

## Evaluation Report

### I'm a Scientist, Get me out of here!

### RSC funded zones 2015

**I'm a Scientist**  
Get me OUT of here

Meet the Scientists...  
Michael MG Jesus **WINNER!** Baljit Arlene

Spectroscopy Zone  
You are logged in as modanpela. [Log out](#)

Zone Home My Profile Scientists Search

global zone

Ask? Chat Vote X

**Michael Kyriakides**

**Me and my Work:** I am curious person whose research is focused on the understanding and detection of important diseases such as cancer or infections.  
[Read more about me](#)

Latest Question:  
[what is a i-knife?](#)

Latest Comment:  
No comments to display

**Maire Gorman**

**Me and my Work:** I help astronomers work out what molecules are in other planets- ie is there alien life out there?  
[Read more about me](#)

Latest Question:  
[If you find alien life will you be able to name it or will the government have to name it. If you can name it what](#)

Latest Comment:  
[does your job ever scare you](#) (1 comments)

**Jesus Calvo-Castro**

**Me and my Work:** I study the properties of compounds that can detect explosives and other chemicals  
[Read more about me](#)

Latest Question:  
[do you always keep trying even if you fail at one point?](#)

Latest Comment:  
[And the winner is...](#) (1 comments)

**Baljit Ghatora**

**Me and my Work:** A very varied job where I teach the application of chemistry to forensic science and also spend time researching how to make new safe materials for human use.  
[Read more about me](#)

Latest Question:  
[Hello, would you consider coming to our school ever?](#)

Latest Comment:  
No comments to display

**Arlene McBroom**

**Me and my Work:** I analyse unknown samples to work out what they are and where they may have come from.  
[Read more about me](#)

Latest Question:  
[How has what you wanted to do for your job changed through your education?](#)

Latest Comment:  
No comments to display

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## 1. Executive summary

Here is a summary of our main findings after evaluating the 9 RSC funded zones of I'm a Scientist, Get me out of here 2015.

- 1. Scientists improved their science communication skills:** They learned about students' interests and how to communicate with them in a more efficient way.  
*"... there is no better way to test how much you know about something than trying to explain it to someone with a more limited background on the topic."* – Jesús Calvo-Castro, Spectroscopy Zone
- 2. The zones saw a great number of conversations around chemistry themes** with keywords like "chemistry", "light", "materials", "drugs", "polymers" being prominent in questions and live chats.
- 3. 37 RSC members took part in I'm a Scientist thanks to this funding agreement.** 31 took part in the 8 RSC funded themed zones and another 6 were spread in 6 general zones.
- 4. 6 RSC members were voted winners in the 9 RSC funded zones in 2015** and will continue to promote their research on chemistry with the £500 prize money.
- 5. Widening participation in schools:** 118 schools got a place to take part in I'm a Scientist RSC funded zones in 2015 the UK and Ireland. 47 were in Ireland and Scotland and 71 were in England and Wales and the remaining. Of these, 12 (17% of 71) were rural or Widening Participation schools.



## 2. Introduction and background

### *I'm a Scientist, Get me out of here! (IAS)*

I'm a Scientist, Get me out of here! is an online event where students get to meet and interact with real scientists. It's an X-Factor style competition between the scientists, where students are the judges.



The event has 3 parts: ASK, CHAT and VOTE. Students ASK questions and have text-based live CHATS with the scientists. Students learn more about the scientists, and let scientists know their opinions. And finally, students VOTE for their favourite scientist to win £500 prize to be spent on more science communication.

The event takes place over two weeks, online at [imascientist.org.uk](http://imascientist.org.uk), and it is split into “zones”, which are either general (named after an element) or themed. In each zone there are 5 scientists and around 400 school students in 20 classes. IAS is designed to bring real science to life for students, supported by carefully developed classroom resources.

The Royal Society of Chemistry (RSC) agreed to support I'm a Scientist over 3 years through to the end of 2017. Each year, they fund 9 zones across the UK and Ireland. Part of the arrangement is that we include RSC members in five of our General Zones to show school students the full breadth of science.

### *The Royal Society of Chemistry*

The Royal Society of Chemistry is the largest organisation in Europe for advancing the chemical sciences. Supported by a worldwide network of members and an international publishing business, our activities span education, conferences, science policy and the promotion of chemistry to the public.



In the UK, the RSC are the largest non-governmental supporter of UK chemistry education. Their activities encompass formal and informal education from primary through to Higher Education levels and they are committed to providing Continuing Professional Development (CPD) for those teaching chemistry. They work closely with the government and other organisations on issues which may impact on science education and encourage initiatives to attract students to the chemical sciences from all parts of society and raise awareness of potential careers with chemistry.

### 3. Activity in the zones

We ran 9 RSC zones in 2015, distributed in four events:

- 3 zones in I'm a Scientist UK March 2015: Green Chemistry Zone, Materials Zone, Molecules Zone
- 3 zones in I'm a Scientist UK June 2015: Colour Zone, Polymers Zone, Ytterbium Zone
- 1 zone in I'm a Scientist UK November 2015: Spectroscopy Zone
- 2 zones in I'm a Scientist Ireland November 2015: Drug Synthesis Zone and Food Science Zone

Two of these zones were for primary students only: Materials and Colour zones.

**IAS Figures: Historic average since 2012, average of all zones in 2015, and RSC funded zone average in 2015.**

	HISTORIC AVERAGE	'15 ZONES AVERAGE	'15 RSC ZONES AVERAGE
Registered Students	353	415	382
% of students active in ASK, CHAT or VOTE	85%	89%	89%
Questions asked	----	----	427
Questions approved	307	306	257
Answers given	552	524	482
Comments	78	52	43
Votes	281	328	295
Lines of live chat	4827	5629	4422
Live chats	14	18	16
Average lines of live chat per chat	322	322	290
Schools	9	12	12
% of approved questions	----	----	60%
Answers given per approved question	1.8	1.7	1.9

Most figures for RSC funded zones in 2015 fall around the average for all I'm a Scientist zones.

We have recently updated the methodology used to count the total number of questions asked by the students. This figure used to include questions mistakenly repeated by students, incomplete questions, and a small percentage of spam. The current Questions Asked figure shown for 2015 RSC zones is more accurate and includes all the full questions asked by different students, but not repeated questions by the same student or spam. The difference between Questions Asked and Questions Approved is made up of questions which have an answer on the scientist's profiles and duplicates of previously asked questions – i.e. when one student asks a question that has already been asked by another student, the second question is counted as a duplicate and the student gets a link to the answer for the first question.

Unfortunately, we have only updated this figure for RSC zones, so we are unable to offer a comparison against annual or historic I'm a Scientist values. No other figures are affected by this update.





## Examples of good engagement

Most of the scientists in the RSC funded zones in 2015 had an enthusiastic and engaging tone, here are just some examples of outstanding engagement, to give a flavour of how students and scientists interacted.

In the Polymers Zone, the students asked some insightful philosophical questions, which the Thomas Farrugia, PhD student at the University of Bristol and the zone winner, seemed to enjoy considering:

*“How do you know that what you have been taught is true?” – Student*

*“Good one - when reading published research you do have to be critical, especially if it's really close to your field, but you do bank on other people's scientific integrity and the peer review process (essentially when someone publishes something it first gets read by other scientists who are also experts in the field and tell the editor whether it's fit for publishing or not).” – Thomas Farrugia, scientist*

In the Food Zone, students brought up the subject of animal testing and John Gleeson, PhD student and Senior Teaching Assistant at University College Dublin, used the opportunity to explain the reasoning for using rats in his research.

*“We are doing a debate in animal testing next week so just wondering: does everyone treat the animals right in your lab? What do you do with them after?” – Student*

*“I'm a huge animal lover so nobody would get away with not treating them right [smiley] But we also have University system to ensure everything we do minimises harm, a national system AND we have to do exams for our licence. We are audited as well to make sure everything is ok. Animal work requires respect for the animals and that's key” – John Gleeson, scientist*

*“How do you know if it works on real life humans!? Just because it's been tested on rats and worked successfully doesn't mean it works on humans the same way or does it? – Student*

*“You're dead right. So these compounds do work in humans (people have tested before). But the formulation (pill) hasn't been tested before. So for our work we always go Cell > Rat > Human. If everything works out I'd love to do work with people. But say if you discovered a drug and it worked in rats you're very right that may not work on humans. But for pill design rats are fine as we are mainly using them as they've similar digestive system to us” – John Gleeson, scientist*

The scientists always provided useful and encouraging advice, for instance in the example below where scientists in the Spectroscopy Zone discuss broader ideas of what it means to work in science.

*“Would you say that people like me should look into or be a scientist?” – Student*

*“There is no such stereotype of who should be a scientist...when people often see me they get me confused for a student but do not realise I am a scientist! A scientist is someone who is passionate about making change and challenging ideas...” – Baljit Gathora, scientist*

*“YES!!!!!!!!!!!!!!!!!!!! There are so many careers available in science- not just doing research but also teaching, managing projects, building equipment, testing equipment, doing public outreach, lobbying the government for funding. (I'm sure there are plenty more...)Keep an open mind. Attend careers talks. Speak to people. Ask questions. There is a role for everyone to play in science” – Maire Gorman, scientist*

*“I think most of people have a potential scientist inside! Are you curious about everything that surrounds you? Then you can be a scientist. Keep your career options open and do something you are passionate about. There is nothing like having a job that you really enjoy...it does not feel like having a job!” – Jesús Calvo Castro, scientist*

## 5. Participation

### Scientists

#### RSC members

40 scientists took part in the 8 RSC funded themed zones in 2015. We aimed to recruit at least 3 RSC members for each zone (24 in total), and we exceeded this with a 31 members across the 8 zones.

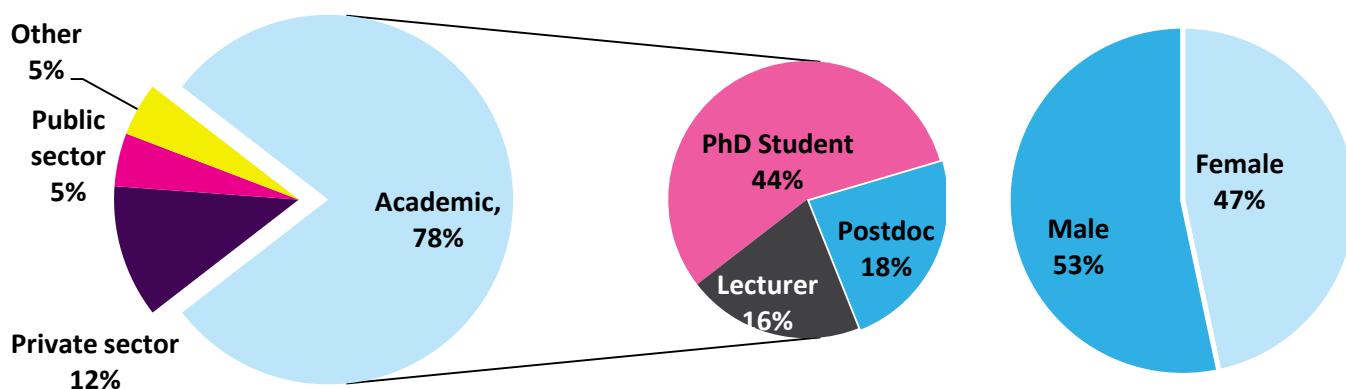
Additionally, the RSC funded one general zone (Ytterbium), with a mix of scientists from different fields (microbiology, computing, environmental sciences...). That funding allowed for five RSC members to take part in at least five general zones in different events throughout 2015. We also exceeded this target, with a total of 6 RSC members spread in 6 different general zones:

- Jennifer Rudd in the Erbium Zone, March 2015
- Fran Longford in the Holmium Zone, March 2015
- Paul Brack in the Lutetium Zone, June 2015
- Tat Ming Mako Ng in the Thulium Zone, June 2015
- Anna Kutner in the Ytterbium Zone, June 2015
- Keith Franklin in the Osmium Zone, November 2015

Altogether, **37 RSC members took part I’m a Scientist in RSC funded zones in the UK and Ireland in 2015.**

#### All scientists in RSC zones

When the scientists apply to take part in I’m a Scientist, they write a one sentence summary of their work. This summary is sent to students and teachers, who rate the scientists based on their descriptions and how much they’d like to see them in the event. We also try to get a mix of research interests and academic levels (from PhD students to Professors), variety of institutions, and a balance of female and male scientists, as well as scientists from minority ethnic backgrounds. This is very important for us, to help every student find a relatable role model.





Of the 45 scientists who took part in the 9 RSC funded zones, 47% were female and 13% were from black or minority ethnics. The majority (78%) of the participants were academic scientists, and over half of these were PhD students. Only 12% of scientists came from the private sector. **We would like to work with RSC to increase the proportion of scientists from private companies.**

Scientists were widely spread in different institutions in the UK and Ireland, as shown in the map to the right.

In each zone, there were four rounds of voting with one scientist evicted in each. Students can cast one vote in every round. In the 9 RSC funded zones, 6 winners (67%) were female, and a total of **6 RSC members were voted winners**. This means that they will be able to continue to promote their research on chemistry with the £500 prize money.

For example, Anaïs Pujol came second in the Molecules zone in March 2015, and was awarded the £500 after Peter Maskell found alternative funding for his project. She collaborated with Science Grrl to design and deliver a workshop about light for children and adults at Brixton Library. Read more about this at: [about.imascientist.org.uk/2016/what-anais-pujol-did-with-her-prize-money/](http://about.imascientist.org.uk/2016/what-anais-pujol-did-with-her-prize-money/) and have a look at other winner reports at [about.imascientist.org.uk/category/prize-winner/](http://about.imascientist.org.uk/category/prize-winner/)



## Scientists' interviews

We conducted a telephone interview with Baljit Ghatora, Senior Lecturer in Analytical and Forensic Chemistry at Kingston University and Spectroscopy Zone participant; and a Skype interview with Mark Collins, Senior Analytical Chemist at Almac Group and Drug Synthesis Zone participant. Both Baljit and Mark are RSC members.

### Living up to expectations

None of the two scientists interviewed had any particular expectations of the event. Mark said he signed up because someone he knows at RSC told him about the event, and that he didn't expect it to be an international event with so many different zones running across the UK and Ireland.

### Time commitment

Baljit thought "it was Ok". She thought "it was going to be more time, but it wasn't as much as expected in the end". For Mark, being a scientist working on the private industry, it was "difficult to take part in the live chats during the day. In industry having extra time is rare. You have a lot of pressure and have to go from meeting to meeting, so it was hard to get in many live chats. I wanted to do more than I could, so I got a bit frustrated with myself, but it was definitely worth it."

## Benefits from taking part

For both of the scientists interviewed, taking part was a good way of improving their communication skills. For Baljit it was good to “understand how to communicate with a younger audience, and get a fresh outlook on how you present things”, or in Mark’s words “good to talk to a different audience to what I usually talk to”.

Both of them highlighted the students’ interest in science.

*“It was eye opening. It’s good to know that students are engaged with how science affects their lives. They didn’t just ask about basic science questions, but also about current issues.”* – Baljit, scientist

*“It’s good to see that there are young people who want to be scientists”* – Mark, scientist

## Suggestions of how to improve the event

Baljit expected that it had been easier to take part in the activity from mobile devices. We have been improving the site design to adapt it to mobile, but she suggested that it would be nice to have an app to get notifications of questions, and comments, and answer them directly.

Mark just hoped we could encourage students to leave more comments on the answered questions, so a conversation could be developed there. This was particularly important for him, since he couldn’t take part in a lot of the live chats due to professional commitments.

## Schools

**118 schools** (red dots on the map to the right) **got a place in I’m a Scientist RSC funded zones in 2015**. 80% of these schools actually took part in the event, in line with our expected 20% dropout rate (although this is been decreasing to 10% in June 2015 and 15% in November 2015). We oversubscribe zones with 25 classes, when we expect around 20 classes to show up in each zone.

However, school dropouts are particularly unfortunate now that we have to select which teachers get a place in I’m a Scientist UK, given the high oversubscription rates. In November 2015, 202 teachers requested a place for 537 classes, and we only had space for 250 classes. Read more at:

[about.imascientist.org.uk/2015/too-many-teachers/](http://about.imascientist.org.uk/2015/too-many-teachers/)

*“It was excellent and it would have been good to have more students accessing it - appreciate the difficulties though! Thank you so much for the opportunity - the kids loved it!”* – **Teacher, November 2015**

## Widening Participation

Being online we can reach those who are currently underserved by science outreach activities, and this is one of our last strategic aims: increase the diversity of the schools taking part in I’m a Scientist. Since there is not data available for which are the most disengaged schools, we have created our own definition, taking into account distance to Higher Education Institutions, and Widening Participation indexes. We are targeting non independent schools that fulfil at least one of these criteria:



- the % of students achieving 5 grades A\*–C at GCSE is below 45%
- the % of students achieving level 4 in reading, writing, and maths at KS2 is below 45%
- the % of students eligible for free school meals is higher than 41%
- POLAR3 is in the first quintile
- A SEN School
- A school that is more than 25 miles away from a major research University

At the moment, we have looked at which schools in England and Wales meet these criteria. **Of the 71 schools who took part in RSC funded zones in England and Wales, 12 (17%) were in rural or underserved areas.** Our aim is to improve this number in the future by targeting promotion to these schools, as well as offering them extra support during the activity.

*“It was a good way to reach schools that might not be geographically convenient for my outreach work. I'd like to see what kind of mix of intake there is for this though, are underprivileged schools particularly encouraged?”* – **Scientist, November 2015**

### ChemNet Students

ChemNet is a Community offers help and support for students who are 14 to 18 years old and studying chemistry. We offer **ChemNet students** the opportunity to take part in I'm a Scientist.

The RSC ChemNet team promotes I'm a Scientist to ChemNet students, who register an interest to take part in by filling a form on the site. Then we email them directly and send them their log in details so they can access the site, ask questions, comment and vote for their favourite scientist in one of the RSC funded zones.

We allowed ChemNet students to take part in I'm a Scientist June and November 2015 events:

- In June 2015, 13 students registered on the site, we emailed them login details and 3 of them logged in and asked 14 questions.
- In November 2015, 4 students registered, we emailed login details to all the students who had registered for the June or November events. Only one student logged in to vote for their favourite scientist.

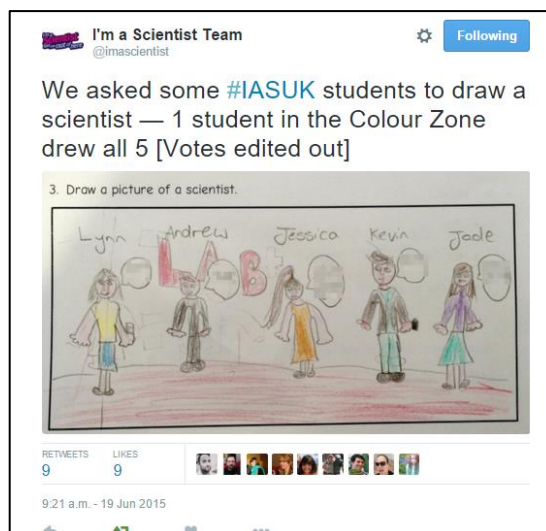
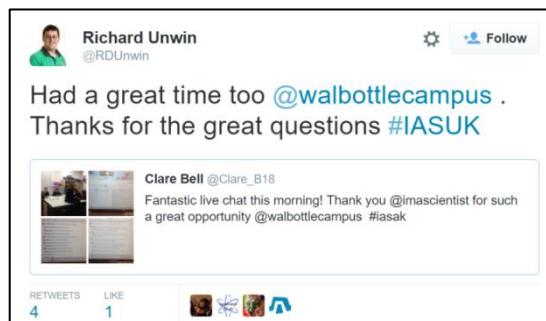
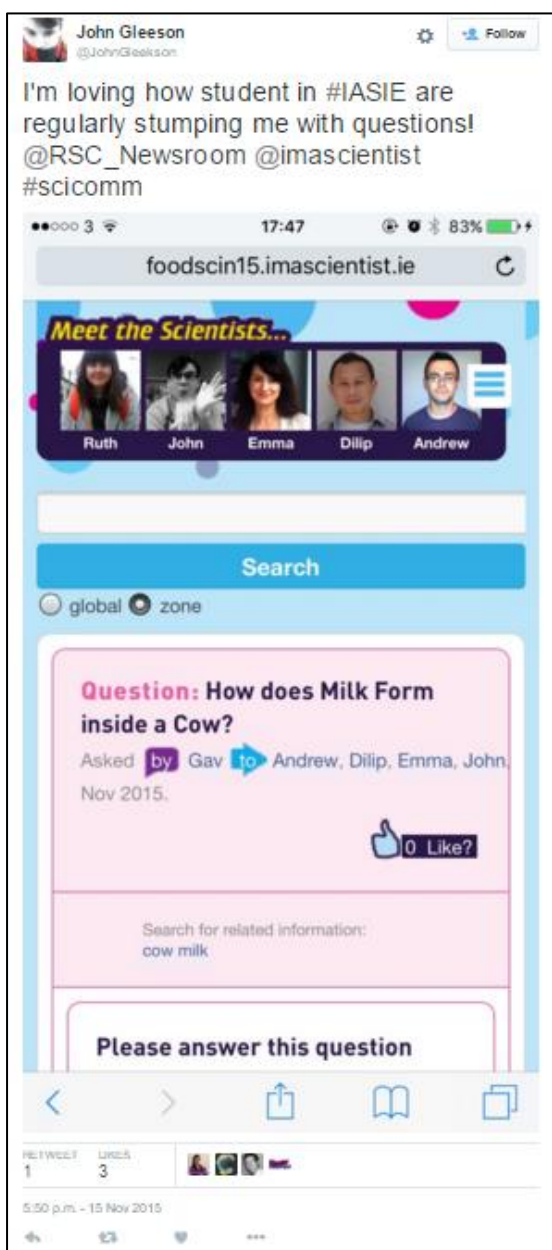
Importantly, ChemNet team improved their promotion for the November event. They promoted the activity on their website homepage, their regular email newsletter, separate emails to ChemNet members, on discussion boards with students who have previously taken part, and in webinars. However, even after all this promotion we got very few students involved.

Taking part in June might have tied in slightly better with ChemNet students' schedules, as they have already taken their GCSE and A-level exams, and have more time for informal learning activities.

We will keep working with ChemNet Team to find out better ways to promote I'm a Scientist to their community of students.

## 6. Publicity

I'm a Scientist (@imascientist) regularly tweeted updates and popular questions and linked to @RSC\_Newsroom. Some of the scientists were very good at engaging with other participants and teachers on Twitter. Here are just some examples, but you can find more at #IASUK and #IASIE.





## 7. Feedback

### Scientists

Scientists improved their communications skills and enjoyed talking to students and to other scientists. For some of them, taking part was a revealing experience; they learned about the students' interests and often felt reinvigorated to do more science outreach:

*"It took the first few minutes of my first live chat to turn #IASUK from something I didn't understand to something that meant more to me than anything going on in my life!"* – Jess Wade, Colour Zone

*"The questions and the live chats were very enjoyable and challenging with questions that I had to give some serious thought to and questions that I was very impressed with."* – Peter Maskell, Molecules Zone

*"I would recommend the experience to both scientists and students as I think that both can get a lot from it, there is no better way to test how much you know about something than trying to explain it to someone with a more limited background on the topic."* – Jesús Calvo-Castro, Spectroscopy Zone

### Students and teachers

Students gained an increased awareness of what scientists actually do and what they are like. They engaged in debates with scientists during the live chats, and asked them about their personal opinions and experiences. It also showed students that scientists don't know the answer to everything and that they also go through challenges in life, just like any of us.

Many students and teachers left positive comments during or after live chats, including:

*"I thought scientist just looked like they do in the film flubber and experimented on aliens or weird stuff but when I found out you liked Taylor Swift I realised you are more down to earth and not like mad scientist 😊"* - GraceWilsannn , student, Food Zone

*"It's been a great success thanks to all of the scientists – the students could not believe that you answered so many questions – thank you once again to you all for all your inspiration."* —Teacher, Colour zone

*"Can I have a job with one of you."* – student

## 8. Recommendations

- **Get more scientists working at private companies taking part in RSC funded zones.** Only 12% of scientists who took part in RSC funded zones in 2015 came from the private sector. We would like to work with RSC to increase the proportion of scientists from private companies.
- **Get more Chemnet students involved in I'm a Scientist zones.** We will keep working with ChemNet Team to find out better ways to promote I'm a Scientist to their community of students.
- **Improve the site mobile design.** One of the scientists interviewed for this evaluation told us that she expected that it had been easier to take part from mobile devices. We have been improving the site design to adapt it to mobile, but we still need to make it easier for scientists to answer questions and take part in live chats from their mobiles.