# Science Technology Engineering Maths (STEM) Symposium

John Monash School Melbourne 25 November 2013

Hosted by the Australian Government Department of Education and the Victorian Department of Education and Early Childhood Development (DEECD)

The aim of the STEM Education Symposium was to bring together key stakeholders with an interest and expertise in STEM to consider major issues for Australia in the area of STEM school education including:

* strategies for maintaining student interest in STEM subjects;
* equipping STEM teachers with the knowledge and skills they need to do this; and
* building workforce capacity in STEM careers.

Key speakers were drawn from the Australian and Victorian departments of education, the New York Academy of Sciences, the Australian Academy of Science, STEM professional associations and representatives of Australian organisations with a strong interest in STEM education in schools. Science Education Technicians Australia (SETA) was privileged to be invited to attend this event.

Sonia Sharp (Deputy Secretary Vic DEECD) welcomed everybody and gave a brief outline of the events for the day.

Senator the Honourable Scott Ryan (Parliamentary Secretary to the Minister for Education) opened the Symposium and raised concerns for the decline in the numbers studying in the areas of STEM. He mentioned a three pronged approach; to consult and train teachers; work with States to ensure strong interest in STEM subjects; and continue with “Primary Connections” and “Science by Doing” programmes.

Mr Richard Bolt (Secretary DEECD) highlighted the Primary Science and Maths programs that the State Government supports.

Mr Phil Scanlon, founder of the Australian American Leadership Dialogue, spoke about his time in the USA and the New York Academy of Science. This is a very prestigious organisation and has many institutions and industries from around the world wanting to be involved and he is looking forward to continuing the connection with them.

Mr Ellis Rubinstein, Head of the New York Academy of Science, spoke about working with the gifted and talented students and the advantages of the networks that they have established with Universities and industry worldwide. The USA has the same issues as in Australia with dwindling numbers of students taking up STEM courses.

Professor Suzanne Cory (and Shelley Peers) from the Australian Academy of Science raised the need to encourage the best and brightest students into STEM studies. The core duty of the Academy of Science is to promote science and maths in school. Concerns are that there are too few experienced and enthusiastic science teachers and that the curriculum is too full to be able to do real science. They provide two programs “Primary Connections” and “Science by Doing”. “Primary Connections” aims to enhance primary school teachers’ confidence and competence for teaching science and also focuses on developing students’ knowledge, understanding and skills in both science and literacy. “Science by Doing” is a free on-line resource designed to engage secondary students through an enquiry based approach. It can include working with “real scientists” doing science experiments.

Claudette Baker from La Trobe University spoke about connecting higher level university students with secondary students. This benefits both sides as the secondary students work with real scientists and talk about their research and conduct their own practical work; while the undergraduates gain an understanding of effective communication skills at a different level.

Peter Corkill Principal of John Monash and Prof Adam Shoenmaker from Monash followed a similar theme, with the connection of the secondary students and the undergraduate students working on sharing ideas on projects on both levels.

Phil Scanlon then led a panel discussion which raised topics including:

* Girls in science and the need for positive role models
* Scientists in schools
* Building communities to advance science
* Key skill development
* Specialist centres e.g. GTAC, Biolab, Ecolink
* Emerging science electives in schools e.g. nanotechnology, bioinformatics, imaging science
* Students as active researchers
* ICSSF International Student Science Fair (John Monash Dec 2015)

It was an interesting day with many high profile speakers promoting the importance of improving participation and engagement in Science Technology Engineering Maths (STEM) in schools in Australia.

Dale Carroll

SETA