

## STS 115: COMMUNICATING SCIENCE

SPRING 2019

Harvey Mudd College, HSA Department

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**OFFICE HOURS:** Friday 4 - 5pm or by appointment

**COURSE OVERVIEW:** This course will examine the ways in which science has been written, performed and displayed for non-specialist audiences from the early 19<sup>th</sup> C to today. Looking at different modes of communication including books, museum exhibits, newspapers, documentaries and science blogs, we will ask how boundaries have been drawn around professional science. How have different modes of communication shaped certain expectations about the authority and scope of science, about what kinds of questions scientists get to ask, and about who gets to be a scientist? We will look at moments in which scientific debate has spilled out of formal peer-reviewed journals, as scientists reach out to non-specialist audiences for support and we will look for resistance and appropriation from those audiences who have been much more than passive readers.

**GOALS:** Students will:

1. explore the aims and conventions of different modes of science communication from the 19th century to today
2. consider the relationships of different audiences to popular science
3. practice analysing primary sources and incorporating evidence from these sources into an argument
4. learn how to identify arguments in a secondary source and critically evaluate the evidence given for those arguments
5. create a work of popular science in a medium of their choosing
6. use Scalar to publish their course work

### GRADE BREAKDOWN:

Class Participation, Quickwrites and Peer Review	25%
Primary Source Critique I	10%
Primary Source Critique II	15%
Final Project	30%
Reflective Essay	20%

*You must pass all course requirements in order to pass the course.*

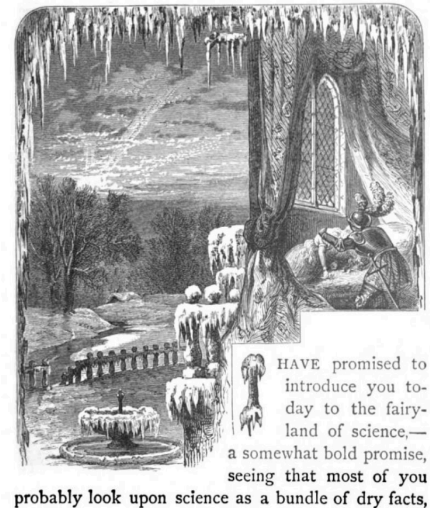
### Course Readings:

The course readings will all be available as pdfs on the Sakai site. In order to participate fully in discussion, **you must bring your readings and your reading notes to class.**

## THE FAIRY-LAND OF SCIENCE.

LECTURE I.

HOW TO ENTER IT; HOW TO USE IT; AND HOW  
TO ENJOY IT.



Arabella Buckley, *The Fairy-Land of Science*. (1888)

## **Class Participation (25%)**

**Discussion:** We will approach the material together through discussion. You are expected to come prepared to contribute to the conversation each week. Please see the attached rubric showing how your contribution to the discussion will be evaluated. You are not being graded on attendance but if you are not present you cannot contribute. Missing more than one class session will negatively affect your final grade.

**Quickwrites:** These are short, informal responses which will be submitted through Assignments on Sakai during class. You will be asked to spend 10 min reacting to the readings. These quickwrites will allow you to reflect again on the texts, generate discussion points and demonstrate your careful reading. Each quickwrite will receive a grade of 0, 1-, 1 or 1+ (corresponding to F, C, B, A). You must complete 8 out of 10 QWs to receive full credit.

**Peer Review:** You will be asked to provide detailed, critical feedback on your classmates' work throughout the semester.

**Primary Source Critique I (10%):** (900 - 1000 words). You will choose one of the primary sources we have studied so far for your analysis. **Due Friday, Feb. 22 at 9pm.**

**Primary Source Critique II (15%):** (1000-1200 words). This will offer a chance for you to do a close analysis of one example of popular science of your choice. You will do some research to find one additional scholarly source beyond the class readings to help you place your example of popular science in wider historical context. **Due Friday, March 15 at 9pm.**

**Final Project (30%):** You will produce a work of popular science in a medium of your choosing. **Proposal due Monday, April 1 at 9pm (10%). Project Draft due April 26 before class. Final Project due May 3 before class (20%).** You will act as audiences and provide feedback on your classmates' projects during our Project Exhibition, May 3.

**Reflective Essay (20%):** This will be a chance for you to make use of our course readings to reflect on the creation of your popular science project. **Due May 10 at 9pm (graduating seniors); May 16 at 5pm (everyone else).**

## **Detailed Schedule**

### **Jan. 25: Introduction**

1. Syllabus

### **Feb 1: Modeling Popular Science**

1. Stephen Hilgartner, "The Dominant View of Popularization: Conceptual Problems, Political Uses," *Social Studies of Science* 20 (1990): 519 - 539
2. Sarah Perrault, "Popular Science Writing: Problems and Potential," in *Communicating Popular Science* (2013): p. 3- 17.

### **Feb 8 Readers**

1. James Secord. "Prologue," "Introduction" and "Self-Development" in *Victorian Sensation* (2000): p. 1-6, 336 - 363.
2. Robert Chambers, *Vestiges of the Natural History of Creation* (1844).  
<https://archive.org/details/vestigessofnatura00unse>

## **Feb 15 Writers**

1. Bernard Lightman, "'The Voices of Nature': Popularizing Victorian Science," in *Victorian Science in Context*, Chicago: University of Chicago Press (1997): 187- 211.
2. Arabella Buckley, *The Fairy Land of Science*. Philadelphia: J. B. Lippincott Company (1888). <https://archive.org/details/fairylandofscien00buckiala>

## **Feb 22: Spectacle + Scalar Workshop I**

1. Fred Nadis. "The Techno-Wizard," in *Wonder Shows: Performing Science, Magic and Religion in America*, p. 48 -82.
2. Primary Source tba.

**The second half of class will be held at the Library.**

\*\*\*\* Primary Source Critique 1 Due Friday, Feb. 22 at 9pm. \*\*\*

## **March 1: Museums + Trip to the Alf Museum**

1. Karen A. Radar and Victoria E.M. Cain, "A Vision of the future: The New Museum Idea and Display Reform, 1890-1915," in *Life on Display: Revolutionizing US Museums of Science and Natural History in the Twentieth Century*," Chicago: Chicago University Press (2014), p.8-50.

**We will be travelling to the Alf Museum at the Webb Schools. You should expect to be back on campus by 4:15.**

## **March 8: Television**

1. Marcel Chotkowski LaFollette. "Prologue," and "Illusions of Actuality," in *Science on the Air: Popularizers and Personalities on Radio and Early Television*. Chicago: University of Chicago Press (2008): 1-5, 211 - 238.
2. Long et al., "Gender and racial counter-stereotypes in science education television," *Public Understanding of Science* 10 (2001): 255 - 269.

(in class): *Bill Nye the Science Guy* and *PBS Wonders*

## **March 15: Values + Scalar Workshop II**

1. Angela J. Aguayo, "The Re-vised American Dream: The Wildlife Documentary Form as Conservative Nostalgia," in *Uncovering Hidden Rhetorics: Social Issues in Disguise*, Barry Brummett, ed. Thousand Oaks: Sage Publications, 2008: 141 -153.

In class: *March of the Penguins* (2005)

**The second half of class will be held at the Library and will give you a chance to finish formatting your Primary Source Critique 2 in Scalar.**

\*\*\*\* Primary Source Critique 2 Due Friday, March 15 at 9pm. \*\*\*

## **March 22: Spring Break**

## **March 29: Cesar Chavez**

\*\*\*\* Project Proposal Due Monday, April 1 at 9pm. \*\*\*

### **April 5: Communicating Risk**

1. Harry Collins and Trevor Pinch, "The science of the lambs: Chernobyl and the Cumbrian sheep farmers," in *The Golem at Large: What you should know about Technology* (2009): 113 - 125.
2. Alex Zahara, "On Sovereignty, Deficits, and Dump Fires," *Inevitably Toxic* (2018): 259 - 277.

**Special Guest: Prof. Talithia Williams (2:45 - 3:15)**

### **April 12: Popular Physics**

1. Felicity Mellor. "Demarcating Science from Non-Science in Popular Physics Books," *Social Studies of Science* 33/4 (2003): 509 - 538.
2. Lawrence Krauss, *The Physics of Star Trek* (2007) (selection).

### **April 19 Controversy**

1. Daniel Patrick Thurs. "Intelligent Design: The Evolution of Science Talk," in *Science Talk: Changing Notions of Science in American Culture*. Rivergate Books (2007): p.159-183.
2. Katharine Hayhoe, "[How to talk about Climate Change](#)" (April 18, 2019)

In Class: <https://climate.nasa.gov>; <https://www.thegwpc.com>; <https://climatechange.procon.org>

### **April 26: Project Drafts**

### **May 3: Project Exhibition**

\*\*\*\* Reflective Essays Due Friday, May 10 at 9pm for graduating seniors and Thursday, May 16 at 5pm for everyone else. \*\*\*

## Participation Rubric

You will be graded on the contributions that you make each week to the class discussion. Careful reading and preparation for each class will help you to make thoughtful and meaningful contributions.

**In order to participate fully, you must bring your readings and your reading notes to class.**

A	A-	B	C	D	F
<ul style="list-style-type: none"> <li>• actively supports, engages and listens to peers (ongoing)</li> <li>• arrives fully prepared to every class</li> <li>• continually plays an active role in discussion</li> <li>• comments consistently advance the level and depth of discussion</li> </ul>	<ul style="list-style-type: none"> <li>• actively supports, engages and listens to peers (ongoing)</li> <li>• arrives fully prepared to almost every session</li> <li>• plays an active role in discussion (ongoing)</li> <li>• comments occasionally advance the level and depth of the dialogue</li> </ul>	<ul style="list-style-type: none"> <li>• makes a sincere effort to interact with peers (ongoing)</li> <li>• arrives mostly, if not fully, prepared</li> <li>• participates constructively in discussions (ongoing)</li> <li>• makes relevant comments based on the assigned material</li> </ul>	<ul style="list-style-type: none"> <li>• limited interaction with peers</li> <li>• preparation, and therefore level of participation, are both inconsistent</li> <li>• when prepared, participates constructively in discussions and makes relevant comments based on the assigned material</li> </ul>	<ul style="list-style-type: none"> <li>• virtually no interaction with peers</li> <li>• rarely prepared</li> <li>• rarely participates</li> <li>• comments are generally vague or drawn from outside of the assigned material</li> <li>• demonstrates a noticeable lack of interest (on occasion)</li> </ul>	<ul style="list-style-type: none"> <li>• no interaction with peers</li> <li>• never prepared</li> <li>• never participates</li> <li>• demonstrates an ongoing lack of interest in the material</li> </ul>

Adapted from a rubric presented by Adam Chapnick in *The Teaching Professor* March 2005.