

HISC 104, UCSD, SPRING 2009

## The History of Popular Science: Pop Science and Popularizations of Science

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Office: 2302 HSS, East Wing / Hours: Tues+Thurs 12-1, 3:45-4:15, 6:30-7:30

Tuesday-Thursday 2-3:20 PM, Peterson 104

Grading: Take-Home Essay Midterm 40% + Take-Home Essay Final 60%.

### **Class Description:**

This class is an “alpha” version: first time taught by me, thus still undergoing construction. The class is on the history of popular science, and much more, especially on the popularization of science and “pop science,” or science as seen by popular culture. Each session will be structured as about 50 minutes of lecture, followed by 30 minutes of discussion. The list of readings and films below is provisional – there is too much listed below, so we’ll discuss as a group, eventually, how much and what to do. Except for the first four books listed below, readings will be posted on the class website as pdfs, and are mostly articles or chapters from books – not whole books. Most of the films listed below will also be posted on the class website (in mp4 format) – the films will be posted in a timely way during the term.

### **Books (at UCSD Bookstore)**

Kathleen Krull, *Marie Curie: Giants of Science #4* (Giants of Science / Viking Juvenile).

Steven Levy, *Hackers: Heroes of the Computer Revolution* (Penguin, Non-Classics).

Mary Wollstonecraft Shelley, *Frankenstein* (Norton Critical Editions, W. W. Norton).

James D. Watson, *The Double Helix: A Personal Account of the Discovery of the Structure of DNA* (Touchstone).

### **PDFs (to be reproduced in part or in whole on the class website: )**

Anon, *The Historie ... of Doctor John Faustus* (1587; 1592; 1965).

David Basalla, “Pop Science: The Depiction of Science in Popular Culture” (1976).

Berkeley Exhibit, “Oppenheimer – A Life” (2004).

William Clark, *The Romance of the Scientist* (manuscript).

Robert Darnton, *Mesmerism and the End of the Enlightenment in France* (1968).

James Evans, *Jules Verne Rediscovered* (1988).

Ernest Fontana, “Lombroso’s Criminal Man and Stoker’s Dracula” (1988).

Paolo Galuzzi, “The Sepulchers of Galileo” (1998).

Jan Golinski, “The Secret Life of an Alchemist” (1988).

Donna Haraway, *Primate Visions* (1989).

Roslynn Haynes, *From Faust to Strangelove: Representations of the Scientist in Western Literature* (1994).

Hermann Helmholtz, “The Aim and Progress of Physical Science” (1869).

Hermann Helmholtz, “On the Conservation of Force” (1862/63).

Gordon Hirsch, “*Frankenstein*, Detective Fiction, and *Jekyll and Hyde*” (1988).

Donald Lawler, “Reframing Jekyll and Hyde” (1988).

Clive Leatherdale, *Dracula* (1985).

Craig McCracken et al., *The Powerpuff Girls Movie: Mojo Jojo, My Story* (2002).

Maureen McNeil, “Newton as a National Hero” (1988).

Margaret Mead and Rhoda Métraux, “Image of the Scientist Among High-School Students: A Pilot Study,” *Science*, 1957, 126: 384-90.

Anton Mesmer, *Dissertation on the Discovery of Animal Magnetism* (1779).

Michael Segre, *In the Wake of Galileo* (1991).

Michael Segre, “The Never-Ending Galileo Story” (1998).

Caoril Senf, *Dracula* (1998).

Paul Strathern, *Turing and the Computer* (1997).

Jonathan Swift, “A Voyage to Laputa,” Pt. 3, *Gulliver’s Travels* (1727).

Video Sources (to be posted on the class website: )

*Amen* (2002).  
*Biography – Albert Einstein* (2005).  
*Biography – Charles Darwin, Evolutions' Voice* (2005).  
*Biography – Thomas Edison* (2004).  
*The Boys from Brazil* (1978).  
*Bram Stoker's Dracula* (1992).  
*Charles Darwin – Genius* (2000).  
*Colossus – The Forbin Project* (1970)  
*The Day After Trinity: J. Robert Oppenheimer and the Atomic Bomb* (1981; 2002).  
*DNA: Secret of Photo 51* (2007).  
*Doctor Faustus* (1968).  
*Dracula* (1931).  
*Einstein* (1979).  
*Einstein Revealed* (1996; 2004).  
*Einstein's Big Idea* (2005).  
*Einstein's Letter* (2006)  
*Einstein's Wife* (2003).  
*Extraordinary Voyages of Jules Verne* (2002).  
*Frankenstein* (1931).  
*Galapagos* (2007).  
*Galileo – Genius* (2000).  
*Galileo's Battle for the Heavens* (2002).  
*Insignificance* (1985).  
*Jane Goodall: Reason for Hope* (1999).  
*Jane Goodall's Wild Chimpanzees* (2002).  
*Jane Goodall's Return to Gombe* (2003).  
*Marie Curie* (1943).  
*Mary Shelley's Frankenstein* (1994).  
*Newton's Dark Secret* (2005).  
*The Search for Mengele* (1985; 2008).  
*Sir Isaac Newton* (2004).  
*Tesla: Master of Lightning* (2000).  
*The Trials of J. Robert Oppenheimer* (2009).  
*War Games* (1983).

Lectures: Dates & Topics

MARCH

31 FABULOUS SCIENTISTS – INTRODUCTION: The Powerpuff Girls and Cartman's Anal Probe.

Read: Basalla, "Pop Science..."; McCracken, *Powerpuff Girls*. Optional – Read: Mead and Métraux, "Image of the Scientist...".

**PART 1: THE REVOLUTIONARY ERA, 1527 TO 1830  
FAUSTIAN DEMONS & NEWTONIAN SAINTS**

APRIL

02 THE FALLEN PHILOSOPHER: The History of Dr. Faust.

Read: Anon, *History of ... Faustus*, pp. 57-119, 144-62, 174-206. Optional – Watch: *Doctor Faustus*.

07 THE FIRST SAINT OF SCIENCE: The Sainthood & Martyrdom of Galileo.

Read: Galuzzi, "The Sepulchers"; Segre, "Never-Ending..." Watch: *Galileo – Genius*.

Optional – Watch: *Galileo's Battle for the Heavens*.

09 THE MARRIAGE OF HEAVEN AND EARTH: The Lives of Sir Isaac Newton.

Read: Jan Golinski, "Secret Life..."; McNeil, "Newton..." Watch: *Newton's Dark Secret* and *Sir Isaac Newton*.

14 THE ENLIGHTENED SCIENTIST: Franklin and the New Saints of Science.

Read: Haynes, *From Faust ...*, chaps. 1-5; Swift, *Gulliver's Travels*, pp. 78-103 (= Pt. 3, chaps. 1-6).

### ROMANTIC GENIUSES

- 16 THE ROMANTIC SCIENTIST: Mesmerism and the End of the Enlightenment.  
Read: Darnton, *The End*, chaps. 1-2; Haynes, *From Faust ...*, chap. 6. Optional – Read: Mesmer, *Dissertation*.
- 21 THE NEW PROMETHEUS: Frankenstein and the Cult of Genius.  
Read: Shelley, *Frankenstein* (Norton ed.), pp. 17-58, 98-120, 302-13; Haynes, *From Faust ...*, chap. 7.  
Optional – Watch: *Frankenstein* and *Mary Shelley's Frankenstein*.

### MIDTERM TAKE-HOME ESSAY – DUE IN CLASS ON 23 APRIL

#### PART 2: THE CLASSICAL ERA, 1830-1920

##### THE OVERWORLD OF SCIENCE

- 23 DARWIN'S BEARD: The Beetle-Collector as Genius.  
Watch: *Biography – Charles Darwin*; *Charles Darwin – Genius*. Optional – Watch: *Galapagos*.
- 28 HELMHOLTZ'S EYES: Prometheus Unbound.  
Read: Haynes, *From Faust ...*, chap. 8; Helmholtz, "Aim and Progress" and "On the Conservation of Force."
- 30 EDISON'S VOICE & TESLA'S HANDS: The Wizard of Menlo Park & the Rival.  
Watch: *Biography – Thomas Edison*; *Tesla: Master of Lightning*.

##### THE UNDERWORLD OF SCIENCE

#### MAY

- 05 THE DESCENT INTO THE UNDERWORLD: Works of Jules Verne and H.G. Wells.  
Read: Haynes, *From Faust ...*, chaps 8-9. Watch: *Extraordinary Voyages ...* Optional – Read: Evans, *Jules Verne*.
- 07 DEMONIC SCIENTISTS AND FEARLESS VAMPIRE-KILLERS: Works of Robert Louis Stevenson and Bram Stoker.  
Read: Hirsch, "Frankenstein ... Jekyll and Hyde"; Lawler, "Reframing Jekyll and Hyde"; Leatherdale, *Dracula*; Senf, *Dracula*. Optional – Watch: *Dracula* and *Bram Stoker's Dracula*.

#### Part 3: The Modern Era, 1920-2000

##### THE MATHEMATICO-PHYSICAL SCIENCES

- 12 CURIE'S HANDS: Marie Curie and Radioactivity.  
Read: Krull, *Marie Curie*. Watch: *Marie Curie*.
- 14 EINSTEIN'S HAIR: Albert Einstein, the New Saint of Science.  
Read: Clark, *Romance*, pp. TBA. Watch: *Einstein* and *Einstein's Big Idea*. Watch – Optional: *Einstein's Wife*; *Einstein Revealed*; *Insignificance*.
- 19 OPPENHEIMER'S HAT: J. Robert Oppenheimer, the New Martyr of Science.  
Read: Berkeley Exhibit, "Oppenheimer". Watch: *The Day After Trinity* and *The Trials of J. Robert Oppenheimer*.

##### THE BIO-MEDICAL SCIENCES

- 21 JOSEPH MENGELE: The Nazi Doctors and "Scientists from Hell."  
Read: Clark, *Romance*, pp. TBA. Watch: *Search for Mengele* and *The Boys from Brazil*. Watch – Optional: *Amen*.
- 26 FRANKLIN, CRICK, AND WATSON: DNA and The Quest for the "Secret of Life."  
Read: Watson, *The Double Helix*; Watch: *DNA*.
- 28 JANE GOODALL: Chimps, National Geographic and the "Female Touch."  
Read: Haraway, *Primate Visions*, chaps. 6-7. Watch: *Jane Goodall's Wild Chimpanzees*; Watch – Optional: *Jane Goodall's Return to Gombe* and *Jane Goodall: Reason for Hope*.

##### THE CYBERNETIC-INFORMATIONAL SCIENCES

#### JUNE

- 02 COLOSSUS: A.I.  
Read: Strathern, *Turing*. Watch: *Colossus – The Forbin Project*.
- 04 HACKERS: The Trickster's Return.

Read: Levy, *Hackers*, pts 1-2. Watch: *War Games*.

09 **FINAL: Take-Home Essay Due at 2 PM in Class**