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SPOTLIGHT ON FEMALE STEM RESEARCHERS AT REGIONAL UNIVERSITIES

To coincide with the United Nation's World Science Day for Peace and Development on 10 November, Regional Universities Network (RUN) has released a new booklet that showcases the significant scientific contributions to society by female researchers at the network's seven universities.

RUN Women in Science, Technology and Engineering in Regional Australia includes the research stories of 14 women from Charles Sturt University, CQUniversity, Federation University Australia, Southern Cross University, University of New England, University of Southern Queensland and University of the Sunshine Coast.

Some of the stories describe the use of micro-technology devices in rugby league, combating disease in plants and animals, helping people with disability stay mobile, and developing stronger and lighter steel. Importantly, all stories reveal that the women chose careers in science, technology, engineering and mathematics (STEM) to help their communities and to teach others.

RUN Chair, Professor Helen Bartlett, said that female researchers at regional universities are making a real difference to the big issues facing Australia.

"RUN Women in Science, Technology and Engineering in Regional Australia is a prime example of the tremendous impact that research by women at RUN universities has on regional development and beyond.

"Women are contributing enormously to advances in STEM. But we know that they still face barriers to reaching their full potential," Professor Bartlett said.

"We must make sure that women have equal research and career opportunities in STEM. This is not only the right thing to do – it produces good outcomes for Communities, business and for Australia."

The booklet supports the Australian Government's Women in STEM Decadal Plan, and is available to read at www.run.edu.au/RUN-Women-in-STEM-2019.

To learn more about World Science Day, visit www.un.org/en/events/scienceday.

www.run.edu.au

Summaries of the 14 female researchers

Charles Sturt University

1. Sandra Savocchia

Sandra is a National Wine and Grape Industry Centre researcher working with growers in Australia's wine industry to protect vineyards from economically important pests and diseases. Grapes are one of the most valuable agricultural crops in the world. Sandra oversees the research to control and better manage vines from debilitating wood diseases.

2. Robyn Watts

Robyn is an environmental scientist who studies physical and ecological responses to environmental flows and the operation of dams and weirs in rivers. She works with biophysical scientists, social scientists, managers and the community to bring together scientific and local knowledge to improve the management of water, rivers, and wetlands. She believes that through good science and engagement, we can use this knowledge to improve decision-making for healthy river ecosystems and communities.

CQUniversity

3. Amy Cosby

Living in Gippsland, Amy has first-hand access to the challenges faced by farmers and others in agriculture. Amy co-developed the 'GPS Cows' program to educate young people about STEM in agriculture and career possibilities. The initiative uses livestock tracking technology to better understand animal movement and their interaction with the landscape to develop more efficient management practices.

4. Carolyn Unsworth

Carolyn works tirelessly for the 'invisible community' of millions of older Australians and Australians with disability. Her goal is to keep people on the road in a car, or mobile on a scooter as long as safely possible as it is critical to the length and quality of their lives. She believes that the 'big systems' do not provide the right support to help people manage as well as they could.

Federation University

5. Fatemeh Javidan

Fatemeh has spent years testing steel, one of the main sources of income in Australia. She hopes Australia can eventually corner the world market in highstrength steel, which brings sustainability benefits. Stronger, lighter steel would drive up demand within Australia, which in turn would drive up Australian-made steelmaking for domestic use and export.

6. Britt Klein

Britt is co-creating a workplace mental health and wellbeing digital tool for frontline workers in Australia's aged care homes. The workers are being empowered to take greater care of their mental health and wellbeing, which will also benefit the residents they work with. The tool is voluntary and ensures anonymity by only feeding back aggregated mental health and wellbeing workplace-based data to management.

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Southern Cross University

7. Hanabeth Luke

Hanabeth is working with top rural sociologists to better understand farmer needs and challenges, and what they most need from scientists in our rapidly changing times. Hanabeth is deeply motivated by helping regional communities and farmers to become more resilient. She is researching barriers to the uptake of new scientific innovation and technology.

8. Amanda Reichelt-Brushett

Amanda's research is focused on tropical marine ecotoxicology. Recently, Amanda and her colleagues found mercury in the Maluku region of eastern Indonesia, the fishing ground for Indonesia. 90 per cent of protein resources for human consumption come from the ocean. The mercury was found to be concentrated in marine sediment up to 82 times higher than recommended safe levels.

University of New England

9. Tamsyn Crowley

Tamsyn is on the front line of improving the intensive poultry production systems needed to produce Australia's number one consumed meat. Flocks in the thousands in regional areas and city rims means stepping up to intensive systems of either cages, barns or free range. Her research finds that intensively farmed chicken flocks may be better off living in a hybrid system of barn and cage known as 'colony cages.'

10. Cloe Cummins

Cloe is a sports scientist at the forefront of using micro-technology devices to inform rugby league training and recovery, and provide an improved basis for training professional players, especially women. Her future focus in research is on the development of training, recovery and injury prevention protocols specific to female rugby league players.

University of Southern Queensland

11. Belinda Nicholson

Belinda worked at the Southern Hemisphere's only dedicated machine, MINERVA Australis, to follow up exoplanet leads from the latest generation space-based telescope: the NASA/MIT Transiting Exoplanet Survey Satellite, TESS. She is now at Oxford, where she will be helping advance the inter-generational effort to bring exoplanets – planets orbiting stars other than our Sun - into ever sharper focus.

12. Niloofar Vaghefi

Niloofar uses the latest DNA-level investigation tools to better protect the Australian summer grains that help feed Asia and Africa. She does this by travelling from northern New South Wales to across Queensland to talk to growers and walk across paddocks to identify the hungry pathogens that attack mungbeans and sorghum.

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University of the Sunshine Coast

13. Martina Jelocnik

Martina is investigating the genetic diversity, nature and evolutionary origins of chlamydial infections in livestock and wildlife. This will ultimately reduce the number of Australians each year contracting Chlamydia from infected native birds and the loss of foals on farms; and lessen economic losses suffered by farmers. Martina also routinely engages with schools and the public to communicate her findings.

14. Gemma Read

Gemma is researching the viability of fully autonomous vehicles (AVs) - self-driving or driverless cars in Australia. She is midway through her three-year investigation of how autonomous vehicles might interact with traditional vehicles and vulnerable road users. She is focused on the unintended consequences associated with how people behave around AVs, given that they will behave in a risk averse way.

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