



Triona



Simone



Kieran



Julia



Hugh



Emily

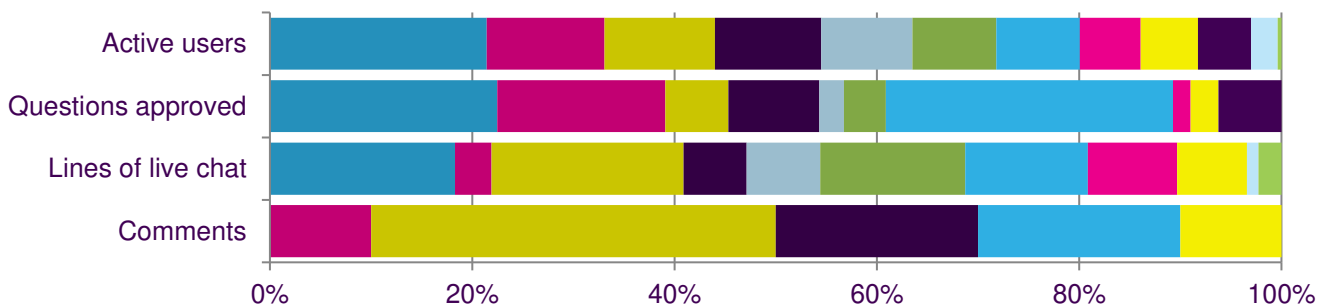
November 2018

The New Materials Zone was a themed zone supported by Science Foundation Ireland and involved six scientists:

- Triona Kennedy works for Stryker, a 3D-printing factory making hips, knees and parts of the spine
- Simone Iadanza designs and build small structures that trap or reflect light so they can work as small lasers
- Kieran Joyce is making new materials that can be used in spinal surgery for people with lower back pain
- Julia Savioli is a computational chemist who uses simulations to understand the behaviour and chemistry of different materials
- The zone winner, Hugh Manning, researches nanomaterials, particularly nanowires to conduct electricity for display screens and touch screens
- Emily Growney Kalaf is a biomedical engineer working on nanowires that act like neurons to understand neurogenic and neuropathic pain

Students in this zone were particularly interested in finding out what it was like being a scientist, and over 40% of the questions in ASK were on careers and/or education topics. Hugh, the zone winner, was very active in the live chats, with his chat lines making up nearly half of all those sent by the scientists over the activity.

School data at a glance

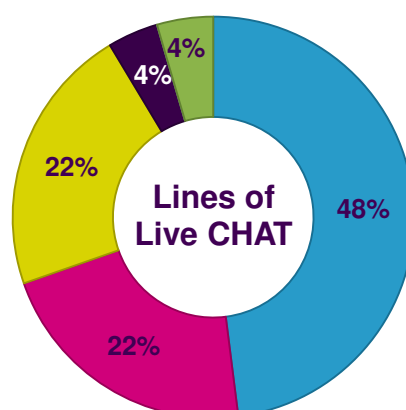


- Coláiste Bríde, Dublin
- Scoil Mhuire, Galway
- Coláiste Bhaile Chláir, Galway
- Coláiste Éanna, Dublin
- Coola Post Primary School, Sligo
- Mount Anville Secondary School, Dublin (U)
- Our Lady Queen Of Apostles, Dublin (DEIS/U)
- The Kings Hospital, Dublin (U)
- Coláiste Chillian, Dublin
- St Gaimin's Community School, Clare (U)
- Moyle Park College, Dublin (U)
- Sn An Phairtin Mixed, Clare (U)

We want to increase the participation of under-represented groups going into STEM careers. Indicated here are SFI priority counties (U) and Delivering Equality of Opportunity in Schools (DEIS).

Find out more at about.imascientist.ie/widening-participation

Scientist activity



SCIENTIST	PROFILE VIEWS	POSITION
Hugh Manning	531	Winner
Kieran Joyce	498	2nd
Julia Savioli	380	3rd
Emily Growney Kalaf	298	4th
Simone Iadanza	377	5th
Triona Kennedy	382	6th

Key figures from the New Materials Zone and the averages of the November zones

PAGE VIEWS	NEW MATERIALS ZONE	NOV '18 ZONES AVERAGE
Total zone	12,426	19,289
ASK page	1,075	2,268
CHAT page	849	1,171
VOTE page	544	800

	NEW MATERIALS ZONE	NOV '18 ZONES AVERAGE	IAS 2012-18 AVERAGE
New Materials Zone Schools	12	12	11
Students logged in	322	392	373
% of students active in ASK, CHAT or VOTE	83%	87%	70%
Questions asked	602	1,011	665
Questions approved	289	416	289
Answers given	365	563	508
Comments	17	80	67
Votes	225	344	307
Live chats	15	18	16
Lines of live chat	3,654	4,692	4,232
Average lines per live chat	244	253	268

Popular topics

The questions asked by students showed that they had a real interest in the scientists' research and its applications. They asked about nanomaterials, what they were, how you study them, why we want to study and use them and what applications they can have.

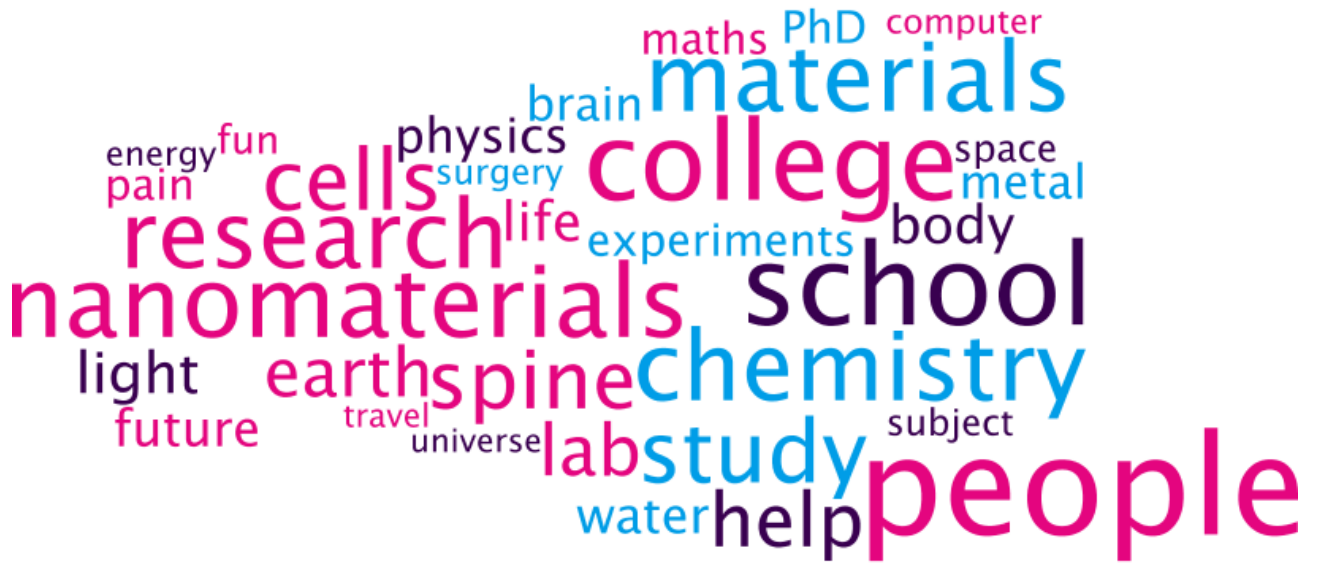
Students in the live chats were particularly interested in knowing how nanotechnology could be used to help people.

In ASK, there were questions for Simone about lasers and discussion about 3D printing with Triona, showing they had read the scientists' profiles.

There were lots of questions, in both ASK and CHAT, about colleges and careers. Students also wanted to know about the scientists' interests and hobbies, and whether their job gave them opportunities to travel.

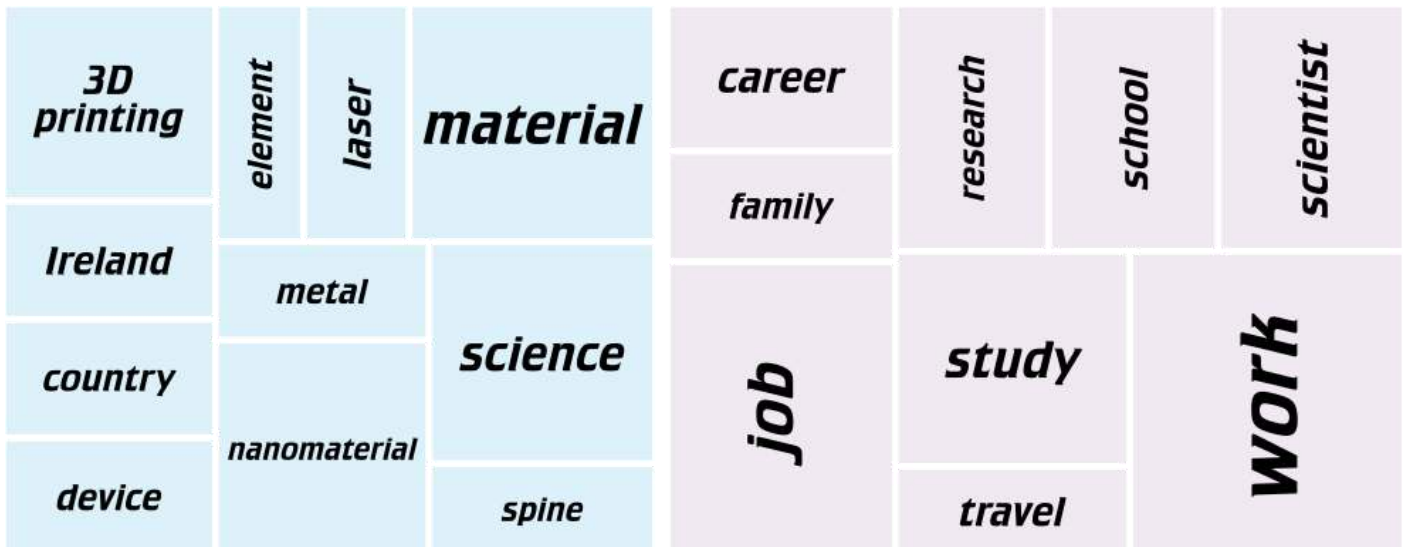
Chat

Keywords from live chats in the zone. Size of the word represents its popularity



Ask

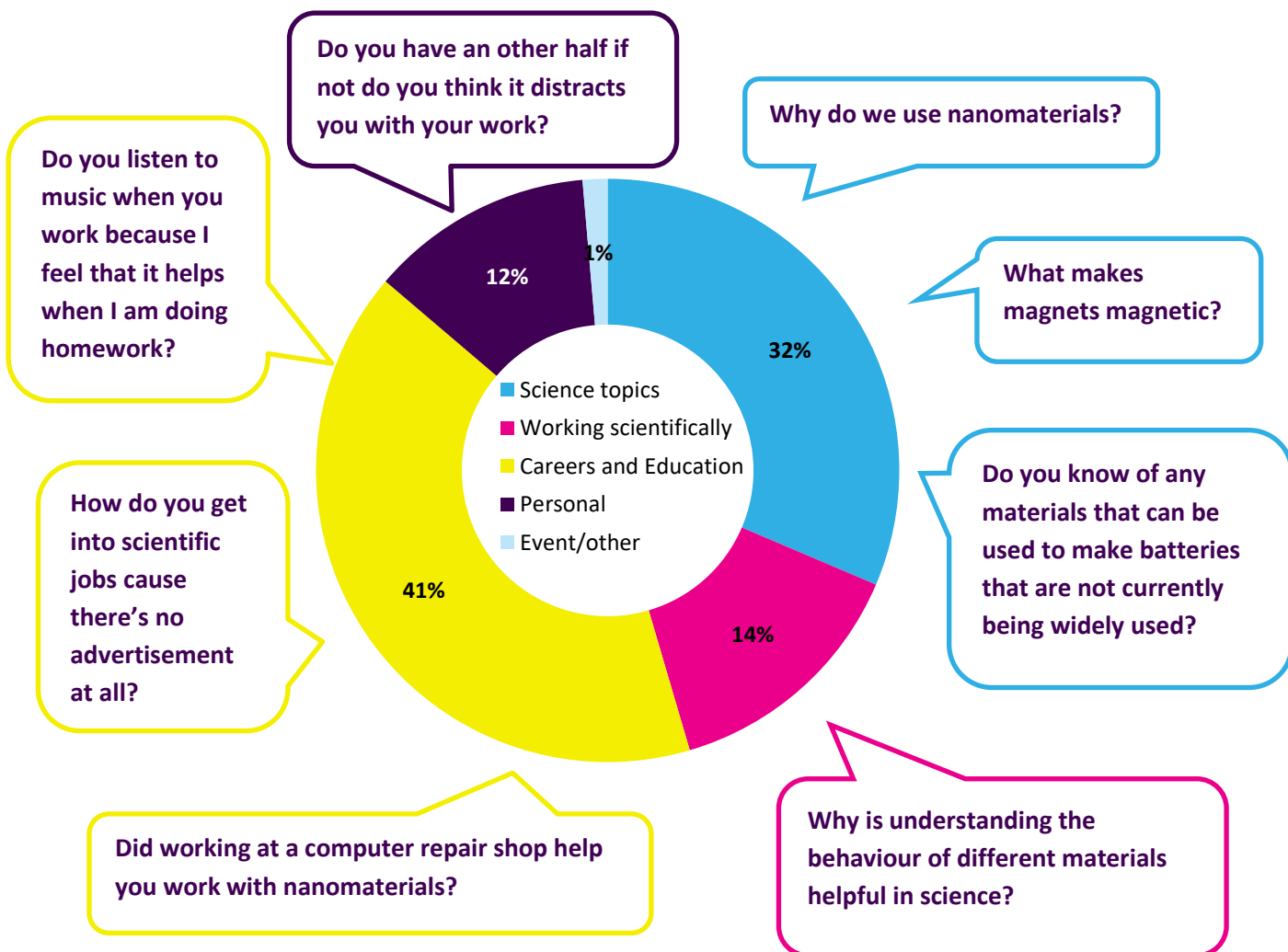
Top Keywords of questions approved in the Zone



■ Science ■ Being a scientist

Question themes and example questions in the Zone

Find out about how we've coded the questions at about.imascientist.org.uk/student-question-coding



Examples of good engagement

The students showed an understanding of what the scientists studied, making links between some of the scientists' work and even suggesting that they could collaborate on projects. In one conversation, a student applied their knowledge of Hugh's work to follow up an answer from Julia about aging:

"What makes you grow old?" – Student

"At the ends of our chromosomes there are things called telomeres. They are responsible for aging, they become shorter as we grow old" – Julia, scientist

"could you not extend them using something like what Hugh uses?" – Student

"No, I'm afraid we can't extend them. But some things make them get shorter faster, like smoking or stressing. So keep away from those :)" – Julia, scientist

One class who were chatting together through one account enjoyed turning their conversation with Hugh into a hands-on activity to help understand the scale of nanomaterials:

"My research at the moment is using nanomaterials, have your class heard of nanomaterials before? Or do they have an idea of what Nano might mean?" – Hugh, scientist

"No we have little knowledge. Could you explain?" – Students

“Excellent, well if we take a metre and divide it by 100 we get centimeters. If we take a metre and divide it by 1 billion we get nanometers. Nano is a length scale, like centi or mili or micro” – Hugh, scientist

“Thanks, Eoghan has the metre stick out” – Students

“Hahaha, brilliant” – Hugh, scientist

“Your fingernails actually grow 1 nanometer every second!” – Hugh, scientist

“CLASS! That will be something for the parents!” – Teacher

“The length scales go, meter , centimeter , millimeter , micrometer , nanometer” – Hugh, scientist

“So nanometers are tiny, really small?” – Students

“Really tiny! and because they're so small they have really interesting properties, the colour from butterfly wings comes from nanosize structures” – Hugh, scientist

“We will go onto micrometers soon hopefully!!” – Students

“The super water repelling properties of lotus fowers come from nanosize bumps on the leaf. So nature uses nanosize objects, if we can do the same we can make materials with all these interesing and super useful behaviours!” – Hugh, scientist

“Hugh that is really interesting” – Students



Scientist winner: Hugh Manning

Hugh’s plans for the prize money: *“I recently learned that the Leaving Certificate Engineering Special Topic this year is on ‘the basic principles and applications of Nano Technology’. I think this would be a perfect opportunity to bring nano-scientists into secondary schools.”*

Read Hugh’s [thank you message](#).

Student winner: Seán

For great engagement during the event, this student will receive a gift voucher and a certificate.

Feedback

We’re still collecting feedback from teachers, students and scientists but here are a few of the comments made during the event...

I really liked the communication format because students, not having to speak in front of everybody, felt free to ask questions that might have been very curious to them but that would have never asked in person, because shy or afraid (wrongly) to look less clever. – **Scientist**

I thought having a job that has to do with science would be very stressful day to day but the scientist I have met and read about made me aware of the good parts of being a scientist and that made me change my ways of thinking and motivated me into thinking of taking up a job that includes S.T.E.M. – **Student**

This event is so important as it lets students experience first-hand that scientists are people too and a career in STEM is readily achievable if you have a love of science and a passion for knowledge. – **Hugh, zone winner**