

UNU-RMIT Science Communication Course 2016

Professional Development

Date: Tbd

Course Coordinator: Brendan F.D. Barrett, RMIT University

Lecturers: Daniel Powell (United Nations University), John Watson (The Conversation), Toby Kent (Resilient Melbourne), Citty Williams (RMIT University), Sean Wood and Curtis Christophersen (UNU via video conference)

Rationale for the Course:

Science communication is a “complex and contentious topic that covers a spectrum of issues from factual dissemination of scientific research to new models of public engagement” (Bubela et. al. 2009).

We live in a time when scientific understanding of complex problems is of unprecedented value for our individual and collective welfare. But we also recognize that the proportion of decisions made - by individuals and by society - based on the effective use of scientific information is shockingly small.

The evidence for this conclusion is reflected in the awful decisions people make, and consequences they suffer as a result, in their personal health and financial planning.

It is reflected too not only in the failure of governmental institutions to utilize the best available scientific evidence that bears on the safety, security, and prosperity of its members, but in the inability of citizens and their political representatives to even agree on what that evidence is or what it signifies for the policy tradeoffs acting on it necessarily entails.

This course is designed for researchers (natural and social scientists) who are concerned about how best to effectively transmit their scientific knowledge to their target audience, however defined – policy-makers, journalists, the public.

We will consider how researchers can avoid speaking in technical jargon when addressing the public or about how they can communicate complex research outcomes to journalists in comprehensible ways. We will also reflect upon how to make presentations that resonate with your audience or nicely designed slides that don't look like a cut and paste from a journal article with walls of text.

However, these are only manifestations of the "science communication problem," and as important as they are, they are likely not the ones in most urgent need of exploration (although we will certainly look at how to make significant improvements in these areas).

Rather on this course, we will address the misleading notion that effective science communication is uniform across contexts. We have to be aware that we cannot necessarily use the same communication techniques to explain the risks of cancer from radiation as we would to try to dispel polarization over climate science. We will try to individuate the separate domains in which science communication is needed, and take stock of what is known, and what isn't but needs to be, in each.

This professional development course offers researchers the opportunity to reflect on why it is important to communicate scientific knowledge, to gain awareness on the best ways to achieve this and to understand the issues and ethical dilemmas that define the process of science communication in relation to the media.

This course seeks to develop your abilities to communicate your science effectively in a variety of real-world contexts. It covers strategies for dealing with complex research topics, and addresses challenges in communicating about topics such as climate change, urban biodiversity, energy security, and so on.

The assignments in this course focus on speaking, presenting and writing, and giving live interviews for broadcast, understanding the use of social media and the importance of the web as a communications platform.

Learning Outcomes

- To provide an introduction to popular science communication in the broader contexts of (a) the role of communication in science, and (b) the cultural, practical and policy-related role of science communication in wider society;
- To provide intellectual resources for constructive critical analysis of popular science communication in a variety of real-world settings;
- To cultivate participants' practical communication skills, with particular emphasis on effective speaking, writing and exhibiting on scientific and science-related topics to a variety of audiences; and
- To provide participants with a range of resources and skills for effective communication of complex material.

Competences

- You will learn to speak clearly and vividly about your work and why it matters, in terms non-scientists can understand.
- You will develop your ability to write about science for a public audience without "dumbing down" your material.

- You will learn how to use blogs, Twitter and other forms of social media for two-way communication with different segments of the public. Includes hands-on instruction, tailored to your experience.
- You will practice communicating with key audiences, such as fellow scientists, journalists and public officials.

Course Requirements

The course will comprise 15 sessions each of 1.5 hours over one week. You are required to attend and participate actively in the classes.

Assignments will involve reading, listening to or viewing relevant sources before class, and written composition. It is crucial that you complete pre-class assignments, as this will be essential for effective participation in the relevant class discussions.

This is a communications intensive course. Given how important revision is to composition, many assignments will be revised. The emphasis is on writing: the writing process, from pre-writing through drafting, revising, and editing; and the rhetorical dimensions of writing: the audience for whom one is writing, and the purpose for which one is writing—to argue, inform, persuade, explain, convince, and so on.

Timing and Details of Assignments

Session		
Session 1:	A. Personal Introductions B. One sentence summing up your research based on "lol my thesis" model (http://lolmythesis.com/) For example: 1. No one in finance has any idea what they are doing. 2. We planted too many big trees but now we're not cutting them down and no-one knows what to do next. Especially not me. 3. Maybe don't listen to sad music if you're depressed.	Share oral presentation guidelines. Show Gettysburg Address video.
Session 2:	Oral Presentation: Speak for three minutes about a science topic that interests you. Assume audience is intelligent but knows little about the subject. Note – choose your topic carefully. Prepare to be interesting, understandable, and memorable. Use one image max. Use notes, but don't read. Time yourself beforehand.	Opportunity to see the participants public speaking skills. Watch MLK I have a Dream.
Session 4:	Each participant allocated five minutes to make a presentation using PowerPoint or Keynote.	Effective use of visual props.
Session 7:	Interactive Discussion with journalist, John Watson of The Conversation	Understand what makes a successful article.
Session 12:	Participants will have completed a short article for The Conversation or Our World..	
Session 10:	Participant video interviews.	Participants will interview each other in pairs.
Session 13:	Interactive discussion with policy-maker, Toby Kent of Resilient Melbourne	Reading materials provide in advance on what makes research policy-relevant.

Course Schedule

Day 1	Day 2	Day 3	Day 4	Day 5
(am)				
Session 1: Introduction: Why be a Science Communicator? Brendan Barrett (RMIT University)	Session 3: Resonate with your audience, Brendan Barrett (RMIT University)	Session 7: On The Record: Communicating with the Media, John Watson (The Conversation)	Session 10: Getting to the heart of the matter, Citt Williams (RMIT University)	Session 13: Using the Web and Knowing your Audience, Sean Wood (UNU via video conference)
Participants present a one sentence explanation of your research in LOLmythesis format	Session 4: Presentations, Brendan Barrett (RMIT University)	Session 8: Writing Effectively, Daniel Powell (UNU)	Participant-interviews recorded on video in Hard Talk Style with RMIT ITS or external contractor	
	Each participant is allocated five minutes to make a presentation using PowerPoint or Keynote.			Session 14: Understanding and using Social Media, Brendan Barrett (RMIT University)
(pm)				
Session 2: Talking Science: In the Elevator or the Hallway, Brendan Barrett (RMIT University)	Session 5: Leveraging Design in Your Work, Curtis Christophersen (UNU via video conference)	Session 9: Seeing is Believing, Citt Williams (RMIT University)	Session 11: Communicating Science to Policymakers, Toby Kent (Resilient Melbourne)	
Participants make a three minute oral presentation on scientific topic	Session 6: Writing about your Research, Daniel Powell (UNU)		Session 12: Reviewing participant articles, Daniel Powell and Brendan Barrett	Session 15: Course Evaluation and Discussion, Brendan Barrett (RMIT University)
	Participants spend time working on your article pitch		Feedback on participant articles	

Course Syllabus

Session 1: Introduction: Why be a Science Communicator?

We will briefly review some of the main landmarks in the development of professional scientific communication. We share insights on recent developments in science communication, mainly drawing from experience in the United Kingdom related to the rise of the Public Understanding of Science (PUS) and Public Engagement with Science and Technology (PEST) movements in the late 20th century. The rapid historical tour is completed by looking at the impact of electronic communication on both scientific and mass communication.

You are required to submit one sentence summing up your research (following the lol my thesis model).

Session 2: Talking Science: In the elevator or the hallway

You should come to class prepared to speak informally and briefly (maximum 3 minutes) about your research topic. Assume the audience is intelligent but knows

little or nothing about your subject.

Session 3: Resonate with your audience

Here we explore some of the common pitfalls with formal presentations and examine the role of the creative process, how to bring out your own creativity, as well as how your presentation can resonate with the audience.

Session 4: Presentations

Each participant will make a short 5 minute presentation on your research using either PowerPoint or Keynote.

Session 5: Leveraging design in your work

In this session, we will explore the ten principles of good design based on the work of Dieter Rams, Chief Design Officer at Braun, and with reference to the work of the United Nations University.

Session 6: Writing about your research

Story-telling lies at the heart of nearly all communication. Even 'objective' genres of media communication, such as news, are all about telling stories and these narrative structures construct and constrain the way we see the world. You will be asked to develop a pitch for an article in *The Conversation* or *Our World*.

Session 7: On the Record: communicating with the media

An interactive discussion with John Watson from *The Conversation* on the complexities of communicating science in the media.

Session 8: Writing Science 2: Writing effectively

You will work on your first draft of your article. This could be related to your own research or an interesting scientific topic.

Session 9: Seeing is believing - Visualizing your science through video documentary production

Documentaries show us situations and events that are recognizably part of a realm of shared experience. It is this status of documentary film as evidence from the world that legitimates its usage as a source of knowledge. But while documentaries offer pleasure and appeal, their own structure remains virtually invisible, their own rhetorical strategies and stylistic choices largely unnoticed. Documentary films raise a rich array of issues: legal, philosophical, ethical, political and aesthetic. In this lecture we look at these issues within the context of viewing and discussing some video work of the UNU and seminal works in the history of the documentary film.

Session 10: Getting to the Heart of the Matter: conducting interviews

This session is devoted to the practice of communication via video interview. You will develop technical skills in interviewing and being interviewed. You are encouraged to develop an interview style very similar to that found on the BBC's *Hard Talk* series. You will play the roles of interviewer and interviewee, and the interactions will be caught on video.

Session 11: Communicating science to policymakers

How is public policy determined? To what extent is knowledge and research a factor in policymaking? To what extent is the process a function of politics and power? What is the role of communication and the mass media?

Session 12: Reviewing your articles

You will complete your articles in the style of specified and receive detailed feedback. The session develops your skills in sourcing and researching stories, finding an angle appropriate for the publication and audience, interviewing, structuring stories, and writing accurately.

Session 13: Share your Research Online: know your audience

In this session we aim to provide you with sufficient understanding of website construction to enable them to liaise with designers and programmers. The emphasis is on design and structure, rather than technical programming skills. You should be able to understand website architecture, interactivity, usability, and design aesthetics. We will introduce a number of analytic tools that enable you to follow your audience online, understand their interests and enhance the performance of your website.

Session 14: Understanding and using social media

The face of media communications has been transformed by the advent of the web and by the emergence of social media. While many researchers are using these tools for personal reasons, few are using them to effectively undertake their research, to collaborate or to disseminate their research findings

Session 15: Course evaluation and discussion

In this session you will have the opportunity to give feedback on the course and suggest areas for improvement.

Readings

Baron, N. (2010) *Escape from the Ivory Tower – A guide to making your science matter*, Island Press, Washington.

Bennett, D.J. and Jennings, R.C. (eds) (2011) *Successful Science Communication – Telling it like it is*, Cambridge University Press, Cambridge.

Bowater, L. and Yeoman, K. (eds) (2013) *Science Communication – A Practical Guide for Scientists*, Wiley-Blackwell, Oxford.

Bubela, T. et. al. (2009) *Science Communication Reconsidered*, *Nature Biotechnology*, Vol. 27, No.6., pp.54-518.

Donovan, J. (2012) *How to Deliver a TED Talk – Secrets of the World's Most Inspiring Presentations*.

Duarte, N. (2010) *Resonate: Present Visual Stories That Transform Audience*, John Wiley and Sons.



Duarte, N. (2008) slide:ology: The Art and Science of Creating Great Presentations, O'Reilly Media.

Olson, R. (2009) Don't be such a Scientist – Talking substance in an age of style, Island Press, Washington.

Reynolds, G. (2011) Presentation Zen: Simple Ideas on Presentation Design and Delivery, New Riders.