

Industry and University collaboration yields Government funding towards ARC Training Centre for Advanced Technologies in Rail Track Infrastructure

Support from the Australasian Centre for Rail Innovation for a major research effort to transform rail construction and maintenance has borne fruit.

The Minister for Education and Training, Simon Birmingham, announced in June a successful funding bid by the University of Wollongong. It is for nearly \$4 million from Australian Research Centre funding from 2017 to 2020 for Advanced Technologies in Rail Track Infrastructure (ITTC-Rail). This money will be matched by a further \$4.8 million in cash and kind from a range of partners.

ACRI is a leading industry partner in the new Australian Training Centre.

ACRI CEO Vicki Brown said, "This new research centre will be strategically focused on the aspects of advanced design and manufacturing for Australian railroad infrastructure."

Wollongong University's Dr Buddhima Indraratna, who headed the ARC bid, said, "The aim of the new centre is to transform Australia's rail construction and maintenance technologies through specialist training of industry-focused researchers.

This is to be achieved by close collaboration with companies within the rail-supply chain; interdisciplinary programs promoting novel design approaches; and innovative fabrication of products delivered through advanced manufacturing techniques.

The programs will address geotechnical difficulties in building new rail to meet higher operating speeds and axle loads. The aim is safer, more reliable and cost-effective rail networks that will benefit the nation's transportation, mining and agriculture sectors."

Vicki Brown said, "The new ARC grant comes at a critical and exciting time for Australian rail, in both freight and passenger traffic. In particular, the recent go-ahead for Inland Rail will generate demand for the best technology, much of which will be developed during the construction phase.

ACRI has been a key collaborator both within the rail sector and between transport modes. That philosophy was applied to ACRI's support of this new ARC.

"Close collaboration is essential to ensure that the outcomes can be adopted by our rail participants through prototype (large-scale) physical modelling, numerical simulations and field trialing in suitable sites," Vicki Brown said. "It is expected that the proposed research will provide capital life-cycle enhancement and environmental and sustainability benefits."

Dr Indraratna said that ITTC-Rail was one of only nine Industrial Transformation Training Centres funded in this round.

Minister Birmingham said, "Many of these projects will also grow much-needed industry-research collaboration and support the training and skilling-up of our next generation of researchers."

Vicki Brown said that ACRI's history supported the Minister's prediction. ACRI, now independently funded, grew from a Cooperative Research Centre funded by the Federal Government. That seeding spawned rail-industry recognition and support for research.

"In turn, that resulted in ACRI pursuing and obtaining national and international collaborative agreements on rail research," she said. "The University of Wollongong's successful proposal is a salient example of leveraging research money to provide industry-wide benefits."

The University of Wollongong's university partners in this training centre are: Swinburne University of Technology, University of Sydney, Queensland University of Technology, Curtin University of Technology, Western Sydney University, University of Queensland, University of Newcastle, Monash University.

The industry partners are: Australasian Centre For Rail Innovation (ACRI) Limited, Metro Trains Melbourne Pty. Ltd., Bridgestone Corporation, Geofrontiers Group Pty Ltd, SMEC Australia Pty. Limited, Ecoflex International Pty Limited, China Railway Eryuan Engineering Group Co.Ltd, Innovative Technology Beijing, Nu-Rock Technology Pty Limited, Tensar International Limited Partner Organisation, Elasto-Plastic Concrete Pty Ltd, Boral Construction Materials Limited, Polyfabrics Australasia Pty Ltd.

Vicki Brown said, "ARCI is proud to have supported this successful Australian Research Centre application. We feel sure that it will result in economic, safety and sustainability benefits to the rail industry and the community at large far greater than the cash and in-kind inputs over the next four years. ACRI's experience to date tells us that investment, such as this, in targeted research has huge pay-offs."

