



Science Communication

Student Research Projects 2022

Welcome

Science communication is an interdisciplinary field of practice and scholarship. Science communicators aim to improve communication between scientists and non-scientists with a view to addressing society's grand challenges.

We create opportunities for meaningful two-way dialogue between scientists and other community groups, helping to create a society in which science is not only better understood, but also challenged, contested, and collaborative.

We work with diverse groups of people, from academics and activists to policymakers and local community groups.

We seek to understand how science is communicated, and who stands to benefit from such engagements.

At UWA, there are opportunities to undertake original research projects in science communication at the Honours level (undergraduate), at the Masters level (in the Master of Science Communication by coursework and dissertation), and at the Higher Degree by Research level as a Master or Doctor of Philosophy.

This booklet describes the research areas that are the focus areas at UWA and some suggestions for research projects that could be done at any level, as well including some generic information about the Honours and Masters units. For information about enrolment and timelines associated with an MPhil or PhD please go to <https://www.postgraduate.uwa.edu.au/courses>.

This list of research areas is not exhaustive, and **students are welcome to come and discuss their own ideas and areas of interest**. However, the choice of project will be ultimately determined by whether appropriate supervisors can be identified.

If you have any further questions, please contact me at heather.bray@uwa.edu.au

I look forward to working and learning with you.

Dr Heather Bray, Coordinator
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Research areas

Making sense of science

Scientific concepts and technological innovations are complex and continue to change how we live. We can use a range of research approaches and tools to explore how scientific information is 'made public', how people 'make sense' of science, and the role of trust and values in the acceptance or rejection of a technology.

Suggested projects

Media framing of scientific issues and events, such as gene editing, COVID-19, vaccinations, recent bushfires, plastic pollution etc

Although a direct relationship between media frames and public opinions about scientific issues is still hotly debated by science communication scholars, it is clear that even in our rapidly changing mediascape news media has a role in helping people know *what* to think i.e. raising awareness, as well as *how* to think about scientific issues. If you are interested in a project like this, read:

Buddle, E.A. & Bray, H.J. (2019) How Farm Animal Welfare Issues are Framed in the Australian Media. *J Agric Environ Ethics*, 32, 357–376. <https://doi.org/10.1007/s10806-019-09778-z>

Public understanding of scientific issues and events, such as gene editing, COVID-19, vaccinations, recent bushfires, plastic pollution etc

To improve conversations between experts and non-experts about scientific issues, it is important to understand how attitudes, perceptions, and understandings about scientific issues are shaped by social and cultural factors. What do people really think about scientific issues and why do they think that way? Are these understandings barriers to behaviour change? Both qualitative and quantitative research methods can be used to explore public understandings of scientific issues. If you are interested in a project like this, read:

Bray, H.J. & Ankeny, R.A. (2017) Happy Chickens Lay Tastier Eggs: Motivations for Buying Free-range Eggs in Australia. *Anthrozoös*, 30:2, 213-226. <https://doi.org/10.1080/08927936.2017.1310986> (for a qualitative approach).

Bray, H.J., Zambrano, S.C., Chur-Hansen, A. & Ankeny, R.A., (2016) Not appropriate dinner table conversation? Talking to children about meat production. *Appetite*, 100, 1-9. <https://doi.org/10.1016/j.appet.2016.01.029> (for a quantitative approach).

Multiple voices

In order to solve global interdisciplinary problems such as climate change and the COVID-19 pandemic, scientists need to work-with non-scientists, either through establishing two-way dialogues that grant agency to all stakeholders, or through co-creating knowledge in a way that values all contributors. We can conduct interdisciplinary research into how best to give voice to those audiences that are traditionally under-heard and underserved by science.

Suggested projects

Improving public engagement with science through understanding participant experiences in citizen science projects

Citizen science projects are considered by many to present new and exciting opportunities for public engagement with science. However, many citizen science projects are not examined through a critical lens that asks whether people who participate in citizen science projects have an improved understanding of scientific processes, scientific concepts, or science as a human endeavour.

Additionally, there may be barriers to participation in citizen science projects that prevent them from being a mechanism for true *public* engagement with science. If you are interested in a project like this, read:

Heigl, F., Kieslinger, B., Paul, K. T., Uhlik, J., & Dörler, D. (2019). Opinion: Toward an international definition of citizen science. *Proceedings of the National Academy of Sciences*, 16(17), 8089-8092.

Diversity and inclusion in science communication

Just like science, science communication has a diversity problem. Worldwide most science communication research and teaching is performed in English, and in the 'Global North'. Institutional and organisational outreach and other science communication activities are dominated by Western ideas of who and what counts in science. Informed by scholarship in Feminist and Postcolonial Science and Technology Studies, science communication is slowly recognising that efforts are needed to make science communication practices more inclusive.

If you are interested in a project like this, then watch this interview with A/Prof Emily Dawson from University College, London <https://echo360.org.au/media/6647209c-93cd-4888-8a37-7b84fdb953e3/public>

Previous research projects

Stuck for ideas? These papers from projects recently completed by science communication students at UWA might help:

McGellin, R.T.L., Grand, A. & Sullivan, M. (2021) Stop avoiding the inevitable: The effects of anthropomorphism in science writing for non-experts. *Public Understanding of Science*
<https://doi.org/10.1177/0963662521991732>

Manyweathers, J., Taylor, M. & Longnecker, N. (2020) Expertise and communicating about infectious disease: a case study of uncertainty and rejection of local knowledge in discourse of experts and decision makers. *Journal of Science Communication*, 19(4), A01.
https://jcom.sissa.it/archive/19/04/JCOM_1904_2020_A01

Austin, S. R. P., & Sullivan, M. (2019) How are we performing? Evidence for the value of science shows. *International Journal of Science Education, Part B: Communication and Public Engagement* 9(1), 1-12.
<https://doi.org/10.1080/21548455.2018.1532620>

Mwenda, A.B., Sullivan, M. & Grand, A. (2019) How do Australian universities market STEM courses in YouTube videos?, *Journal of Marketing for Higher Education*, 29:2, 191-208,
<https://doi.org/10.1080/08841241.2019.1633004>

There is also this (selected) list of research projects completed by Honours or Master of Science Communication students between 2012 and 2019:

- Community fishing of giant clams in the Karajarri Indigenous Protected Area
- How do women respond to information provided by BreastscreenWA?
- Public attitudes toward culling of pest birds (Corrella sp.)
- How does positive and negative framing influence acceptance of fox baiting in urban areas?
- Ethics of data collection from social media
- effectiveness of digital storytelling
- What do scientists know about what the public knows?
- Scientist vs non-scientist engagement with science blogs
- The effect of the live export controversy on farmers
- Language used in advertising by alternative medicine practitioners
- Photography exhibitions as a biological conservation tool

DISSERTATIONS IN SCOM

Dissertations within the Master of Science Communication are undertaken by enrolling in the four SCOM dissertation units (SCOM5810, SCOM5811, SCOM5812, SCOM5813) over two semesters (ideally) after completion of SCOM4402 and MIXD5005

MEET WITH THE COORDINATOR

At the end of the semester *before* you start your dissertation units, meet with the coordinator to discuss your topic. Potential supervisors and the need for a human research ethics committee approval need to be identified early

WHAT ARE YOU INTERESTED IN?

You will have the opportunity to explore a topic of interest in your literature review and when developing a research proposal in MIXD5005. You can change topics for your dissertation, but that means that you will need to do another review and proposal as part of the dissertation

FIRST WEEK OF YOUR FIRST SEMESTER

Submit your human research ethics committee application

4 WEEKS BEFORE YOUR FIRST SEMESTER STARTS

You will meet with your supervisors and plan for the submission of a human research ethics committee application if required. At this meeting, you'll also discuss your overall timeline, expectations, communication channels etc

DO YOUR RESEARCH!

Meet with your supervisors regularly. You will also have access to a shared office on campus to work from, and we encourage you to attend library workshops and relevant seminars

IN WEEK 9 OF YOUR LAST SEMESTER

You will give a presentation to your fellow students, supervisors, and guests

BY THE END OF WEEK 11 OF YOUR LAST SEMESTER

Submit your thesis!

Contact: heather.bray@uwa.edu.au