Science Communication & Public Engagement

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Today's session will work

- Introduction to Science Communication & Public Engagement (50 mins)
- Workshop activity (30 mins)
- Over to John (20 mins)

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

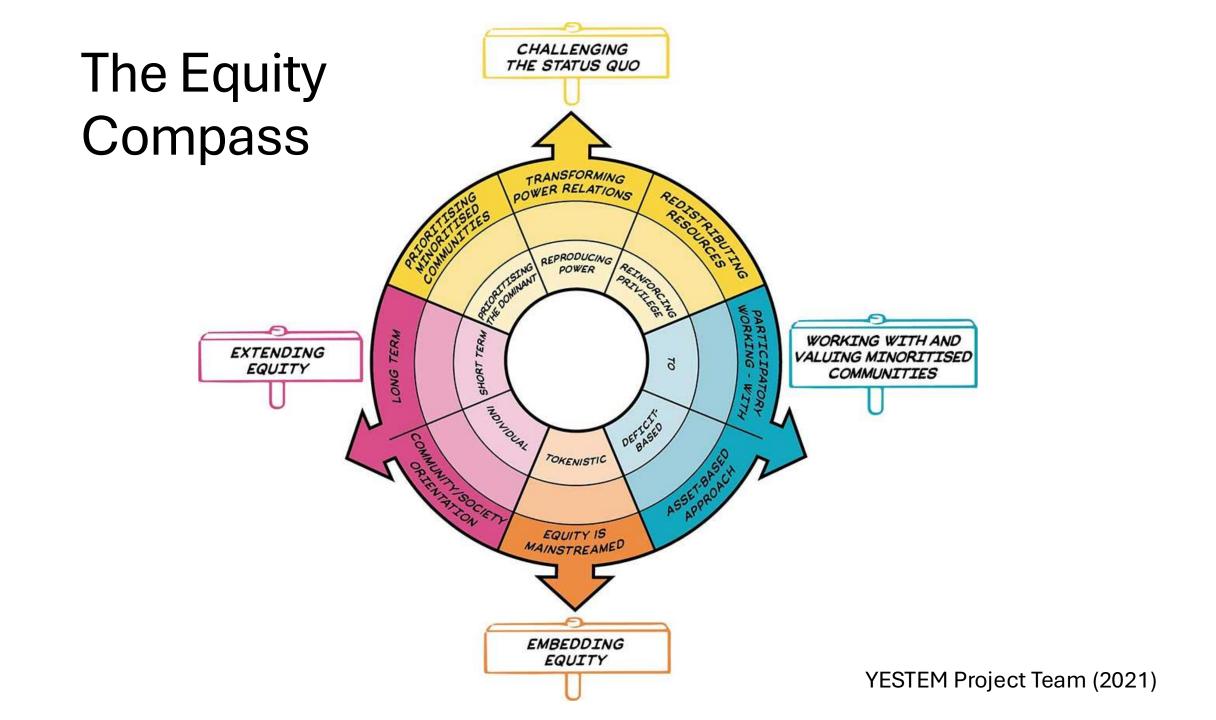
'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'

UKRI Guidance on Public Engagement

UKRI (2025a) has recently updated their guidance and now sets out 8 key principles:

- Include public engagement at the start of the project inc. in funding applications.
- Explore available support including local support (eg the CDT team, ERO, etc.)
- Listen to the public PE is a two-way process and everyone should benefit from their engagement
- Identify your target group who do you want to engage with and why
- **Include all relevant people** including those who have fewer opportunities to engage, follow principles of equality, diversity and inclusion (EDI)
- Make sure the public is an equal partner equitable relationship between researcher and audience, consider motivations, expectations, and distribution of resources, responsibilities, efforts, benefits
- Consider the ethics including confidentiality and data protection, EDI, health and safety, safeguarding
- Measure success including what success will look like and how you will evaluate this.

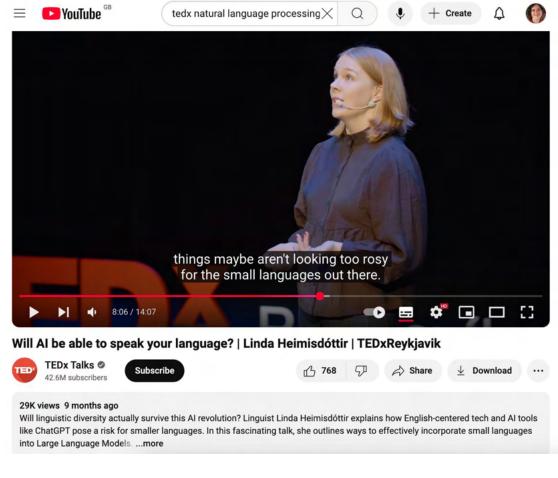
See also the wider UKRI Public Engagement resources including their strategy (UKRI 2022) and wider examples and resources (UKRI 2025b).



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?
- Is a talk a good format for this information or audience? Is short video, in-person discussion, something more active or participatory better?



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

Alternative presentation/interactive formats



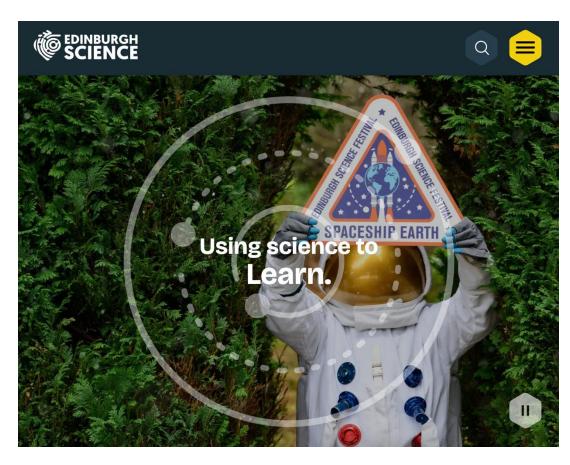


Pint of Science Festival (next run: 18-20 May 2026). https://pintofscience.co.uk/

Mhairi Aitken (Turing Institute) performing at the Cabaret of Dangerous Ideas / The Provocateurs at The Stand. https://www.provocateurs.uk/

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

Science Festivals (Edinburgh & Others)



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



Creative Informatics Unleashed, Science Festival 2024 (Pirie 2024)











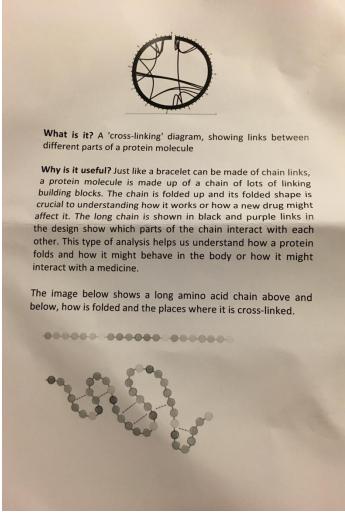


Designing Responsible NLP at Edinburgh Science Festival 2025

(You will be doing this at Edinburgh Science Festival 2026! Date TBC, between 4th-19th April))

Opportunistic Engagement at Public Events





Tattoo My Science at the Meadows Festival (2018)... Doors Open Day 2025 etc.

- Brief encounters at a large-scale public event
- Varying tattoos depending on campaigns and audience
- Free, appealing, visual, playful
- Child friendly but not a family-only 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 postevent.

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

Social Media (pragmatic vs playful)

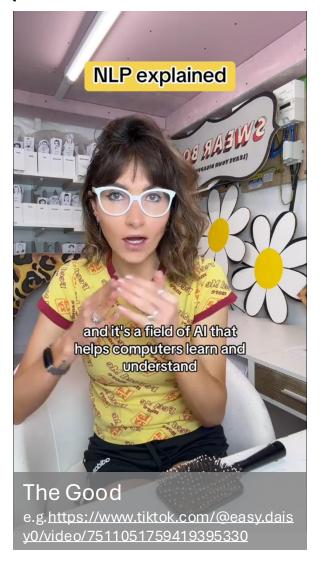


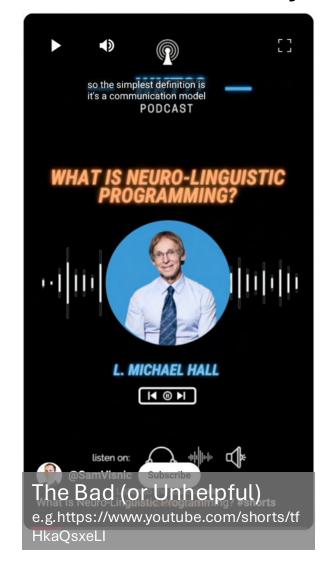
southend.library LIBRARIES #LibraryTaskmaster Episode 1: Very Posh. #SouthendLibrari challenged 3 members of our Digital Officer team to a... more Original sound - Southend Libraries 🕦 🗱 🛜 🔞 📫 https://www.tiktok.com/@southend.library/video/735... Copy link Julia.... just brilliant 🚳 Cromwell Belden Public Library Uhhh; I didn't realize math was going to be involved when I got into this profession Bar Starz Juliaso funny! ok how many stacked paperbacks tall is Richard G ()

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

NLP – the Perils of acronyms!

(And the bots that love them and other AI keywords)







The Ugly (bots) (see: Black et al 2024)

Dance your PhD



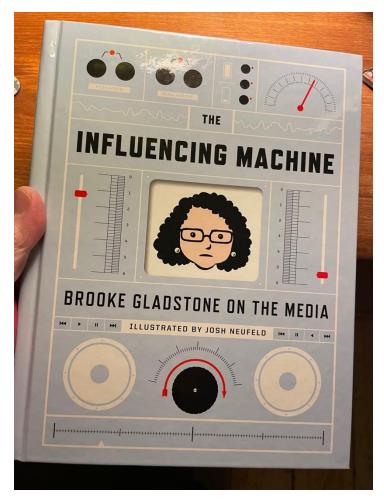
Take a look behind the winner of Dance Your PhD 2024 | Kangaroo Time

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

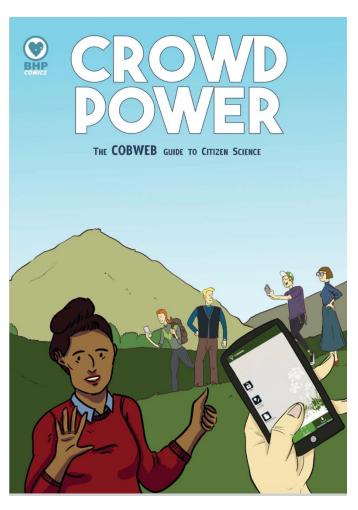
Public Engagement through artistic works: Andrew Brooks: FND Stories



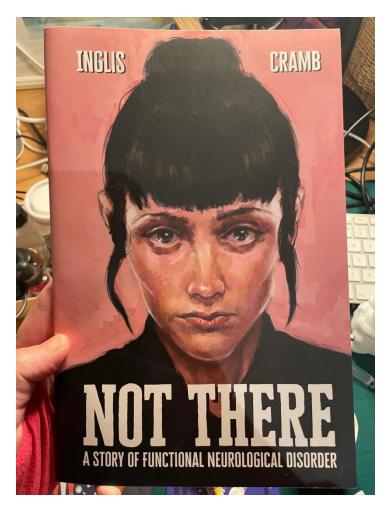
Comics/graphic novels



Gladstone and Neufeld (2011)

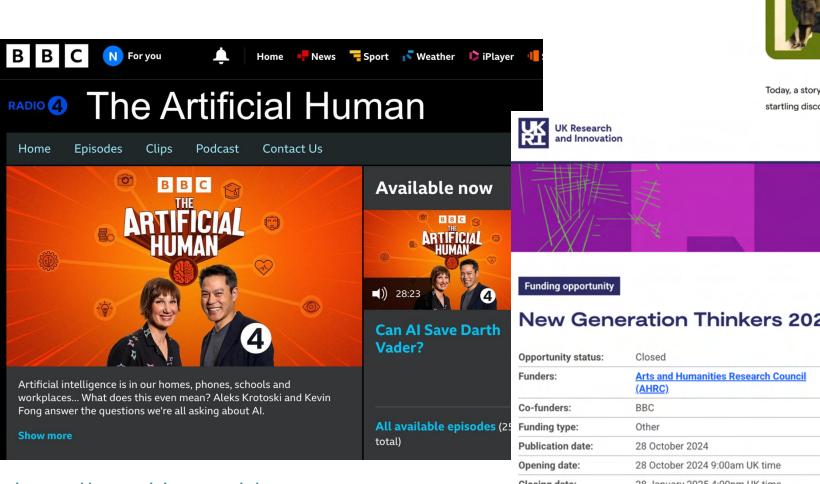


Nazir et al (2016)



Inglis and Cramb 2021. See also Inglis (2021)

Podcasts (& Broadcast)



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



≡ Radiolab Become a member The Immortal Life of Henrietta Lacks Image credits: Illustration by Jared Bartman. Source: The Lacks Family

> 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

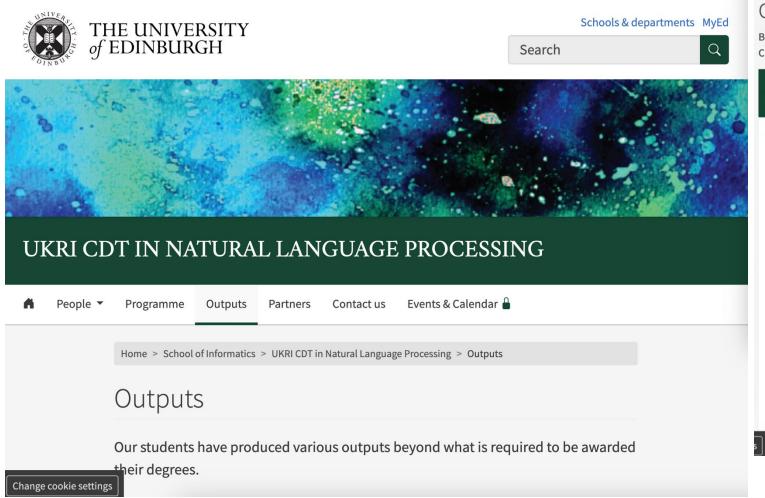
so big that it has impacted the life of every person reading this right now-and all n ever even knowing the impact she had. We originally aired this story back in 2010, ring it back today, as questions about bodily autonomy circle with renewed force.

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













Designing Responsible NLP Partner Summit 2025













Designing Responsible NLP at Doors Open Day 2025 (EFI & Inspace)

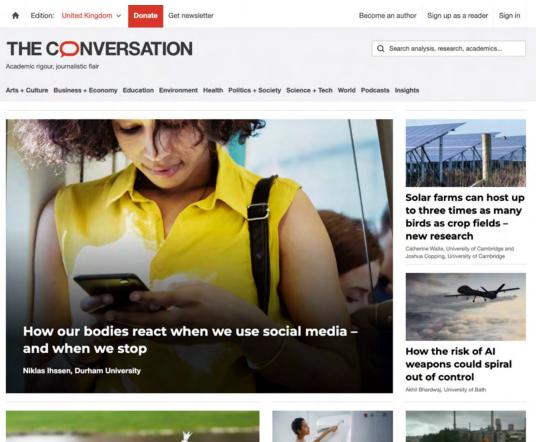
Planning Public Engagement Activity

- 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?

Planning Public Engagement Activity

- 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? If its ongoing, how will you sustain that and manage expectations around your time or availability.

The Conversation



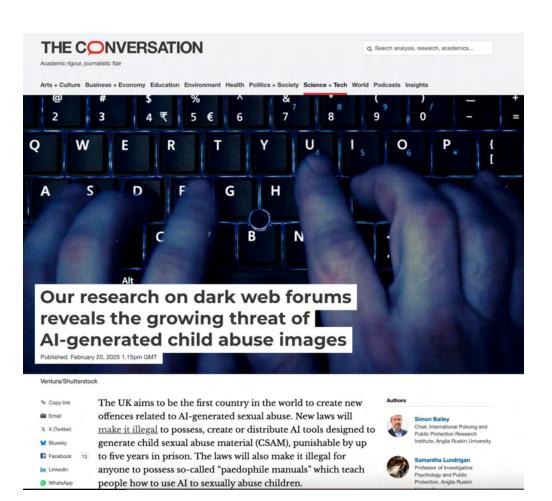




Black women are more likely to die from breast cancer - so why is breast screening



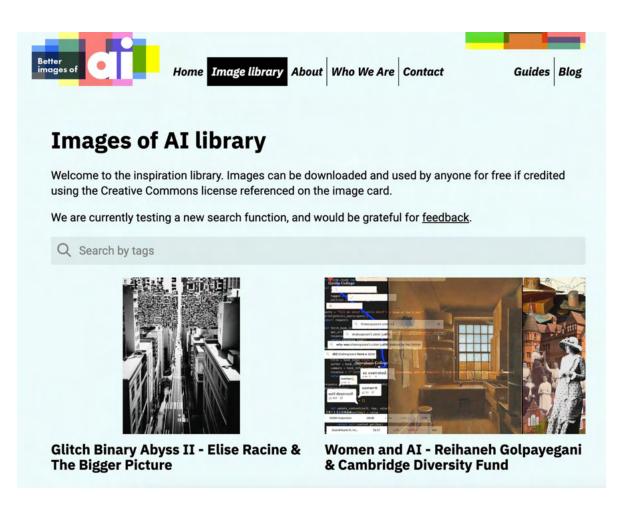
Netflix's Toxic Town offers a stark warning on environmental rollbacks

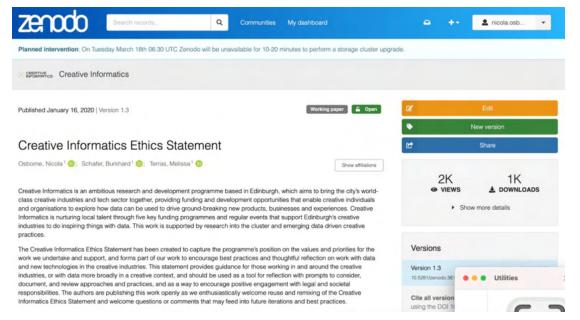


https://theconversation.com/our-research-on-dark-webforums-reveals-the-growing-threat-of-ai-generated-childabuse-images-249067

https://theconversation.com/

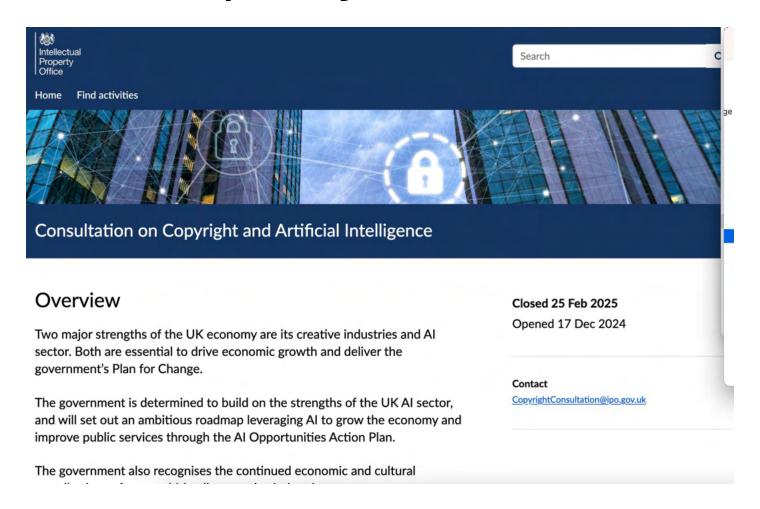
Engagement through open resources





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



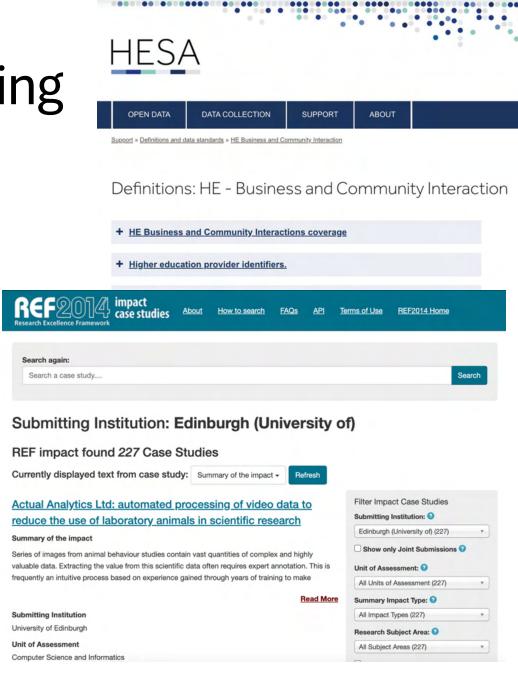
Creative Informatics: Data Driven Innovation for the Creative Industries

Lead Research Organisation: University of Edinburgh

Department Name: Edinburgh College of Art



Artistic and Creative		
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
Key Findings Impact Summary	Form Of Engagement Activity	A talk or presentation
Policy Influence Further Funding	Part Of Official Scheme?	No
	Geographic Reach	National
	Primary Audience	Professional Practitioners
Research Databases and Models	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.
Collaboration	Year(s) Of Engagement Activity	2019
Software and Technical Products	URL	https://digitalheritageconference.wordpress.com/programme-2/



A Few Gotchas...

- **Podcasts** are great, **but 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 (e.g. as in early days of Twitter)
- Video content always takes about 5 times + longer to make than you expect...
- Remember to note what you've done it builds up quickly and helps you demonstrate that you are making an impact with your work!

Any Initial Questions?

Quick Comfort Break (and or/viewing moment)















Designing Responsible NLP at Edinburgh Science Festival 2025

Workshop: Find the public engagement story

In twos or threes:

Think about a basic NLP concept you might want to communicate to a public audience – it might be technical (e.g. how LLMs understand prompts) or something related to how NLP works (e.g. training data bias). It doesn't need to be your research, and can be something quite high level.

Imagine you are presenting this to an audience at the Edinburgh Science Festival – mixed age and background, general interest. Think about:

- 1. How would you share this? What might it look like?
- 2. How would they engage with your exhibit/ideas/you? What would the 'hook' be?
- 3. What would you want them to take away in terms of understanding? And how would you know this had happened? Would there be some form of takeaway or follow up?
- 4. How would you capture what happened? And who you engaged with?

Workshop: Find the public engagement story

Feedback from each group

Any other thoughts and questions on this?

What to Expect over the next few months

- Science festival details will be confirmed keep an eye out for emails, including some times to chat through ideas.
- We hope to schedule a workshop with comedian Susan Morrison of The Provocateurs, Bright Club etc. to provide further support for sharing your ideas with the public (date TBC).
- We will look at where any additional support will be most helpful, e.g. we plan to bring in a designer to work with you on Science Festival exhibit ideas. Let us (the CDT team and I) know what would be most helpful for you and your work and we will see what is possible.
- Other opportunities to engage wider publics with your work will be circulated, including industry and public-facing events.

Questions?

If you have questions later I'm happy to set up a time to chat, and can also be reached via email and/or the CDT mailbox.

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 The Provocateurs (previously called, The Cabaret of Dangerous Ideas), you are encouraged to participate in a series of "bootcamps" performance and show development training. See: https://www.provocateurs.uk/

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/
- Edinburgh Research Office (where public engagement team now based): https://research-office.ed.ac.uk/
- Binks Hub: https://binks-hub.ed.ac.uk/

Resources: Opportunities

- 3 Minute Thesis[™]: https://vitae.ac.uk/support-services/vitae-three-minute-thesis-3mt-competition/
- The Provocateurs (previously The Cabaret of Dangerous Ideas): https://www.provocateurs.uk/ coordinated through Charlie Pike at ERO (Edinburgh Research Office: https://research-office.ed.ac.uk/)
- Edinburgh Science / Edinburgh Science Festival: https://www.edinburghscience.co.uk/ UoE activities are usually coordinated through Charlie Pike and Fiona Murray at ERO (Edinburgh Research Office: https://irascientist.org.uk/ | I'm a Scientist Get Me Out of Here: https://irascientist.org.uk/
- Explorathon: https://www.explorathon.co.uk/
- Pint of Science: https://pintofscience.co.uk/ inc. 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 Al and a Social Sciences winner): https://www.science.org/content/page/announcing-annual-dance-your-ph-d-contest
- Scottish AI Summit (accepts proposals for panels and sessions): https://www.scottishaisummit.com/ (no further dates confirmed at present)
- UK Science Festivals Network: https://sciencefestivals.uk/festival/
- UKRI Next Generation Thinkers: https://www.ukri.org/opportunity/new-generation-thinkers-2025/
- Diverse Al 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/

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Dance Your PhD Winners 2025

- Overall Winner and Chemistry category winner: Sulo Roukka, University of Helsinki, "Insights into oral chemesthetic perception: A focus on food-related behavior".
 https://www.youtube.com/watch?v=qOa6GJ6_les
- Biology category winner: Priya Reddy, Friedrich Schiller University Jena, "Unravelling the plant mechanisms involved in plant-microbe interactions". https://www.youtube.com/watch?v=nhZEDbWqfAU
- Physics and AI/quantum categories winner: Arfor Houwman, University of Innsbruck, "Collective Phenomena in Ultracold Dipolar Quantum Gases".
 https://www.youtube.com/watch?v=LPrySGu0SOc
- Social Sciences category winner: Manisha Biswas, Humboldt University of Berlin, "The Powerful Outcomes of Collective Synchrony".
 https://www.youtube.com/watch?v=yhYJtAE9IF8