



Rosemary



Oliver



Leigh



Jordan



Hannah



David

## March, 2019

The Nobelium Zone was a general science zone supported by Wellcome. In the zone were six scientists:

- Rosemary Josekutty Thomas, a PhD computer scientist researching how to change people's behaviour using messages
- Oliver Gordon, the zone winner, who is doing a PhD in AI/Nanoscience at The University of Nottingham
- Leigh Kesler, who uses a particle accelerator to imitate the damage in fission and fusion reactors
- Jordan Kirby, a teaching and research technician at the University of Reading
- Hannah Dennett, a consultant who assesses the impact that developments, such as new houses or roads, have on air quality
- David Sünderhauf, a PhD student using CRISPR biotechnology to combat antibiotic resistance

### Key figures from the Nobelium Zone and the averages of the March zones

PAGE VIEWS	NOBELIUM ZONE	MAR '19 ZONES AVERAGE
<b>Total zone</b>	20,611	15,399
<b>ASK page</b>	1,839	1,114
<b>CHAT page</b>	1,592	1,291
<b>VOTE page</b>	1,697	1,327

	NOBELIUM ZONE	MAR '19 ZONES AVERAGE	IAS 2012-19 AVERAGE
<b>Nobelium Zone Schools</b>	7	8	10
<b>Students logged in</b>	499	388	391
<b>% of students active in ASK, CHAT or VOTE</b>	90%	92%	86%
<b>Questions asked</b>	737	443	675
<b>Questions approved</b>	392	216	297
<b>Answers given</b>	469	437	532
<b>Comments</b>	65	29	71
<b>Votes</b>	406	312	308
<b>Live chats</b>	22	19	16
<b>Lines of live chat</b>	8,557	6,732	5,711
<b>Average lines per live chat</b>	389	352	358

### Popular topics

Students in the Nobelium Zone were interested in each of the scientists' areas of work and the science behind their research.

They asked David about his work with bacteria and antibiotic resistance, with questions such as: "How do you prepare bacteria?" and "What is the most dangerous bacteria and virus?"

Oliver's research into AI proved popular, with students asking how artificial intelligence works, if we're close to creating sentient robots and the affect this would have on society.

Students were also interested in the scientists' education and time at school, seeking advice about their own educational choices.



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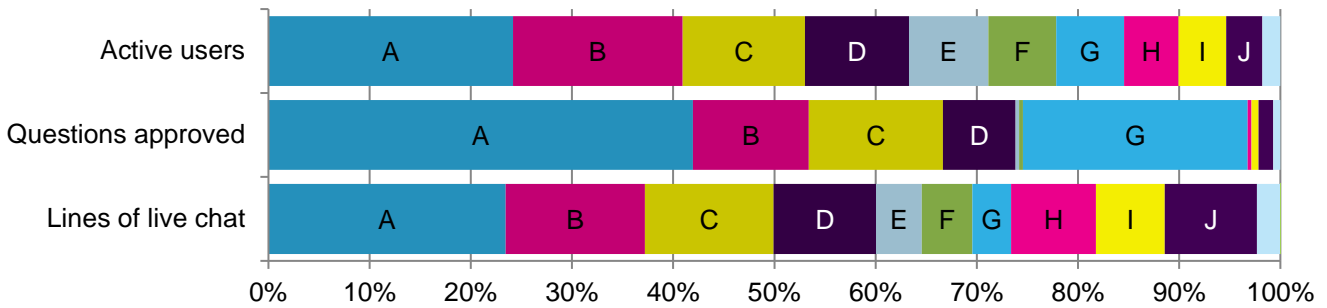


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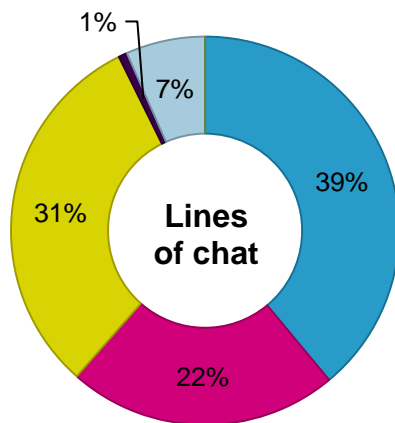
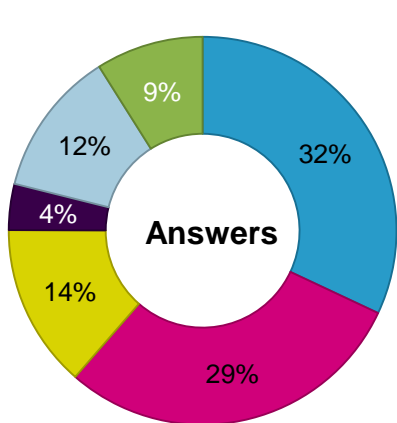
**School data at a glance**



School	Year/s	Classes
<b>A</b> John Flamsteed Community School, Ripley, U	Y9	3
<b>B</b> Dartford Science & Technology College, Dartford	Y9	6
<b>C</b> Reepham High School and College, Norwich, U	Y10	2
<b>D</b> Lancaster Girls' Grammar School, Lancaster	Y10	2
<b>E</b> Prince Henry's High School, Evesham, U	Y10, Y13	2
<b>F</b> Howard of Effingham School, Leatherhead	Y8	1
<b>G</b> King James's School, Knaresborough, U	Y10	1
<b>H</b> Wyvern Academy, Darlington, WP/U	Y8	2
<b>I</b> Bohunt School, Liphook	Y8	2
<b>J</b> Hampton Court House, East Molesey	Y7	1
<b>K</b> Mulberry Academy Shoreditch, London, WP	Mixed STEM Club	1

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

**Scientist activity**

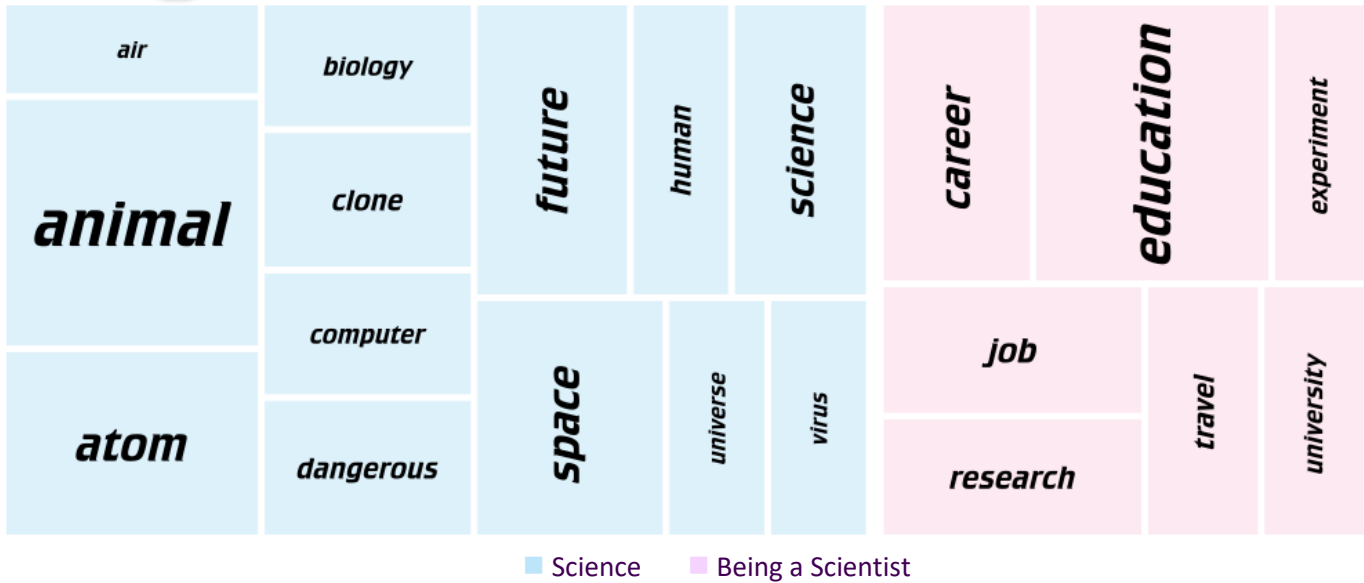


SCIENTIST	PROFILE VIEWS	POSITION
Oliver Gordon	875	Winner
David Sünderhauf	690	2nd
Jordan Kirby	647	3rd
Hannah Dennett	543	4th
Rosemary Thomas	649	5th
Leigh Kesler	486	6th

Ask?

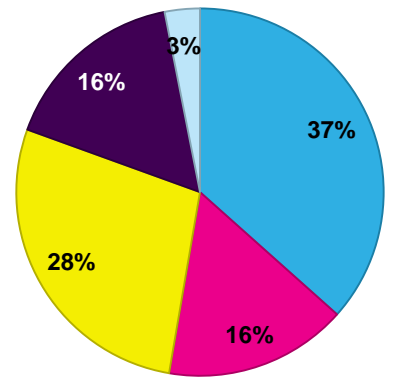
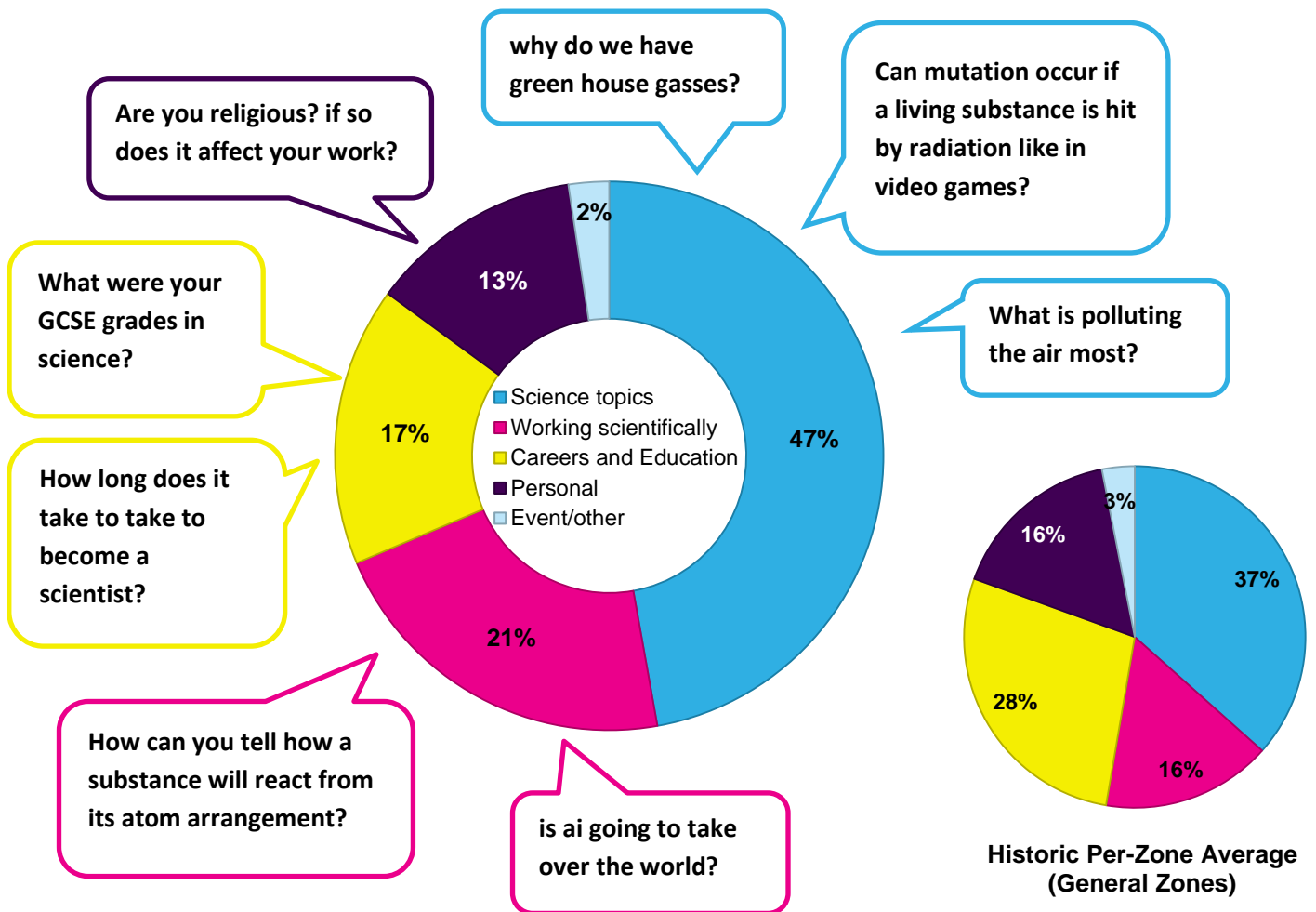
Top Keywords of questions approved in the Zone

(Area represents frequency of use)



Question themes and example questions in the Zone

Find out about how we've coded the questions at [about.imascientist.org.uk/what-do-students-ask-about/](http://about.imascientist.org.uk/what-do-students-ask-about/)





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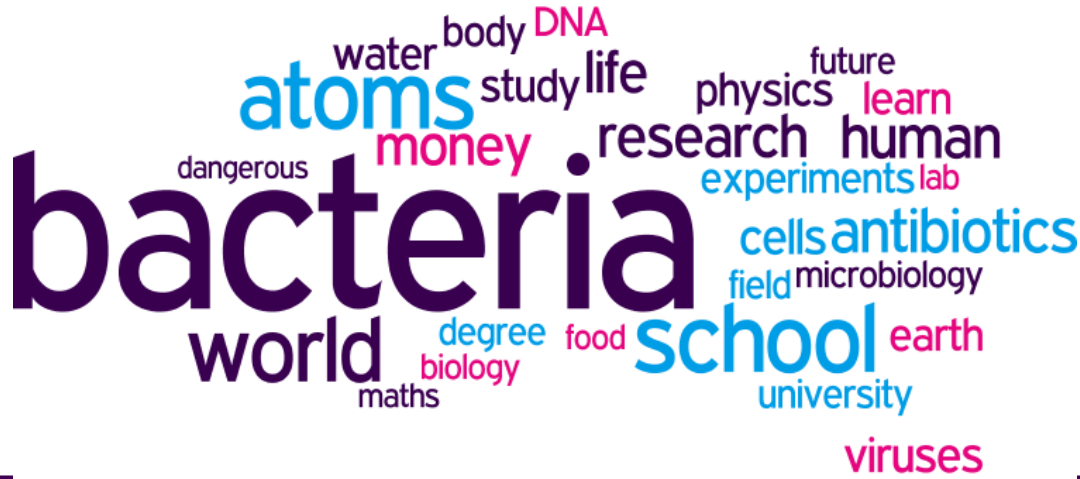
Hannah



David

Chat

Frequent words used in live chats by students and scientists. Size of the word represents its popularity



Examples of good engagement

Students showed an awareness of current problems such as climate change. Here, Oliver valued a student’s concern and replied with a detailed answer that included links to further science content. This process of eliciting, valuing and linking students’ questions back to the science is a central part of the science capital teaching approach\*:

*“I am really passionate about our planet and want to do something to help it. Since your Scientists I wondered weather you knew anything I cloud do? Thx” - Student*

*“Absolutely! ‘Citizen science’ is a very big thing these days. One of the problems that I face and spend a lot of time working around is not having enough data available to me. This is also true for environmental studies. Although it helps you to analyse that data, you don’t need to be a super highly trained expert to MAKE that data.*

*https://www.zooniverse.org/ is a website I’m really familiar with, and have used in the past to great success. Basically, there’s loads of different types of projects, from medicine to astronomy (what it was originally created for) to environmental studies that all need help making their datasets. Here’s a couple of environmental based ones that I think might catch your eye: <https://www.zooniverse.org/projects/shuebner729/snapshot-pilanesberg> and <https://www.zooniverse.org/projects/serc/invader-id>*

*But there’s loads more – here’s all the ones going on right now – <https://www.zooniverse.org/projects?page=1&status=live>*

*Each project page also lets you know what your data has helped and is helping them to do – they show you links to all their papers and the work that they are doing. You can also discuss it directly with them, which is really neat, too (my advice is to do this: scientists LOVE to talk about what they do)” - Oliver, scientist*

*“Thx I have joined Zooniverse” – Student*

\*The science capital teaching approach helps teachers to support and further build their students’ science capital. Science capital is an individual’s science-related resources – their knowledge, attitudes, experiences and social contacts – which help them engage with science. The more science capital someone has, the more they feel it is ‘for me’. More info at [imascientist.org.uk/science-capital](http://imascientist.org.uk/science-capital)



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The scientists regularly replied to questions with links to external media and further information to help the students understand their answers:

*“How do micro-organisms occur?” - **Student***

*“Micro-organisms live virtually everywhere! Note that these aren't just bacteria (even though they're my favourite), there are other microscopic organisms like fungi, protozoa (single-celled eukaryotic organisms), microscopic algae, little tardigrades (very adorable microscopic “bears”) and many more – there's a whole world hidden behind a microscope. Basically anything you look at (your spit, soil, pond water, ...) will be full of little wriggling creatures” - **David, scientist***

*“Thank you for answering. What is the most common type of micro-organism?” - **Student***

*“What an awesome follow-up question! 😊 Bacteria are the most common group of microorganisms – there's so many of them that they'd come out second when comparing all life on earth by weight, just behind plants – despite being so small! But wait! Bacteria actually have their own little viruses that infect them, called bacteriophages. People estimate that there are at least 10x as many bacteriophages as bacteria in the world – this actually makes bacteriophages the most common type of microorganism 😊 And to visualise just how many of them there are: despite being so super tiny (bacteriophages are between 20-200 nm long, which is at least 10 times smaller than bacteria, which in turn are 1000x smaller than a flea), there are so many bacteriophages in the world that if you were to gather them all up and put them into a long row, this chain of bacteriophages would be longer than \*our galaxy\*!*

*Bacteriophage size comparison: <https://www.youtube.com/watch?v=9beBIGAoMII> (called “phage” in the clip). All life on earth weighed in comparison –*

*<https://www.economist.com/science-and-technology/2018/05/24/a-planetary-census-puts-humans-in-their-place>” - **David, scientist***



### **Scientist winner: Oliver Gordon**

Oliver's plans for the prize money: *“I'd like to use the money to fund more school visits, bringing along scientists from the university to do experiments. We also have a massive inflatable planetarium that we use to teach children about space and the stars, and I'd like to use the money to fund more school visits for it in the future.”*

Read Oliver's [thank you message](#).

### **Student winners: Mrs Blake's 8CD Science Class**

Mrs Blake's class at Churnet View Middle School were nominated following their live chat in the Nobelium Zone. One scientist said: *“I'd like to nominate the whole class, and then see if they can use the money to do something all together. They all asked fantastic questions and clearly came really well prepared”*

As student winners, the class will receive a certificate and a gift voucher.





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## Feedback

We're still collecting feedback from teachers, students and students but here are a few of the comments made about March's *I'm a Scientist* activity...

It was fab! The children were engaged, there was a buzz around the room! What a pleasure to witness and inspire them! – **Teacher**

[I have learnt] a lot really about the level I should keep in a conversation to keep interest and how to give students little snippets of info so they do become curious... a crash course in communication really.

And I think I just became passionate about them, who they are what they think, what interests them – **Silvia, scientist**

[I have learnt] scientists are normal people aswell not just nerds – **Student**

Thank you very much for answering all of our questions. we have learnt a lot today and we really appreciate it because it has truly inspired us to follow our dreams and not worry about all the bumps in the way – **Student**

I sign up every term as it is a great addition to help students engage with science. It also ticks an Ofsted box of helping disadvantaged students to relate what happens in the classroom to the real world. – **Teacher**

love the live chats! It gives students the chance to ask anything and they really do! I have grown so much through my participation in this event! Thank You! – **Scientist**