



Australian Government

THE PRIME MINISTER'S PRIZES FOR SCIENCE



BRETT MCKAY

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



Bringing science alive

Kirrawee High School has a rich history in sport and music. Its alumni include six Olympic athletes and several leading musicians. Today, thanks to the work of Brett McKay over the past twenty years, Kirrawee has become a force in

science education as well.

Brett McKay is Head Teacher Science, at Kirrawee. As a physics and science teacher he has overseen a four-fold increase in students taking physics. Many have gone on to careers in science around the world. He has inspired young women to consider science careers. A Year 11 student recently said, "Thanks to Mr McKay... I found my love and passion for science and a highly possible career path for me."

Importantly he's brought science to life for students not considering science as a career. He recognises that we all need a grounding in science to make informed decisions in the modern world.

And he's shared his knowledge of science teaching with his peers through the Science Teachers Association of NSW and with primary schools in his area. He is seen as an encouraging, resourceful, and engaging teacher who brings science alive for students.

Mr Brett McKay receives the Prime Minister's Prize for Excellence in Teaching in Secondary Schools for his achievements in inspiring his students to love science and to use it in their daily lives.

Within the school Brett has played a major role in curriculum development, in particular, finding ways to link the curriculum to the outside world. He uses every opportunity to introduce his students to working scientists, including lectures at University of New South Wales, Sydney Observatory, Green Point Observatory, and the Australian Institute of Physics.

He's working with the Science and Engineering Challenge, Growing Tall Poppies, bringing in forensic science incursions, and he's sending students off to work experience at ANSTO,

the home of Australia's nuclear reactor. Then when the students return to school they report to their peers, to the teachers and to the parent community on what science is really all about.

These initiatives have contributed to the four-fold increase in physics participation and a 150 per cent increase voluntary and co-curricular science activities.

Twenty-five per cent of Year 10 students are now seeking science-based work experience, and this is leading to an increase in students doing rigorous science courses in Year 11.

He is making real inroads in getting girls to engage in science. Six Year 10 girls recently attended a Growing Tall Poppies event at ANSTO. After the event they all reported that, for them, it had turned science from formulas to real world applications. All would now consider a career in science. He's also brought alumni back to the school for women in science lectures. These and other activities have seen a 10 per cent boost in girls studying physics in just the last year.

As Head Teacher Science Brett deliberately works to put his colleagues in leadership roles: mentoring them in curriculum; in developing practical classes and lesson plans; and in preparing their students for the challenges of the Higher School Certificate. One of his staff reported, "I'm thankful to be working with a Head Teacher Science who is interested in my professional development and sees the importance of supporting beginning science teachers who will contribute to science education for many years to come."

Brett's impact reaches far beyond his school. He has guided curriculum development and the future shape of teaching through membership of the Board of Studies, Teaching and Educational Standards NSW Science Reference Group, through work guiding state syllabus development and curriculum resourcing, and through a national pilot study of innovative online learning.

He also mentors his fellow science teachers through his involvement in state and national science teacher associations and through the NSW Department of Education's mEsh program developing programs involving flipped learning, pre-testing and other innovations.

To quote a former student, "He encouraged thinking, and instead of spoon-feeding us, he encouraged us to think back to first principles. He inspired me and many of my classmates to take up further education at university."



Brett says, "A great science class is one that confuses students. They make predictions, run the experiment and find that something different happens. You know it's working when the students are engaged in what they're doing and they start asking questions in the playground."

He's proud of past students who are working in science around the world, studying fusion, fossils, biomechanics and fluid dynamics. But he says it's not all about creating scientists, "It's also about giving students a passion for science that they can use in everyday life for example as electricians. If you're literate in science you can do whatever you want to."

Career profile, Mr Brett McKay

QUALIFICATIONS

1989	Graduate Diploma of Education, University of New South Wales
1988	Bachelor of Science (Honours), University of New South Wales

CAREER HIGHLIGHTS

2017	Convener, Conference of Australian Science Teachers Association (ASTA)
2017	mEsh Project Leader, NSW Department of Education
2017	Advisor and school implementer, NSW Department of Education CERN masterclass project
2016	Japan Teacher Exchange, Australian Science Teachers Association
2016	Facilitator, Young Tall Poppies, Kirrawee High
2015	Bush Blitz Scholarship, Oikola, Queensland
2015	Science Reference Group and Senior Science Writing Brief, Board of Studies, Teaching and Educational Standards NSW
2014, 2016	Presenter, Science Teachers Association of NSW (STANSW) HSC study days
2013	Outstanding Professional Service Award, Professional Teachers' Council NSW
2012–2017	Convener and Presenter, STANSW Physics Professional Learning Conference

2012	STANSW and Board of Studies Liaison for the writing of NSW Science Syllabus F-12
2010–2014	Treasurer, STANSW
2012	Facilitator, Inaugural Australian-Japanese Teacher Exchange
2009–2014	Councillor, ASTA
2009	NSW Premiers Teaching Scholarship
2009	ASTA advisor to Australian Curriculum, Assessment and Reporting Authority (ACARA) on Australian Science Curriculum
2008–2009	Councillor, STANSW
2001	PASCO Scientific International Training Program, USA
1993	Science Teacher, Kirrawee High School
1990	Science Teacher, Condobolin High School

Further reading

<https://web1.kirrawee-h.schools.nsw.edu.au/internet/>
Twitter @nswbrett