

University of Wisconsin-Madison
History of Science 500-001:
Reading Seminar: Science above Politics? An Inconvenient History
Spring 2022

Tuesdays 2:25-5:15 pm
In Person: 2611 Mosse Humanities

Professor Lynn K. Nyhart (she/her)

lknyhart@wisc.edu

5117 Mosse Humanities Building

Office hours: Mondays 2:00-3:00 pm; Fridays after 1:30 pm by appointment (virtual until at least spring break); other times by appointment as needed. Virtual office hours will be held at:

<https://uwmadison.zoom.us/j/95905208276?pwd=U3BZYTE4TEI3NzVhOTdPLzk0OXdlldz09>

Meeting ID: 959 0520 8276

Passcode: 904214

Politics corrupts science--right? Shouldn't scientists stay "above" politics, in order to be trustworthy? This course asks: how and when did this come to seem obvious? What historical circumstances have driven scientists to political action? And what is the role of the historian in understanding and intervening in science/politics dynamics? Can historians save science from politics? Should they?

We will examine these questions via three twentieth-century cases based mainly in the U.S.: the cultural politics surrounding the Scopes (anti-)evolution trial of 1925; science, freedom, and political ideology in World War II and the Cold War; and the politics of scientific doubt-mongering and misinformation from the tobacco industry to climate change. In doing so, we will reflect not only on the continuities and discontinuities across these kinds of "science and politics" interactions, but also on the interactions between structure, ideology, and personal responsibility, understood historically and in our own time.

Requisites – None

Level – Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

Work Expectations:

This 3-credit course has 3 hours of group meetings per week (each 50 minute segment of seminar counts as one hour according to UW-Madison's credit hour policy). The course also carries the expectation that you will spend an average of at least 2 hours outside of class for every hour in the classroom. In other words, in addition to class time, plan to allot an average of at least 6 hours per week to reading, writing, and preparing for discussions for this class.

Learning Outcomes. In successfully completing this course, **Undergraduates** will:

- Understand different perspectives on what different people--scientists, historians, politicians, political theorists, policy makers, "regular" citizens--mean when they talk about "science" and its relation to "politics."
- Analytically situate a primary source in relation to course materials and themes.
- Compare, analyze, and synthesize arguments by scholars on the history of the topics covered in this course.
- Communicate effectively through discussion, presentations and written work.
- Practice critical, empathic peer-review of paper drafts in the spirit of improving one another's work.
- Reflect on their own positions concerning science and politics.

Graduate students will, in addition to the above:

- Extract and analytically summarize arguments from secondary sources in the history of science and politics, broadly understood;
- Develop an original historical argument based on primary sources and using secondary sources to construct a framework.

Undergraduate requirements:

Preparation for and contributions to seminar: 45%

20% Class participation: attend class; read the assigned readings in advance; listen actively and contribute intelligently in class; participate actively and productively in editing workshops.

10% Discussion-starters (150-200 words): due each week as required (all weeks when we have new readings) by 7 a.m. Tuesday. Late submissions will not be accepted and will receive a "0." Lowest grade will be dropped: 10 weeks (2/1, 2/8/, 2/15, 2/22, 3/8, 3/22, 3/29, 4/5, 4/19, 4/26), 9 grades count. (1.1% each)

15% Summaries (150-200 words) of individual readings and 5 min. oral elaboration in class. Due at 7 a.m. 3x during semester (2/8, 3/22, 4/19) = 3.3% each.

Formal Writing: 55% (separate guidance for each assignment to be posted on Canvas)

15% Unit 1 Paper (1200-1500 words), polished draft due 3/1 (in class); final due 3/6 (5 pm).

15% Unit II Paper (1200-1500 words), polished draft due 4/12 (in class); final due 4/15 (5 pm).

25% Final Paper (1800-2400 words): "First-final" version due 5/3 (by classtime); "Final-final" version due 5/10.

Grad requirements:

60% class participation, including same reading, seminar preparation, and discussion requirements as undergrads (45%), plus a separate 1-hour discussion approximately every other week on a separate reading list (15%; time and exact reading list TBA).

40% 20-25 page research paper on an approved topic of your choice. Grads are not required to write the undergrad essays. They will present their research in class on May 3. Stages of research paper (ideas sheet; proposal with preliminary bibliography; progress report/outline; draft) to be posted in separate grad syllabus.

Grading: Assignments in this course are graded on a 4-point scale:

A = 3.67-4.0

AB = 3.34-3.66

B = 2.76-3.33

BC = 2.26-2.75

C = 1.6-2.25

D = 1-1.6

F = below 1.0.

The number grade tells you if your paper is at the high, middle, or low end of the grade range for any given assignment. Final grades will be tabulated from these ranges. There will be no rounding up. See Grading Criteria on final page of this syllabus for more details on essay expectations.

It is the University of Wisconsin's expectation (and mine) that you will know, understand, and abide by principles of **academic honesty and integrity**. Please review the Academic Guidelines and Expectations at the end of this syllabus for more details.

Disability Access and Accommodation: I will make every effort to honor requests for reasonable accommodations made by individuals with disabilities. If you think you qualify for accommodation, please contact the McBurney Disability Resource Center to establish your eligibility for services. Requests for accommodation can be responded to more effectively if I receive them as far in advance as possible, preferably in the first two weeks of the semester. Such requests are confidential.

Religious Observance: If religious holidays or observances conflict with your participation in this course, please come talk to me **well in advance** for us to work out alternative arrangements.

Covid-19 Safety and Class Absences: In a small seminar that meets only once a week, there is little luxury for missing classes: the flow of the class depends on everyone's presence and participation. However, Covid-19 can readily interfere with this principle, and is likely to at some point this semester. To reduce the chance of spreading this disease, please keep current on campus Covid information (including how to tell if you have Covid-19 symptoms, where, how, and when to test yourself, how to quarantine or isolate yourself) at <https://covidresponse.wisc.edu/>.

Masking: While on campus all employees and students are required to correctly wear appropriate and properly fitting face coverings while present in any campus building (or outdoors when physical distancing is not possible) unless working alone in a laboratory or office space. I will halt class if any student is not wearing a properly fitted mask.

Absence: If you have Covid-19 symptoms, please do not come to class! Health comes first. If you need to isolate yourself but feel well enough to participate in class, please consider letting me know no later than early Tuesday morning so I can try to arrange for an extra laptop and class microphone so you can participate remotely. If I myself am sick or exposed such that I need to isolate, I would expect to run the class remotely via my zoom link (unless I am seriously ill).

If any other problems arise, either academic or personal, which might jeopardize your performance in the course, you must try to inform me after class, by the soonest available office hour, or by email (lknyhart@wisc.edu).

Course Overview:

(DS = Discussion-starter; IS = Individual reading summary)

I: Introductions

Jan. 25: Course Intro: What do we mean by “Science,” “Politics,” “Above”?

Feb. 1: Perspectives on the Autonomy of Science in Democracies (DS 1)

II: The Scopes “Monkey” Trial (1925) and the Cultural Politics of American Science

Feb. 8: Scopes and Its Contexts (DS 2, SI 1)

Feb. 15: Personal Politics: The Species Maker 1 (DS 3)

Feb. 22: Personal Politics: The Species Maker 2 (DS 4)

March 1: Paper 1 Workshop: print up 2 copies of your paper draft to hand out.

Paper 1 due Sunday, March 6, by 5 pm.

III. Science, Ideology, and the State in International Perspective

March 8: Beyond Democracy: Totalitarianism and Models of Ideology (DS 5)

[March 15: NO CLASS (SPRING BREAK)]

March 22: Totalitarian Regimes and Agricultural Science, 1920s-1950s (DS 6, SI 2)

March 29: Freedom’s Laboratory? The Cold War Ideology of “Freedom” in U.S. Science and History of Science (DS 7)

April 5: Scientists and Historians of Science: Participants or Analysts? (DS 8)

April 12: Paper 2 Workshop: Bring 2 hard copies to workshop with your classmates.

Paper 2 due Friday, April 15 by 5 pm.

III. Capitalism, Climate Change, and Misinformation

April 19: Merchants of Doubt (DS 9, SI 3)

April 26: Stepping Back: Other Views on Climate Science, Climate Change, Truth, Misinformation, and Knowledge (DS 10)

May 3: Last Class! “First-Final” paper drafts due.

Student presentations; general discussion.

Final-Final papers due May 10 by 5 pm

Course Week-by-Week

I: Introductions

Jan. 25: Course Introduction: What do we mean by “Science,” “Politics,” “Above”?

Feb. 1: Perspectives on the Autonomy of Science in Democracies

Part I (Merton, Brown, Jewett): In which we examine different disciplinary takes on science and democracy. What does each have to offer us? How do they differ? How do they overlap?

Part II (Hicks): In which we interrogate relations between science, epistemology, and politics in particular controversies.

Everyone read:

Robert K. Merton (sociologist), “The Normative Structure of Science (1942),” in idem, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973), 266-278.

Mark B. Brown (political theorist), *Science in Democracy: Expertise, Institutions, and Representation* (Cambridge, MIT Press, 2009) Introduction and Chapter 8: pp. 1-19, 185-199; (endnotes pp. 262-266, PLUS NOTES TO CH8) [political theorist]

Jewett, Andrew (intellectual historian), *Science, Democracy, and the American University: From the Civil War to the Cold War* (New York: Cambridge University Press, 2012) Accessed January 16, 2022. ProQuest Ebook Central. Introduction and Conclusion: pp. 1-19, 365-374.

Daniel Hicks, “Scientific Controversies as Proxy Politics,” *Issues in Science and Technology* 33(2), Winter 2017. 13 pages.

II: The Scopes “Monkey” Trial (1925) and the Cultural Politics of Science

Feb. 8: Scopes and Its Contexts

Part I: In which we examine Adam Shapiro’s key arguments. What is at stake for him as an historian in re-presenting this story, so familiar in the history of American science and religion?

Everyone read:

Adam R. Shapiro, *Trying Biology: The Scopes Trial, Textbooks, and the Antievolution Movement in American Schools* (Chicago: University of Chicago Press, 2013), chapters 1, 5, 7, 8: pp. 1-13, 87-110, 135-165

Part II: In which we add new perspectives (Individual readings to be divided up among students, who will write a short [150-200 word] summary and elaborate in a 5-min. report). How does the story of the trial look different from these different perspectives? What kinds of sources did each historian use?

Individual Readings:

On textbooks and the publishing industry: Shapiro, chapters 2-3

On *Civic Biology*, the key textbook of the Scopes Trial: Shapiro, chapter 4

On race and religion: Jeffrey Moran, “Reading Race into the Scopes Trial: African American Elites, Science, and Fundamentalism,” *Journal of American History*, Dec. 2003, 90: 891-911.

On responses by the press and among scientists: Constance A. Clark, *God—or Gorilla: Images of Evolution in the Jazz Age* (Johns Hopkins University Press, 2008), chapter 8, “Scientists and the Monkey Trial,” 162-194, 269-275

On the subsequent history and mythologizing of the trial: Edward J. Larson, *Summer for the Gods: The Scopes Trial and America’s Continuing Debate over Science and Religion* (Cambridge, MA: Harvard University Press, 1997), chapter 9: “Retelling the Tale”: pp. 225-246, 298-302.

Feb. 15: Personal Politics: The Species Maker

In which we consider why a historian would decide to write a novel about biology and biologists in the year of the Scopes Trial instead of a history. What does it convey that the histories we read last week did not?

Everyone read:

Kristin Johnson, *The Species Maker: A Novel* (Tuscaloosa: University of Alabama Press, 2021), pp. 3-190.

Acquaint yourself with the associated website: thespeciesmaker.wordpress.com: familiarize yourself with all 5 tabs, especially the Character Guide and Discussion Questions to Parts I-III. Write a Discussion-Starter using one or more of the Discussion Questions as a springboard. (Be sure to copy the discussion question(s) you’re using at the top of your response [not counted in word count].)

Feb. 22: Personal Politics: The Species Maker 2

Part I: In which we pursue further questions about the goals of this historian’s novel and discuss some of the Discussion Questions for Parts IV and V on thespeciesmaker.com website.

Everyone read the rest of Johnson’s *The Species Maker* and Discussion Questions for Parts IV and V.

*Part II: in which we examine some **primary sources** (sources “from the time”) mentioned in the readings for this unit. How does reading the source compare to reading the presentation of it in the secondary source? Are there significant aspects that the historian leaves out or plays down? What other questions or themes might this primary source be used to illuminate?*

March 1: Paper 1 Workshop: print up 2 copies of your paper draft to hand out.

Paper 1 due Sunday, March 6, by 5 pm.

III. Science, Ideology, and the State in International Perspective

March 8: Beyond Democracy: Totalitarianism and Models of Ideology

Part I: In which we move to a new focus on ideology and the state by considering “ideologically correct science” during the twentieth century.

Everyone read: Michael Gordin et al, "Chapter 3: 'Ideologically Correct' Science," pp. 92-157 in Mark Walker, *Science and Ideology: A Comparative History* (Taylor & Francis Group, 2003). ProQuest Ebook Central.

<http://ebookcentral.proquest.com/lib/wisc/detail.action?docID=1474469>.

Part II: In which we consider continuities between this unit and the previous one, by viewing and discussing "Homo Sapiens 1900" (or another ideologically-appropriate history film)

March 15: NO CLASS (SPRING BREAK)

March 22: Totalitarian Regimes and Agricultural Science, 1920s-1950s

In which we deepen our understanding of the interactions between ideology and state-sponsored science via agricultural science and food production in fascist Italy and communist Russia and China.

Part I (Saraiva, DeJong-Lambert&Krementsov, Schneider): In which we ask, to what extent do these articles reflect the features of "ideologically correct science" identified by Gordin et al. in last week's article? What new features are illuminated by these authors, based on their finer-grained perspectives and research?

Part II (individual readings): In which we consider "Michurinism" vs. Lysenkoism," heroes, villains, and propaganda, and watch a clip from the Soviet film "Michurin."

Everyone Read:

Tiago Saraiva, *Fascist Pigs: Technoscientific Organisms and the History of Fascism* (Cambridge, MA: MIT Press, 2008), Intro to Part 1, "Nation," and "Chapter 1: Wheat," pp. 17-42.

William DeJong-Lambert and Nikolai Krementsov, "On Labels and Issues: The Lysenko Controversy and the Cold War," *Journal of the History of Biology* (2012) 45:373–388, DOI 10.1007/s10739-011-9292-6.

Laurence Schneider, "Michurinist Biology in the People's Republic of China, 1948-1956," *Journal of the History of Biology*, 2012, 45:525-556

Individual Readings:

N. P. Goncharov and N. I. Savel'ev, "Ivan V. Michurin: On the 160th Anniversary of the Birth of the Russian Burbank," *Russian Journal of Genetics: Applied Research*, 2016, 6: 105–127.

Nils Roll-Hansen, "The Lysenko Effect: Undermining the Autonomy of Science," *Endeavour*, 2005, 29: 143-147

Nikolai Krementsov, "A 'Second Front' in Soviet Genetics: The International Dimension of the Lysenko Controversy, 1944-1947," *Journal of the History of Biology*, 1996, 29: 229-250.

March 29: Freedom's Laboratory? The Cold War Ideology of "Freedom" in U.S. Science and History of Science

Part I (Wolfe): In which we consider Wolfe's argument about the political uses of science and scientists during the Cold War. How does the Lysenko case fit into the larger arc of the book?

How does Wolfe weave together stories of individual action by scientists and their larger contexts? What lessons do you take away from her argument?

Part II (Dennis): In which we discuss the parallels between the development of the history of science as a field in the U.S. and the development of science policy during WWII and the Cold War. How does the story Dennis tells about trends in the history of science dovetail with what we've been reading about the history of international science policy in Wolfe's book? What can this tell us about the role of the historian as analyst vs. advocate?

Everyone read:

Audra J. Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Johns Hopkins, 2018), Introduction and Chs. 1-4, 7, pp. 1-90, 135-156. For chs. 5 and 6 read intros, conclusions, and skim lightly.

Michael Aaron Dennis, "Historiography of Science: An American Perspective," in John Krige and Dominique Pestre, eds. 2003. *Companion Encyclopedia of Science in the Twentieth Century* (London: Taylor & Francis Group, 2003 [orig. print version 1997]). Accessed July 17, 2021. ProQuest Ebook Central. Selections: pp. 5-26.

April 5: Scientists and Historians of Science: Participants or Analysts?

*Part I: In which we consider what our historians this week and in this unit as a whole are arguing for **about** the lessons of history concerning ideology, Cold War science, and periodization. What sorts of evidence do they think is important to put in their story? What do they think that will tell us—what's their take-home message? And why do they think it's important?*

Audra Wolfe, *Freedom's Laboratory*, chs. 8, 9, and Epilogue, pp. 157-209.

Michael Gordin, "Lysenko Unemployed: Soviet Genetics after the Aftermath," *Isis*, 2018, 109(1): 56-78.

Review earlier Unit III Readings; catch up on individual readings you didn't read but find interesting!

Part II: Brainstorming for Paper 2. Come with an idea or two to share.

April 12: Paper 2 Workshop (Cold War Science and historiographic analysis): Bring 2 hard copies to workshop with your classmates. This should be a pretty polished paper; there's not a lot of time to turn it around (because you also have considerable reading for next week).

Paper 2 due Friday, April 15.

III. Capitalism, Climate Change and Governance

April 19: Merchants of Doubt

Part I: In which we discuss the connections between free-market capitalism, Cold War ideology, and opposition to climate change. What is the overall arc of the story? What connections do the authors make among the tobacco, the Strategic Defense Initiative, the Ozone Hole, secondhand

smoke, and global warming? What is the authors' message about science and how it works, and how and why misinformation about certain kinds of science has been so readily spread in the past 50 years or so?

Everyone read:

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*, pp. 1-38, 169-274
Individual Readings: chs. 2, 3, 4, and 5

Part II: in which we watch the documentary "Merchants of Doubt" and compare it to the book. How do the producers make use of the different medium of film to convey their story? What's different? Why?

April 26: Stepping Back: Other Views on Climate Science, Climate Change, Truth, Misinformation, and Knowledge

Part I: In which we discuss some other analytical approaches to climate change, expert knowledge, truth and misinformation, and the social contract between scientists and society.

Everyone read:

Evelyn Fox Keller, "What are Climate Scientists to Do?" *Spontaneous Generations: A Journal for the History and Philosophy of Science*, 2011, 5(1):19-26.
Stephen P. Turner, *The Politics of Expertise* (New York: Routledge, 2013), "Chapter 15. Expertise in Post-Normal Science," pp. 277-296.
Richard Staley, "Partisans and the Use of Knowledge vs. Science," *Berichte zur Wissenschaftsgeschichte*, 2019, 42: 220-234
[Another reading TBA]

Review Daniel Hicks, "Scientific Controversies as Proxy Politics" (week 2)

Part II: In which we pull it all together—personalities and agency, ideology and belief, institutional and social structures, historians and their goals.

May 3: Last Class!

Final Paper Polished Drafts Due in class
Student presentations on their papers; general discussion.

May 10: Final paper due

ACADEMIC GUIDELINES AND EXPECTATIONS

Essays: Every essay you write should take the form of an argument supporting a thesis. Since all essays are open-book, grading will NOT depend solely or even primarily on the correctness of the facts marshaled for your argument; this correctness is assumed as a base-point. Rather, much of your grade will be based on the persuasive power, sophistication, originality, and succinctness of your argument. (More on this during the course.)

Extensions are only granted if requested before the due date, and only in case of illness or other serious emergency. All extensions will have a definite new due date established. Papers received after the new due date will be subject to late paper penalties.

Late paper policy: any piece of writing that you hand in late without an extension will have the following penalties assessed: a quarter of a point on the 4-point scale for every working day late. For example, if the paper on its merits deserves a B (3.0), after one day it would receive a B/BC (2.75), after two days a BC (2.5), after three a BC/C (2.25), after four a C (2.0). NOTE: LATE FINAL ESSAYS WILL NOT BE ACCEPTED.

Academic Credit and Plagiarism: Students may not copy sentences or ideas from others (including authors, websites, or other students) without giving credit to those sources; if someone else's words are so wonderful that you cannot substantially rephrase them, you must put them inside quotation marks, using the exact same words. If you omit the quotation marks or the credit, you are plagiarizing. Plagiarism is grounds for failure on the assignment plagiarized; repeated plagiarism is ground for failure in the course. If you use 3 or more words in a row from another source, they must be placed in quotation marks and footnoted. Otherwise, it is plagiarism. For more details on what plagiarism is and how to avoid it, consult a style manual, the Writing Lab, or the History Lab.

Appealing a Grade: If you have questions about a grade, come speak to me. If the problem is not resolved, speak with the History Undergraduate Advisor, Scott Burkhardt. He will attempt to resolve the issue informally and inform you of the Appeals Procedures if no resolution is reached informally.

GRADING SCALE FOR ESSAYS:

- A: For outstanding essays only. Thesis and argument are clear, thought-provoking, and based on correctly understood facts; material used to support the argument synthesizes ideas from different parts of the course (readings, lectures, discussions from different weeks); relationships drawn between facts and ideas are sophisticated, subtle, and/or original. Writing is grammatically correct and succinct. The argument flows well from point to point, without any puffery or wasted words.
- AB: For very good essays that for some reason fall short of the criteria listed above. For example, the argument may be murky in one place; information may be presented that doesn't directly or clearly contribute to the argument; writing style may be awkward here and there, or flawed by one or two consistent (if minor) grammatical errors.
- B: For solid, workmanlike essays. The essay may pursue a straightforward but not especially deep or sophisticated argument; it is okay as far as it goes, but doesn't penetrate the material very far. It may have a flash of brilliance that is unfulfilled, counterbalanced by minor grammatical problems, a weakness in argumentation, and/or a significant misunderstanding of events or chronology.
- BC: The essay shows some of the basics of the ideal essay, but is weakened by a lack of serious think-work or writing problems. It may make superficial connections without offering sufficient evidence to make the connections plausible or persuasive, or it may have what is in principle a good argument supported by incorrect facts or chronology. Alternatively, it may provide a fairly solid argument with minor flaws, from which the reader is repeatedly distracted by awkward or ungrammatical prose.
- C: A grade signifying some serious problem in essay-writing. It may deliver facts without a recognizable thesis or argument; it may wander away from the point; or it may be a thoughtful attempt so weakened by writing problems (grammar, punctuation, word choice) that it is difficult for the reader to understand a crucial point you are trying to make.
- D: A marginal grade. There may be enough in here to show you have attended a few classes and/or done some of the reading, but the essay indicates no effort at synthesis or thinking on your own, or else shows a serious misunderstanding of the nature of the material and/or the assignment. Also used for essays that are just barely coherent.
- F: For unacceptable essays. An essay may be judged unacceptable if it contains plagiarism (see above); if it consists primarily in content inappropriate to the question or the material for this course; if it shows a complete misunderstanding of the course content; or if the writing fails to meet standard college-level requirements of basic communication in English.