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Newsletter of The Australian Association of Mathematics Teachers Inc.
June 2016

## From the President

I became President of AAMT at the Annual General Meeting on Saturday 30 April at the Australian Academy of Science in Canberra. My first meeting as President was held at the Australian National University on Sunday 1 May. I would like to thank Mary Coupland, the Immediate Past President, for leading the team with such enthusiasm and bringing out the best in the councillors over the past two years. She has a great passion for mathematics education and I look forward to working with her over the next 12 months. Sadly, we had to say goodbye to Rodney Anderson (QAMT) and Christine Slattery (MASA), but welcomed Chicri Maksoud (QAMT), David Shigrov (MASA) and Selina Blyton (MTANT). Congratulations to Jurek Paradowski (CMA) who was elected as Treasurer.

One of our main topics of discussion at the council meeting was the review commissioned by the AAMT Council in February as part of its review of governance and operations. Jim Davies from Education Consulting Australia conducted the review. One of his chief recommendations was that Council update the AAMT Strategic Plan for the next triennium. This strategic plan for 2017–19 needs to have a clear focus on future-proofing AAMT in his view.

In 2016 AAMT is involved in a number of exciting projects; one of these is *reSolve: Mathematics by Inquiry*. It is a new national program designed to promote innovative and engaging approaches to teaching mathematics in Australian schools, and is managed by the Australian Academy of Science in collaboration with AAMT. Another project, *Connect with Maths*, has been a huge success and I would like to thank Renee Hoareau for all her efforts in bringing these online communities together.

In addition, and under the umbrella of the Australian Academy of Science's National Committee for Mathematical Sciences, leading representatives of the mathematical sciences community have worked together over the last three years to identify the key issues Australia faces in the field. As a result the Decadal Plan was released in March this year (see p. 3).

I look forward to celebrating the 50th year of AAMT and seeing many of you at the AAMT 50:Directions conference in Adelaide on 7–8 July. The keynote speakers are Rob Randall (CEO of ACARA) and Merrilyn Goos (University of Queensland). More details can be found at http://tiny.cc/aamt50.

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AAMT Council at the ANU

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**supporting and promoting mathematics education**

## From the CEO

Recommendation 1.1 from the recently released *Decadal Plan for the Mathematical Sciences* is that:

"Australian governments, schools and universities should urgently increase their provision of professional development for existing out-of-field school teachers of mathematics and enhance their commitment to the recruitment and retention of new, properly qualified staff."

There is no doubt this recommendation will strike a chord with many members. It is certainly true that there are many people teaching mathematics in Australia's secondary schools who are poorly prepared for that task. Estimates of the numbers vary but are typically at least 30% of those teaching in Years 7–10.

Australia's young people do really deserve "a globally competitive education in mathematics and statistics while at school", a priority of the *Decadal Plan*. Yet it is hard to see this as a reality with so many out-of-field teachers.

The term 'out of field' has entered our vocabulary. Its working definition is essentially about someone who sees themselves—and is seen by others—as a teacher whose training and expertise is in another discipline. AAMT has a statement of minimum qualifications for teaching mathematics, with different expectations for junior and senior secondary levels, and at the primary level. As a profession it is necessary to set such basic requirements, but these are not sufficient to ensure all students have "access to outstanding mathematics teachers".

It has been suggested to me as a working definition that a teacher is no longer 'out of field' after teaching mathematics for five years. This is not something I would necessarily agree with. However, I could see it as reasonable if, during that five years, the out-of-field teacher developed the knowledge and skills to teach mathematics well to their classes. Necessary conditions for this would be for the teacher to have a professional commitment and desire to learn about teaching mathematics; being part of a supportive professional culture in which the mathematics teachers in the school work together to share and develop their knowledge and teaching practices; working in a school in which staff are supported to address particular professional learning needs directly related to their work.

It goes without saying that the recommendation in the *Decadal Plan* leaves out reference to most of the people who currently teach mathematics in our schools. Many primary teachers express reservations around their teaching of mathematics that are similar to the concerns about out-of-field teachers in secondary schools: deep knowledge of the content, connections within mathematics, knowledge of different approaches, etc. These often result in lack of confidence in teaching the subject. There is no doubt in my mind that these primary teachers should also be part of a culture that supports their development of skills in teaching mathematics, and growth in their confidence.

Many factors have an impact on teachers' professional environments and the support they provide for better teaching and learning of mathematics. Some are beyond our control. But collegial support—for an out-of-field Year 8 mathematics teacher, for a colleague lacking background and experience teaching Year 3 mathematics, through sharing a resource and approach that really went well—is always an option. Take it today. And tomorrow. You, your colleagues and your students will be better for it.

***Will Morony***,
*Chief Executive Officer*
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## Australian Mathematics and Science Partnerships Programme (AMSPP)

Enclosed with this newsletter is a flyer that contains information about the five Implementation Officers appointed as part of the Towards Educating Mathematics Professionals Encompassing Science and Technology (TEMPEST) project, led by the University of Tasmania as part of the AMSPP. AAMT is contributing to TEMPEST by employing and supervising the work of these Implementation Officers around the country. Members are encouraged to get in touch with their local Implementation Officer and to get on board with TEMPEST locally.

In other AMSPP news, classroom materials to exemplify uses of mathematics in 'high end' science and technology that are being developed as part of the *Maths Inside* project (led by University of Technology, Sydney and involving the CSIRO) are in draft form and are being introduced to members for feedback and trialling through conferences and other means.

The team working on the *Reframing Mathematical Futures* project, led by Prof. Di Siemon from RMIT University, will soon be recruiting teachers and schools to trial classroom resources designed to support students' reasoning in and through mathematics. Keep your eye on the AAMT eNews for updates.

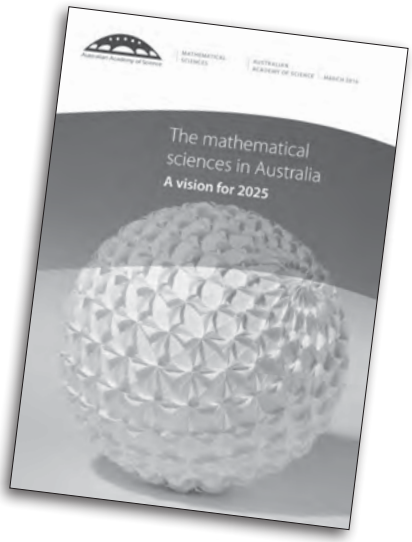
## Decadal Plan for the Mathematical Sciences

Over the past few years, the Australian Academy of Science has led a process to develop a plan for the mathematical sciences for the next 10 years. One of the strengths has been the collaboration of organisations and people across the wide spectrum of mathematical scientists from industry, academia and education. AAMT was extensively involved and provided financial support.

The resulting *Decadal Plan for the Mathematical Sciences* provides a consistent platform for action to improve the contribution of mathematics to Australian society.

There are four Objectives in the Plan that describe domains for action. The first of these is to "Give all Australian schoolchildren access to outstanding mathematics teachers". Clearly this is directly relevant to AAMT and its members. Other objectives relate to teaching mathematics in universities, research in the mathematical sciences and awareness and impact of mathematics on society.

The AAMT Council is formulating its response to the Plan, with a view to having strategies for making progress on its recommendations. If you have any views you would like to share—especially ideas for taking action—please contact your local Councillor or respond to feedback@aamt.edu.au.




The plan is available at www.science.org.au/support/analysis/decadal-plans-science/decadal-plan-mathematical-sciences-australia-2016-2025.

## Annual General Meeting

AAMT's AGM for the 2015 financial year was held in Canberra on 30 April 2016. Jurek Paradowski (ACT) was elected Treasurer for the next two years. Allason McNamara (Vic.) assumed the role of President, with Mary Coupland stepping down as President to take up her role as Immediate Past President until the AGM in 2017.

The meeting received the AAMT Annual Report. This is available at www.aamt.edu.au/About-AAMT. A motion to decrease in the number of the Association's objectives in the constitution was also passed.

## reSolve: Maths by Inquiry update

General information about this exciting new project that is a collaboration between the AAMT and the Australian Academy of Science can be found at www.science.org.au/learning/schools/resolve. If you would like to be kept informed about the *reSolve: Maths by Inquiry* project, please register your name and address at http://tiny.cc/mbi-newsletter. Information about participation in trialling lesson suites will be circulated later.

Briefings about the *Maths by Inquiry* project have been concluded in each State, along with briefings with representatives from Government, Catholic and Independent sectors. Discussions with the various parties about how the project could build strong links has highlighted the innovation and diversity present in each sector in supporting the teaching and learning of mathematics. This process has been illuminating for project management and will help give shape to the project and maximise its impact in the longer term.

AAMT is liaising with its State/Territory Affiliates to finalise selection of Outreach Officers. The Outreach Officers will have an initial role of liaising with teachers and schools involved in trialling *Maths by Inquiry* lessons in Term 3, observing lessons, and offering feedback to the writing team based in Canberra. An orientation program is being held for Outreach Officers on 23–24 June at the Australian Academy of Science.

There are now five TEMPEST Implementation Officers (from left): Libbie Spohn (Tas./Vic.), Desley Pidgeon (Qld), Ann Ruckert (SA/NT), Darius Samojlowicz (NSW/ACT), Rachael Whitney-Smith (WA).

## Connect with Maths Day

Three organisations—the AAMT, the Mathematical Association of Victoria (MAV) and the Victorian Space Science Education Centre (VSSEC)—worked in collaboration to present Connect with Maths Day on 18 March. Teachers were invited to take part in a day of professional learning—in person or online. The community event, themed by the five Connect with Maths online communities, showcased professional learning enabled by technology.

From left: Michael Pakakis (Director, Victorian Space Science Education Centre) Brett Biddington (Director, Space Environment Research Centre), Will Morony (AAMT CEO), Mary Coupland (then AAMT President), Renee Hoareau (AAMT Manager Online Teacher Support), Danny Pearson MP (Member for Essendon), Simon Pryor (MAV CEO), Jillian English (Principal, Strathmore Secondary College).

In total, 26 diverse sessions were presented on that day, hosted at VSSEC in Melbourne.

Over 400 delegates attended the conference: around 100 in person, as well as a much larger connected audience (300) engaged online—from universities and classrooms across the country, at home in regional areas of New South Wales and Tasmania, even one attendee travelling on a train in Perth!

Special thanks go to contributors from Singapore and especially to Mike Askew (Monash University) who participated from a hotel in the UK at 1 am!

The response to the Connect with Maths Day has been overwhelming. Many thanks to our presenters, teachers, supporters, sponsors and technical support for such a successful outcome. You can view videos of presentations from the day at www.aamt.edu.au/Communities/Connect-with-Maths-Day/Videos or access the presentations at each Connect with Maths community.

From left: Will Morony (AAMT CEO), Denise Neal (AAMT life member and keynote speaker) & Mary Coupland (then AAMT President).

Thornbury High School ClassTV and Strathmore Secondary College Media students also documented the day. These can be viewed online at: https://vimeo.com/167971501 and https://vimeo.com/167970123.

Connect with Maths Day was a blended learning community event of the Connect with Maths Project funded by the Australian Government Department of Education and Training through the Mathematics and Science Participation Program.

More information can be found on the AAMT website at www.aamt.edu.au/Communities.