Science Communication & Public Engagement

Nicola Osborne

Nicola.Osborne@ed.ac.uk

What does Public Engagement mean to you?

Why undertake Public Engagement?

Why is community engagement important for research?

From basic science to health challenge research, effective community engagement involves communities most likely to be affected by research outcomes in ways that prioritise their views and experiences. It encourages mutual trust and improves the scope, relevance and impact of research.



https://wellcome.org/what-we-do/community-engagement



https://2021.ref.ac.uk/guidance-on-results/guidance-on-ref-2021-results/index.html

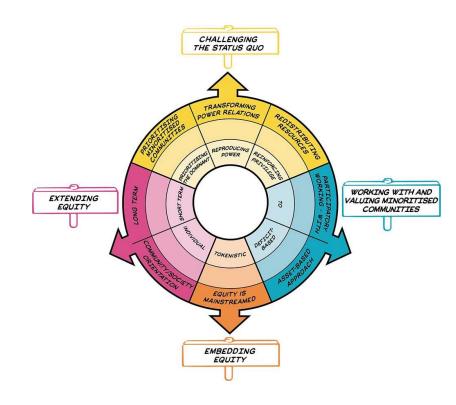
REF includes 25% weighting for impact and defines impact is

'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'

Models of Engagement

UKRI (2024) sets out 4 key principles:

- Open dialogue engaging diverse voices in the planning and execution of your research, understanding public perspectives and values
- Participatory research bringing non-academic partners into the research process, including shaping your research. Includes: citizen science, crowdsourcing, co-production, patient involvement and public involvement.
- Inspiring the next generation engaging with young people, including nurturing development of research and STEM skills, and an interest in research careers
- **Open innovation** involving and inspiring people to engage in applied research and innovation to solve important societal issues

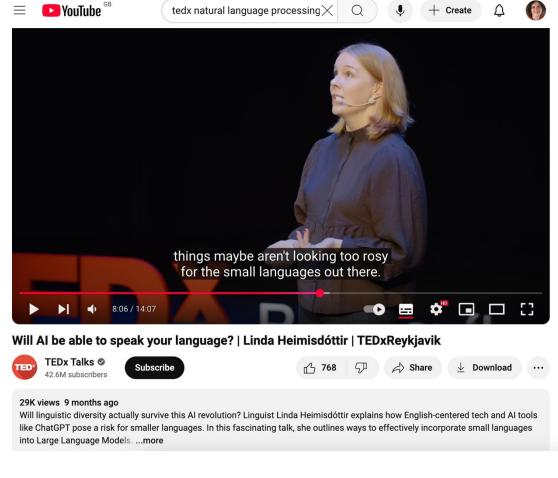


YESTEM Project Team (2021)

Are public talks good public engagement?

It depends...

- UKRI note public talks as a useful route to engage the public however...
- It depends on where you are speaking and who you are engaging – audiences can be self-selecting and lack diversity...
 - Can you target the right people to engage could you partner with organization/s to do this?
 - Can you go to your audience/target community where they already are?



https://www.youtube.com/watch?v=pvnXj0YJ6sA

Alternative presentation/interactive formats



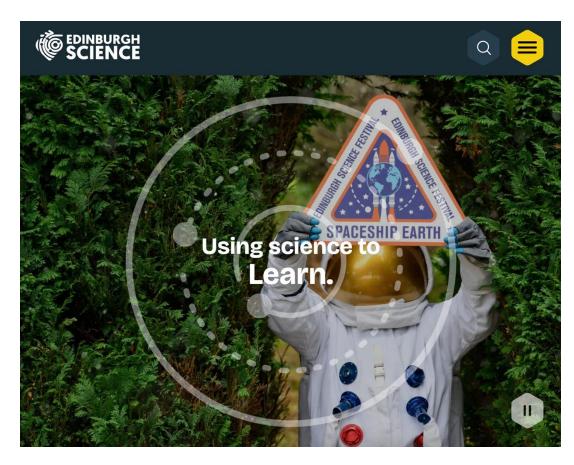


https://pintofscience.co.uk/

Mhairi Aitken (Turing Institute) performing at the Cabaret of Dangerous Ideas (new name TBC) at The Stand

What public engagement examples have you seen/encountered that work well?

Science Festivals (Edinburgh & Others)



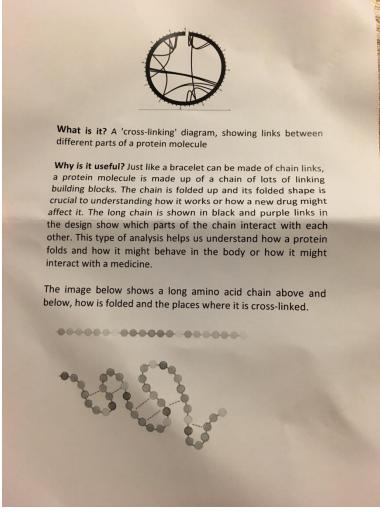
https://www.edinburghscience.co.uk/



Creative Informatics Unleashed, Science Festival 2024 (Pirie 2024)

Opportunistic Engagement at Public Events



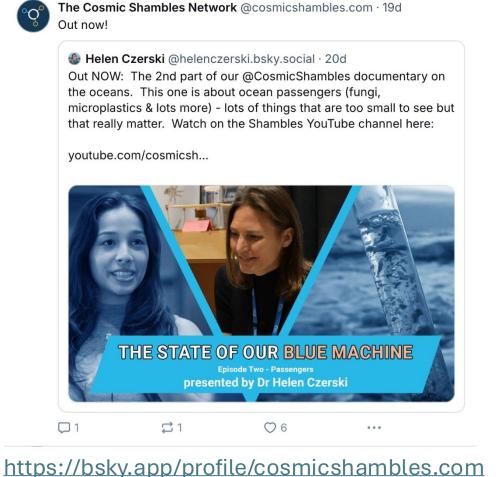


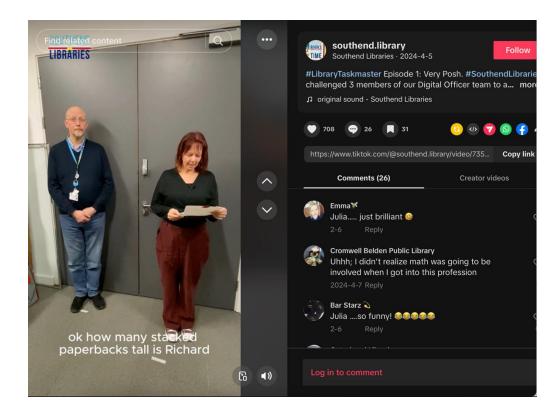
Tattoo My Science at the Meadows Festival (2018)

- Brief encounters at a large-scale public event
- Free, appealing, visual, playful
- Child friendly but not a familyonly activity
- Brief information given at point of applying temporary tattoo
- Further information shared as a take-away (2018) or as part of extended conversations (2024)
- Highly sharable as a talking point post-event.

Part of wider strategy: University of Edinburgh Wellcome Centre for Cell Biology (2018)

Social Media (pragmatic vs playful)





https://www.tiktok.com/@southend.library/video/7354356988853128481?q=library%20taskmaster &t=1741135616086

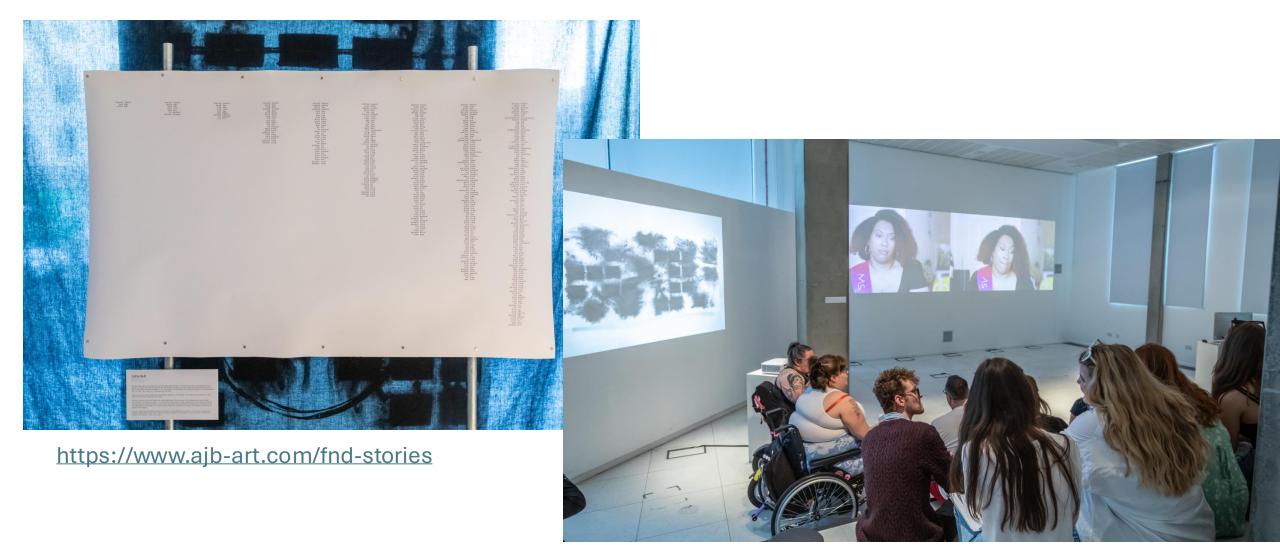
Dance your PhD



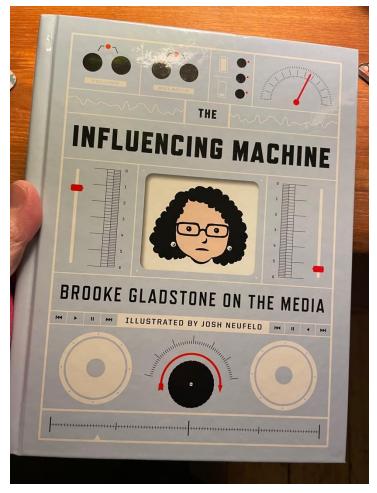
Take a look behind the winner of Dance Your PhD 2024 | Kangaroo Time

Behind the scenes: https://www.youtube.com/watch?v=2U76WCw3dhw Winning dance: https://www.youtube.com/watch?v=RoSYO3fApEc

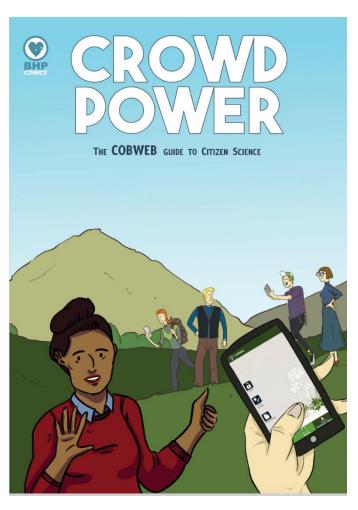
Public Engagement through artistic works: Andrew Brooks: FND Stories



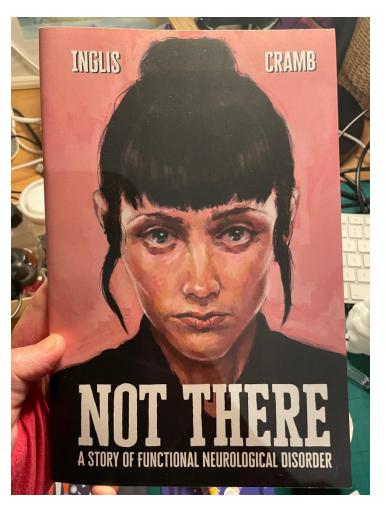
Comics/graphic novels



Gladstone and Neufeld (2011)

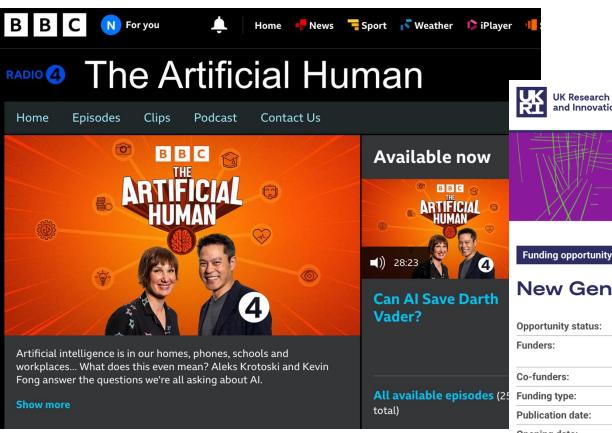


Nazir et al (2016)

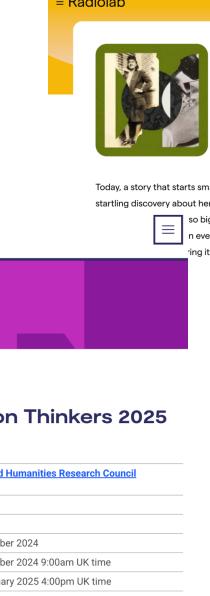


Inglis and Cramb 2021. See also Inglis (2021)

Podcasts (& Broadcast)



https://www.bbc.co.uk/ programmes/m001wif8



New Generation Thinkers 2025

UK Research

Opportunity status:	Closed
Funders:	Arts and Humanities Research Council (AHRC)
Co-funders:	BBC
Funding type:	Other
Publication date:	28 October 2024
Opening date:	28 October 2024 9:00am UK time
Closing date:	28 January 2025 4:00pm UK time

https://www.ukri.org/opportunity/ new-generation-thinkers-2025/



Today, a story that starts small and private, with one woman alone in her bathroom, as she makes a quiet, startling discovery about her own body. But that small, private moment grows and grows, and pretty soon

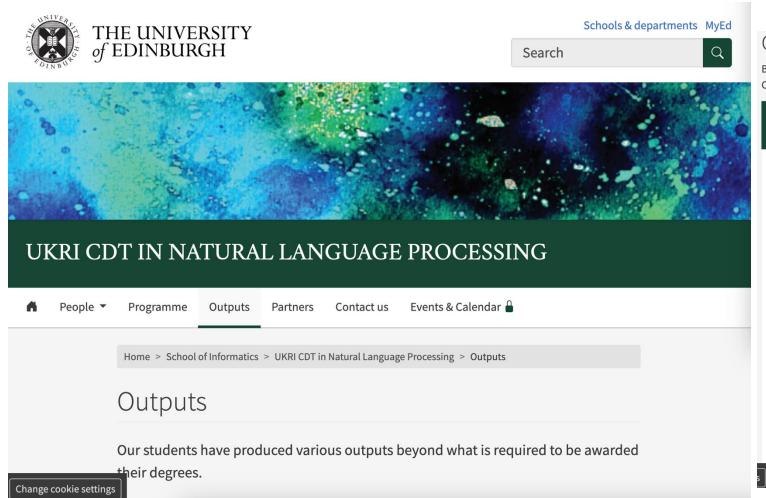
so big that it has impacted the life of every person reading this right now—and all n ever even knowing the impact she had. We originally aired this story back in 2010, ring it back today, as questions about bodily autonomy circle with renewed force.

https://radiolab.org/podcast/theimmortal-life-of-henrietta-lacks



https://www.bbc.co.uk/ programmes/b015sqc7

Some examples of what previous PhD students have done...



Other Outputs

Besides publications, our students have engaged in a variety of other activities reflecting the aims of the CDT:

Public Engagement (including Equality, Diversity & Inclusion Initiatives)

Laurie BURCHELL

- Poster Exploring diversity in back translation for low-resource machine translation, ILCC Poster Session, Informatics Forum, July 2022
- Talk CDT NLP Industry Day, February 2021
- Talk research presentation to funder community (+100), online, December 2020
- CDT NLP Ambassador WomenInAl Open Day, online, October 2020

Agostina CALABRESE

- Workshop Co-organiser of 2nd Workshop on Novel Evaluation Approaches for Text Classification Systems (NEATCLasS), co-located ISWSM, June 2023
- Hate Speech Detection Slack workspace connecting researchers from academia and industry, independently from their institution, 2022
- Activity Host- introducing children to computer science at Informatics Circle/zoom, February 2022, December 2021, July 2021, June 2021
- Microblogger volunteer for the ACL 2021 conference, tweeting about papers in both English and Italian, August 2021

https://informatics.ed.ac.uk/ukri-cdt-in-natural-language-processing/outputs

Planning Public Engagement Activity

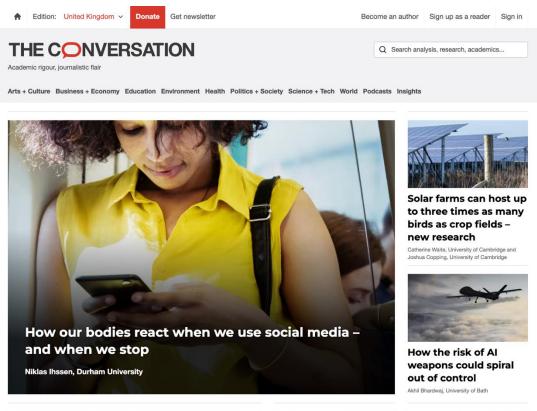
- 1. What is the purpose for engaging the public? Are you trying to change their mind, to share something new, to bring them into a conversation about your work? What would success look like?
- 2. Who is the intended audience/community you want to engage? (The 'general public' is too broad an audience for almost any public engagement activity.)
- 3. Where can you find that audience? What is the right kind of space (physical or virtual) to find them?
- 4. What does your audience know already? What expectations or possible misunderstandings might they bring in? Will they be receptive? Do you need to plan for a difficult situation? (e.g. Holder 2014)
- 5. What is your audience's cultural context will they relate to what you want to do? Does it pose any risks or challenges for them?
- 6. How will you communicate your work and involve your audience in it? What's the right format for this activity? What are the limitations (practical, financial, technological, etc.) on what is possible?
- 7. Ethics do we need formal ethics approval? (Garcia Iglesias et al 2024)
- 8. Practical planning what do you have? what do you need? Do you need other people to support you?
- 9. What are the key messages you want you audience to take away? How will you ensure they do?
- 10. How will you document, evaluate and capture impact of your activity?
- 11. Will this be a one-off or are you beginning an ongoing conversation?

Thinking about the Science Festival...

As you've been preparing, has anything surprised you?

Are there aspects you've needed to think differently about?

The Conversation



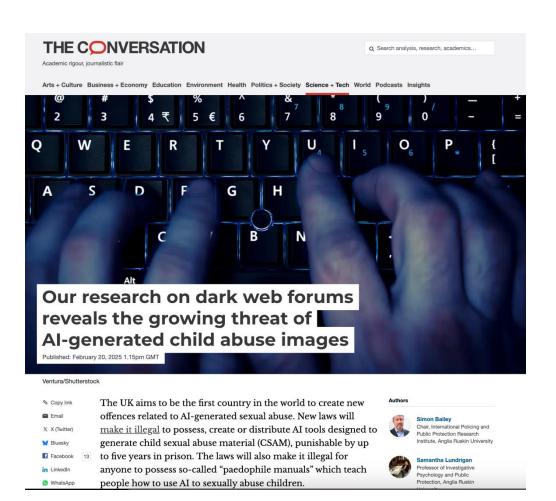




Black women are more likely to die from breast cancer – so why is breast screening



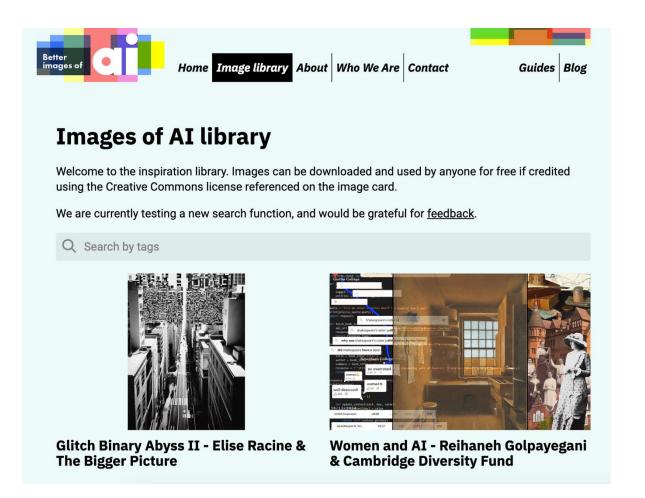
Netflix's Toxic Town offers a stark warning on environmental rollbacks

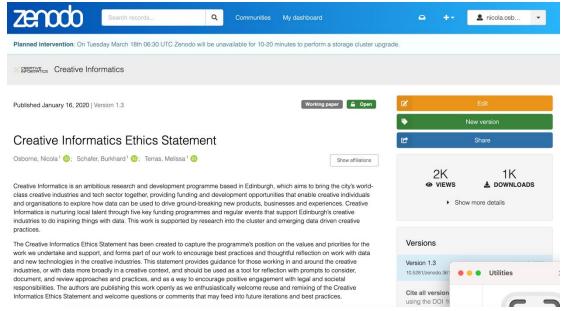


https://theconversation.com/our-research-on-dark-web-forums-reveals-the-growing-threat-of-ai-generated-child-abuse-images-249067

https://theconversation.com/

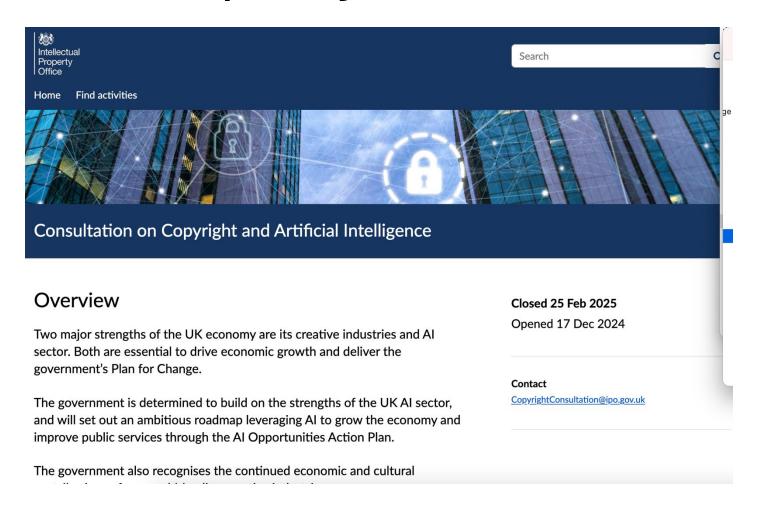
Engagement through open resources





https://doi.org/10.5281/zenodo.11260235

Public Engagement through public contributions to policy



Capturing & Evaluating Public Engagement

You are expected to participate in at least one public engagement activity per year and will be expected to report on this. Think about:

- Documentation of the event (with permissions)
- Recording how many people you engaged and (if possible) some idea of who they were/what their backgrounds are
- Capturing feedback from participants and/or your reflections and learnings on what went well/less well, areas for improvement etc.
- Recording any coverage/media/social media commentary and immediate impacts of follow ups, invitations to speak, collaborations or interest in further discussion of your work, etc.
- Consider how you might capture long term impacts both on your audience, and on your research (see eg Wellcome Trust 2014)

There is a great set of how to guides on planning and evaluating Public Engagement on the UoE Engagement for Impact Hub: https://uoe.sharepoint.com/sites/EngagementforImpactHub

Public Engagement Reporting







Definitions: HE - Business and Community Interaction

Support » Definitions and data standards » HE Business and Community Interaction

Creative Informatics: Data Driven Innovation for the Creative Industries

Outcomes

Lead Research Organisation: University of Edinburgh

People

Publications

Department Name: Edinburgh College of Art

Organisations



⋖ Go back

Overview

Artistic and Creative **Products** Key Findings Impact Summary Policy Influence Further Funding

Research Databases

and Models

Collaboration

Software and

Engagement

Technical Products

Description "Bootstrapping data processes within the arts: creative Informatics" Conference Paper, at Digital Heritage in a World of Big Data, Stirling University, 14th May 2019 Form Of Engagement A talk or presentation Activity Part Of Official Scheme? Geographic Reach National Professional Practitioners **Primary Audience Results and Impact** 50 attendees at a Conference at Stirling University to discuss big data in cultural heritage. This was a talk I gave, which sparked many questions and discussions afterwards. Year(s) Of Engagement 2019 Activity URL https://digitalheritageconference.wordpress.com/programme-2/

+ HE Business and Community Interactions coverage + Higher education provider identifiers. About How to search Search again: Search a case study...

Submitting Institution: Edinburgh (University of)

REF impact found 227 Case Studies

Currently displayed text from case study: Summary of the impact -

Actual Analytics Ltd: automated processing of video data to reduce the use of laboratory animals in scientific research

Summary of the impact

Series of images from animal behaviour studies contain vast quantities of complex and highly valuable data. Extracting the value from this scientific data often requires expert annotation. This is frequently an intuitive process based on experience gained through years of training to make

Submitting Institution University of Edinburgh

Unit of Assessment

Computer Science and Informatics

Submitting Institution: 2 Edinburgh (University of) (227) ☐ Show only Joint Submissions ② Unit of Assessment: 2 All Units of Assessment (227) Summary Impact Type: 2 All Impact Types (227) Research Subject Area: 2 All Subject Areas (227)

Filter Impact Case Studies

https://gtr.ukri.org/projects?ref=AH%2FS002782%2F1

A Few Gotchas...

- **Podcasts** are great, don't try to start a new one the time commitment involved to make a good one is huge. Do look for opportunities to contribute to others' though.
- Communities are ongoing, research projects and PhDs are time limited manage expectations realistically trust is hard to build and easy to destroy
- **Budget and plan realistically** there is typically little additional/flexible budget for public engagement unless embedded in project / research plans
- Social media can be used brilliantly for public engagement if you know your community/audience well and where they hang out. It no longer works as a broad public forum (eg as in early days of Twitter)
- **Video** content always takes about 5 times longer than you expect to make...
- Remember to note what you've done it builds up quickly and helps you demonstrate that you are making an impact with your work!

Resources: Local Training

- An Introduction to Public Engagement with Research: https://institute-academic-development.ed.ac.uk/postgraduate/doctoral/courses/course-list#event_10309
- Facilitation Skills for Public Engagement w/Oliver Escobar & Sarah Stocks: <u>https://institute-academic-development.ed.ac.uk/postgraduate/doctoral/courses/course-list#event_12108</u>
- How to Design a Public or Stakeholder Engagement Process w/Oliver Escobar & Jan Barfoot: https://institute-academic-development.ed.ac.uk/postgraduate/doctoral/courses/course-list#event_11695
- Edinburgh Innovations Engage Training online learning resource on working with industry: https://uoe-edinburgh-innovations.ed.ac.uk/for-staff/training-and-events/engage
- If participating in Cabaret of Dangerous Ideas (new name TBC), you are encouraged to participate in a series of "bootcamps" performance and show development training

Resources: Organisations and Communities

- Research Office (ERO) Public Engagement with Research: https://research-office.ed.ac.uk/public-engagement-with-research
- UoE Engagement for Impact Hub: https://uoe.sharepoint.com/sites/EngagementforImpactHub
- BIG STEM Communications Network: https://www.big.uk.com/
- National Coordinating Centre for Public Engagement: https://www.publicengagement.ac.uk/ earn-others/case-studies
- UKRI CDT in NLP (previous UoE CDT) public engagement archive: https://informatics.ed.ac.uk/ukri-cdt-in-natural-language-processing/outputs
- UKRI CDT in NLP public engagement and outreach resources: https://web.inf.ed.ac.uk/cdt/natural-language-processing/practicalities/public-engagement-and-outreach
- Pscicomm (mailing list): https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=PSCI-COM
- EUSEA: European Science Engagement Association: https://eusea.info/
- European Citizen Science Association: https://www.ecsa.ngo/
- Better Images of AI: https://betterimagesofai.org/
- Beltane Public Engagement Network (dormant but useful resources and examples: https://www.beltanenetwork.org/

Resources: Opportunities

- 3 Minute Thesis [™]: https://vitae.ac.uk/support-services/vitae-three-minute-thesis-3mt-competition/
- Cabaret of Dangerous Ideas (name change forthcoming): https://www.beltanenetwork.org/opportunities/cabaret-of-dangerous-ideas/
- Edinburgh Science / Edinburgh Science Festival: https://www.edinburghscience.co.uk/
- I'm a Scientist Get Me Out of Here: https://imascientist.org.uk/
- Pint of Science: https://pintofscience.co.uk/ events/edinburgh details: https://pintofscience.co.uk/events/edinburgh
- Being Human Festival: https://www.beinghumanfestival.org/
- Festival of Social Sciences: https://festivalofsocialscience.com/
- Science Magazine's annual Dance Your PhD competition (includes an AI and a Social Sciences winner): https://www.science.org/content/page/announcing-annual-dance-your-ph-d-contest
- Scottish Al Summit (accepts proposals for panels and sessions): https://www.scottishaisummit.com/
- UK Science Festivals Network: https://sciencefestivals.uk/festival/
- UKRI Next Generation Thinkers: https://www.ukri.org/opportunity/new-generation-thinkers-2025/
- Diverse AI opportunities for engagement, speaking etc. often shared in Slack, sign up via: https://www.diverse-ai.org/
- Science is a Drag Canadian STEM themed drag: https://www.scienceisadrag.com/
- Bright Club Edinburgh (on hiatus): https://brightclubedinburgh.blogspot.com/

References

- Dihal, K., and Duarte, T. 2023. Better Images of Al: A Guide for Users and Creators. Cambridge and London: The Leverhulme Centre for the Future of Intelligence and We and Al
- Garcia Iglesias, J., Beange, I., Davidson, D. J., Goopy, S., Huang, H., Murray, F., Porteous, C., Stevenson, E., Rhodes, S., Watson, F., & Fletcher-Watson, S. (2024). Ethical Considerations in Public Engagement: Developing Tools for Assessing the Boundaries of Research and Involvement. Research Involvement and Engagement, 10, Article 83. https://doi.org/10.1186/s40900-024-00617-8
- Gladstone, B. and Neufeld, J. 2011. The Influencing Machine. New York: W. W. Norton & Company, Inc.
- Holder, Tom. 2014. Dealing with contentious issues in social media. In Collected Thoughts 2014: Essays inspired by the annual Science Communication conference, pp. 26-29. London: British Science Association. https://www.britishscienceassociation.org/Handlers/Download.ashx?IDMF=4a2d168e-e553-473c-abd2-bb106626a53f
- Inglis, G. 2021. Not there. Gavin Inglis Blog, 5 February 2021. https://www.gavininglis.com/blog/050221.html
- Inglis, G. and Cramb, F. 2021. Not there: A Story of Functional Neurological Disorder. Edinburgh: NHS Lothian and Tonic Arts. https://t.co/kreKpUwSYV
- Nazir, S., Hunter, K., Forrest, C., Kristofferson, K., Lothian, J., & Osborne, N. (2016). Crowd Power: The COBWEB guide to citizen science. (BHP Comics) Black Hearted Press Publishing Ltd. https://doi.org/10.5281/zenodo.11656583
- NIHR. 2024. National Instittute for Health and Care Research Guidance on co-producing a research project. NIHR, April 2024. https://www.learningforinvolvement.org.uk/content/resource/nihr-guidance-on-co-producing-a-research-project/
- Ouellette, J. 2024. Meet the winners of the 2024 Dance Your PhD Contest. Ars Technica, 29 February 2024. https://arstechnica.com/science/2024/02/kangaroo-time-tops-winners-list-for-2024-dance-your-phd-contest/
- Pirie, E. 2024. Creative Informatics: Unleashing the Power of Data meet the exhibitors. Creative Informatics News, 28 March 2024. https://creativeinformatics.org/meet-the-exhibitors/
- UKRI. 2024. Guidance on engaging the public with your research. https://www.ukri.org/manage-your-award/good-research-resource-hub/guidance-on-engaging-the-public-with-your-research/
- UKRI. 2022. Research and innovation for all: UKRI's public engagement strategy. https://www.ukri.org/publications/ukri-public-engagement-strategy/research-and-innovation-for-all-ukris-public-engagement-strategy/
- University of Edinburgh Wellcome Centre for Cell Biology. 2018. Public Engagement Strategy for the Wellcome Centre for Cell Biology. 2018. https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/public_engagement_strategy_wcb_may_18.pdf
- Wellcome Trust . 2014. Planning your public engagement a step-by-step guide. https://cms.wellcome.org/sites/default/files/planning-engagement-guide-wellcome-nov14.pdf
- YESTEM Project Team. 2021. YESTEM Insight 1: The Equity Compass: A Tool for supporting socially just practice. https://yestem.org/tools/the-equity-compass/
- Youmshajekian, L. and Tormes, L. 2023. See the brain like never before in this gorgeous art. Scientific American, 4 December 2023. https://www.scientificamerican.com/article/see-the-brain-like-never-before-in-this-gorgeous-art/