National Forum for Public Engagement in STEM

Networking event, 1 November 2018

This presentation includes all the slides shared at the networking event, and notes from the various discussions hosted on the day
Agenda

11.15: Taking stock

12.30: Lunch

1.15: Parallel Sessions
• Fostering diversity
• Developing evaluation
• Developing a new funding scheme

2.20: Parallel Sessions
• Building capacity
• Designing new activities
• Open Space

3.20: What’s next?

4.00: Reception

#ukstemforum
National Forum for Public Engagement in STEM

Established in 2014 by the Wellcome Trust and the Department for Business, Innovation and Skills (BIS)

‘The Forum brings together key funders and organisations involved in setting the national agenda for public engagement in STEM. It aims to deliver a step change in activity across the sectors involved in informal science learning, by improving collaboration, cooperation and learning’

#ukstemforum
National Forum for Public Engagement in STEM
Forum focus

• Improving models and approaches to funding
• Engaging underserved audiences
• Ensuring more effective evaluation
• Development and sharing of evidence, knowledge, resources and activity

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Taking stock of the Forum’s activity since the 2016 Networking Event

Sophie Duncan and Paul Manners
Forum Secretariat
NCCPE

#ukstemforum
Joining up activity
Machine learning

What is machine learning?

Machine learning in the world around you

Interactive infographic

Our machine learning report

About the project

Interactive infographic

Read more about the report launch

Governance and goals

Find out more:
https://royalsociety.org/topics-policy/projects/machine-learning/

Genome Editing Public Engagement Synergy

Developing innovation and collective impact in public engagement within genome editing.

GEPES resource guide

Access the GEPES resource guide. The guide contains links to useful resources for engaging the public with genome editing. It is a “living document” which will be added to and amended over the project.

Find out more:
https://www.publicengagement.ac.uk/nccpe-projects-and-services/nccpe-projects/genome-editing-public-engagement-synergy
Underserved audiences in STEM

How can we engage with people we aren’t currently reaching?

The National Forum for Public Engagement with STEM is convinced that we need to value the knowledge and experiences of the publics we engage with. We have to understand that people think and feel very differently about science and build on that diversity. We also need to recognise that people’s participation in science is affected by lots of social factors.

Engaging underserved audiences

What we have done

- We have reviewed the audiences we are currently reaching and the balance of our investments. We have noted a strong focus on young people, and a significant gap in reaching ‘underserved’ audiences.
- We have reviewed different approaches to reaching ‘underserved’ audiences and identified five different paradigms, to help clarify the assumptions we operate with.
- We have chosen to adopt the idea of ‘science capital’ to inform our collective work. We believe that this provides a very productive platform to think differently and more profoundly about the factors which affect people’s engagement with science.

Find out more:

The Enlightenment tradition (reach ‘the hard to reach’)
A public service duty to share knowledge with the wider public. If people understand science they are more likely to engage with it.

What’s the problem?
Our content isn’t accessible to some people

Assumptions about fixing it?
We need to create rich formal and informal learning. We can address the problem by coming up with more creative and inspirational ways of sharing knowledge.

Focus of interventions?
• Techniques to making knowledge accessible, including open access
• Providing authoritative accounts and expertise

The Socio-cultural tradition (engage the ‘under-served’)
Respecting how different people come to learn and value science differently and the power of culture in shaping our identities and world views

What’s the problem?
People’s readiness to engage with science is shaped by their culture and social identities - science itself is a culturally constrained

Assumptions about fixing it?
We need to be sensitive to context and culture – and problematize the cultural assumptions about what science is

Focus of interventions?
• Working with people’s cultural preferences; re-framing the culture of science; multiple narratives; working with trusted intermediaries

The Systemic tradition (fixing the system)
Science forms part of a much wider complex social system – we need to make sense of individual’s choices as part of this broader ecology

What’s the problem?
We approach ‘science’ as a closed system – in fact it is deeply implicated in wider systems of culture, power and politics

Assumptions about fixing it?
Thinking systemically can help us grasp the complex interdependencies that shape individual choices and intervene to better align or harmonise the system

Focus of interventions?
• Understanding the systems that impinge on science engagement and intervening to enhance them
• Brokering and aligning interventions

Purposes:
1. Inspiring the next generation
2. Science literacy of the general population
3. Social equity outcomes arising from positive engagement

The Participatory tradition (empower the ‘disadvantaged’)
People’s readiness to participate is strongly determined by inequity and the exercise of power

What’s the problem?
Poverty, marginalisation, access and self-efficacy affect people’s readiness and appetite to engage with science

Assumptions about fixing it?
We need to address inequality and structural barriers if we are to open up science to the ‘disadvantaged’

Focus of interventions?
• Community development; widening participation

The Marketing tradition (target the ‘dis-engaged’)
We are ‘selling’ science in the wrong way – we need to tailor our messages to our audiences

What’s the problem?
Our messages aren’t getting through

Assumptions about fixing it?
If we better understand our audiences and their motivations / interests / values we can target them more effectively – and reach the publics we value

Focus of interventions?
• Intelligence gathering
• Tailoring message to audience; targeting more effectively

Find out more: http://publicen-gagement.ac.uk/sites/default/files/publication/diversity_and_inclusion_-mapping_app-roaches_to_opening_up_scienc-e.pdf
The National Forum has chosen to adopt the idea of ‘science capital’ to inform our collective work. We believe that this provides a productive platform to think differently and more profoundly about the factors which affect people’s engagement with science.
Professionalising PE

The ScoPPES team
Dr Helen Featherstone, Colin Johnson and Professor Justin Dillon

Find out more:

Professionalising STEM engagement

Helping to develop sector skills in public engagement with STEM.

Image credit: British Science Association

The National Forum for Public Engagement with STEM believes that skills development is crucial to a thriving public engagement system, improving the quality of our work and helping people to feel supported.
Evaluating public engagement with STEM

How can we support better evaluation?

The National Forum for Public Engagement with STEM believes evaluation is critical to improving quality of engagement. Across the Forum, each of the members is working actively in this space, and some examples are included below. We are convinced there is more we can do by working collectively and openly with the sector to interrogate our practice, and have established a working group to progress this.

Better evaluation & evidence

- Working group scoping study
- Pilot approaches (What Works, GEPES)
- Factors and PAS
- Audience insight tool

Find out more:
Better funding

• Reviewed our funding and how it is currently spent
• Sought feedback from the wider sector
• Invited external challenge
• Planning a ‘funders forum’ in 2019

Find out more:

The National Forum for Public Engagement with STEM is aware that funding for public engagement with STEM is precious and in short supply. We want to make it work harder to realise a thriving system and to realise our goals of more people, engaging more productively in STEM.
Reflections from network:
What has changed over the past 5 years

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What changes to the ‘sector’ have people seen over the past five years?

Areas where we have seen change -
• Increasing focus on public value
• More STEM engagement happening using artistic methods
• Greater appreciation of the link between STEM and culture
• Shifting from one-way to two-way engagement
• Larger and more joined up set of ‘actors’
• Inclusion of impact in the REF encouraging more researchers and institutions to engage
• More attention being paid to legacy and evaluation
• Funding has improved a little for longer term projects
• A shift towards more strategic investment, but has this left less room for support for grassroots activity?
• More collaboration and partnerships forming around diversity and inclusion agendas.

Aspects where there has been very little change -
• Very little has changed in the workforce, we are on transient short term contracts
• We are still very dependant on project funding, which has a cyclical nature. It is difficult to build and sustain excellence.
Taking stock

What’s preoccupying you at the moment?
What’s preoccupying me?

• Dr Penny Fidler, CEO of The UK Association for Science and Discovery Centres
  – The world has been given a stark and urgent warning in the IPPC report on 8 October [on the impacts of a 1.5°C warming]
  – We are Working to develop a set of pledges for the Science Centres, museums and learned societies within the ASDC membership to drive change across the UK. Details to be announced.

• Savita Willmott, CEO, Natural History Consortium
  – We are looking ahead to 2020 with a real sense of urgency - looking the moments and milestones that will help us engage new audiences.
  – We are taking the time to celebrate progress. For example, New research from Natural England shows more people than ever across all sections of society are engaging with nature.
What's preoccupying you? – TABLE NOTES

- Making the case to Universities and others
- How to capture the breadth and depth of activity taking place
- How to keep up best practice amongst volunteers
- How to move beyond surveys and metrics and develop more useful approaches to evaluation
- How to make the STEM ambassadors more “normal”
- How to network better in order to access best practice
- How to move beyond deficit models
- Balancing the needs of recruitment and widening participation in universities.
- The balance of power in relationships with/for small community led organisations working in STEM engagement
- Ensure there is diversity in leadership and role models
- Encouraging researchers to engage:
  - Will it affect their career?
  - How do I get them to do high quality engagement?
  - To love it/feel its meaningful?
  - Make it quicker/easier
  - Get messages across
- Sustainable business models
- How to be more strategic with minimal resources
- Climate change
- Supporting social mobility
- Working out what is good practice, and what is there already to draw on
- Adult science capital
- Entertainment as a fundamental part of science engagement
- Encouraging PE to move beyond schools to work with more community groups.
- Genetics as a ‘hot’ topic
- Student recruitment overwhelming public engagement in universities
- Government policy and education changes

Notes from table discussions
What's preoccupying you? – TABLE NOTES

- Our ongoing assumption that we have a right to tell people what to do, without really understanding the current lived experiences of those we want to reach
- Funding has invisible and visible consequences, it directly influences practice and can hinder progress
- Different organisational agendas/drivers are hidden or conflated which makes collective action challenging
- Understanding where we can best add value in supporting others to do PE
- Access to robust evidence of what really works in engagement with schools
- Lack of alignment between our activities and goals
- Engaging those from lower socio-economic backgrounds
- Sustainability of knowledge base within organisations
- Keeping practice going whilst having to innovate
- Justifying the value and position of public engagement within my organisation
- Improving evaluation – particularly longitudinal studies and better dissemination, so not re-inventing the wheel
- Long term funding direction
- Needing to encourage researchers to engage beyond schools
- Different areas of STEM having different levels of investment
- Cost/benefits of corporate funding
- Addressing the cost of our lack of diversity
- Articulating the financial value of STEM engagement
- Increasing life-cycle focus – outcomes not inputs - in schools
- Greater longitudinal work and data tracking
- Collaboration vs competition in the widening participation agenda.
- Low pay
- Gender balance
- Career development
- Trying to retrofit what we want to do to get funding
What's preoccupying you? – SUMMARY

IN PLENARY

- Establishing long term funding priorities
- Improving evaluation by independent professionals
- Diversity needs to be a top strategic priorities - going to be hard
- Does funding enable community organisations to grow and work with us?
- Broaden the people doing engagement, and improve the quality of their work.
- Encourage researchers to work beyond schools
- How can PE be sustainable when there is a lack of funding?
- Researchers still working from the deficit model
- Real lack of ability of our sector to understand the lived experience of the people that we want to reach.
- Different areas of STEM get different levels of investment (i.e. tech and genome editing at the top)
- Industry funding might be rising
- We are getting good at recognising the value that diversity brings, but we are not counting the costs of that a lack of diversity brings
- System is self-replicating
- Financial value of STEM engagement for people’s careers, and how much schools will pay for this
- Sharing knowledge in the room and how its is shared - our sector is not seen as one with expertise outside of itself, with a distinguished track record around evaluation
Taking stock

Survey of those working to engage the public with STEM

Provisional results - survey open until the 10th December, 2018

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Public Engagement with STEM

Part 2: National Forum

The Forum is currently focused on these four areas. They are all areas that we feel are unhelpful to make a collective difference. In this section we take you through some questions:

- Improving models and approaches to funding
- Engaging underserved audiences
- Ensuring more effective evaluation
- Development and sharing of evidence, knowledge, resources and activity

What other topics or issues do you think the Forum should be addressing?
Which of the following types of organisation best describes your organisation?

- University or Research Institute
- Museum
- Other Charity or NGO
- Consultancy
- Private business or industry
- Learned Society
- Science or Discovery Centre
- STEM Enrichment Provider
- Planetarium or Observatory
- Festival/Cultural Event
- Funder
- Policy, Advocacy or Infrastructure Organisation
- Media, Broadcast or publisher
- School or College
- Nature / Conservation organisation
Which of the following statements best describes the primary focus of your role?

- I have responsibility for and oversight of public engagement in my organisation
- I develop and deliver public engagement
- I support others to develop, deliver and evaluate public engagement
- I research and evaluate public engagement
- Public engagement is a small part of my current role
- Other
How many employees work for your organisation?

**INTERIM FINDINGS**
Thinking about the audiences you engage with what are your top three aims?

- To embed STEM as part of life/’culture’
- To help people feel confident in engaging...
- To create conversations between STEM...
- To help people enjoy STEM
- To create a more fair and equitable society
- To develop a scientifically literate society
- To encourage evidence-based behavioural...
- To promote specific work
- To promote particular STEM projects or...
- To encourage people to support research...
- To help people talk to friends and family...
- To help people seek out STEM events and...
- Other
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- To help people talk to friends and family...
- To help people seek out STEM events and...

Other
Has the concept Science Capital informed your work?

INTERIM FINDINGS

Yes, significantly: 35
Yes, to some extent: 40
I’ve heard about it but not applied it: 20
I’ve never heard of it: 30
Other: 5
If answered yes, how have you used it? (select all that apply)

- Influenced my approach to targeting underserved audiences
- Made me reflect on my own journey
- Helped me to support others
- Helped with designing and shaping policies
- Used as an evaluation tool
- Influenced how I talk to young people
- Influenced how I engage adults
- Influenced who I choose as role models for young people
- Influenced how I talk to parents
- Other
Evaluation is a critical part of improving practice.

Funders have a responsibility to evaluate the engagement work they fund.

Funders should invest in a longitudinal study to explore the long-term impact of investment in STEM engagement.

Funders should provide expert evaluators to work alongside the programmes they fund.

Evaluation training should be a compulsory requirement for those who are funded to do public engagement.

Funders have a responsibility to evaluate the engagement work they fund.

Evaluation is a critical part of improving practice.

[Bar chart showing the distribution of agreement levels for each statement.]
What is the key challenge you face in your role?

- Lack of time / resources
- Lack of / poorly targeted funding
- Culture of science
- Fragmented sector / lack common purpose
- Weak partnership working / networks
- Lack of purpose / strategy / quality
- Lack of capability / skills
- Lack of personal influence
- Inadequate evaluation
- Racism / diversity
Taking stock

Any surprises in the survey results?
Feedback on the survey and interim results?

• Science Capital – there was no room for a nuanced response
• Racism and diversity question – surprised at how few people experienced this as a challenge
• What do we do about ‘lack of time’ and ‘resources’ – this always rates as highest?
• Diversity – do we have a diverse sector?
• Responses are mainly from senior management – BSA survey had different motivations but different audiences – more coal face [NB: BSA are distributing the survey in November].
• The survey is written in a language that is relevant to us but may not be accessible for other people to complete.
• Fragmentation in the sector
• The evaluation deficit
• Split in size of organisations
• The volume of volunteers
Lunch

1.15: Parallel Sessions

- Fostering diversity
- Developing evaluation (Foster room)
- Developing a new funding scheme (Bloomsbury room)
Parallel Sessions

Fostering diversity

#ukstemforum
Fostering diversity

Katherine Mathieson, Chief Executive, British Science Association
Clio Heslop, Cultural Partnerships Manager, British Science Association
Erinma Ochu, Lecturer Open Science & Storytelling, University of Salford
Susan Raikes, Director of Learning, Science Museum Group
Session outline

Approx. timings:
• Group activity (10 mins)
• Group discussion (15 mins)
• Group activity (10 mins)
• Discussion panel (30 mins)

Aims:
• Discuss the strategic drivers for diversity in science engagement
• Discuss the influences on how we think about diversity, and how these compare across the sector
• Discuss initial results of Forum sector survey
• Build on the Forum’s recent paper “Mapping approaches to opening up STEM”

Note: this session is not claiming extensive expertise on diversity, rather to encourage attendees to reflect on their approach
Activity – 10 mins

What is driving you/your organisation’s work on diversity and inclusion?

• Create a spider plot to rate each driver (scale 1-5, 5 high)
• Feel free to add “other” categories as needed
Activity feedback

• Highest rated drivers were business and social justice
• Most people said they emphasised different drivers depending on who you were speaking to
• “Other” drivers included: health benefits for all, more relevant/quality research, wider range of influences, lip service/expedience, need for novelty/creativity, reputation and influencing, learning, equity
Discussion – 15 mins

Discuss on your table:

• Which one of these factors would you change to have the biggest overall impact on your/your organisation’s work on diversity?

• (e.g. Do you need to change business processes? Strategy? Other?)

• Nominate one person to feed back after 10 minutes
Feedback

- Making it a high level priority
- The change will be slow unless those with more privilege recognise it and step back
- Identifying who is accountable
- Weaving through organisation
- Clarifying our obligation and role in relation to structural and systemic challenges
- Trustees Boards and Boards of Governors - Well meaning but ignorant - educate in other ways of thinking
- We need a trustee who is a go too person for this. Someone who has a track record that is relevant to our work
- Be bolder and act. Making it public what we’re doing - and being held accountable. We don’t talk much about what we’re doing - we need to take time to celebrate what we’re doing before moving on
- Don’t talk about us without us. We need to have the voices in the room [that represent the communities we are talking about]
- Could we be better at making the business case
- We wouldn’t exist without the belief that Science is for everyone
- Greater diversity in the workforce drives better and more diverse work
- More diversity brings better research - the tech industry is taking leaps and bounds in this area
To what extent do you agree/disagree with the following statements about how well equipped your organisation is to improve diversity and inclusion in STEM?

Highest rated answers:
• We have the right organisational culture
• We have the right attitudes and skills

Lowest rated answers:
• We have access to funding
• We have the expertise we need

From National Forum Sector Survey – correct as 31/10/18
In your opinion, which factors hinder your organisation’s attempts to be more diverse and inclusive?

Highest rated answers:
- Structural barriers and inequalities
- Inadequate funding

Lowest rated answers:
- Senior managers do not value diversity
- Limited organisational knowledge on how to embrace diversity
In your opinion, what should be done to improve diversity in STEM?

Highest rated answers:
- Share best practices and experience of what works
- Tools and resources

Lowest rated answers:
- Nothing
- Financial penalties
- Auditing, charters, and awards
Feedback

Responses indicate that:

• The sector feels it is hindered by external factors (funding, societal inequality) rather than a need to change internally

• There is a lack of confidence to take the next step (needing best practice, tools, resources)
Activity – 5 mins

• Look at the blank charts around the room
• Mark an “x” to guess the % respondents of the sector survey who identify as being part of each group
• Note: this is a snapshot based on 3 week survey (n=129) – not representative
Gender of respondents

- Male: 25%
- Female: 68%
- Prefer not to say: 6%
- Prefer to self-describe: 1%
Age bands of respondents

INTERIM FINDINGS

- 16-24: 5%
- 25-34: 22%
- 35-44: 33%
- 45-54: 22%
- 55-64: 14%
- 65-74: 2%
- 75+: 2%
- Prefer not to say: 1%
Ethnic background of respondents

- 78% Irish
- 8% Any other ethnic background
- 5% Prefer not to say
- 2% Mixed: White and black African
- 1% Mixed: White and asian
- 4% English/Welsh/Scottish/N Irish/British
- 1% Asian Chinese
- 1% Black African

INTERIM FINDINGS
Day-to-day limitations of respondents due to a health problem or disability

INTERIM FINDINGS

- Yes, limited a lot: 0%
- Yes, limited a little: 12%
- No: 84%
- Prefer not to say: 5%
Highest qualification (any subject)

INTERIM FINDINGS

- Postgraduate degree: 68%
- Undergraduate degree: 18%
- Professional qualification: 9%
- None: 2%
- Other - please give details: 0%
- Level 1 (e.g. NVQ, SVQ, level 1): 0%
- A-level or equivalent (e.g. OAA, OGC): 1%
- College-level diploma (e.g. HNC): 2%
- GCSE/O-level or equivalent (e.g. GCSE, O-level): 0%
Highest qualification (STEM subjects)

INTERIM FINDINGS

- Postgraduate degree: 57%
- Undergraduate degree: 26%
- College-level diploma (e.g. HNC, HND): 2%
- A-level or equivalent (e.g. ONC, OCR): 4%
- GCSE/O-level equivalent (e.g. CSE): 9%
- Level 1 (e.g. NQV, SVQ, level 1): 0%
- None: 2%
- Other - please give details: 0%
Feedback

• Attendees accurately predicted results in most cases
• Level of qualification was the only area where attendees underestimated

Verbal reflections from participants
Discussion

• What actions can we take at an organisational level?
• What structures need to change?
Susan Raikes, Director of Learning, Science Museum Group

Susan provided a personal account of her approach to the topic

- First person family to ever go to university.
- An obligation to clear the path for others to engage, take part in things that are interesting and stimulating.
- Before joining the Science Museum Group, I worked in the Museum Sector for over 17 years. Most recently at the British Museum.
- It's always been important to me to work for an organisation that aligns with my values. The Science Museum Group has a strategic mission to be open for all.
- “New audiences” is the term that I currently use. Underserved audiences - hard to reach - these terms don’t seem to work for me.
- I would like there to be a stronger drive for equity in STEM engagement. This is much more part of the landscape of the museums sector.
- We need to have the confidence to challenge the status quo and find new ways of working.
- There needs to be some urgency and a willingness to look at how we work with communities in an equitable way. We need to look at our structures and processes, as well as a better understanding of what we are striving for and how we will measure success.
Disability movement

'Nothing About Us Without Us'

Intellectual Activism

“The myriad ways that people place the power of their ideas in service to social justice.”

– Patricia Hill Collins
Erinma Ochu, Lecturer Open Science & Storytelling, University of Salford

Erinma also provided a personal account you can read the full account here: https://everyoneandeverything.wordpress.com/2018/11/07/coming-out-of-the-blue-remix/

I’m Erinma, a lecturer in Open Science and Storytelling at The University of Salford. As a teenager, I was incredibly privileged to be educated in Manchester by local African and Caribbean communities, alongside my University education. I had no idea at the time, but the pioneer, Beresford Edwards, who came to settle in Moss Side from Guyana, was a key figure in striving towards racial equality in the UK. A printer by trade, Beresford had to fight the printers union after being ousted in the UK due to racism, but he won his case. A landmark case, look it up! But, again, because of racism, although he got back his union card, he was ostracised by rumours and couldn’t get work.

This didn’t deter Beresford – instead, he set up the West Indian Community centre on Carmoor road, just round the corner from where I lived in Longsight. He also set up a black book shop there. One Saturday morning, I went out, curious about my new neighbourhood – I am a geek by nature, and would happily stay in the house, but my mum always encouraged us to go out, ‘meet your neighbours, go do ‘cultural activities’” – so I went out and I came across the community centre. I popped my head in, the door was open and a record tape was playing. Beresford invited me in – he said ‘come in, what do you do?’ I told him I was studying science around the corner at The University.
Parallel Sessions

Developing evaluation (Foster room)
Developing an evaluation framework
Science capital and the Ogden Trust

DR CHARLOTTE THORLEY
@CPRTHORLEY
The Ogden Trust aims to increase the uptake of physics for all at post-16, particularly for under-represented students

**Supporting physics teaching**
- Recruitment
- CPD
- Retention

**Supporting students to develop physics identity**
- Enrichment and enhancement activities
- Working with families
- Attainment
- Careers awareness

**Priority audiences**
Teachers in England who:
- Teach in primary schools,
- Teach physics without having a subject specialism,
- Teach in a state school in a remote rural area, or
- Teach in a state school in an area of social deprivation.

**Priority audiences**
Students in England who:
- Have low science capital,
- Live in remote rural areas,
- Live in areas of social deprivation,
- Pupils on Free School Meals (FSM), or
- Pupils whose parents haven't been to university.
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<th>Have you evaluated the design of your public engagement?</th>
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<tr>
<td><strong>Design</strong></td>
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<td>Does the design follow good practice, underpinned by sound ethics?</td>
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<td>Have you systematically identified relevant publics (and stakeholders)?</td>
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<td>Do you understand the expectations and specific benefits each group is likely to derive from engagement?</td>
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<td>Have you identified and made contingencies for any risks &amp; assumptions?</td>
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<td>Have you tested your activities and sought feedback from relevant publics?</td>
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<td>How well do you know the context you are working in, and have you adapted the design of your activities to this context?</td>
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<td>Do your proposed engagement activities match the interests and needs of your target publics and their social and cultural context?</td>
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<td>Is there experience of engagement and existing trust between members of the research community and publics?</td>
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<td>Do you have sufficient resources and support for engagement in this particular context e.g. professional facilitation, event planning etc.?</td>
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<th>Delivery Outputs</th>
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<td>What immediate outputs do you want to deliver from engagement?</td>
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<td>How will you know you delivered these outputs?</td>
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<td>Identify indicators to show whether your delivery of public engagement activities is providing the immediate outcomes you want</td>
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<td>What tool will you use to track your progress?</td>
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<td>Identify evaluation tools that will enable you to track the indicators you have identified</td>
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<tr>
<td>What benefits or “impacts” do you want to achieve from engagement?</td>
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<tr>
<td>How will you know you achieved these impacts?</td>
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<tr>
<td>Identify indicators to show whether your public engagement is leading to “benefits” or impacts</td>
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<tr>
<td>What tool will you use to track your progress?</td>
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<tr>
<td>Identify evaluation tools that will enable you to track the indicators you have identified</td>
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Parallel Sessions

Developing a new funding scheme (Bloomsbury room)
Developing a new funding scheme
National Forum for Public Engagement with STEM

Dr Katy Stubbs
Our Vision
A world where people are free from the fear, harm and heartbreak of dementia

Our Purpose
- Fund and deliver pioneering research
- Collaborate to speed up global scientific progress
- Confront misconceptions across society

Our Mission
To bring about the first life-changing dementia treatment

Our Goals
- Understand dementia
- Reduce risk
- Improve diagnosis
- Develop treatments
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Our Goals
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- Improve diagnosis
- Reduce risk
- Develop treatments

- Build upon existing work
- Empower people to develop public engagement projects
- Bring new perspectives, talent and expertise into this area
Currently available

- A number of schemes available around £1k - £5k
  - E.g. Physiological Society, MRC, Biochemical Society, Royal Society
- Larger sums from Wellcome, MRF, STFC £10k - £1m
- Eligibility restrictions
- Nothing specifically around dementia
  - Alzheimer’s Research UK Research Network provides some funds

New scheme:
Open to all, applications to meet one of more of the following aims:

- Challenging misconceptions about dementia
- Raising awareness of dementia
- Engaging people with dementia research
Opportunities and challenges

• How can we ensure a thorough review process that isn’t protracted?
• How can we minimise risks around funding private individuals?
• How can we embed effective evaluation into applications?
• How do we reach communities other than researchers who may want to apply?
How can we ensure a thorough review process that isn’t protracted?

- Create an easy and uniform review process to make it clear to reviewers what the judging criteria are.
- Pay external reviewers (especially if from communities).
- Make a review process that is proportionate to the scheme – small amounts reviewed in house, larger amounts triaged then a proportion go out for external review.
- Ask for an expression of interest or a very short initial application before asking a subset to do the full application.
Summary of Discussions

How can we minimise risks around funding individuals?

- Pair up with researchers to form a collaboration (then there is accountability).
  - Do matchmaking after awards.
- Ask applicants to form partnerships.
- Don’t! Always fund organisations or partnerships.
- Need evidence of experience, a separate business account, audit them (i.e. Devon Community Fund).
- A grant is a gift – you don’t have full control afterwards.
- In reality, would you fund a £30k project for a private individual?
- Lump sum or given in stages?
Summary of Discussions

How can we embed effective evaluation into applications?

- Is evaluation for the activity or the overall grant scheme? Think about how they will show different things and what you will judge as evidence of the scheme being a success (so what you need project evaluation to cover).
- Have an appointed evaluator to support the projects.
- Run an evaluation workshop – see examples like Ingenious from Royal Academy of Engineering.
- Clearly define what evaluation means to you – what does success look like in your eyes and create in-house success criteria.
- Appoint an external learning partner – will provide independent evaluation of the scheme.
- Have an external PE professional on the review panel to provide an external voice and perspective.
- Run scheme as is, evaluate the scheme and then use smaller sub-pots to experiment.
- Need toolkits and support to show applicants what you want.
- Tools available on website, partnership comms manager to work with.
- Ask in advance about evaluation.
- Don’t require evaluation that is out of proportion with the scheme – manage expectations.
- Ask grant holders to present posters of the project at relevant events.
Summary of Discussions

How do we reach communities other than researchers who may want to apply?

- Involve the communities now – ‘user testing’ pilot. Is that the amount they would use? What would they do/need/call it?
- Publicise through Association of Independent Museums.
- Need to identify the communities you want to reach so you can understand their motivators and drivers.
- Look to best practice, who is doing similar?
  o Wellcome Library Scheme.
  o Local support groups?
  o British Science Association – community scheme.
- It takes a while to go beyond the usual suspects.

Other

- Create a 3-year strategy/commitment to the scheme to fully embed and evaluate
- Use a partner to deliver the scheme
2.20 Session - ideas

2.20: Parallel Sessions

• Building capacity
• Developing new activities using design thinking (Foster room)
• Triggering the behaviour change that is needed around climate change. How do we make space to work on these global missions and make people welcome and feel like they belong. (Bloomsbury Room)
Building Capacity

Gail Cardew and Dom McDonald - Ri
Helen Featherstone – University of Bath

#ukstemforum
Building our collective capacity

How do we develop our skills and capacity to deliver excellent public engagement?

A session to explore how different players in the PE STEM sector are thinking about skills and development

www.bath.ac.uk/public-engagement
Scoping the Professionalisation of Public Engagement with STEM

What we did …

Thinking aloud

• Online discussions
• Desk research
• Advisory group

Helen Featherstone (*Public Engagement Consultant, University of Bath, BIG*)
Justin Dillon (*Professor of science and environmental education, University of Exeter*)
Colin Johnson (*Visiting Senior Research Fellow, University of Bristol*)

Download the report:
http://publicengagement.ac.uk/sites/default/files/publication/scopess_forum_recommendations_final_version.pdf

www.bath.ac.uk/public-engagement
What we said 1

The sector is poorly understood

- Science Communication Practitioners (e.g. science centres, science presenters etc)
- Other engagement and communication sectors (e.g. museums, broadcast etc)
- Researchers in Universities

Paid and volunteer roles
What we said 2

Professionalisation is happening in practice, if not in name…
# Generalisations about professionalisation/chartership

<table>
<thead>
<tr>
<th>Generalisation</th>
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<tr>
<td>There is a sector body which defines, approves, assesses (by peer/senior review) and regulates the tools for professional development.</td>
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<tr>
<td>Assessment is by people who are members of the body and have achieved senior status.</td>
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<tr>
<td>Knowledge of core practice and commitment to certain values. More senior accreditation involves demonstrable leadership or advanced practice in some way.</td>
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<tr>
<td>Methods for gaining new knowledge can involve courses which are run by the accrediting body or are run by others with accreditation/endorsement from the body</td>
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<tr>
<td>Accreditation process involves evidence and support from someone within the sector.</td>
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<tr>
<td>Members of the profession have a commitment to keeping up to date.</td>
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<tr>
<td>There is often a payment for being assessed.</td>
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<tr>
<td>The processes and tools delivered by the sector body facilitate a community of practice and builds networks.</td>
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What we said 3

The lack of agreed quality standards for practice or people which hinders development

Engage Framework

Good practice principles for public engagement involving universities

Background

There are lots of reasons researchers might choose to engage the public with their work. It might be because of a desire to make a difference; to respond to funding calls that ask for pathways to impact to be integrated into the research programme; to be accountable to the public; to try to create a REF impact case study; or to learn new skills. As public engagement is increasingly in the spotlight, and funders invest significant effort to incentivise more engagement, it is important to consider what the good practice principles for this work might be.
This session
Engage Framework

Good practice principles for public engagement involving universities

Background

There are lots of reasons researchers might choose to engage the public with their work. It might be because of a desire to make a difference; to respond to funding calls that ask for pathways to impact to be integrated into the research programme; to be accountable to the public; to try to create a REF impact case study; or to learn new skills. As public engagement is increasingly in the spotlight, and funders invest significant effort to incentivise more engagement, it is important to consider what the good practice principles for this work might be.
Discussion

What should we be mindful of as we explore the use of these frameworks?

Begin by talking with your immediate neighbour(s), then your table co-ordinator will gather some observations and record them for us.
Summary of Discussions

The potential benefits...

- Improving the quality of interactions, e.g. between scientists and the public.
- Clear and agreed skills and competencies, agreed standards of practice, can help to define and open our sector to others.
- Improving career progression, wellbeing in work, training and development etc.

There was wariness about the use of the term ‘professionalisation’ because ...

- It can be used to define “who is in the PE-with-STEM business”, but also those who are not, leading to an undesirable sense of exclusivity.
- A set of professional criteria could be regarded as stifling innovation and creativity (a hallmark of the best public engagement), especially for newer entrants.
- Any framework would need to be co-produced and have significant backers in order to have buy-in from the sector.
What next?

Our vision is that by 2025 the public engagement with science sector meets the highest standards of professional excellence in:

a) developing the knowledge, skills and ethical practices of its members;

b) engaging diverse publics responsibly with science, scientists and science policy;

c) critically evaluating planning, delivery and impact;

d) paying attention to working conditions, status and career progression.

So that we have a society in which STEM knowledge and practices are created, used, challenged, valued, and shared by all.

If you would like to take this forward in any way, please come and talk to us after the session.

www.bath.ac.uk/public-engagement
"Science communication is like gardening. Many can do it, but to become adept one needs to be interested, be willing to learn from others and gain experience, to have a plan, be prepared to experiment, occasionally fail and learn from failure and to reflect on outcomes. It is useful to recognise that there are differences between a novice’s enthusiastic attempts and those of a professional. That is not to say that novices cannot produce good outcomes. But all science communicators can benefit from an understanding of key principles and reflection about the craft. And all science communicators can improve with increased understanding of how people receive and use information."

Nancy Longnecker
Journal of Science Communication 15(05)(2016)Y01
Find out more

https://scoppes.blogspot.com


https://blogs.bath.ac.uk/publicengagement/tag/challengecpd/
Parallel Sessions

Developing new activities using design thinking (Foster room)

No slides available
Parallel Sessions

How can we encourage the behaviour change that is needed by our organisations around climate change?

How do we make space to work on these global issues and ensure that engagement is done with and not to? (Bloomsbury Room)
Summary of Discussions

This session was convened in response to proposals for a session on addressing carbon and climate collectively spurred by the IPCC call for immediate action on climate change. The session focused on pragmatic large-scale national changes that can be made by our organisations, leading by example and driving national change.

Highlights from the discussions include for example:

• Working through our networks to influence major institutions across the UK, across Science Centres, Universities, councils.
• Considering what is our super power. It is not our individual actions as people, but our voice to lead the way and to influence all the science organisations with whom we work.
• Embedding engaging the public with climate change and biodiversity at the heart of strategic plans and activities.
• Making it very visible. Showing what you are doing to lead others and normalise it.
• Sharing practice across cities –See Malmo as a good example. Ambitious challenge re renewably fuelled buses. Pledged to do this as a city, and citizens, construction workers etc.
• Use every part of behavioural psychology to Consider where people are in their lives.
• Mobilise individuals that we are working with, build it into projects. For example NERC Community Science project - annual showcase for community science, people come together to share their work, and to learn from each other. Includes health and environment. There is no formal commitment to work together, but just happens annually.
What’s next?

Place-based partnership working

Steven Hill, Director of Research, Research England

Three Forum members then provided updates on current Forum activity
The shared objective that we all have across the Forum is to engage audiences that don’t typically engage with STEM. One challenge is that the audiences that we are seeking to reach are often in different places than the infrastructure that we have in place for STEM engagement.

We are investigating working in a place-based way into a single location, in a period of time, to catalyse and facilitate the development of a legacy.

Further details will follow.

For more information – contact the Forum secretariat.
What’s next?

A common tool for capturing audience insight

Jenni Chambers, Head of Public Engagement with Research, UKRI)
UKRI is planning to pilot a data collection and audience insight tool, building on work already done by other Forum members.

The plan is to develop a web/app based survey and data ‘dashboard’, which provides summary results to organisations (their own and aggregated from others) that would enable informal science organisations to measure, understand and use data regarding the levels of science capital and other metrics among the audiences they engage with.

**Key features**
- Common set of questions with data collected in a standardised way
- Data aggregation
- Technical hosting on a long-term arrangement
- Investment in resources to help embedding in practice
- Academic link to process the data but also to ensure it is as useful and open to others to interrogate

For more information – contact the Forum secretariat
What’s next?

Funding PE with STEM – what works?

*Simon Chaplin, Forum Chair*

Simon shared some of the work the Forum has been doing to review the current funding arrangements. Building on this work is a priority in the year ahead.
Positives in the current arrangements

- Range of different funding schemes
- Recognition of the role of key organisations in supporting the development of the system.
- Robust review and assessment processes.
- Increasing focus on diversity, inclusion and evaluation.
Simon Chaplin, Director of Culture and Society, Wellcome (Forum Chair)

Things people would change:
- Invest in capacity building.
- Longer term projects, extension grants/or seed fund networks to share learning
- Reduce the focus on 'new' and 'innovative'
- Cover salary costs
- Greater strategic oversight and coherence to funding. Shift from a collective of disparate funders to a coordinated approach creating progression routes and maximising funds from other sectors (i.e. industry, BLF etc.)
What’s next?

Forum priorities going forward

• Improving models and approaches to funding
• Engaging underserved audiences
• Ensuring more effective evaluation
• Development and sharing of evidence, knowledge, resources and activity

The final session invited delegates to reflect on the Forum’s priorities, and shared feedback from the sector survey about possible future priorities

#ukstemforum
## Part 2: National Forum

The Forum is currently focused on these four areas. They are all areas that we feel are unexplored and can help to make a collective difference. In this section we take you through some key questions:

- Improving models and approaches to funding
- Engaging underserved audiences
- Ensuring more effective evaluation
- Development and sharing of evidence, knowledge, resources and activity

What other topics or issues do you think the Forum should be addressing?
What other topics or issues do you think the Forum should be addressing?

- Current are good: High visibility
- Sector-wide Initiatives / common purpose: Moderate visibility
- Forum profile: Low visibility
What other topics or issues do you think the Forum should be addressing?

- Current are good
- Sector-wide Initiatives / common purpose
- Forum profile
- Making case / advocate for change

Championing everyone’s efforts to promote the importance from the littlest efforts of STEM ambassadors all the way to the big players such as the RI.

Being relevant to changing social and environmental needs (rather than whims of government policy)

Clear vision about the role of STEM in society - its place in our cultural lives & the increasing need for scientific literacy & understanding (e.g. in climate change debates)
What other topics or issues do you think the Forum should be addressing?

- Current are good
- Sector-wide Initiatives / common purpose
- Forum profile
- Making case / advocate for change
- Diversity / inequality access

Social mobility / social justice and PE

Disparity of opportunities in STEM for schools in economically deprived areas

Diversity within the public engagement sector
What other topics or issues do you think the Forum should be addressing?

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<thead>
<tr>
<th>Topic</th>
<th>Rating</th>
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<td>Capability</td>
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**Training and qualifications**

Professionalisation of PE and how to support multiple career paths

Union or supporting body for freelance PE professionals to ensure fair pay/industry standards etc

How smaller actors in PEST can work with the larger institutions like museums and unis.
What other topics or issues do you think the Forum should be addressing?

- Current are good
- Sector-wide Initiatives / common purpose
- Forum profile
- Making case / advocate for change
- Diversity / inequality access
- Capability
- Connecting to other sectors

Strategic approach to partnership working

Linking with businesses and employers

Interdisciplinary events with Arts and Humanities.

Build meaningful partnerships with schools/youth clubs, so that better and more in depth engagement can occur.
What’s next?

Forum priorities going forward

• Improving models and approaches to funding
• Engaging underserved audiences
• Ensuring more effective evaluation
• Development and sharing of evidence, knowledge, resources and activity
What’s next?

Forum priorities going forward

- Improving models and approaches to funding
- Engaging underserved audiences
- Ensuring more effective evaluation
- Development and sharing of evidence, knowledge, resources and activity

What one extra thing should the Forum prioritise?

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One extra thing the Forum should prioritise?

- Standardised approach to diversity audits
- Influencing policy – being an advocate for public engagement, commenting on policy
- Networks at different levels – international, national, regional and local
- Networking opportunities like today
- Profile/grow beyond usual suspects
- Be more transparent about membership e.g. science museums and universities can they join?
- Benchmarking public engagement from other countries and other sectors
- Agree some “universal” impacts we wish the sector to achieve and the measures of success by which we can assess performance.
- Listening to the public views on the ‘big’ questions and supporting science into policy
- Embedding public engagement throughout the research process

- Work with arts and humanities, get out of comfort zone
- Develop funding for extended outcomes of projects to improve impact on sector (see Paul Hamlyn Foundation)
- Encouraging review panels to engage with the outcomes from what they decided to fund.
- Change the culture of how science works
Thank you

National Forum for Public Engagement in STEM

The National Forum for Public Engagement with STEM (Science, Technology, Engineering and Mathematics) is a group of organisations committed to the value of engaging the public with STEM, and to working collaboratively to support innovation and good practice.

Find out more: http://publicengagement.ac.uk/national-forum

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