



Science and  
Technology  
Facilities Council

# Early Career Experiences of Public Engagement





## Members of the PEER Forum and their affiliation at time of joining

### Cohort 1 – recruited 2018

Martin Black, STFC - UK Astronomy Technology Centre  
Sally Cooper, University of Manchester (Jodrell Bank)  
Greg Corbett, STFC - Rutherford Appleton Laboratory\*  
Sabrina Gaertner, STFC - Rutherford Appleton Laboratory (ISIS)\*  
Dawn Geatches, STFC - Daresbury Laboratory  
Laura Kent, National Physical Laboratory\*  
Kristin Lohwasser, University of Sheffield\*  
Josie Rawes, University of Bristol  
William Taylor, STFC - UK Astronomy Technology Centre  
William Trickey, University of York

### Cohort 2 – recruited 2019

Sarah Bugby, Loughborough University  
Emily Lewis, STFC - Rutherford Appleton Laboratory\*  
Philippas Papadakis, STFC - Daresbury Laboratory (Chair of PEER Forum)\*  
Abby Powell, University of Glasgow  
Hannah Sargeant, The Open University  
Aran Singanayagam, Imperial College London  
Jamie Williams, University of Leicester

### Cohort 3 – recruited 2021

Chloe Gowling, University of Sussex  
James Lees, University of York  
Choong Ling Liew-Cain, University College London  
Omar Mahfoze, Imperial College London  
David McDonagh, STFC - Rutherford Appleton Laboratory (Vice-Chair of PEER Forum)  
Adam McMaster, The Open University  
Catherine Regan, University College London (Vice-Chair of PEER Forum)  
River Riley, University College London  
Katherine Shirley, University of Oxford

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# Introduction

Over the last 20 years there have been great efforts put into supporting mechanisms for enhanced science communication, public understanding of science, and more recently, public engagement. STFC (Science and Technology Facilities Council) have been continuous in their support for these efforts, and through their own work exploring the public engagement environment within their research disciplines identified that Early Career Scientists and Engineers were a particular pinch point for public engagement activity and support<sup>1</sup>. It certainly appears that most schemes to date target more established researchers or less research-intensive engagement activities such as undergraduate outreach programmes. To explore this, STFC established the Public Engagement Early-career Researcher, or PEER, Forum, a group for public engagement interested Early Career people affiliated with STFC funding or sites to discuss the issues they face, develop their skills and contribute to STFC's public engagement endeavours.

The study outlined in this report was born from discussions with the PEER Forum members. They identified early on shared concerns about the ways in which Early Career Scientists and Engineers are positioned within dialogues about public engagement, the ways in which their work is valued and rewarded, and the pressures they are under. They felt that they, STFC, and the wider sector could usefully seek to understand more about the experiences Early Career Scientists and Engineers have when considering being a part of public engagement, and the environment within which this occurs. This study is the result of these

discussions and builds on both their knowledge and understanding of being early career, and the experience of the STFC public engagement team and the consultant brought in to lead the project.

Over the course of a year, through a series of consultation events, an online questionnaire, focus groups, interviews and some social media interrogation, data was collected on all aspects of Early Career experiences of public engagement. The survey included Early Career staff and students as well as some public engagement professionals and managers of early career staff. It was sent to those working in higher education institutions, as well as other research sites and industry. All the participants were exceptionally generous with their time, opinions and sharing their experiences for good or bad, which has provided rich data for us to consider.

It should be noted that this was also the year of the COVID-19 pandemic arriving, which turned everyone's worlds upside-down, and put public engagement in the spotlight for its essential role in connecting the public to research findings. The pandemic meant a very changeable environment for the study participants, the PEER Forum, the STFC team and the consultant, and so it is within this light that the study is framed. When the world can be incredibly turbulent, how do we ensure public engagement provides a supportive, valuable contribution to the work of our Early Career Scientists and Engineers? The recommendations at the end of this report are perhaps a first step towards this.

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<sup>1</sup> STFC (2017), Public Engagement: Attitudes, Culture and Ethos. <https://webarchive.nationalarchives.gov.uk/ukgwa/20220205100405/https://stfc.ukri.org/news-events-and-publications/publications/>



## Who are Early Career Scientists and Engineers?

For the purposes of this study, the definitions around who should be considered under the Early Career Scientist and Engineer umbrella was led by the existing terms for the STFC PEER Forum<sup>2</sup>. In designing the study, the definitions were broadened somewhat to encompass those who might find themselves moving in and out of the exact remit of the Forum, and so in the context of this study the definition is as follows:

- They should have completed (or currently be studying for – including apprentices and PhD students) their highest level of academic qualification within the last ten years (not including any career breaks).
- They should come from across the breadth of STFC's pure and applied science and technology remit.
- They are most likely to be employed at a Higher Education Institute, or a research-intensive Public Sector Research Organisation or Research Laboratory (including STFC's own national laboratories).
- They will mostly likely work within a science and technology field in STFC's remit, or with a strong inter-disciplinary connection to STFC's remit, or use an STFC facility to enable their own research. Recent leavers were also eligible.
- They should be eligible for STFC public engagement funding.

From this point forward the phrase Early Career Scientists and Engineers will be shortened to ECSEs for ease of reading.

## What do we mean by public engagement?

For the purposes of this project 'public engagement' was defined to be any activity that an early career scientist or engineer might participate in that would be considered to contribute to the STFC strategy for public engagement. This includes public events, social media work, work with schools that is not solely focused on recruitment, and background work undertaken to support all of these. The PEER forum throughout has been concerned to make sure that any recommendations from this project are clear about what activities would be supported by changes made.

However, throughout the responses from ECSEs and their managers you will see the terms public engagement, outreach, and science communication used interchangeably. The ECSE understanding of what these terms mean is explored on page 10, because it became clear in the data that how public engagement professionals understood public engagement and related terms was not necessarily how they were being commonly used. Rather than change their individual contributions, the text is left verbatim to demonstrate the breadth of usage of these terms.

## Ethics, bias, trustworthiness and authenticity

This study was carried out as a type of autoethnographic or 'insider' research, relying on the experience and understanding of the consultant and the PEER Forum to help navigate a complex system. The nature of the topics being discussed raise various ethical issues particularly for those discussing relationships with employers and managers, and so accordingly all responses have been anonymised within this report. Any names used throughout this report have been changed to enable this. The majority of the participants were already inherently interested in and positive about the concepts of public engagement, so care has been taken in the analysis to make sure that generalisations are limited to this group. However, careful questioning has meant that participants were open and honest in their responses and have discussed many facets of their experiences with us.

By looking across several types of data, bringing together the information from the PEER Forum itself, the questionnaire, the focus groups and interviews, it becomes apparent that some issues are endemic to our public engagement environment. The recommendations of this report focus on those issues seen most commonly or causing most significant problems for our early career scientists and engineers.

<sup>2</sup> <https://www.ukri.org/what-we-offer/public-engagement/public-engagement-stfc/our-support-for-public-engagement-stfc/public-engagement-early-career-researcher-forum/>

# A snapshot of the questionnaire respondents



There were 138 usable responses returned by ECSEs. Given the everchanging situation with the pandemic, and the number of surveys being carried out at the time, this is a reasonable response. There is no way to estimate the total possible population size because of the huge variation in career routes at this level, but to give a sense of scale we know that STFC funds around 800 PhD positions annually.

Our respondents included a diverse range of voices but were for the main part very similar. The numbers below tell us who responded but do not describe the ECSE cohort more generally:

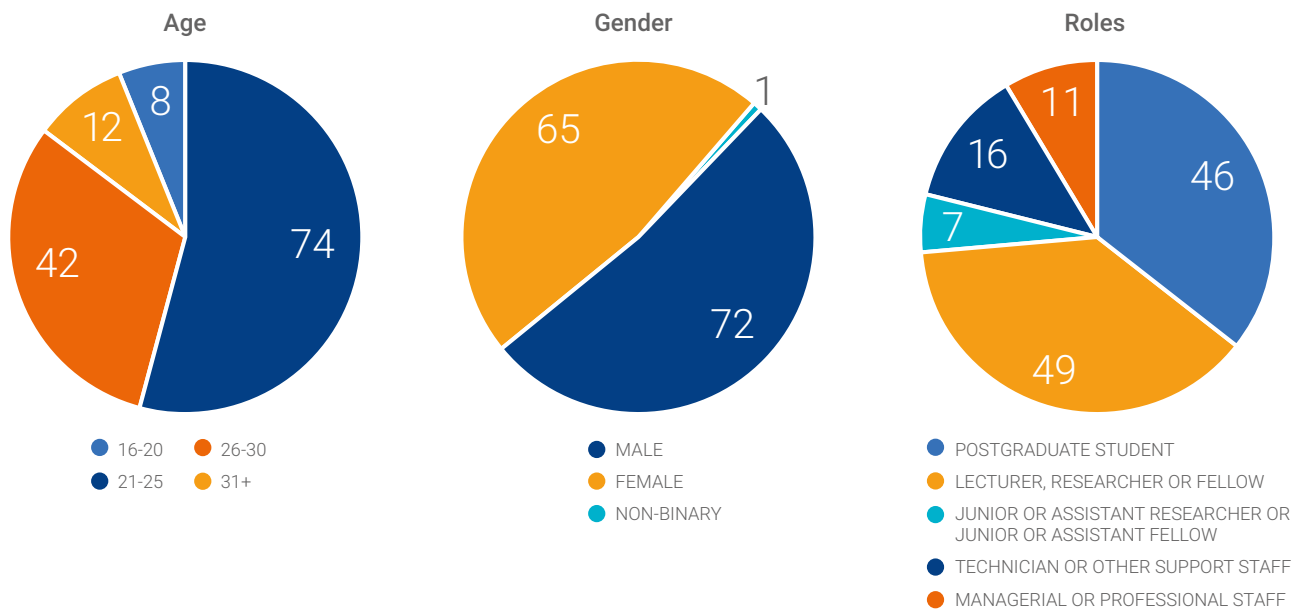
- Primarily astronomy related.
- British, with English as a first language.
- Mostly men, although a disproportionate number of women responded compared to the number of women holding relevant qualifications.<sup>3,4</sup>
- Mostly between 21 and 30 year olds.
- Mostly Postgraduate students or researcher/lecturer roles, although responses came from technical and professional staff and apprentices.
- 30% of respondents held an STFC fellow or studentship and 28% were employed directly by STFC. 14% were using, or had recently used, an STFC facility. 21% of respondents worked in an area of science and engineering relevant to STFC but was not receiving funding or using an STFC facility.

<sup>3</sup> Institute of Physics (2018) Academic staff in UK physics departments tells us that 19% of postdoctoral researchers in physics identify as female. [www.iop.org/sites/default/files/2019-10/Academic-staff-UK-physics-dept.pdf](http://www.iop.org/sites/default/files/2019-10/Academic-staff-UK-physics-dept.pdf)

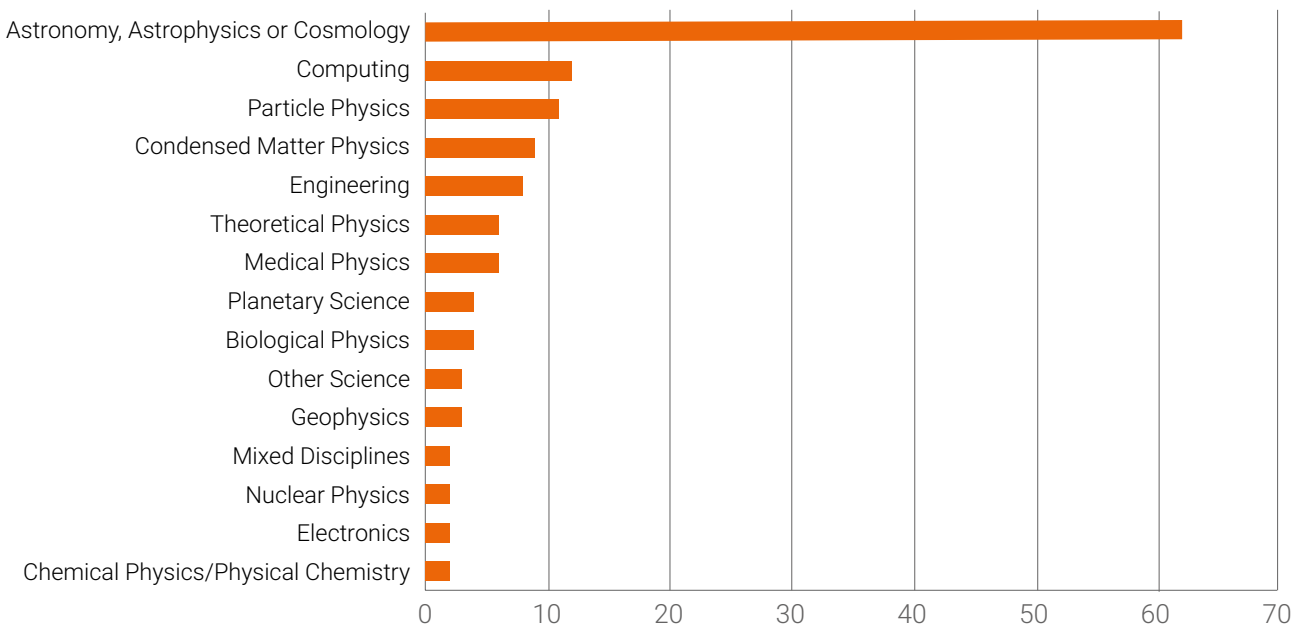
<sup>4</sup> We did not ask about race or sexual identity, as we anticipated response rates too low to make useful comparisons from. The respondents were asked if their gender matched that assigned to them at birth because we had already asked for gender. They were nearly all cisgender. One respondent identified as nonbinary, and two as transgender. But comparing these numbers to the LGBT+ in STEM Workplace study shows a lower response from transgender staff than we might have expected. Future studies in this area may wish to look specifically at the way diverse identities intersect with the pressures on those interested in public engagement. [www.iop.org/sites/default/files/2019-06/exploring-the-workplace-for-lgbtplus-physical-scientists\\_1.pdf](http://www.iop.org/sites/default/files/2019-06/exploring-the-workplace-for-lgbtplus-physical-scientists_1.pdf)



## RESPONDENT OVERVIEW



## HOW WOULD YOU DESCRIBE YOUR CURRENT AREA OF RESEARCH INTEREST?



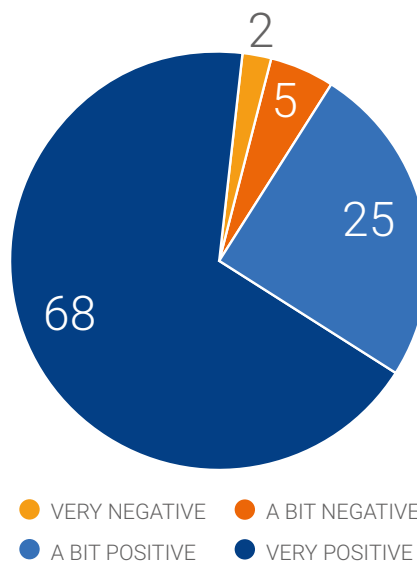
# A snapshot of the questionnaire respondents

Respondents were, as previously mentioned, very positive towards engagement overall. Only five had never taken part in any engagement activities at all, and the majority felt that they were or could be good at it.

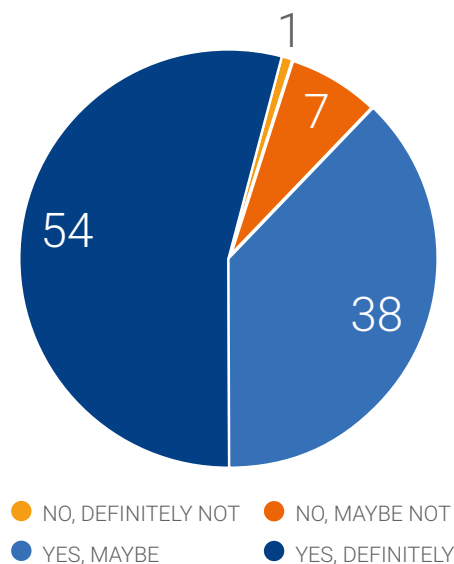
The types of activities respondents had been taking part in were primarily public events, both hands on and talks, with a somewhat surprisingly lower

number also taking part in similar events in schools. Contributing to the engagement activities of others and advocating for engagement were mostly considered as one-off or infrequent activities. Those people who were frequently doing one activity were more likely to also frequently do another type of activity, but not uniformly across all categories.

## OVERALL, WOULD YOU SAY YOU FEEL POSITIVELY OR NEGATIVELY ABOUT GETTING INVOLVED WITH PUBLIC ENGAGEMENT? (%)

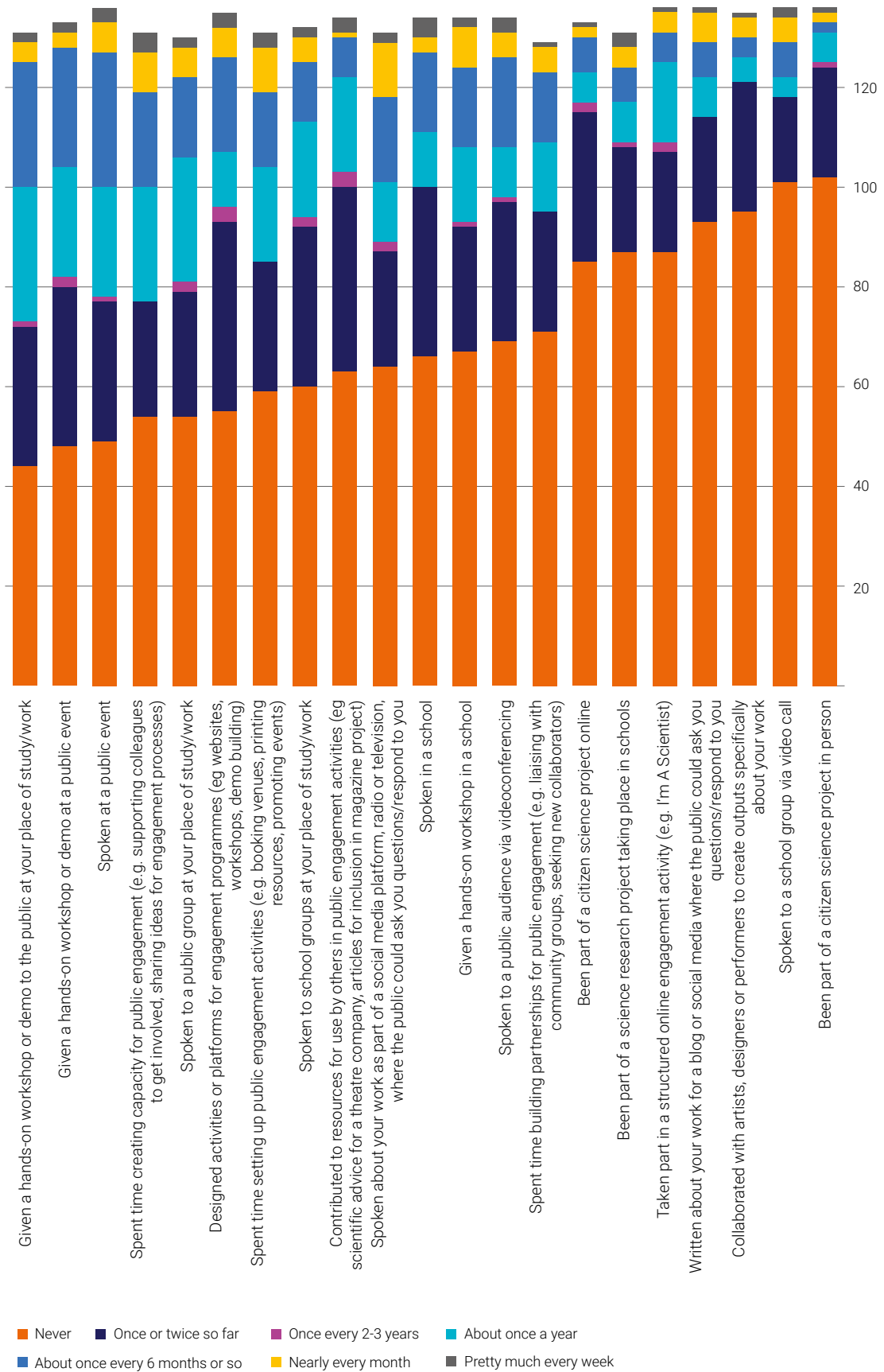


## IS PUBLIC ENGAGEMENT SOMETHING YOU THINK YOU ARE, OR COULD BE, GOOD AT? (%)





## HAVE YOU EVER CONTRIBUTED TO ANY PUBLIC ENGAGEMENT WORK?



# What public engagement means to ECSEs

Overall, respondents understand public engagement and outreach to be inclusive and require significant interaction between themselves and members of the public, but understanding of what each term means is by no means consistent.

**Using descriptive language in policy documents and funding calls to explain what activities are covered by a particular public engagement and outreach programme is essential if these diverse understandings are to be included in our work.**

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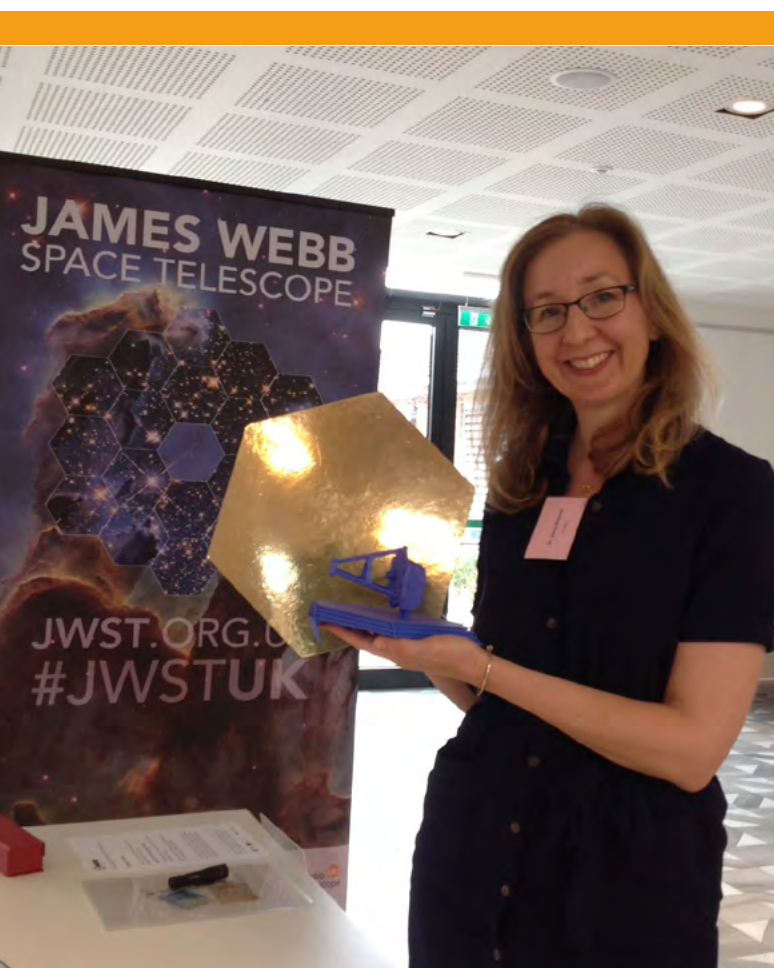
The ways in which engagement and outreach were described by ECSEs were more inclusive of the mentioned publics than might have been expected, tending away from dissemination in the main part. Responses drew distinctions between those activities that sought to inform audiences and those that might cause changes in action or behaviour from their participants, prioritising the latter, although only little

mention of influence on the researchers was made. There is disagreement about which term is most inclusive of different activities; particularly for those in an industrial or applied context, or those who have come to the UK from abroad, their understanding of public engagement is sometimes more aligned to that of public relations and promotion of institutions and research. Outreach was often defined to be the more targeted and interactive way of engaging people, demonstrating more effort being made by the researchers to design activities around the needs of their public. This conflicts with the current Higher Education/Public Engagement Professional usage common to the sector at the moment, where public engagement would be considered to be the broader term, and outreach heavily associated with recruitment and schools work. The important message here is that there is a lot of confusion and some hesitancy; definitions looped back on and contradicted themselves, as well as conflicting with answers from other parts of the study.

Those who manage ECSEs were a little more coherent in their definitions, particularly those with very senior posts. These positions also tended to talk about recruitment of future scientists in their definitions, and to link both public engagement and outreach heavily to work with young people and schools. The more senior and managerial posts were more likely to have a specific aim for their engagement work, sometimes linked to local strategies, but also for this to be quite limited to public speaking and enthusiasm raising. However, for those managers who had experience of a more two-way interaction themselves, and who had a named project to reference, it was clear that they also supported this type of activity in those they managed.

**Whilst we are trying to encourage a creative space around public engagement, clear outlining of possible goals and aims for engagement work, or tools to help define this, would be helpful in letting ECSEs, and their managers, know what is relevant to their work.**

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## Seeking to catch the tide in a stormy sea

For some institutions public engagement holds a special place within their work and can contribute to the overall sense of community in a department. This can provide the support and authority that individuals need, or desire, when accepting or turning down public engagement opportunities. This is particularly true for ECSE roles; such positions are often short-term or part-time contracts, meaning that some take on multiple jobs and end up under high amounts of conflicting pressures. For one Higher Education Institution, a strong ecosystem of engagement support remaining in place for a number of years led to ECSEs and their managers being very reflective about the role public engagement plays in their workplace. Both described similar barriers to the other study participants, unsurprisingly citing time barriers first and foremost, and a concern about the performativity of engagement, so for these discussions our focus was on how those barriers manifest and what might be done about them.

For this department, a dedicated public engagement professional was in place to manage programmes, with support from an academic champion, and some admin from the department office. Delivery very much required participation from undergraduates,

postgraduates and other staff, as the department had a strong track record of public engagement and outreach with high expectations of how this would be maintained. The managers reported feeling very positive towards engagement, and feeling that colleagues were too. "I wonder though," says one, "if our students feel this too?" These managers, more than most, were concerned that ensuring a coherent and systemic approach towards engagement was a task that needed constant effort. They noted the precarity ECSEs faced with short term contracts and were keen not to overload those reporting to them with work that might not be beneficial in the short term. As one said:

*"I'm keen on public engagement, and my team are too, but the benefits are limited when you apply for your next job."*

Another added:

*"The effects of outreach are sketchy at best. Good quality outreach doesn't get more money or better opportunities. So anything can be put on a form to tick a box. There's no benefit to a thoughtful approach."*



## Seeking to catch the tide in a stormy sea

These managers were realistic about what demands might need to be made of their ECSEs, but were concerned about the long term nature of the benefits of engagement work in an environment monitored through short term contracts and grants. Their desire for high quality work clashed with their perception of the time and resource available; in the end, pragmatic choices would always be made.

Discussing the nature of 15 years of continued support for engagement in their department, they observed that even with their feeling of a supportive environment that colleagues were somewhat removed from feeling engagement was their responsibility, stating that “once people are bought into outreach, they think the work is done on creating the culture.” They were uncertain of how to keep colleagues full of energy and attention for engagement whilst also demonstrating that much had been achieved. If stakes needed to be high to justify any investment of time or money, then suggesting the job was done would put the engagement programmes at risk.

The ECSEs were aware of the efforts that were being made to create a positive culture of engagement. “I don’t really do any,” said one, “but our group is supportive, and that helps others.” Knowing that others were interested, in doing engagement or just in it happening, meant that those who were keen found it easier to get involved. Easier rather than easy; the ECSEs also described many fears that slowed their efforts, including feeling like they might not be “enough of a physicist” for some audiences, and too specialised for others. They were also aware of the inertia this brought to them and their colleagues, as one put it:

*“It’s like surfing. If you miss the jumping on time, then it’s harder to get into it. You need to catch the wave.”*

For those who catch the wave, they are also bothered about the quality of what they produce. They want to be having a positive effect on those they engage with. They raised concerns that they could see funding creating public engagement activity, but could not see the impacts of that work. This is to be expected in an area of work that has long term impacts, for example public engagement with young people, so

they were looking to see the impacts of what had gone before, and projects being run elsewhere. But they didn’t know where to look to find the outcomes of these. The value of access to this information is not to be underestimated. As one said:

*“I want to know what constitutes meaningful engagement. If I don’t know that, how can I know if this is an effective use of my time?”*

The ECSEs want to be doing good engagement, to keep their processes, materials, techniques and equipment up to date. But they also noted, as the managers did, the tension between the short-term nature of their work and their decision making around engagement, as one noted:

*“Outreach, or engagement, or whatever, is useful for your long-term career. I see the senior people in our department doing it and being known for it. But it doesn’t help in the short term. My next job isn’t going to care if I do it or not.”*

It seems that as well as providing a better understanding of high-quality engagement for the ECSEs it would also be valuable to help them reinforce the ways in which public engagement connects to their day-to-day work. Without this integration it will remain difficult for them to make the case for the value of their engagement work as they seek new opportunities.

Transferable skills, such as those picked up through engagement, posed a problem for the managers too. “We expect learning on the job,” said one, “but maybe we need more structure too.” In this instance the manager was referring to a lack of access to time management and conflict resolution training. These would be invaluable, they said, to helping manage the time drift that can be caused by participation in public engagement projects:

*“PE projects are difficult to control time-wise. They drift, and then the research drifts. In a short-term contract that’s going to affect your participation.”*

These managers acknowledged that whilst they had considerable training behind them for their academic work, that the expectation that they could just manage people with lots of different pulls on their time was misplaced. They discussed managing people who’ve come in from different institutions





and different countries, and each having different expectations around what might be expected for public engagement. As one said:

*“Each is different, they don’t have the same expectations. For some, us suggesting public engagement is a good thing will seem like a lot of pressure.”*

When balancing new environments, funding body requirements, a core load of research and teaching, adding public engagement in could easily feel like too much. They described their own early career journey as frequently feeling used, having “done all this work for someone else’s benefit”, and were upset that other faculty members were seen to get the credit for engagement work, even promotion and pay rises, when the work would be carried out by ECSEs. “They aren’t coal to be burned” said one manager, which as the others wholeheartedly agreed lead onto discussion of where pressure comes from. If not the managers, then who? The conclusion was that it was a problem generated by a system full of opacity when it came to decision making. Unnecessary pressure to

do public engagement would be felt if expectations of workload and participation are not transparent and could even lead to ECSEs self-policing and pressuring each other. One solution to this might be to address grant and funding processes to ensure better resource allocation, but current funding options were not seen as desirable:

*“There’s too much pressure to be doing something new for public engagement grants, and the return rate is so low, it doesn’t seem worth it.”*

One manager suggested allocating ECSEs ‘builder status’ within a grant to enable development of engagement activities. Another suggested making public engagement funding through grants a two-stage process, bringing the engagement elements in for funding after the research money has been awarded. The consensus was one of improved support; even departments with a strong culture of engagement would benefit from more resource, with formal time allocation, to develop good quality projects.



# What is rewarding about engagement?

Given the positive attitudes towards engagement, it makes sense that for most respondents - even those who weren't keen on taking part - doing public engagement has its rewards. As one ECSE put it:

*"Giving talks and public speaking generally is not something I get to do very much - if at all - in my job outside of public engagement, and it's something I really enjoy (even if I wouldn't want it to be my job all the time). It also allows me to develop a skill I wouldn't otherwise. I also enjoy my work and enjoy talking about it, so it gives me a chance to do that!"*

The idea of developing and practising skills that might be useful elsewhere in their work or in their futures was a strong theme in the responses from the ECSEs and mirrored in responses from their managers. As one ECSE stated, "Public engagement and outreach are a key role and skill scientists should have. They build confidence and help others", and this was a sentiment echoed throughout many responses. As the longer response above demonstrates, there is also a valuable opportunity to allow ECSEs a chance to enjoy themselves when talking about what they do, which contributes to a sense of belonging and

confidence in their subjects, as well as being a source of encouragement for some:

*"I really enjoy working with the public engagement and outreach. It helps me develop communication skills and understand what is going on in the wider site rather than just being focussed on my job. I also enjoy seeing people in awe of what we do here as it reminds me how cool my job is!"*

As well as seeing their jobs from another point of view, some respondents found public response to their activities gave them "motivation to do my research again", particularly those who felt less comfortable in the research environment. Others have taken their enjoyment of engagement as an indicator that they should seek the sort of job in the future that allows them to do more of it, whether that be a role in STEM, STEM engagement or elsewhere.

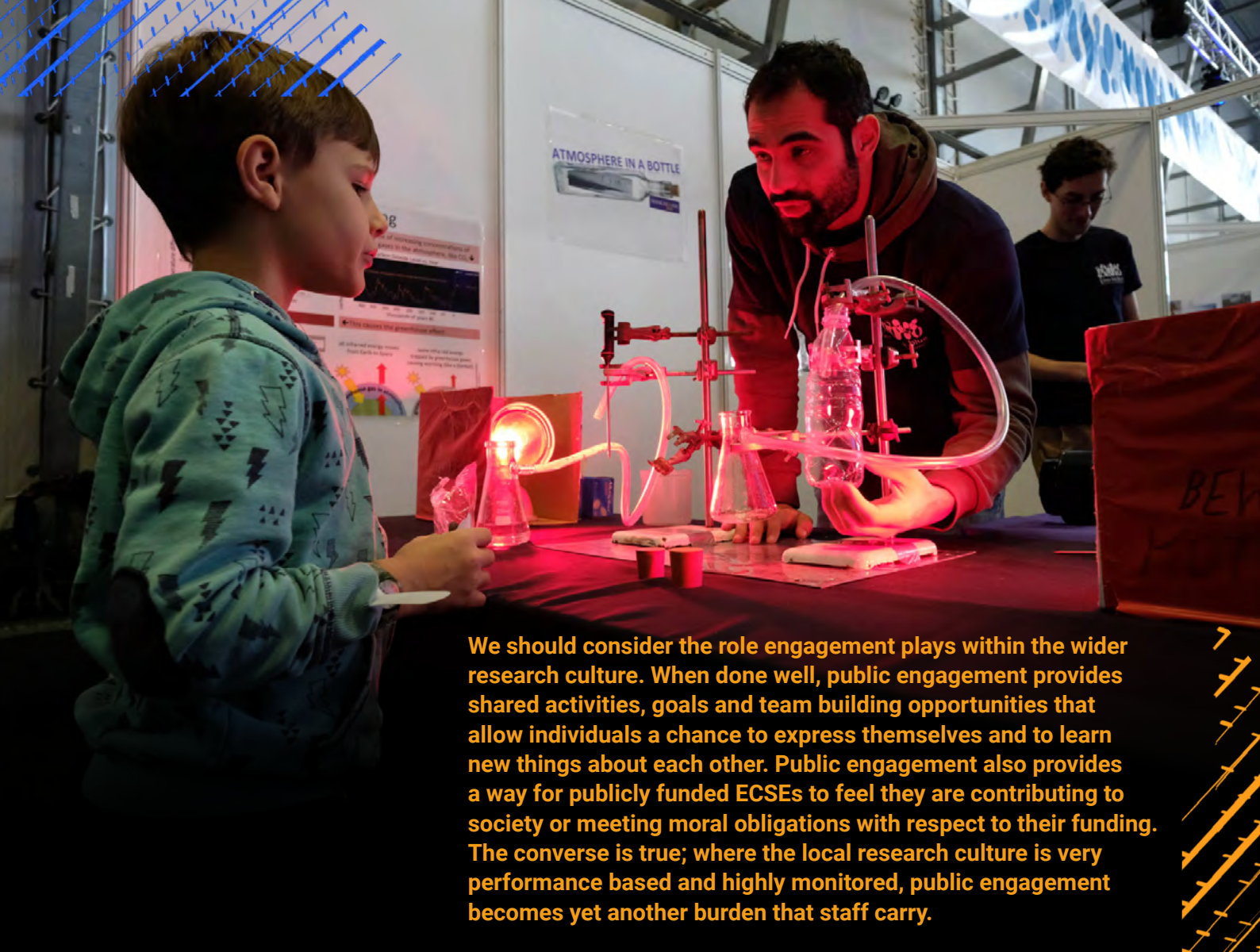
For many the idea of being useful to the public in some way was reward in itself, as this ECSE explained:

*"It can be socially tiring to deal with large numbers of strangers at a time, but in every large event there are a few interactions that make all the work worthwhile - there are always a few who have been visibly inspired or brought joy by our efforts."*

We see with this that the rewarding nature of engagement is not limited to when they felt they were gaining personal benefit. As one put it, "You always get a buzz after a successful outreach event". That







**We should consider the role engagement plays within the wider research culture. When done well, public engagement provides shared activities, goals and team building opportunities that allow individuals a chance to express themselves and to learn new things about each other. Public engagement also provides a way for publicly funded ECSEs to feel they are contributing to society or meeting moral obligations with respect to their funding. The converse is true; where the local research culture is very performance based and highly monitored, public engagement becomes yet another burden that staff carry.**

feeling of gratification can be tied to a completion of duty, something seen in previous studies<sup>5</sup>. The ECSEs and managers overwhelmingly felt that public engagement was important, and something that should be done especially when working in an environment that is publicly funded. For some, their personal interests and identities added to this, such as for this respondent, for whom the marginalisation of women in STEM was a source of motivation:

*"I do feel very strongly about encouraging marginalised groups into science, and although I can't be all things to all people, I hope it can be encouraging for girls to see different paths women can take in STEM careers."*

Issues around diversity in STEM acted as drivers for many, even when not sharing those characteristics. As this respondent explains, there were pragmatic as well as belief driven reasons for this:

*"I am uncertain of the desired outcomes, and how effective outreach is at meeting these - I see it as a fun activity that possibly produces benefits to the future of the field. Work to encourage under-represented groups into higher education and research is very worthwhile, and should produce a measurable outcome."*

Where the impacts of engagement might sometimes seem intangible, including elements of diversity and inclusion work was seen to be a more measurable and productive use of time and resources. Many of the respondents were uncertain about how to demonstrate how effective their engagement activities were, and this left them feeling concerned about spending their time in this way even if they found it personally rewarding.

<sup>5</sup> TNS-BMRB & PSI (2015) Factors affecting public engagement by researchers: A study on behalf of a Consortium of UK public research funders, available at: <https://wellcome.org/news/what-are-barriers-uk-researchers-engaging-public>

## Embedded and recognised are not always hand in hand

Sometimes an institution has a public engagement mission at its core. Where early career scientists and engineers find themselves working in such an environment, it makes sense that they too take on this mission. For one such research-intensive site, a permanent public space and public programmes leads to a strong relationship between the ECSEs and public engagement. More so than any of the other discussions, this group of contributing ECSEs, one of whom was also a manager, knew they had the authority to make time for engagement work. For those looking to top up their salaries public engagement demonstration work was available in place of the teaching or tutoring load you might normally expect in a Higher Education institution. A central team facilitated large public events and opportunities for ECSEs to contribute. A sense of shared purpose within their organisation facilitated these ECSEs to be confident about taking part in engagement activities, and to understand the value of this work to their careers.

There are still tensions. This group exemplified some of the difficulties around language in public engagement, seeing 'public engagement' as something to be centrally organised, large scale, and with a corporate aim compared to 'science communication', which they felt was more research related and "bespoke to us, not the event". One ECSE described the larger, repeated events as "corporate, grating", and others discussed that it can be difficult as a PhD student to say no when asked, suggesting that "It feels like being trotted out to perform".

Some of this comes from the sense of uncertainty that is faced by staff on short term contracts, as one ECSE said:

*"UK PhD timeframes are short, they create a sense of urgency, so you say yes. It becomes less about communicating my own research and just about putting on a show."*

It's also fuelled by disparity in workload. Those who do say yes to taking part end up saying yes again and again, whilst others do nothing. "It would be less tiring," one says, "if everyone was involved a little bit, instead of the same people every time". Repeat participation means being able to use the same wording and "do it on autopilot", which doesn't leave the ECSEs feeling very satisfied with their contributions. Not every activity is paid as additional work, and it's not always clear when this will be, which leaves them feeling awkward. They want to be more thoughtful in their work, and to engage well. But in the current climate they feel constrained. In their words:

*"Just a little more consideration would be nice. Like, we're people, not just a resource to be used. I'm really happy to do stuff, but it would be nice if it was recognised a bit more."*

For this group at least, a little more recognition and the ability to shape their programmes would go a long way to supporting their participation. Given their already significant contributions, it would be amazing to see what they achieve with just a little more consideration.





## Engagement is someone else's problem

Having a dedicated staff resource to allocate to public engagement is often seen as an indicator of a strong culture or supportive environment for engagement. For one Higher Education Institution, their public engagement professionals operate at a faculty level with a strong identity as a team. But as one such professional, Luis, explains, this can leave a gap between engagement and the researchers that is difficult to build bridges across. "At least before," he says, "Pathways to Impact<sup>6</sup> was a reason for researchers to speak to me, even if it was late notice. But now I don't know, the conversation is gone."

For a team like Luis's, existing for a sustained period of time has allowed their structural support of engagement to embed. The team is funded by research grants, where a proportion of their money is put towards the core engagement team and their delivery. The university and faculty research grants teams liaise between Luis and colleagues to ensure this is included in sensible ways. "But a distance has been created," says Luis, "outreach and public engagement are not always seen as [the researchers] responsibility." In some ways, having a funded professional post around takes away the possibility of the researchers doing things. Professionalisation and increased structure for outreach and public engagement in some cases at least has disengaged the research teams.

All is not lost, particularly when it comes to the ECSEs. "The younger generation have outreach and public engagement in their beliefs, their values," Luis says. And whilst the grants approval process in some cases removes connection, in others it works to their advantage, with the awareness of the OPE team, their work and support they offer being made more visible to the early career staff through the liaison with the grants management teams. The more work they do, the more Luis is convinced it becomes part of the ECSEs skills set:

*"If you give them a good experience, if you help them shape high quality public engagements that they enjoy, then that can be the hook to*

*keep that level of that aspect of their work with them throughout the rest of their careers. So I suppose that the more you invest in early career researchers in terms of their self-awareness of public engagement, and their satisfaction in taking part, and you show them the usefulness of it, then hopefully those are going to be long term lessons that they can take with them."*

Luis describes a system that is always paying forward, with investments made now paying out much further down the line. As the current ECSEs move through their careers they start having their own postdocs, hiring their own PhD students, employing staff, it is Luis's hope at least that they will pass down their support for engagement, helping future ECSEs find it easier to get involved.



<sup>6</sup> Pathways to Impact was a section of all UKRI grants until 2020, providing a specific section of grant application forms where applicants needed to outline the types of impact they would achieve through their research, and how. Public Engagement was one way in which impact might be achieved. A discussion on this and the ways in which it might affect public engagement can be found on the NCCPE website at [www.publicengagement.ac.uk/whats-new/blog/our-thoughts-news-ukri-are-ending-pathways-impact](http://www.publicengagement.ac.uk/whats-new/blog/our-thoughts-news-ukri-are-ending-pathways-impact)

# Permissions and authority

One of the ways in which ECSEs struggle to manage their activity and expectations around public engagement is to do with having authority. In time-limited, sometimes precarious, and relatively junior posts, they have lots of pressures on their time and on the activities that they can choose to do in that time. Whilst ECSE roles, like many in academia, can seem from the outside to be relatively autonomous there are numerous reporting burdens that mean their time is felt to be particularly precious, both to the ECSE and their managers. One response to this from the ECSEs was to seek ways to secure permission, from direct managers or those higher up in their system, to give authority to them to take part in engagement. But navigating this is not always easy. As this ECSE pointed out, there are conflicting messages:

*"We (scientists) are funded by projects, most of which don't explicitly support engagement in PE. Time spent doing PE = time not spent working on the project which means working on a non-deliverable, which causes many staff concern, to the extent they won't do PE.*

*At the same time, the message from senior staff is that PE is important and we all should get involved.*

*The conflict is how to account for our time spent being involved with PE and not working on a deliverable? If this had its own project code, the conflict would be resolved."*

The solution for this respondent would be a specific budget code to cost their time against. Other suggestions from the respondents included workload allocation, being given specific aims or objectives for public engagement and having public engagement

**Whilst costing public engagement fully into funding bids, and into project workload allocations, came up often as a suggestion for how to improve engagement culture, this won't be effective if that time is then felt to be wasted. The oversight mechanisms for public engagement elements of funding and project allocation should be reviewed with this in mind.**

mentioned explicitly in job or role descriptions. As this ECSE put it:

*"If you want researchers to perform public engagement and do research without being at risk of burning out, this needs to be in job descriptions and roles. In a researchers job description, communicating their research through conferences and publications is their duty, and everything else is a bonus. If the job role was structured to allow for a real level of public engagement if the researcher should want to, then this would be beneficial. Otherwise, we need help in order to minimise our time taken up, and maximise the impact for the efforts put in."*

Having explicit objectives and reportables can come with downsides. For some, their efforts in doing public engagement are not felt to be valued once completed, as for this ECSE:

*"Just as (sometimes) questions will get asked if I'm not doing my research and not writing papers, the same level of scrutiny should be involved with EPO [engagement and public outreach]... I had to write a "Pathways to Impact" Statement (which I see is no longer required). Not \*once\* was there even the pretense to hold me accountable for the things I wrote and promised to do in that statement."*

ECSEs questioned the current systems in place to examine the outcomes from engagement work, including their usefulness and their visibility. Some, as this ECSE, felt that not enough was being done to hold engagement activities to account:

*"The system needs checks and balances to make sure the engagement activity promised is assessed by grant panels and then actually occurs, otherwise it leads to institutions promising what they never intend to deliver and thus engagement not being seen as an important thing to do."*

In a system that is time poor, it makes sense that any objective given to an ECSE that is felt to not really be of value to funders or employers will be frustrating, and cause discontent.

Until explicit authority to take part is given, many ECSEs do what they can to take part in engagement activities by making it work for themselves in other





ways. But to make the most of this they need help, and training. For example, this ECSE would like help to make engagement show their abilities to lead things:

*“A better sense of how to take more responsibility in activities so it can be related to APR [annual performance review], chartership objectives and the like.”*

Others were not sure how to demonstrate the quality of their engagement work, or how to link it to good practice. As one ECSE pointed out knowing if their engagement was actually a productive use of their time would help them make the case to do it in the first place:

*“I would like support for various types of measurement, so that it would be easier to demonstrate the effectiveness of any particular type of engagement. I don’t know much about it and it feels like it’s easy to get it wrong.”*

Throughout the responses there was a feeling that grants or project processes could be better structured to ensure early career staff can lead or co-lead on engagement activities, thus gaining much

**ECSEs were not sure how to talk about their engagement in ways that would show its value to their work or their career. This could be improved by ensuring better access to and sharing of project evaluations and tools, and through exposure to other scientists and engineers talking about their engagement work in relation to their day-to-day roles.**

needed material for their CVs. When coupled with peer review and sharing of engagement outcomes, the ECSEs felt that engagement could be a very valuable part of their work, but that it is not quite there yet.



## Transferring engagement into new environments

For one ECSE working in an NGO, transferring their public engagement activity and values to their new work was both an opportunity and a source of tension. Ellie found herself in a work environment that leant itself to engaged approaches and inclusion of diverse voices. Her interdisciplinary and transferable skills, well-honed by participation in public engagement and outreach whilst doing her postgraduate studies were invaluable to an NGO trying to raise the profile of particular science related issues.

However, navigating this working environment isn't straightforward for Ellie. After several years working in a laboratory environment with pressures to publish and to find both individual as well as group recognition for work, her new role needs her to support organisational aims and processes. Most of the time this is fine, but every now and then she finds herself bumping up against organisational processes that are less about engagement and more about creating specific behaviour changes. In Ellie's words:

*"I want to engage with the public about [the issue], but in my industry the known ways of getting our results are more about telling people what to do. At the end of the day, this makes it easier for them to understand what action they can take and we can reach more people more quickly."*

Ellie worked towards two-way engagement in her postgraduate time at university and learnt the value of high-quality interpersonal connection. But to her workplace, bringing nuance such as discussions of ethical considerations into their communication with the public muddies the messages they are trying to convey. It's also difficult to navigate which issues are political or seen as political, and to find a diplomatic way through. Ellie explained that "even issues

such as smoking are political, so we have to find a message that uncontroversially conveys a message without bringing personal judgement into it." Ellie, at least, finds this difficult to negotiate when she is so passionate about the issues she works on. After years of doing public engagement as an additional activity on top of a full-time research post, she uses her personal drive and passion to create the time and space for engagement. Divorcing the two doesn't come easy.

She is still driving her activity in this way now, being a senior member of several groups and committees working on continued research and engagement with issues adjacent to those she deals with in her day job. "But I struggle to know," she tells me, "whether I belong... whether I'm a scientist or a science communicator or something else." Her idea of what a working scientist is is strongly influenced by her time in university, and she doesn't know many other people in her day-to-day work who have, or talk about having, a science background. For this she leans on her extended network of committees and groups outside of work, where scientists interested in these issues gather. She isn't connected yet to the wider field of science communication and public engagement professionals, and doesn't yet feel enough like a professional herself to know or understand the networks that her NGO might bring for her to be part of. But she feels the pressure of a silent clock ticking on her time with the groups she is part of "Science moves fast," she says, "and I feel disconnected." She worries that she won't be of value, or have the same status in these groups as her time in the lab fades into her past. For now, she is making the most of the opportunities ahead of her, whilst seeking the labels that will help her feel connected to her work.

## Balancing activity, purpose and recognition

One major message for ECSEs to take away from this work is that they are not alone in the tensions they feel around public engagement work. No discussion highlighted this more than that with one research intensive site. Discussions with public engagement professionals, early career scientists and engineers, and their managers made it abundantly clear that no role escapes the feeling that their public engagement work pulls them in multiple directions, something which is not always easy to navigate.

Knowing they had a clear directive for engagement work from the highest levels, dedicated expert staff, a strategy, and other similar sites to lean on for support, we might expect the participant stories from this particular site to be the most cohesive and consistent in describing support for public engagement work. A lot of support was described, which is certainly something to celebrate. A dedicated central team to support engagement, as well as significant organisational messaging meant that the profile of engagement work was high. The ECSEs particularly valued the availability of established engagement programmes for them to contribute to because of the “defined scope” and “known time and constraints”, all combining to mean that they knew what to expect,

and what was expected of them. This is something the Public Engagement lead staff member also echoes, acknowledging the role of repeat activities in getting people started on their engagement journey, as well as raising the profile of engagement work to other stakeholders such as funders or very senior staff.

What became apparent quite quickly as the conversations progress is a sense of separation, aims that don't align, and interests pulling in different directions, that leave ECSEs stuck not being clear where their efforts should be invested. As the public engagement lead put it “public engagement is not part of the contract” for most staff, so knowing what to do and when isn't always easy. When discussing the nature of the regular and high-profile engagement events, the ECSE managers were less convinced of the value of these activities. Despite also understanding that they provided an easy way to get involved, they raised concerns about “lack of connection” between the events, and the tension caused by these activities being something everyone might be expected to contribute to, but there being no dedicated budget for the time spent on the project.



## Balancing activity, purpose and recognition

As one manager said:

*“Even if we like [public engagement], we might be reluctant to support it because there’s no obvious infrastructure or supporting mechanism for participation. It has never been clear who is paying for my time.”*

When considering their own participation at least, ECSE managers lack clarity on where their authority to contribute or to spend organisational resources on public engagement comes from. They carry this concern into their decision making around their reports time too. As one said:

*“I can’t perpetuate top-down messaging that public engagement is good if it isn’t backed up in workload allocation.”*

This particular group of managers didn’t feel they could wholeheartedly support their ECSEs in taking part, and described a double standard being created by organisational messaging that encouraged engagement activities with no formal routes for booking that time in or reporting it. They questioned the value of engagement to themselves and their ECSEs, asking “is this really something that is appreciated in my career?”, and were critical of graduate schemes that expect ECSEs to do public engagement but do not directly allocate time for it.

Despite these concerns, public engagement was very much still happening, and something the ECSEs found time for. Feeling it was “something we should all do”, the ECSEs described a variety of ways of making time available. Some had managers who were supportive, and made it clear that a percentage of their ‘research’ time could be used for engagement. Others made time here and there, often in their own time. This approach appears to be particularly effective when an activity is more researcher lead. The ECSEs talked about getting their colleagues involved, and how many of them would be happier “doing their own projects”, choosing their own audiences and designing the activities.

Their biggest concerns were not around making time for the engagement itself, but the preparation and planning. As one ECSE said:

*“Wider public engagement work is not recognised, set up, planning, materials etc. Just recording a video is not a gratifying thing to do; I want to do something extra. But this all takes time.”*

It seems that this group were finding ways to make engagement happen but wanted space to think about what they are doing and to feel it is going to make a difference. For these ECSEs, public engagement does not seem to carry with it any performativity or politics; rather it is something to be enjoyed, and that gives back.

Focussing on passion projects was also the main suggestion to get around issues of time offered by the managers. They described being more passionate about their own ideas, less so about the centrally organised “big flashy” activities, which they felt to be too corporate. They suggested that they might be more proactive about activities they felt were more relevant to their research or interests. This raises other issues; throughout all the discussions with staff at this site their plans for what might make a good engagement activity was heavily anchored in their own personal experiences of access, or lack of, to science activities, and so the result was a keen interest in providing work experience and activities for school aged young people, particularly girls. Attempts from the central public engagement leads to drive a strategic approach to choosing target audiences were seen as “limiting scope” rather than creating desired impacts. For this site, there is certainly more work to be done in making a coherent public engagement strategy that is enabling for all staff, but it is work well worth doing to make the most of these engaged and interested staff.



# Danger zones and unsung heroes

Whilst there is a lot that is positive about the nature of engagement for ECSEs, there is an undercurrent of concern throughout the responses of a “toxic pressure to do outreach”. Some institutional or departmental programmes of outreach and engagement support were seen in a negative light, even by those ECSEs who were active and supportive of engagement. This is beyond the normal concerns about time-usage or resources, although it is interwoven with both; rather this concern seems to represent undue levels of pressure, both through disproportionate allocations of responsibility for outreach on a few individuals, as well as an expectation on all staff that they need to do engagement activities even when it’s something they are not interested in or keen on. Some systems that might be considered positive indicators of a culture of engagement, e.g. inclusion of engagement activity in appraisals, are at times construed as ways of perpetuating the toxic culture, and leading to box-ticking. One result is staff taking on outreach and engagement activities in their own time to ensure they don’t miss out on career progression, or conversely, worry that they will be overlooked because they are not able to participate.

Another is the idea that people might have to do activities that make them uncomfortable. Within any environment there are staff who enjoy being on stage, and those who would rather work in quieter ways. This individuality is something to be embraced, yet where public engagement is concerned, and staff expectations of what ‘doing’ public engagement means, there is a feeling that individual needs are not respected.

The idea of public speaking causes distress to some, who feel that they are unduly pressured to do something they are not suited to:

*“Some people such as myself just aren’t cut out for communication. Needs to be emphasized that outreach is not an issue regarding all scientists but an activity only a subset of the exceedingly extroverted can perform with any outcome.”*

The idea that some people, particularly in the physical sciences, are not suited to speaking with

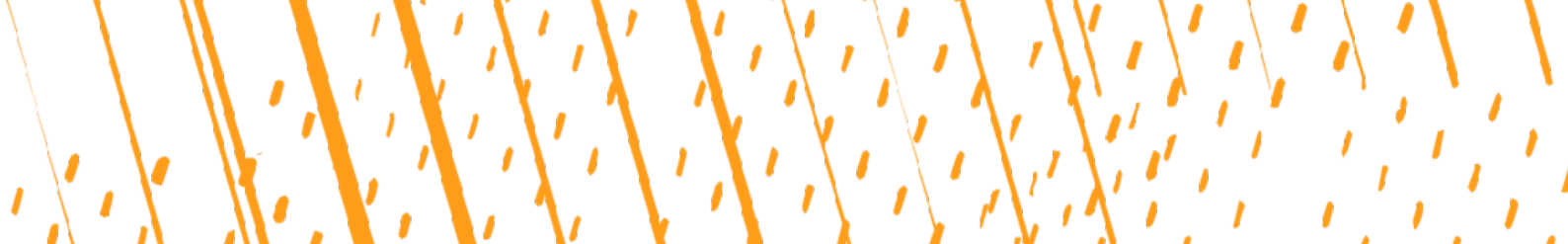
the public is one that is raised and challenged elsewhere<sup>7</sup>. However, what is clear from the ECSE responses is that there is a lot of work going on behind the scenes in public engagement activities that is hitherto unrecognised. Where awards and rewards exist, they tend to be based on numbers of people reached, or the number of activities you have visibly taken part in. But there are many roles being performed by the ECSEs that are noted by their absence in the conversations. Background provision of support, whether it be through testing ideas, discussing possibilities, or helping to carry things are all an essential part of a positive public engagement culture, and as such need recognition.

There are also many ways in which public engagement is done, not all requiring public speaking. The default assumption throughout the interviews and survey responses was that doing public engagement required some sort of performance, lecture or being on stage in some way. Yet we know

**Amplifying the visibility of the behind-the-scenes work, and finding ways to recognise this, would go a long way to improving the culture of engagement at many sites, and allow more ECSEs to see their contributions as valuable.**



<sup>7</sup> Thorley, C (2016) Physicists and Outreach: Implications of schools physics outreach programmes from the perspective of the participating physicists, available at: <https://discovery.ucl.ac.uk/id/eprint/1503745/>



that a lot of public engagement is done online, through websites, blogs, videos and social media. Demonstrating the value of these less tangible ways of engaging, and providing frameworks for developing these beyond communication and into a more two-way process is another way the wider contributions to engagement can be recognised.

Having said this, the other big concern raised by the ECSEs was a pressure to take part in social media activities. Many considered social media to be an unsafe place to engage with the public. This might be through making them vulnerable to personal attacks, or by encouraging them to take on the feeling of responsibility for likes and comments on various platforms. For some this is not just undesirable, but also potentially harmful:

*"I love the idea of outreach, but that seems to be equated with use of what are termed "social" media. Unfortunately "Social" media appear to be having a corrosive effect on our society, so I conscientiously object to their use. That seems to preclude me from participating in outreach activities."*

Many of the respondents felt that constructive conversations couldn't be had through social media, or that the potential for it going wrong was too high. Others were unhappy at having to link their personal accounts to what is a work-related activity. More comfort was felt when the activity was closely guided by public engagement or communications professionals, and when it was through an organisation/company channel, rather than through their own.

**Social media work is a complicated area for many ECSEs, and any programmes involving this need careful management and safeguarding.**

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There's no doubting the value of support for public engagement when it is done well. The ECSEs and their managers throughout spoke highly of the value of administrative support, making it easier to navigate their companies or universities and the complex finance, room booking and other systems that underpin them. They also valued specialist help, including video making, script writing, demo

development, evaluation, communications and much more. For the ECSEs, having specialist support was a good way of boosting their engagement activity, by providing a first step on their public engagement journey, helping them to understand their audiences or create higher quality outputs, or to understand the viability of an idea. More often than not their main contact for this support took the form of a public engagement professional or team, and the majority spoke very highly about such individuals. But there were a few who had difficulties. Some professional teams were felt to act less as enablers and more as gate-keepers, preventing some activities, or just slowing down the process of connection between ECSEs and the public, as in this example:

*"Universities need to have a strong outreach team. For example, during my PhD I offered to do school visits after hearing that there were lots of requests coming in. No one ever got back to me and the requests seemed to disappear into a black hole. There was only travel funding too to visit schools with 6th forms (which were target schools for student recruitment). The high schools in the city did not have 6th forms since there is an FE college. Spot the problem. This meant as well that I couldn't go to primary schools."*

When ECSEs are being pulled in many directions, it is understandable that they want to be able to do the engagement they are interested in, that they find rewarding, especially if they will end up doing it in their own time. They will get discouraged if their offers of help are not deftly managed. However, this is not necessarily the fault of the public engagement professionals, who are also pulled in many directions, and subject to shifting institutional priorities. More could be done to help ECSEs understand the structures of their organisations, the competing priorities the professional staff are under, and the ways that local strategies affect the engagement opportunities they are offered.

**Managers of ECSEs and public engagement professionals could do more to help their ECSEs engage with and understand local priority setting and activity development, not just helping with public engagement uptake, but also the ECSEs wider development.**

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## Feeling the pressure

There was one last case study site, a Higher Education Institution with strong links to local research-intensive sites. This, of all the participating sites, felt the most fractured and strained. Yet within that were glimpses of strong engagement ethos and activity. The local public engagement professional, Charles, was funded through multiple external sources, a split that was echoed in the departmental programmes where responsibility for some subject areas were outsourced to other collaborators due to joint funding. This separation was proving trying for Charles, as both the physical separation of the sites and the practical separation of organisational aims and engagement programmes made planning difficult:

*"I'm not part of the research culture, my work is an add on for most. It makes making the case for better engagement or strategic engagement very difficult."*

What this means for the ECSEs at this site is a confusing environment, with many different understandings of what public engagement means and can encompass being used. Public engagement is valued for the role it plays in team building and providing a social activity, and individuals value the opportunities to get involved, but the sense of a public engagement culture is lacking. As one ECSE pointed out:

*"External research funders are keen for engagement work. But locally there's limited support or resource. Even funding like the Impact Accelerator Accounts, which I know other universities use for engagement, isn't allocated here."*

At this site, institutional support seems dependent on external pressure and resource, and this adds to the already precarious nature of early career roles. This external interest comes with obligations:

*"There's an expectation of significant evaluation, but no resource. And their objectives don't always match our aims."*

Where there's tension in direction and unclear expectations it can be difficult for ECSEs to navigate their participation. However, when there's a good relationship with the manager, ECSEs feel confident



to take part. From the manager perspective, this isn't just based on personal relationships:

*"It matters that I'm established, that I'm senior. I've been through everything before, I know how it works, what to worry about and what to weather."*

Time and resource for engagement were specified again as barriers to involvement. Engagement was described as "something that matters less than your research", as something that was good to gain confidence through, but not necessarily worth spending work time on. "There's nothing to actually show for it," says one ECSE, discussing the use of their free time for engagement. At this institution introducing smaller acts of recognition would go a long way to supporting their engagement culture, with letters of thanks and discussion of workload being suggested by the ECSEs.

# The low-hanging fruit

The participants for this study were very generous with their time and ideas. Not all of their suggestions warranted the deeper discussion seen elsewhere in this document, but are noteworthy, nonetheless. As such, what follows is a list of actions that ECSEs would like managers, employers and funders to consider to better support their public engagement activities.

- Provide petty cash to cover expenses, as ECSEs are often working on tight budgets
- Provide structured, managed, entry points to engagement activities
- Make sure that ECSEs are not expected to do public engagement in their own time
- Provide administration support for public engagement activities as well as delivery
- Fully cost public engagement activities to include all deliverables and the time needed to do the project
- Talk about public engagement in meetings, performance reviews and interviews
- Talk about the public engagement already being done, and how you know it is good quality
- Give decent amounts of notice for engagement opportunities, to allow scheduling around work commitments (e.g., telescope time)
- Repeat public engagement activities where possible so that there is a second chance to take part
- Understand that precariousness impacts on how ECSEs feel about doing engagement
- Value low numbers of contacts but strong interactions as well as the larger events
- Provide access to training, shadowing, mentoring and 1-1 support for engagement
- Be aware that individuals with marginalised identities are asked to participate in engagement disproportionately, and try to share the load
- Offer engagement opportunities beyond the regular participants, and make it clear when anyone is welcome to take part
- Allocate time in workload for engagement activities, or budget codes to cost time against
- Have clear institutional or departmental commitment to a supportive research culture, including engagement
- Increase opportunity sharing and communication of engagement outputs within workplaces
- Ensure engagement work is not only carried out by a closed group of very active people, and access to opportunities is transparent and equally accessible



## Recommendations for organisations who employ Early Career Scientists and Engineers

This includes universities, research facilities, funding councils, and any place of work where an early career staff member might be working with science and engineering content.

- Be explicit about where public engagement fits into workload. If there is dedicated time for it, let the ECSE know how much this is, and how to access or report it. If there is not dedicated workload or time for it, then be clear about how free the employee should feel to build it in or ask for time. Do not expect them to do it in their own time. Ensure appropriate supporting policies are in place, with advice on how to enact them.
- Ensure that all managers are aware of when and where their staff might be taking on public engagement, and how your organisation expects this to be managed. Written policies can help. Too often organisations promote the idea of public engagement being important, without explicit instruction to managers on how to enable their staff to contribute.
- Draw a distinction between the public engagement work that is integral to a particular project or work strand, and that which is more generic in nature. Where the content could be delivered by anyone with some knowledge and practice, this work can be shared across colleagues and become a more routine part of your organisations working plans. But for work that is bespoke to a project, site or scientist, and that has the potential for significant impact for the public group and the science being done, this will need to be considered part of being a scientist or engineer and be given space within their main role workloads.
- Review your appraisal and promotions processes to examine the role of public engagement within these. Much has been done in recent years to embed the structures of public engagement at doctoral level and for more senior staff, but early career staff find themselves under increasing pressure for other reportable elements of their jobs, such as numbers of clients aided, completing professional registration, production of reports or papers. Where public engagement is relevant to their work, find ways to ensure this is recognised as part of their professional development.



- Explore models for creating dedicated time and budgets for public engagement work that is not intrinsically part of an individual's day to day work. In this way the amount of effort being deployed can be managed and accounted for, as well as being targeted strategically for the organisation. This might include a number of days being available for giving talks in schools or to local interest groups or working with partner organisations such as community groups or schools. This is somewhat similar to Corporate Social Responsibility, and caution is needed if it is to avoid being a tick-box exercise. Nevertheless, such a scheme would have dedicated time and strategically chosen programmes in such a way that would enable participation from those least sure of their options.
- In all of the points above, reward all the different contributions staff might make to public engagement, not just presenting. In doing so, your supportive culture will be reinforced, and less tension felt between staff considered to be doing too much or not enough engagement. This will also enable those ECSEs who do not want to be on stage to say no to speaking roles and to feel valued for the roles they do play.



## Recommendations for organisations who fund the work of Early Career Scientists and Engineers

This includes research councils, charities, business and any other agency that funds early career staff to work on science and engineering focussed activities.

- Build more transparency into research funding structures and procedures. The ECSEs were concerned that there were unknown factors at play throughout the system, of which public engagement was one with high risk attached. Clear guidelines to reviewers as to how public engagement should be considered, as well as providing guidance alongside funding schemes to let applicants know how public engagement fulfils criteria and contributes to research outcomes. Training or guidance should be offered to peer reviewers and funding panels to ensure they respond appropriately to someone's public engagement work.
  - Shape funding structures that enable workload allocation to public engagement. This might include funding towards public engagement roles as part of core teams on research grants, explicit mention of reasonable time allocation for public engagement within research funding, ensuring that contracts include a percentage of public engagement within research work strands, and direct allocation of public engagement time in project codes.
  - Request, and support others to be interested in, information on the quality of the engagement work that ECSEs are doing. This should be part of the funding structures for those ECSEs, whether they be individual fellowships, parts of block grants, or through ResearchFish. This will work to counterbalance the feeling within the participants that they were being asked to do engagement but that their participation, or quality of participation, was not valued.
  - Set clear standards of what high quality engagement might look like through sharing stories of success and having a "manifesto" style document available alongside your wider policies. Moving towards less frequent, more thoughtful, higher quality engagement will create more authority in the ECSEs to turn down opportunities that don't work for them, and more confidence to say yes when they do take things on.
- Create and support a programme of peer shadowing and/or mentoring for ECSEs. Informal, light touch, but quality assured training and confidence building would be beneficial to those needing support as they manage their conflicting priorities. An engagement focus would be ideal for such work, but might also usefully be only one strand of a larger programme of support.
  - Create and support a programme of expert mentoring for ECSEs. For those who already think that public engagement might be part of their future career, whether as a researcher or a professional. Such a programme would act as a signal for others that including engagement in your work is a productive and desirable activity, and add more quality assurance into the system. Experts might be from diverse strands of engagement, including comedy, arts, education, speakers, animators, influencers, or from a more professional public engagement with research background.
  - Create and support a programme of training for those managing ECSEs. Again, a focus on engagement is suggested, but many of the problems raised by the managers were not unique to engagement activities, but more the more universal issues of time management and prioritisation. Short, intensive courses that include practical help on how to manage expectations, set clear goals, resolve conflicts, and balance priorities for those interested in engagement could go a long way to making more productive conversations happen between ECSEs and their managers. Such a course might also usefully include information on how to make space for engagement, how to respect it as part of a research workload, and how to champion it within your department.
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# A manifesto for good engagement by Early Career Scientists and Engineers

## **I don't need to do or be interested in public engagement, but I can still contribute to a supportive culture.**

There are so many ways in which you can support public engagement that don't require any of your time. The very basic one is just not to be negative about other people's work in this area. It doesn't have to be something you are personally interested in to be worthwhile. Having said all of that, there are so many ways in which you can contribute, by discussing ideas, by sharing experiences or contacts or materials that the likelihood is that many of you have been part of this work all along.

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## **I won't say yes to everything. I will do less things, but better.**

We know that time pressures and prioritisation are an issue for lots of reasons. One way to help manage this is to make sure that you are only doing the most high-quality engagement that you are capable of, and that means making proper time for it. Only take on the engagement that you can spend some decent planning time on, to make sure it has the most useful impacts for you, your work and your participants.

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## **I won't assume I am the first person to be doing this.**

Ask around, and do a quick search online to find others who you might learn from. It will save you work in the long run! More often than not things have been tried before, and you will have more capacity for all your work if you are not designing every element from scratch. It's worth looking outside your own discipline too, so make sure you keep your options open to learn from other sciences, the arts and humanities and the charities sectors.

## **I will ask for help!**

People have a huge amount of skill and interest that can be deployed to help you in your engagement endeavours. You might like it on stage, but others might be happy to drive you there or help manage bookings, or share ideas for content. You might prefer to write or manage budgets, but there's always someone else who wants an audience.

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## **I will share my experiences.**

Even if you were the person who carried stuff, people will benefit from understanding that public engagement has room for them. Tell them why you did it, what you gained, what you think the impact was. If it was terrible, that's ok too, but what would you do differently next time?

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## **I will lift others up.**

When you talk about engagement, talk about the others you work with too. Does someone else do engagement work and means you don't need to? Did someone help with lots of photocopying? Did someone else's research findings inform your content? Make sure you give them a shout out.

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## **I will be sensible about my capacity.**

Public engagement can be a wonderful thing, but lots of things under the public engagement umbrella can come in as extra pressures at times you don't need them. Work on saying no to those things that are not beneficial to you, but in a way that is supportive of the person asking. After all, if they want to do it, or to find someone else, then that's great.

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## **I will be clever about my capacity.**

If a piece of kit already exists, you could borrow it. If someone else lives nearer to that school, they could go. Sometimes a small investment in software or an expert's time can cut down your workload immeasurably and allow your expertise to shine. Reduce, reuse, reallocate are the three R's of sustainable engagement, and they are good for the environment too.

# A manifesto for good engagement by Early Career Scientists and Engineers

## **I will choose to get involved in things that are beneficial to me.**

Does the thought of this activity spark joy? Does it contribute to your research in some way? Do you have a strong sense that it is needed or that others will benefit? Is it important to you? Then that's brilliant, go ahead. But if none of these are true then think carefully before saying yes.

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## **I will think about the impacts of my activity before I start.**

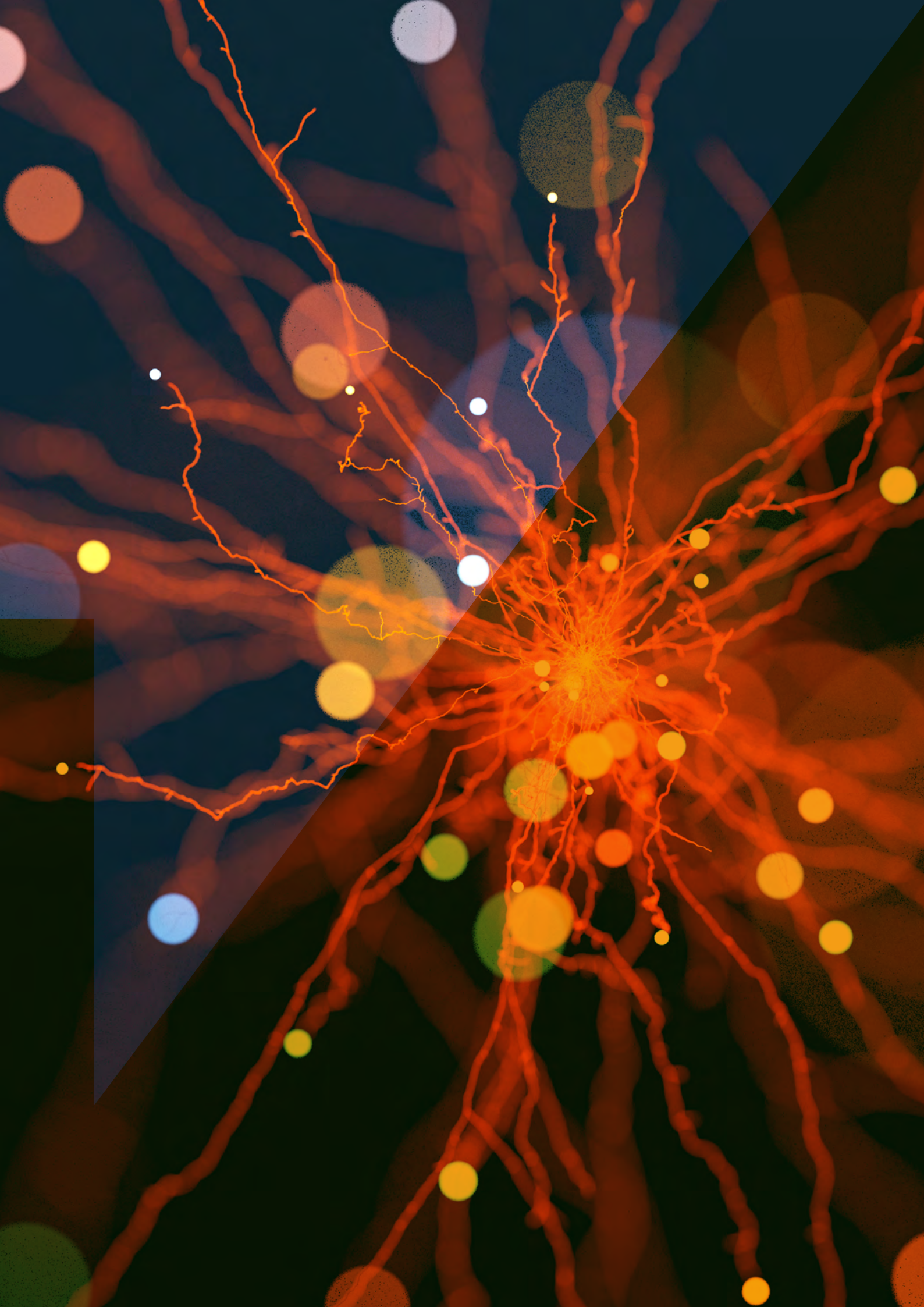
Who are you trying to reach, and why? Thinking about what success looks like from the very beginning will help everyone involved have a good experience. Take 15 minutes to map out all the impacts you might expect from your work, including ideas about locations, numbers, demographics, learning objectives, sustainability, and funding. Ask yourself if you think those impacts will be achievable, or reasonable to do with the time and resources you have available.

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## **I won't make assumptions about the people I'm engaging.**

We all fall into this trap, but it's an important one. People will always surprise you. Many public engagement activities start from a position of wanting to educate people or assuming that they know less than you. But in truth whilst they might not have instant recall to the same specialist facts that you do, they do have their own knowledge and experience that are invaluable. If you are interested in reaching particular groups then start by asking why that is, and if that reason is founded in assumption or knowledge. Then consider reaching out to community leaders or others working with those groups to help you to shape your activities to their interests and needs.







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