HPSC0008 Science Communication and Public Engagement

Course Syllabus

2021-22 session | Prof Charlotte Sleigh | c.sleigh@ucl.ac.uk

Course Information

This interdisciplinary course introduces the public dimensions of science and technology. Drawing on sociology, history, cultural, media and communication studies it explores the relationship between the professional world of science and the social, cultural and personal spaces in which science contributes to the shaping of society. It also develops students' critical analysis skills with respect to the communication of science in different public contexts including the news media, museums, fiction and online. Ultimately it aims to develop students' skills in academically interrogating science communication and engagement.

Basic course information

Moodle:	https://moodle.ucl.ac.uk/course/view.php?id=7417
Assessment:	Writing assignment (35%), essay (65%)
Timetable:	www.ucl.ac.uk/timetable
Course tutor:	Prof Charlotte Sleigh
Course Teaching assistant	n/a
Contact:	c.sleigh@ucl.ac.uk
Web:	https://www.ucl.ac.uk/sts/people/charlotte-sleigh
Office location:	tbc
Office hours:	**Primary slot**: Seminars on Thursdays 2-3 or 3-4 (tbc) Each lecture is made available on Moodle on the Monday prior to the relevant seminar (or earlier) and can be watched at any time. Office hours: Mondays 3-4 on Teams.

Schedule

Session	UCL Week	Topic	Campus session	Focus of weekly activities*
1	6	Labsplaining	7th Oct	Introductions and a quick history of science in public. How does science get made and where is communication in the process? Three aspects of science literacy. • Read: Charlotte Sleigh, 'Communicating Science' (pdf on Moodle).
2	7	Who is Jo(e) Public?	14th Oct	Models of communication, and the power relations they tacitly encode. • Read: Jane Gregory and Jason Ford. "Who is 'the man in the street'?." RSA Journal 151.5512 (2004): 28-31. • Read: Cathelijne M. Reincke, Annelien L. Bredenoord, and Marc HW van Mil. "From deficit to dialogue in science communication: The dialogue communication model requires additional roles from scientists." EMBO reports 21.9 (2020): e51278.
3	8	Who is a scientist?	4th Nov	Public images of scientists: where they come from, and what effects they have. • Read: R. Haynes, 'Whatever happened to the 'mad, bad scientist?' Overturning the stereotype' in Public Understanding of Science • Read: Charlotte Sleigh, 'The Secret Life of the Laboratory: PCR at 30'. https://www.theguardian.com/science/2013/nov/26/the-secret-life-of-the-laboratory-pcr-at-30 • Read: Amy Chambers, 'Women scientists are more than capable of leading blockbuster storylines' https://theconversation.com/women-scientists-are-more-than-capable-of-leading-blockbuster-storylines-93779
4	9	Expertise, scepticism and conspiracy	28th Oct	Expanding science literacy to an understanding of how scientific research and self-policing work • Watch: Naomi Oreskes, 'Why we should trust scientists' https://www.ted.com/talks/naomi_oreskes_why_we_should_trust_scientists • Read: Charlotte Sleigh, 'The abuses of Popper' https://aeon.co/essays/how-popperian-falsification-enabled-the-rise-of-neoliberalism • Research: one sceptical/conspiracy group in science and come ready to talk about it for 3 minutes.

5	10	Don't RIP the books	21st Oct	Why writing still matters and how to do it well. Links to first assessment (writing assignment) • Read: 'Bar fight' excerpt from Suzanne Simard, Finding the Mother Tree (Allen Lane, 2021) pp. 127-136 (pdf on Moodle) • Read: Read 'Ants' excerpt from Edward O. Wilson, Naturalist (Penguin, 1995), pp. 299-306 (pdf on Moodle) • Make notes: Compare and contrast the two • Draft: first assignment
	11	**Reading Week**		**No lecture or tutorial** **Complete: First assignment**
6	12	Science in Television and Film *Expert guest lecturer (Dr. Jean-Baptiste Gouyon)*	18th Nov	With a special focus on nature documentaries, we consider the narratives about nature and humans that are constructed. • Read: Chapter 5 of Derek Bouse, *Wildlife Films* (University of Pennsylvania Press, 2000) (via library reading list) • Watch: Watch Dynasties episode 1 - https://www.bbc.co.uk/iplayer/episode/p06mvpsw/dynasties-series-1-1-chimpanzee • Make notes: on the extent to which Bouse (and any other reading) applies to it.
7	13	Science in museums *Expert guest lecturer (Scott Keir)*	25th Nov	Applying principles and themes from the first half of the module, we ask what accounts of science, and what publics, are created by museums. • Read: Bernard Schiele's chapter from the *Routledge Handbook of Public Communication of Science and Technology* (2nd ed., 2014) • Visit: A science centre or museum of your choice - go there in person or visit online. Prepare to share in class.
8	14	Science in the news	2nd Dec	Questioning the narrative of 'over-simplification' by the media • Read: Stephen Hilgartner, "The dominant view of popularization: Conceptual problems, political uses." Social studies of science 20.3 (1990): 519-539. • Listen: Science in the time of Covid – podcast https://www.bbc.co.uk/programmes/m000tcqy • Compare: two media accounts of one science news story. Prepare to share in class.

9	15	Science online	9th Dec	With a special focus on medicine and health, we consider the evolving uses of the web and social media to consider how knowledge and publics are constructed. • Read: Flis Henwood et al. "'Ignorance is bliss sometimes': constraints on the emergence of the 'informed patient'in the changing landscapes of health information." Sociology of health & Illness 25.6 (2003): 589-607. • Research: a disease/condition/disability web site (e.g. MS, breast cancer, autism Prepare to share in class.
10	16	Citizen science	16th Dec	We examine the spectrum of citizen science, from those that are complicit in conventional models of scientific authority to those that are truly radical. • Read: Philip Mirowski, 'Against Citizen Science' https://aeon.co/essays/is-grassroots-citizen-science-a-front-for-big-business (2017) • Research: One citizen science project online. Where would you place it on the spectrum of authority-complicit to radical? Prepare to share in class. • Draft: second assignment

* Specific instructions relating to each tutorial activity are available on Moodle

Assessments

Summary

	Description	Deadline	Word limit
35%	Short Writing Exercise	10th November 2021, 17:00	1000
65%	Essay	21st December 2021, 17:00	2000

Assignment: Short Writing Exercise

Due 10 November 2021, 17:00
Word limit: 1000 words
Contribution to final mark: 35%

Either: Writing the Life Scientific

Choose one episode from the BBC podcasts The Life Scientific. Write it up as a magazine profile. 100 of your words should state what magazine you are writing for and how your content is angled towards its editorial policy. You can focus on explaining the science itself, or on the life story of the scientist, or a hybrid of the two. If you are writing about the science itself, make sure you explain how the science was done, not just the 'facts'. If you are writing a life story, avoid writing a straight, chronologically linear biography. There is no need for formal footnotes though you can hyperlink sources as relevant to the audience. Make it interesting and lively.

Or: What I really learned about science

Write a blogpost about an early memory of science (perhaps a lesson at school, or a film you saw, or a trip to a museum). What message(s) about science was conveyed? How did you respond to it at the time? What is your reflection on it now? What is its significance for your reader? How do you want to use it to challenge what the reader thinks about science? Make sure your blogpost touches on the themes of power and audience as we have discussed them in the course. There is no need for formal footnotes though you can hyperlink sources as relevant to the audience. Make it interesting and lively.

Whichever version of the writing exercise you do, I am looking for evidence that you have understood the issues of power that have informed the first half of the module. You should demonstrate a nuanced understanding of dialogue and/or participation, and avoid labsplaining at all costs!

Assignment: Essay

Due 21 December 2021, 17:00
Word limit: 2000 words
Contribution to final mark: 65%

Choose one of the following:

1. Analyse example/s of **either** flat-earth, climate skeptic or anti-vaxx activity and characterize participants' engagement with science. Do they present themselves as denying science or as practising science? Why and how?
2. Using an example of a specific museum and/or exhibition as a case-study, discuss what message about science is communicated.
3. Using example(s) of a specific factual film or TV show, discuss what message about science is communicated.
4. Trace a specific piece of scientific research through stages of research, announcement, publication and media response. How does the message change through the process? Which of the three elements of scientific literacy are treated in the media, and how/how well? (You can emphasise one or other of these sub-questions as appropriate to the story.)
5. Using example(s) of a specific health-based website or social media, discuss what kinds of knowledge and community are created.
6. Is citizen science real participation in science, or is it just free labour/just-pretend? Choose one example that supports a positive and one that supports a negative response to the value of citizen science.

Your essay should draw upon **science communication theory** and **academic publications** to support your argument. Themes and topics from the first five weeks should be included in any of these essays. The following questions will help you to develop your answer.

- Whose voices are heard (whether directly or indirectly)?
- What narrative is used to present the science? What effects does this have?
- Which of the three elements of scientific literacy (subject knowledge, knowledge creation, and disciplinary policing) are treated, and how?
- Who is the communication aimed at? (and what evidence do you have to support this?), and who might be excluded from the communication and why?
- How is the audience encouraged to relate to the science?
- In what way(s) is science itself (re)presented?

Note: these questions are merely guides to help you structure your essay. The essay should be structured with an appropriate introduction, middle sections and conclusion. We will discuss this issue later on the module.

Please attach an appendix containing a copy of your chosen examples (or a weblink to where they are accessible). This appendix does NOT count towards your word count.

It is worth bearing in mind that this is a course about science communication, the theory, its practice and its implications. Thus your approach, and work, should focus on this as the main area of analysis. You should never be simply providing a descriptive account of the content of the science communication studied. The content of a piece of science communication is only relevant insofar as it allows you to answer more interesting questions about it (not just what did it say, anyone can read/watch something to answer that!)

Bear in mind also the difference between the research literature and your own experience. This is particularly important when dealing with popular culture or media, subjects which we are all familiar with and have experiences of in our every day lives.

You may experience the mass media and popular culture in one way, and thus form your own opinions about them but this does not mean that your experiences and opinions are representative of everyone else's. Sociology is about society not individuals. So be very wary of making statements like, "the public will think this…", "this won't make sense to the public…" or "this will make everyone think x". You may feel that way, but unless you have concrete evidence backing up such claims, these are simply unsubstantiated assertions based upon one person's experience.

You are at university to study these things in an academic and critical manner, so you should always ground your arguments and observations within the academic literature you have read. You should therefore justify your arguments through such mechanisms as sourcing, citing data, referencing, providing logical justification etc. There is nothing wrong with having personal opinions concerning an issue, but we want to see that you have engaged with the context and issues rather than simply writing a polemic, one-sided and unsubstantiated editorial on the topic! If you want to bring your own opinions or values to bear on your research, you need to make sure that you reflect on how these articulate with other viewpoints or values from within the literature.

Criteria for assessment

The departmental marking guidelines for individual items of assessment can be found in the STS Student Handbook. Further module specific criteria for assessment can be found on the module Moodle pages.

Module aims & objectives

Aims

The course aims to impart knowledge and understanding, at an introductory level, of:

- Concepts in public understanding of, and engagement with, science
- Public spaces for science, including the mass media, science museums and everyday life
- Cultural, social and political issues around science communication

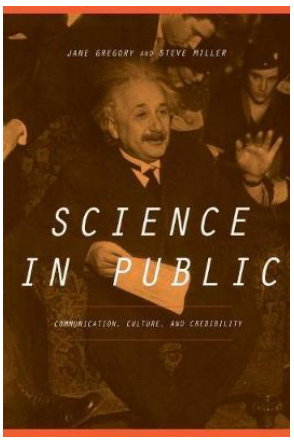
Objectives

By the end of this module students should have:

- Knowledge and understanding of the basic concepts and scope of science communication
- A broad understanding of the cultural, social and political issues around science in public
- Skills in written and spoken communication
- Skills in relating personal experience to the ideas, tools and values of academic research
- Skills in the recognition, collection and analysis of research materials
- Skills in argumentation, listening and constructive dialogue
- Confidence in contributing in class

Reading list

There is no one book that covers this course.



Science in Public: Communication, Culture & Credibility (New York: Plenum/Perseus/Basic Books, depending on the date) by Jane Gregory and Steve Miller provides some useful background: it is a *secondary* text – that is, it collects and comments on the work of many different scholars – and is a guide to the primary literature that you will meet if you go on to study science communication at higher levels. It is also now quite old, so doesn't provide a great picture of contemporary developments, not least the shift to online communication. It is still, however, a great introductory book to help us understand the historical and Western cultural dimensions of science communication

Other useful books include:

- Gascoigne, T., Schiele, B., Leach, J., Riedlinger, M., Lewenstein, B. V., Massarani, L., & Broks, P. (Eds.). (2020). *Communicating Science: A Global Perspective*. Acton: ANU Press. https://doi.org/10.22459/CS.2020 [Open access - free to download]

This offers a global perspective on Science Communication and features work by members of the STS Department. This may be a rich source for weekly class tasks, and for ideas for the term-essay – and it's free to download.

- Bell, P., Lewenstein, B. V, Shouse, A. W., & Feder, M. A. (2009). Learning Science in Informal Environments: *People, Places, and Pursuits*. Washington, DC: The National Academies Press. Available from http://www.nap.edu/catalog.php?record_id=12190.
- Brake, M. & Weitkamp, E. (Eds.), *Introducing Science Communication*. London, UK: Palgrave Macmillan.
- Holliman, R., Thomas, J., Smidt, S., Scanlon, E., & Whitelegg, L. (2009). *Practising science communication in the information age: Theorising professional practices*. Oxford, UK: Oxford University Press.
- Agustí Nieto-Galan, *Science in the Public Sphere: A History of Lay Knowledge and Expertise* (London: Routledge, 2016).

Additionally, Stella Cottrell has published an excellent text that will help you develop your critical thinking skills and essay writing, including worked examples to help you practice these skills. If you haven't read it already we strongly advise that you do so in preparation for your assessments on this course:

- Cottrell, S. (2005). *Critical thinking skills*. Developing effective analysis and argument. Basingstoke, UK: Palgrave Macmillan.

Finally, **essential weekly readings** are available on Moodle. You are expected to have read the relevant texts in following your viewing of each lecture at the start of each week. We have also compiled an extensive set of additional readings which will be provided to complement each lecture – these will allow you to delve more deeply into specific areas of interest and assist you in your critical review assessment. See each set of lecture slides for details.

Course expectations

Students are expected to view each weekly lecture package (videos available on Moodle) and carry out associated assigned tasks (including reading all assigned texts). These tasks are set each week for discussion to tie in with the lecture content and further develop your communication skills and understanding. It is mandatory that you participate by engaging online as directed. This includes self-directed reading, posting online to forums and other tools, and actively engaging with peers on Moodle and related platforms.

Should the instructions present any difficulties in completing the tasks, please contact Charlotte Sleigh as soon as possible.

Important policy information

Details of college and departmental policies relating to modules and assessments can be found in the STS Student Handbook www.ucl.ac.uk/sts/handbook

All students taking modules in the STS department are expected to read these policies.