

Science in American Culture



Wednesdays 9:50-12:50
Hardenbergh Hall (College Avenue campus) room A1



Instructor: Dr. David Singerman
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Course description

What is the role of scientific expertise in a democratic culture? In this discussion-based course, we'll examine how questions of science and technology have shaped the history of the United States, and how American culture and society have shaped the meanings of "science" and "technology" themselves. Each week we'll read and discuss a diverse mixture of primary and secondary sources that include historical documents, fiction, essays, visual art, movies, television, and material objects. Beginning in colonial New England with ideas of nature and wilderness, we'll consider 18th- and 19th-century questions of industrialization and scientific racism, and products of 20th- and 21st-century "big sciences" like nuclear weapons. We'll inquire into mass agriculture and supermarkets to see how cheap food gets on American tables, and we'll explore American culture's scientific obsessions, like Arctic explorers and spaceflight. All along, we'll ask how Americans have thought about science, nature, and their society. What is the relationship of government, business, and universities to scientific research? Who creates new knowledge and new technology, and who should benefit from it?

Policies

Required readings and materials

The following four books are required for purchase and will be available at the Rutgers bookstore:

- Henry David Thoreau, *Walden and Civil Disobedience* (Penguin, ISBN-10: 0140390448)
- Richard White, *The Organic Machine* (Hill and Wang, ISBN-10: 0809015838)
- Mark Twain, *A Connecticut Yankee in King Arthur's Court* (Penguin, ISBN-13: 9780140430646)
- Rachel Carson, *Silent Spring* (Houghton Mifflin, ISBN-10: 0618249060)

Unless otherwise indicated, all other readings will be available on the course's Sakai site, and all books (though possibly not the same editions, depending on availability) will be on reserve at the Alexander Library on the College Avenue Campus.

Attendance

You are required to attend every class and participate in class discussions. More than one unexcused absence will result in a 2% deduction from your final grade per class missed. (For an absence to count as "excused" you must produce, within one week, a note from a dean, doctor, coach, etc., explaining why you could not attend.) Being excused from that day's class does *not* excuse you from the work your classmates did. You are still responsible for completing the assigned readings and producing the response paper. You are also responsible for any material covered in class; this means finding a classmate who will lend you their notes, not asking me for mine.

Electronic devices

Laptops, tablets, e-readers, and phones are **not allowed** in class. If there is a medical reason you are unable to take notes on paper, and need to use an electronic device, get in touch with me. "Attendance," therefore, does not only include showing up, but also bringing the readings **in hard copy** to class, as we will often refer to specific passages. This means printing them if they are not already printed.

Academic Integrity

There is no alternative to adhering to strict standards of academic integrity. This means properly acknowledging what work and words are yours and what is the work of others. I strongly encourage all of you to read the University's Writing Program's site on plagiarism (<http://wp.rutgers.edu/courses/plagiarism>). **You are responsible for understanding** Rutgers's policy on academic integrity (<http://academicintegrity.rutgers.edu>). If you have **any** doubts as to whether something counts as plagiarism, **ask me**.

Assignments

1. Weekly reading journal entries (2-3 pages)

You are responsible for submitting a reading journal entry every week of 2-3 pages. These do not have to be finely-honed essays, but they should be written in the same style as you would an essay—not, that is, in the same style as you would write an email to a friend. They should represent your thoughtful, reasoned engagement with the assigned reading for that week. You may consider a single reading in depth, weigh multiple readings against each other, identify a contradiction, expand upon a point that could use more development—these are just some of the approaches you may take, and you should experiment over the course of the semester.

These journal entries are due in the Forums section on Sakai at 5pm on the Tuesday before class meets. You are responsible for reading your classmates' responses before class, so that they can provide the basis for discussion.

2. Research paper (10 pages, double-spaced)

You will be responsible for an original research paper of 10 pages, due the last day of class. This paper assignment will also include intermediate elements (submitting a topic, a bibliography, and an outline) and successful completion of those will make up part of the grade for the assignment as a whole. Further details on this assignment will be provided as the class progresses, and we will also spend time discussing how to go about conducting original historical research and writing this paper.

3. In-class presentation

Each of you will be responsible for beginning, and helping to lead, our discussion during one week of class, by introducing and presenting the readings and offering questions to begin our conversation. (I will "present" at our second meeting.) Since there are more students in the class than weeks in the semester, many students will have to present in pairs (or divide the readings for that week). Note that whether you present individually or as part of a pair will have **no effect** on your presentation grade.

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Course syllabus updated 5/11/15

I strongly encourage you to get in touch with me by the Friday before your selected date to discuss your plan for the presentation and any supplemental readings you may want to consult.

Grading

Final paper (total) — 40%

Reading responses—30%

Participation — 20%

Presentation — 10%

Disability policy.

Rutgers, the State University of New Jersey abides by the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments (ADAA) of 2008, and Sections 504 and 508 which mandate reasonable accommodations be provided for qualified students with disabilities and accessibility of online information. If you have a disability and may require some type of instructional and/or examination accommodation, please contact me the first week of the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Office of Disability Services, Lucy Stone Hall, Livingston Campus, 54 Joyce Kilmer Ave., Suite A145. **Phone:** (848) 445-6800 • **Fax:** (732) 445-3388.

Schedule of meetings and readings

Week 1 — Introductions

Week 2 — Colonial nature

—William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England*, Chapters 2-7

—Thomas Jefferson, *Notes on the State of Virginia*, Queries 7, 11, & 18

—Philip Pauly, *Fruits and Plains: The Horticultural Transformation of America*, Chapter 1, “Culture and Degeneracy: Failures in Jefferson’s Garden”

Week 3 — Humans and the land

—Henry David Thoreau, *Walden*, “Economy,” “Where I Lived, and What I Lived For,” “Sounds,” “The Bean-Field,” “Higher Laws,” “Brute Neighbors,” “Winter Animals,” and “The Pond in Winter”

—Conevery Bolton Valencius, *The Lost History of the New Madrid Earthquakes*, Chapters 4 & 5

Week 4 — Credibility on trial

—D. Graham Burnett, *Trying Leviathan: The Nineteenth-Century New York Court Case That Put the Whale on Trial and Challenged the Order of Nature*, Chapters 1-4

—Neil Harris, *Humbug: The Art of P.T. Barnum*, Chapters 2 & 3

Week 5 — Science in and of the American West

—Rebecca Solnit, *River of Shadows: Eadweard Muybridge and the Technological Wild West*, Chapter 1, “The Annihilation of Time and Space,” and Chapter 5, “Lost River”

—William Cronon, *Nature’s Metropolis: Chicago and the Great West*, Chapter 3, “Pricing the Future: Grain”

Week 6 — Bodies of knowledge

—Ann Fabian, *The Skull Collectors: Race, Science, and America’s Unburied Dead*, Chapters 1-4

—Michael Sappol, *A Traffic of Dead Bodies: Anatomy and Embodied Social Identity in Nineteenth-Century America*, Chapters 3 and 4

Week 7 — Electrifying America

—Henry Adams, *The Education of Henry Adams*, Chapter 25, “The Dynamo and the Virgin”

—Mark Twain, *A Connecticut Yankee in King Arthur’s Court*, “A Word of Explanation,” Chapters 1-3, 5-8, 10, 17-18, 22-23, 26-29, 33, 38-44, & Postscript

Week 8 — Eugenics and evolution

—Stephen Jay Gould, *The Mismeasure of Man*, Chapters 4 and 5

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—Edward J. Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion*, Chapters 4-7

Week 9 — Atomic weapons

—Michael Gordin, *Five Days in August*, Chapters 1, 4-7

—John Hersey, *Hiroshima*, Chapters 1-3

—Stanley Kubrick, “Dr. Strangelove, or: How I Learned to Stop Worrying and Love the Bomb”

Week 10 — Science and the politics of the Cold War

—Shane Hamilton, “Supermarket USA Confronts State Socialism: Airlifting the Technopolitics of Industrial Food Distribution into Cold War Yugoslavia,” in *Cold War Kitchen: Americanization, Technology, And European Users* (2009)

—David Kaiser, “The Postwar Suburbanization of American Physics,” *American Scholar* (2004)

—Chris Phillips, “The New Math and Postwar American Politics,” *Journal of American History* (2014)

—Vannevar Bush, “Science, the Endless Frontier: A Report to the President” (July 1945)

—Peter J. Westwick, “The Jet Propulsion Laboratory and Southern California,” in *The Societal Impact of Spaceflight* (2007)

Week 11 — The control of nature

—Rachel Carson, *Silent Spring*, Chapters 1-8, 14, & 17

—Richard White, *The Organic Machine: The Remaking of the Columbia River* (all)

Week 12 — Exploration

—Beau Riffenburgh, *The Myth of the Explorer: The Press, Sensationalism, and Geographic Discovery*, Chapters 2, 4-6, & 9

—David Mindell, *Digital Apollo: Human and Machine in Spaceflight*, Chapters 1, 4, 9, & 11

Week 13 — Doctoring evidence

—Allen Brandt, *The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product that Defined America*, Chapters 4-6 & 9

—Watch: David France, “How to Survive a Plague”

Week 14 — Global warnings **Final Paper Due**

—Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, Chapters 3, 4, 6, & 7