anton.vandenhengel@adelaide.edu.au)

**Professor Bob Hill**  
Director, Environment Institute  
Phone: 8313 6807  
Email: [bob.hill@adelaide.edu.au](mailto:bob.hill@adelaide.edu.au)

**Professor Michael Goodsite**  
Director, Institute for Mineral and Energy Resources  
Phone: 8313 4320  
Email: [michael.goodsite@adelaide.edu.au](mailto:michael.goodsite@adelaide.edu.au)

**Professor Andre Luiten**  
Director, Institute for Photonics and Advanced Sensing  
Phone: 8313 4380  
Email: [andre.luiten@adelaide.edu.au](mailto:andre.luiten@adelaide.edu.au)

**Professor Sarah Robertson**  
Director, Robinson Research Institute  
Phone: 8313 4094  
Email: [sarah.robertson@adelaide.edu.au](mailto:sarah.robertson@adelaide.edu.au)

**Professor Matthew Gilliam**  
Director, Waite Research Institute  
Phone: 8313 8145  
Email: [matthew.gilliam@adelaide.edu.au](mailto:matthew.gilliam@adelaide.edu.au)

**Professor Adam Graycar**  
Director, Stretton Institute  
Phone: 8313 4774  
Email: [adam.graycar@adelaide.edu.au](mailto:adam.graycar@adelaide.edu.au)

CRICOS 00123M  
Job no 6101-ODVC(R)