



*I'm a Scientist,
Get me out of here:*

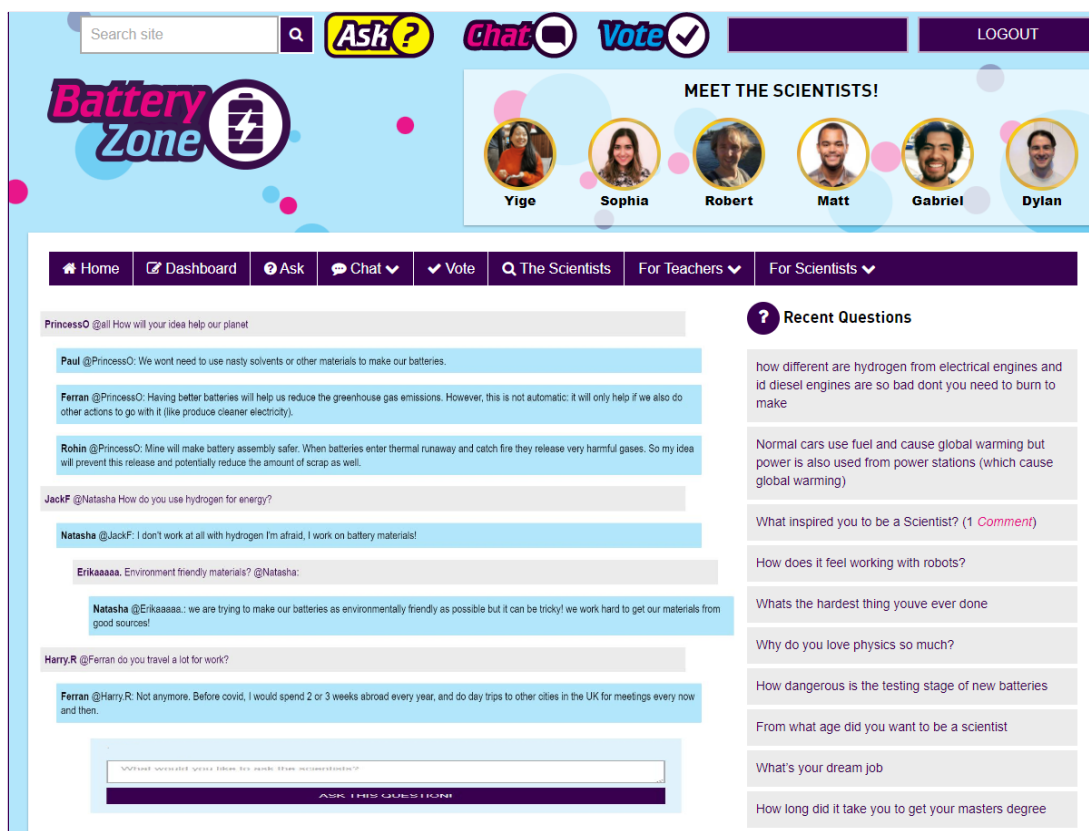
2021 RSC Zones Evaluation Report

December 2021

MangorollaCIC



Background



***I'm a Scientist, Get me out of here* (IAS, imascientist.org.uk) is an online, student-led, public engagement project that gives school students across the UK authentic interactions with scientists and other STEM professionals.**

Scientists create profiles on the website and engage directly with school students through real-time, text-based chats and answering posted follow-up questions. Students ask questions about whatever they want; questions about careers, research, as well as their wider interests and lives outside of work.

Through taking part, students engage with STEM professionals from a diverse range of backgrounds, disciplines, and industries. They get to see scientists as ordinary people with hobbies, interests, pets and families. They learn about STEM careers and opportunities in higher education, while seeing how what they learn in school relates to the world around them.

In 2021 the Royal Society of Chemistry (RSC, rsc.org) directly part-funded three IAS zones to engage students with chemists and members of the RSC participated in a further eight zones. This report is a summary of the activity in, and an evaluation of, the impact of those zones.

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Summary

- **Throughout 2021, RSC members participated in 10 zones across the IAS platform, 3 of which were directly part-funded by the RSC**
- **Students interacted directly with RSC members in 180 live chat sessions:**
 - Students from 85 schools took part in those live chats.
 - A total of 185 schools took part across the 10 Zones in 2021.
 - 64% of participating UK schools were widening participation schools and/or located more than 30 minutes drive from a major research HEI.
- **51 reported RSC members took part:**
 - Participating scientists can disclose any organisations to which they belong when they sign up to take part. However they are not obliged to do so. Therefore, the number of RSC members could be higher.
 - Representing a wide range of scientists' backgrounds provided students with insight into different careers, fields and routes into chemistry
- **Taking part has a positive impact on participating scientists:**
 - 83% of respondents reported an increase in skill in communicating with lay people.
 - *"Taking part and winning has increased my reputation for outreach and I am asked to do outreach for the lab more now"* (Scientist feedback)
- **77% of participating scientists were more interested in continuing with other forms of engagement activities after IAS:**
 - *"A very positive experience that definitely encouraged me to engage more with the public and look out for outreach opportunities."* (Scientist feedback)
- **Taking part in IAS supports students' science capital:**
 - IAS maps well onto the Science Capital Teaching Approach, supporting science capital dimensions including: *science literacy, seeing science as relevant to everyday life, knowledge about the transferability of science/science qualifications, and especially, knowing people in science-related jobs.*

Participants and activity

Summary of activity

RSC funded Zones

March 2021[Molecule Zone](#)

RSC members: 22

October 2021[Battery Zone](#)

RSC members: 2

May 2021[Orange Zone](#)

RSC members: 7

RSC members active in 2021 Zones

January 2021[Planet Earth Zone](#)

RSC members: 3

May 2021[Orange Zone](#)

RSC members: 7

February 2021[Purple Zone](#)

RSC members: 3

September 2021[Hydrogen Zone](#)

RSC members: 4

March 2021[Molecule Zone](#)[Pink Zone](#)

RSC members: 27

October 2021[Battery Zone](#)

RSC members: 2

April 2021[Red Zone](#)

RSC members: 2

November 2021[Clean World Zone](#)

RSC members: 2

December 2021[Nuclear Zone](#)

RSC members: 1

Key figures	Total	RSC funded Zones
Zones	10	3
Scientists	293	78
Reported RSC members	51	31
Schools	185	57
School in contact with RSC members	85	41
Students logged in	7,327	2,139
Active students ¹	80%	84%
Live chats	419	127
Live chats with RSC members	180	92
Lines of live chat	131,555	38,550
'Ask' questions asked	2,631	1,000
'Ask' questions approved ²	1,3772	481
'Ask' answers given	3,164	1,117
Votes	2,878	1,168

Zone reports

Zone reports summarise activity data, show examples of good engagement, and preliminary feedback.

These are published following each event and are available online:
[<https://about.imascientist.org.uk/category/zone-reports/>]

¹ 80% of students actively engaged through asking a question, taking part in a live chat, casting a vote, or posting a comment.

² Excludes duplicated questions

Participating schools

7,327 students from 185 different schools logged in over the ten Zones in 2021. 85 interacted directly with RSC members in live chats.

80% of students actively engaged by joining a discussion, asking a question, posting a comment, or casting a vote.

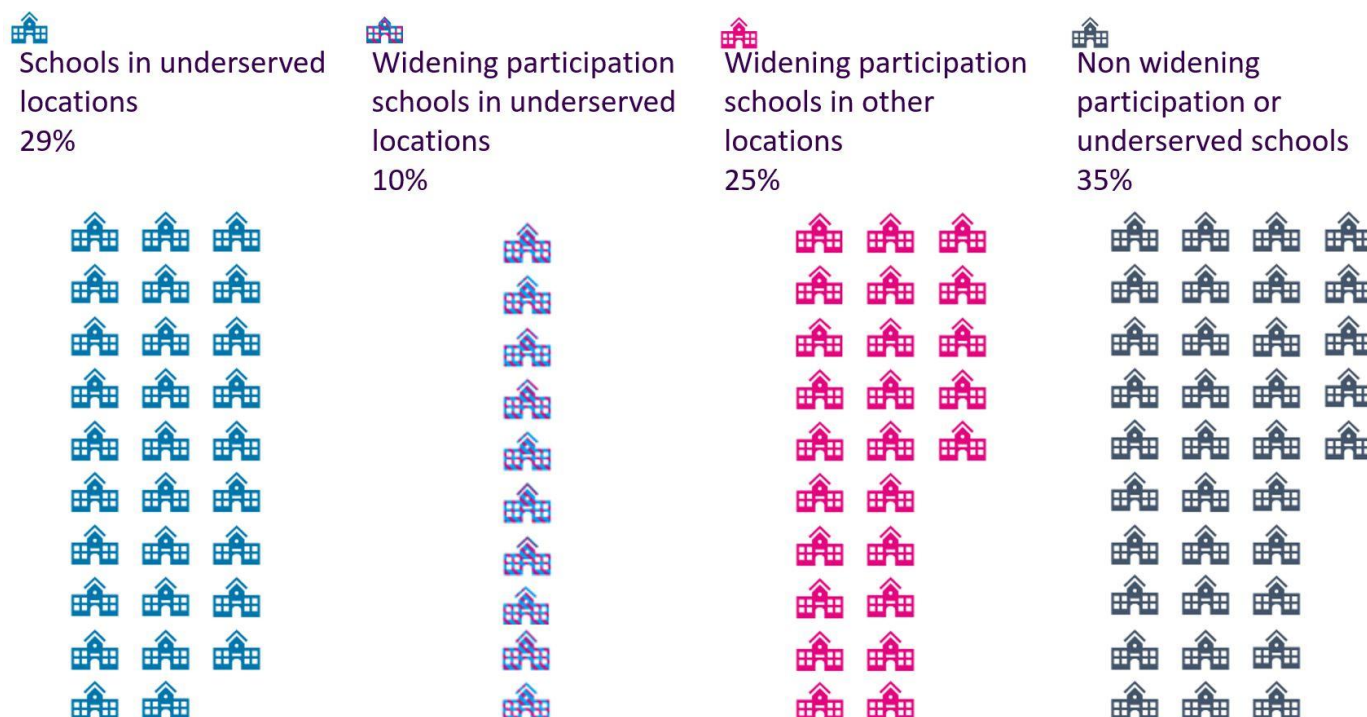
The map below shows the locations of participating schools across the UK.



Underserved and widening participation schools

We work to prioritise schools in geographically underserved areas and widening participation schools.³

64% of participating UK schools were underserved or widening participation schools.



39% of participating UK schools were located more than 30 minutes from major research HEI (underserved locations). Our research shows that these schools are half as likely to get a visit from a university scientist than schools within 15 minutes of a HEI.⁴ Taking part in IAS gives students at these schools access to researchers and other scientists.

35% of participating UK schools were widening participation schools.

³ Widening participation schools are counted as those with above average percentage of students eligible for free school meals (currently more than 14%); or in Scotland, where more than 20% of pupils live in the 20% most deprived datazones. Underserved schools are those more than 30 minutes drive from a major research HEI. Read more: about.imascientist.org.uk/under-served-and-wp/

⁴ imascientist.org.uk/distance

Participating scientists

In total, 51 RSC members took part in Zones across 2021.

Scientists from UK-based institutions and universities took part. Scientists represented a wide range of areas within chemistry, allowing students a greater insight into potential careers.

The map (right) shows the locations of members of the RSC that participated.



Student: Where did they get the parts to make batteries?

Scientist: The earth! You can find the different elements needed to make batteries deep within the earth by mining.

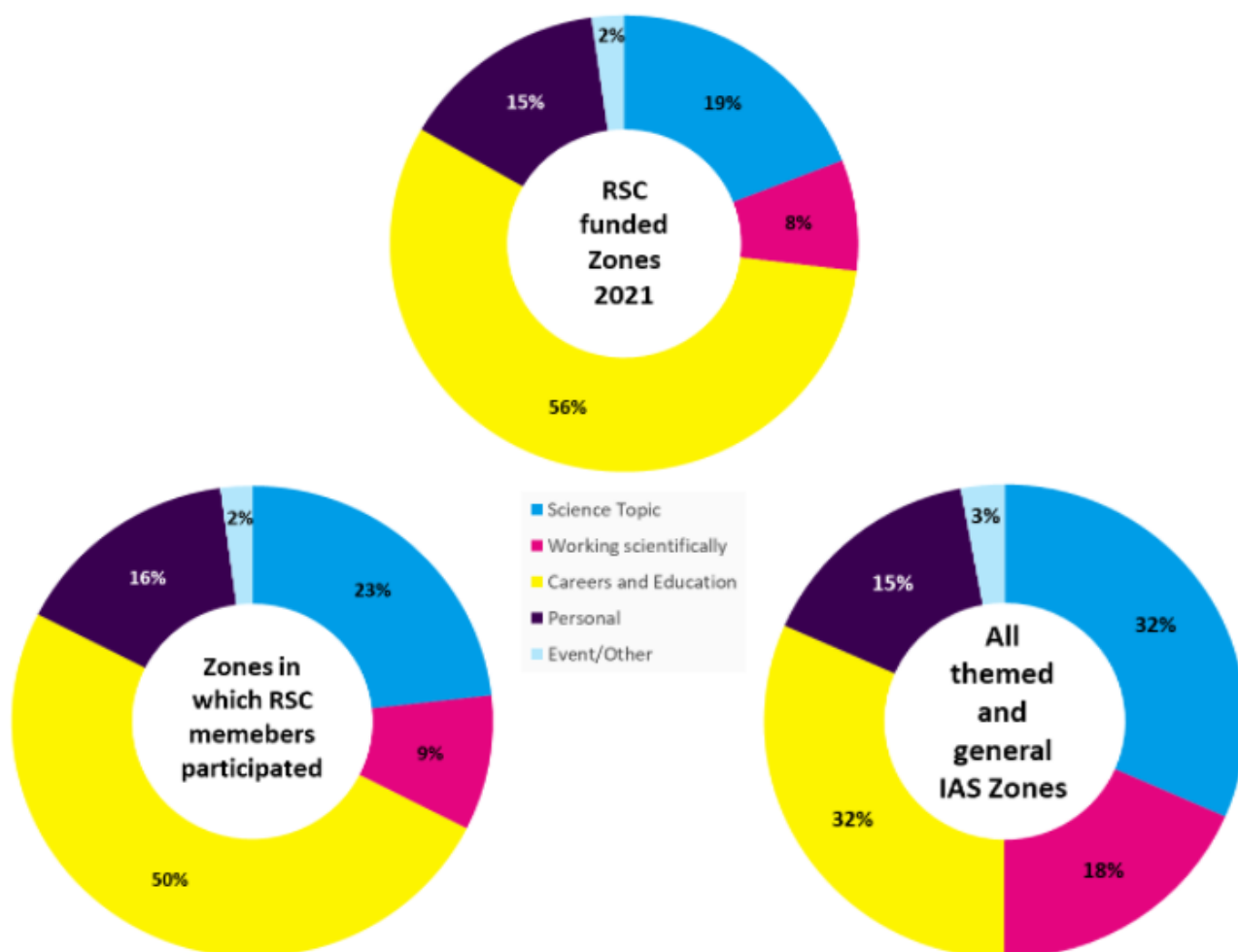
Scientist: Many places! E.g. They mostly get cobalt from the Democratic Republic of Congo, lithium from South America or China.

Follow-up questions

Questions submitted by students are coded according to their theme. The charts below shows the proportion of questions in each theme.

Topics of questions asked in chemistry zones were consistent with other IAS themed zones. The **majority** of questions were about **scientific topics** and **careers and education**.

Engagement with **chemistry topics** and careers was **present in both Ask and live chats**.



Follow-up questions for RSC members

Questions can range from detailed subject-related questions to ones that support science capital by making science more relatable to everyday life.

Were you required to memorise the periodic table at school? And if so, how did you do it? And how does it apply in your career?

— Student question

What is your favourite element and why?

— Student question

How are you able to grow crystals? Is it like growing a plant but as a crystal?

— Student question

Why do people float in water?

— Student question

Why do you use yeast to find out how parts of the cell work and are there other things you use or can use?

— Student question

Impact

Scientists' feedback

The scientists who took part in chemistry zones in 2021 were asked to complete a survey looking at the possible impacts of taking part in IAS.

30 out of 78 scientists responded to the survey.

Communication skills, understanding, and enthusiasm for public engagement

Scientists were asked what, if any, impact taking part in IAS had on their skills, confidence, and enthusiasm for communicating research with lay people.

The majority of respondents reported an increase in their **skills, confidence** and **enthusiasm** towards public engagement and communicating with lay people.

- **83%** of respondents reported an increase in **skill in communicating with lay people**.
- **73%** of respondents felt an increased level of **enthusiasm for communicating with lay people**.
- **70%** of scientists felt as though their **confidence in communicating** with lay people increased.

I'd never taken part in an online public engagement event before, so this was the greatest change. I enjoyed having direct contact with the students, and them feeling like they have free reign in where they take the discussion.

— Kate, Scientist, Feedback survey

Additionally, **87%** of scientists had increased their **understanding of young peoples' views** on science.

It was a very relaxed platform, with way more student engagement than anticipated! The live chats especially provided students with a fun opportunity to ask lots of questions - more than I ever got during any in-person event, and express their curiosity about all things science.

— Scientist, Feedback survey

Public engagement activity after IAS

Scientists taking part in the events were asked what, if any, public engagement activities they had taken part in, 12 months before the IAS events.

Prior to IAS, the majority of scientists had taken part in at least one public engagement activity, with only one not having taken part in any.

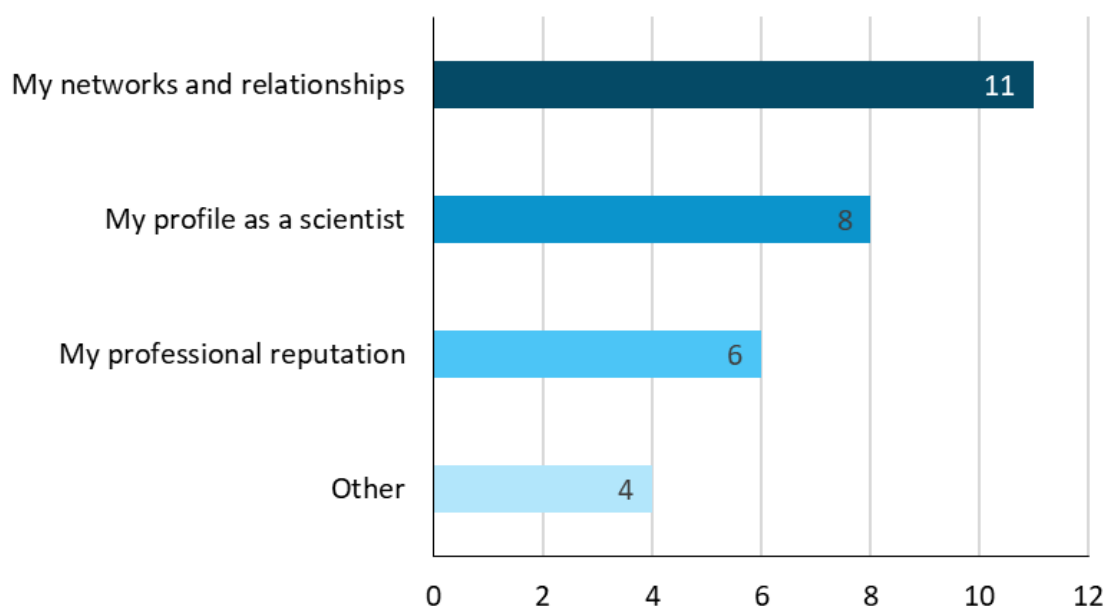
Participants experienced a **77%** increase in interest for taking part in **further public engagement** activities

Five participants had taken part in an IAS zone before 2021 and each **increased** the amount of times they **produced online content, engaged with policy makers and participated in a public debate or discussion.**

Professional advantages

When asked what benefits they perceived from having taken part in IAS, 66% of scientists felt there had been a benefit to their professional profile, reputation, and extended their outreach and academic network and relationships.

Taking part was a benefit to



Further RSC members feedback

Really enjoyable, particularly liked talking to scientists outside my community and finding out about everyone's research. Kids were (for the most part) great and had really interesting questions.

— Jennifer Graham, Scientist, Feedback survey

A very positive experience that definitely encouraged me to engage more with the public and look out for outreach opportunities.

— Scientist, Feedback survey

I enjoyed the text based nature of it as I have a stammer so it makes it harder to engage with strangers through speech. Plus, it didn't interrupt my day too much and I could do other things at the same time.

— Edward Smart, Scientist, Feedback survey

Wonderful! If I have the chance, I will join in again.

— Melody, Scientist, Feedback survey

Supporting Science Capital

I'm a Scientist, Supporting Science Capital

In 2019 Jen DeWitt, PhD, an independent research and evaluation consultant, and member of the core team developing and applying the concept of science capital, conducted an evaluation of IAS to see how the experience might support students' science capital.

The research comprised student focus groups, teacher interviews, surveys and analysis of content generated on the IAS site including transcripts of live chats and questions asked by students.

The evidence produced by this research demonstrates that the experience of IAS maps onto elements of the Science Capital Teaching Approach. In turn, this supports science capital-related outcomes of participating in IAS.

The research discussed in the following section applies to the IAS project as a whole.

Read the full report (PDF):

about.imascientist.org.uk/files/2019/11/IAS-Science-Capital-Main-Report-Sep-2019.pdf

Background: Science capital

Science capital⁵ is a set of resources that helps individuals engage and identify with science. Young people with higher levels of science capital are more likely to see science as 'for me' and to choose to study science subjects at a higher level.

The Science Capital Teaching Approach (Godec, King, & Archer, 2017)⁶ aims to enhance young people's engagement with science, supporting them in seeing science as relevant to their lives and 'for me'.

The foundation of this approach involves broadening what counts in the science classroom: creating a learning environment where all students feel able to offer contributions from their own experiences and interests. The approach also consists of three main pillars:

1. **Personalising and localising:** Going beyond contextualising, to connect to the actual experiences, understandings, attitudes and interests of young people.

⁵ ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research

⁶ discovery.ucl.ac.uk/id/eprint/10080166/

2. **Eliciting-valuing-linking:** Inviting students to share knowledge, attitudes and experiences; recognising these as having value; and connecting this back to the science.
3. **Building the dimensions of science capital:** Considering the eight dimensions when developing activities, lessons or programmes.

Supporting science capital

The research found evidence that IAS provides support for four of the science capital 'dimensions':

- **Science literacy** (Dimension 1)
- **Seeing science as relevant to everyday life** (Dimension 2)
- **Knowledge about the transferability of science/science qualifications** (Dimension 3)
- **Knowing people in science-related jobs** (Dimension 7)

Science literacy (Dimension 1)

By providing the opportunity to ask about science content, taking part in IAS contributes to science literacy.

Seeing science as relevant to everyday life (Dimension 2)

Because students can ask questions of interest to them personally, taking part in IAS can enhance science-related attitudes and values, helping students to see science as relevant to their everyday lives.

Knowledge about the transferability of science (skills, knowledge, qualifications) (Dimension 3)

When students ask about qualifications, participation may improve their knowledge of the range of jobs that science can lead to.

Knowing people in science-related jobs (Dimension 7)

Most importantly, however, IAS provides an opportunity to get to know scientists — about the paths they took to their current work, about a range of aspects of their work (e.g. travel, teamwork) and about their lives outside of work. Students may even discover that scientists are not all 'super geniuses' — that they are normal individuals, albeit with interesting jobs.

In sum, IAS is personally relevant to students and their lives, elicits and values students' questions and experiences, and provides support for building dimensions of science capital. Together, its various elements create an environment in which students are able to contribute from their own interests and experiences.

Consequently, through participating in IAS, students can come to see science as personally relevant to them and to appreciate that scientists are 'normal people'. Moreover, ultimately it is the participating students who are in control — it is their votes that determine the winner.

This environment, we believe, reinforces that the arena of *I'm a Scientist* is one in which it is students' valued and valuable opinions that count the most. Together, then, the elements of IAS can support students' science capital, meaning IAS has an important role in helping young people see that science just might be 'for me' which, in turn, can contribute to nurturing science aspirations.

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