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Science, Technology and Education News from Australia, August 2018

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1. Science and Technology Developments

Huawei banned from 5G network

The federal government has banned Chinese tech companies Huawei and ZTE from participating in the Australian 5G network. Acting Home Affairs Minister Scott Morrison issued a statement, amidst increasing leadership speculation and turmoil in Canberra, outlining new security precautions that will be taken with the rollout of the 5G network. While the statement did not specifically name Huawei or ZTE, it all but confirmed the Shenzhen-based telecommunications giant would be banned from the network. Huawei was also banned from any involvement with the National Broadband Network. The concern with Huawei revolves around new laws recently passed in China which compel "all organizations and citizens" to help the country's intelligence work and alert the government of any vulnerabilities identified, along with its perceived link to the government. There have been long-standing fears that this law would force the company to pass on data and potential vulnerabilities in the 5G network to the Chinese government.

Click here to read the article.

Northern Australia plans backed by science

Northern Australia could become a multi-billion food producing region under a CSIRO plan which the federal government is determined to bring to life. The research has identified 370,000 hectares suitable for agricultural crops in the north, making a significant addition to the two million hectares across the country on which crops currently stand. The CSIRO estimates agricultural development on the land would create 15,000 jobs and generate $5.3 billion annually. Northern Australia Minister Matt Canavan says the study, backed a federal government push to make the region the nation's next great food bowl.

Click here to read the article.

An Australian city beats dengue fever using special mosquitoes

Globally, dengue fever is on the rise. Just last year, cases of the mosquito-borne disease reached an all-time high in Australia, infecting around 2,000 people total. But the city of Townsville in the state of Queensland hasn't seen a single case in the last four years, despite being in the perfect habitat for the disease. The reason is, that the citizens of Townsville released millions of mosquitoes infected with a certain bacteria that prevents them from spreading the disease. If deployed globally, the technique could help protect the over 2 billion people living in the range of the disease.

Click here to read the article.

This autonomous drone is ready to defend the Great Barrier Reef from predators

The Great Barrier Reef has no shortage of enemies — global warming, ocean acidification, invasive predators. Now, it also has an ally in its corner: an autonomous underwater drone named RangerBot. The reef-defending bot is the work of researchers from Queensland University of Technology, and after two years of development, it officially launched at the Reef HQ Aquarium in Townsville, Australia, on Friday, 31 August 2018.

Click here to read the article.

Australian scientists just made a huge breakthrough for hydrogen-powered cars

One of the biggest challenges facing the hydrogen fuel industry – its transport and storage – may have been solved by scientists at the CSIRO, paving the way for a fuel export industry from Australia. With some of the world's biggest car companies, including Toyota, Hyundai and BMW, betting on hydrogen as a future fuel source, the national science agency has developed membrane technology to refuel cars using ammonia. Two fuel cell vehicles, a Toyota Mirai and Hyundai Nexo, have been successfully refuelled using ultra-high purity hydrogen produced in Queensland. Unlike electric charge cars, hydrogen-cell vehicles can be refuelled in minutes with a range up to twice that of electric vehicles run on batteries. Technological advances are also helping drive down the production costs of renewable hydrogen to make it cost competitive with oil-based fuel.

Click here to read the article.

The innovation imperative – predicting Queensland's digital future

The Innovation Imperative is the first report from the Q-Foresight program, a joint research initiative between the Queensland Government and Data61 to inform long-term strategy and planning. Technology, emerging global markets, demographics, digitisation, cultural change and other megatrends are all reshaping the landscape for Queensland businesses, governments and communities. The reports estimates that about 868,000 Queensland jobs (36 per cent) are 'at risk' of task automation over the coming 20 years, but the Queensland economy is projected to add an extra one million new jobs by 2038. These jobs may be in fields which complement new technology, or in roles with a distinctly human focus such as caring or customer service, and some will be in currently unforeseen occupations.

Click here to read the article.

2. Education and Science Policy

Australia needs boldness from Karen Andrews, new minister for industry, science and technology

It had been almost a year since Australia had a named science minister in Cabinet. Now the role has been revived, following a weekend ministerial reshuffle after Scott Morrison became the new Australian prime minister. Karen Andrews was sworn in as Minister for Industry, Science and Technology, joining the cabinet for the first time. The incoming minister is likely to be a strong advocate and effective representative for the science, technology, engineering and mathematics (STEM) sector. During her eight years in parliament, Andrews has shown an avid interest in science and technology.

Click here to read the article.

Innovation axed from ministry

The industry portfolio has been given a bit of nip and tuck with the removal of the word 'innovation' ahead of the beauty contest that is the looming federal election, whenever that is. The Prime Minister Scott Morrison has excised Innovation from the ministry altogether as part of the Cabinet reshuffle that followed inevitably last week's coup. Law Enforcement and Cybersecurity has also been chopped as a ministry, while the Home Affairs and Digital Transformation portfolio has been demoted to an outer ministry role – and hence Michael Keenan being dropped from Cabinet. Queensland MP Karen Andrews, who was Science minister in the original Abbott Ministry, has been promoted into the Cabinet as the Minister for Industry, Science and Technology. Ms Andrews becomes Australia's sixth industry minister since the Coalition won government at the 2013 election, and the third since January last year.

Click here to read the article.

Australia's leading research minds to tackle PFAS

Some of Australia's best scientists and researchers will commence ground-breaking work to address PFAS contamination in the environment, thanks to new research projects announced by the Turnbull Government. The nine research projects will share in $8.2 million in funding under the first round of the Australian Research Council's Special Research Initiative PFAS Remediation Research Program. The projects will focus on the development of new technologies and remediation solutions to minimise and remove PFAS from contaminated areas in soil, groundwater, waterways and marine systems. It is expected researchers will work closely with industry and business partners to develop and refine solutions for tackling PFAS that can be applied in the field across Australia. The Program builds on the Turnbull Government's investment of more than $120 million in responding to PFAS contamination, including investigations, community support, remediation and research.

Click here to read the article.

The Medical Devices Fund

The Medical Devices Fund is an $8.2 million per annum, competitive technology development and commercialization program funded by the NSW Government, through the NSW Ministry of Health. In the 2018-2019 financial year, the fund has over $8 million available. The NSW Government established the Medical Devices Fund (MDF) to help encourage and support investment in the development and commercialization of medical devices and related technologies in NSW. In August seven winners of the 2018 NSW Medical Devices Fund (MDF) were announced by Health Minister Brad Hazzard. Among the winners were Eudeamon Technologies with its invention of a new age condom and the Kiko Knee Innovation Company, which manufactures custom knee replacements.

Click here to read the article.

NSW's new tech mega precinct

The New South Wales government has announced initial plans for a potentially vast new tech precinct in central Sydney – to be "Australia's Silicon Valley" – but has declined to reveal how much funding it would be contribute towards the ambition. The state says it would partner with Australian tech giant Atlassian, co-working space provider

Fishburners and industry group TechSydney to develop the precinct. Government says the precinct would create 10,000 jobs by 2036. The value of the state's investment in the plan would be orders of magnitude great than the $35 million it spent on the Sydney Startup Hub – potentially in the hundreds of millions of dollars or more, depending on the size of the land given over to the project, or whether the state also contributes cash.

Click here to read the article.

Research and Higher Education: How do Australian universities remain globally competitive?

Professor Ian Jacobs, the Chair of the group of eight universities and Vice-Chancellor of the UNSW addresses the above question in his speech at the AFR Higher Education Summit, which has taken place on the 28th to the 29th of August in Melbourne.

Click here to read the full speech.

2018 Eureka Prizes shine a spotlight on ARC-funded research

The Eureka Prizes, presented annually, highlight the very best of Australian science in the four categories of: scientific research and innovation; science leadership; science communication and journalism; and school science. The winners included those who have received fellowships and funding assistance towards their research endeavors from the Australian Government through the ARC's National Competitive Grants Program.

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