

Highest Common Factor

November 2017



Newsletter of the Australian Association of Mathematics Teachers (AAMT) Inc.

From the President



It is with great pleasure that I announce the appointment of Dr Duncan Rayner as the new Chief

Executive Officer of AAMT.

Duncan will take up the position in July 2018. He was most recently Faculty General Manager, Faculty of Science and Engineering at Flinders University. He is currently undertaking some independent consulting work. He majored in pure and applied mathematics in his first degree and his PhD is in the field of physics. From 2009–2011 he was Regional Manager for Southeast Asia for Cambridge Assessment (Cambridge University). He has high quality interpersonal and communication skills and presented as a collaborative and confident person at interview. I would like to thank the panel—AAMT Councillors Bronwyn Welch and Jurek Paradowksi, as well as Jim Davies, advising consultant—for their professionalism and wisdom throughout the process.

Here are a few words from Duncan:

I'm very much looking forward to working with the AAMT and educators around Australia to support and promote the teaching of mathematics. There are some exciting and challenging times ahead. The Foundation for Young Australians' (FYA) report, 'The New Work Smarts', published earlier this year, highlights the growing importance of maths skills for careers in the future. Young people are increasingly part of a globally-connected education and work place. They need to be competitive with their abilities in maths. Teaching practices and pedagogy are rapidly adjusting to the impact of technology. In these changing and demanding times ahead, it will be a real privilege to represent and support the community of maths teachers.



Duncan Rayner will be the new CEO of AAMT.

Due to the retirement of Leon Poladian as Director of the National Maths Summer School (NMSS), a NMSS Advisory Board has been set up. This has been a joint initiative of AAMT and ANU to ensure the ongoing success of the school, which has been running since 1969. The Memorandum of Agreement was signed in August this year. Initially Will Morony will chair the Board and Terry Gagan, a member of the Board, will be the Acting Director for the 2018 Summer School. The Board will appoint a new Director shortly.

Recently I had the pleasure of welcoming the *reSolve: Maths by Inquiry* Victorian Champions to Trinity Grammar School, Kew, where a one-day workshop was conducted by the Academy of Science and AAMT. My favourite activity was that on Pythagoras' theorem which involved the bending of bamboo rods. This was one of the creations of Steve Thornton, the Executive Director of reSolve. You can access the activities at <http://resolve.edu.au> and a recent media release

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after the NSW Champion's workshop in Sydney at www.science.org.au/news-and-events/news-and-media-releases/australian-maths-teaching-champions-come-together-ground.

The AAMT Council has been working hard with Goal 2 of its Strategic Plan—strengthening AAMT's connections and collaboration with affiliates—and I am about to sign off on three memoranda of understanding (MoUs) with the Canberra Mathematical Association (CMA), the Mathematics Teachers' Association of the Northern Territory (MTANT) and the Mathematical Association of Victoria (MAV). The Mathematical Association of Tasmania (MAT) already has an MoU. I am looking forward to finalising the MoUs with other affiliates.

It was great to go to the Mathematical Association of New South Wales' (MANSW) conference in the Blue Mountains in September. Dr Mark Lawrence gave a presentation to the AAMT

and MANSW Councils about the newly formed Australian Industry/Mathematical Sciences Engagement (IMSE) Task Force, established in 2016 by the Australian Mathematical Sciences Institute (AMSI). One of the aims of IMSE is to increase student awareness of the opportunities and benefits that the study of mathematics provides, and to positively influence student subject choices through the senior years of high school. It aims to shift societal attitudes and perceptions about mathematics, and thereby influence student subject choices. The industry representatives include IBM, BHP Billiton, the Commonwealth Bank, Google, Woodside Energy, Bain and Company, and PayPal; a number of Australian universities will also be involved.

Jennifer Bowden, a Mathematics Educational Consultant at the MAV, organised a successful 2017 Maths Talent Quest. In October this year the National Mathematics Talent Quest presentation ceremony was held at La Trobe University,

Melbourne. Thank you to the national judges Donna Buckley (WA), Tom Frossinakis (SA), Paulina Sliedrecht (Qld), Caroline Davis and Lorraine Norris (Tas.) and the Victorian team—Peter Karakoussis, Terence Mills, Jim Spithill, Jennifer Bowden, Julie Tillyer and Mike Westbrook—for giving up their time to make such an event work. The winners can be viewed at www.aamt.edu.au/Student-activities/NMTQ/NMTQ-2017.

I look forward to attending the MAV conference, *Achieving excellence in M.A.T.H.S.*, at La Trobe University in Melbourne on 7–8 December and I hope to see many of you there. A special 'thank you' goes to the MAV for allowing one free registration from each of the affiliates to attend. AAMT will have a stand there. Come and have a look at Maths300 and have a chat with the AAMT team Matt Skoss, Kate Manuel and Ann Ruckert.

Allason McNamara

President

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Dimensions professional learning website launch

Dimensions is the new professional learning website for mathematics educators (F–12), developed by AAMT.

Working primarily with projects funded through the Australian Mathematics and Science Partnerships Programme (AMSP), AAMT has worked with leaders in mathematics education in order to bring their work and inspiration to your school via the web.

On the website you will find an increasing number of learning modules—on a variety of topics—which include PowerPoint slides, facilitator guides, handouts, videos, and student materials—everything you need to support in-school professional learning for you and

your colleagues.

Tools on the site can also assist you to track your learning—online and offline—so you can record your progress, make notes, and download what you have done for reporting purposes.

You can connect with colleagues using the bulletin boards: ask questions, discuss resources, swap classroom stories.

As more educators get involved in online discussions, these bulletin boards will be building a user-generated body of knowledge that others can search, read, and learn from.

Access to the site and use of the professional learning materials is free, but you must register to use



dimensions

the site (you can use your AAMT website user name and password if you have one).

Dimensions will be launched at the Mathematical Association of Victoria's Annual Conference (7–8 December).

Your feedback about the site and learning materials is welcome—email feedback@aamt.edu.au.

To register and access the learning materials and tools, go to <http://dimensions.aamt.edu.au>.

From the CEO



I often hear sports commentators say that someone is a 'household name'. I do not think that Professor John

Hattie is a name in all Australian households, but his influence on thinking and practice in Australian education is so widespread in that he could be termed a 'staff room name' in our schools.

An important part of Prof. Hattie's work is to analyse findings from education research to try to identify the impact of approaches and strategies. It is similar to the work that AAMT has recently commenced in collaboration with Social Ventures Australia as part of its *Evidence for Learning* initiative.

The first stage of that work has been to link the *Toolkit of approaches* to the AAMT *Standards for Excellence in Teaching Mathematics in Australian Schools*. This has resulted in a selection of approaches that are specific to mathematics (see www.evidenceforlearning.org.au/the-toolkit/approaches-by-organisation/aamt/toolkit-approaches). Having completed this stage, we are now working with the people from Evidence for Learning to 'drill down' to identify approaches and strategies from the work of Australian mathematics education researchers that have demonstrated impact. This work has the potential to help members and schools respond to the calls for 'evidence-based practices'.

Hattie's analyses are being taken up in many different ways. For AAMT, one of his most telling findings is that the 'efficacy of the teaching group' has a very significant impact on students' learning. AAMT members continually strive to be as good a teacher as they can by looking for new resources, seeking out professional learning, networking with colleagues, and so on—all things they recognise their local and national mathematics teacher associations provide.

However, Hattie points to the 'teaching group' as a key factor in student achievement in a way that suggests that the whole can be more than the sum of the parts. This has wide ranging implications.

For schools, it means truly working as a team, whether in faculties in secondary schools, or year group and other organisational structures in primary schools. This, in turn, requires principals and other school leaders to facilitate and support the teamwork that builds the "collective efficacy of the teaching group" in general, and in two other important ways. Nurturing a positive professional culture among the staff provides conditions for mentoring and supporting graduates through the challenges of their early years in teaching. In secondary schools such a setting in the faculty has been shown to be effective in supporting 'out-of-field' teachers.

AAMT has recognised that the mathematics leaders in schools need other support beyond the

practical support provided by the school. The *Dimensions: Professional learning in mathematics* website will be launched at the start of December (<http://dimensions.aamt.edu.au>). It will provide the insights and guidance of some of Australia's leading mathematics education researchers in a form that in-school mathematics leaders—or individual teachers for that matter—can use in professional learning programs at the school level. It includes other tools such as means for networking and record-keeping that have been designed to provide further professional support.

I encourage you to look at Dimensions. Whilst the areas currently covered include some of today's 'hot topics'—ranging from the teaching of fractions, to the promotion of growth mindsets in mathematics—AAMT plans for the collection of resources and tools to grow over time. We will be encouraging more people working to support the teaching and learning of mathematics to embrace it as a good way of providing and promoting their approaches and strategies to teachers. Working together to support in-school leaders and their teams as they undertake professional learning that builds their 'collective capacity'.

Will Morony

Chief Executive Officer

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AAMT office closure

The AAMT office will be closed for the festive season from midday 21 December 2017 until 2 January 2018.

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

Renew your membership

Your membership of AAMT is through membership of your local affiliate. If unsure, check whether your membership is by calendar year and, if so, then renew your membership as soon as possible so as not to miss out on any benefits. Contact information for your local association can be found at www.aamt.edu.au/Membership/Affiliates.

AAMT journals

Two of AAMT's three journals (*The Australian Mathematics Teacher* and *Australian Senior Mathematics Journal*) will start 2018 with new editors. Many thanks to Maree Skillen (AMT) and Jill Brown (ASMJ) for their time spent as editors of those publications. Thanks also to the reviewers and especially authors for their contributions in 2017.

The editors of all journals would welcome contributions from teachers—classroom stories, teaching ideas, etc. Writing an article is great professional development too! For more information see the AAMT website, particularly the recently updated *Editorial policy and guidelines* at www.aamt.edu.au/Journals/Editorial-policy. The website also includes many free articles from these journals.

reSolve learning resources

Many teachers have written to the *reSolve: Mathematics by Inquiry* team and shared their experiences about how their students have responded so positively to the lesson resources.

If you have not yet checked out what is available, please register via the Members' tab at <http://resolve.edu.au>, using your school email address. This will allow you to explore the full range of lesson resources.

The writing team is very grateful for feedback about the lessons via the in-built survey form, or comments, photos and student work samples sent to mbi@science.org.au. An increasing range of Special Topics are also available on the website.

Join the Australia-wide community that is teaching mathematics with a strong spirit of inquiry.

International Mathematical Modelling Challenge

The International Mathematical Modelling Challenge (IM²C) is a team-based mathematical competition for Australian secondary students. Operating in teams of up to four students, participants must work collaboratively to solve a problem (set globally) by devising and applying an original mathematical model.

Registration opens 31 January 2018. For more information, go to www.immchallenge.org.au.

Vale Joan Margaret Cousins (1940–2017)

It is with sadness that AAMT marks the passing of Joan Cousins who was one of the first teachers to be recognised as a Highly Accomplished Teacher of Mathematics (HAToM) which was presented to her at the AAMT conference in Fremantle in 2009.

Having raised four children, she returned to the teaching sector in the 1970s and continued an outstanding career in the classroom, and as a teacher librarian.

Realising the need for more mathematics educators she embarked on her most ambitious career change and obtained her Masters in Mathematics Education at the age of 66. She then spent the next 10 years supporting her own classroom staff, visiting schools as a School Advisor Mathematics and, after officially retiring, she volunteered to work with refugee children.

Many teachers and students recall her kindness, generosity and hard work. Joan will always be remembered as a caring intelligent, highly skilled and vivacious person who lived life to the full.

15th International Conference of The Mathematics Education for the Future Project

15th International Conference of The Mathematics Education for the Future Project: *Theory and Practice: An Interface or a Great Divide?* will be held from 4–9 August 2019 at Maynooth University, Ireland.

The preliminary announcement and call for papers can be downloaded from <http://directorymathsed.net/public/Ireland>.

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

Canberra Mathematical Association (CMA)
Mathematical Association of New South Wales (MANSW)
Mathematical Association of South Australia (MASA)
Mathematical Association of Tasmania (MAT)

Mathematical Association of Western Australia (MAWA)
Mathematical Association of Victoria (MAV)
Mathematics Teachers Association of the Northern Territory (MTANT)
Queensland Association of Mathematics Teachers (QAMT)