

BUILDING A STEM GENERATION

WITH 74% OF AUSTRALIAN CEOs CONCERNED ABOUT THE CURRENT AND FUTURE AVAILABILITY OF STEM SKILLS, THE STATE GOVERNMENT IN NEW SOUTH WALES IS ON A MISSION TO CREATE A NEW GENERATION OF STEM EXPERTS – AND IT'S PARTNERING WITH CSIRO, AUSTRALIA'S SCIENCE RESEARCH AGENCY, TO DO IT. MARY MULCAHY, DIRECTOR OF CSIRO'S EDUCATION AND OUTREACH TEAM, EXPLAINS

MARY MULCAHY

Director, CSIRO's Education and Outreach Team



Why are you passionate about STEM education?

Science, technology, engineering and maths are integrated into our lives – so enmeshed that we often don't realise or recognise them. STEM skills are also really important for current and future jobs.

Governments around the world recognise that in a new global economy driven by data, digital technologies and innovation, organisations will need more employees with STEM training and that STEM does and will drive socio-economic development. STEM skills are already in high demand and growing – STEM jobs are growing 1.5 times faster than other jobs in Australia. However, 74% of Australian CEOs are concerned about the current and future availability of STEM skills; right now, the US cannot find enough people with STEM skills to fill current labour market needs and it is predicted there will be 7 million new STEM jobs in Europe by 2025 and not enough people to fill them.

A PricewaterhouseCoopers report in 2015 estimated that changing just 1% of the workforce into STEM roles would add \$57.4 billion to Australia's gross domestic product by 2050.

So, why am I passionate about STEM? One, I love it and all it brings to our lives; and secondly, it's really important for Australia if we are to be successful on the global stage.

ON THE CSIRO WEBSITE IT SAYS: "GENERATION STEM IS A 10-YEAR INVESTMENT INTO THE DEVELOPMENT AND RETENTION OF SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) SKILLS IN NEW SOUTH WALES, AUSTRALIA". WHEN WAS GENERATION STEM SET UP?

Generation STEM was formally launched in June 2019 by New South Wales Minister for Skills and Tertiary Education Geoff Lee. It is part of the New South Wales government commitment to attract, support and retain young people in science, technology, engineering and maths education and skilled careers.

The first programme, The STEM Community Partnerships Programme targets year 9 and 10 students and provides them with the opportunity to work on their own STEM challenge, inspired by industry and local government future challenges.

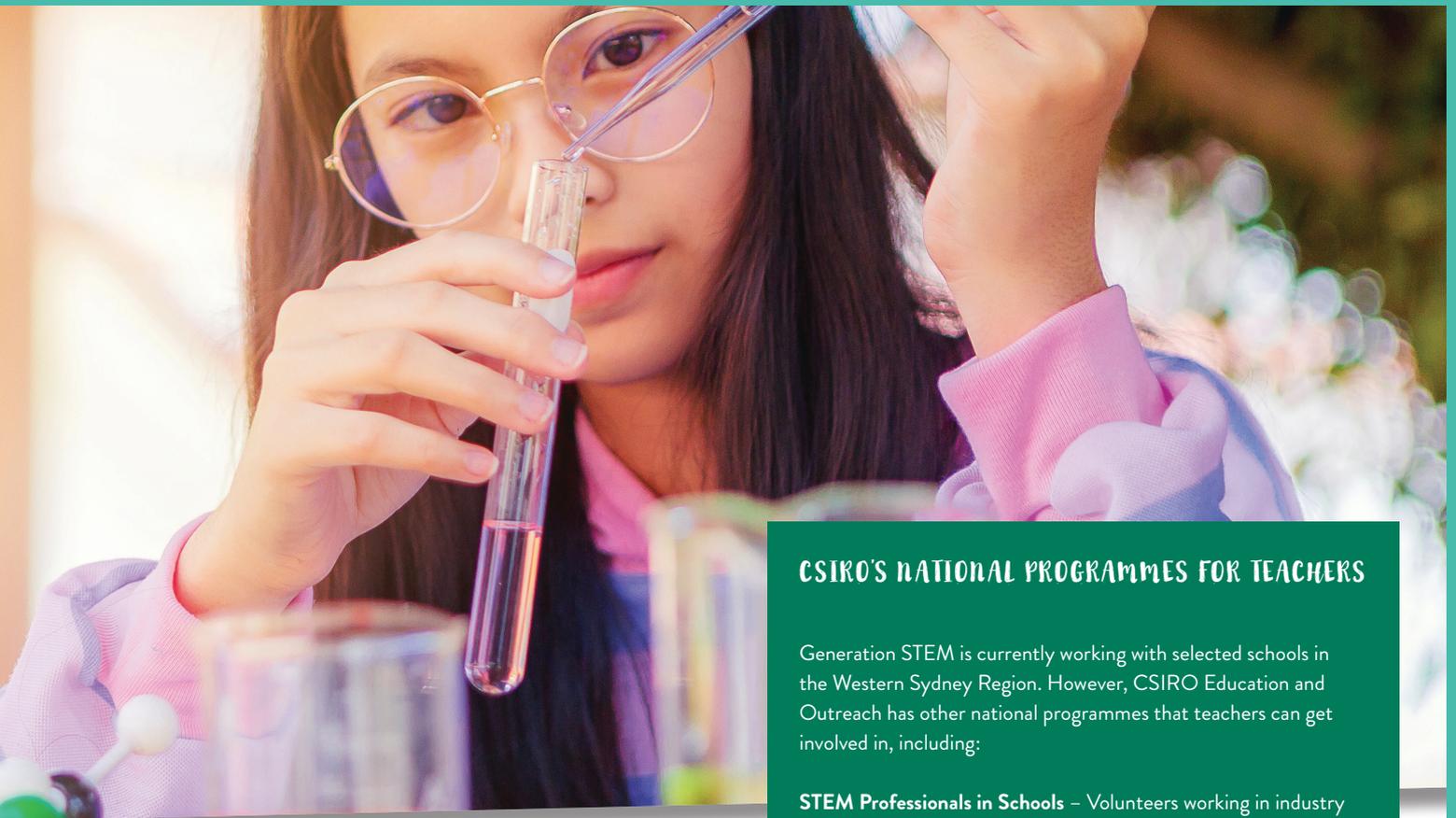
WHY IS THE FOCUS ON NEW SOUTH WALES?

Generation STEM is funded by the New South Wales state government as part of their commitment to attract, support and retain young people in science, technology, engineering and maths education and skilled careers.

The initiative takes a community driven approach, ensuring tailored programmes address local business needs and equip young people with the relevant skills to secure local jobs.

One of the major components of the STEM Community Partnerships programme is partnering with local councils and industry to identify local issues for students to focus on solving with STEM solutions. Students have the opportunity to offer new and innovative thinking to help solve real-world problems in their community.

STEM Community Partnerships is the first programme to launch under Generation STEM.



CSIRO'S NATIONAL PROGRAMMES FOR TEACHERS

Generation STEM is currently working with selected schools in the Western Sydney Region. However, CSIRO Education and Outreach has other national programmes that teachers can get involved in, including:

STEM Professionals in Schools – Volunteers working in industry partner with schools to provide mentoring, career talks and STEM educational activities.

BHP Foundation Science and Engineering Awards – These awards recognise Australia's brightest student researchers and innovators, and also celebrate teachers who engage students in the study of open-ended investigations; teachers who work consistently within their school community and wider professional arenas to make an outstanding contribution to science education in Australia.

Creativity in Research, Engineering, Science and Technology (CREST) – Providing CPD, educational resources and awards, CREST aims to progress the development of an inquiry culture in Australia's education system, particularly in science, technology and engineering.

Digital Careers – Offering a range of educational resources for different age groups, Digital Careers delivers real world, future-focused education initiatives to help students pursue an exciting digital career.

PLEASE DESCRIBE THE INTENDED BENEFITS FOR:

a) Teachers

The programme increases teachers' confidence, skills and knowledge through exposure to contemporary STEM practices, which enhances their teaching practice. The Generation STEM resources can support teachers' lesson planning and delivery of the Australian curriculum. Also, there is no cost to participate.

b) Students

Generation STEM allows students to explore a wide-range of STEM careers, to find which one is right for them. Generation STEM not only drives an increase in STEM career aspirations, but also an understanding of various local STEM careers, pathways and opportunities to take advantage of promising job opportunities close to home.

Generation STEM provides valuable opportunities for both top performing students and those who demonstrate a high-potential for success with a keen interest in STEM industries, regardless of background.

The Generation STEM initiative aims to create strong partnerships between local schools and industry, with the goal of highlighting local STEM careers and opportunities and providing avenues for students to develop their STEM skills in a local meaningful way. For teachers and students, this is an opportunity to engage with the open-inquiry learning process and connect with STEM professionals to expand their knowledge of what a STEM career looks like.

WHAT OTHER GENERATION STEM PROGRAMMES ARE IN THE PIPELINE?

As it is a ten-year programme, we're looking at different ways to expand and capitalise on what the market needs. CSIRO will work with government, the education sector and industry to develop programmes to drive greater participation and engagement in STEM in New South Wales.

Generation STEM will focus on achieving measurable results and backing initiatives that have proven impact. At the moment, we're looking to expand the Community Partnerships programme to other Western Sydney Council areas as well as regional New South Wales.

ON LAUNCHING GENERATION STEM, DR LARRY MARSHALL, CSIRO'S CHIEF EXECUTIVE AND GENERATION STEM TRUSTEE SAID: "TODAY'S STUDENTS WILL USE SCIENCE TO INVENT THEIR OWN CAREERS, CREATING A BETTER FUTURE FOR ALL OF US." WHAT IS CSIRO'S VISION OF A BETTER FUTURE FOR ALL OF US?

Solving Australia's greatest challenges through innovative science and technology.