SCOTT SLEAP

PRIME MINISTER'S PRIZE FOR EXCELLENCE IN SCIENCE TEACHING IN SECONDARY SCHOOLS

Opening young eyes to careers in science, technology, engineering and maths

Cessnock in New South Wales was traditionally a mining town, but today's high-value jobs in the Hunter Valley are in agriculture, tourism and increasingly in aerospace. Williamtown is already a maintenance base for Australia's F/A-18 fighters. Soon it will be a maintenance hub for the Joint Strike Fighter in the Asia-Pacific.

Many of Cessnock's students don't believe that the new jobs are for them. Dr Scott Sleap is opening their eyes and showing them that they can participate in the new economy. He's done that by creating the Cessnock Academy of STEM Excellence, a partnership between Cessnock High School, its feeder primary schools, and local industry.

Students struggling with numeracy are catching up with the help of robotics. A team of Indigenous girls are making and racing model F1 cars, mentored by Boeing engineers. And the number of students signing up for STEM subjects is growing. NSW Education is now rolling out similar programs in other regional centres.

Dr Scott Sleap receives the $50,000 Prime Minister's Prize for Excellence in Science Teaching in Secondary Schools. Scott is Deputy Principal, STEM, for the Cessnock Learning Community.

At school, Scott Sleap was told that a career in science or engineering wasn't for him. He studied education instead, but after working as a teacher for a decade and a half he was drawn back to STEM.

So in 2013, while teaching Industrial Arts and undertaking a PhD in Engineering, Scott started working with Regional Development Australia – Hunter to build a curriculum model that integrates science, technology, engineering and mathematics and brings in 'real-world' industry perspectives.

The model, called iSTEM, has been adopted in more than 260 schools across NSW.

Now he's helping to implement the program, unlocking careers in STEM for thousands of students in the Hunter Valley and across NSW.

His work has been influential in turning around the Hunter Valley's school science performance. Local schools in the program have seen a 19 per cent increase in Year 11 participation in STEM subjects over the course of seven years, while the state average has fallen slightly in the same period.

"What I really love about my job is being able to make a difference in a young person's life," Scott says.

"Teachers have the capacity to engage and inspire our young people, and I can do that not only at this school, but across the state."

Scott has created school-industry partnerships with organisations including Google, BAE Systems, Boeing Australia, PricewaterhouseCoopers, Jetstar, and Thales.

In an area where approximately 22 per cent of students identify as Indigenous, Scott has established several Indigenous engagement programs.

Girls who have participated in the programs are now three times more likely to study Engineering Studies, 70 per cent more likely to study Software Design and Development, and 35 per cent more likely to study either Extension 1 or 2 Mathematics.

With Boeing Australia, he organised for a group of Indigenous boys to complete work experience at the Williamtown RAAF base, and try out Thales' 737 flight simulator.

Scott also teamed up with Boeing Defence Williamtown to support a team of Indigenous girls, based at Cessnock High School, to reach the state finals of the international F1 in Schools competition, in which students design, build, and race a mini Formula One car.

Scott is also working with hundreds of teachers across NSW to help inspire and educate them in the sciences and expand the programs he began.

"What really excites me about being an educator is working with young people to expand their horizons," Scott says.
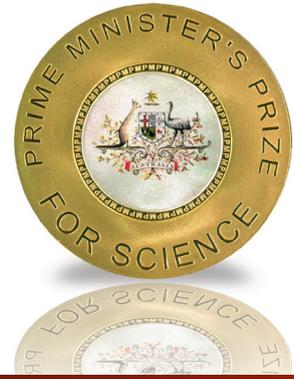
Scott's latest project is a culmination of his earlier work: with the support of local school leaders, he has brought together Cessnock High School and five local primary schools to create the Cessnock Academy of STEM Excellence (CASE). CASE is creating transition programs for students entering high school and at the same time developing a community of teachers with solid STEM understanding and future-focused teaching skills.

The structure of CASE—in which high schools team up with partner primary schools—is proving so successful that it has already been picked up for use in other regions of NSW.

"It's exciting to work with other teachers and on programs that can then be transferred and inspire a whole other generation of young people," Scott says.

Further reading

http://www.meprogram.com.au/istem

https://chslccase.org

Career profile: Scott Sleap

QUALIFICATIONS

2011–2015	PhD, University of Newcastle
1992–1995	Bachelor of Education (Design and Technology) Honours, University of Newcastle

CAREER HIGHLIGHTS

2018–ongoing	Deputy Principal STEM, Cessnock High School Learning Community
2018-ongoing	STEM Project Officer, NSW Department of Education
2018-ongoing	Conjoint Senior Lecturer, University of Newcastle
2018	BAE System Chairman's Award, Advancing the Next Generation Program
2018	STEM Industry/Schools Partnerships (SISP) Program Manager, NSW Department of Education
2017	Conference Convener EduTECH 2017 Conference
2017–ongoing	Senior Advisor, ME Program, Regional Development Australia
2017	Head Teacher Teaching and Learning STEM, Maitland Grossmann High School
2015–2017	ME Program Director, Regional Development Australia