



***I'm a Scientist
& I'm an Engineer
Ireland 2019
Summary Report***

Gallomanor
creating community conversations

 **SFI Discover**
Science Foundation Ireland



Highlights

- **Activity in live chats has increased by 35%.** While overall engagement levels remained relatively steady across the events compared with the previous year, and with a similar number of students actively taking part, 2019 saw more than 10,000 additional lines of live chat written compared with 2018 (39,266 up from 29,033).
- **The majority of students taking part in the events were from underserved communities,** with 57% of students taking part from schools in SFI target counties.
- **The Shape the Future Zone successfully engaged students and the public in 3D printing and its role in helping to create a sustainable future.** 48 different and creative ideas were submitted showing how people of different ages had interpreted the brief. Between July and November 2019, the Shape the Future site was viewed 23,916 times by 1,991 users. The winning water filter idea will be produced, and promoted by the winner, continuing the impact of this zone.
- **Students saw a wide range of science and engineering happening across Ireland, helping them to better understand how science and engineering is done, and smashing stereotypes:**
 - When teachers who took part in our 2019 projects (IAS and IAE in Ireland and the UK) were asked to rate the effectiveness of the project from 1 (not effective) to 5 (highly effective), teachers gave average scores of:
 - 4.1 (n=119) in terms of teaching students about how science works
 - 4.3 (n=122) for improving students motivations towards science/engineering
 - 4.5 (n=122) helping students to see how science/engineering relates to the world around them, and
 - 4.6 (n=122) for challenging students' stereotypes about scientists/engineers.
- **Scientists and engineers improved their communications skills and gained a greater appreciation for the value of their work.**
 - 80% (20/25) reported an increase in their appreciation of the value of their work, and 72% (18/25) in their enthusiasm towards their own work.
 - 88% (22/25) reported increases in their skill and confidence at communicating their work, and 92% (23/25) said that their interest in public engagement had increased.

Objectives, outputs, outcomes

Objective	Output
<p><i>I'm a Scientist:</i> 4 zones in Science Week November 2019</p> <ul style="list-style-type: none"> ■ 2 SFI zones for secondary students ■ 1 SFI zone for primary students ■ 1 Wellcome zone 	<p>Ran 5 zones: Drug Discovery, Energy, Food, Water, Sodium (general science).</p> <p>An additional zone was run to the planned four, in lieu of the public Big Week on the Farm Zone, which was not run.</p>
<p><i>I'm an Engineer:</i> 3 zones in Engineers Week March 2019</p> <ul style="list-style-type: none"> ■ 2 SFI Zones (including 1 Space Zone) ■ 1 Wellcome zone 	<p>Ran 3 zones: Health, Production, Space.</p>
<p>2 public zones:</p> <ul style="list-style-type: none"> ● I-Form ● Big Week on the Farm 	<p>The Shape the Future Zone (I-Form) ran during November 2019 where five shortlisted entries were discussed and voted on by students and the public. The winning entry will be produced by I-Form.</p> <p>The Big Week on the Farm Zone was not run. The TV programme was scheduled for the first week of the Autumn term. That was not a good time to run a school zone, and no decision was made in time before the summer break. Funding was re-allocated to run an additional zone in IAS November 2019.</p>
<p>Careers Zone:</p> <ul style="list-style-type: none"> ■ Enabling students to have workplace interactions when it suits them. ■ 20 DEIS schools on our lists will be offered year-round access for their students to use careers.imascientist.org.uk, allowing them to question people working inside and outside Irish research about STEM careers. 	<p>Students taking part in <i>I'm an Engineer</i> were invited directly to join the Careers Zone via a link on their profile page.</p> <p>All teachers at participating DEIS schools were invited to join the Careers Zone.</p>
<p>24 scientists, 15 engineers take part in <i>I'm a Scientist</i> and <i>I'm an Engineer</i></p>	<p>30 scientists and 18 engineers were recruited.</p>
<p>1,750 secondary school students log in (350 per zone) to <i>I'm a Scientist</i> and <i>I'm an Engineer</i></p>	<p>2,384 students logged into secondary zones.</p>

<p>700 primary school students log in (350 per zone) in <i>I'm a Scientist</i> and <i>I'm an Engineer</i></p>	<p>432 students logged into the primary school zone. Across the events, 1,082 primary school students actively took part.</p>
<p>150 family members engage with the zones</p>	<p>99 students logged into the evening chats.</p> <p>Participants were asked whether they were taking part with their family, 27% of respondents (22/83) reported that they were a student taking part with their family, 2 were a parent or carer. This gives a minimum estimate of 28 family members engaging with the zones.</p>
<p>I-Form Zone:</p> <ul style="list-style-type: none"> ■ 1,000 people vote 	<p>185 votes were cast in the Shape the Future Zone.</p>
<p>Big Week on the Farm Zone:</p> <ul style="list-style-type: none"> ■ 200 people active on the site ■ 5,000 visits 	<p>This was not run.</p>
<p>At least 75% of students actively engage</p>	<p>87% of students actively engaged with scientists/engineers.</p>
<p>Offer places to at least 28 schools from counties of Leitrim, Carlow, Monaghan, Roscommon, Cavan, Louth, Clare, Kerry, Meath, Kildare, Donegal, Wicklow.</p>	<p>26 schools from these counties were offered places.</p> <p>All schools which applied from these counties were offered a place.</p> <p>22 of these schools actively took part, in addition to 23 schools from Dublin.</p>
<p>100,000 people viewing imascientist.ie, 8,000 viewing imanengineer.ie in 2019</p>	<p>Between 1 January and 19 December 2019, imascientist.ie received 292,994 page views from 59,491 users</p> <p>imanengineer.ie received 62,499 page views from 7,062 users.</p> <p>These figures are lower than anticipated, likely in part due to not having run the additional public zone.</p>

Objective

Outcome

Students:

- See wide range of science and engineering happening across Ireland
- Get a better understanding of how science is done in the real world.
- Stereotypes about scientists are smashed, students see that scientists are normal people they can relate to.
- Learn that engineering is about more than spanners, hard hats and building bridges
- Students get inspired to study STEM subjects, seeing how what they learn in school lessons is used in careers in the real world.

Students saw the wide range of science/engineering happening across Ireland, gained a better understanding of how science is done in the real world, and saw stereotypes about scientists and engineers smashed.

"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 in Health Zone**

Students were inspired to study STEM subjects, and saw how what they learn in school lessons is used in careers in the real world.

When asked to rate the effectiveness of the activities from 1 (not effective) to 5 (highly effective), teachers reported average scores of:

- 4.3 (n=122) for improving students' motivations towards science/engineering
- 4.5 (n=122) for improving students' awareness of how science/engineering relate to the world around them

STEM professionals:

- Understand what students think about their jobs and their role in society
- Improve communication skills
- Increase enthusiasm and confidence in communicating with public audiences

Scientists and engineers gained a greater understanding of what students think about their jobs and role in society:

- 96% (24/25) of scientists and engineers responding to the post event survey reported increased understanding of how students view science/engineering
- *"I have definitely learned a lot about the big concerns of children today, which seemed to be climate change. I was proud to tell them how my research could have a huge impact on climate change, but also making kids realise the importance of farming in society."* — **Scientist, November 2019**

Scientists and engineers improved their communication skills, and gained enthusiasm and confidence in communicating with the public:

- 88% (22/25) reported that their skill at communicating their work had increased
- 92% (23/25) reported that their interest in doing public engagement had increased after taking part, and 88% (22/25) that their confidence in communicating their work had increased.

Audience & activity

Our primary target audience are school students in Ireland; Primary Level, Junior Cycle (Secondary Level), and Senior Cycle (Secondary Level). Students are given access to the site by their teachers, to whom we promote the activities.

During the two events, our primary (registered on the site) audiences comprised:

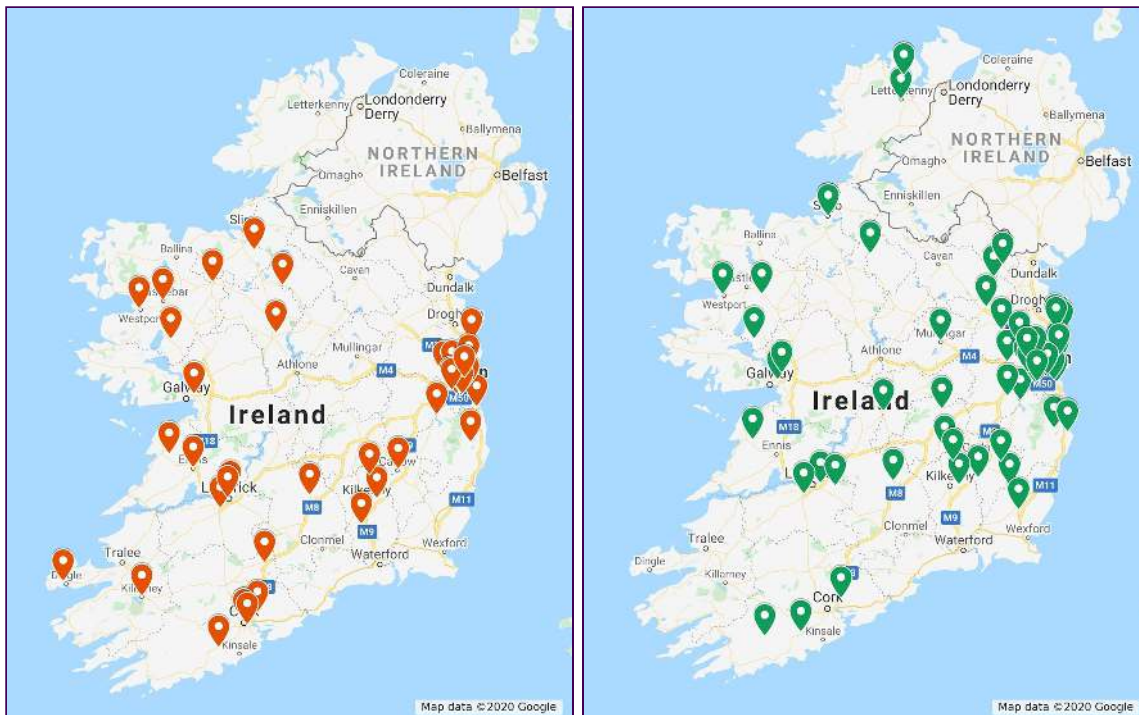
- **1,000 people taking part in IAE, March 2019**
 - 18 engineers
 - 982 students (85% active in ASK, CHAT, VOTE, or comments)
- **1,864 people taking part in IAS, November 2019**
 - 30 scientists
 - 1,834 students (87% active)

Zone breakdown is shown below:

	Registered students	% Active students ¹	Scientists / Engineers
IAS			
Drug Discovery	381	86%	6
Energy	432	92%	6
Food	273	86%	6
Water	363	82%	6
Sodium	385	90%	6
IAE			
Health	371	86%	6
Production	353	84%	6
Space	258	85%	6
Total	2,816	87%	

¹ % of registered students who submitted a question in ASK, took part in a live CHAT with scientists/engineers, commented, or cast a VOTE.

Schools & students



*Above: Maps of schools signed up to take part in **I'm an Engineer, March 2019** (left) and **I'm a Scientist, November 2019** (right) [Map data: Google]*

2,437 students (87% of those who logged in to the site) from 68 schools actively engaged with the scientists and engineers by asking a question, taking part in a live chat, casting a vote, or writing a comment. 1,377 (57% of total) students were from schools in SFI target counties.

Family engagement

99 students logged into live CHATs from home during the evening. Participants were asked whether they were taking part with their family, 27% of respondents (22/83) reported that they were a student taking part with their family, 2 were a parent or carer. This gives a minimum estimate of 28 family members engaging with the zones.

Key activity figures

	IAS			IAE		
	Historic IAS Zone average	2019 Zone average	2019 Zone total	Historic IAE Zone average	2019 Zone average	2019 Zone total
Scientists/engineers	5	6	30	5	6	18
Schools	11	11	56	10	10	29
Registered students	372	367	1,834	295	327	982
% Active students	86%	87%	87%	84%	85%	85%
Questions asked	692	851	4,253	456	407	1,220
Questions approved	303	384	1,921	223	191	572
% Questions approved	44%	48%	45%	49%	48%	47%
Answers given	511	529	2,644	426	400	1,199
Comments	67	69	343	42	38	113
Votes	304	281	1,407	227	236	707
Live chats	16	17	87	14	18	53
Lines of live chat	4,359	5,092	25,459	3,649	4,602	13,807
Chat lines per chat	271	293	-	249	261	-

Breakdown of figures for each zone can be found in the Zone reports, published at about.imascientist.ie/category/zone-reports/ and imanengineer.ie/category/zone-reports/.

Challenges

Some schools were invited to take part with full year groups (larger number of classes than usual). When we gave Teachers multiple classes, they often passed on packs to new teachers who didn't know how the events work. In previous events, team members visited some schools in the UK where we saw this having negative impacts in the classroom. In November we included a 'new teacher' card with a URL for new teachers to sign up and get their own accounts to make the activity easier for them to use.

In November, we posted paper pre and post event surveys to 16 schools (30 classes). Only 3 schools posted them back. When we asked teachers for feedback no one replied. We are continuing to look for feedback on this evaluation method, and will adapt it in future events.

Submissions for the Shape the Future competition (I-Form Zone) were low initially, following promotion via our own and partner networks as well as on social media. The deadline for entries was extended, and ultimately a good number of entries — 48 ideas — were submitted, including a wide range of different ideas. A large proportion of them were from school students; this was a result of a few teachers creating ideas with their classes.

There was a reasonable interest in the Zone from students taking part in the main IAS event as well as the public — with 165 people registering in the Zone through social media — however fewer people actively engaged in the Zone through posting a question, and turnout in the live chats was low. The 185 votes cast falls short of the 1,000 vote target. Questions in the Zone demonstrated that people were interested and engaged with the ideas, asking questions about how various aspects of the ideas would work, their practicalities, and reasons for certain design choices.

The Big Week on the Farm Zone was not run. The TV programme was scheduled for the 1st week of the Autumn term. That was not a good time to run a school zone, and no decision was made in time before the summer break. Funding for this zone was re-allocated to run an additional I'm a Scientist Zone during November Science Week 2019.

Press & social media

Tyndall National Institute News: *Tyndall Scientists participate in 'I'm a Scientist, get me out of here!' for Science Week 2019,*

tyndall.ie/news/tyndall-scientists-participate-in--i-m-a-scientist--get-me-out-of-here-for-science-week-2019/

Teagasc News: *Festival of Farming and Food – SFI Science Week at Teagasc 2019,*

teagasc.ie/news--events/news/2019/festival-of-farming-food.php

Additionally, the events were promoted on Twitter, through the @imascientist, and @IAEGMOOH accounts, and using the #IASIE, and #IAEIE hashtags, which participants were encouraged to use. Tweets during the events, using the hashtags can be found at the following URLs:

- [twitter.com/search?lang=en-gb&q=\(%23iasie\)%20until%3A2019-11-30%20since%3A2019-11-01&src=typed_query](https://twitter.com/search?lang=en-gb&q=(%23iasie)%20until%3A2019-11-30%20since%3A2019-11-01&src=typed_query)
- [twitter.com/search?lang=en-gb&q=\(%23iaeie\)%20until%3A2019-03-30%20since%3A2019-02-15&src=typed_query](https://twitter.com/search?lang=en-gb&q=(%23iaeie)%20until%3A2019-03-30%20since%3A2019-02-15&src=typed_query)

Zone reports

Summary activity data, examples of good engagement, and preliminary feedback are published in Zone Reports following each event. These are available online:

- about.imascientist.ie/category/zone-reports/
- imanengineer.ie/category/zone-reports/

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