

## **External Review of the REFRESH Project by Amalia Lucena (DAFM) facilitated by Susan Enright (MTU and coordinator of previous REFOHCUS review)**

### **1. What was the point of the work?**

The REFRESH project aimed to bridge the gap between scientists and members of the public, particularly focusing on engaging traditionally underrepresented groups in STEM. Through workshops on the environment, sustainability, and health, the project sought to foster inclusive dialogue, promote STEM education, and encourage future engagement.

### **2. What difference did it make, was it effective?**

The project was effective in engaging diverse community members, many of which are not commonly seen at STEM outreach events. For example, members of the travelling community and senior women particularly from rural areas. It was clear from the capstone event the project successfully facilitated meaningful conversations about climate change, sustainability, and farming in an inclusive manner. The surveys and end of project meetings suggest that participants found the events engaging, relevant, and thought-provoking, demonstrating the project's impact in making science more accessible and relatable.

### **3. What happened that wouldn't otherwise have happened?**

Without REFRESH, many of the targeted communities may have remained disengaged from STEM discussions. The project's emphasis on co-creation meant that participants actively shaped the topics and discussions rather than merely receiving information. The workshop events were designed to promote a participative environment, where fluid communication and engagement happened between participants and experts. Additionally, the capstone event using live streaming to bring together urban and rural communities to collectively discuss sustainable farming fostered new connections that might not have emerged otherwise.

### **4. What learnings do you think came from this?**

Key learnings from the project include the importance of accessibility and relevance in science outreach. The public was particularly captivated by the hands on events. The success of the co-creation model highlights the value of community-led engagement strategies but also demonstrates how this can help overcome hesitancy in community members who believe science is too confusing.

### **5. What should they do next?**

To build on its success, REFRESH should consider strengthening partnerships with local organizations and educational institutions involvement. Further, developing long-term engagement strategies—such as follow-up initiatives or community-led action groups—could maintain momentum and deepen impact. The events were mostly attended by adults, so engaging younger generations would be a step forward, by organising workshops or STEM events in schools. Also given the success of the capstone event in bringing two distant communities together (Dublin and Kerry), it would be useful to consider if doing so at future

events in either place would increase impact. They should also ensure the recorded podcast at the capstone event is released.

#### **6. Have they achieved their aims?**

REFRESH did reach the aims it laid out. The project successfully engaged traditionally underrepresented communities, facilitated multigenerational dialogue, and fostered collaboration between urban and rural groups. It promoted STEM education through participatory discussions and workshops. The changes in views from participants shown in the before and after programme surveys demonstrates how science outreach can impact the general public. While there is room for continued growth and outreach, the project has demonstrated clear success in its mission and provides a strong foundation for future initiatives.

The following surveys were collected and conducted by all the REFRESH team. The post project interviews were collected by Jason Keegan.

## **Summary**

Science capital surveys were distributed to all those who attended events in 2024. The initial questionnaire had 26 respondents. There was a good spread of participant ages with most age ranges represented, however the majority of participants were in the 60+ category. Most people were referred to the programme by a friend, with the partnerships responsible for the remainder of the Dublin attendance and the Irish Countrywoman's association and MTU responsible for the remainder of attendance in Kerry. All respondents had completed some education and there was an even spread of qualifications across the respondents, with the majority having completed Upper Secondary Education. The majority of participants were female with 19% of respondents being male. The participants were asked where they learned about science. Most had done some science education in school. However, about a third of participants reported having no science education at any stage during school.

When asked about their attitudes towards science, the majority of participants agreed, or strongly agreed that science was needed, interesting, inspiring, useful and honest. When asked about scientists specifically, most participants agreed or strongly agreed that scientists were needed, interesting, inspiring, useful and honest. When asked about their attitudes towards science, most people agreed or strongly agreed that nearly anyone can do science if they work at it. The majority disagreed or strongly disagreed that Science has no relation to their lives. A majority of people also agreed or strongly agreed that science changes my ideas about the world, as well as it being important to keep up to date with science. When asked about their attitudes on the value of science, the majority neither agreed nor disagreed that "scientific research is a priority for me". Otherwise participants were supportive with 41% agreeing or strongly agreeing that scientific research is a priority for them. The majority also believed that science is making the world a better place.

The same survey was conducted after the project (17 responses) and a number of changes were reported. After taking part in the program, respondents were more likely to say that Science and scientists are needed. Respondents were more likely to say that Scientists provided clear information. A number of positive attitude changes were reported after taking part in the programme, with more participants thinking that "nearly everyone can do science if they work at it". More people also reported that "learning science changes my ideas about how the world works". Finally, more people reported that "it is important for me that I keep up to date about science" after taking part in the program.

## Science Capital Survey at the beginning of the project

Science capital surveys were distributed to all those who attended events in 2024. The initial questionnaire had 26 respondents, and the following is a summary of the findings of the initial questionnaire. Each question in the survey is provided below and the responses are associated.

### *How old are you?*

There was a good spread of participant ages with most age ranges represented, however the majority of participants were in the 60+ category.

How old are you?	Number	Percentage
12-18	7	27
18-30	4	15
31-40	1	4
41-50	3	12
51-60	2	8
60+	9	35
Total	26	100

### *How did you hear about the programme?*

Most people were referred to the programme by a friend, with the partnerships responsible for the remainder of the Dublin attendance and the Irish Countrywoman's association and MTU responsible for the remainder of attendance in Kerry.

How did you hear about the programme?	Number	Percentage
Dublin North West Partnership	4	15
South Dublin County Partnership	5	19
Irish Countrywoman's Association	1	4
Munster Technological University	4	15
Referred by a friend	12	46
Total	26	100

*What is the highest level of education you have completed so far?*

All respondents had completed some education and there was an even spread of qualifications across the respondents, with the majority having completed Upper Secondary Education.

What is the highest level of education you have completed so far?	Number	Percentage
Primary Education	3	12
Lower Secondary	5	19
Upper Secondary	6	23
NFQ6 - Advanced Certificate	4	15
NFQ7 - Ordinary Bachelor's Degree	2	8
NFQ8 - Honours Bachelor's Degree	3	12
NFQ9 - Postgraduate Degree/Diploma	3	12
Total	26	100

*Gender*

The majority of participants were female with 19% of respondents being male.

Gender	Number	Percentage
Male	5	19
Female	21	81
Total	26	100

*When did you learn about Science?*

The participants were asked where they learned about science. Most had done some science education in school. However, about a third of participants reported having no science education at any stage during school.

When did you learn about science?	Yes	No	Unsure
Primary School	62%	29%	10%
Lower Secondary School	55%	32%	14%
Upper Secondary School	55%	35%	10%

*I think Science is...*

When asked about their attitudes towards science, the majority of participants agreed, or strongly agreed that science was needed, interesting, inspiring, useful and honest.

I think science is...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Needed	58%	26%	16%	0%	0%
Interesting	62%	29%	10%	0%	0%
Inspiring	42%	26%	26%	0%	5%
Useful	59%	24%	12%	0%	6%
Honest	56%	28%	17%	0%	0%

*I think scientists are...*

When asked about scientists specifically, most participants agreed or strongly agreed that scientists were needed, interesting, inspiring, useful and honest.

I think scientists are...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Needed	60%	30%	10%	0%	0%
Interesting	59%	29%	12%	0%	0%
Inspiring	45%	30%	20%	0%	0%
Useful	53%	24%	18%	6%	0%
Honest	35%	41%	24%	0%	0%

*Sources to trust...*

When asked about their level of trust for different sources of information, scientist and healthcare professionals had the greatest support with 91% agreeing or strongly agreeing that they trust these sources. The level of trust in TV and Radio, Print news and online news, was much lower with most participants reporting that they neither agree nor disagree that they can trust these sources. This likely reflects the variety of programs and their different levels of quality and journalistic rigour available on all of these platforms.

I trust...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Scientists	43%	48%	5%	0%	5%
TV and Radio News Programmes	13%	26%	43%	13%	4%
Printed News	6%	11%	61%	17%	6%
Online news websites	0%	6%	81%	6%	6%
Healthcare professionals	43%	48%	0%	0%	10%
Health Agencies	41%	41%	14%	0%	5%

Agriculture Agencies	22%	44%	28%	0%	6%
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*I trust the scientific information shared on...*

Participants reported trusting information shared on social media much less, the majority of participants disagreeing or strongly disagreeing that they trust information on Facebook, Twitter/X, TikTok, Instagram. For youtube the majority of people neither agreed nor disagreed, likely due to the wide variety of information available on youtube. Reserachgate had the most support of all the social media platforms, however many participants reported not being familiar with this particular site.

I trust the scientific information shared on...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Facebook	10%	0%	38%	24%	29%
Twitter/X	5%	0%	35%	30%	30%
TikTok	0%	0%	42%	32%	26%
Instagram	5%	0%	38%	33%	24%
Youtube	0%	0%	58%	26%	16%
Researchgate	17%	11%	44%	17%	11%

*I find the information from the following sources to be clear*

Scientists, healthcare professionals, health agencies and agriculture agencies were reported to provide clear information by the participants, the majority of respondents agreeing or strongly agreeing that these sources provide clear information. For TV and online news the majority of people responded that they could neither agree nor disagree that the information from these sources is clear.

I find the information from the following sources to be clear	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Scientists	32%	45%	14%	5%	5%
TV and Radio News Programme	13%	26%	52%	4%	4%
Printed news	9%	17%	70%	0%	4%
Online news websites	9%	17%	57%	9%	9%
Healthcare professionals	30%	48%	17%	0%	4%
Health Agencies	25%	46%	21%	0%	8%
Agriculture Agencies	14%	43%	38%	0%	5%
Social Media	10%	5%	48%	14%	24%

### *Attitudes to science*

When asked about their attitudes towards science, most people agreed or strongly agreed that nearly anyone can do science if they work at it. Most people did agree or strongly agree that some people will always find science hard. The majority disagreed or strongly disagreed that Science has no relation to their lives. A majority of people also agreed or strongly agreed that science changes my ideas about the worlds, as well as it being important to keep up to date with science.

Attitudes to science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Nearly everyone can do science if they work at it	35%	48%	13%	0%	4%
Some people will always find science hard	17%	65%	9%	9%	0%
Science has no relation to my normal life	0%	4%	17%	43%	35%
Learning Science Changes my ideas about how the world works.	35%	43%	17%	4%	0%
Its important to me that I keep up to date about science	35%	30%	22%	4%	9%

### *Attitudes to science and myself*

The majority of people agreed or strongly agreed that they are the type of person that can do science. Over 70% of respondents disagreed or strongly disagreed that “science is not for me”. Responses were more evenly spread when asked if they have a good understanding of science as well as when asked if they feel well informed about science.

Attitudes to science and myself	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I am the type of person that can do science	26%	35%	22%	13%	4%
Science is not for me	0%	0%	24%	43%	33%
I have a good understanding of science	22%	17%	30%	30%	0%
I am the type of person who can be a scientist	14%	14%	52%	19%	0%
In general I feel well informed about science	9%	32%	32%	27%	0%

### *Public and science*

The majority of respondents agreed or strongly agreed that ‘public money spent on science is well worth spending’ and that ‘the government should spend more money on scientific research’. The majority also agreed or strongly agreed that ‘the government should look for scientific evidence when deciding how to solve problems’ and that ‘scientific research should be a priority for our nation’. The overall support for science and scientific research is also emphasised by the majority of respondents disagreeing and strongly disagreeing with the statements that ‘the government is spending too much money on science’ and that ‘scientific discoveries are doing more harm than good’.

Public and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Public money spent on science is money well spent	35%	43%	13%	4%	4%
The government should spend more money on scientific research	43%	43%	9%	0%	4%
The general public should have a say in how science develops	22%	26%	39%	13%	0%
This country is spending too much on science	0%	0%	32%	55%	14%
The government should look for scientific evidence when deciding how to solve problems	43%	43%	9%	0%	4%
Scientific research should be a priority for our nation	50%	32%	18%	0%	0%
Scientific discoveries are doing more harm than good	5%	5%	14%	36%	41%

### *My attitudes on the value of science*

When asked about their attitudes on the value of science, the majority neither agreed nor disagreed that “scientific research is a priority for me”. Otherwise participants were supportive with 41% agreeing or strongly agreeing that scientific research is a priority for them. The majority of respondents believed that scientist have a professional responsibility to talk about research with the public. Finally the majority also believed that science is making the world a better place.

Public and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Scientific research is a priority for me	23%	18%	59%	0%	0%

Scientists have a professional responsibility to talk about research findings with the public	42%	25%	29%	0%	4%
Science is making the world a better place	59%	23%	14%	0%	5%

### *Community and Science*

When asked about the science related facilities in their areas most people neither agreed nor disagreed that there is a lack of science facilities in the local schools, while a large proportion agreed that there was a lack in their communities. The respondents were split on the topic of scientific role models in the community with 42% agreeing that these people were role models in their community while 48% neither agreed nor disagreed, or disagreed with the statement, possibly reflecting the different communities of the participants. Finally the majority of people neither agreed nor disagreed that their community has more access to science related activities than others.

Community and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
There is a lack of science facilities/teaching in the local schools	4%	42%	50%	4%	0%
There are science role models in my community	0%	43%	26%	22%	9%
I believe my community has more access to science related activities than other communities	0%	14%	55%	27%	5%

When asked about their level of trust in a variety of news sources, the majority disagreed or strongly disagreed that they could trust a mobile news app or social media. The level of trust was higher for traditional media such as television and radio with an almost even spread between agree, neither agree nor disagree, and disagree with television and radio being trustworthy. People were less sure of trusting podcasts, print newspapers and friends and family. With most people responding “neither agree nor disagree”.

Trust in news sources	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Mobile News App	0%	15%	35%	40%	10%
Television	0%	30%	35%	30%	4%
Social Media	0%	5%	40%	40%	15%
Radio	0%	36%	32%	27%	5%
News Website	0%	25%	40%	30%	5%
Podcast	0%	25%	45%	25%	5%
Print Newspaper	0%	29%	43%	24%	5%
Friends and family	11%	21%	42%	16%	11%



## Post Programme Responses

### *I think Science is...*

The attitudes remained favourable towards science with the majority of respondents reporting that they think science is needed, interesting, inspiring, useful and honest.

I think science is...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Needed	92%	8%	0%	0%	0%
Interesting	82%	18%	0%	0%	0%
Inspiring	73%	18%	9%	0%	0%
Useful	100%	0%	0%	0%	0%
Honest	70%	20%	1%	0%	0%

### *I think scientists are...*

Again the responses remained favourable with the majority of people agreeing that scientists are needed, interesting, inspiring, useful and honest.

I think scientists are...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Needed	82%	0%	18%	0%	0%
Interesting	59%	29%	12%	0%	0%
Inspiring	82%	18%	20%	0%	0%
Useful	82%	18%	18%	0%	0%
Honest	73%	9%	18%	0%	0%

### *I trust...*

When asked about their level of trust for different sources of information, scientists, healthcare agencies and healthcare professionals had the greatest support with the majority agreeing or strongly agreeing that they trust these sources. The level of trust in TV and Radio, Print news and online news, was much lower with most participants reporting that they neither agree nor disagree that they can trust these sources.

I trust...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Scientists	77%	15%	8%	0%	0%
TV and Radio News Programmes	0%	9%	55%	27%	9%
Printed News	0%	18%	55%	18%	9%
Online news websites	0%	10%	30%	60%	0%
Healthcare professionals	27%	55%	18%	0%	0%
Health Agencies	25%	58%	8%	0%	8%
Agriculture Agencies	9%	64%	18%	9%	0%

*I trust the scientific information shared on...*

In most cases, people did not trust scientific information that they encountered on most social media websites. Youtube and Researchgate, had the most support with 24% agreeing that they trust the information they find on Youtube, while 33% either agreed or strongly agreed that they trust the information they encounter on Researchgate.

I trust the scientific information shared on...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Facebook	0%	0%	50%	25%	25%
Twitter/X	0%	0%	50%	25%	25%
TikTok	0%	0%	58%	33%	8%
Instagram	0%	8%	42%	25%	25%
Youtube	0%	25%	42%	17%	17%
Researchgate	25%	8%	67%	0%	0%

*I find the information from the following sources to be clear*

Again, scientists, healthcare professionals, Health agencies, agriculture agencies, were reported to provide the clearest information with the majority of respondents agreeing or strongly agreeing that these sources have clear information. Information on social media was less clear to participants with an even spread across agree, neither agree nor disagree and disagree observed.

I find the information from the following sources to be clear	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Scientists	77%	15%	8%	0%	0%
TV and Radio News Programme	15%	46%	31%	8%	0%
Printed news	9%	36%	45%	9%	0%
Online news websites	8%	42%	33%	8%	8%
Healthcare professionals	58%	33%	8%	0%	0%
Health Agencies	33%	58%	8%	0%	0%
Agriculture Agencies	25%	42%	33%	0%	0%
Social Media	9%	27%	27%	27%	9%

### *Attitudes to science*

When asked about their attitudes towards science, most people agreed or strongly agreed that nearly anyone can do science if they work at it. Most people did agree or strongly agree that some people will always find science hard. The majority disagreed or strongly disagreed that Science has no relation to their lives. A majority of people also agreed or strongly agreed that science changes my ideas about the worlds, as well as it being important to keep up to date with science.

Attitudes to science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Nearly everyone can do science if they work at it	77%	15%	8%	0%	0%
Some people will always find science hard	46%	23%	8%	8%	15%
Science has no relation to my normal life	8%	0%	0%	33%	58%
Learning Science Changes my ideas about how the world works.	69%	31%	0%	0%	0%
Its important to me that I keep up to date about science	37%	25%	8%	0%	0%

### *Attitudes to science and myself*

The majority of people agreed or strongly agreed that they are the type of person that can do science. Over 80% of respondents disagreed or strongly disagreed that “science is not for me”. Responses were more evenly spread when asked if they have a good understanding of science as well as when asked if they feel well informed about science.

Attitudes to science and myself	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I am the type of person that can do science	31%	62%	8%	0%	0%
Science is not for me	0%	8%	8%	42%	42%
I have a good understanding of science	8%	46%	31%	15%	0%
I am the type of person who can be a scientist	15%	23%	31%	23%	8%
In general I feel well informed about science	8%	46%	23%	23%	0%

### *Public and science*

The majority of respondents agreed or strongly agreed that ‘public money spent on science is well worth spending’ and that ‘the government should spend more money on scientific research’. The majority also agreed or strongly agreed that ‘the government should look for scientific evidence when deciding how to solve problems’ and that ‘scientific research should be a priority for our nation’. The overall support for science and scientific research is also emphasised by the majority of respondents disagreeing and strongly disagreeing with the statements that ‘the government is spending too much money on science’ and that ‘scientific discoveries are doing more harm than good’.

Public and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Public money spent on science is money well spent	62%	23%	15%	0%	0%
The government should spend more money on scientific research	62%	31%	8%	0%	0%
The general public should have a say in how science develops	31%	38%	23%	8%	0%
This country is spending too much on science	0%	0%	38%	46%	15%
The government should look for scientific evidence when deciding how to solve problems	46%	38%	15%	0%	0%
Scientific research should be a priority for our nation	42%	58%	0%	0%	0%
Scientific discoveries are doing more harm than good	0%	0%	15%	15%	69%

### *My attitudes on the value of science*

When asked about their attitudes on the value of science, the majority agreed or strongly agreed that that “scientific research is a priority for me”. The majority of respondents believed that scientist have a professional responsibility to talk about research with the public. Finally the majority also believed that science is making the world a better place.

Public and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
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Scientific research is a priority for me	23%	46%	23%	8%	0%
Scientists have a professional responsibility to talk about research findings with the public	69%	23%	0%	8%	0%
Science is making the world a better place	62%	31%	8%	0%	0%

### *Community and science*

When asked about the science related facilities in their areas most people neither agreed nor disagreed that there is a lack of science facilities in the local school, while a large proportion agreed that there was a lack in their communities. The respondents were split on the topic of scientific role models in the community with 38% agreeing that these people were role models in their community while 46% neither agreed nor disagreed, or disagreed with the statement, possibility reflecting the different communities of the participants. Finally the majority of people neither agreed nor disagreed that their community has more access to science related activities than others.

Community and science	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
There is a lack of science facilities/teaching in the local schools	15%	38%	31%	15%	0%
There are science role models in my community	15%	23%	46%	15%	0%
I believe my community has more access to science related activities than other communities	15%	8%	69%	8%	0%

### *Trust in news sources*

No clear trends were observed in the trust for different news sources. In most cases the majority of respondents neither agreed nor disagreed or disagreed that the various sources of information were trustworthy.

Trust in news sources	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Mobile News App	0%	22%	22%	56%	0%
Television	8%	25%	35%	25%	8%

Social Media	8%	8%	42%	25%	17%
Radio	8%	33%	33%	17%	8%
News Website	8%	25%	42%	17%	8%
Podcast	8%	25%	33%	25%	8%
Print Newspaper	0%	33%	50%	8%	8%
Friends and Family	8%	17%	50%	17%	8%

## Comparison between Phase 1 and Phase 2 of the Science Capital Survey

The responses to the questionnaires were compared before and after the programme by means of the Mann-Whitney-U test.

After taking part in the program, respondents were more likely to say that Science is needed. No differences were observed for the other questions.

I think science is...	Median before	Median after	p-value
Needed	5	5	0.034
Interesting	5	5	0.231
Inspiring	4	5	0.093
Useful	5	5	0.454
Honest	5	5	0.474

### *I think scientists are...*

After taking part in the program, respondents were more likely to say that Scientists are needed. No differences were observed for the other questions.

I think scientists are...	Median before	Median after	p-value
Needed	5	5	0.044
Interesting	5	5	0.361
Inspiring	4	5	0.104
Useful	5	5	0.092
Honest	4	5	0.131

### *I trust...*

No significant differences were observed in terms of peoples level of trust in various sources before and after the programme.

I trust...	Median before	Median after	p-value
Scientists	4	5	0.081
TV and Radio News Programmes	3	3	0.065
Printed News	3	3	0.840
Online news websites	3	2	0.072
Healthcare professionals	4	4	0.394
Health Agencies	4	4	0.519
Agriculture Agencies	4	4	0.826

*I find the information from the following sources to be clear*

After taking part in the program, respondents were more likely to say that Scientists provided clear information, while no differences were observed for the other information sources.

I find the information from the following sources to be clear	Median before	Median after	p-value
Scientists	4	5	0.016
TV and Radio News Programme	3	4	0.315
Printed news	3	3	0.470
Online news websites	3	3.5	0.361
Healthcare professionals	4	5	0.106
Health Agencies	4	4	0.251
Agriculture Agencies	4	4	0.434
Social Media	3	3	0.396

*Attitudes to science*

A number of positive attitude changes were reported after taking part in the programme, with more participants thinking that “nearly everyone can do science if they work at it” More people also reported that “learning science changes my ideas about how the world works”. Finally, more people reported that “it is important for me that I keep up to date about science” after taking part in the program. No differences were seen for the other variables, both of which captured more negative opinions about science.

Attitudes to science	Median before	Median after	p-value
Nearly everyone can do science if they work at it	4	5	0.026
Some people will always find science hard	4	4	0.605
Science has no relation to my normal life	2	1	0.195
Learning Science Changes my ideas about how the world works.	4	5	0.028
Its important to me that I keep up to date about science	4	5	0.047

### *Attitudes to science and myself*

No differences were observed in these variables.

Attitudes to science and myself	Median before	Median after	p-value
I am the type of person that can do science	4	4	0.157
Science is not for me	2	2	0.659
I have a good understanding of science	3	4	0.597
I am the type of person who can be a scientist	3	3	1.000
In general I feel well informed about science	3	4	0.616

### *Public and science*

No differences were observed between these variables.

Public and science	Median before	Median after	p-value
Public money spent on science is money well spent	4	5	0.167
The government should spend more money on scientific research	4	5	0.307
The general public should have a say in how science develops	3	4	0.287
This country is spending too much on science	2	2	0.821
The government should look for scientific evidence when deciding how to solve problems	4	4	0.943
Scientific research should be a priority for our nation	4.5	4	0.921
Scientific discoveries are doing more harm than good	2	1	0.146

### *My attitudes on the value of science*

No differences were observed between these variables.

Public and science	Median before	Median after	p-value
Scientific research is a priority for me	3	4	0.370
Scientists have a professional responsibility to talk about research findings with the public	4	5	0.093

Science is making the world a better place	5	5	0.726
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## Event and Programme Feedback

Participants were invited to complete feedback forms after each event. Below is a summary of the responses to specific questions asked after each event. In each case the vast majority of respondents agreed or strongly agreed with all of the below statements.

Trust in news sources	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I enjoyed the event	86%	14%	0%	0%	0%
The content was relevant to me	62%	35%	3%	0%	0%
The content was interesting to me	73%	27%	0%	0%	0%
I would recommend the event	77%	23%	0%	0%	0%
I gained new knowledge	86%	14%	0%	0%	0%
I have a better understanding of the topics covered	73%	27%	0%	0%	0%
I will put this new knowledge to use in my life	60%	29%	11%	0%	0%
I will share this knowledge with friends	65%	32%	3%	0%	0%
I will change my attitudes as a result of what I have learned	62%	29%	9%	0%	0%

Participants were also given the opportunity to tell us some of their favourite things about the events, some examples of which are reproduced below.

### *MTU Lab events*

“I’ve changed my attitude towards gardening and I will be more aware when walking on the beach, keeping an eye out for egg cases”

“I will be more aware of soil health and use of compost in the garden, also the amount of life in Tralee Bay!”

“I learned about soil and how to improve the soil in my garden by adding egg shells or chicken manure”

“Methane lab was more interesting than I expected. I didn’t know how great Ireland was for all this activity”

“Be more mindful when walking on local beaches”

“I will pass on this knowledge to my grandchildren”

#### *Biodiversity workshop*

“I am going to survey my garden and upload to biodiversity Ireland”

“I found a rare species of Ladybird. It was great because I didn’t know about it before!”

“I am a member of my local biodiversity group. I will pass on the knowledge I learned today to my colleagues

“I have been involved in ecology but don’t upload my data, but will after seeing how easy it is”.

#### *UCD Lab day*

“I will look for larvae in my garden and send them onto UCD”

“I will definitely discuss the mosquito study”

### **Post Programme Feedback**

Face to face exit interviews were held with 10 participants, with some additional participants providing written feedback. The participants were asked to respond to the following questions and some of their insights are presented below.

#### *What was your overall impression?*

All participants reported really enjoying the programme. Before attending their first event, people were unsure of what was involved and may have been reluctant to attend, but once they had attended one event and saw what was involved, they felt more comfortable going to other events and recommending it to others.

“I found it an eye opener – I actually didn’t realise, about the food waste, and I would love to know more. Definitely if there is a new programme I would go again.

#### *Which aspect stood out the most?*

There was a wide variety in what people reported as the aspect that stood out most in terms of the events. Overall, getting to go into the lab, wearing a lab coat, using a

microscope and getting hands on experience with specimens and equipment was reported as standing out the most by many of the participants

“More hands on experiments, explosions, things changing colour, a few Bunsen burners”

“Great to get back on a microscope” – Kerry ICA member

“I really enjoyed it because we didn’t do science in school. It was great to see what the lab is like and to see how easy it was to do science” – Dublin Northwest Partnership member

“Getting to do tests in the lab on our own pets, getting to see the science and be able to do the test yourself“ – Dublin Northwest Partnership member

“Labs were the best events, talks had a different function but were very informative” - Kerry ICA member

“The talks were very educational, particularly water. Favourite was the veterinary nursing lab“

*How would you rate the quality of the lecturers?*

All interviewees rated the lecturers very highly. One interviewee reported that the level of some of the talks could have occasionally been too high.

“very good, all experts in their fields. Level may have occasionally been too high “

*Did you think the topics covered were relevant and valuable?*

All of the interviewees reported that the topics covered were relevant and valuable. Many of the Kerry participants reported that they had started being much more aware of the things that they might encounter while walking on the beach. The amount of underwater life in Tralee Bay was also a big surprise for many of the participants and the programme made them more aware of the biodiverse nature of the bay.

“Sharks skates and rays particularly interesting, The amount of life in Tralee Bay, the life is like the Serengeti”

“We are scouring the beaches now for Mermaids purses, and getting the family involved too!”

“I attended the event in the community garden, and the biodiversity swatches were lovely. Have been telling people in my gardening class about them “

“Great to see the water testing in action and to hear how regularly our water is tested”

Were there any topics or themes you wish had been included or explored further?

All of the interviewees were happy with the topics presented. This is thanks to the co-creation model used, as these groups that were interviewed were the same groups that took part in the initial focus groups that decided what topics we would cover.

Did you find the events interactive and engaging enough?

The majority of the event involved physical activities and required the participants to get involved. These were also the events that people liked the most. They did also report that the lectures were interactive, with plenty of opportunities to ask questions and chat with the guest speakers.

“It was nice and varied, liked getting to go outdoors but also working on the microscope”

Were there any particular speakers/sessions that you found inspiring and impactful?

Lots of different speakers and sessions were mentioned here. The session in the MTU lab about Sharks, Skates and Rays was a particular favourite. Also mentioned were the mosquitos session in UCD. Some of the lecturers were also mentioned here with the freshwater pollution talk and the CircBio, Food waste lectures getting special mentioned by interviewees.

Were there any logistical issues that hindered your experience (timing, accessibility, facilities)?

Interviewees reported that the logistics were generally good, with the facilities appropriate for the events. In terms of timing, more advance notice of the events and holding events at weekends only were the most important logistical changes that the interviewees requested.

“Surprised that only a few of us (ICA) took an interest. Older generation, a bit far from Tralee so its hard to come out at night in the winter months”

“Biodiversity workshop at the weekend during the day would be better”

“Getting to UCD for an evening lecture, not ideal. Traffic prevented attendance”

*Do you feel more confident or inspired to engage with scientific topics or events after taking part in this?*

All of the interviewees reported feeling more confident and inspired to engage with scientific topics. Many reported that they already were doing more science related activities since taking part in the programme.

“I feel more confident and inspired to engage with scientific topics afterwards”

“They are on the beach and identifying animals on the beach, and more interested in recording bird songs”

“It was good for inspiration for new events. I’m coming from a more informed perspective when organising similar events.

“I really learned a lot, there were some terms that I was initially unfamiliar with but I eventually picked them up”

“I would say a lot of people are afraid of it, or think that I wouldn’t be able for it. Word of mouth an important way to recruit new participants“

“I enjoyed putting on the white coat, and the goggles”

“I enjoyed the ordinary language that was used to explain things”

“I did ask questions and I didn’t feel stupid, and they answered and explained all that I asked.

“everyone was so open and friendly and explained things in a way I could understand which would give me confidence to talk to and about science with scientists”