

June 2022

The **Cancer Zone** (cancer22.imascientist.org.uk) ran from 6 June to 1 July 2022 and was funded by the **MRC Oxford Institute for Radiation Oncology**, **University of Oxford Department for Oncology**, **MRC Human Genetics Unit** within the Institute of Genetics and Cancer at the University of Edinburgh, **Division of Cancer Sciences**, **University of Manchester**, **Manchester Cancer Research Centre** and **UKCR Beatson Institute**.

The Zone featured 34 scientists working in and supporting cancer research. 40 scientists were invited to take part. They connected with 808 students from across the UK. 507 students (63%) actively participated by writing Chat lines, asking follow-up questions and voting.

Teachers advised us that exam season impacted the time available for enrichment activities, reducing the activity in the Zone.

Key activity figures

	Zone
Students logged in	808
Students active	63%
Schools	26
Scientists	34
Live Chats requested	66
Live Chats taken place	41
Lines of live Chat	14,924
Average lines per live Chat	355
Questions asked	246
Questions approved	180
Answers given	640
Scientist comments	30
Votes	467

Who took part?

808 students from 26 schools across the UK logged into the Zone and connected with 34 scientists.

71% of active students were from priority schools: 43% from underserved schools and 47% from widening participation schools.

The winning scientist with the most student votes was **Ben Futcher**, a PhD student in Oncology at the University of Oxford.

Activity

66 live Chats were booked. 41 took place.

Out of the remaining 25 Chats booked, 15 were cancelled and in 10 the school did not attend and did not give notice. All schools were chased and invited to rebook. 2 additional Chats took place to further teachers' professional development.

There was one Chat in which the teacher asked questions on behalf of the students. On average, 31 students were in a class. It is also common for students to share login details or computers during live Chats. Therefore, the number of students engaged will be higher.

Students asked 246 follow-up questions of which 180 were approved and 43 were duplicates.

School activity

Students from 26 schools across the UK participated in the Zone.

School	Students logged in	Active users	Chats attended	Chat lines (total)	Avg. Chat lines	Questions approved	Votes
Hornsey School for Girls, London (WP)	102	60	3	753	13	6	56
Cox Green School, Maidenhead	66	45	6	379	8	4	36
St Dominic's High School, Belfast (WP)	57	39	3	391	10	6	37
Balwearie High School, Fife (WP/U)	49	38	3	265	7	0	36
Prestatyn High School, Denbighshire (U)	38	35	2	289	8	2	33
St John Wall Catholic School, Birmingham (WP)	87	28	4	425	15	11	21
Stokesley School, Stokesley (U)	28	27	1	285	11	48	27
Kent College, Canterbury	42	27	3	400	15	0	26
Etone College, Nuneaton (WP/U)	28	25	1	216	9	4	24
Darrick Wood Junior School, Orpington	28	24	1	150	6	0	23
Cantonian High School, Cardiff	54	24	2	263	11	12	22
Garth Hill College, Bracknell	35	21	1	281	13	3	20
Litcham School, King's Lynn (U)	19	18	1	341	19	6	17
The New Forest Academy, Southampton (WP/U)	29	18	0	0	0	43	6
Glenlola Collegiate, Bangor (WP/U)	24	16	2	250	16	3	13
The Cooper School, Bicester (U)	27	15	1	210	14	15	13

Biggar High School, South Lanarkshire (U)	13	13	1	75	8	0	12
South Wilts Grammar School, Salisbury (U)	15	12	1	77	6	0	12
Kirkintilloch High School, East Dunbartonshire	10	9	1	29	3	5	5
Hillhead High School, Glasgow City (WP)	16	8	1	71	9	1	8
Newbattle High School, Midlothian (WP)	6	6	1	89	15	0	5
Maiden Erlegh School in Reading, Reading (WP)	11	6	1	68	11	0	5
Sir Harry Smith Community College, Peterborough (U)	5	5	1	29	6	0	4
Greater Peterborough UTC, Peterborough (U)	5	5	2	80	16	3	6
The Holmesdale School, Snodland (WP/U)	8	3	1	24	8	8	0
Potters Bar Clinic School, Potters Bar ¹ *	5	1	1	23	23	0	0

* In these chats teachers typed questions on behalf of their students, with the chat displayed on a screen.

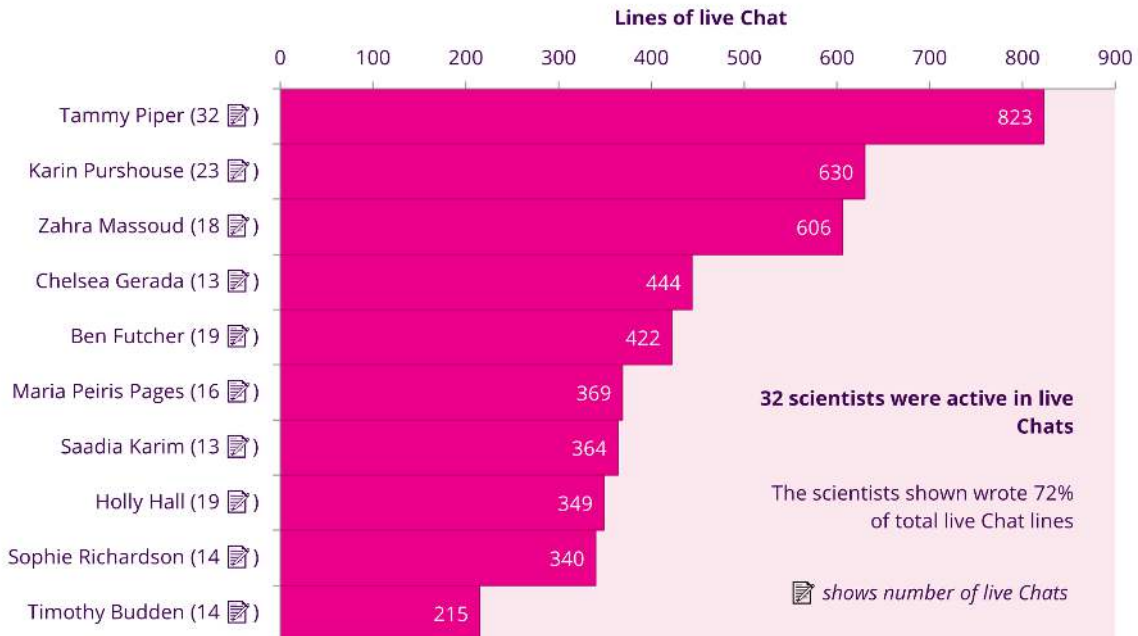
We want to increase the participation of under-represented groups. Find out what we mean by under-served (U) and widening participation (WP) schools, and how you can support us in working with more of these: about.imascientist.org.uk/under-served-and-wp

¹ Special educational needs school

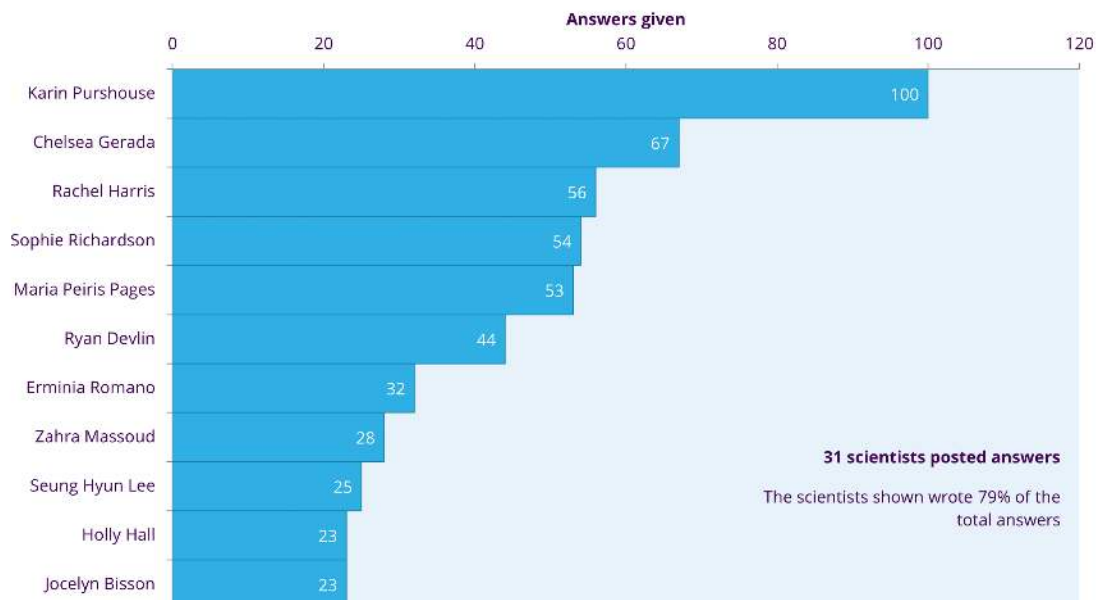
Scientist activity

During the Zone the scientists interacted with students by writing 6,314 lines of live chat, and providing 640 answers to 180 posted questions. On average, 5 scientists took part in each live Chat.

10 most active scientists in live Chats



10 most active scientists in posting answers



Good engagement

Getting answers to questions that relate to students' lives, and that they find interesting, shows that their questions have value and supports students' confidence.

Student 1: My father is due to get a stoma bag soon but he is still weighing the options, the chemotherapy and radiotherapy would most likely result to still getting the stoma bag, so are there any other alternates than those 3?

Zahra (scientist): I can't answer this without knowing a lot more about your father's case unfortunately. There may be different combinations or variations of treatment available, but it depends on lots of individual factors. This is a conversation best to have with your family and his doctor. Best of luck to your father - sending you all good wishes!

Holly (scientist): A stoma bag is an adjustment but won't stop your dad living his best life! Best of luck to you all

Student 1: Thank you

Similarly linking cancer research to their learning makes science more relatable, transferable and builds their science capital².

Student 1: How does biology link in with cancer and can it help cure different types of cancer?

Saadia (scientist): Cancer is a biological process, biological research helps us understand how normal cells and tissues work. We can also investigate the differences between normal cells and cancer cells using biological research

Student 1: Do all cells look the same in all types of cancer?

Saadial (scientist): No, not always. Sometimes the cells look very similar to each other so good labelling on your flasks is essential to tell your cells apart. the research we do does lead to discovery of new drugs and drug combinations that will lead to improvements in cancer survival.

Student 1: Are these new drugs being used in hospitals yet or are they still being developed in the lab?

² about.imascientist.org.uk/student-impact

Saadia (scientist): Some of the drugs we worked on a few years ago are now in clinical trial in the hospital

Student 1: So are the drugs you're making now are still being processed in the lab?

Saadia (scientist): Some of the drugs we use are sent by other groups, by drug companies and some are being repurposed. We investigate the effects of these drugs on cell growth and spread then take any interesting ones into pre clinical models. If they are successful there they can go to clinical trials

Subject specific questions are great to generate interest in the subject area and build on existing knowledge.

Student 1: Does radiation exposure increase the chance of getting cancer?

Karin (scientist): Overall, yes. You might have heard about Chernobyl, and lots of people unfortunately got cancer after that

Student 1: What type of cancer was most common among the regular civilians of chernobyl and what was the most common amongst the firefighters?

Karin (scientist): I think Thyroid cancer was very common. Thyroid cancers are likely attributable to children drinking fresh milk containing radioactive iodine from cows who had eaten contaminated grass in the first few weeks following the accident... Also leukaemia was frequent.

Student 1: Thank you

Information and advice about scientists' careers can show students the range of possibilities for working in science and what they need to do to get there.

Student 1: Is it easy to be a scientist with high grades

Ryan (scientist): You may think so, but having high grades is not the only thing you need. You need to have a creative mind, and to problem solve

Zahra (scientist): It's never easy to be a scientist :) It's a career that involves a lot of hard work - more than grades, the most important things are curiosity, patience, and perseverance to keep going when stuff doesn't work!

Ben (scientist): Not necessarily! Many people with high grades can be very used to not having to work hard in school, but doing actual research is tough and requires lot of patience. Many older scientists have told me that the highest achievers at school can sometimes struggle to adjust

Student 1: Growing up did you always want to have a career in science?

Tammy (scientist): I originally wanted to do archaeology (like Indiana Jones) but found marine biology when I was in my teens so switched to science then.

Zahra (scientist): Hadn't planned on it! I wanted to be a doctor, which is similar, but didn't get into medical school :')

Student 1: Is medical school really difficult to get into?

Zahra (scientist): Yeah it's really competitive! I had good grades, but not the best, and I applied to quite competitive unis so I got 4 rejections :) But it's fine, because I found my love for science instead

Conversations like this are great to build a rapport between the scientists and students. It encourages students to see scientists as “normal” people with interests and hobbies.

Student 1: What's your favourite movie?

Tammy (scientist): Jaws

Student 1: I love that!!!

Student 2: Same

Tammy (scientist): Excellent taste

Student 2: I know it's the best

Student 1: Who's your favourite Avengers character?

Chelsea (scientist): That's a tough one probably Scarlett Witch because she has had to overcome a lot in her life

Student 1: same

Scientists of the Week

Students voted each week for their favourite scientist to be named Scientist of the Week.

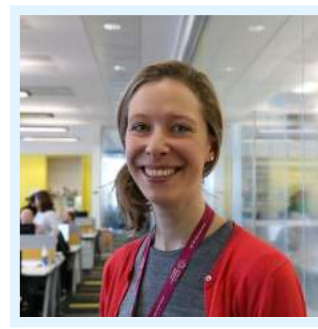
The Scientists of the Week were:



Zahra Massoud, PhD Student at The University of Edinburgh



Timothy Budden, Postdoctoral scientist at Cancer Research UK Manchester Institute



Karin Purshouse, PhD Student at The University of Edinburgh

Scientist Winner

The overall winner, with the most votes at the end of the Zone was:

- **Ben Futcher**, PhD student at the University of Oxford

As Zone winner, he receives £500 to spend on further public engagement projects.



"I hope we were able to highlight that no matter your background, whether maths is not your strongest subject, or you just don't know what you want to do after finishing school that cancer research and science more broadly is a valid and attainable career path if you are motivated and open to learning new and exciting things"

You can read his full statement at ias.im/458.624

Feedback

Thank you all for your time and answers to questions asked by our students, they enjoyed themselves!

Teacher

Thank you for answering my questions for today, I feel a lot more confident about a possible future in medicine now.

Student

Thank you guys for answering my questions and taking the time out of your day to reply to us so we can have knowledge. I hope to talk to you guys again soon.

Student



Karin Purshouse @KarinPur... Jul 1
Just finished my last [@imascientist](#) chat. What an experience! Learned a huge amount, top of the list being the long lens view of cancer - so important for this early career cancer dr/researcher! Thanks to the team, the students, their teachers. 12/10 would recommend!

Thank you very much for your time. The students enjoyed asking you questions and look forward to another session in the future.

Teacher