Technology & Nature in American History

Wed 3:00-4:20 pm ET | Online (mixed asynchronous/synchronous)

Instructor

Professor Jamie Pietruska
pietrusk@history.rutgers.edu
Van Dyck 311
848.932.8544

Online office hours (via Zoom):
M 12:00 - 2:00 pm EST
W 12:00 - 1:00 pm EST
or by appointment

Course info

This course meets SAS Core goals WCr or WCd and counts toward the STEM in Society minor/certificate. No prerequisites. No prior experience in History necessary.

Course tools

Books:
–Susanne Freidberg, *Fresh: A Perishable History* (ISBN:0674057228)
–Rebecca Solnit, *River of Shadows* (ISBN: 0142004103)
–Richard White, *The Organic Machine* (ISBN: 0809015838)
Available from the Rutgers University Barnes & Noble Bookstore and online retailers. E-books freely accessible on course reserve at the Alexander Library.

LMS: Canvas

Technology: computer or tablet with Internet connection needed



Course description

How have technological and natural forces interacted in the making of modern America? From colonial America to the twenty-first century, we will consider how the visual and material world of "nature" has been reshaped by industrial practices, ideologies, and institutions, with a particular emphasis on the nineteenth and twentieth centuries. We will combine readings from environmental history and the history of technology to explore a variety of landscapes—from farms to suburbs, from Walden Pond to Yosemite National Park—to uncover not only the ways that technologies have shaped the landscapes around us, but also the ways that the natural world has resisted and redirected technological change.



Course format

- Mixed remote (primarily asynchronous, with synchronous meetings approximately every other Wednesday)
- Emphasis on multimedia sources (including video lectures, documents, maps, visual art, film, video clips, and podcasts)
- The success of our course will depend on your active and thoughtful engagement with the course material and each other, so please complete all the reading and activities for each module and share your ideas, comments, and questions with your classmates and the professor.



Course topics

- land-use patterns & agriculture
- energy & industrialization
- infrastructures
- irrigation & the American West
- national parks & nature tourism
- railroads & automobility
- nuclear energy & accidents
- weather modification & climate engineering
- environmental politics & activism
- fast food & slow food
- landscape painting & nature writing

Course objectives

1.Understand the changing historical interactions of technology and nature in a variety of contexts from colonial America to the present

2.Analyze how the concepts *technology* and *nature* have changed over time

3. Understand recent scholarly approaches in the fields of environmental history and the history of technology

4.Analyze how political and economic institutions, as well as social practices, have shaped changing patterns of land ownership, use, and distribution

5.Analyze how the historical interactions of technology and nature have been differentiated according to race, class, gender, and region

6.Analyze how cultural meanings have been ascribed to various American landscapes

7.Analyze how ideologies relating to nature and technology have shaped environmental politics, policies, and practices

8.Analyze and evaluate historical arguments in secondary sources

9.Analyze and interpret primary sources

10. Write analytical essays based on secondary and primary sources



SAS Core learning goal for Writing & Communication [WCr]

Communicate complex ideas effectively, in standard written English, to a general audience, and respond effectively to editorial feedback from peers, instructors, and/or supervisors through successive drafts & revision

SAS Core learning goal for Writing & Communication [WCd]

Communicate effectively in modes appropriate to a discipline or area of inquiry; evaluate and critically assess sources and use the conventions of attribution and citation correctly; and analyze and synthesize information and ideas from multiple sources to generate new insights

This course meets the requirements for SAS Core goal WCr* ***OR *WCd* ***(not both).***

How to succeed in this course

1. Stay engaged

Our ongoing, collective conversation about the course material and reading is the single most important part of this course, and it depends on your engagement! Students in this course come from across the disciplines, and everyone brings a valuable perspective to the topics we will study. My hope is that we can take advantage of our online format to engage with the material and with each other in different ways than we would in a classroom setting.

This is a **mixed asynchronous/synchronous remote** course. We will meet together for **online discussion** via Zoom approximately **every other Wednesday from 3:00-4:20pm ET.** Attendance at these online discussions is required except in case of illness, religious observance, participation in university-sponsored events or activities, or other university-approved absences as explained in the SAS attendance policy. Otherwise, you can log on to our Canvas site each week to do your coursework at whatever days and times are best for you.

The course is organized into **15 weeks of online modules**, with typically 2 modules for each week. The new modules will be posted at the same time each week, and you will have **10 days to complete each module's assignments** on Canvas. Modules will include short video lectures, a variety of multimedia sources, and opportunities for students to interact with each other and with the professor through Canvas discussion forums and other online platforms (including Hypothesis).

Another way to stay engaged in the course is to communicate by email with the professor and TA and visit online Zoom office hours to clarify and deepen your understanding of the course material.

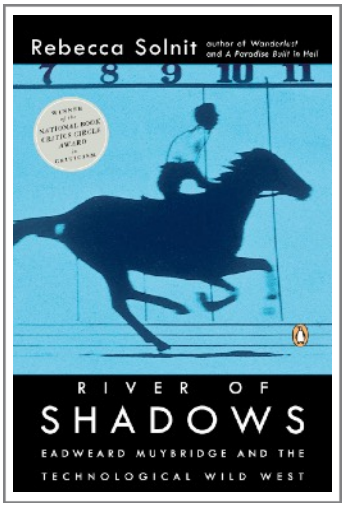


Your online engagement will be the basis of your citizenship/class participation grade, and it is highly unlikely that you will be able to succeed on paper assignments and exams without regular engagement with the weekly modules.

I understand that you may occasionally have to miss an assignment due to illness or other extenuating circumstances. In the event that you do fall behind in the course for whatever reason, please contact me by email as soon as possible so that I can help you catch up. **I understand that everyone is doing their best under the extremely adverse conditions of a global pandemic, and I will do everything I can to make this course as flexible as possible for anyone who needs accommodations.**

2. Do the reading

Reading assignments should be completed for each module as we will use the readings as the basis for online Canvas discussion and other interactive activities. **It is important to take notes in some way as you read** (e.g., underlining, highlighting, annotating, writing notes on a text's main arguments and themes, writing down questions you would like to discuss, noting any confusing or seemingly contradictory aspects of the reading, etc.)



Required books:

- Susanne Friedberg, *Fresh: A Perishable History* (ISBN:0674057228)
- Rebecca Solnit, *River of Shadows: Eadweard Muybridge and the Technological Wild West* (ISBN: 0142004103)
- Richard White, *The Organic Machine: The Remaking of the Columbia River* (ISBN: 0809015838).

Books are available for purchase from the Rutgers University Barnes & Noble Bookstore and online retailers, and freely accessible in digital format on course reserve at the Alexander Library.

Additional readings will be posted on Canvas.

Assessment

15% Paper #1 (5 pp.)

10% Paper #1 revision

15% Midterm exam

25% Paper #2 (5 pp.)

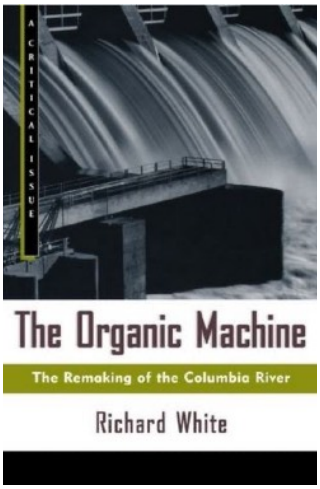
15% Final exam

20% Citizenship & class participation

All papers and both exams must be completed to pass the course.







3. Complete assignments on time

You will receive detailed instructions for each paper and exam well in advance of the due date. Read the instructions carefully and plan ahead. Come to online office hours to discuss your ideas with the professor. (Don't wait until the night before the paper is due to start the assignment!)

Writing Tutors & Coaches

Visit the History Writing Tutors online to get expert help with any stage of your writing process. Check out the History Writing Tutors webpage for their drop-in office hours and step-by-step writing guides covering everything from brainstorming to comma use. The Rutgers Learning Center offers online appointments with their Writing Coaches.

Late submissions

There is a **rolling submission period of one week for all paper assignments and the take-home midterm exam** so that you can balance your workload for this course with your other courses and commitments. If you need additional time to complete your work, please email the professor to arrange an extension.

There are no late penalties in this course.

Grading

Final course grades will be calculated according to the following scale, conforming to University policy that uses "+" but not "- "grades:

A	90% & above
B+	85-89%
B	80-84%
C+	75-79%
C	70-74%
D	60-69%
F	59% & below

- Our Canvas grade book will be updated regularly throughout the semester, so make sure to check your grades so that you know where you stand.
- If you would like to discuss your grades at any point, please make an appointment to speak with the professor over Zoom. *Please note that I do not discuss grades over email.*
- *There are no extra credit assignments in this course.*

Online discussion groups

Our class activities will offer you many opportunities to engage with the material and each other through Canvas. Your participation will be assessed based on the quality and quantity of your contributions to your Canvas discussion group and other online platforms that we will use.

Online participation rubric	
A	Student participated meaningfully in every, or nearly every, Canvas group activity; offered comments and/or questions that reflected substantive engagement with the assigned material; and responded thoughtfully to other students' contributions
B	Student excelled in most of the above ways, but fell short on 1 or 2 of the criteria (e.g., had more than a few instances of no participation, *or* about 1/3 of the time made comments that reflected only a superficial engagement with the assigned material)
C	Either the student excelled in some criteria but fell short in others (e.g., made frequent comments in Canvas group activities but comments were not relevant to the topic or did not reflect engagement with the assigned material), or the student performed merely adequately on all the above criteria (e.g., only sometimes participated in Canvas group activities)
D	Student did not meet most of the criteria overall, but occasionally did meet one of the above criteria
F	Student did not engage with the video lectures, assigned material, or Canvas group activities throughout the semester

4. Contribute to our intellectual community

Citizenship

The Department of History's "Policy on Mutual Responsibilities and Classroom Etiquette" states, "Our commitments to a strong learning community are expressed in many ways. Respectful professors convey their commitment to the discipline of history and their desire to share its delights and challenges. They are well prepared for class, provide students with clear goals and expectations, listen carefully to student questions and comments, and conscientiously evaluate their students' work. Respectful students bring a strong work ethic to the history courses that they select. They expect to attend the scheduled classes, to be on time, to be prepared for class, and to be attentive during class. A shared respect for the discipline of history and for one another as teachers and students of history is essential to the academic integrity of our program. We must all do our part to maintain an environment of openness and civility that encourages and honors the intellectual achievement represented by the discipline of history."

Each of you is a valuable member of our intellectual community this semester, and I trust that you will conduct yourselves accordingly. My goal is that our online class will be a space for thoughtful, sustained, and respectful engagement with the course material and with each other.



I trust that you will make your best effort to help us achieve this goal by doing the following:

•Keeping up with the weekly modules to the best of your ability

•Participating thoughtfully in online discussions and other class activities

•Working collaboratively and productively in your Canvas discussion group

20 percent of your course grade will be based on online participation & citizenship

5. Ask for help when you need it

I would like everyone to succeed in this course and am always happy to help however I can. Please don't hesitate to contact me with any questions or concerns as soon as they arise.

Contacting the professor

I am available during office hours each week or by appointment. I check email regularly and will reply as soon as I can, typically within one business day. **In compliance with the Family Educational Rights and Privacy Act (FERPA), please use your Rutgers ScarletMail account (and not a personal email account) to communicate with me.** As the Rutgers University Ethics and Compliance webpage states, "All Rutgers University students, staff, and instructors are assigned a university managed email account to be utilized for purposes of official correspondence."

Student wellness resources [services provided remotely in Fall 2020]

Rutgers Universitywide COVID-19 Information
https://coronavirus.rutgers.edu/

Rutgers Learning Centers Remote Instruction
Learning remotely presents new challenges. For assistance with learning how to address these challenges, please consult the resources available here: https://rlc.rutgers.edu/remote_instruction

Rutgers Student Technology Resources
Please visit the Rutgers Student Tech Guide page for resources available to all students. If you do not have the appropriate technology for financial reasons, please email the Dean of Students deanofstudents@echo.rutgers.edu or complete the contact form for assistance. If you are facing other financial hardships, please visit the Office of Financial Aid at https://financialaid.rutgers.edu/.

Just In Case Web App
http://codu.co/cee05e
Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)
(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ http://health.rutgers.edu/medical-counseling-services/counseling/
CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professionals within Rutgers Health Services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)
(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/
The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services
(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / https://ods.rutgers.edu/
Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: https://ods.rutgers.edu/students/registration-form.

Scarlet Listeners
(732) 247-5555 / https://rutgers.campuslabs.com/engage/organization/scarletlisteners
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

Report a Concern: http://health.rutgers.edu/do-something-to-help/

Basic Needs Security: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. Also, if you are comfortable doing so, please notify the professor so that she can help however she can and connect you with campus resources.

Office of the Dean of Students http://deanofstudents.rutgers.edu/
88 College Avenue
New Brunswick, NJ 08901
848-932-2300
deanofstudents@echo.rutgers.edu

Rutgers Student Food Pantry http://ruoffcampus.rutgers.edu/food/
Operating with limited services and/or hours in Fall 2020
39 Union Street
New Brunswick, NJ 08901
848-932-5500
ruoffcampus@echo.rutgers.edu

Academic Integrity Policy

The foundation of this course and any scholarly endeavor is academic integrity. I fully expect that all students will adhere to principles of academic integrity in their work. You are responsible for understanding the Rutgers University policies regarding academic integrity. Ignorance of these policies or the consequences for violations is not an acceptable excuse. All written work must be a student's own original work. **Collaboration on writing assignments (i.e., essays and take-home exams) is not permitted.** Any and all references to other sources within your own essays must be properly cited according to the bibliographic conventions of the Chicago Manual of Style, which is available through the Alexander Library and online at the Purdue Online Writing Lab.

If you have any questions about quoting, paraphrasing, or referring to the work of others, please ask! It is better to be safe than sorry—better to have too many citations than too few and thus run the risk of unintentional plagiarism. Any and all violations of academic integrity in this course will result in the formal consequences and disciplinary action that are outlined in the Rutgers policies on academic integrity. I have a zero-tolerance policy for academic dishonesty and refer all violations directly to the Office of Student Conduct.

Students with Disabilities

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 the professor during the first week of the semester so that we can arrange accommodations. 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 Online: https://ods.rutgers.edu/

Schedule

The professor reserves the right to modify the schedule (e.g., by shortening or eliminating assignments) as warranted by the ongoing public health emergency or other unforeseen events.

Week 1: Definitions & Debates

Week of Sept 1

Module 1.1 Introductions and Course Overview

Module 1.2 Defining *Technology* and *Nature*

Leo Marx, "The Idea of Nature in America," *Daedalus* (Spring 2008): 8-21 [Canvas]

Leo Marx, "*Technology*: The Emergence of a Hazardous Concept," *Technology and Culture* 51, no. 3 (2010): 561-77

Recommended: Edmund Russell, "Can Organisms Be Technology?," in Martin Reuss and Stephen H. Cutcliffe, eds., *The Illusory Boundary: Environment and Technology in History* (UVA Press, 2010), pp. 249-59 [Canvas]

Week 2: Land Use & Labor in Colonial & Early America

Week of Sept 7

Module 2.1 Histories of Ecological Change in North America to the Eighteenth Century

William Cronon, *Changes in the Land: Indians, Colonists and the Ecology of New England* (Hill and Wang, 1983), pp. 3-15, 54-81, 159-70 [Canvas]



Module 2.2 Industrial America in the Countryside

Ella, "The Garden of Science," *Lowell Offering*, October 1840, pp. 8-9

S. G. B., "Pleasures of Factory Life," *Lowell Offering*, December 1840, pp. 25-26

Chad Montrie, *Making a Living: Work and Environment in the United States* (UNC Press, 2008), ch. 1 ("'I Think Less of the Factory Than of My Native Dell': Labor, Nature, and the Lowell Mill Girls") [Canvas]

Recommended: Theodore Steinberg, *Nature Incorporated: Industrialization and the Waters of New England* (New York: Cambridge UP, 1991), pp. 1-75 [Canvas]

Week 3: The Aesthetics of Industrial Landscapes

Week of Sept 13

Module 3.1 The Hudson River School and Artistic Responses to Industrialization

Image: Thomas Pritchard Rossiter, *Opening of the Wilderness*, c. 1858 (oil on canvas)

Module 3.2 Visions of Technology and Nature in American Literary Transcendentalism

Selections from Henry David Thoreau, *Walden* (1854) [Canvas]

Week 4: Time & Space in the Mid 19th Century

Week of Sept 20

Module 4.1 Natural Time and Clock Time

Emily Pawley, "Reading the Man of Signs, or, Farming in the Moon," *Common-place* 14, no. 4 (2014)

Edgar Allan Poe, "The Devil in the Belfry" (1839), reprinted in *The Works of the Late Edgar Allan Poe* (1850), vol. 2, pp. 383-91

Recommended: Alexis McCrossen, *Marking Modern Times: A History of Clocks, Watches, and Other Timekeepers in American Life* (University of Chicago Press, 2013), ch. 2 ("Clockwatching: The Uneasy Authority of Clocks and Watches in Antebellum America") [Canvas]

Module 4.2 Temporalities & Geographies of Slavery & Resistance

Stephanie M. H. Camp, *Closer to Freedom: Enslaved Women and Everyday Resistance* (UNC Press, 2004), ch. 1 ("A Geography of Containment") [Canvas]

Recommended: Mark Smith, "Time, Slavery, and Plantation Capitalism in the Antebellum American South," *Past & Present* 150 (Feb. 1996): 142-68

Week 5: Landscapes of Battle & Burial in the American Civil War

Week of Sept 27

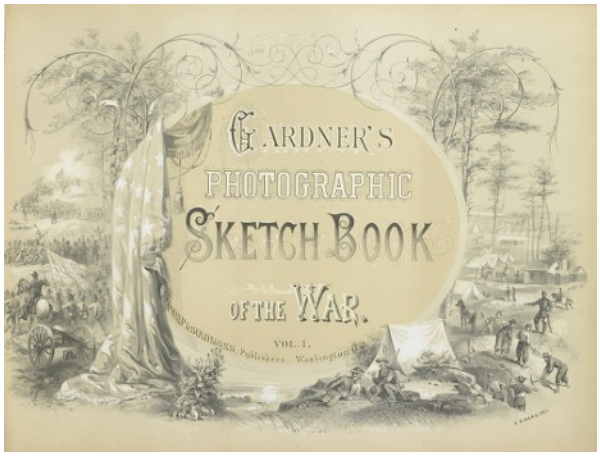
Paper #1 due [submit to Canvas between Sept 28 and Oct 5]

Module 5.1 Wilderness and Ruins

Aaron Sachs, "Stumps in the Wilderness," in Brian Allan Drake, ed., *The Blue, the Gray, and the Green: Toward an Environmental History of the Civil War* (University of Georgia Press, 2015), pp. 96-112 [Canvas]

Megan Kate Nelson, *Ruin Nation: Destruction and the American Civil War* (University of Georgia Press, 2012), conclusion ("The Ruins of History") [Canvas]

Megan Kate Nelson, "Americans Need to Know the Hard Truth About Union Monuments in the West," *The Atlantic*, July 10, 2020



Module 5.2 Bodies

Drew Gilpin Faust, *This Republic of Suffering: Death and the American Civil War* (Knopf, 2008), ch. 3 ("Burying") [Canvas]

Megan Kate Nelson, "Looking for Limbs in All the Right Places: Retrieving the Civil War's Broken Bodies," *Common-place: The Journal of Early American Life* 12, no. 1 (2011)

Week 6: Railroads & Colonization

Week of Oct 4

Module 6.1 Railway Journeys and A New Economic Geography

Rebecca Solnit, *River of Shadows: Eadweard Muybridge and the Technological Wild West* (Penguin, 2003), pp. 3-53

Recommended: William Cronon, *Nature's Metropolis: Chicago and the Great West* (W. W. Norton, 1991), pp. 55-93 [Canvas]

Module 6.2 A Spatial History of the Transcontinental Railroads



Website: *Railroaded* (Stanford University Spatial History Project)

Solnit, *River of Shadows*, pp. 103-152

Rising Wolf's account of the Ghost Dance, excerpted from Hamlin Garland, "Rising Wolf—Ghost Dancer," *McClure's Magazine* 12 (January 1899), 241-48 [Canvas]

Video: Louis Warren on the "The Ghost Dance Movement," Rachel Carson Center Environment and Society (2014), 8 min.

Week 7: Transforming Time & Space in the Late 19th Century

Week of Oct 11

Module 7.1 Networking Nature and Markets in the Gilded Age

Solnit, *River of Shadows*, pp. 153-206

Module 7.2 Place, Time, and Technologies of Visual Representation

Solnit, *River of Shadows*, pp. 207-259

Week 8: Creating American Parklands

Week of Oct 18

Take-home midterm exam due [submit to Canvas between Oct 19 and Oct 26]

Module 8.1 Inventing and Policing Wilderness

John Muir, "Features of the Proposed Yosemite National Park," *Century Magazine*, Sept. 1890, pp. 656-67

Petition and Map from John Muir and Other Founders of the Sierra Club Protesting a Bill to Reduce the Size of Yosemite National Park, Jan. 2, 1893

Module 8.2 National Parks, Dispossession, and Indigenous Histories

Film: Selections from Ken Burns, *The National Parks: America's Best Idea*, Episode 1: "The Scripture of Nature" (1851-1890) (1 hr., 53 min.)

In-mut-too-yah-lat-lat's speech to a white audience, 1879, excerpt from "An Indian's Views of Indian Affairs," *North American Review* 128 (April 1879) [Canvas]

"Picturing a Western Myth: Photography and the Blackfeet Indians," in *Going to the Source: The Bedford Reader in American History* (Bedford/St. Martin's, 2012), 29-36 [Canvas]

"The Source: Photographs of the Blackfeet at Glacier National Park and on the Reservation, 1890-1930," in *Going to the Source: The Bedford Reader in American History* (Bedford/St. Martin's, 2012), 39-52 [Canvas]

Karl Jacoby, "Ken Burns Gone Wild: Naturalizing the Nation in The National Parks: America's Best Idea," *The Public Historian* 33, no. 2 (Spring 2011): 19-23

Edward T. Linenthal, "Ken Burns's The National Parks: America's Best Idea: Compelling Stories and Missed Opportunities," *The Public Historian* 33, no. 2 (Spring 2011): 13-18

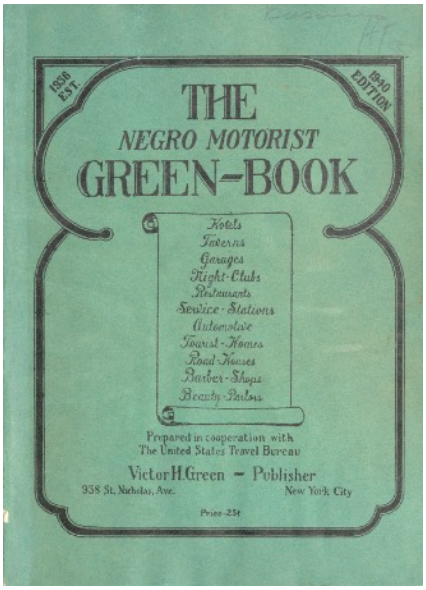
Week 9: Landscapes of Automobility

Week of Oct 25

Module 9.1 Roads, Driving, and Wilderness

Christopher W. Wells, *Car Country: An Environmental History* (University of Washington Press, 2012), ch. 2 ("Automotive Pioneers") [Canvas]

Recommended: Paul Sutter, *Driven Wild: How the Fight Against Automobiles Launched the Modern Wilderness Movement* (University of Washington Press, 2004), ch. 2 ("Knowing Nature through Leisure: Outdoor Recreation during the Interwar Years")



Module 9.2 Black Automobility in the Mid-Twentieth Century

The Negro Motorist Green Book: 1948, New York Public Library Digital Collections

Recommended: Mia Bay, "Traveling Black/Buying Black: Retail and Roadside Accommodations during the Segregation Era," in *Race and Retail: Consumption Across the Color Line*, ed. Mia Bay and Ann Fabian (Rutgers

University Press, 2015), pp. 15-33

Recommended: Cotten Seiler, "'So That as a Race We Might Have Something Authentic to Travel By': African American Automobility and Cold-War Liberalism," *American Quarterly* 58, no. 4 (Dec. 2006): 1091-1117

Week 10: Water & the Hydraulic Society

Week of Nov 1

Revision of Paper #1 due [submit to Canvas between Nov 2 and Nov 9]

Module 10.1 The Dust Bowl and FDR's Moviemaker

Film: Pare Lorentz, The Plow that Broke the Plains (1936), 25 min.

Richard White, *The Organic Machine: The Remaking of the Columbia River* (Hill and Wang, 1995), introduction, chs. 1 & 2

Module 10.2 Rivers, Energy, and Work

White, *Organic Machine*, chs. 3 & 4

Paul Roberts, "This is What Happens When Bitcoin Miners Take Over Your Town," *Politico Magazine*, March/April 2018

Recommended: Nathan Ensmenger, "The Environmental History of Computing," *Technology and Culture* 59, no. 4 (2018): S7-S33.

Week 11: Nuclear Landscapes

Week of Nov 8

Module 11.1 Plutopia: Cold War Plutonium Production, Prosperity, and Disaster

Film: PBS Oregon Experience: Hanford (2013), 59 min.

Robin Lindley, "Kate Brown: Nuclear 'Plutopias' the Largest Welfare Program in American History," interview, History News Network

Module 11.2 Project Plowshare: Nuclear Explosives for Civil Engineering

Film: U.S. Atomic Energy Commission, *Plowshare* (1961), 28 min.

Video: Project Sedan nuclear test, 7 min.



Week 12: Controlling Weather & Climate?

Week of Nov 15

Module 12.1 Weather Modification and Climate Control during the Cold War and Beyond

H. T. Orville, "Weather Made to Order?," *Collier's*, May 28, 1954 [Canvas]

Seymour M. Hersh, "Rainmaking is Used as Weapon by U.S.," *New York Times*, July 3, 1972

Shirley Li, "The Science Behind Human-Controlled Weather," *The Atlantic*, Feb. 19, 2015

Recommended: Jacob Darwin Hamblin, *Arming Mother Nature: The Birth of Catastrophic Environmentalism* (Oxford UP, 2013), ch. 9 ("The Terroristic Science of Environmental Modification") [Canvas]

Recommended: James Rodger Fleming, *Fixing the Sky: The Checkered History of Weather and Climate Control* (New York: Columbia University Press, 2010), ch. 8 ("The Climate Engineers") [Canvas]

Module 12.2 Climate Modeling and Global Knowledge Infrastructures

Video: Paul Edwards, "Modeling Wicked Problems," The Anthropocene Campus, Nov. 2014 (30 min.)

Week 13: Environmental Politics

Week of Nov 22

Paper #2 due [submit to Canvas between Nov 23 and Dec 4]

Module 13.1 American Environmentalism from Earth Day to #NoDAPL

Start reading Susanne Freidberg, *Fresh: A Perishable History* (Harvard UP, 2009)

Recommended: Andrew Needham, "Powering Modern America," in *Why You Can't Teach United States History without American Indians*, ed. Susan Sleeper-Smith et al. (UNC Press, 2015) [Canvas]



THANKSGIVING RECESS

Week 14: Landscapes of Food

Week of Nov 29

Module 14.1 Industrial Agriculture in the 20th Century

Continue reading Freidberg, *Fresh*

Module 14.2 Fast and Slow Food

Finish reading Freidberg, *Fresh*

Week 15: Conclusions

Week of Dec 6
Module 15.1 The Futures of Nature

Lauren Holt, "Why the Post-Natural Age Could be Strange and Beautiful," BBC.com, May 3, 2019

"Inside the Global Seed Vault, Where the History and Future of Agriculture is Stored," NPR *Fresh Air*, podcast, July 24, 2017 (35 min.)



We will not have a traditional final exam in this course. Your final exam grade will be based on the short Canvas discussion post (1 paragraph) that will be part of the Week 15 modules. The reason for this modification is to avoid contributing to exam-related stress at the end of the semester.

Final exam schedules: https://scheduling.rutgers.edu/scheduling/exam-scheduling/final-exam-schedule

Final exam policies: https://scheduling.rutgers.edu/scheduling/exam-scheduling/final-exam-policies

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