I’m a Scientist, Get me out of Here!

Sponsor’s Report: March 2013

Student:

“. . . Thanks for that answer, that's got me really thinking. :)”

Contents

Thank you to our partners for supporting *I'm a Scientist, Get Me Out of Here!* in Australia:

- Major partners TechNYou for supporting the pilot in June 2011, both the May and August/September 2012 events, and this March 2013 event.
- Zone supporters the Australian Bureau of Agricultural and Resource Economics (ABARES) and the Council of Rural Research and Development Corporations (CRDC) for sponsoring the March 2013 Agriculture Zone.

Prepared by Dr Kristin Alford, Dr Dee Halil & James Hutson
I'm a Scientist, Australia presented by Bridge8 Pty Ltd
March 2013

Sponsor summary

I'm a Scientist, Get me out of Here! is a science engagement activity where school students aged 9-18 years talk to real scientists online for 2 weeks. Students take the lead by posting questions via an "Ask" forum and instant message scientists in their zones in 30 minute "Live Chats". The latter half of the event is 'Eviction Week' where students vote for the scientist they think is the "best" according to their own criteria. The winning scientist in each zone receives $1,000 to spend on further public outreach.

I'm a Scientist, Get me out of Here! focuses on the "Science as a Human Endeavour" part of the national curriculum and aims to nurture a lifelong interest and engagement with science and technology, as well as the consideration of careers in science, research, technology and innovation. Questions posed by students in our March 2013 event show that they are thinking about the role of science and technology in their everyday lives and the legacy being left for future generations, in particular food security and reserves of natural resources.

Support from TechNyou, the Australian Bureau of Agricultural and Resource Economics (ABARES) and the Council of Rural Research and Development Corporations (CRDC) has enabled us to deliver our fourth event since our pilot in 2011. Whereas in previous events we had a general zone amongst two themed zones, in March 2013 we were able to feature three theme focussed zones: Agriculture; Disease; and Wet & Wild. Participating scientists were from across the country in disciplines including health, medical research, agricultural science, aquatic ecology, nanotechnology and marine biology. Each zone consisted of 5 scientists and approximately 300 students years 5 – 12. Some schools participated for a second or third time, and others were new to the event, evidence of the growing popularity and success of *I'm a Scientist, Get me out of Here!*. Overall 751 students asked 793 questions on our forum and participated in 49 live chats.

Sponsor Visibility

Major sponsors TechNyou were featured with mentions in the teachers' booklet, lessons plans on nanotechnology in the media, and were represented by Blaire Dobiecki in the Wet &Wild Zone. Teachers were encouraged via the booklet and the *I'm a Scientist, Get me out of Here!* website to visit and sign-up for the TechNyou Education Resource.

Zone sponsors, the Australian Bureau of Agricultural and Resource Economics (ABARES) and the Council of Rural Research and Development Corporations (CRDC), were featured with mentions in the scientists' booklet and were represented by Kim Ritman in the Agriculture Zone.

All sponsors were mentioned within media releases to regional and national media, direct communication campaigns via email, Facebook, Twitter (#IASAus), and on the "Partners" page of the *I'm a Scientist, Get me out of Here!* website with approved text, logos and weblinks.

Looking to the Future

The success of the 2012 and March 2013 events means we have already expressions of interest from schools and scientists for the next *I'm a Scientist, Get me out of Here!* in August 2013. Further sponsorships will allow us to expand the number of zones and therefore participating schools and scientists, giving us the opportunity to explore an even wider variety of scientific research taking place across Australia.

Participation

I'm a Scientist has now reached 2,400 students Australia across three events. A summary of the March 2013 activity is in Table 1 and includes a new *I'm a Scientist, Get me out of Here!* record for the number of questions asked in a single zone – 399 questions posted in the Disease Zone.

Table 1: Summary of activity in the March 2013 event of I'm a Scientist

Zone	Students	Questions	Comments	Live Chats
Agriculture	224	167	28	13
Disease	288	399	157	21
Wet & Wild	239	234	259	15
Total 2013	**751**	**793**	**444**	**49**

Participation by Schools

A total of 33 teachers from 19 schools registered to take part in the March 2013 event, each teacher applying for up to 10 student groups. Students were from a broad socio-economic background with participating schools comprising 12 public schools and 7 private schools covering WA, Qld, SA, NSW, Vic, and Tas. School names, type and their level of activity during the 2 week online event can be found in Appendix 1.

Students had the chance to join scientists in the award winners category of the event. Scientists were asked to nominate students that they thought had been outstanding in terms of the types of questions asked and their engagement during chats. There was one winning student in each zone: katies in the Agriculture Zone, april7 in the Disease Zone, and wdowe2 in the Wet & Wild Zone. The student winners each received a $50 iTunes voucher and those who were highly commended received a certificate to mark their achievement. A full list of students who received an award can be found in Appendix 2.

Participation by Scientists

A summary of participating scientists and affiliations is shown in Appendix 3. Scientist recruitment was conducted to ensure diversity in disciplines and research topics, a range of career levels, and scientists from different types of organisations.

Support from our partners and the success of the recruitment for the March 2013 event enabled us to host three themed zones. The zone winners were: undergraduate student Dominique Cotterill (University of Tasmania, Tas) in the Agriculture Zone; Post-doctorate researcher Miranda Ween (University of Adelaide, SA) in the Disease Zone; and PhD student Jennifer Shaw (University of Adelaide, SA) in the Wet & Wild Zone.

Evaluation

The success of the event and its management was evaluated by collecting formal feedback from scientists, teachers and students via an online survey after the event.

A more dynamic approach was taken during the event where feedback from participants was sent via email and social media, shaping the ongoing refinement of content and event management. Teachers used email to get in touch with the team, and scientists provided feedback via Twitter, the *I'm a Scientist* alumni Facebook group and email.

After each event the *I'm a Scientist* team host a culmination event for participant scientists as a thank you for their contribution. Scientists from previous seasons of *I'm a Scientist* are also invited. This alumni group provides an opportunity for scientists to share their current ideas for communicating science and encouraging STEM careers, as well as acting as a forum for informal feedback to the *I'm a Scientist* organisers.

Formal feedback: Online surveys

An incentive was introduced for completion of the student survey to help increase response rates from previous events. From the students who completed the survey, flyingpig was chosen at random to receive a $50 iTunes voucher. Each survey was shortened compared to previous events, and teachers and scientists were reminded and encouraged to complete the online survey during the final week. Links to all the surveys (student, teacher and scientist) can be found at http://imascientist.org.au/feedback/.

Students

A total of 61 students from 9 schools completed the feedback survey for the March 2013 event, a response rate of 8%, the highest so far compared to 3% in August/September 2012, 6% in May 2012 and 4% in June 2011. With almost half of students from one school (28 students from Diamond

Valley College) and the remainder from 8 other schools it is difficult to determine trends amongst students across schools. We can however demonstrate an increased level of engagement beyond the classroom with 46% of respondents having accessed the site from both school and home. In support of this, 79% of respondents rated the "Quite Interesting" (23) or "Very Interesting" (25), reporting that they were generally more confident (38% of respondents), if not much more confident (another 38% of respondents) in asking questions about science.

There was a generally even split between which element of the event students felt they leant the most from, the "Ask" and the "Live chat" sessions, with one student naming the scientist profile pages. When asked what they disliked about the event and how they felt it could be improved, the general message was that they wanted more – more scientists, more of their questions answered and more live chats:
"It only went for 2 weeks, if it went for longer it would be a little bit more enjoyable, but apart from that it was a great experience." – Year 8 student, Diamond Valley College, VIC

With 69% saying that they would recommend the event to their friends, it was an overall positive experience from the students' point of view. What they liked about taking part in *I'm a Scientist*, was talking to real scientists:
"That you could ask questions to real scientist and get there opinion on your topic plus it allowed you to see what other people were asking so you could then comment and respond." – Year 7 student, Clover Hill State School, Qld
"I liked the live chat sessions and how it made everyone feel so much more enthused to learn about science." – Year 8 student, St Catherine's School, VIC

Teachers

With a response rate of 9% (3 respondents out of 33 teachers) it is difficult to determine trends amongst teachers across schools. We can however present general observations from the responses we received.

Teacher respondents stated that, for them as teachers, the positive experience for their students was the single most important outcome of the event:
"Very positive experience for year 9 students who are one of the least likely to positively engage & see science in their future." – Helen
"This program empowered my students to learn more about science topics that they were interested in." – Mary-Jane

The amount of time spent on the *I'm a Scientist* website within the classroom ranged from 1 – 6 hours, with one teacher saying that they watched the live chats of other schools with their students. When asked if the experience had encouraged students to consider a career in science, teachers general response was that students were surprised at the range of activities undertaken by scientists, that they were normal people with real lives that were exciting.

All teachers said that they would participate in the event again, and would recommend it to a colleague. Suggested new zones for future events included: Ecology; Engineering and Emerging Technologies; Marine Science; Forensic Science; Sports Science; Physics and Quantum Sciences.

A barrier to the completion of the online surveys remains to be the access to the survey pages from school computers. Efforts to review this and test the online survey access at the schools who have noted this as a problem will be made before the start of the next event.

An area of suggested improvement was the capture live chat dialogues. As the nature of live chats is dynamic and temporary interaction between students and scientists, the availability of dialogue for use after the event is contrary to the spirit of this part of the event.

Scientists

Three out of our 15 scientists responded to our request to fill in the online survey (a 20% response rate). All three respondents rated participation in the event as "Yes, it was fantastic". Below are a few examples of the responses we received:

What did you gain from the experience?
"It was great to learn what sort of questions the students wanted answers to; anything from general career stuff to the meaning of life. It was very informative." – Blaire

What do you think students gained from the experience?
"There was a lot of questions about hours worked, equipment used, how long it takes to make discoveries etc... it allowed the scientists to give a realistic view of what being a scientist is and what the students can expect if they choose it as a career." – Kate

What did you particularly like about the event?
"I liked the live chats, I think this was great opportunity for student to speak to the scientist openly" – Shona

How does it compare to other science engagement?
"I have never been involved with online communication like this and I found that it probably made it easier for the students to express themselves. Often in person they can be quite shy, but in the live chats they were very engaged and chatty. I think it is also great that any school can be involved - a great 'outreach' initiative." – Blaire

Scientists were very positive about the event management. An area suggested for improvement was time zone specific web pages to overcome confusion over live chat times.

Informal feedback: Emails and social media

The feedback received via email and social media ranged from the discussion and resolution of any website glitches and time-zone confusions with respect to live-chat bookings, to general positive and constructive feedback on the content and management of the event. These reflected the areas of improvement suggested via the formal online surveys.

Emails – a teacher, a parent

A teacher emailed us about the enthusiasm displayed by her students for the event:
"My class is really getting into I'm a Scientist this year. We finish school at 3pm in Queensland and they have been going on the web site at home to find out who has been evicted then telling me about it first thing in the morning. A group of girls have a favourite scientist who has made it to the final two in the Agriculture Zone so they are very excited and hoping that "their" scientist is the winner. Thanks once again for such an engaging scheme." – Celia

We also received an email from a parent about how much of their out-of-school time was taken up with science related discussions because of *I'm a Scientist*:
"Thank you for engaging our girls in the IAS program - we heard a lot about it at home, in the car, everywhere! It clearly resulted in a lot of exciting and memorable learning for Ella and the class, and we appreciate that greatly, especially the promotion of women in science too." – Juanita

Social media

The IASAus Twitter account has approximately 460 followers. Twitter is used to share interesting content and communicate easily with scientists via the #IASAus hashtag. About half of our scientists had been on Twitter prior to the event but their usage levels varied.

Website Analytics

The website data presented focuses on the period of 4 March – 22 March 2013, covering the week prior to the start of the event when Teachers' booklets were due to arrive into schools.

Web views were very strong. The March 2013 event saw 10,505 unique visitors to the site (compared to 6,654 for August 2012),63,174 page views (60,641 page views in August 2012) and the average time on the site was 4 minutes, 47 seconds (a slight decrease on 6 minutes, 58 seconds for August 2012). The visitor numbers are shown in Figure 1.

Traffic sources: An increase in search traffic and direct traffic compared to August 2012 appears to be the major factor in the increase in web views.

Figure 1: Visitors to http://imascientist.org.au

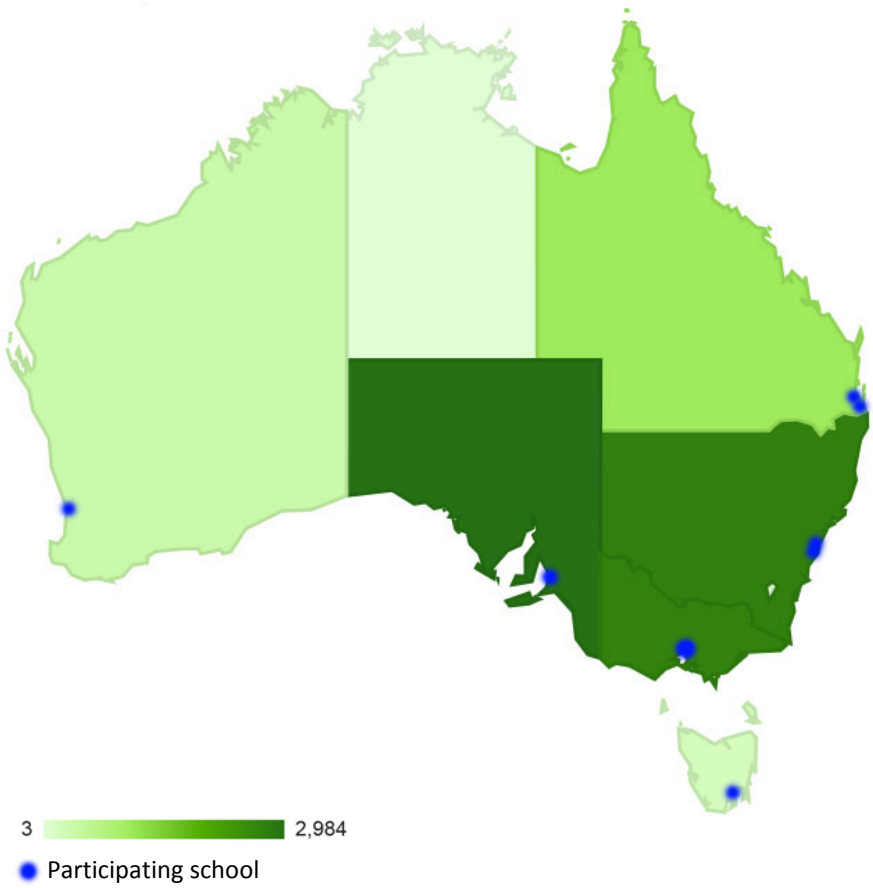

Figure 2: Participating school locations and visitors to http://imascientist.org.au by location

The majority of visitors were from the desired catchment area of within Australia, mirroring school participation as shown in Figure 2.

Examples of online engagement

Our March 2013 event had many examples that demonstrated that students were thinking about the role of science and technology in their everyday lives and the legacy being left for future generations. There was significant interest in science careers in terms of pathways to becoming a scientist, as well as understanding what real-life scientists do inside, and outside of the workplace. Below are some examples from our “Ask” section:

Food security playing on students' minds

Students in the Agriculture zone posed questions about the future of transgenic food and if sharing is the way forward to ensure food security for all.

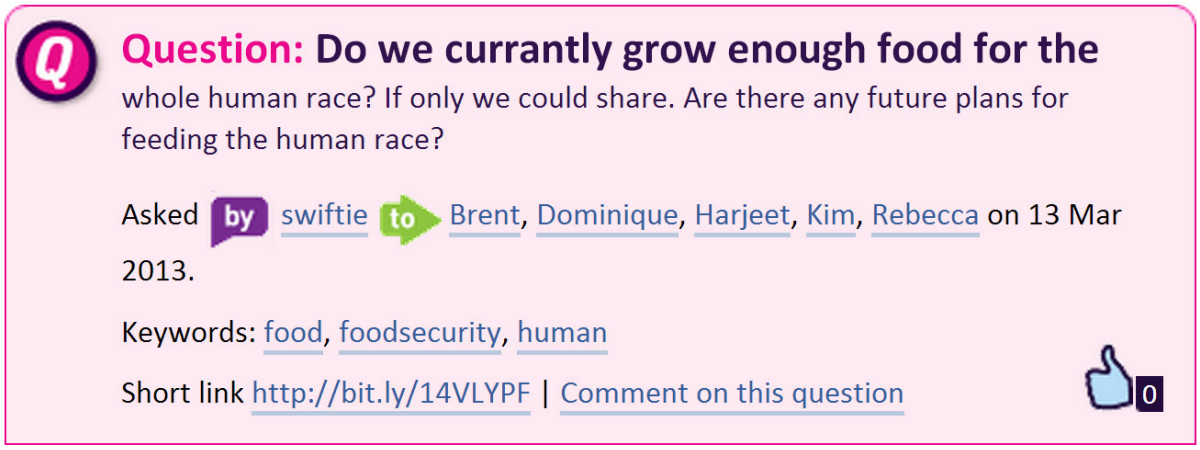

Figure 3: Enough food for the human race?

Studying science at university – is it worth it?

In each zone we had lots of questions in both the "Ask" section and in the "Live chats" regarding what motivated scientists to follow their career paths, and what it's like to study science at university. One student asked, is it really worth all the effort?

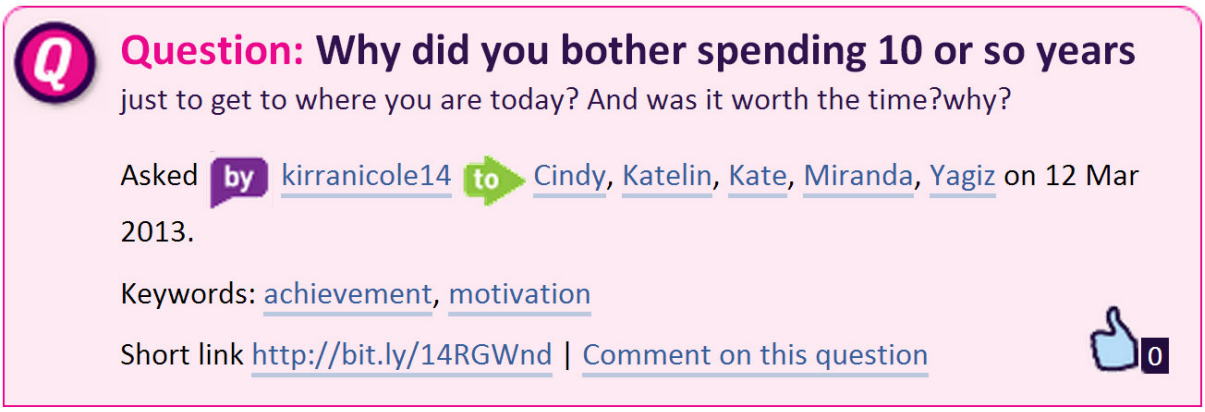

Figure 4: It is worth the effort?

Live Chats can be followed up in ASK

As well as science questions from the "Live chats" being followed up in the "Ask" section, students keep the conversation going by just saying thanks.

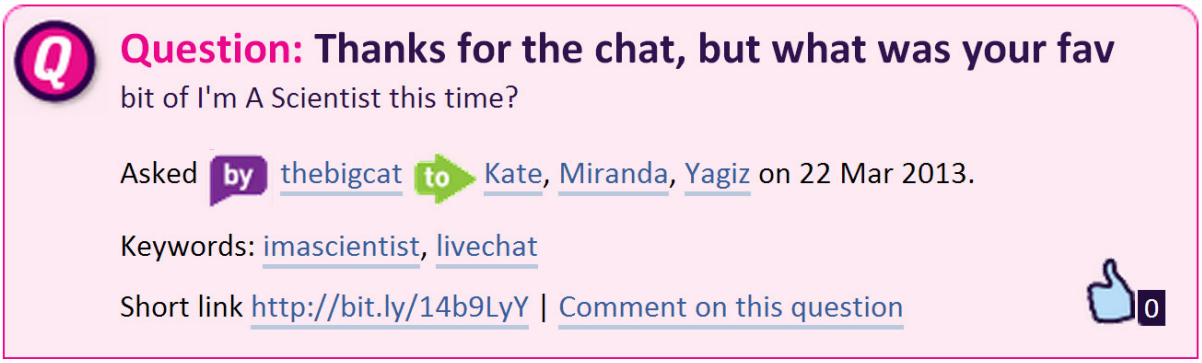

Figure 5: Students want to know if the scientists enjoy the event too

Media & Communications

The following activities were undertaken in order to reach out through traditional media channels:

- A Press information page on the *I'm a Scientist* Australia website (http://imascientist.org.au/about/press/)
- Direct communication via email campaigns to a combined list of 230 contacts, plus featuring scientists on Facebook during the 'Eviction Week' of the event.
- Communications with *I'm a Scientist Australia* alumni through a closed Facebook group
- Bridge8 blog http://bridge8.wordpress.com/2013/02/17/im-a-scientist-get-me-out-of-here-march-2013/
- Press releases were prepared and sent to schools and scientists so they could share with their communications or administration teams to adapt for internal communications, local newspapers or other media.
- Press release distributed to local and national media on behalf of Bridge8

Coverage of *I'm a Scientist* was recorded through the following blogs:

- Waite Research Institute, University of Adelaide, blog post http://waiteresearchinstitute.wordpress.com/2013/03/05/im-a-scientist-get-me-out-of-here/
- Science for life – 365, a post by Sarah Keeinhan http://scienceforlife365.wordpress.com/2013/03/27/day-227-im-a-scientist-and-i-love-to-eat-out/
- TechNyou blog post http://technyou.edu.au/2013/03/im-a-scientist-get-me-outa-here-students-discuss-the-big-issues/

Next Steps

Our Zone winners have great plans for the use of their prize money: Disease zone winner Miranda Ween is planning on supporting a number of science outreach activities by providing funding for schools that otherwise would not be able to participate; Dominique Cotterill, the winner of our Agriculture zone plans to do some science outreach of her own and help teach students about growing their own food; and our Wet & Wild champ Jenny L.A. Shaw will be donating her prize money to the charity 'Room to Read' (www.roomtoread.org).

We are grateful for your support of our program and look forward to continued engagement with our next event in August/September 2013.

Appendix 1: Participation by Schools

Table 2. Schools participating in March 2013 Event

State	School name	Type of School	Year level	Live Chat?	Total Events
QLD	Broadbeach State School	Public, Regional, Primary	5,6,7	Yes	2
QLD	Browns Plains State School	Public, Regional, Primary	5,6,7		1
QLD	Clover Hill State School	Public, Regional, Primary	5,6,7	Yes	1
QLD	Kelvin Grove State College	Public, Metro, Secondary	10	Yes	2
NSW	Brigidine College	Private, Metro, Secondary	7		1
NSW	East Hills Girls Technology High School	Public, Metro, Secondary	7, 8, 10	Yes	1
NSW	Moriah College	Private, Metro, Secondary	9,10	Yes	4
VIC	Baden Powell College	Public, Regional, Secondary	8		2
VIC	Cooryong College	Public, Regional, Secondary	7,8	Yes	1
VIC	Diamond Valley College	Public, Regional, Secondary	8	Yes	1
VIC	Kilbreda College	Private, Metro Secondary	7,8,9		1
VIC	St Catherine's School	Private, Metro Secondary	8	Yes	1
TAS	The Hutchins School	Private, Metro, Primary	6	Yes	3
SA	Annesley Junior School	Private, Metro, Primary	5,6	Yes	2
SA	Australian Science & Mathematics School	Public, Metro, Secondary	10,11,12		1
SA	Mitcham Girls High School	Public, Metro, Secondary	9	Yes	1
SA	Murray Bridge High School	Public, Regional, Secondary	8,9,10	Yes	1

State	School name	Type of School	Year level	Live Chat?	Total Events
SA	Pedare Christian College	Private, Metro, Secondary	8	Yes	3
WA	Kapinara State School	Public, Metro, Primary	6,7	Yes	2

Appendix 2: Student winners

Table 3: Students commended for their outstanding contribution to the March 2013 event in terms of the types of questions asked and their engagement during chats

Zone	School	Student username	Year
Agriculture	**Mitcham Girls High School**	**katies**	**9**
	Mitcham Girls High School	strawberrybunny	9
	Footscray City College	cloudstrife	8
	Australian Science and Mathematics School	davidmcafee	11
	Mitcham Girls High School	phoebe1998	9
	Mitcham Girls High School	mitchamgirls1998	9
	Mitcham Girls High School	daughterofhades	9
	Mitcham Girls High School	markwinterbottom5	9
	Moriah College	jezzdogslayer	10
	Moriah College	jonahkaufman	10
	Footscray City College	luciferdesu	8
	Footscray City College	beaversrcool	8
	Mitcham Girls High School	kelseyjaye98	9
Disease	**East Hills Girls Technology High School**	**april7**	**7**
	Kapinara Primary School	tonystark	6
	Annesley Junior School	naniasa	5
	Diamond Valley College	cupcakesrachel	8

	St Catherine's School	scientistsophie	8
	Kilbreda College	potatosteph	8
	Annesley Junior School	lulu	5
Wet & Wild	**Clover Hill State School**	**wdowe2**	**7**
	Moriah College	camillaweiss	10
	Cooryong	dinghy65	8
	Corryong College	reddwarf3705	8
	Clover Hill State School	cheesecake	6
	Clover Hill State School	kidfromclover	7
	Clover Hill State School	dmath56	5
	Baden Powell College	grumb1es	8
	Clover Hill State School	isla12321	6
	Clover Hill State School	fourleafedclover	5
	Clover Hill State School	wdowe2	7

Appendix 3: Participation by Scientists

Table 4: Scientists participating in the March 2013 Event

Zone	Scientist	Organisation & Location	Interests
Agriculture	Kim Ritman (Chief Scientist)	Australian Bureau of Agricultural and Resource Economics and Sciences (ACT)	Leads and manages provision of science-based policy advice for DAFF in areas covering fisheries, forestry, land use, feral animals and weeds, climate, water availability, salinity, agricultural biotechnology, spatial information and social sciences.
	Harjeet Khanna (Senior Research Scientist)	Queensland University of Technology (QLD)	I develop transgenic crop technologies, strengthening the scientific base on which GM crop technology is evolving. In the past 7 years I have been mainly working on Bill and Melinda Gates' funded program on developing nutritionally enriched transgenic bananas to combat malnutrition in Sub-Saharan Africa.
	Brent Kaiser (Teacher and Scientist)	Waite Institute, University of Adelaide (SA)	I conduct research into the molecular regulation of nitrogen acquisition and use in plants.

Zone	Scientist	Organisation & Location	Interests
	Rebecca Doyle (Teacher and Scientist)	Charles Sturt University (NSW)	Area of expertise is animal physiology and welfare. Day to day roles include research collaborations with partners in France, Bristol and the CSIRO, working overseas in Indonesia and the Middle East, and teaching physiology and welfare to animal science, agriculture and veterinary students.
	Dominique Cotterill (Undergraduate)	University of Tasmania (TAS)	Just commenced her first year of a Bachelor of Agricultural Science after working a gap year as a technical field assistant for contract agricultural research companies.
Disease	Yagiz Alp Aksoy (PhD Student)	Macquarie University (NSW)	I am working to shedding "light" onto the blackbox of the cardiovascular and cardiorespiratory diseases by taking synthetic biology and optogenetics approach.
	Kate Skulte (Honours Student)	University of Western Sydney (NSW)	I'm working on a project that looks at the on and off switches for our genes in our DNA and their role in complex diseases like cancer and allergy.
	Cindy Lin (PhD Student)	Australian Centre for Blood Diseases, Monash University (VIC)	My research is on Multiple Myeloma, particularly focussed on investigating factors that make the disease worse in some patients than in others.
	Miranda Ween (Post-doctorate scientist)	Research Centre for Infectious Diseases, University of Adelaide (SA)	How do bacteria recognise vital elements in their environment, and how can we use this against them?
	Katelin Haynes (PhD Student)	Diamantina Institute, University of Queensland (QLD)	I'm trying to understand what causes ankylosing spondylitis, a type of arthritis where the bones in your spine fuse together.
Wet & Wild	Simon Allen (Stream Leader for Coastal Systems Research)	CSIRO (TAS)	I explore questions on how we can work, play and live around Australia's coasts and still have an environment within which we still want to live.
	Blaire Dobecki (Communications and Outreach Officer)	TechNyou (VIC)	I studied Zoology/Environmental science and my honours year was about predicting invasive species distributions using computer models. My current role as a Communications and Outreach Officer requires me to communicate on the topics of enabling technologies including GM foods and nanotechnology.

Zone	Scientist	Organisation & Location	Interests
	Shona Marks (Director, Benthic Australia)	Benthic Australia Pty Ltd (QLD)	I'm an Aquatic Ecologist, specialising in Marine and Freshwater ecology of Invertebrate fauna. I have personal passion for Taxonomy, and my favourite animals are worms. I am the Director of Benthic Australia, but I also work part time at the Queensland Museum in the Discovery Centre, which aims to engage the public and students in discovering natural history.
	Jennifer Shaw (PhD Student)	University of Adelaide (SA)	My research involves sequencing the DNA found in freshwater systems such a rivers, lakes, streams and stormwater in order to identify species which may indicate pollution in the ecosystem. The new methods developed will eventually be used in monitoring freshwater health and quality.
	Elizabeth Stark (Environmental Statistician)	Symbolix Pty Ltd (VIC)	I use statistics to help people make decisions and to understand how things interact in the environment.