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ENGINEERING E2E is currently entering its fourth year and I think it will be our most productive yet. Much of the research we've commissioned is moving into an implementation phase this year. Eight feasibility studies for micro-credentials will be completed during the first half of the year and phase 2 of our degree apprenticeship pilot begins next month.

After considering a number of initiatives that could contribute to increasing Māori engineering graduate numbers, I'm very pleased to announce Engineering e2e's support for a cultural competency and mentoring programme.

Te Tapuae o Rēhua will work with Ara Institute of Canterbury and Otago Polytechnic, City Care, Hawkins, Downers and other firms to double the number of Māori engineering graduates by 2021 through the He Toki Iwi Industry Māori Engineering Workforce Partnership.

Look out for the launch of our resource portal in early February. The portal has been developed specifically to support those who employ engineers. It's a database of information, tips and tools to recruit, retain and grow your team.

Your feedback is always very welcome. Please get in touch with the Engineering e2e team at engineeringeze@tec.govt.nz

Sir Neville Jordan
Chair, Engineering e2e Steering Group

Initiatives undertaken through the Engineering e2e programme contribute directly to the achievement of the Government's Business Growth Agenda priority of building a more productive and competitive economy.



He Toki Iwi Industry Māori Engineering Workforce Partnership funded

Engineering e2e is funding Te Tapuae o Rēhua to implement a programme that will more than double the number of Māori engineering graduates from Ara Institute of Canterbury (Ara) and Otago Polytechnic by 2021.

Over the past two years, the Engineering e2e Steering Group has considered a number of initiatives which could contribute to increasing Māori engineering graduate numbers. In December 2017, the Steering Group approved funding for Te Tapuae o Rēhua, which has a proven track record in working closely with industry to influence training and professional learning and development.

This project will leverage collaboration between Ngāi Tahu, key industry employers, engineering tutors and students to create successful engineering education and employment outcomes.

SECONDARY-TERTIARY PATHWAYS PROJECTS (STPPs) ENTER SECOND FULL ACADEMIC YEAR

Project managers for the six STPPs spent time at the end of 2017 reflecting on their year and revising their plans for 2018. They were encouraged to experiment and make changes to their plans to better meet the funding aims.

Secondary-Tertiary Pathways Projects aim to support secondary schools and ITPs to work collaboratively to deliver programmes that will prepare and pathway students – particularly women, Māori and Pasifika – into tertiary engineering study.

PORTAL OPENING NEAR YOU

Testing is nearly complete on a resource portal for employers of engineers. The portal will provide access to a range of materials and practical tools to assist small to medium sized engineering companies to recruit, retain and grow employees.

Developed by Engineering e2e and hosted by Business NZ, the portal will be opening in early February.



PROFESSOR JULIA CLARKE VISITS NEW ZEALAND TO TALK ABOUT DEGREE APPRENTICESHIPS

Manchester Metropolitan University (MMU) is one of the leading universities worldwide in the development and delivery of degree apprenticeships.

Professor Julia Clarke (*right*) is Pro-Vice-Chancellor, Faculty of Business and Law and has been instrumental in supporting developments in the degree apprenticeships offered by MMU.

MMU partners with over 130 employers to develop and deliver degree apprenticeships in Digital & Technology Solutions, Chartered Management, Senior Leader Masters



(MBA) and Chemical Science. They also deliver Legal Services Apprenticeships with Manchester Law School. They currently have 600 apprentices on degree apprenticeship programmes.

MMU has developed degree apprenticeships in collaboration with leading national employers. These include Asda, AstraZeneca, BAE Systems, Barclays, BBC, Chartered Management Institute, IBM, Lloyds, MBNA, McDonald's, Pizza Hut, Tech Partnership, Thales, United Utilities, and many small- and medium-sized firms.

MMU staff have reviewed a proposal from Otago Polytechnic and WelTec for phase 2 of a degree apprenticeship programme for engineering. This programme was begun by Massey University and is being developed in collaboration with the Institution of Public Works Engineering Australasia NZ division.

PROMOTE ENGINEERING BY GETTING INVOLVED

"There's a huge range of science, technology, engineering and maths (STEM) activity on offer to schools around the country, both curriculum and careers focused," says Royal Society Te Apārangi Schools Programmes Coordinator Jessie McKenzie.

Industry groups, government, crown research institutes, polytechnics and universities offer STEM-based initiatives covering all age groups of school students, and many are looking for volunteers willing to lend their expertise. Getting involved gives you, as an engineer or engineering educator, a chance to showcase the opportunities engineering offers.

There's no one place to go to find out what's happening around the country, so we asked Jessie to tell us about just a few of the STEM-based programmes on offer to primary and secondary students in 2018.

CREST is an international awards scheme designed to encourage Year 0-13 students to be innovative, creative, and to problem solve in science, technology and environmental studies. Students benefit from the help of a technical expert or consultant who can offer them advice and guidance as they carry out their project. Projects involve students in technological practice and/or scientific investigation, as they find creative solutions to problems that are of real significance in their lives.

FUTUREINTECH supports teachers and careers advisers. They take Ambassadors from industry to schools to provide an engaging context for curriculum-based learning in maths, science and technology. Being an Ambassador is a good way to develop public speaking skills and learn how to pitch presentations to non-specialist audiences.

HELLO CAFÉ aims to support young women to open their minds, create opportunities, and gain confidence to help those around them. Hello Café has created a series of problem-solving workshops for 10-13 year olds. The aim is to ignite a conversation where the potential of these students is realised: solving problems, contributing to their communities and finding inspiration for the future.

ASB BRIGHT SPARKS was created by The Skills Organisation in 2000 to encourage future engineers, electricians and programmers. Bright Sparks connects people with an interest in technology and software, so they can exchange ideas and information, and give encouragement to those starting out. It also enables young people to experience electronics and software directly through a project-based approach.

TRANSPOWER NEIGHBOURHOOD ENGINEERS AWARDS gives prizes every year to the best and most innovative collaboration between students, teachers and volunteer engineers. These awards offer students the opportunity to work with engineers on practical projects in the school and community.

UNLOCKING CURIOUS MINDS funds initiatives that support innovative science projects that engage New Zealanders, particularly young people, with science and technology in their everyday lives. Curious Minds has a **database** of research, competitions, awards, exhibitions, inspiring talks, roadshows and festivals to help you find out what's going on near you.

A large number of projects have been funded over the past few years. In the 2018 Unlocking Curious Minds round, 33 new projects have been awarded just over \$2 million.