



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

# **2024 Johnson Matthey Funding Summary Report**

February 2025

MangorollaCIC



# Background

*I'm a Scientist, Get me out of here* (IAS, [imascientist.org.uk](https://imascientist.org.uk)) is an online, student-led, public engagement project that gives school students across the UK real 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 2024 Johnson Matthey (JM, [matthey.com](https://matthey.com)) funded the IAS project to engage students with JM work and research. This report is a summary of the activity, interactions and impact of the JM funded participants.

## Contents

<b>Summary</b>	<b>3</b>
JM evaluation metrics	4
<b>Themes and format</b>	<b>5</b>
A new activity format for 2024	5
Themes	5
<b>Participants and activity</b>	<b>6</b>
Summary of activity	6
Participating JM scientists	7
Schools	9
Chats	11
<b>Feedback and impact</b>	<b>15</b>
Scientist feedback	15
Teacher and student comments	18
Supporting Science Capital	19

# Summary

- **48 JM staff were given access, 30 actively took part in 2024**
- **JM funded scientists took part in 176 chats**
- **We estimate that nearly 4,000 students from 112 schools took part in chats with JM funded scientists**
  - 71% of participating schools were priority schools
- **Taking part has a positive impact on scientists**
  - 77% reported an increased interest in taking part in future public engagement activities
  - 62% reported increased enthusiasm for communicating with lay audiences
  - 61% reported increased skills in communicating with lay audiences
- **92% of scientists would recommend the activity**
  - 89% of scientists reported that the activity met with, or exceeded their expectations
- **Taking part supports students' science capital and provides opportunities for whole class engagement**

# JM evaluation metrics

## Metric

## Outcome

### **Mandatory metrics**

Total number of young people reached through the project

We estimate that **3,968 students were reached.**

Total number of young people reached through the JM funded project, that would be classified as typically excluded from science, e.g. girls and women, ethnic minorities, people with disabilities and those from low-income backgrounds.

We estimate that **50% of the students were girls:** 1,416 active student accounts, or 1,984 estimated students reached. (This figure is based on the number of students taking part from single-gender schools, and assuming 50% of the class for mixed schools.)

**60% of active students were from priority widening participation or underserved schools<sup>1</sup>:** 1,695 active student accounts, or 2,373 estimated total students reached.

Total number of JM volunteers involved

**48 JM staff were given access to the site. 30 actively took part** through chats or answering students' follow up questions.

### **Positive attitudes of learners and influences**

Number participated in science-related interactions and experiences

**2,834 student accounts were active in chats.**

### **Better diversity and mobility**

Number of schools in need supported (e.g. isolated, under-resourced (teachers) low performing or high proportion of low income students)

**79 schools** (71%) participating in chats with JM funded scientists were priority widening participation or underserved schools:<sup>2</sup>

- 50% of schools were widening participation schools
- 34% were distant from HEIs

<sup>1</sup> See: *Participants and Activity; Schools; Widening participation and distant schools* for information on how priority schools are identified and categorised.

<sup>2</sup> (As above)

## **Advice on careers and opportunities**

Number agree a science qualification can help you get many different types of jobs

Teachers completing a feedback survey after taking part in the Spring 2024 term were asked how effective they found the activity to be for *developing students' awareness that STEM qualifications can be useful even if you don't want to be a scientist*. Respondents gave an average score of **3.9/5**, where 5 is *Extremely effective*, and 1 is *Not at all effective*.

# Themes and format

## A new activity format for 2024

Since 2008, the IAS project has followed a format of distinct, time limited, themed events. Individual 'zones' with groups of scientists working around a given theme. This format changed in January 2024.

No more themed zones. Teachers can choose when they want to take part, and what they want to discuss. They can select a theme based on their current curriculum topic. Scientists can choose the chats which meet their areas of work, and fit with their schedule.

**Bookings for the new format IAS began in late January 2024 with a limited selection of themes. A full range of themes released in September 2024 for the start of the 2024/25 academic year.**

## Themes

Participating scientists are invited to select the themes appropriate to their work and research, and are then invited to take part in chats on those themes. In addition, scientists are invited to take part in chats on **General Science**, **STEM Careers**, and other broad themes including a theme for **British Science Week** run in March 2024 which acted as a general science theme; and a **Chemistry Week** theme in November.

A full list of available themes can be found at: [imascientist.org.uk/activity-themes/](https://imascientist.org.uk/activity-themes/)

# Participants and activity

## Summary of activity

### Activity and chats attended by JM funded scientists

JM scientists given access	48
JM scientists actively participated (in chats and answering follow up questions)	30
Schools engaged in chats	112
Students engaged in chats	2,834
<i>Estimated true students engaged in chats</i> <sup>3</sup>	3,968
Chats booked	193
Chats took place	176
Interactions <sup>4</sup>	241
Lines of chat	56,917

All scientists who added a photo to their profile were given the opportunity to take part. Despite the ease of participation, some of the scientists were less able to take up the opportunity as they would have liked due to unanticipated increases in workloads, maternity leave and placement students having to return to university.

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<sup>3</sup> Many students take part in pairs, or share computers or tablets; the estimated true number of students engaged is the students engaged (i.e. student accounts active in a chat) multiplied by 1.4

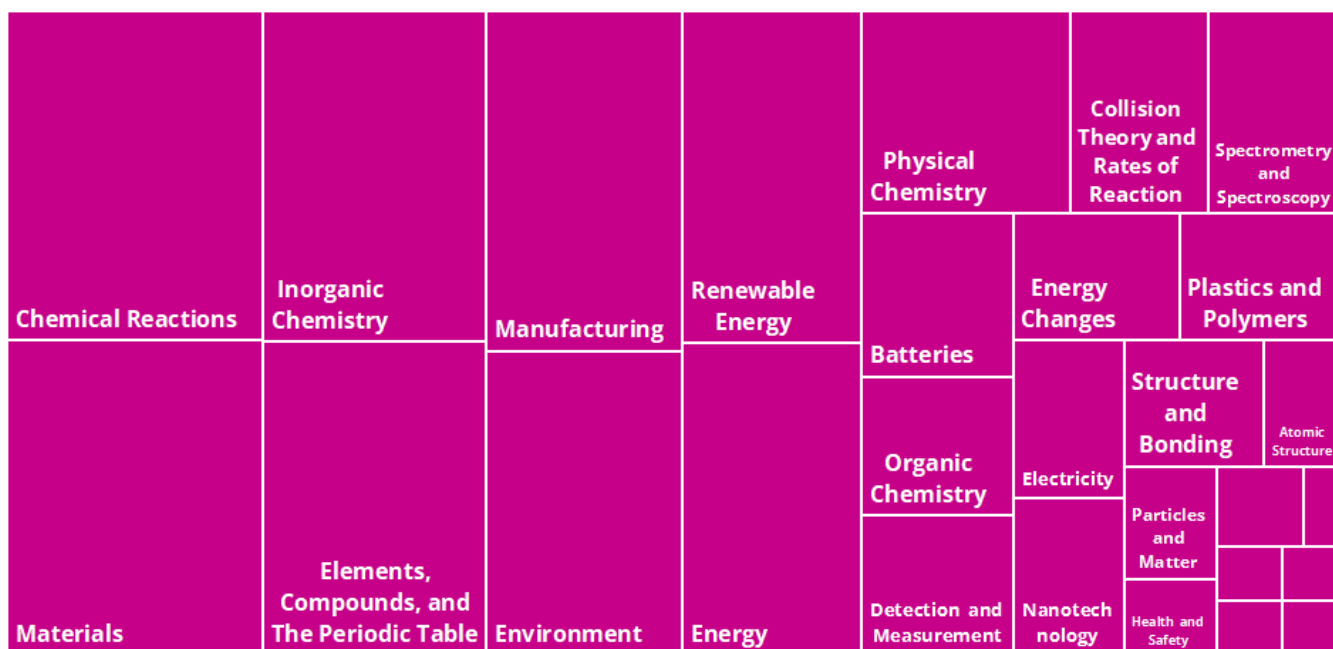
<sup>4</sup> Total instances of a scientist attending a chat

# Participating JM scientists

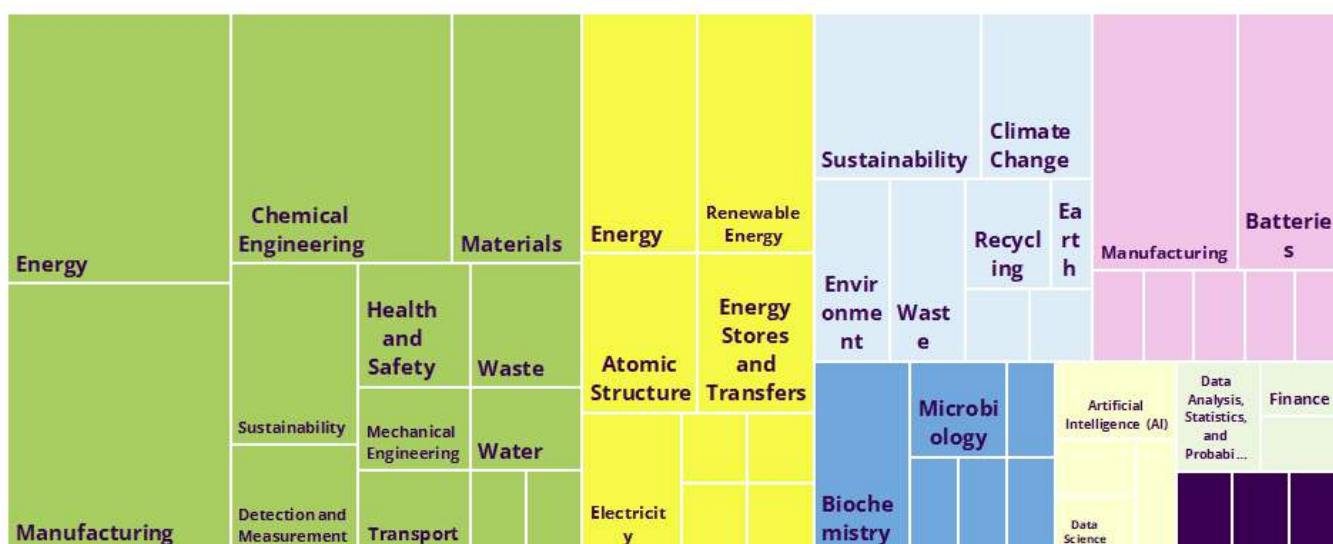
## Themes represented by JM scientists

In the charts below, the size of the box is proportional to the number of scientists representing each theme.

### Chemistry themes



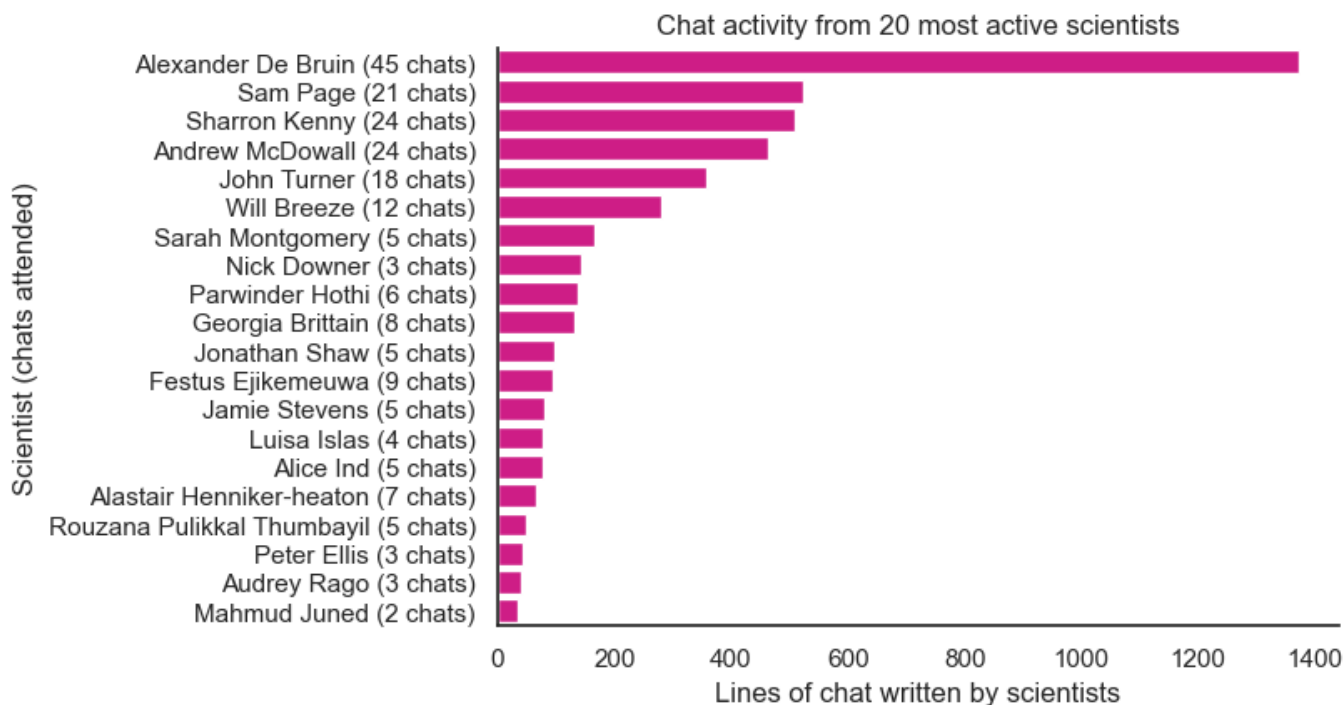
### Additional themes



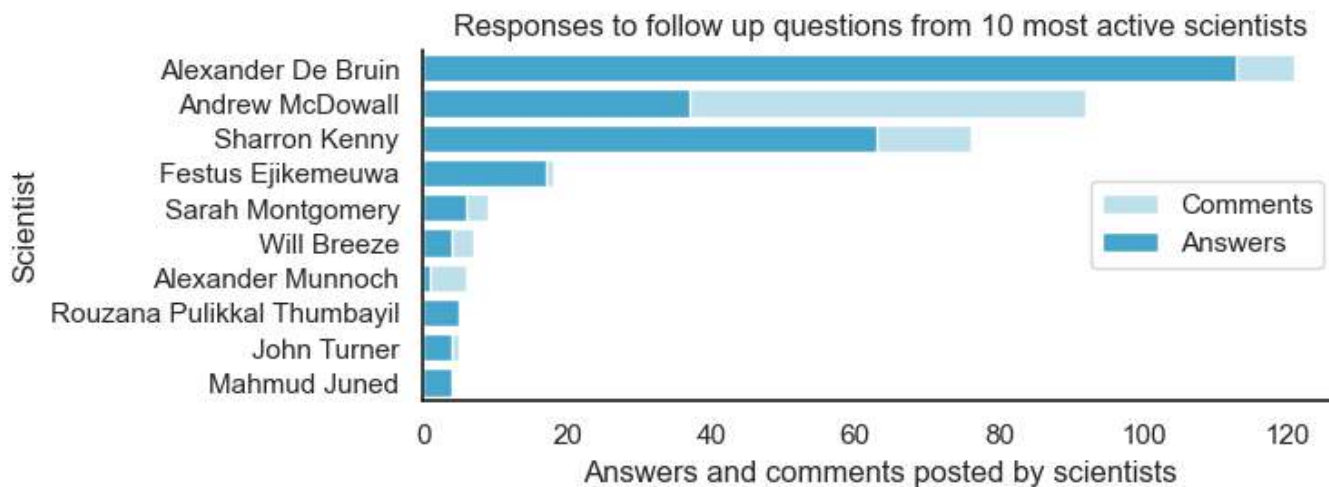
- Engineering themes
- Physics themes
- Earth and Environmental Science themes
- Technology themes
- Biology themes
- Computer Science themes
- Maths themes
- Health themes

## Scientist activity

The charts below show activity in chat and follow up questions/comments of JM funded scientists.



The scientists shown wrote 97% of the lines of chat during the period.  
The average scientist attended 4 chats, and wrote 71 lines.



The scientists shown posted 93% of the answers, and 94% of the comments during the period.  
The average scientist posted 9 answers, and 3 comments.



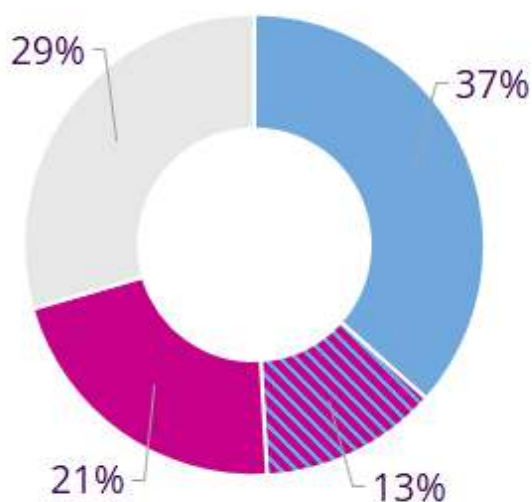
# Schools

## Widening participation and distant schools

We prioritise opportunities for widening participation (WP) schools<sup>5</sup>, and schools distant from major research HEIs<sup>6</sup>. Teachers at these schools are offered additional support, and earlier booking for chats.<sup>7</sup>

### 71% of schools participating in chats with JM funded scientists were priority schools:

- 50% of schools were widening participation schools
- 34% were distant from HEIs



- Schools with high WP quintiles
- Schools distant from HEIs with high WP quintiles
- Schools distant from HEIs
- Non-priority schools

## Locations of participating schools



**Map: Locations of schools with chats attended by JM scientists**

[Map data and imagery: ©2025 TerraMetrics]

<sup>5</sup> We define a priority widening participation school as one with a high proportion of students (quintiles 4 and 5) receiving Free School Meals, or Pupil Premium; or living in the most deprived areas in the Scottish Index of Multiple Deprivation (SIMD). Additionally, FE colleges, SEND schools, and PRUs are considered priority schools.

<sup>6</sup> Schools more than 30 minutes from their nearest major research HEI are half as likely to receive a visit from a scientist as those within 15 minutes travel time. State schools more than 30 minutes from a HEI are priority distant schools. See:

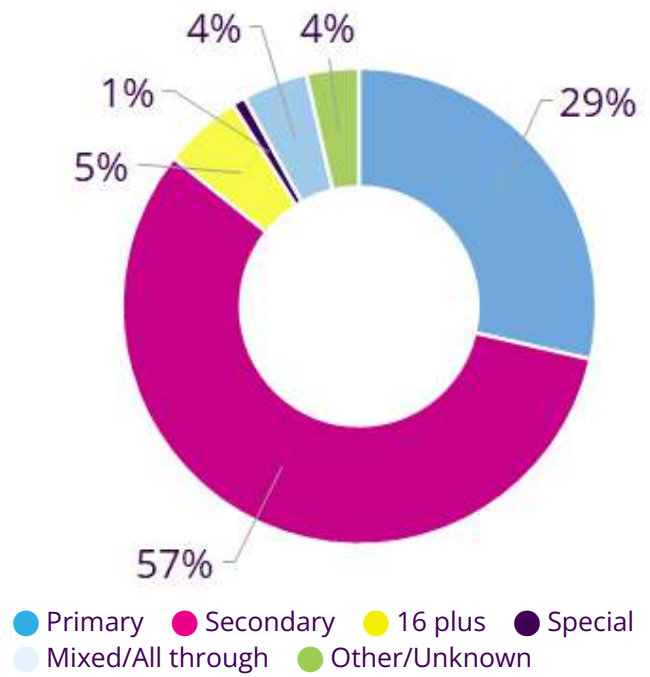
[about.imascientist.org.uk/2017/school-engagement-in-stem-enrichment-effect-of-school-location/](https://about.imascientist.org.uk/2017/school-engagement-in-stem-enrichment-effect-of-school-location/)

<sup>7</sup> Read more about how we prioritise schools:

[about.imascientist.org.uk/widening-participation-prioritising-places-for-schools/](https://about.imascientist.org.uk/widening-participation-prioritising-places-for-schools/)

## School phase

57% of schools that took part in chats with JM funded scientists were secondary schools.



# Chats

## Themes of chats attended by JM funded scientists

In the chart below, the size of the box is proportional to the number chats in each theme, grouped by theme branch.<sup>8</sup>



- Chemistry   ● General Science   ● Special event   ● Earth and Environment
- Physics   ● Biology   ● Computer Science   ● Technology   ● Maths

## Discussion topics in chats

### Lines of chat written by JM funded scientists



<sup>8</sup> Chemistry, Biology, etc chats booked under the General Science branch have been included in the counts for the respective branches. Chemistry Week, and Maths Week chats are included in the Chemistry, and Maths branches respectively, rather than the Special Events branch under which they were booked.

## Examples of good engagement

In a *Chemistry Week* chat a student was interested to know how scientists collaborate with one-another:

**Theon.B** @sophiep Does collaborating with other scientists get confusing? How niche are different scientists in your field?

**sophiep** @Theon.B: it can get confusing if you don't communicate clearly at the start to agree on exactly what you're doing! if everyone is on the same page, then it works quite well. everyone has their own little niche, but we all overlap enough to understand roughly what each other works on

**Theon.B** @sophiep: have you ever been inspired by a colleagues work to try new methods to approach a problem? Like, do different subjects offer different lenses?

**sophiep** @Theon.B: definitely! i try to go to conferences a few times a year to learn about the work other people are doing. i normally come away with new ideas based on the work they've done, or a new collaborator to work with in the future!

**Andrew M** @Theon.B: Absolutely. My own business is coating and most of us came in from a standard chemistry background, but the insights from colleagues who did forensics, soil science, geochemistry, chemical engineering are hugely useful to us.

**Andrew M** @Theon.B: You often find the same problems in very different fields have been looked at in very different ways.

**Theon.B** @Andrew M: Nice, thank you



In this *Chemistry* themed chat, the scientist shared that chemistry was not a subject they went straight to.

**deed499bee** @all Did you enjoy chemistry at school?

**Sharron K** @deed499bee: honestly at school i didnt and id have probably said if you asked me back then no thanks its not for me. but chemistry at school and chemistry at work are different

**band499bee** @Sharron K: why did you go into chemistry if you didn't enjoy it?

**Sharron K** @band499bee: i didnt not at 1st i studied biology at universty then for my masters i did forensic science and this is when i started to love chemistry because it was twinned with something i found interesting forensics.

One student in a topically themed *Structure and Bonding* chat, wanted to know how what they were learning in class could be used in future:

**LiviaA** We are learning about structure and bonding at the moment in school and covalent bonding, is there any relevance or necessity to use this knowledge when we are older??

**Alexander dB** @LiviaA: I use my knowledge of structure and bonding pretty much on a daily basis! What I learned at school and university helps me to understand my data and results

**sophiep** @LiviaA: I use what I learned at school in understanding the work I do now, so its relevant to what I do. Learning about science helps us understand how the world works, so even if you don't use the knowledge directly in the future, it helps you understand other things around us

Hydrogen fuels were a common topic in other chats, including this *Chemistry* themed chat:

**back1envy** @Alexander DB How long will it be until Hydrogen Fuel Cells will be used in aviation?

**Alexander DB** @back1envy: there's already companies working on it. I've seen a couple of prototypes, but I would guess at least 10 years. I actually reviewed a book on Hydrogen for aviation!

**back1envy** @Alexander DB: Thank you, would you say they will become more widespread than bio-fuels?

**Alexander DB** @back1envy: biofuels will definitely be used first, as they require the least amount of change. Current planes can run on biofuels, but do still emit CO<sub>2</sub> so will probably need to be replaced eventually

**back1envy** @Alexander DB: Thank you

In another chat, students discussed alternative fuels and sustainability:

**easy499zarf** @Andrew M why are catalytic converters important for future sustainability?

**Andrew M** @easy499zarf: They will be yes. Although they're currently associated with petrol and diesel engines which we hope and expect to start being replaced with alternative fuels, some of the replacement technologies, Hydrogen and Ammonia internal combustion engines will still need catalysts to be environmentally sustainable.

**thurlowd24** @Andrew M: Ammonia internal combustion engines! Is ammonia added as the fuel and then the car systems do a reverse Haber process to give Hydrogen for a fuel cell or is it using the Ammonia directly?

**Andrew M** @thurlowd24: Hard as it is to believe, it burns the ammonia.

**Luca V. A.** @Andrew M: is it commercially viable, compared to say ethanol fuels?

**Andrew M** @Luca V. A.: Early days of development at the moment, but some manufacturers believe so. In simple market terms it's likely not able to compete with petrol and diesel, but commercial viability is starting to take second place to environmental viability. Laws are coming that will limit the ability to buy new petrol and diesel combustion engines.

# Feedback and impact

## Scientist feedback

Feedback is collected from all scientists taking part across the *I'm a...* programme. Feedback discussed in this section reflects the programme as a whole, collected December 2024 to January 2025.

### Comparison with other public engagement

Scientists were asked in what way the activity compared with other public engagement activities they had been a part of:

*I'm a Scientist is unique in that you are targeting children in school. Other activities I have done target a broad range of interested lay people across a wide age range. Also the use of the online platform for chatting is innovative compared to traditional means (e.g. science festivals). For school age children it provides a great way to connect while minimizing the load on academics.*

Fraser Smith

*I am a .. programs have an audience lead focus, this is very different to pint of science or the big bang competition or other events. Whereby participants turn up to listen. The audience sets the tone as what they want to know from you based on your brief profile. I think all outreach does a great job in bringing the information to those who may not know about it but I am a sci, takes a way some of that worry of does anybody actually care about what I'm saying.*

*I love this activity because of how simple yet effective it is. We are answering questions directly, we are talking to students that want to communicate and I think this is very interactive and different.*

Konstantina

*I love the flexibility (online chats), interactive style and direct interaction with school kids.*

Professor Cathy Fernandes



## Experience vs. expectations

Scientists were asked how their experience had met with expectations they had prior to taking part. 47% reported that it exceeded their expectations, and another 47%, that it met their expectations.

Respondents were asked what those expectations were, and — where relevant — in what way the activity exceeded or fell short.

*I think I underestimated how excited I would be to answer questions instead of just giving a presentation to an audience*  
Konstantina

*The interaction with the students and their feedback during the sessions has been excellent. I didn't really expect to have so many questions, or opportunities to engage.*  
Martin McMahon

*I wasn't sure what to expect, but there were lots of great questions and opportunities to interact with other scientists, which I hadn't thought/know about.*  
Diane Turner

*The pupils' engagement has been amazing in every session, so many questions to reply to I've never typed so fast! All excellent questions too.*  
Jemma Kerns

*I have done engagement using online, text-based platforms in the past, and often they have been quite clunky and non-intuitive. The ease of using the I'm a .... Projects online platform, and the helpfulness/knowledge of the moderators have exceeded my expectations.*  
Hannah Baird

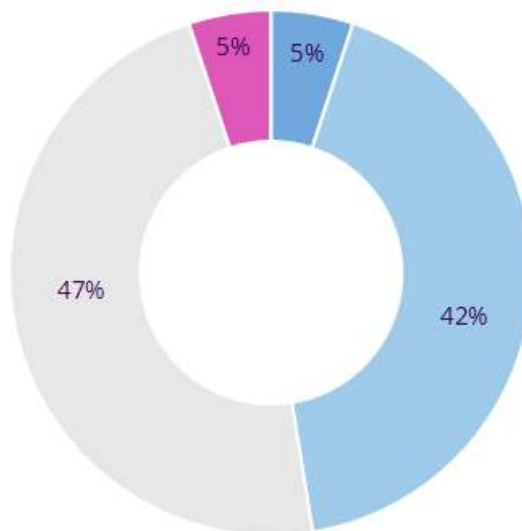
Scientists reporting that the activity met with their expectations had often taken part previously.

*I expected a lot of questions from participating young people in a simple to use system in place to answer them all*

*Good engagement and questions. Some fun mixed in, which was good.*  
Siraj Sayed

3 scientists reported that the activity fell below their expectations. They mentioned frustrations with classes not showing up to chats, and website navigation issues.

### How has your experience met with expectations you had before taking part?

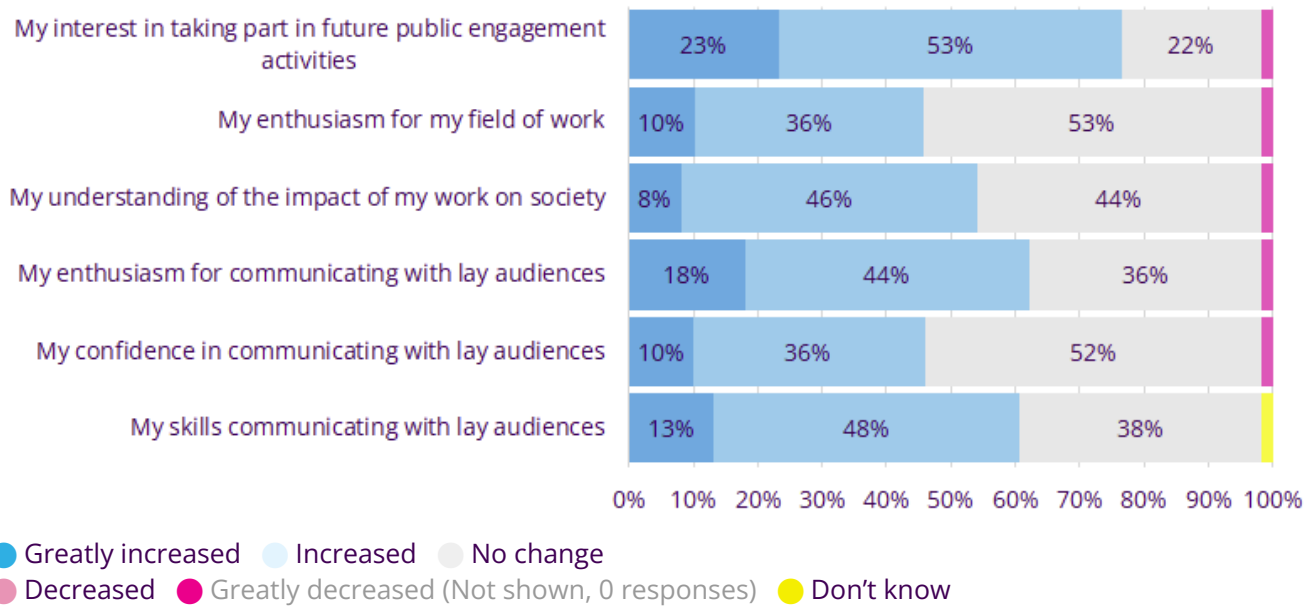


- Greatly exceeded expectations
- Exceeded expectations
- Matched expectations
- Below expectations
- Far below expectations (Not shown, 0 responses)



# Skills impact

**What impact, if any, has your experience with the activity to date had on the following?**



Scientists reported a positive impact across all areas. The most positive impact was reported on interest in taking part in future public engagement activities (77% reported increase); and enthusiasm for, and skills in communicating with lay audiences, (62% and 61% reported increase).

Respondents were asked how — if at all — they planned to use experience gained from taking part in either their careers or future public engagement activities:

*For me, every single chat has been completely different, and I never know what to expect, so I have had to learn to adapt quite quickly and stay on my toes. This will be invaluable for future engagement activities, especially as I move into doing engagement as part of my job (rather than just alongside my job).*  
Hannah Baird

<i>It helped me focus the message I want to convey to the really crucial parts, so no waffle.</i>	<i>I have gained more confidence in thinking on my feet.</i> Sam Gilbert
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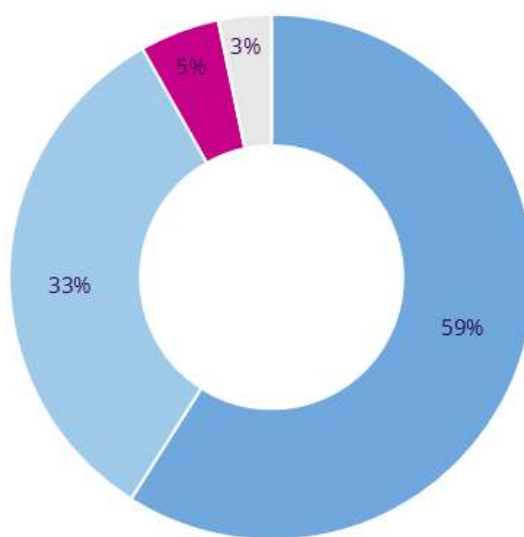
*It definitely helps to formulate ways of explaining specialist concepts to lay audiences and kids at different stages of their education*  
Fergus McKiddie

<i>I really like that the students dictate the conversation in I'm a ... I want to find ways to do that with in-person events too, asking questions first and tailoring the activity based on their responses (will be a challenge!)</i>	<i>I've got more confidence to put myself forward for other public engagement events.</i> Jemma Kerns
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## Recommend to a colleague

92% of respondents would recommend, or already had recommended the activity to a friend or colleague.

### Would you recommend the activity to a friend or colleague?



● Already recommended  
 ● Yes ● No ● Don't know

## Teacher and student comments

After taking part in a chat, classes are invited to complete a reflection activity. Part of that activity allows students and teachers to provide comments and thoughts on their chat. A sample of these comments are included below.

*Comments here reflect feedback from classes taking part across the I'm a... programme.*

*Class loved the session. They thought it was extremely worthwhile and felt that it gave them good insight and was a great opportunity to speak to real scientists.*

*Different type of activity, it was good to chat with scientists and learn more in this informal way.*  
 Berkshire College of Agriculture

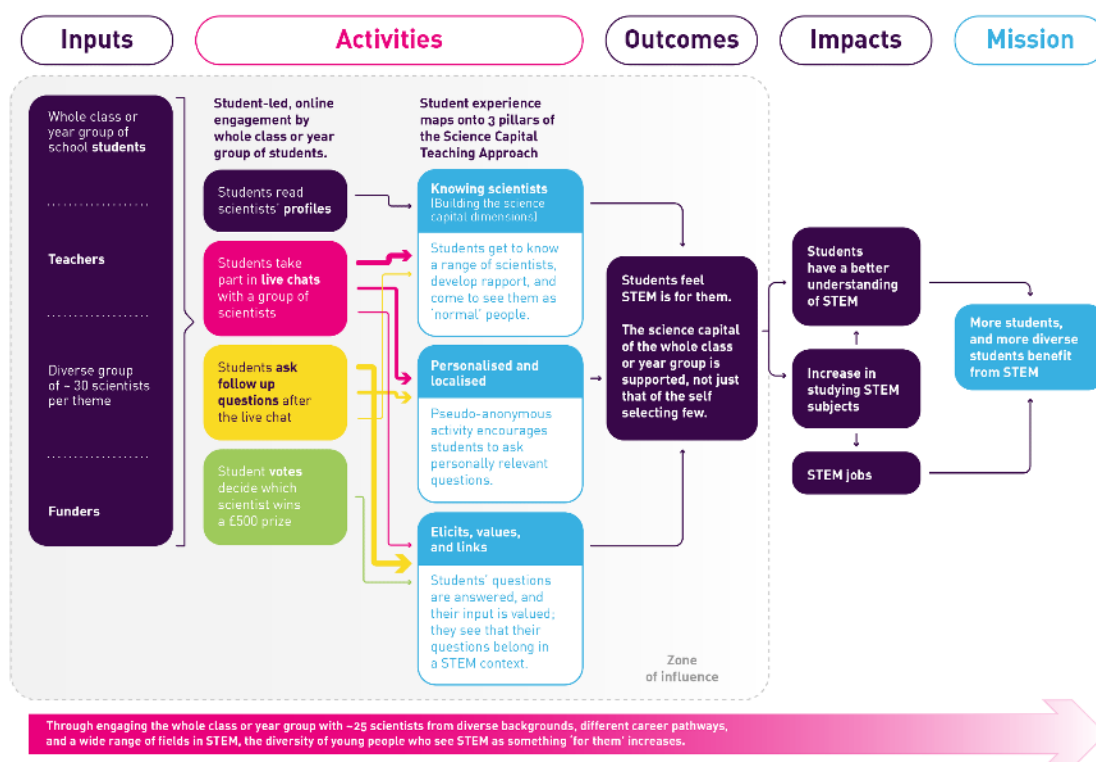
*It was very interesting to hear about the variety of jobs there are within Science. The aspect of considering who would be voted for meant that students had a further engagement level.*  
 Milton Keynes College

*Lots of fun and interesting chats and questions were had. We loved it, and the scientists were so kind and useful in their replies.*  
 Fynamore Primary School

*Thank you so much for this. This was a low ability challenging group and so many more students than I expected totally engaged with this activity. It was great.*

# Supporting Science Capital

## Theory of Change



Read our Theory of Change in more detail: [about.imascientist.org.uk/theoryofchange/](https://about.imascientist.org.uk/theoryofchange/)

## *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](https://about.imascientist.org.uk/files/2019/11/IAS-Science-Capital-Main-Report-Sep-2019.pdf)

## Background: Science capital

Science capital<sup>9</sup> 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)<sup>10</sup> 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.
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.

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<sup>9</sup>

[ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research](https://ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research)

<sup>10</sup> [discovery.ucl.ac.uk/id/eprint/10080166/](https://discovery.ucl.ac.uk/id/eprint/10080166/)

## 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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