



Science, Technology and Education News from Australia, October 2018

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1. Science and Technology Developments

EPFL scientists head to Antarctica to study snow and icecaps

EPFL scientists will soon be heading off to Antarctica, where they will spend four months collecting reams of meteorological data at Australia's Davis research station. They will set up a weather station and take samples to better understand the unique phenomena related to snowfall and to snowflake sublimation by polar winds. Very few hydro meteorological data have been collected on Antarctica, but this expedition will change that. It will indirectly help measure the effects of climate change in this region by examining the behavior of the snowfall that creates icecaps. This project was selected through a competition within EPFL's School of Architecture, Civil and Environmental Engineering (ENAC). The three EPFL scientists will work alongside over 100 other researchers at the station, which is one of the biggest in Antarctica.

Click [here](#) to read the article.

Click [here](#) to follow their progress on the school's blog: EPFL Out There.

Scientists uncover volcanic lost world off the Tasmanian coast



Scientists studying ocean productivity have uncovered a volcanic lost world teeming with marine life off the Tasmanian coast. The lost world was uncovered during detailed seafloor mapping by CSIRO research vessel Investigator while on a 25-day research voyage led by scientists from the Australian National University (ANU). The mapping has revealed, for the first time, a diverse chain of volcanic seamounts located in deep water about 400km east of Tasmania. The seamounts tower up to 3000m from the surrounding seafloor but the highest peaks are still far beneath the waves, at nearly 2000m below the surface. Ship data collected during the voyage revealed spikes in ocean productivity over the chain of seamounts, with increased phytoplankton activity and marine animal observations in the area. Research indicates that seamounts may be vital stopping points for some migratory animals, especially whales. Whales may use these seafloor features as navigational aids during their migration. Research vessel Investigator is Australia's only research vessel dedicated to blue-water research, and is owned and operated by CSIRO – Australia's national science agency. The vessel conducts research year round, and is made available to Australian researchers and their international collaborators.

Click [here](#) to read the article.

Fleet meets NZ space deadline

Adelaide-based Internet of Things company Fleet Space Technologies will launch the first Australian commercial satellite into space from New Zealand in November. Fleet currently offers a range of IoT-based sensors that are connected to satellites that they do not own. They aim to eventually have its own constellation of satellites in space connected to these devices, delivering efficiencies for a range of industries, including agriculture, mining and logistics. It comes as the Australian Space Agency took its first step in its aim to triple the size of the local space industry by 2030, with its inaugural charter being signed off on by the federal government. A key role of the new Australian Space Agency will be to assist these launches, and help local companies obtain the necessary licenses, and to potentially conduct the launches from within Australia. The agency is now responsible for the whole-of-government coordination of civil space matters, and the "primary source of advice" to the government on civil space policy. The agency is also expected to reveal where it will be permanently based by the end of the year, with nearly every state and territory lobbying to host the headquarters.

Click [here](#) to read the article.

InSpace lifts off – ANU launches new space institute

The Australian National University has launched its new innovation institute, InSpace, which will bring together technology, science and law research to advance Australia's space industry. The new space institute will have a multi-disciplinary approach to expanding the opportunities for Australia to expand its commercial and scientific interests in the space industry. InSpace, will be led by Professor Anna Moore from ANU Research School of Astronomy and Astrophysics.

Click [here](#) to read the article.

Investment partnership takes research from lab to shelves

A joint initiative launched today between five Australian universities and one of Australia's biggest companies will provide seed investment to companies translating academic research into applied technology. Significant Capital Ventures is a partnership between Canberra-based construction and property company Hindmarsh, The Australian National University (ANU), University of Canberra (UC), Deakin University, University Technology of Sydney (UTS) and University of Wollongong (UoW). The investment fund aims to grow to \$50 million.

Click [here](#) to read the article.

'Smart Money' trial explores potential for blockchain

CSIRO's Data61 and Commonwealth Bank (CBA) have developed an app as part of a trial to explore the potential for blockchain technology to create 'smart money', through using the case study of the National Disability Insurance Scheme (NDIS). The trial, called 'Making Money Smart', aims to enhance the experience of participants and service providers in the NDIS through the creation of 'smart money' - also known as programmable money. By attaching



conditions, the 'smart money' knows what it can be spent on, who it can be spent by and when it can be spent. Smart Money is enabled by a blockchain token solution that could integrate with Australia's New Payments Platform, and is accessed through a user friendly app. The potential of this technology for the NDIS is ranging from greater empowerment for participants, reduced administration costs for businesses and greater visibility for Government. The proof of concept combines CBA's globally-recognised Blockchain Centre of Excellence with Data61's deep research expertise in blockchain, smart contracts and software engineering.

Click [here](#) to read the article.

2. Education and Science Policy

Federal Government welcomes new ANU Asian economic research

Deputy Secretary of the Department of the Prime Minister and Cabinet, Dr David Gruen, has launched a new ANU bureau for economic policy research in the Asia Pacific region, announcing a commitment to fund the project for 10 years. The Asian Bureau of Economic Research (ABER) will work with 45 partner organisations from countries across Asia on economic policy issues facing the region. One of ABER's first major research projects released on 8 October 2018, is the Chinese Investment in Australia (CHIA) Database. CHIA is a joint project between ABER and the Australian Treasury and is the first comprehensive public database tracking Chinese commercial investment in Australia. The 10-year project is funded through the Department of Foreign Affairs and Trade with an initial \$3.9 million grant over five years.

Click [here](#) to read the article.

Click [here](#) to read the article about the CHIA database.

University leaders condemn political veto on research grants

The leaders of Australia's 39 universities condemn the decision of former Education Minister Simon Birmingham to veto 11 research projects recommended for funding by the Australian Research Council. Vice-Chancellors and their delegates today said the decision undermined confidence in the nation's research funding system and sent exactly the wrong message to the global research community. These highly competitive grants are judged by panels of the most eminent experts in each field of research, through a lengthy and rigorous process to determine which projects receive funds. Expert review is the cornerstone of merit-based research systems around the world. It ensures that taxpayer funds are spent wisely on the best research across all fields of endeavour. This also ensures Australia remains at the forefront of global research advances. All 11 vetoed projects were in the humanities – which receives the smallest amount of funding by far of all the fields of research.

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Downward-looking telescope will unlock Australia's mineral wealth

The Australian Academy of Science is proposing the development of a new 'downward-looking telescope' that could look at least 300 km beneath Earth's surface to unlock Australia's hidden mineral wealth. The proposal is one of several in a 10-year plan for Australian Geoscience (2018–27) launched today by the Academy's National Committee for Earth Sciences. The 10-year plan highlights how the world's shift towards mobile device technology, renewable energy sources and electric cars will involve massive increases in demand for copper, cobalt, gold, rare-earth elements and other specialty metals. The plan also calls for an expansion of Australia's national computational capability to ensure that Australia retains and extends its lead in geoscience simulation and modelling capability. The National Committee for Earth Sciences acknowledges the support of the Australian Research Council, Geoscience Australia, the University of Melbourne, the University of Queensland, Macquarie University and the Australian Geoscience Council in the development of the plan

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Driving innovation in next-gen AI medical technologies

A new research training centre based in Victoria will develop artificial intelligence (AI) applications for medical technologies and train an expert workforce that will drive Australian innovation. The Federal Government is providing \$4.1 million to support the training centre that will advance 'next generation' data-driven and machine learning-based medical technologies. Liberal Senator for Victoria Jane Hume launched the Australian Research Council (ARC) Training Centre in Cognitive Computing for Medical Technologies at The University of Melbourne. The centre will be led by The University of Melbourne, in partnership with IBM Research-Australia, with the involvement of: Western Sydney University, RMIT University, and the University of South Australia; and with participating organisations Medtronic Australasia Pty Ltd, CSIRO, St Vincent's Health, The Florey Institute of Neuroscience and Mental Health, Melbourne Academic Centre for Health, and Cogstate Ltd.

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Qld govt funds new AI hub

The Queensland government has pledged seed funding for a new artificial intelligence hub being built to address the skills shortage in the tech sector. As part of its \$650 million Advance Queensland initiative, the Queensland government has earmarked "millions" for a dedicated AI training and networking hub as part of the expansion of Brisbane startup hub, The Precinct. The hub will offer specialised training courses for the local industry and public sector organisations. In addition to its initial seed funding, the state government is calling for co-investment from the private sector. Queensland Innovation Minister Kate Jones said the state had already received expressions of interest from major international companies, as well as Australian companies and universities.

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