



Ted



Sajjad



Laura



Kevin



Ellen



Andrea

## March, 2019

The Health Zone was a themed engineering zone supported by Wellcome. In this zone there were six engineers:

- Ted Burke, who specialises in electrical engineering and using the electrical signals inside of us to diagnose health problems.
- Sajjad Soleimani, who uses engineering to create medical devices.
- Laura Farina, who develops new medical devices based on electromagnetism.
- Kevin O'Brien, the winner of this zone, who designs electronics for infusion pumps used for everything from pain relief during surgery to chemotherapy.
- Ellen Simmons, a biomedical engineer who uses her knowledge to design solutions to various technology problems.
- Andrea Pacheco, who is using lasers to develop a device that measures oxygen levels in preterm babies.

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

PAGE VIEWS	HEALTH ZONE	MAR '19 ZONES AVERAGE
Total zone	16,106	13,258
ASK page	1,274	946
CHAT page	1,256	1,114
VOTE page	707	572

	HEALTH ZONE	MAR '19 ZONES AVERAGE	IAE 2012-19 AVERAGE
Health Zone Schools	8	10	10
Students logged in	371	327	295
% of students active in ASK, CHAT or VOTE	87%	86%	84%
Questions asked	517	407	456
Questions approved	256	191	223
Answers given	635	400	426
Comments	85	38	42
Votes	247	236	227
Live chats	17	18	14
Lines of live chat	5,358	4,602	3,649
Average lines per live chat	315	261	249

### Popular topics

Conversations in the Health Zone were very on topic, with students engaging well with the zone theme.

Students were particularly interested in Ted's work with robots and how they can be used to help humans interact.

Andrea's profile mentioned 'the best thing she'd done in her career' was building an earthquake alarm, and students in ASK wanted to know more about the alarm and if it had helped save people.

55% of the questions sent to ASK were about careers and education, with students asking about the engineers' career history and day-to-day job content to find out what it is actually like working in engineering.



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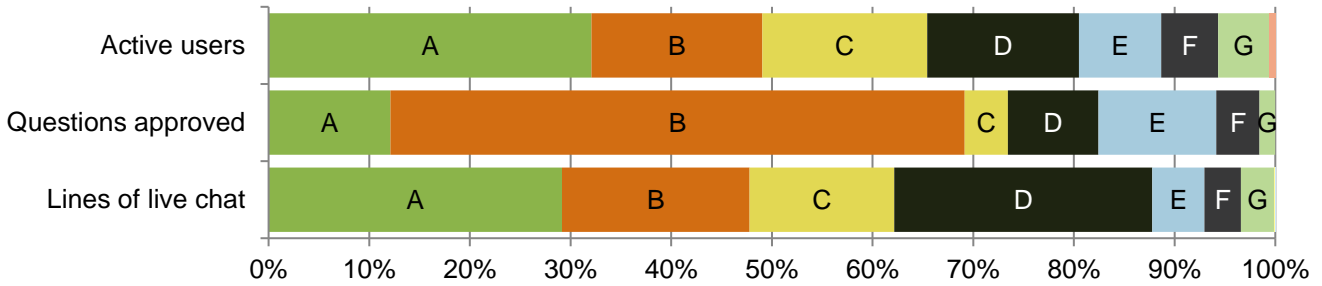


Ellen



Andrea

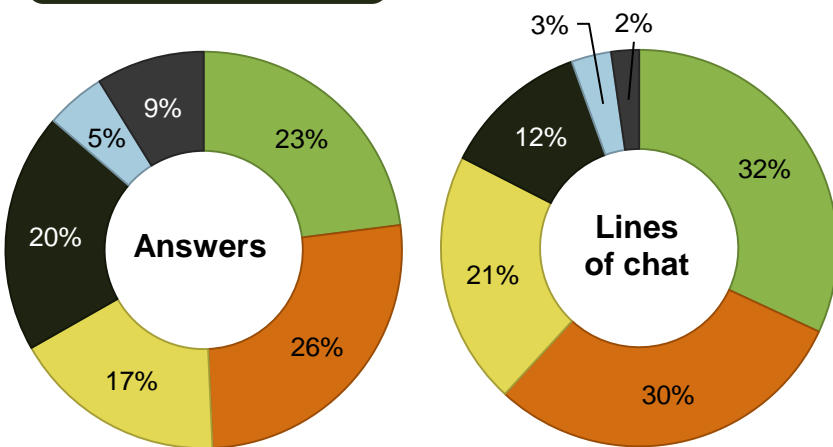
**School data at a glance**



School	Year/s	Classes	
A	St Molaga's School, Dublin, U	5 <sup>th</sup> Class	5
B	St Colmans Clara National School, Kilkenny	5 <sup>th</sup> and 6 <sup>th</sup> Class	1
C	Gaelscoil na Cruaiche, Mayo	3 <sup>rd</sup> – 6 <sup>th</sup> Class	4
D	Dunboyne Senior National School, Meath, U	6 <sup>th</sup> Class	2
E	Tallaght Community School, Dublin, DEIS/U	Transition Year	2
F	St Vincent's Secondary School, Cork	3 <sup>rd</sup> Class	1
G	Patrickswell National School, Limerick	3 <sup>rd</sup> Class	1
H	Ballinrobe Community School, Mayo	Transition Year	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 DEIS schools, 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/)

**Engineer activity**

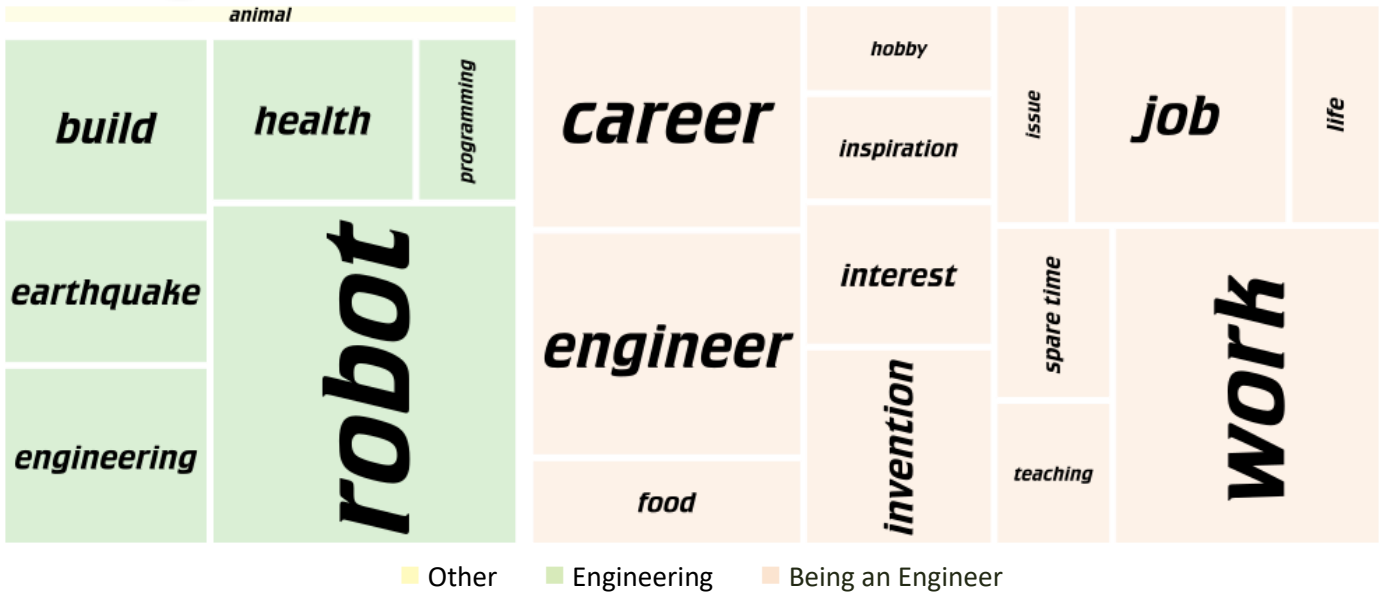


ENGINEER	PROFILE VIEWS	POSITION
Kevin O'Brien	581	Winner
Ted Burke	726	2nd
Laura Farina	477	3rd
Andrea Pacheco	362	4th
Sajjad Soleimani	501	5th
Ellen Simmons	462	6th

**Ask?**

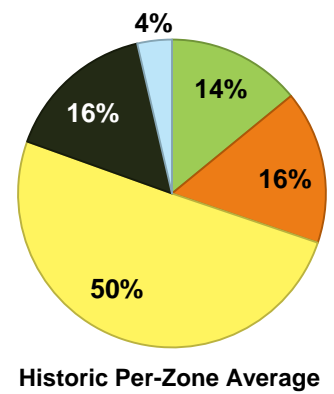
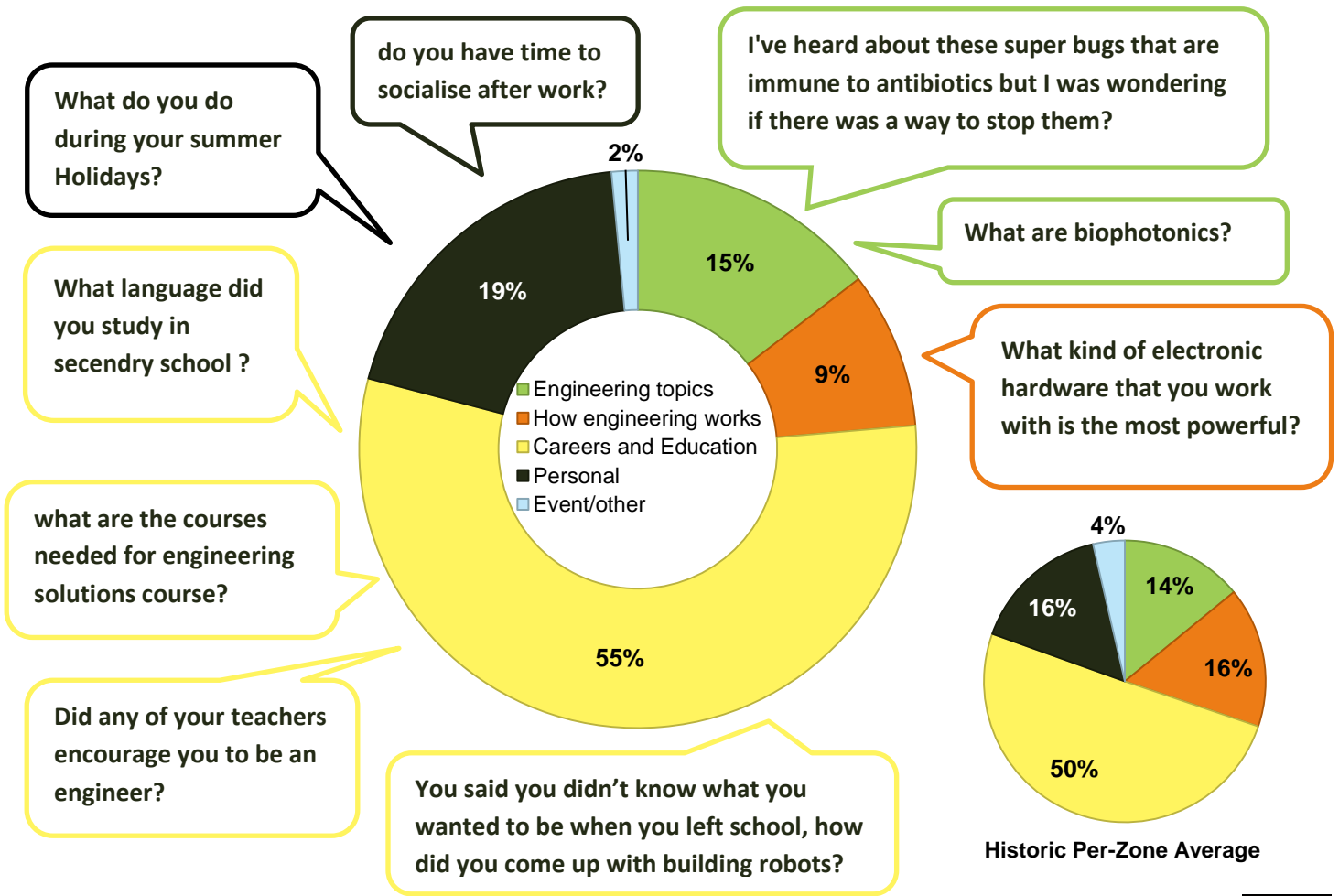
**Top Keywords of questions approved in the Zone**

Area represents frequency of use



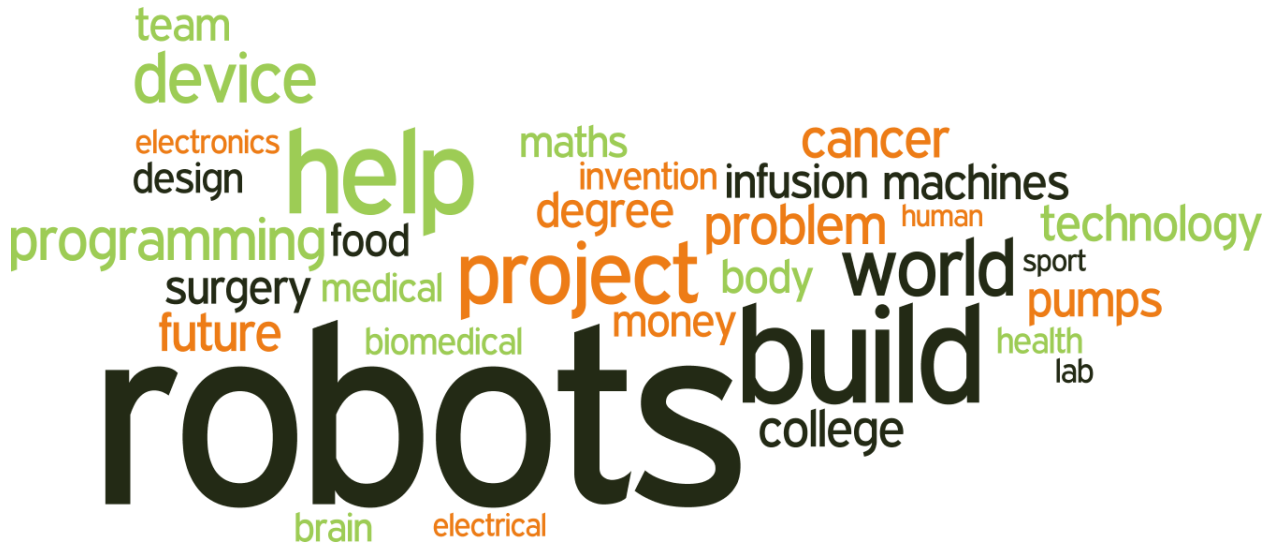
**Question themes and example questions in the Zone**

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/)



Chat 

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



**Examples of good engagement**

One student asked Andrea about her work and was comfortable asking for more information about terms she used that they were unfamiliar with.

*“Andrea im so honoured to speak to a real enginerr and get nervous communicating with famous people so i apologize so excited hehehe” – Student*

*“no problem at all, I am not famous and I am also very excited to talk to you!” – Andrea, engineer*

*“have you made much advances in your studies and think you can cure cancer” – Student*

*“right now I am working on a clinical device to measure oxygen in the lungs of preterm babies using just light, and I have learnt and progress a lot!” – Andrea, engineer*

*“what is a preterm baby?” – Student*

*“babies that are born before the 9 months” – Andrea, engineer*

*“what experiments do you conduct concering the preterm babies? – Student*

*“our technology is non-invasive basically we just shine a lamp over the skin of the babies” – Andrea, engineer*

*“and what comes from shining the light” – Student*

*“if the lungs are healthy, very little light will shine out, if I get a lot of light from the baby I know he needs respiratory treatment” – Andrea, engineer*

*“and do you have the equipment to treat respitory or are you looking intp that” – Student*



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*“Oh no, I just work on the device development. Doctors will use my device and do all needed to help the baby” – Andrea, engineer*

*“is it common for babies to need the treatment?” – Student*

*“yes, if they are born preterm the lungs are very weak and the tiny air-sacks (alveoli) we have inside do not inflate properly” – Andrea, engineer*

Students would also use the opportunity to ask the engineers for careers and educational advice on subjects they are interested in. One student was interested in Ted’s work, and struck up a conversation about robotics. Ted gave advice on ways the student could explore programming now:

*“@Ted Have you ever taught programming with any schools?” – Student*

*“Yes, we sometimes run robotics workshops with school groups. When we do that, it usually involves programming the robots. It's at quite a basic level, but it gives people a flavour of what they'll do if they choose engineering in college.” – Ted, engineer*

*“I would love to do robotics when I am older” – Student*

*“Great! You should consider studying electrical or mechanical engineering then. But you don't have to wait until college to get started. You can find Arduino robotics kits on Amazon and other places online that will help you learn the basics. Also, there's another cool little toy robot that someone showed me the other day called OzoBot. That's another interesting way to learn some stuff about robotics.” – Ted, engineer*

*“@Ted cool I will check it out!!!!” – Student*



### **Engineer winner: Kevin O'Brien**

Kevin’s plans for the prize money: *“I’d like to use the prize money to provide electronic hardware kits to schools so they can learn a bit about how electronics works... I will also prepare instructions for experiments that could be carried out using the kits, ideally tailored to the different age groups of the schools/classes involved.”*

Read Kevin’s [thank you message](#).

### **Student winner: Emily**

Emily from St Colmans Clara National School was nominated by the engineers for being ‘participating, curious and had good questions’. Their questions in ASK included: “Have you ever used light (sun light) to power a tv without having to plug it in?” “How many problems have you solved so far in your career?” and “How many machines have you made so far to help doctors with people?”

As the student winner, Emily will receive a certificate and a gift voucher.



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## Feedback

We're still collecting feedback from teachers, students and engineers but here are a few of the comments made about the Health Zone...

I was impressed by the level of the questions from the students, both in the live chats and in the "Ask" section. I'm confident that there's no shortage of great up-and-coming scientists and engineers to fill the many roles that continue to be created in STEM industries and institutions across Ireland. – **Kevin, zone winner**

I have learned that there are so many different types of engineering. Asking the engineers questions has inspired me to be something like an engineer when I am older. I have always wanted to be a teacher or a doctor but I also love making things at home and doing this has made me realise that I can do all of these things in the one job. I hope to one day become an engineer who works on the human body and that does lots of lectures and it's all because of I'm an engineer 2019!!!!!! – **Student**

And here are a few comments made about March's *I'm an Engineer* activity...

It was a fantastic experience.  
Loved it – **Teacher**

A great opportunity to use the technology the students have now in their schools and help them understand the engineering world. – **Engineer**

We're just finished our live chat with Noel and Alice. The girls had such fun and got a great buzz from the engineers answering their questions on the spot.

Thanks so much for organising I'm an engineer! We'll definitely do it again next year! The girls loved the immediate responses. The engineers were very clear in their responses and were very witty. There were not only engineering questions but also jokes and chats about pancake Tuesday!

The girls told the engineers about their upcoming visit to Science Blast in the RDS on Thursday. The girls will be presenting their project on bacteria and were asking for advice. They got great advice. They have also changed their minds about who they are going to vote for! – **Teacher**