

EDUCATION AND OUTREACH
www.csiro.au



Software Freedom Day

Scientists and Mathematicians in Schools and ICT in Schools

Gill Lunniss | Project Officer | 17th September 2016

Scientists and
Mathematicians in
Schools is supported
by the Australian
Government

What is Scientists, Mathematicians and ICT in Schools?

A national skilled volunteering program which facilitates ongoing, flexible professional partnerships between school teachers and Science, Technology, Engineering and Maths (STEM) professionals.

Background...



- 2007: Scientists in Schools
- 2009: Mathematicians in Schools
- 2014: ICT in Schools
- Managed by CSIRO Education and Outreach
- Funded by the Australian Government National Innovation and Science Agenda.

Partnership distribution

As at 30 June 2016

Current partnerships:

1927 (Science : 1422 Maths : 262 ICT : 243)

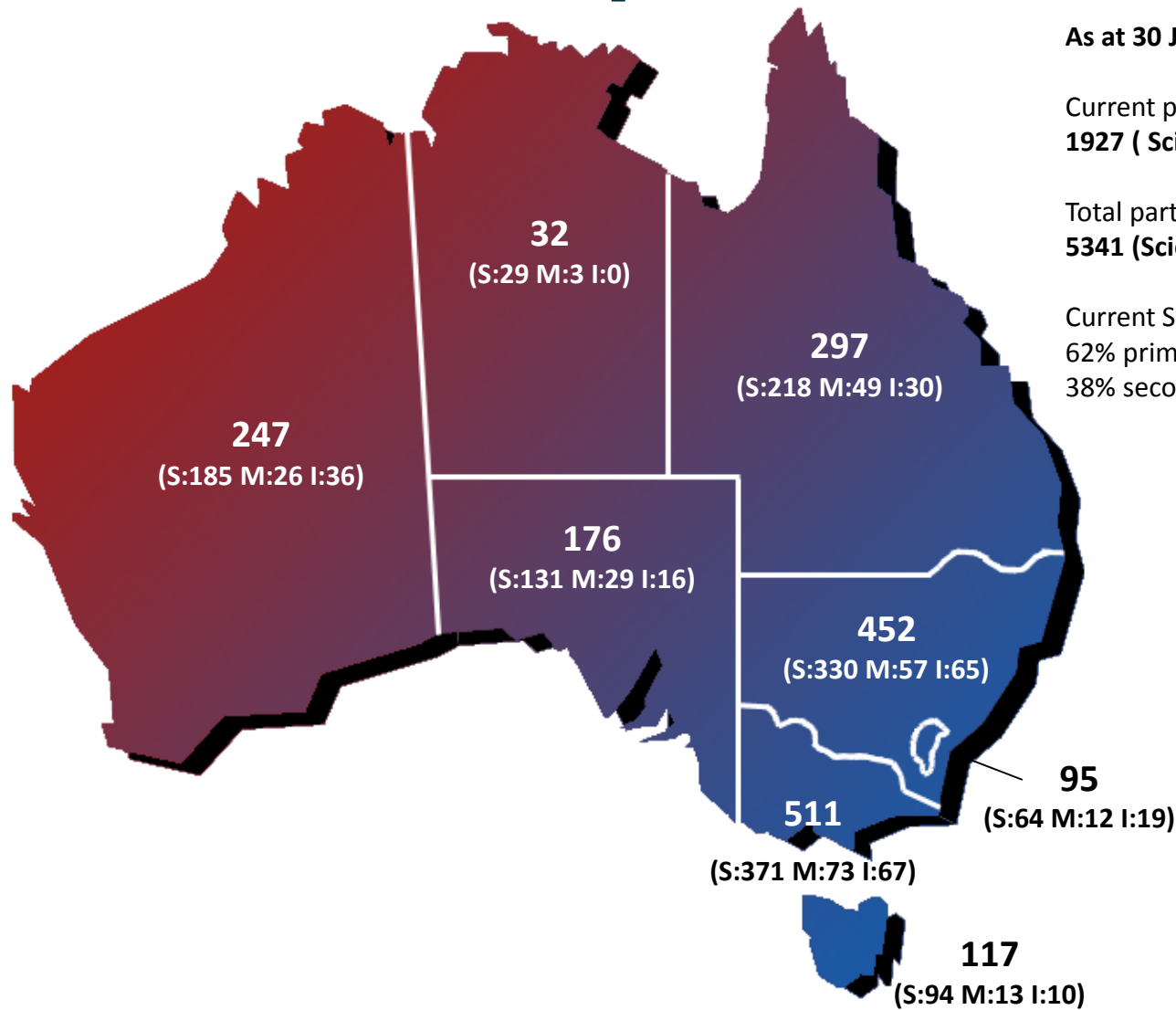
Total partnerships: since July 2007:

5341 (Science : 4413 Maths : 663 ICT: 265)

Current Schools : **1300 (14% of schools)**

62% primary

38% secondary



Building productive partnerships for STEM education



Delivered by CSIRO's Scientists and Mathematicians in Schools program (SMiS)

Partners



4600+
partnerships
since 2007

Participation



1263
schools currently
involved



60K+
students
involved per year

School sectors

66%
Government

18%
Catholic

16%
Independent

60%
Primary

39%
Secondary

1%
Special

Time



60K+
hours contributed by
STEM professionals
per year

Leverages

3x

annual funding
in terms of
volunteered time
by STEM
professionals

Positive outcomes for teachers and students



Partnerships considered
very valuable to:

62% of science teachers
69% of their students



Top two significant changes
chosen by teachers of science:

79% Increase in my
students' engagement
with science
60% Improved learning
of science by
students

These would **not** have occurred, if not for SMiS

Top 4 reasons for teachers
participating in SMiS:

- 1 Increase student engagement
- 2 Student access to a STEM professional
- 3 Highlight importance of STEM in daily life
- 4 Student access to contemporary knowledge

Positive outcomes for STEM professionals



For STEM professionals, very
significant benefits include:



30%
Up to 30% claim
improvement in
communication
skills



42%
Up to 42% claim
the opportunity
to promote STEM
related careers

Top 4 reasons for
STEM professionals
participating in SMiS:

- 1 Inspire and engage
- 2 Share my passion
- 3 Highlight importance of STEM in daily life
- 4 Raise the profile of STEM in schools

All stats current at June 2015 and are from the Building Productive Partnerships for STEM Education: An Evaluation of the Scientists and Mathematicians in Schools program 2015 report by Deakin University.



What does a partnership look like?



- Negotiate your level of involvement
- On-going
- No costs involved
- Provide access to real-world, contemporary experiences that help promote the understanding of the importance of STEM and inspire students



Who is involved?

1) STEM professionals

- Minimum Bachelor degree in a **STEM-related field** or equivalent industry qualifications and/or experience
- ICT specialists, agricultural scientists, engineers, medical doctors, veterinarians, economists, meteorologists, surveyors, statisticians...

2) Teachers

- Primary, secondary, college
- Government and non-government
- Metropolitan and regional

3) SMiS support team

- Local project officers, National Office



When and where can it happen?

SMiS and ICTiS partnerships are highly flexible and unique.

INSIDE THE CLASSROOM

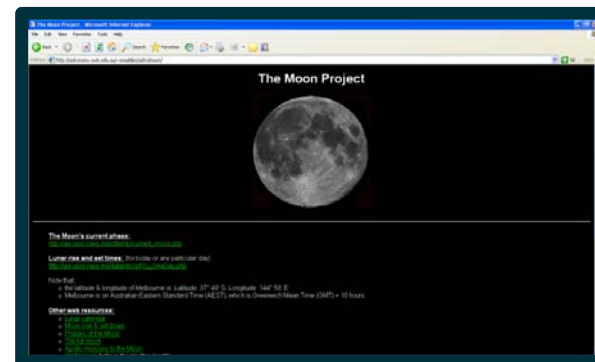
- Seminar presentations
- Regular classroom activities
- Project mentoring (one on one)
- Science and technology fairs



Taroona High School, TAS

OUTSIDE THE CLASSROOM

- Site visits
- Excursions and field trips
- Distance communication
- Teacher mentorship



Hartwel Primary, VIC

Examples of generic teacher requests

- Many teachers would like to be partnered with a STEM professional who can help with:

- Coding
- Arduinos
- Raspberry Pi



Examples of specific teacher requests

- [St Helena Secondary college \(Eltham North\)](#) Love to work with STEM professionals in the Engineering and Technology fields to discuss the future in STEM with students and perhaps assist with STEM projects.
- [Mt Eliza Secondary College](#) is open to all forms of partnership
- [Langwarrin Primary School](#) would like help with programming-to create online games-robotics
- [Balwyn Primary School](#) are completely flexible but mention that Swinburne students have previously undertaken programming and created some android apps with the kids and they loved it.

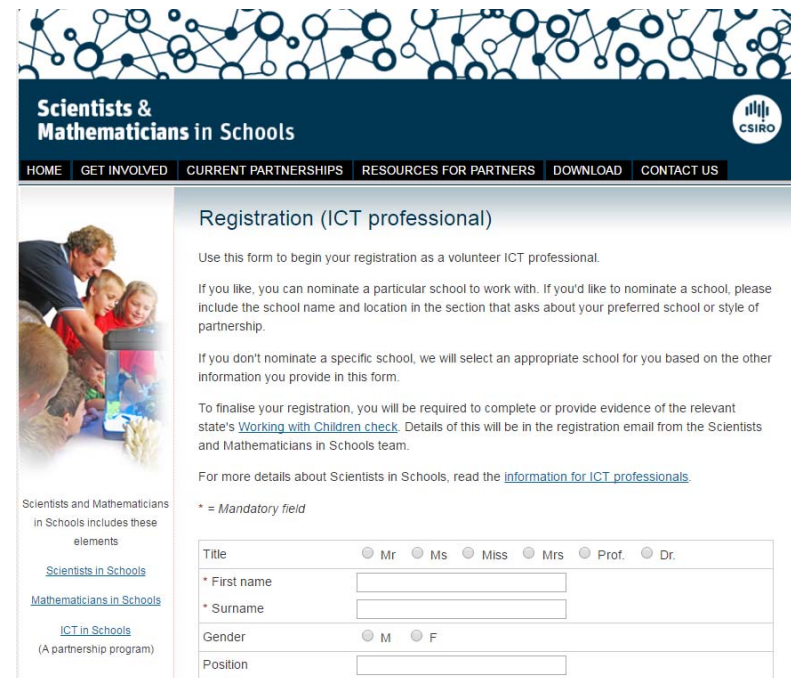
What do we do?

- Match you with a teacher
- Provide partnership support
- Webinars
- Networking events



How can you get involved?

- 1) Register your name and details at <http://www.scientistsinschools.edu.au/ict/index.htm>
 - Specify what you might like to do
 - Preferred locations, year levels
- 2) Obtain your **Working with Children Check (WWCC)**.
 - Free for volunteers
- 3) Please be patient while we look for a suitable partner.
- 4) Start your partnership!



The screenshot shows the 'Registration (ICT professional)' form on the Scientists & Mathematicians in Schools website. The header includes the CSIRO logo and navigation links: HOME, GET INVOLVED, CURRENT PARTNERSHIPS, RESOURCES FOR PARTNERS, DOWNLOAD, and CONTACT US. The form is titled 'Registration (ICT professional)' and includes instructions for volunteers. It asks for a nominated school and provides a link to the 'Working with Children check' information. A sidebar on the left lists 'Scientists in Schools' and 'Mathematicians in Schools' as elements of the partnership program. The form fields include Title (with radio buttons for Mr, Ms, Miss, Mrs, Prof, Dr), First name, Surname, Gender (M/F), and Position.

Scientists & Mathematicians in Schools

HOME | GET INVOLVED | CURRENT PARTNERSHIPS | RESOURCES FOR PARTNERS | DOWNLOAD | CONTACT US

Registration (ICT professional)

Use this form to begin your registration as a volunteer ICT professional.

If you like, you can nominate a particular school to work with. If you'd like to nominate a school, please include the school name and location in the section that asks about your preferred school or style of partnership.

If you don't nominate a specific school, we will select an appropriate school for you based on the other information you provide in this form.

To finalise your registration, you will be required to complete or provide evidence of the relevant state's [Working with Children check](#). Details of this will be in the registration email from the Scientists and Mathematicians in Schools team.

For more details about Scientists in Schools, read the [information for ICT professionals](#).

* = Mandatory field

Scientists and Mathematicians in Schools includes these elements

- [Scientists in Schools](#)
- [Mathematicians in Schools](#)
- [ICT in Schools](#)
(A partnership program)

Title: ☐ Mr ☐ Ms ☐ Miss ☐ Mrs ☐ Prof. ☐ Dr.

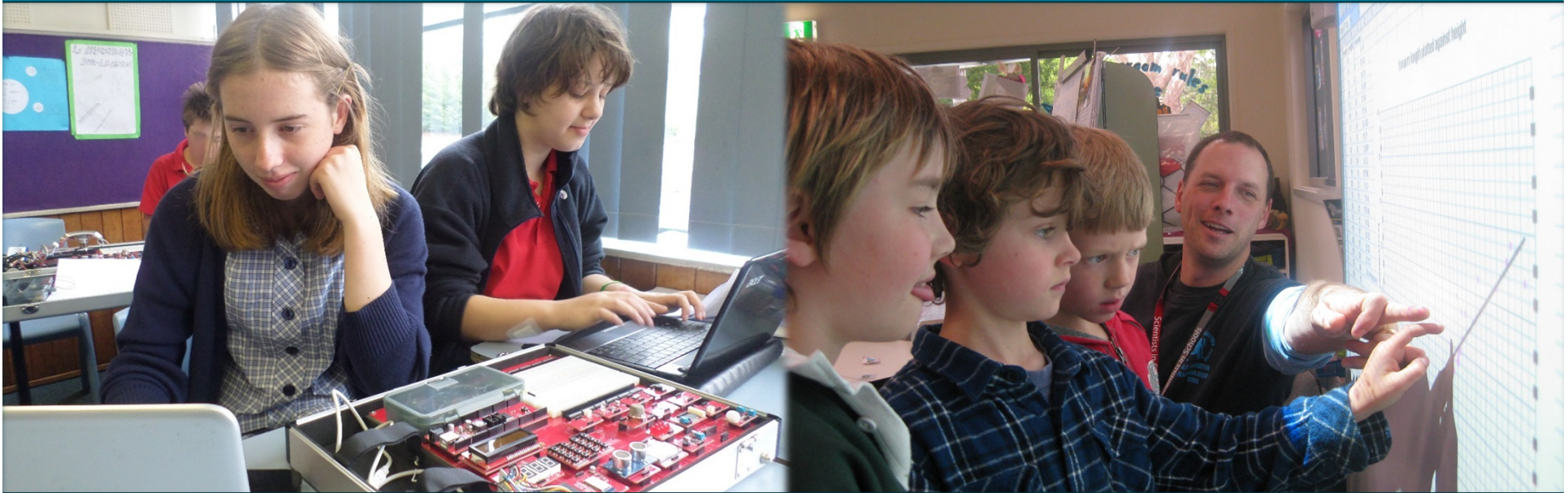
* First name:

* Surname:

Gender: ☐ M ☐ F

Position:

Get involved today!



Visit our website: www.scientistsinschools.edu.au for more information and to register.

If you have any questions, contact me on sis.vic@csiro.au or 9545 2308.

Comments from participants...

- Interaction with students. Kids (even teenagers!) are a fun distraction from the office :) !
- A retiree like myself absolutely feed off the energy of young and enthusiastic kids!
- *It's great to provide 'rocket' fuel for their imaginations!*
- Some trivial answers are very obvious to students that scientists miss sometimes due to other scientific considerations!!
- Children are a great reality check.
- *Planting the seeds of interest for the next crop of scientists*



Why would a STEM professional get involved?

- Inspire and engage students in STEM
- Raise profile of STEM in school
- Develop their communication skills
- Give back to their old school
- Way to help their children's school
- Get involved with the community

•FUN!



Source: Evaluation of the Scientists in Schools Project 2011-2012