

November 2021

The Magnesium Zone (<https://magnesium21.imascientist.ie/>) ran from 8th November to 3rd December 2021 and was funded by the **Science Foundation Ireland**.

The Zone featured general science, with each scientist doing something different and fascinating in the world of science.

Throughout November, Covid-19 cases in schools reached an all time high. This meant there was less activity within the Zone than expected.

Key activity figures

	Zone	November 2021 average
Schools	19	13
Students logged in	603	404
Students active	84%	87%
Scientists	32	24
Questions asked	284	178
Questions approved	204	131
Answers given	388	239
Scientist comments	46	24
Student comments	2	2
Live chats	29	21
Lines of live chat	8,259	5,526
Average lines per live chat	285	250
Votes	335	223

Scientists

32 scientists created a profile in the Zone.

You can see who took part at

<https://magnesium21.imascientist.ie/scientists/>

The winning scientist with the most votes from students was **Gaël Lymer**, Postdoctoral Researcher at University College Dublin.

Students

603 students from 19 schools across the Republic of Ireland logged into the Zone.

84% of students were active within the Zone by participating in live chats, asking questions and voting.

Live chats

29 live chats booked by teachers for school classes took place during the activity. Additionally, there were 4 chats scheduled, open to all the students.

An additional 23 live chats were booked: 13 were cancelled and in 10 the school was unable to attend without cancelling.

There was one live chat where teachers asked questions on behalf of their students. It is also common for students to share login details or computers during live chats. Therefore, the number of students reached will be higher.

School activity

Students from 19 schools across Ireland participated in the Zone. In addition to live chats booked by teachers, there were 3 Thursday evening chats scheduled for the students and their families.

School	DEIS status	Active users	Chats attended	Chat lines (total)	Chat lines (per user)	Questions approved	Votes
Coláiste Chill Mhantáin, Wicklow ¹	U	66	4	578	9	3	62
Ursuline Secondary School, Cork	DEIS	57	3	534	9	7	30
Wicklow Educate Together Secondary School, Wicklow	U	50	3	704	1	5	38
Balla Secondary School, Mayo	DEIS	47	2	228	5	74	12
Drumshanbo Vocational School, Leitrim	U	44	3	232	5	28	23
Skerries Community College, Dublin	U	39	2	70	19	10	30
St Molaga's School NS, Dublin	U	32	2	328	10	0	34
Kingswood Community College, Dublin	U	32	1	120	4	0	27
KILTERNAN N S 1, Dublin	U	27	1	348	13	4	25
St Aloysius College, Cork	-	22	1	71	3	21	17
Loreto Community School, Donegal	U	21	1	98	5	5	8
Meánscoil Iognáid Ris, Kildare	U	19	1	205	11	1	3
Ardscoil Mhuire, Galway	-	18	0	0	0	32	10
Killinarden Community School, Dublin	DEIS	16	1	266	17	11	10
Dominican College, Dublin	U	16	1	72	5	0	2
St Killian's College, Galway	-	9	2	61	7	2	0
MASTERSONS N S, Leitrim	U	6	1	86	13	0	3
Sacred Heart Secondary School, Cork	-	2	2	4	2	1	0
Scoil Ailbhe, Tipperary*	-	1	1	36	36	0	0

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

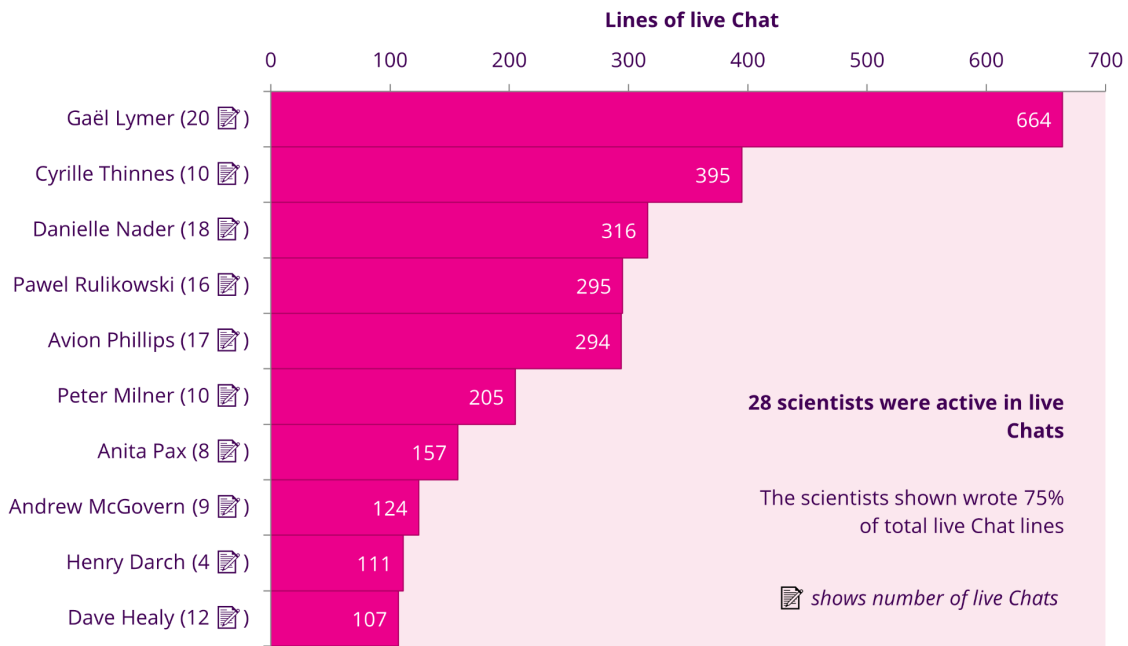
We want to increase the participation of under-represented groups. Find out what we mean by under-served (U) and DEIS (Delivering Equality of Opportunity in Schools) schools, and how you can support us in working with more of these: about.imascientist.ie/under-served-and-wp/

¹ Two classes took part from this school

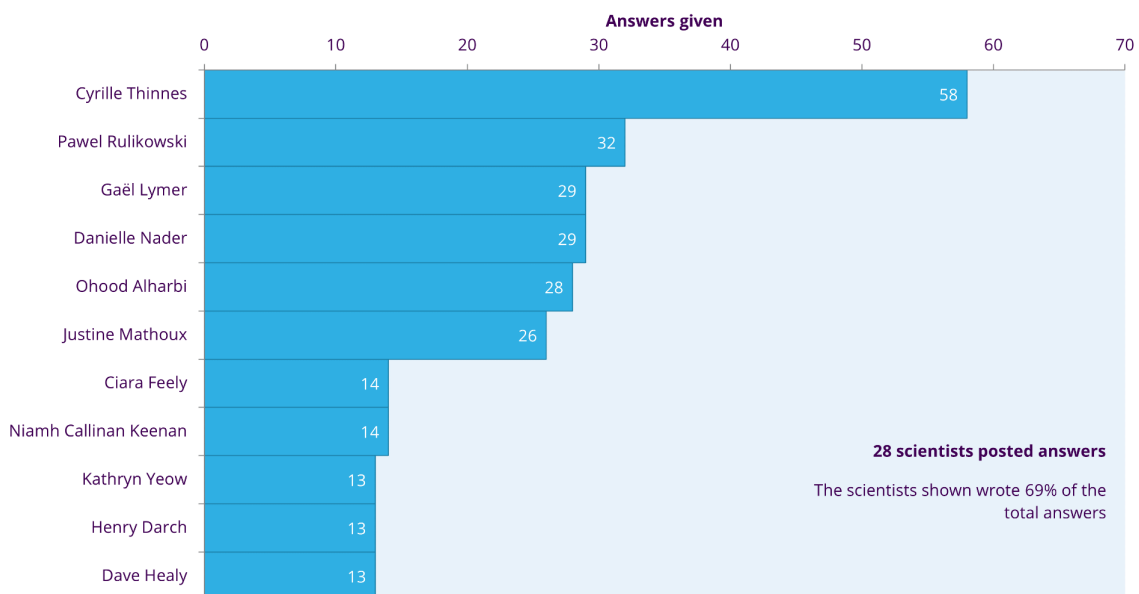
Scientist activity

During the Zone the scientists interacted with students by writing 3,548 lines of live chat, and providing 388 answers to 204 posted questions. On average, 7 scientists attended each live chat.

10 most active scientists in live Chats



10 most active scientists in posting answers



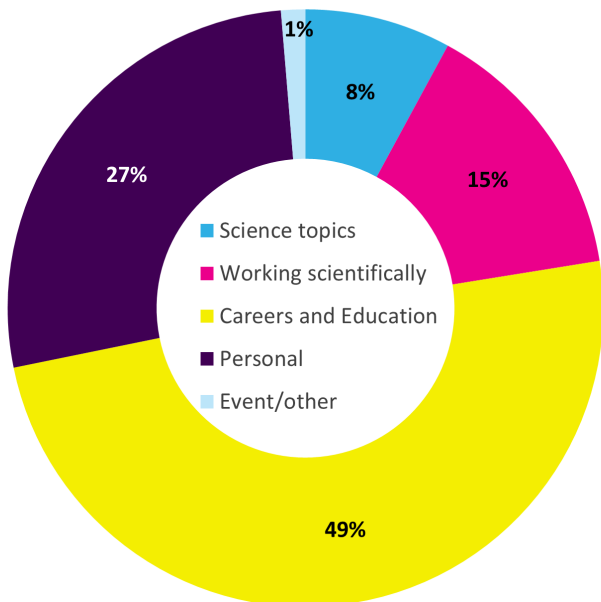
Live chats

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



Questions in Ask section

The chart below shows an analysis of questions students sent to the engineers. Questions are coded into overarching categories. The examples are coloured by category.



- Can you tell if areas are at risk of having an earthquake or tsunami by studying tectonic plates?
- When a person dies, how long is their brain active for?
- Do you ever discover new plate boundaries or are they all already established?
- Are animals harmed in your research?
- Did you always want to be a scientist?
- What's the hardest part of your job?
- I love science and I really want to pursue it but I am terrible at maths. Is that important?
- What's your favourite Harry Potter movie?

Good engagement

Connecting with scientists over shared interest and learning that they are “regular people” can help students relate to them. This makes it easier for students to see themselves in science-related careers.

Student 1: How much money do you make for being a scientist?

Andrew (scientist): Not as much as you'd think haha

Cyrille (scientist): Enough for fish and chips - all I need.

Student 1: i love fish and chips too x

Student 1: What's your favourite football team?

Daniela (scientist): Benfica - Portugal

Student 1: no robo

Daniela (scientist): but I like Man. United too! What about you?

Student 1: Liverpool

Student 2: I support United too

Student 1: booo

Daniela (scientist): hahaha some riverlary! Who's your fav player? Gotta say, Man City is also a good one.

Student 2: Ronaldo

Subject specific questions can help generate interest and knowledge about the scientific field.

Student 1: What makes the drugs strong enough to fight the virus?

Cyrille (scientist): *they target a very specific part of the disease - they are not strong but smart! Our drug specifically can block the target on our cells that the virus is trying to recognize. The virus will basically float around the cell looking for that target but can't find it. No target=no infection*

Student 1: Could you explain geotechnical engineering to me

Gaël (scientist): *I can try :) that is studying the properties of the soil to build things on the ground. For example before building a house or a hospital or anything we make geotechnical studies to check if the found can actually hold the building; does that make sense? :)*

Student 1: Yep thanks Gaël

Student 1: How is it possible that there is electricity in the brain?

Henry (scientist): *Electricity is really just the moving of electrons from one place to another. Our brain cells use a complex system of channels and gates to move 'ions' which are either positively charged or negatively charged across their cell membranes*

This is why we say that the brain uses electricity.

Information on the scientists careers can provide insight into how variable careers can be and what students may need to do to get there.

Student 1: What course did you study after secondary school to be where you are now?

Danielle (scientist): *Intensive Biology, Chemistry courses. In college you get to specialise a bit more, I took Biotechnology, Biochemistry, and Microbiology courses*

Erin (scientist): *I studied neuroscience at university as an undergraduate!*

Maria (scientist): *Mostly Biology, Chemistry, Biochemistry, Maths and just in my Master I started to study the brain and neuroscience in general.*

Student 1: Thank you!

Student 1: I know neuroscience has to do with the brain. It seems really interesting, what are the main things you study when studying neuroscience?

Maria (scientist): My thesis is on studying the effects of exercise on neurogenesis and neuroinflammation specifically during middle age. To make the story short I'm trying to understand how exercise can influence behaviour (with a main interest on the memory related tasks)

But this is specifically my main focus. In general, we study and try to understand how the brain works. And you should think that the brain is what is driving our behaviour and our body in general (the brain is telling the body if we are cold or if we are hungry)

So, to sum up, there are a billion things you can study about the brain and a billion things that are still unknown (the neurons, the cells of our brain, were discovered at the beginning of the 1900 so all the knowledge is quite recent).

Being able to see how science is relevant to everyday life and how certain knowledge or science can be utilised is an important part of Science Capital.

Student 1: How long does it take for the stuff in your compost bin to turn into soil?

Avion (scientist): This depends mostly on Temperature!! The warmer it is in the bin the sooner it will be soil. It depends on the type of stuff in your compost, things with a lot of carbon but very little nitrogen e.g. a lot of hay takes long to breakdown.

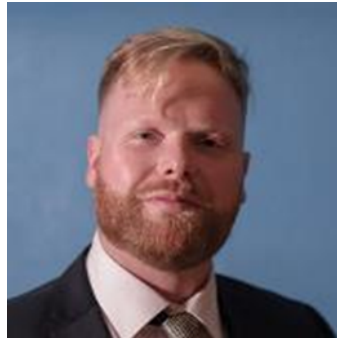
Scientists of the Week

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

The Scientists of the Week were:



Gaël Lymer, Postdoctoral Researcher at University College Dublin



Cyrille Thinnes, Engagement Manager and Research Fellow at National University Ireland



Danielle Nader, PhD candidate at Royal College of Surgeons in Ireland

Scientist winner

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

- **Gaël Lymer**, Postdoctoral Researcher at University College Dublin

As Zone winner, they receive €500 to spend on further public engagement projects.



"Our chats made me re-think my research and how I got doing my job. In turn, I learnt a lot about myself and chatting with you all reminded me how much I love Geology and being a scientist. Thank you all for being so open-minded, curious, and dynamic."

You can read their full statement at

<https://magnesium21.imascientist.ie/2021/12/22/a-thank-you-from-your-winner-gael/>

Feedback

Thanks so much for answering all our questions. We've really enjoyed it.

Teacher



Gaël Lymer
@GaelLymer

Replying to @imascientist

They ask great and smart questions! It is fun and in some ways challenging to answer :) great activity!

Also their concern about COVID seems clear regarding the amount of questions they ask on that topic.

1:06pm · 9 Nov 2021 · Twitter Web App

Thank you! Your answers were very interesting

Student



Rang a Sé
@StMolaga5

@ScienceWeek @imascientist we really enjoyed our live chat today. Thank you so much for your time! We are very interested in soil so it was great to chat with a scientist about it. #ScienceWeek2021 #SCIENTIST 🧪

Thank you for talking to me about Covid. I really learned more.

Student



Reabetswe Zwane
@rea_zwane

@imascientist is an incredible online platform that connects school students with working scientists. Students get to not only talk to scientists in the field, but to identify with them.

3:50pm · 10 Nov 2021 · Twitter for Android