Transcript

Glen Paul: Welcome to CSIROnow.

Owing to the sheer size of this country, Australia is one of the world's biggest consumers of satellite earth observation data. Making sure that information from thousands of kilometres away remains accurate is a job for ground crews, who take measurements at the same time as a satellite passes overhead. It's called vicarious collaboration – that means finding large, bright and uniform surfaces to measure the light reflecting off the earth's surface.

This could be about to change as CSIRO is working on a prototype rover which can collect this information autonomously and send it wirelessly back to researchers. The end result is more accurate measurements, leading to efficient, productive, and profitable mining and agricultural industries, all thanks to satellites.

Jasmine Leong: CSIRO is a foundation partner of a joint research academy between Monash University and the Indian Institute of Technology Bombay, called the IITB Monash Research Academy. The partnership aims to strengthen research collaboration, and to attract top Indian postgraduate students to work with CSIRO.

Mohan Krishnamoorthy: There has been a tenfold growth in the number of R&D centres that have opened in India in the last ten years, so this is a good way for scientists in CSIRO also to connect with Indian counterparts, Indian scientists and so on.

Glen Paul: As part of National Science Week in August, Melbourne's famous inner city market was treated to some fun with the Living Science at the Queen Victoria Markets display. Scientists from various organisations, including CSIRO, offered a variety of hands-on science, along with some delicacies not normally found at the bustling fruit and vegetable markets.

Participant: So we would like five very brave people to come up and have a go at eating a scorpion.

Glen Paul: Thanks to the work of the scientists involved, the day certainly achieved its goal of raising awareness of science among Melbourne's market goers.

Jasmine Leong: In a Brisbane forest scientists from around the world recently gathered for a forest laser shootout. Representing CSIRO was Super ECHIDA, an advanced version of the original ECHIDA ground based laser scanning system used for assessing forest structure. In collaboration with Boston University, the new system's official name is DWEL, which stands for Dual Wavelength Echidna Lidar.

Dr. Newnham: Around ten years ago they build the first generation of ECHIDNA instruments, the ECHIDNA validation instrument, and we had a lot of discussions during that time with the Boston University group that we were working with, and talked about the idea of using multiple wavelength lasers in the next generation ECHIDNA instrument.

Jasmine Leong: Collaboration and partnership means the best minds are working together to tackle the scientific challenges of our time.

Glen Paul: Australia's new Marine National Facility research vessel, *Investigator*, is having sampling equipment and devices purpose built. To ensure specifications are met, Doctor Lindsay Pender was in Coffs Harbour to run a factory acceptance test for a corer, a 3.5 tonne device designed to freefall and plunge into the seafloor as far down as seven kilometres, and take core samples.

From a barge the new equipment's ability to be triggered was put to the test. This is just one of a range of scientific instruments RV *Investigator* will be fitted with to take seafloor samples.

Jasmine Leong: Science met art at Canberra's Questacon in August, with a stellar scope exhibition created by CSIRO science art fellow, Eleanor Gates-Stuart. Eleanor collaborated closely with scientists to create her 3D interactive art works. The exhibit explored the story connecting the Canberra region to Australia's major food crop, wheat.

Eleanor Gates-Stuart: So some of it is non-linear, some of it's quite abstract, some of it's very scientific, although it looks very artistic.

Jasmine Leong: And that's CSIROnow. For more information on these stories, or to follow us on other social media, go to www.csiro.au.