

# HPSC1008 Fundamentals of Science Communication

## Course Syllabus

2013-14 session | Professor Steve Miller | [s.miller@ucl.ac.uk](mailto:s.miller@ucl.ac.uk)  
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### Course Information

In the UK, in particular, and to varying degrees internationally, science communication is an area that has developed considerably over the past three decades. With every new generation, however, there is a tendency to “reinvent the wheel”, to repeat old fallacies, and to make unfounded generalizations, as if there was no body of knowledge and evidence that has been accumulated.

So this course introduces students to some of the fundamental concepts of science communication by examining both its intellectual underpinning and the practical activity that accompanies it. Intellectually, it does so by going back to some of the founding ideas in science communication. Practically, it does so with critical reviews of a variety of science communication modes.

### Basic course information

Moodle Web site:	search 'HPSC1008'
Assessment:	Two pieces of coursework (2,500 words) 50% each.
Timetable:	<a href="http://www.ucl.ac.uk/sts/hpsc">www.ucl.ac.uk/sts/hpsc</a>
Prerequisites:	No prerequisites
Required texts:	Jane Gregory and Steve Miller (1998 / 2001). <i>Science in Public: communication, culture and credibility</i> (Perseus, New York). Available in the library and at Waterstones etc.
Course tutors:	Professor Steve Miller and Dr Carole Reeves
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Office location:	22 Gordon Square, Room 4.3 (Miller), Room 3.3 (Reeves)
Office hours:	Steve Miller: Monday 14.00 – 16.00; Tuesday 09.00 – 10.00, or by appointment – please email Carole Reeves: Tuesday 10.00 – 11.00; Wednesday 10.00 – 11.00, or by appointment – please email

**Schedule**

<b>UCL Week</b>	<b>Topic</b>	<b>Date</b>	<b>Activity</b>
20	Introduction to Science in Public (SM/CR)	Lecture: 13 <sup>th</sup> Jan Seminar 1: 13 <sup>th</sup> Jan Seminar 2: 14 <sup>th</sup> Jan	
21	Science in Fiction (CR)	Lecture: 20 <sup>th</sup> Jan Seminar 1: 20 <sup>th</sup> Jan Seminar 2: 21 <sup>th</sup> Jan	
22	Science, Communication and Culture (SM)	Lecture: 27 <sup>th</sup> Jan Seminar 1: 27 <sup>th</sup> Jan Seminar 2: 28 <sup>th</sup> Jan	
23	Museums: Cathedrals of Science? (CR)	Lecture: 3 <sup>rd</sup> Feb Seminar 1: 3 <sup>rd</sup> Feb Seminar 2: 4 <sup>th</sup> Feb	
24	What is Scientific Literacy? (SM)	Lecture: 10 <sup>th</sup> Feb Seminar 1: 10 <sup>th</sup> Feb Seminar 2: 11 <sup>th</sup> Feb	
25	<b>Reading Week</b>	No classes	
26	Engaging the Public (SM)	Lecture: 24 <sup>th</sup> Feb Seminar 1: 24 <sup>th</sup> Feb Seminar 2: 25 <sup>th</sup> Feb	Assignment One due: Friday, February 28 at 23:59hrs.
27	Science and the Consumer (CR)	Lecture: 3 <sup>rd</sup> Mar Seminar 1: 3 <sup>rd</sup> Mar Seminar 2: 4 <sup>th</sup> Mar	
28	Science on Television (CR)	Lecture: 10 <sup>th</sup> Mar Seminar 1: 10 <sup>th</sup> Mar Seminar 2: 11 <sup>th</sup> Mar	
29	Science and New Media (CR)	Lecture: 17 <sup>th</sup> Mar Seminar 1: 17 <sup>th</sup> Mar Seminar 2: 18 <sup>th</sup> Mar	
30	Just what counts as "Engagement"? (SM)	Lecture: 24 <sup>th</sup> Mar Seminar 1: 24 <sup>th</sup> Mar Seminar 2: 25 <sup>th</sup> Mar	Assignment Two due: Monday April 28 at 23:59hrs.

## Assessments

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### Summary

	Description	Deadline	Word limits
<b>Essay 1</b>	Essay chosen from the titles below	11.59 pm Friday, February 28 2014	<b>2,500</b> (not 3,000 as stated in Portico)
<b>Essay 2</b>	Critical science communication review	11.59pm Monday, April 28 2014	<b>2,500</b> (not 3,000 as stated in Portico)

### Assignments

This module is assessed by 100% coursework. There is no exam. Assignments must be submitted anonymously via Moodle.

In order to be deemed 'complete' on this module, students must attempt both assignments.

#### Assignment One:

**Due 28 February, 23:59**

**Word limit: 2500 words**

**Contribution to final mark: 50%**

**Choose one of the following essays. Essays must be properly referenced and contain a bibliography.**

1. Outline the concept of the 'Two Cultures'. To what extent, if any, is it relevant today?
2. "Scientific literacy" means knowing how science *really* works. Discuss this statement making use of one or more concrete examples.

#### Assignment Two:

**Due 28 April, 23:59**

**Word limit: 2500 words**

**Contribution to final mark: 50%**

**Using material collected for one of your research task as a starting point, write a critical review of an area of science communication covered on the module. Note: you are expected to do further research and go beyond the discussion in class.**

You might, for example, compare two pieces of popular science writing, a variety of newspaper articles, exhibits in two museums, or a television and a radio programme. Alternatively, you might review a cinema film, a science fiction book (the whole book, not a single short story), a series of blogs or Twitter accounts on the same topic.

### **Guidance on writing a critical review**

You should be addressing some or all of the following aspects in your review:

Where did your materials come from? Why might this be relevant to the content and how might the same message be different in a different context?

Who might read/watch it? (What is the intended audience?)

What sort of model of science communication is implied here?

How does what you are looking at fit with the historical trends in science, communication and culture that have been discussed in class?

Whose interests are being served here?

How does this piece of communication fit with models of public understanding of science?

How does this medium of science communication compare to others you have looked at?

To answer these sorts of questions you need to provide evidence. Your evidence in this case will be the content and/or specific features of the piece of science communication. So try to point to the relevant sections/sentences/features of the piece when answering the question.

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 learning to study 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.

### Aims & objectives

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

- Public spaces for science, including the mass media, science museums and everyday life
- Media and processes for science communication
- The history, and role, of science communication in the professionalisation of science
- Concepts in public understanding of, and engagement with, science
- How science becomes newsworthy
- How science is represented in museums
- How science is used in the political arena

By the end of this course, you should have:

- Knowledge and understanding of the basic concepts and scope of science communication
- A broad understanding of the social and political contexts and functions of 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

The core text for this course is the book *Science in Public: Communication, Culture & Credibility* (New York: Plenum/Perseus/Basic Books, depending on the date) by Jane Gregory and Steve Miller (£11.99 from Waterstones). This is a *secondary* text – that is, it collects and comments on the work of many different scholars – and it will prepare you for the often challenging primary literature – the work of those scholars themselves – that you will meet if you go on to study science communication at higher levels. For some classes, you will be required to read parts of *Science in Public* before class.

Three other useful books, which are also secondary texts, are *Science, Culture and Society: Understanding Science in the 21<sup>st</sup> Century* (Polity Press), by Mark Erikson, *Investigating science communication in the information age: implications for public engagement and popular media* edited by Richard Holliman et al. (Oxford University Press), and *Introducing science communication* edited by Mark Brake and Emma Weitkamp (Palgrave Macmillan).

You are also encouraged to use the internet for research. However make sure you reference the full web address, the site title and date visited. Be critical of what you read and be careful of / avoid purely descriptive sites such as Wikipedia – We will be looking for evidence of some hard thinking and argument in your essays, not simple regurgitation of basic information. **Also note that plagiarism, particularly involving internet sources, will be treated as a severe exam irregularity.**

The notes that you take in lectures will not be detailed enough for you to fully understand a topic or to write an essay on that topic. It is therefore essential that you make use of the reading list.

- The reading list is divided into essential and additional reading - you are **not** expected to read all of the material, but they may be helpful in writing the essays.
- You will be expected to read all of the required reading (although not necessarily all in the same amount of detail). This amounts to one or two pieces each week.
- If you cannot get hold of the *required* reading, then you should read an item from the key reading list instead.

**All of the readings, web resources, and Library listings are listed, and many can be directly accessed on the course Moodle pages. You will have access to the Moodle pages once you have been registered for the course on PORTICO.**

**Week 1: Introduction to science in public**

This week's class will introduce the course and explore the many contexts and means by which science is experienced in the world outside of its professional community. These spaces will be explored in more detail as the course progresses. It will also ask why we may need special efforts to make science more generally understood.

The basic reading for this class and several that follow is *Science in Public*, Chapters 1 and 2.

Further reading:

- Brian Trench and Massimiano Bucchi, 2010. "Science communication, an emerging discipline", *Jcom* **09(03)**, 1-3.
- Geoffrey Thomas and John Durant, 1987. "Why should we promote the Public Understanding of Science", *Science Literacy Papers Summer*, 1-14.

This week's tutorial will discuss the many ways in which different media and forums are used for communicating science.

**Research Task**

Your assignment is to collect and report on two experiences from everyday life where scientific information is made available to non-experts. Only one of these can involve the mass media (newspapers, TV, internet).

By the end of this week you should understand:

- That science communication is carried out by a wide range of people;
- That they have a variety of motivations for doing this;
- That they may play a variety of roles, from educator to entertainer, to which they are more or less well suited;
- That the process of communication requires making assumptions about the audience ...
- ... that may or may not be justified.

## Week 2: Science in Fiction

This week we will consider the new genre of Science-Punk fiction in which authors work with scientists to create short stories based on modern scientific research, futuristic bio-ethical issues, and the far side of scientific discovery. This will be explored in the context of the emergence of science fiction in the era of emerging science, the portrayal of scientists in fiction, and the potential of fiction as a means for science communication.

Required reading: Mark Brake and Neil Hook, *Futureworlds: where science fiction becomes science* (Boxtree, 2008), introduction and at least 20 of the very short topics

Further reading:

- Nicholas Russell, 'Science and scientists in Victorian and Edwardian literary novels: insights into the emergence of a new profession,' *Public Understanding of Science* (2007); 16: 205-222.
- Roslynn Haynes, 'From alchemy to artificial intelligence: stereotypes of the scientist in Western literature,' *Public Understanding of Science* (2003); 12: 243-253.
- Steven Hrotic, 'The evolution and extinction of science fiction,' *Public Understanding of Science* (2013): 1-17.
- Jon Turney, 'Science communication in fiction', in Richard Holliman et al, *Practising science communication in the information age* (OUP 2008).

All articles available on Moodle

In this week's tutorial we will discuss how scientific events or issues have been represented in the short stories from the Science-Punk fiction.

### Research Task

Your assignment is to read at least one short story from one of the following books:

*Biopunk: stories from the far side of research*, edited by Ra Page (Comma Press, 2012).

*Litmus: short stories from modern science*, edited by Ra Page (Comma Press, 2011).

*When it changed: science into fiction*, edited by Geoff Ryman (Comma Press, 2009).

Summarise your fictional story and link it to an article in the science press that tells the same story in its non-fiction context.

By the end of this week you should understand:

- That science in fiction has a long tradition that is related to the emergence of scientific disciplines;
- That the sympathetic or unsympathetic portrayal of scientists in fiction may depend on the controversial or otherwise nature of their research;
- That fiction can be a valuable medium through which to explore the grey area between the fantastical and that which is already within our reach;
- That fiction does have potential as a means of science communication.

### Week 3: Science, communication and culture

This class will develop the idea that science communication does not take place in a vacuum, but in a context formed of the many other forms of knowledge and communications with which it co-exists in science-based societies. It will look briefly at the way the cultural context for science has developed historically, and whether or not there is a divide between science and general culture. Finally, it will ask: "So what? Do we need our citizens to be scientifically literate?"

Required reading for this class the first two chapters of *Science in Public*. You should also read Stefan Collini's Introduction to C.P. Snow's *The Two Cultures* in the 1993 Canto edition.

Further reading:

- C.P. Snow, 1959. *The Two Cultures* (Canto edition: 1993);
- Robert M. Young, 1985. "Natural theology, Victorian periodicals, and the fragmentation of a common context" in *Darwin's Metaphor: Nature's place in Victorian Culture* (Cambridge University Press), 126-163.
- Science for All Expert Group, 2010. *Science for All: report and action plan* (Department for Business, Innovation and Skills, London).
- Tim Adams, 'The new age of ignorance', *The Observer* 1 July 2007 (article on the two cultures).
- Geoffrey Cantor, 2000. "Fighting the wrong battle", *Nature* **403**, 831, and the ensuing correspondence which you can find through an online search.
- Geoffrey Thomas and John Durant, 1987. "Why promote the public understanding of science", *Science Literacy Papers* **Summer**, 1-14.

For this week's tutorial you will discuss how different understandings of science leads to differing relationships between science and other aspects of culture, and to what extent you think understanding science matters.

#### Research Task

Undertake an online search to find recent discussions about the "two cultures" (you'll be surprised where this conversation pops up). You might, for example find it in discussions about science and religion, science and art, science and humanities. Be prepared to summarise the arguments in what you find, and develop your own opinion on this issue.

By the end of this week you should understand:

- That science communication does not take place in a cultural vacuum;
- That the cultural environment for science communication has developed historically (and is still doing so);
- That the issue of a cultural divide is one that is still much debated.

**Week 4: Museums: cathedrals of science?**

This week we will explore the history and theory of science museums. We will discuss the purpose of collections of scientific artefacts and natural objects, and consider how science/society relations have been reflected in the changing style of science museums through the twentieth century.

Required reading for this class is *Science in Public* Chapter 8; and Robert Bud, 'Collecting for the Science Museum: constructing the collections, the culture and the institution,' in *Science for the nation: perspectives on the history of the Science Museum*, edited by Peter J T Morris (Science Museum, 2010).

Further reading:

- Andrew Nahum, 'Exhibiting science: changing conceptions of Science Museum display,' in *Science for the nation: perspectives on the history of the Science Museum*, edited by Peter J T Morris (Science Museum, 2010).
- Robert Bud, 'Medicine at the Science Museum,' in Sam Alberti & Elizabeth Hallam, *Medical museums: past, present, future* (Royal College of Surgeons, 2013).
- Bernard Schiele, 'Science Museums and Science Centres' in Bucchi and Trench (eds), *Handbook of Public Communication of Science and Technology* (Routledge, 2008), pp. 27 – 40.
- John Durant's introduction to Durant, J (ed), *Museums and the Public Understanding of Science* (Science Museum, 1992)
- Frank Oppenheimer, 'Rationale for a science museum: <http://www.exploratorium.edu/frank/rationale/rationale.pdf>
- Sharon MacDonald, 'Exhibitions and the Public Understanding of Science Paradox: <http://www.pantaneto.co.uk/issue13/macdonald.htm>

This week's tutorial will be a discussion of your experiences as museum visitors.

**Research Task**

Your assignment is to visit the Science Museum in South Kensington, where you should look at one traditional gallery in the main building and one of the newer exhibitions in the Wellcome Wing. Think about: what it is that you are being shown; what media are used; what choices have been made and why in the assembling and exhibiting; and what messages you felt were communicated to you.

By the end of this week you should know something of the history of science museums and be able to take a critical view of museums and exhibitions.

## Week 5: What is Scientific Literacy?

If we do feel that it would be a “good thing” were our fellow citizens to be scientifically literate, then a question must follow: just what counts as being scientifically literate? This class will look at an area that – until recently – was known as “The Public Understanding of Science” (PUS). It will discuss notions of PUS as a “mission” or as “social engineering”, and models of science communication that accompany these notions. These will be contrasted with other approaches that see PUS as a means of empowering individuals and groups within society, and engaging them with science, a topic that will get further attention in Course Weeks 7 and 10.

Required reading for this class is: *Science in Public*: Chapters 4 and 6, and Simon J Lock, (2011), ‘Deficits and dialogues: science communication and the public understanding of science in the UK’, in David Bennett and Richard Jennings, eds, *Communicating Science For Scientists* (Cambridge: Cambridge University Press).

Further reading:

- The Royal Society Committee on the Public Understanding of Science, 1985. *The Public Understanding of Science* (Royal Society of London).
- John D. Miller, 1992. “Towards a scientific understanding of the public understanding of science”, *Public Understanding of Science* **1**, 23-26.
- John Durant, 1993. “What is scientific literacy?” in *Science and Culture in Europe*, eds. John Durant and Jane Gregory, (Science Museum, London), 129-138.

For this week’s tutorial you will discuss approaches to PUS and the features that accompany them. The discussion will bring out the strengths and weaknesses of these approaches.

### Research Task

Your assignment will be to read one of the following articles from the launch issue (Vol. 1 no. 1) of the journal *Public Understanding of Science*. The journal is available online in College as part of the Library’s electronic journals: <http://www.ucl.ac.uk/library/ejournal/index.shtml>. The articles are by Bodmer, Leblond, Fayard and J.D. Miller. Choose two, read them and make notes so that you can discuss the approaches to PUS that are being manifested in the articles, as well as any other features that you think are worthy of discussion. For some interesting contrasts choose one of Bodmer or Miller and one of Leblond or Fayard.

By the end of this week you should understand:

- Different takes on scientific literacy;
- The basic concepts underlying the area of PUS;
- The various approaches to this area;
- Their strengths and weaknesses.

<b>Week 6: Reading week</b>
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<b>No lectures or tutorials this week</b>
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## Week 7: Engaging the Public

How has the public for science been envisaged, how has that changed over years, and how has this led into different approaches to science communication? This lecture will sketch some of the approaches that have been taken towards thinking about citizens' takes on science and what they might bring to bear in understanding it and its implications for them. It will highlight the role of the 2000 House of Lords report "Science and Society" in moving official discussion of science communication away from the "Deficit Model" towards "engagement".

Required reading for this class is: The House of Lords "Science and Society" report, available at: <http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3801.htm> and *Science in Public* Chapters 4, 7 and 10. There will also be reference to Jurgen Habermas' 1991 book *The structural transformation of the public sphere*.

Further reading:

- Jane Gregory, 2004. "Who is the man on the street?" *RSA journal* **July**, 29-31.
- Steve Miller, 2001. "Public Understanding of Science at the Crossroads", *Public Understanding of Science* **10**, 115-120.
- James Wilsdon, Brian Wynne and Jack Stilgoe, 2005. "The Public Value of Science: or how to ensure that science really matters", (DEMOS, London).

This week's tutorial will discuss what audiences are being targeted by the various science communication activities discussed in the lecture, and what implicit and/or explicit assumptions are being made about those audiences.

### Research Task

Your assignment is to look at the content of at least two government department websites (e.g. BIS, GOScience, DEFRA) to see what sort of information it provides on a contemporary scientific issue such as climate change, synthetic biology, or nanotechnology and at whom it might be aimed. Consider especially the contrast between the differing communications strategies, e.g. the promotion of the new technology and attempts to facilitate public engagement or consultation.

By the end of this week you should have some understanding of the different notions of the public and you should be alert to some of the underlying assumptions that science communications and communicators may be making.

- That approaches to PUS have developed over a period of time.
- That a variety of official bodies are involved in science communication, as part of their duties and as part of their efforts to promote themselves and their activities;
- That in doing so, they have "authority";
- That this then requires measures to allow for public involvement, particularly in the area of policy making.

## Week 8: Science and the consumer

This week we will consider scientific information given to consumers, for example, on food and medicine packaging, and in advertisements, and will explore the relationship between consumer behaviour, government policy and market forces.

Required reading for this class: Consumer Association website (<http://www.which.co.uk>); type 'food labelling' into the search box. Read some of the press releases and reports on the Consumer Association's challenges to food labelling. Also check out the UK Government's Food Labelling and Packaging web pages (<https://www.gov.uk/food-labelling-and-packaging>).

Further reading:

- Rachel Dodds, Efrat Tseëlon, Emma Weitkamp, 'Making sense of scientific claims in advertising,' *Public Understanding of Science* (2008); 17: 211-230.
- Gwendolyn Blue, 'Food, publics, science,' *Public Understanding of Science* (2010); 19: 147-154.
- Pauline Ippolito, Alan Mathios, 'The regulation of science-based claims in advertising,' *Journal of Consumer Policy* (1990); 13: 413-445.
- Gill Cowburn, Lynn Stockley, 'Consumer understanding and use of nutrition labelling: a systematic review,' *Public Health Nutrition* (2005); 8: 21-28.
- Peter Williams, 'Consumer understanding and use of health claims for foods,' *Nutrition Reviews* (2005); 63 (7): 256-64.
- Giuseppe Nocella, Orla Kennedy, 'Food health claims: what consumers understand', *Food Policy* (2012); 37 (5): 571-580.
- Medicines and Healthcare Products Regulatory Agency: labels, patient information leaflets and packaging for medicines:  
<http://www.mhra.gov.uk/Howweregulate/Medicines/Labelpatientinformationleafletsandpackaging/>

All sources available on Moodle

This week's tutorial will set up the following week's lecture on science on television by providing you an opportunity to watch the drama-documentary 'Smallpox 2002: silent weapon'. Prior to the screening of this film on BBC 2, Tuesday 5 February 2002, the UK Department of Health sent a circular to *all* medical and biomedical professionals and community pharmacists warning of a possible public panic and request for smallpox vaccination.

### Research Task

Collect two examples of scientific information from food or other consumer goods packaging, and one example of an advertisement that uses science to sell its product. Reflect on what information is given, what it means to you, and how you might use it.

By the end of this week you should have some factual knowledge about the debate over the use of scientific claims in consumer products, and be able to reflect critically on the different kinds of information given to consumers.

### Week 9: Science on the television – a drama-documentary

This week we will consider the context in which 'Smallpox 2002: silent weapon' was produced, the issues it highlighted, the credibility of its scientific content (whether a smallpox pandemic could be launched and disseminated in the manner portrayed), and how it compares with other genres of science programming. We will also look at recent comparisons of science scheduling on television across Europe. How does the UK stand up?

Required reading for this class is *Science in Public*, pp 121-123; and Markus Lehmkuhl, Christina Karamanidou et al, 'Scheduling science on television: a comparative analysis of the representations of science in 11 European countries,' *Public Understanding of Science* (2012); 21: 1002-1018.

Further reading:

- Michael Stewart, Richard Butt, 'We had it coming: hypothetical docudrama as contested form and multiple fantasy,' *Critical Studies in Television* (2011); 6: 72-88.
- Brett Mills, 'Days of future past: documenting the future,' *Journal of British Cinema and Television* (2011); 8: 81-98.
- HM Collins, 'Certainty and the public understanding of science: science on television,' *Social Studies of Science* (1987); 17: 689-71.
- Georgios Pappas et al, 'Infectious diseases in cinema: virus hunters and killer microbes,' *Clinical Infectious Diseases* (2003); 37: 939-942.
- Patrick Berche, 'The threat of smallpox and bioterrorism,' *Trends in Microbiology* (2001); 9: 15-18.
- Martin Enserink, 'How devastating would a smallpox attack really be?' *Science* (2002); 296: 1592-1595.
- Monica Schoch-Spana, 'Bioterrorism: US public health and a secular apocalypse,' *Anthropology Today* (2004); 20: 8-13.

All sources available on Moodle

This week's tutorial is about techniques in broadcasting science stories across the media.

#### Research Task

You should watch or listen to one or more science broadcasts. Suggestions will be made in class, depending on current broadcast schedules.

By the end of this week you should understand some of the general strategies in telling the story of science. In particular, you should be aware of the techniques available to television and cinema, compared with other media such as radio.

## Week 10: Science and New Media

This week we explore the ways in which new media may be used to communicate scientific topics. Interactive social media such as Facebook and Twitter will be considered, as well as more 'broadcast' mechanisms such as podcasting, blogging and open notebooks. Audience demographics for each of the different media will be considered in light of ensuring that the medium is best suited to the target recipients.

Required reading for this class:

Research Information Network (2011), "Social media: A guide for researchers" (on Moodle).

Further reading:

- Trench, B., "Internet: Turning Science Communication Inside-Out" in Bucchi and Trench (Eds) *Handbook of Public Communication of Science and Technology* (Routledge, 2008).
- Various chapters in Richard Holliman et al (eds), *Practising Science Communication in the Information Age Theorizing Professional Practices*, 2008, Oxford University Press, e.g.:
  - Chapter 2.2: Matthew Chalmers: Communicating physics in the information age
  - Chapter 3.1: Scott L. Montgomery: Science and the online world: realities and issues for discussion
  - Chapter 3.2: Richard Gartner: From print to online: developments in access to scientific information
- Giuseppe Veltri, 'Microblogging and nonotweets: nanotechnology on Twitter', *Public Understanding of Science* (2013); 22: 832-849.

All articles available on Moodle.

This week's tutorial will involve group critiques of specific examples of science communication using new media.

### Research Task

Your assignment is to identify and briefly review one example of each of the following mechanisms for communicating scientific topics using new media:

- Podcast
- Blog
- Twitter or Facebook

If you are unsure what examples you should select please contact Carole Reeves in advance of the tutorial. Consider each of the examples you have chosen in light of the following issues: how have the scientists been presented (e.g. personal vs professional personas); how does the medium encourage or detract from collaboration and dissemination of scientific results; and what audiences are best served by the different media types. Remember, you are expected to conduct a **critical analysis** of this topic, **not just describe** each of the examples you have found.

By the end of this week you should: comprehend different types of new media and how it is used to communicate science; understand the motivations and barriers that affect scientists' use of these new media; be aware of the importance of audience targeting when selecting new media.

**Week 11: So what counts as engagement?**

Following on from the House of Lords 2000 report on “Science and Society” there has been a “new mood for dialogue” which has expressed itself in various discussions around “public engagement” in policy-making on new (and some old) technologies. So what is envisaged? And what about other, non-policy-related, science communications? Does involving citizens in doing science, in some form or another, count as engagement – or is it just cheap labour?

Required reading for this class is: Martin Bauer, Nick Allum and Steve Miller, “What can we learn from 25 years of PUS survey research: liberating and expanding the agenda”, *Public Understanding of Science* **16**, 79-95, and POSTnotes 153 and 189, at:

<http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-153> and <http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-189>

Further reading may be found at:

- [http://en.wikipedia.org/wiki/List\\_of\\_crowdsourcing\\_projects](http://en.wikipedia.org/wiki/List_of_crowdsourcing_projects)
- <http://blogs.scientificamerican.com/guest-blog/2013/02/28/pearls-across-the-zooniverse-when-crowdsourcing-becomes-citizen-science/>
- <http://www.rspb.org.uk/birdwatch/>
- <http://www.galaxyzoo.org/>

Your tutorial this week will give you an opportunity to discuss your second assignment, and to ask outstanding questions about this course.

**Research Task**

Find the necessary materials for your second assignment.

## Course expectations

Students are expected to attend the lecture and their allocated seminar on Monday or Tuesday each week.

You will bring to the tutorial an item of research material that illustrates an aspect of that week's topic as highlighted in the research task. You should annotate or review your research material and be prepared to discuss it in class. Please ensure that you give yourself time for finding this material.

Tutorial groups will be assigned in the first week. **Please note that these tutorials are a compulsory part of the course, failure to attend less than 70% of the course will result in you being deemed incomplete for the module.**

## Important policy information

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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](http://www.ucl.ac.uk/sts/handbook)

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

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