

# Public Engagement 101

(Led by Tristan MacLean, PhD)

## Module Overview

- The definition, importance, and value of public engagement
- Types of public engagement with case study examples
- Strategies for effective public engagement

## Module Summary

- The basis of public engagement is fostering interactions and opportunities between the public and the science community through different activities.
- Public engagement is important because it builds trust with the public and guides research to be accountable, relevant, and valuable to society.
- There are many forms of public engagement ranging from public discussions, theatre productions, participatory studies, online engagements, and much more.
- Effective public engagement involves identifying the purpose, format, audience, skills, and resources needed for the program.

## What is Public Engagement?

There are a variety of definitions of 'public engagement' and terms to describe the 'public' and their interactions and knowledge of science.

- In the UK, the US, and Canada, various terms are used to describe 'public engagement' and the sharing of information. Despite the variations, all the terms convey that there are intentional, meaningful interactions between scientists and members of the public in science, technology, and sometimes the social sciences.
- 'Knowledge mobilization' is a term used to describe the production and use of research and can include knowledge synthesis, dissemination, transfer, exchange, and co-creation or co-production by researchers and knowledge users.
- 'Citizen engagement' is the meaningful involvement of individual citizens in policy or program development. This meaningful involvement can take place at a variety of stages in the research, planning, or implementation phases of a project.

## Who Does Public Engagement in Canada?



Canadian  
Government



Federal Research Funding  
Councils e.g., SSHRC, CIHR,  
NSERC



Non-Profit  
Organizations



Social  
Enterprises



Universities and  
Academic Institutions

## Public Engagement in Practice

Thinking strategically about the way you conduct public engagement can make it more effective. Consider the purpose, people and process, and then evaluate what you have done.

### Purpose:

Why do you want to  
engage with the public?

### People:

Who do you want to  
engage with?

### Process:

What are the techniques  
and the forums to  
reach people?

### Evaluation:

How effective are  
your strategies?

## What is the purpose of public engagement?



## Why does public engagement matter?

- ⦿ **Accountability:** Researchers and organizations need to be accountable with projects funded by taxpayers' money.
- ⦿ **Values and purpose:** Ensure that projects are being run ethically and based on guidelines.
- ⦿ **Trust:** Build and maintain public trust on contentious topics.
- ⦿ **Relevance:** Research should have direct relevance to the public.
- ⦿ **Responsiveness:** Ensure that researchers are offering what society needs by listening to the people and empowering people that are being served.

## Benefits of Public Engagement for Researchers

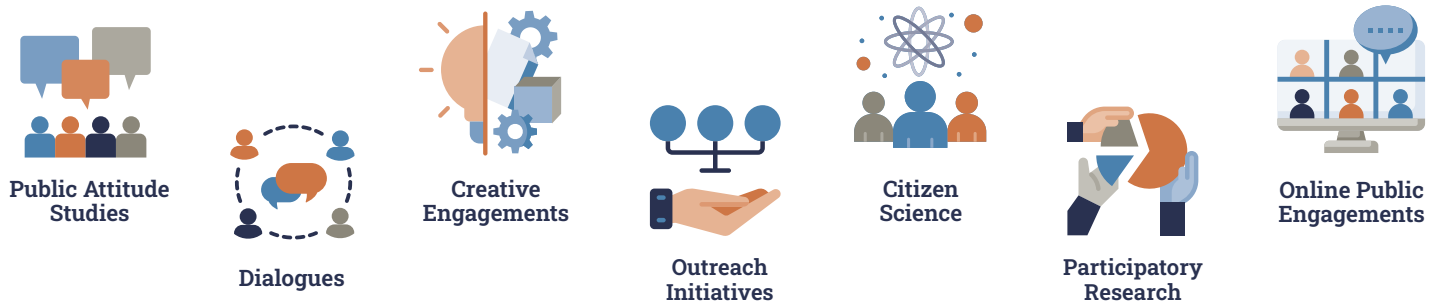


## People

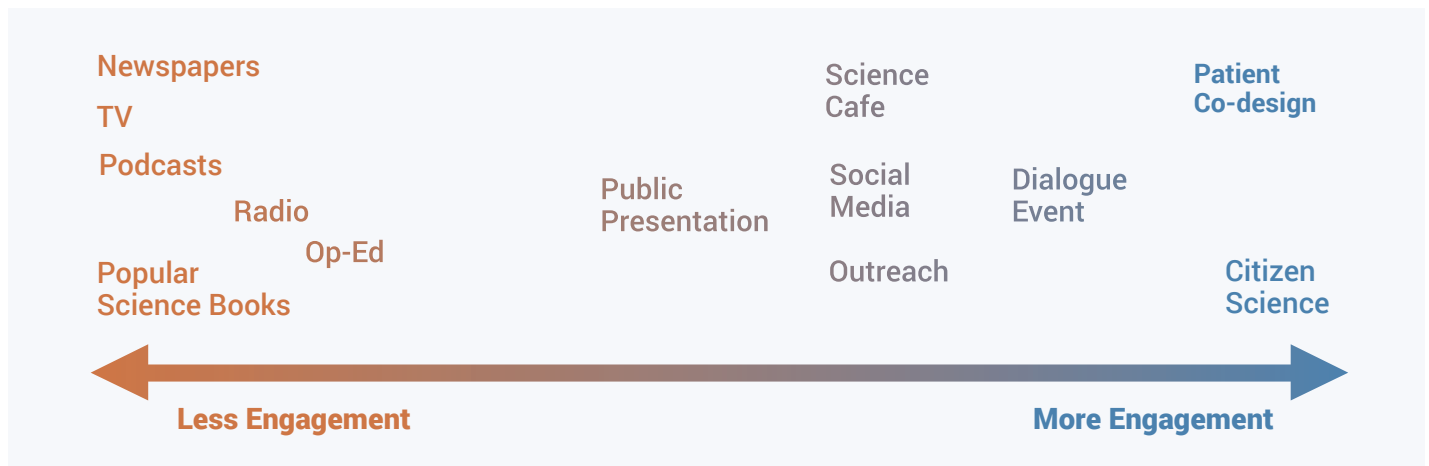
A good project should have a clear and specific demographic in mind and clearly state the benefits your audience is getting from engaging with you.



## Types of Public Engagement



## Spectrum of Public Engagement



## Challenges to Public Engagement



## The Limits of Public Engagement

- “  
*You do not decide by referendum whether the Earth goes around the Sun.*  
 Dick Taverne  
 ”

- There are some concerns that too much public engagement can lead to less evidence-based decision-making and decreased trust in expertise.

# Case Studies



## Public Attitude Studies & Dialogues



**The UK national consensus conference on plant biotechnology** was a community-based initiative held in 1994 about modifying and changing DNA of plants. It was led by the UK's Biotechnology and Biological Sciences Research Council (BBSRC) with the Science Museum and supported by the John Innes Centre and the Institute of Food Research. A panel of 16 lay people had two briefings prior to a conference, where experts asked 7 questions regarding the issue. The following press conference had 300 people present for the outcome of the discussions and debate. A final report was produced which was looked at by the government, members of parliament, and policymakers.



**Alberta Narratives Project** is a community-based project that involved a series of public engagement dialogues about climate change. It was organized by social scientists, communications specialists, and researchers. There were a total of 55 narrative workshops and 75 organizations involved. They spoke with a wide range of people, such as farmers, oil sand workers, business people, youth, environmental activists and faith leaders.

## Creative Engagements



**Blooming Snapdragons (2010)** was a play commissioned by the John Innes Centre about the history of women in science and genetics. After the play, there was a Q&A session with the researchers and actresses.



**Deadinburgh** was an immersive interactive theatre show that involved a variety of scientific institutions and funders including the Roslin Institute, BBSRC, Wellcome Trust Centre for Cell Biology, and Edinburgh University. Audience members entered a fictional scenario about a disease outbreak of unknown origin and became the decision-makers. They were exposed to temperature checks and face coverings, examined cells under microscopes, and planned how to address the outbreak using mathematical models and scientific findings.

## Citizen Science



**Slugwatch** is a citizen science program set up by the John Innes Centre that provides the public information about slugs, raises awareness of an invasive slug species and asks the public to report observations from their backyards. The emergence of a new invasive slug species was a concern because it eats a wider variety of plants and crops and reproduces much faster. Researchers found that there was a surprising level of interest in such an unappealing creature and they were able to engage well with gardeners, horticulturalists and farmers through the program.



**Blackawton Bees** was a research and publication project led by the elementary students of Blackawton school on whether bees could use different coloured patterns to find sugar water over salt water. It was facilitated by a neuroscientist who guided the students through the scientific method to a peer-reviewed publication.

## Participatory Engagement



[SmartICE](#) is a community-based Work Integrated Social Enterprise (WISE). By working with Inuit communities and integrating traditional knowledge, SmartICE monitors the sea ice thickness and helps with making informed decisions of safer sea ice travel. Not only do they provide tools and employment, but they also promote Inuit culture, intergenerational learning, and community wellbeing.



[Understanding diabetes in First Nations communities](#) came about as part of the 2015 Truth and Reconciliation Commission of Canada report. Researchers collaborated with the Chiefs of Ontario in the development of the research questions and the research approaches used in the project. A First Nations Patient Perspectives Advisory Group composed of 8 First Nations people from diverse settings who either have diabetes or who have close family members with diabetes provide input into all aspects of the project including analysis and interpretation of results and advice on knowledge translation strategies.

## Social Media



[Reddit AMAs \(Ask Me Anything\)](#) is a sub-forum on Reddit where people will post that they are answering questions usually related to their expertise or experiences. Normally, the 'Original Poster' (OP) will announce that they will be available during a certain time and date to answer questions. This is a great way to engage and inform the public, younger audiences, and journalists. A group of researchers in Tuktoyaktuk did an [AMA about arctic coastal erosion](#) that received over 4,400 votes and generated over 200 engagements in the comments.



[Twitter Chats](#) are hosted as an event on Twitter where people can ask experts questions at a set date and time. Usually, there is a specific hashtag that people can use to follow along with.

## Online Engagement



[I'm a Scientist, Get Me Out of Here!](#) is an online science engagement activity in which students can submit questions to scientists, take part in live class discussions and vote for their favourite scientists.



[Exploring by the seat of your pants](#) is a non-profit that connects scientists and experts directly to classrooms via virtual field trips from around the world. They show students what a day in a scientist's life is like.

## Strategies for Effective Public Engagement

Considering public views  
and opinions

Developing public trust

Including the public in  
carrying out research

Working with the public to choose the  
direction of research

Working with the public to understand the  
implications of research for policy

## Public engagement tips

- Plan on engaging the public early in the research process
- Budget for public engagement in grants
- Hire professionals to support you

## Questions to consider for public engagement



What is the goal of your public engagement with your audience?



What format are you going to use for your public engagement?

In-person or online

Local or national

Single or multi-pronged approach



What public engagement skills will you need?

- Do you need skills or outside expertise for your public engagement?

Facilitators

Evaluators

Survey or polling expertise

Designers

Translators

Community organizers,  
and other experts



What resources will you need for your public engagement?

Funding

Support or approval from employer, funder, and/or ethics board

Political support

Venues, forums or technical platforms

Means of engaging with the right audience



### Additional Reading(s):

- [Lessons from Fraxinus, a crowd-sourced citizen science game in genomics](#) by Rallapalli et al. (2015)
- [Multi-Site Public Engagement with Science - Synthetic Biology project final evaluation report](#) by Rockman et al. (2018)
- [BBSRC Bioenergy and biofuels discussion toolkits](#)
- [BBSRC Bioenergy Dialogues](#)
- [Permafrost Carbon Feedback Dialogues](#)
- [Sustainable Canada Dialogues](#)