# *I'm a Scientist, Get me out of here* **Summary of activity: January to July 2024**

August 2024

# Background

Since 2008, the *I'm a Scientist* project (IAS, <u>imascientist.org.uk</u>) has followed more-or-less the same format: 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.

This report is a summary of activity in IAS between January and July 2024.

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# Summary

- 9,646 students from 211 schools logged in to the site. 89% of students actively participated through joining chats, asking follow up questions, posting comments, or casting votes.
- 75% of participating schools, and 70% of active students were from priority widening participation or underserved schools.
- 607 chats took place during the 2 terms. There were a total of 176,742 lines of chat. The average chat was attended by 15 students and 5 scientists.
- Chats were booked across 38 different themes.<sup>1</sup>
- 56% of schools attended 2 or more chat sessions.
- Students were introduced to a diverse range of scientists from different disciplines and backgrounds. 77 schools had more than 10 different scientists take part in chats with their students.
- 752 scientists were given access to the site. 517 actively participated.

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	Spring term	Summer term	Total
Students logged in	5,240	4,406	9,646
Students active <sup>2</sup>	4,606 (88%)	3,949 (89%)	8,555 (89%)
Schools active	116	118	211
Scientists given access	609	576 <sup>3</sup>	752
Scientists logged in	438	492	644
Scientists active in chats	343	330	458
Chats took place	330	277	607
Lines of chat	100,434	76,308	176,742
Average lines per chat	304	275	291
Follow-up questions asked	554	645	1,199
Follow-up questions approved	296	425	721
Answers to follow-up questions	1,848	780	2,628
Comments from scientists	310	242	552
Comments from students	9	36	45
Votes cast	1,740	3,500	5,240

<sup>&</sup>lt;sup>1</sup> See the full range of themes available at: <u>imascientist.org.uk/activity-themes/</u>

 <sup>&</sup>lt;sup>2</sup> Students who took part in a chat, asked a follow-up question, posted a comment, or cast a vote.
<sup>3</sup> 143 additional scientists were added to the site for the summer term; other scientists were removed after the spring term including a number who were only taking part during British Science Week in March.

# **Participants and activity**

## Schools

9,646 students from 211 schools logged into the IAS site during the 2 terms. 89% of students actively took part through joining chats, asking follow up questions, posting comments, or casting votes.

### **School phase**

- Primary Secondary 16 Plus
- Mixed / All through Other

### Participating schools



**Active students** 



# Locations of participating schools



Map of UK schools which participated in chats. Map data: Google, Imagery ©2024 TerraMetrics.

"Other" schools include SEND schools, independent schools, and non-UK schools.

### **Priority schools**

We prioritise opportunities for widening participation schools<sup>4</sup>, and schools distant from major research HEIs<sup>5</sup>. Teachers at these schools are offered additional support, and earlier booking for chats.<sup>6</sup>



### 75% of participating schools, and 70% of active students were at priority schools:

- 45% of participating schools, and 38% of active students were at priority widening participation schools.
- 47% of participating schools, and 46% of active students were at priority schools more than 30 minutes travel time from their nearest major research HEI.

<sup>&</sup>lt;sup>4</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>&</sup>lt;sup>5</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/ <sup>6</sup> Read more about how we prioritise schools:

about.imascientist.org.uk/widening-participation-prioritising-places-for-schools/

### **School activity**

The average school took part with 26 students, with 95% actively participating through joining a chat, asking a follow up question, posting a comment, or casting a vote. They attended 2 chat sessions, writing 232 lines.

44% of schools attended a single chat session, with 56% attending 2 or more. 16% of schools likely took part with whole year groups or — in primary schools — as whole school activities; taking part in 6 or more chats.

9 schools took part with 200 or more students each, and 3 with more than 300.

With an average of 5 scientists attending each chat session, students were introduced to a wide range of scientists from different disciplines and backgrounds. Over the 2 terms, 77 schools had more than 10 different scientists take part in chats with their students; 20 schools had more than 30; and 9 schools had more than 40. 1 school — Whitley Bay High School, Tynemouth was joined by 92 different scientists across 22 chat sessions.

#### Number of active students per school



Active students per school

#### Number of chats attended per school<sup>7</sup>



#### Number of scientists engaged with in chats per school



Number of scientists engaged with in chats per school

<sup>&</sup>lt;sup>7</sup> The 3 schools shown with 0 chats are those where students actively took part through posting questions, comments, or casting votes; but did not take part in a chat.

# Scientists

In total, 752 scientists were given access to the site over the 2 terms, of whom 517 actively participated through chats or answering follow up questions. The new delivery model allows scientists to decide when they will take part over the year, and which themed chats they wish to join.

Outside doughnuts represent the scientists given access to the site, and inside doughnuts, those who actively participated.

### Gender of participating scientists



## Ethnic background of participating scientists



### Number of chats participated in by scientists

458 scientists took part in chats. The average scientist — who attended chats — took part in 4 chats. 21% of scientists took part in 10 or more chats.



### Most active scientists

517 scientists actively participated during the 2 terms. The scientists shown below are the 20 most active in chats, and on follow-up questions. They are responsible for 32% of the chat activity, 49% of the answers to follow-up questions, and 36% of the scientist comments posted during the 2 terms.



Chat activity from 20 most active scientists

Responses to follow up questions from 20 most active scientists



# **Themes and timeline**

During the 2 terms, chats were booked in the following themes, with new themes being released over the course of the term.

Theme	Scientists available <sup>8</sup>	Chats booked	Schools booked chats	Scientists attended chats
General science themes (Available throughout	t)			
General Science	520	118	48	233
Biology	266	30	19	80
Chemistry	224	39	25	77
Physics	96	27	18	58
Psychology	42	16	12	17
Health	174	19	11	48
Technology	116	3	2	12
STEM Careers (Released during Summer Term)	430	18	12	76
Working Scientifically (Released during Summer Term)	507	1	1	4

#### **STEM Topic Themes** (Released through Summer Term)

Animals in Research <sup>9</sup>	20	6	4	10
Biomedicine	73	1	1	4
Cancer	74	2	1	7
Climate Change	63	15	8	31
Earth (Available throughout)	56	7	6	21
Ecosystems, Ecology, and Habitats	40	6	5	16
Environment (Available throughout)	112	25	17	60
Evolution (Available throughout)	27	7	5	12
Food Production	50	11	7	18
Genetics	104	13	12	36
Infection	54	3	2	8
Marine and Oceans	28	10	7	18
Meteorology, Atmosphere, Climate, and Weather	16	5	3	12
Plants and Botany	25	4	4	9
Plastics and Polymers	35	7	4	18
Public Health	56	1	1	4
Renewable Energy	50	9	4	22
Sustainability	49	1	1	5

<sup>&</sup>lt;sup>8</sup> Scientists available at time of reporting: Scientists' themes were updated throughout the year

<sup>&</sup>lt;sup>9</sup> Animals in Research was initially planned as a Special Event, but will be available under Biology themes going forward.

Theme	Scientists available <sup>8</sup>	Chats booked	Schools booked chats	Scientists attended chats
Computer Science themes (Available from	n 18 Mar)			
Computer Science	120	23	11	52
Artificial Intelligence (AI)	61	20	10	32
Cyber Security	19	1	1	4
Networking	32	1	1	4
Programming	42	7	4	19
Special event themes				
Great Science Share (Available throughout)	0	6	6	32
National Careers Week (4 to 8 Mar)	341	2	2	10
National Apprenticeship Week (5 to 9 Mar)	12	6	4	7
British Science Week (8 to 17 Mar) <sup>10</sup>	542 <sup>11</sup>	198	72	228
International Women's Day (8 Mar)	214	2	1	18
Professional Bodies (From 18 Mar)	68	5	1	20

#### Chats bookings by theme



<sup>&</sup>lt;sup>10</sup> The *British Science Week* theme acted as a General Science theme. During this week, teachers were encouraged to book this theme rather than other more specialised themes to help manage scientists' availability.

<sup>&</sup>lt;sup>11</sup> Additional scientists were added to the site during British Science Week to support the increased number of chat bookings.

During Science Week, teachers were encouraged to book the specific *British Science Week* (BSW) theme — which acted as a General Science theme — over other more nuanced themes to help to better allocate available scientists to chats.

There were 316 *General Science* (including *British Science Week*) themed chats over the 2 terms, accounting for 48% of total chats.

#### Chats bookings by week



British Science Week is often the busiest time of year for the *I'm a Scientist* project. 2024 was no different, with British Science Week (w/c 11 March) accounting for 221 chats; 32% of the chats during the 2 terms.

## Chats

607 chats took place during the 2 terms. There were a total of 176,742 lines of chat, and on average, 15 students and 5 scientists attended each chat.

8,555 students were active on the site during the term, of whom 7,951 actively took part in chats. In many schools — especially primary schools — students double up on computers, additionally, 62 chats were run through a single teacher or student account; we estimate that around 10,500 students were likely reached in chats.<sup>12</sup>

The word cloud below demonstrates what students and scientists discussed in the chats. The bigger the word, the more frequently it was used.





lab subject worldlearning computer dna ai body brain plant math animation of the sease found getting project cell going test food better water disease found getting project cell going chemical data might uni company chemical biology human chemistry physics depends

<sup>&</sup>lt;sup>12</sup> Assuming 15 students per chat in chats ran through a single account, and a conservative estimate of ~20% of student accounts being shared between 2 students.

## **Examples of good engagement**

Chats provided many examples of great engagement and showed ways in which students' science capital can be supported. Students discussed what they had been doing in the classroom and saw how this could relate to real-world careers.

In the following examples, we can see students getting to know scientists as regular people with interests, hobbies, and lives outside of work. In the first example, multiple students come to realise that the scientists are normal people, sharing the same interests as them:

Student 1: wait are you guys real scientists?

**Ben D (Scientist):** I was just in the lab working on a payload to monitor the solar wind from space - so yes :)

Viviene DC (Scientist): I am, yes! I'm a laser scientist :) an engineer too!

Student 1: how do you know so much about poikemon and everything

Ben D: Turns out that scientists are real people and like normal things! :)

Student 2: 🤯

**Ben D:** People who were in 2ndary school when the first pokemon came out are in their late 30s now!

**Alexander dB (Scientist):** as Ben says, we're people too. Lots of us grew up playing pokemon and some of us still do!

Student 3: its scientifically proven now! playing pokemon makes people smart

In this conversation, students and scientists discussed women in STEM leadership roles:

Student: whats it like to be women working in science related jobs?

**Liz (Scientist):** great question! my current job has lots of women and our Chief Executive is a women which is brilliant! My previous job wasn't so great, but I think it's getting much better!

**Meghan (Scientist):** Sometimes it can feel like your in a minority, but from my experience there are more and more women going into the industry and taking on positions of leadership - which is great to see!

**Student:** thats good considering science is male dominated, do you feel that people supported you when you decided what you wanted to do, or encourage you to choose another job?

**Meghan:** At school I had some fantastic teachers who always encouraged me into the industry! My family and friends always supported it too.

In another conversation, a student found common ground with a scientist, discussing their work and found a shared interest in science fiction.

**Student:** Do you think that black holes lead to alternate realities? Or just kill instantly?

**Michael C (Scientist):** It's not an area I know much about but I think the less exciting answer is normally more likely!

**Student:** Probably! but its cool to think about all the possibilities lol

**Michael C:** Oh definitely! I love science fiction and more out-there ideas can sometimes lead to exciting things in science!

**Student:** You're so cool :0 I enjoy sci-fi so much because it can really trigger a thought process about so many ideas!

The following excerpts show students asking personally relevant questions, seeing that their questions, and interests belong in a STEM context.

In this conversation, a student related to a challenge faced by the scientist:

**Student:** When you started your job what were you worried about

**Ashleigh K (Scientist):** I was always worried about my writing skills and not being good enough. I have improved my writing over time and gained confidence. Now I review other people's writing.

**Student:** I'm not the best at writing so that is encouraging thank you

**Ashleigh K:** Yes, its hard at first but you start to get better. My advice is to read more, that what helped me! Reading how things should sound and how they flow really helps.

**Student:** Thank you :)

In another conversation, students related to STEM and the scientists' work through discussing personal experiences:

**Student:** how do you do your job is it easy

**Fran (Scientist):** I wouldn't say it is easy. It can be very challenging, but I enjoy the challenge. I mainly work with big sets of health data on a computer, writing programs to answer questions like 'how do you know if someone has epilepsy?'.

**Student:** my step sister has epilepsy is it were there see flashing lights too much and then they have thit

**Fran:** I'm sorry to hear that your sister has epilepsy, hopefully the doctors are helping her manage it. The work that I do helps the doctors to have all the best evidence and advice so that they can help people like your step-sister.

**Student:** ok i take good care of her when i am at hers

Fran: That's good to hear, I'm sure she appreciates it.

In this conversation, a student related a scientist's work to existing knowledge and experience of their pets' behaviour, which helped them to understand the science underlying a scenario familiar to them.

Student 1: what do you do for work

**Cobus (Scientist):** I find out how plants make their amazing compounds. We look for the genes and then figure out how they make the compound. Once we know that then we try and use bacteria or yeast as little factories to make lots of the compound.

**Student 2:** so what does the catnip do to the cats. I have 2 cats and they go crazy when we put catnip spray down and iv'e always wondered whats in it that makes them behave like that.

**Cobus:** Amazing. There is a compound in catnip called nepetalactone. Its a small compound that we think stimulates their brains. Almost like a drug

Student 3: How do you find the genes

**Cobus:** Its not easy. These days we sequence the whole genome. This is like building a big puzzle. Once we have this then we look for specific parts of the genome that have genes that might make the compound we are interested in.

In this discussion, the student and scientist discuss the scientist's research, which is personally relevant to the student's everyday life and experiences:

Student: why do you think bilingualism affects how autistic people relate to others?

**Berengere (Scientist):** I don't "think" it, I found data showing it does! bilingualism is like a work out and a tool box for your brain. It gives people more efficient ways to make sense of social information (and when I say "people" I mean anyone, regardless of their kind of brain)

**Student:** ohhh ok i see, i have asd and just so happen to be bilingual so i was just curious on the data you've found :)

**Berengere:** THAT IS GRAND! Which languages do you speak?? Well my PhD data shows that your autistic brain is as able to benefit from the wonders of bilingualism as any other kind of brain

**Student:** i speak english (obviously) and german :) i'm learning bsl at the minute. what benefits have you found bilingualism has?

**Berengere:** THat's really great! (my flatmate is german but I only know a few words). Knowing BSL is SO IMPORTANT too! Knowing both oral and sign languages is called Bimodal bilingualism and it has its own fascinating effects on the brain!

**Berengere:** I found that yes bilingualism influenced perspective taking skills: the younger you have learned the 2nd language, the better you are at doing perspective taking (all other things about bilingualism considered equal, like your skills in the language). and I found that it was exactly the same for autistic and non autistic people

**Student:** that's interesting!! i was raised in a english/german household and i've always been told i'm good at communicating/socialising despite being autistic

In the discussions below, students see their input valued and belonging in a STEM context; eliciting, valuing, and linking their own experiences to scientific topics.

This conversation links STEM topics to a student's interest in gaming:

**Student:** What is your favourite tech device to use?

**Sam (Scientist):** Really good question! I dabble with most things but my favourite machine has to be an Alien laptop for gaming :-) I am currently working on virtual desktops which involves having a windows machine available on any device

**Student:** Do you use the laptop for gaming or just for virtual desktops and things like that

**Sam:** Personally I use one for gaming but within work we have used them with the VR headsets, like the HTC Vive and the Oculus Rift. For showing 4D models of buildings

Student: I have heard of 3D Vr headsets but how do you make it 4D?

**Sam:** it is more 3d but with the headset and additional cameras and sensors you can walk around and open doors (all virtually) which they claim to be more 4D. I am inclined to agree with you as it being 3D.

The student in this discussion was keen to share the science they'd been doing. In the process, they saw their ideas belonging in scientific spaces as the scientist linked their school experiment to real-life methods in STEM:

**Student:** your job sounds so cool do you enjoy it

Anita (Scientist): I love it! What is your favourite subject?

Student: maybe art or probably science because we get to do really fun experiments!!!

Anita: Ooh what experiments have you tried?

**Student:** we have done tape and put it on our clothes we were testing or finding all of the fibers on our clothes!

**Anita:** That is so cool! I know the scientists that work for the police to solve crimes do this too!

In this discussion, the student engaged and linked the scientist's answers to their existing knowledge; learning more about the areas of science they're interested in:

Student: Whats your favourite thing youve learned while studying psychology?

**Mary Jane S (Scientist):** I've learned about how people's senses can get mixed together with something called synaesthesia- so for some people words have colour or music has a taste

**Student:** Do you know what causes this association of colours, taste and/or music? Is it a physical thing that could show up in brain scans or is it something developmental based?

**Mary Jane S:** Excellent question!! So, it's most likely genetic, as it runs in families, and there's differences with brain activity too

**Student:** Is there any possible cause of neurodevelopment disorders, as they tend to be genetic and are passed down through generations, they must have started somehow.

**Mary Jane S:** another excellent question!! So, genetics are definitely important, and how we experience our environment, as it's not one thing or the other. But yes, why they first started,,,, I don't know, something to do with how our brains try to make sense of the world, and some of us think and feel in different ways and that doesn't always fit with society

This chat shows specific links to students' current class learning and experiences in investigating how to make their school more environmentally sustainable. The student's input is considered and valued by multiple scientists, showing collaborative working to explore research questions and fostering a sense of belonging:

Student: Is there anyways that our school could decrease our CO2 output as a whole?

**Nik R (Scientist):** greatest CO2 will be from energy use, can you get a figure for how much energy the school uses per day/week

**Nik R:** then can you break this down by rooms - what are the biggest energy users - heating?

**John T (Scientist):** @Nik surely the greatest difference in CO2 will be from the people inside?

**Student:** it is probably the DT rooms and the Computing rooms that use the majority of the schools energy.

John T: The DT room could also be interesting for particulates

Student: Thank you for that idea, testing those rooms completely skipped our minds

John T: If you have a kitchen that you cook in that can also be good to test

**Student:** thank you for the idea, we have one that we could possibly test

**Michael C (Scientist):** Another fun test might be powering down the computers fully at night versus standby

In this final example, a student found good insight into where different subjects can lead, and the value of transferable skills.

Student: hi georgia, what subjects would you say would link well with what you are doing?

**Georgia (Scientist):** I studied Chemistry at university and a lot of the people I work with have backgrounds in either Chemistry, Chemical Engineering or Physics typically. During my degree I took elective modules in criminology and forensic science too

Student: what elements of these subjects would you say you use most within what you do?

**Georgia:** Critical Thinking is a great skill for any science. In research things tend to go wrong or not as expected more times than they do as expected so being able to Problem Solve and Reassess are big skills. Communication, Teamwork, Adaptability, Critical Thinking and Problem Solving I'd say are the biggest things you can learn and develop from being a research scientist

# Winning scientists

Each half term, the scientist with the most student votes receives a prize of £500 to spend on further public engagement.

5,240 votes were cast by students for their favourite scientist.

### Spring term winners

Winner of the first half term <sup>13</sup>



**Fraser Smith** 

Fraser researches the intelligence of the human brain using machine learning techniques.

"I have really enjoyed chatting with the pupils from across various year groups and their teachers. The questions they asked were on the mark and ranged broadly from the history of AI to the current frontiers (for instance, the possibility of emotion or consciousness in AI systems).

The experience has also helped me consider my research and AI afresh from different perspectives – which is always a good thing to do. Overall, it has been a very worthwhile experience!"

### Read their full statement:

ackroyd.imascientist.org.uk/2024/02/13/a-than k-you-from-your-winner/

#### Winner of the second half term



### **Courtney Povey**

Courtney is a research scientist in reproductive health.

"I have had the best time chatting with all of the students, the chats have been very engaging and lots of fun. A massive thank you to all the other scientists that have also taken part. It was very interesting to see the variety of different jobs and research areas, I learnt lots of new things from you all."

Read their full statement: ackroyd.imascientist.org.uk/2024/04/02/a-than k-you-from-your-winner-2/

## Summer term winners

<sup>13</sup>Scientist votes during the first half term were shared with the AI Zone which ran throughout January. Fraser was a participant in the AI Zone.

#### Winner of the first half term



### **Ryan Durnall**

Ryan maintains fighter jets for the Royal Air Force.

"I have really enjoyed chatting with the pupils from across various year groups and their teachers. The questions they asked were on the mark and ranged broadly from the history of AI to the current frontiers (for instance, the possibility of emotion or consciousness in AI systems).

The experience has also helped me consider my research and AI afresh from different perspectives – which is always a good thing to do. Overall, it has been a very worthwhile experience!"

#### Read their full statement:

https://ackroyd.imascientist.org.uk/2024/06/04/ a-thank-you-from-your-winner-ryan-durnall-%f 0%9f%8f%86%f0%9f%8e%89/

#### Winner of the second half term



### Sam Rogerson

Sam is a professional beast hunter! Looking for insects in woodlands planted by humans to work out why they're there, how they got there, and if we can make it easier for them!

"Thank you, first and foremost, to the students for picking me. It's been a total joy to answer your questions. I've sat through a couple of intense interview panels in my time as a scientist, but I've never had to think quite as hard about an answer as with some of your questions!

I hope I've given you valuable insight into my life as a scientist, and shown you that science is for absolutely anyone."

#### Read their full statement:

https://ackroyd.imascientist.org.uk/2024/07/29/ a-thank-you-from-your-winner-sam-rogerson/

# Feedback

# Scientist feedback

Participating scientists were invited to complete a feedback survey in summer 2024. Feedback in this section reflects the 92 responses received (~17% response rate).

## **Time spent**

When asked how much time they spent in chats compared with their expectations before taking part, 44% reported that the time spent was as expected. 18% reported spending more time, and 38% less time than expected.

Those reporting attending more chats than expected commented on the flexibility of the activity, and having fun in the chats; those attending fewer than anticipated most commonly reported external commitments, with some mentioning school no-shows or cancelled chat sessions.

### **Skills impact**

Participating scientists were asked how taking part in IAS has impacted their skills, confidence, and enthusiasm for public engagement. The activity had the most positive impact on participants' interest in taking part in future public engagement activities (65% reported increase) and communication skills (65% reported increase).





- Decreased
- Greatly decreased Don't know

34%

# Comments and comparison to other public engagement activities

I enjoy face-to-face engagements too, but these were quite different. I like that we are reaching different students with the chat-based format and I found every session interesting and utterly absorbing. There was always a surprise question, and always some really insightful questions. It was great also working with other scientists who gave different perspectives to the conversation. **Paul Stallard** 

Because it is chat-based, I can take part from anywhere so it fits around my commute and my working day.	It is a great idea - and requires no preparation. So it is an easy win. Good PE usually takes a lot of preparation. <b>Martin Coath</b>
I especially like that <i>I'm a Scientist</i> is accessible to all, whatever the location, personality and prior attainment levels. <b>Jo Montgomery</b>	I find it really accessible for me. I am neurodivergent and can struggle with public speaking but this has allowed me to volunteer more than I otherwise would be able to! I think it also helps neurodivergent students who may struggle with asking in person questions!
I like how different it is. It has been great practice for dealing with random questions about a range of different topics. I have started doing more PE with younger kids recently, and they ask about a LOT of different stuff. I enjoy that they can ask what they want, without worrying about what others think. As an introvert, this helps to give us a voice. <b>Rachel Edwards</b>	I think <i>I'm a Scientist</i> is more accessible than other forms of public engagement - I really like that it's a text chat-only format as it feels like less pressure, and it doesn't require preparation time beforehand. In terms of other public engagement, I mostly take part in careers fairs or presentations to groups of students, which require a fair amount of preparation time to do a good job. <b>Sarah Canning</b>
It is very convenient and I like that there is no pressure to sign up to a certain number of chats, you just do what you are able to. I think the support from the chat moderators has been great and to know you have that support available to you immediately is comforting. <b>Dr Jessica McCreery</b>	It is so easy to take part in, as you can be in the office and connecting schools across the country without travelling. It is better for the environment as well, as there are far fewer CO2 emissions. I would be curious to know the carbon footprint of the event, given that the average email is about 0.3g CO2?. Dr Kirsty Ross

It's very different from engagement activities I'm usually involved with. In my job I tend to write technical guidance and deliver training in a more formal business environment, discussing issues such as compliance and enforcement. I'm a Scientist is a great opportunity to learn new communication techniques, thinking how to deliver key environmental messages about pollution and climate change for example. The challenge is being able to remove technical jargon whilst getting key points across and hopefully inspiring an interest in environmental issues and outlining the range of opportunities available. Andrew Lyon

[When asked how IAS compares to other engagement projects] Much better, I feel that it is easier to get involved especially taking travel time out of the equation. I also think it allows the students to feel they can ask anything what they want to know without feeling nervous or judged as it is anonymous. Sam Gilbert	The approach is unique and removes many of the barriers that other forms of public engagement present. It is highly accessible, very convenient, and always enjoyable (particularly without stressors such as commutes, awkward video chats, or unsafe or inaccessible in-person venues).
Through <i>I'm a Scientist</i> , I can reach large numbers of students in each session and I feel that they are all very engaged. The chance to talk about any/all topics is very welcoming; I have been on visits to schools in-person and the questions are far less forthcoming. <b>Sam Page</b>	What's different about I'm a Scientist is that it's always a surprise what other scientists enter the chat and where the conversation goes. E.g. if a biologist enters the chat, the conversation could be completely different compared to when it's all computer science people. That's a good thing, it's fun and leads to very diverse chats!

I've been enthusiastic about public engagement for 30 years, so I'm A scientist just forms a small - but important - part of this. I especially like that it is accessible to all, whatever the location, personality and prior attainment levels. **Jo Montgomery** 

The comments above reflect the majority of comments received on the advantages of the IAS format and text-based chats — primarily in the flexibility, and ease of access; as well as the pseudo-anonymity encouraging students to ask personally relevant questions — though some scientists did report a preference for in-person engagement. Additionally, a number of scientists commented on frustrations of chat cancellations or school no-shows, and some classes where students could have been better prepared for the session with questions, or that they could have read the scientists profiles' in advance.

### **Overall satisfaction**

50% of scientists said they had already recommended IAS to a colleague, and 33% said they would in the future. 10% were undecided.



Have recommended, or would recommend IAS to a colleague

## **Teacher and student comments**

Our students really engaged with the session and there were some great conversations going on in the classroom as well as some of the questions that they were asking. The students were really impressed with some of the career paths of some of the candidates and found it really interesting from a career aspect as well as AI so it was a very worthwhile experience. **Teacher** 

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, Class reflection	The class enjoyed the chance to speak to real world scientists and were all interested in all sorts from science to personal life details too. A great activity we will repeat again. <b>St Anne's CE Lydgate, Class reflection</b>
Thank you so much for this. This was a low ability	Most classes were really engaged with it and
challenging group and so many more students	enjoyed the opportunity to speak to Scientists, so
than I expected totally engaged with this activity.	we felt that it would be great to give other year
It was great.	groups the opportunity.
<b>Class reflection</b>	H Thompson, Teacher, Brayton Academy

It was something new and different. [The students] loved the informality of it, being able to ask whatever they wanted as well as science questions (especially what football team do you support). They were so excited by individual responses to their own questions. They engaged with the expansion of their understanding about how many different careers involve STEM. And they loved, really loved, choosing their favourite scientist.

*I just thought it was a fun way of developing the children's science capital. The children were engaged throughout, and full of beans about STEM ideas afterwards.* **Alex Cerny, Teacher** 

I'm a Scientist has become an activity that is embedded into our delivery of the [T-Level Laboratory Science] course. It offers a unique opportunity to access the world of science in a way that students can access without feeling too daunted. It also requires minimum input from teaching staff whilst yielding lots from the learners. Linda Horsburgh, Teacher

The class were pleased to see the diversity of the scientists involved in the chat, particularly someone with autism.

...

Thank you this was great it really helps to bust the stereotypes that children have about what and who scientists are! St Luke's Primary School, Class reflection

# **Funders**

Between January and July 2024, the IAS project received funding from **The British Psychological Society**, **The Genetics Society**, **The Institute of Cancer Research**, **The Institute of Chemical Engineers**, **The Institute of Physics and Engineering in Medicine**, Johnson Matthey, Lantra, **The National Centre for Computing Education**, **The National Mouse Genetics Network**, **The Royal Society of Chemistry**, **Salmon Scotland**, **The Science Council**, **Statisticians in the Pharmaceutical Industry**, **STEM Ambassadors**, and **The Wellcome Sanger Institute**.



### *I'm a Scientist, Get me out of here is produced by:*

Mangorolla CIC 7–9 North Parade Buildings, Bath, BAI 1NS 01225 667 922

Shane McCracken, Director shane@mangorol.la

Josh Doyle, Data and Evaluation josh@mangorol.la