

April 6, 2018 Australian EGMO Team Launch – Cheryl E Praeger Speech

Minister Craig Laundy, Suganya Suresh and Tristan Thompson, Ms Ruth Carr, Members and leaders of the EGMO team, Colleagues from the Australian Mathematics Trust, Distinguished guests, Ladies and Gentlemen.

I am delighted to be present at this historic event: launching the first Australian team to compete in the European Girls Mathematics Olympiad - EGMO. I congratulate and thank all those who have the confidence to support this initiative.

For many years those involved in the Australian Mathematics Olympiad programs struggled with the issue of the relatively low rate of girls' participation in elite mathematics challenge programs – in particular the fact that in some years Australia's IMO team – for the International Mathematics Olympiad – was all boys. In October 2015 the Australian Mathematics Trust formed a working party chaired by Professor Mike Clapper (who was then Executive Director) to consider how to increase girls' participation, and in particular whether we should consider girls-only events.

We sought advice from colleagues involved in similar mathematics challenge activities in the UK and the Netherlands, and it became clear that special programs for girls in these countries held participation in the EGMO as the highlight.

The EGMO was seen as having a high standard and was fast becoming the major international mathematics competition for girls. The Australian Mathematics Trust first sent an observer, Janine McIntosh, to the 2017 EGMO

in Zurich to get a first hand impression. That EGMO attracted 44 countries: 33 of them from Europe with 11 guest teams from countries in the Americas, Asia and the Middle East.

As a result: we decided to aim for participation in the 2018 EGMO. I am grateful for the commitment and enthusiasm of our new Maths Trust CEO Nathan Ford without whom this would not have been achieved. I am grateful to Optiver Asia-Pacific, to the Australian Government's Inspiring Australia – Science Engagement Program, and to the Australian Mathematics Trust Board for their confidence in us in supporting this initiative financially. All of this work has led to numerous consequential positive changes to our existing programs: for example, increased invitations for girls to compete in senior mathematics contests, especially the Australian Mathematics Olympiad; and increased numbers of invitations to the December School of Excellence – that's our initial training program for exceptionally talented maths students who have been identified through the other Trust programs. I mention especially the vision and leadership of Dr Angelo Pasquale, Director of Training for the Maths Olympiads, and the enthusiastic commitment of the EGMO leaders Thanom Shaw and Michelle Chen.

This whole process has led to an out-flowing of new ideas, new energy and excitement at these, and other, new possibilities. We hope and believe that these changes will be great for all students, not just the exceptionally talented girls identified for the Australian team to EGMO. We hope that we, in Australia, will have a similar experience to that of the UK. They (in the UK) have a minimum quota for girls attending their "initial training camp" where students are introduced to what international maths contests are all about. In

2017, they did not need to impose this quota, because more than half the students who outright qualified were girls anyway.

What does it mean for you, members of the EGMO team, to take part in an international mathematics competition? Already you have had the experience of an intense personalized mentoring program; perhaps you have met an entirely new set of powerful mathematical ideas; perhaps an experience of pushing back the boundaries of your knowledge, and of moving past what you thought you could do. Next comes the excitement – and maybe the terror? – of the EGMO competition; and the wonderful experience of meeting dozens of equally exceptional young women from all over the world. I congratulate each one of you, and I hope you will love the experience, and will return with increased confidence in your abilities as young mathematicians.

When I was at your stage in life, there were no international mathematics competitions. I had grown up in several country towns in South East Queensland, and was completing my last few years at school at an independent girls' school, the Brisbane Girls Grammar School. I loved mathematics and seemed to spend a lot of my time in maths classes helping my fellow students with their work after I'd completed mine. I had no idea whether I would be good enough to study maths at university, as I had no sense of what standard would be required – and no one else in my year at school wanted to proceed with mathematics study. Luckily my school encouraged me to participate in the senior mathematics competition organized by the Queensland Association of Mathematics Teachers. I tied for first place, and having this as a benchmark gave me the confidence to enroll in the honours level maths and physics units at The University of Queensland.

Once there I met many students who were equally engaged – perhaps obsessed – with mathematics, as me.

Providing confidence in your ability, as well as access to a network of talented and engaged young people, is almost as important as the mathematical training these programs provide.

It's a long time since I was at school, and I wondered if I might finish with some comments from an outstanding woman who would have been much closer to your age than me: Maryam Mirzakhani, who won two gold medals in International Mathematics Olympiads (in 1994 and 1995, for her country Iran), and who in 2014 became the first woman ever to win a Fields Medal.

Maryam spoke about

- the importance of *“having a friend who shares your interests, it helps you stay motivated”*;
- the importance of support from teachers: she spoke of her school principal: *“a strong-willed woman who was willing to go a long way to provide us with the same opportunities as the boys' school”*.
- And when trying to solve a really tough problem, Maryam said: *“There are lots of tools, and you don't know which one would work. It's about being optimistic and trying to connect things”*.

I repeat my congratulations to the EGMO team. I wish you a rewarding, and exciting time in Firenze; and success in the EGMO contest. Make the most of this opportunity – you've already learned how to grasp opportunities – and I hope you continue to do so in your future careers.

Thank you.