

## From the President



This newsletter must begin with the brilliant news that AAMT has successfully partnered with the Australian Academy of

Science to be awarded \$6.4 million to develop the Mathematics by Enquiry initiative. Will Morony has more details in his column, but I must say here that the development of this plan to involve AAMT with the Academy has been another successful achievement of Will's. I strongly believe that this is a landmark initiative for mathematics education in Australia, and I am sure you will be as excited as I am when you see the quality of the resources that will be produced, and the effectiveness of the accompanying professional learning for teachers that will be developed alongside the classroom materials and approaches. My confidence in this initiative of the Academy and AAMT is based on the recognised expertise of the leaders, and on the

design of the work which includes rounds of trialling in classrooms. More details will be available soon so keep your eyes on the AAMT website and our e-News. My personal hope is that this initiative will address the rebalancing of attention paid to and success in developing with students the three proficiencies of the *Australian Curriculum: Mathematics* that are sometimes neglected siblings of the Procedural Fluency proficiency. Yes, I am talking about Conceptual Understanding, Reasoning, and Problem Solving. Those parts of our practice as teachers of mathematics are essential and we all will welcome new ideas in finding new ways to plan lessons that incorporate them.

We are all very busy at this time of the year as examinations, marking, report writing and all the end of year preparations are upon us. Some will also be preparing to give back to the profession through conferences and professional learning opportunities: I hope to meet with many AAMT

members at the Mathematical Association of Victoria annual conference in December. Like all the conferences and meetings of the State and Territory affiliated associations, it is an excellent opportunity to meet with colleagues and friends, catch up on news and new ideas, and share your ideas and enthusiasm. I have certainly enjoyed similar conferences in Fremantle, Brisbane, Adelaide, the Hunter Valley, and Launceston in recent times. My target is to visit Darwin and Canberra too before I hand over to the President Elect, Allason MacNamara, in May 2016.

If you are tasked with buying books for presentation at school prize nights, do take a look through the AAMT online catalogue. There is a section on Prizes with wonderful books—useful for Christmas gifts too! Go to [www.aamt.edu.au/Webshop/Prizes](http://www.aamt.edu.au/Webshop/Prizes).

Best wishes,

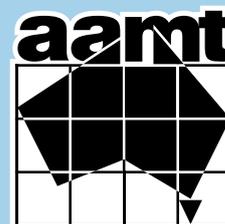
**Mary Coupland**, President  
[mary.coupland@uts.edu.au](mailto:mary.coupland@uts.edu.au)

**AAMT Office** POST GPO Box 1729, Adelaide SA 5001  
STREET Building D, 80 Payneham Road, Stepney SA 5069  
PHONE 08 8363 0288 FAX 08 8362 9288 EMAIL [office@aamt.edu.au](mailto:office@aamt.edu.au)

[www.aamt.edu.au](http://www.aamt.edu.au)

for news updates, online communities, webinars, resources and more

SOCIAL NETWORKS [www.facebook.com/aamtinc](http://www.facebook.com/aamtinc), [twitter.com/aamtinc](https://twitter.com/aamtinc)



## From the CEO



One of AAMT's five partnerships with universities as part of the Australian Mathematics and Science Partnerships program is generating some very interesting initial work. The University of Canberra is undertaking the Secondary Science and Mathematics Mentoring project (SeSaMMe) to foster a mentoring program that brings together inexperienced and/or under qualified science teachers with experienced and expert colleagues. The main focus of the mentoring program is the teaching of physics and chemistry topics in junior secondary schools as these have been established as the areas of need for many new and under qualified science teachers.

As a national program SeSaMMe is committed to these relationships being online using tools available through collaboration with the New Teacher Centre in the USA. One of the most innovative aspects of the technology being used for the first time in Australia is the capacity for a mentee to upload a video of their teaching for their mentor's feedback. Other partners in the project are San Francisco's Exploratorium, Questacon, the Centre for the Public Awareness of Science at the ANU and ASTA, the Australian Science Teachers Association. The project got underway with a week-long intensive 'school' for mentors and mentees in Canberra during the recent vacation break. It will continue through to the end of 2016.

So what is AAMT's role in what is, really, a program for science teachers? One of the issues in teaching science well is to be alert to the mathematical demands in the subject. Good science teaching needs to address these demands in ways that promote students' deep

understanding of the science concepts, and reinforces their capacity to use their mathematics effectively – in this case to learn and do science. The AAMT component of SeSaMMe is designed to make a contribution in this arena.

A group of ten experienced mathematics teachers with an interest in this area have volunteered to help with this work. We gave them the grand name of the "Maths Meta-Mentors" so they are the 3Ms for short. They will be available to advise on mathematical issues that arise in the mentoring program. It will be fascinating to monitor the sorts of matter that arise.

The group has been thinking about these issues and has developed some ideas about what will be useful and a program to work on them. Currently the thinking is to produce some resources designed to help science teachers. For example, during the intensive week the group developed a draft of a poster entitled "Five keys to unlock the mathematics in science" that provides some prompts for science people when planning units and lessons in these areas: mathematical techniques; accuracy and errors; language; tools and technologies; and making sensible conclusions

based on data. Those who attended the Canberra event have taken away a copy and promised to provide feedback.

Other areas in which the group is developing teacher support materials include the pervasive importance of proportional reasoning in science, working with formulae, applying statistical techniques thoughtfully and well and using science contexts for teaching mathematics. The team is working collaboratively at distance over the next few months and will pull it all together at a writing workshop in the next October vacation. They are a dedicated group who are working on this project in their 'spare time' – the outcomes of their work will have the potential to really help improve the quality of science teaching in the early years of secondary school.

Other projects AAMT is involved with through AMSPP are progressing as well. Several of them will provide opportunities for teachers and schools to become actively involved in the development work in 2016 and beyond. Stay tuned for further details.

**Will Morony,**  
*Chief Executive Officer*  
[wmorony@aamt.edu.au](mailto:wmorony@aamt.edu.au)



Three of the 3Ms having fun at Questacon during the SeSaMMe Intensive week in Canberra: (left to right) Rhonda Mossel (NSW), Linda Brook (Qld) and Scott Brown (Vic).

## Mathematics by Inquiry

On 20 October 2015, Senator the Honourable Simon Birmingham, the (new) Minister for Education and Training, announced that

“The Australian Government will provide \$6.4 million from the Mathematics by Inquiry initiative to support the Australian Academy of Science and the Australian Association of Mathematics Teachers to develop and promote new maths resources for Foundation to Year 10 students, teachers and school leaders”.

The Mathematics by Inquiry project is designed to “transform the way in which mathematics is taught in Australian schools”. It will promote problem-solving and reasoning as a means for students to explore relevant and engaging contexts using mathematics. Importantly, the project will provide for extensive teacher support.

Between AAMT and the Academy, a formidable team has been assembled. Having highly regarded people like Kaye Stacey, Charles Lovitt, Peter Sullivan and Malcolm Swan (from the Shell Centre in the UK) and many others directly working on the project alongside teachers and schools from all over the country will allow the project to generate materials and approaches that many believe have been missing from Australian teachers’ repertoires.

More information about the project and how members can be involved will be available in 2016.

## Reframing Mathematical Futures

This is another of AAMT’s AMSPP projects. Based at RMIT University, the team from several universities around the country is being led by Professor Dianne Siemon—a former President of both AAMT and MAV. The *Reframing Mathematical Futures* project is working with schools from each State and Territory to build a comprehensive, evidence-based framework for identifying and responding to student learning needs in relation to algebraic, spatial and statistical reasoning in the junior secondary years. The framework will build on and relate to Prof Siemon’s well-respected work on the development of multiplicative thinking.

Drafts of the assessment tools and targeted teaching advice that form the basis of the framework will be available for trialling in Term 1 2016. You and your school can contribute to the further development of the framework by undertaking to trial these materials and by providing advice to the project team. This will be a valuable contribution to the work of the project, but there will also be a big benefit for you and your students as the project team will do the marking and you will get some really useful insights into your students’ learning in these critical domains of mathematics.

It will take one to two hours of class time spread over a couple of weeks to trial one of the draft assessment tools. Different classes or year levels can trial different tools. For further information, and to express your interest in being invited to take part in the project, please go to [www.aamt.edu.au/News/Opportunities](http://www.aamt.edu.au/News/Opportunities).

## Changes to your membership and subscriptions

If your membership of your local State/Territory association (and therefore AAMT) is by calendar year, then it is important that you renew your membership early. As from 2016, back issues of journals and newsletters will no longer be sent out.

## Vale Richard Phillips

It is with sadness that AAMT notes the sudden passing of Richard Phillips. Richard was formerly involved with the Shell Centre at Nottingham University, UK which produced a number of resources that have been popular in Australia.

In more recent years, Richard produced the popular Problem Pictures and other resources, for which AAMT acted as the Australian agent. For well over a decade, AAMT staff have been privileged to work with Richard on the annual Problem Pictures Calendar. Hundreds of classrooms and thousands of students throughout Australia have been exposed to his work and enjoyed the beauty of the photographs and recognised that mathematics is ‘all around us’. This has been a significant contribution to AAMT’s efforts to help teachers make the subject come alive for their students.

Richard will be remembered as a valued colleague, an imaginative mathematics educator and a truly gentle man. Sincere condolences to Richard’s family from the staff and Council of the Australian Association of Mathematics Teachers.

## AAMT office closure

The AAMT office will be closed for the festive period after 22 December 2015 and re-open on 4 January 2016.

The AAMT Council and staff wish all members a very happy and relaxing holiday period.

## ICME 13

The 13th International Congress on Mathematical Education will be held 24–31 July 2016 in Hamburg, Germany.

AAMT usually co-ordinates a 'delegation' of Australians who are attending the Congress. If you are planning to attend the congress, then please contact the AAMT office.

More information is available at [www.icme13.org](http://www.icme13.org).

## Curriculum updated

An updated Australian Curriculum website (version 8.0) has been released. Over the past 12 months, ACARA has reviewed and revised the F–10 curriculum and the way it is presented on the Australian Curriculum website. The previous version (7.5) will continue to be available until the end of 2016 to allow for a transition period and users will be able to choose which version from the home page. Go to [www.australiancurriculum.edu.au](http://www.australiancurriculum.edu.au).

# What does quality practice in maths and science look like?

18  
NEW

## Illustrations of Practice show the way

This dynamic collection of new videos highlights

- ▶ Exciting strategies to energise your classroom
- ▶ Learning pathways that address the needs of all students
- ▶ Hands on learning linked to real world contexts
- ▶ The impact of research and collegial support on teaching practice

Watch and share

[www.aitssl.edu.au/18maths-science](http://www.aitssl.edu.au/18maths-science)



Primary  
maths



Primary  
science



Secondary  
maths



Secondary  
science

aitssl  
Australian Institute  
for Teaching and  
School Leadership  
Limited

The Australian Association of Mathematics Teachers (AAMT) Inc. is a federation of:

- Canberra Mathematical Association (CMA)
- Mathematical Association of Western Australia (MAWA)
- Mathematical Association of New South Wales (MANSW)
- Mathematical Association of Victoria (MAV)
- Mathematical Association of South Australia (MASA)
- Mathematics Teachers Association of the Northern Territory (MTANT)
- Mathematical Association of Tasmania (MAT)
- Queensland Association of Mathematics Teachers (QAMT)