



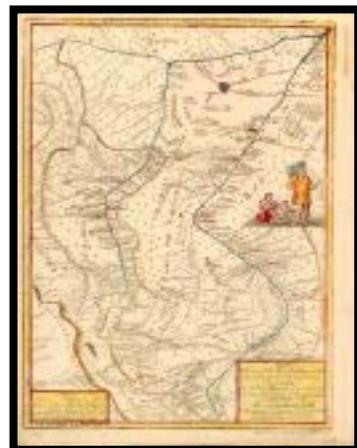
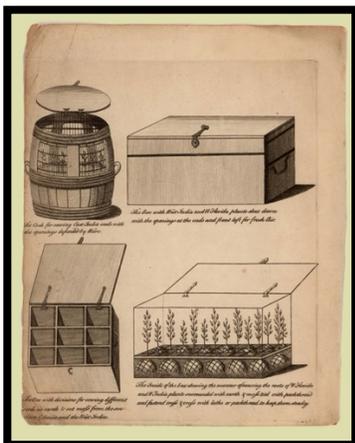
Spring 2022

Science, Nature, and Empire

Elaine LaFay

elaine.lafay@rutgers.edu

Office Hours: TBD



Course Description

Who owns the rights to genetic material? Has global warming begun to drive evolution? Should we dim the sun?

These are some of the questions animating contemporary conversations about how to navigate the fraught relationship between humans and the natural world. But humans have fought bitterly for control over earth's resources long before pharmaceutical companies began vying for genetic patents to medicinal plants. This course will explore the vexed but longstanding relationship between science, nature, and power from the 15th century to our own in a global context. In doing so, we will ask how the pursuit of natural knowledge and imperialism have been co-constitutive of each other and the ways in which natural knowledge has been both a tool of oppression and resistance.

Drawing together a range of historical and contemporary sources, this course explores the sites, sciences, instruments, and networks through which natural knowledge becomes entangled with political power. We will give special attention to the social dimensions of scientific encounters in colonies; the relationship between metropolis, periphery, and scientific practice; and to the political and cultural place of scientific knowledge in regions which have experienced colonial rule. Topics will range from the histories of botanic gardens and botanic illustrations to Andean mummies to current day biopiracy. This class introduces students to key episodes in the history of science and colonialism while also encouraging critical engagement with the role of natural knowledge in the world around us today. As we encounter new forms of biopiracy and with the rise of new environmental threats from climate change, the relationship between race, science, and imperialism is being rethought not just academically but also in a range of practical, commercial, and political arenas.

Assignments

Reading Responses – 25%

Midterm – 25%

Final Project – 25%

Participation – 25%

Learning Objectives:

Upon successful completion of this course, students will be able to:

- Articulate major themes, patterns, and trends in the history of colonialism and natural knowledge
- Develop a working definition of 'colonial science' and an awareness of its many genres of print and visual production
- Explore the changing interplay between scientific knowledge, environment, and empire over time and in different social contexts
- Construct informed and thoughtful responses to course readings, in both writing & class discussions
- Diagnose the historical roots and social dimensions of present-day issues
- Use analytical perspectives of the past to reinterpret contemporary challenges

In addition to learning new content, students will be introduced to the disciplinary tools of history. These objectives are:

- Learn to navigate a diverse array of primary source materials, including, but not limited to, textual sources, film, and visual materials.
- Refine the ability to read historical sources and scholarly writing actively and critically.
- Gain a sense for how history is a form of interpretation, and how past societies interpreted their own histories

SAS Core learning goals

This course meets SAS Core goals CCO-2 and HST and counts toward the STEM in Society minor/certificate. There are no prerequisites for this course, and no prior experience in History is necessary to succeed in this course. The course will introduce students to historical methods, and we will learn how to interpret, analyze, and write about historical sources.



Contemporary Challenges [CCO-2]: Analyze the relationship that science and technology have to a contemporary social issue

Historical Analysis [HST]: Explain the development of some aspect of a society or culture over time

Big Questions:

- Who has historically been seen as an authority on plants, medicine, & healing in the colonial world?
- How did colonialism shape the pursuit of natural knowledge?
- How does attention to gender, sexuality, race, and labor change the way we think about colonial science and natural history?
- What are the economic and political stakes of biopiracy?
- What are the relationships among folklore, mythology, and scientific pursuit?
- How have ideas about race, gender, sexuality, class, and disability been written onto nature?
- How did imperial expansion change natural environments? How did the environment shape colonial settlement and expansion?
- What is the role of violence in the production of knowledge?

Course Format

This is a combined lecture/discussion course. More information will be available closer to spring 2022, as it is contingent on the status of COVID-19.

Assessment

- **Reading Responses (25% final grade)**

All students will be required to post a response to the readings on Canvas each week. I will provide prompts / discussion questions. These responses must demonstrate both comprehension and critical thinking about the readings.

- **Midterm (25% final grade)**

The midterm will consist of a take-home essay. Students will be given three potential essay prompts, asking them to synthesize and analyze the material from the first six weeks. Students will choose one prompt to answer the prompt in an essay of 3-5 pages in length. The Midterm Essay prompts will be distributed in class at the end of Week 7. The completed essays are due one week later, at the end of class Week 8. The essay should reference at least three readings from the course, with appropriate citations.

- **Final Project (25% final grade)**

The final project will ask students to select a contemporary issue that speaks to the intersection of science, nature, and power and situate it in its historical context. Students will be given a list of potential topics, or they can choose their own with consultation with the instructor.

- **Attendance and Participation (25% final grade)**

Participation is crucial to your success in this course. “Active participation” in our class means not only thoroughly preparing each week’s material—i.e. having completed the assigned reading and multimedia—but also being prepared with your original ideas, comments, and questions ready to share with your fellow students. We’ll discuss these ideas in class as well as over virtual platforms like *hypothesis*. As you read, take careful notes and write down the ideas and themes that jump out at you.

Students are required to attend all meetings. All accommodations will be granted, with consultation of the instructor. As participation in class discussions are important, they will be counted in three ways:

- Regular attendance and participation in class
- Regular contributions in collaborative annotation
- Students are required to come to *Office Hours* once during the first five weeks. It can be a quick check-in, or a longer meeting. This counts for 5% of the Attendance/participation grade.

Participation Rubric

| | |
|---|--|
| A | Student participated meaningfully in every, or nearly every, group discussion; offered comments and/or questions that reflected substantive engagement with the assigned material; and responded thoughtfully to other students’ contributions. Student contributed regularly to course readings via hypothesis. |
|---|--|

| | |
|---|--|
| 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 discussion 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 synchronous discussions and shared annotation) |
| 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 assigned material or group discussion throughout the semester |

Grading

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

| | |
|-----------------|--------------|
| A: 90 to 100 | B+: 87 to 89 |
| B: 80 to 86 | C+: 77 to 79 |
| C: 70 to 76 | D: 60 to 69 |
| F: 59 and below | |

*If you would like to discuss your grades at any point, please make an appointment to speak with me over zoom. *Please note that I do not discuss grades over email.*

Course Policies

- **Submitting Assignments**

All assignments must be submitted on Canvas by 11:59 p.m. on the due date. Unless you have explicitly asked for and been granted an extension, assignments submitted after the due date will be penalized a third of a letter grade a day, including holidays. Right now I understand that schedules are strained under the pandemic, so there is a two-day grace period for each of the major assignments. If you think you will need more than that, be in touch ahead of time to arrange for an extension.

Citation Practices: All assignments should be written using the Chicago citation style. You may view it here: [Chicago Manual of Style Official Guide](#)
The Purdue OWL guide is also helpful: [Purdue Online Writing Lab: Chicago Style](#)
If you have any questions about the proper citation, please refer to these sites, and then contact me.

- **Plagiarism and Academic Honesty**

Plagiarism of any kind will not be tolerated. This includes failure to acknowledge another source for ideas and words as well as other forms of cheating on exams and papers. If plagiarism is proven, however small the plagiarized portion, you will be given a zero on the assignment. For a full description of what constitutes plagiarism, see the University's guide to plagiarism and academic integrity (see: <http://academicintegrity.rutgers.edu>).

If you are unsure about whether something is academically dishonest, ask! There is never a penalty for asking, and it is much better to be safe than sorry.

- **Accessibility**

If you have any specific personal and/or academic accessibility requirements (learning disability, physical disability, language comprehension, etc.), you are welcome to speak with me or email me to let me know how to best accommodate your needs, especially if you don't have an apparent disability, have ongoing health issues, or are trying to pass. You are NOT obligated to disclose any of these issues with me, only specify if there's any accommodations required. If you need any adaptations for course materials (large font, pacing, image description, closed captioning), this is easy for me to do, do let me know. You are also encouraged to register with the [Office of Disability Services](#), but it is not a requirement.

Schedule and Readings

Week 1: Introduction

1. Who Owns Nature?

Nicola Twilley, [“Who Owns the Patent on Nutmeg?”](#) *New Yorker*, 26 October 2015

William Neuman, [“Vegetable Spawns Larceny and Luxury in Peru,”](#) *New York Times*, 6 December 2014

Tamar Haspel, [“Unearthed: Are Patents the Problem?”](#) *The Washington Post*, 29 September 2014

Week 2: Patent Wars in the 21st Century

1. Patenting Life
2. From Plants to Pharmaceuticals: The Case of Hoodia

Watch: Tania Simoncelli, [“Should you be able to patent a human gene?”](#) TEDx, November 2014

Abena Dove Osseo-Asare, “Take Kalahari Hoodia for Hunger,” in *Bitter Roots: The Search for Healing Plants in Africa* (2014)

Week 3: Framings: Approaching the History of Nature & Empire

1. Ways of Seeing
2. The Power of a Name

James Cook, excerpt, *The Journals of Captain Cook* (1768-79)

Edward Said, “The Scope of Orientalism,” in *Orientalism* (New York: Vintage Books, 1978)

Mary Louise Pratt, excerpt, *Imperial Eyes: Travel Writing and Transculturation* (Routledge, 1992)

Paul Carter, excerpt, *The Road to Botany Bay: An Essay in Spatial History* (Minneapolis: University of Minnesota Press, 1987)

Recommended:

Michel Foucault, “Forward,” “Preface,” and “Classifying,” in *The Order of Things: an archaeology of the human sciences*. (London: Tavistock/Routledge, 1989)

Carolyn Merchant, “Dominion Over Nature,” in *The Death of Nature: Women, Ecology, and the Scientific Revolution* (Harper San Francisco, 1980)

Week 4: Global Thinking and the “Improvement” of the World

1. The Nature of Conquest
2. The Ideology of Improvement

Richard Grove, excerpt, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600 – 1860* (Cambridge: Cambridge University Press, 1995)

Richard Drayton, excerpt, *Nature’s Government: Science, Imperial Britain, and the ‘Improvement’ of the World* (New Haven: Yale University Press, 2000)

Week 5: Colonial Botany

1. Classifying
2. Bioprospecting

Maria Sibylla Merian, excerpt, *Metamorphosis insectorum Surinamensium*, 1705

Graves, George. *The Naturalist’s Pocket-Book, or, Tourist’s Companion: Being a Brief Introduction to the Different Branches of Natural History: With Approved Methods for Collecting and Preserving the Various Productions of Nature*. London: Printed for Longman, Hurst, Rees, Orme and Brown, 1818, pp. 278-300, 326-335.

Daniela Bleichmar, “Natural History and Visual Epistemology,” in *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment* (Chicago: University of Chicago Press, 2012)

Londa Schiebinger, “Voyaging Out” and “Bioprospecting,” in *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, MA: Harvard University Press, 2007)

Satpal Sangwan, “Natural History in Colonial Context: Profit or Pursuit? British Botanical Enterprise in India, 1778-1820,” in *Science and Empires*, 281-298.

Week 6: Commodities, Part I

1. Revolutions in Taste
2. Colonial Poisons and Elixirs

Garcilaso de la Vega, Royal Commentaries of the Incas, and general history of Peru, Book One, trans. Harold V. Livermore (Austin: University of Texas Press, 1989 [1966]), 306-308. [Book Five, Chapter XXIX]

King James I of England, *Counterblaste to Tobacco*, 1604

Excerpt, Marcy Norton, *Sacred Gifts, Profane Pleasures: A History of Tobacco and Chocolate in the Atlantic World* (Ithaca: Cornell University Press, 2008)

Christopher Heaney, “How to Make an Inca Mummy: Andean Embalming, Peruvian Science, and the Collection of Empire,” *Isis* 109: 1 (2018),

Recommended:

Turner, Jack. “The Spice Race,” in *Spice: The History of a Temptation*. New York: Knopf, 2004, 3-56.
Barrera, Antonio. “Local Herbs, Global Medicines: Commerce, Knowledge, and Commodities in Spanish America,” in Paula Findlen and Pamela Smith (eds.), *Merchants and Marvels: Commerce, Science and Art in Early Modern Europe*, London, 2002: 163-182.

Week 7: People and Places on Display

1. Museums & Gardens
2. Displaying People, Displaying “Progress”

Listen: Episode 5: “[Race, Display, and Empire with Sadiah Quereshi](#),” *The Wonder House Podcast*, 21 January 2020

The Crystal Palace Exhibition; Illustrated Catalogue, London 1851. Dover Pictorial Archive Series. New York: Dover Publications, 1970[1851]. (selections)

Jamaica Kincaid, “Flowers of Evil,” *The New Yorker*, October 5, 1992

Sadiah Quereshi, “Peopling Natural History,” in Helen Anne Curry, Nicholas Jardine, James Secord, and Emma Spary, eds., *Worlds of Natural History* (Cambridge: Cambridge University Press, 2018), 363-78.

Week 8: Deathscapes

1. The Tropics and Settler Colonialism
2. Acclimation, or the Pathology of Displacement

Primary sources on acclimation

David Arnold, “In a Land of Death,” *The Tropics and the Traveling Gaze* (Seattle: University of Washington Press, 2005)

Nancy Leys Stepan, “The New Tropical Pathology,” in *Picturing Tropical Nature* (London, 2001), 149-179

Week 9: Global Industrialization: Colonizing “Nature”

1. Nature and Capitalism
2. Commodity Flows

Karl Marx, *Capital, Vol I* (1867), ch. 7, section 1, “The Labor Process” (283-292); ch. 15, section 10, “Large Scale Industry and Agriculture,” (636-638)

Sven Beckert, excerpt, *Empire of Cotton* (Knopf, 2014)

Michitake Aso, excerpt, *Rubber and the Making of Vietnam: An Ecological History, 1897-1975* (Chapel Hill: University of North Carolina Press, 2018)

Week 10: Potions and Pharmaceuticals

1. Colonial Health and Healing
2. Medical Pluralism

Primary sources, drug advertisements from the early 20th c.

Natasha Gray, “Witches, Oracles, and Colonial Law: Evolving Anti-Witchcraft Practices in Ghana, 1927-1932,” *The International Journal of African Studies* 34, no. 2 (2001)

Laurence Monnais & Noemi Tousignant, “The Colonial Life of Pharmaceuticals: Accessibility to Healthcare, Consumption of Medicines, and Medical Pluralism in French Vietnam, 1905-1945”

Projit Mukharji, “Vishalyakarani as E. Ayapana: Retro-Botanizing, Embedded Traditions, and Multiple Historicities of Plants in Colonial Bengal, 1890 – 1940,” *Journal of Asian Studies*

Week 11: ‘Reap What You Sow’

1. A Global History of Tea
2. Seeds and Animals

Jayeeta Sharma, excerpt, *Empire’s Garden: Assam and the Making of India* (Durham: Duke University Press, 2011)

Rebecca Woods, “From Colonial Animal to Imperial Edible: Building an Empire of Sheep in New Zealand, c. 1880-1900,” *Comparative Studies of South Asia, Africa, and the Middle East* 35:1 (2015), 117-136

Courtney Fullilove, “For Amber Waves of Grain,” *The Profit of the Earth: The Global Seeds of American Agriculture* (Chicago: University of Chicago Press, 2017)

Week 12: Labor

1. Channels of Empire
2. Forced Labor

Primary sources from the Panama Canal

Julie Greene, excerpt, *The Canal Builders: Making America's Empire at the Panama Canal* (New York: Penguin, 2009) [or] Paul Sutter, “Nature’s Agents or Agents of Empire?: Entomological Workers and Environmental Change during the Construction of the Panama Canal,” *Isis* 98.4 (2007): 724-54.

Tiago Saraiva, “Coffee, Rubber, and Cotton: Cash Crops, Forced Labor, and Fascist Imperialism in Ethiopia, Mozambique, and Eastern Europe,” in *Fascist Pigs: Technoscientific Organisms and the History of Fascism* (Cambridge, MA: The MIT Press, 2016), 143 – 184

Week 13: Nationalism and Environment

1. The Pill
2. Carceral Nature

Selection of oral histories, [Densho](#)

Gabriela Soto Laveaga, excerpts, *Jungle Laboratories: Mexican Peasants, National Projects, and the Making of the Pill* (Durham: Duke University Press, 2009)

Connie Chiang, excerpts, *Nature Behind Barbed Wire: An Environmental History of the Japanese Incarceration* (Oxford: Oxford University Press, 2018)

Film: *Embrace of the Serpent/El Abrazo de la Serpiente* (2015)

Week 14: Global Biopiracy

1. Healing Plants
2. Patent Wars

John Merson, “Bioprospecting or Bio-piracy: Intellectual Property Rights and in a Colonial and Postcolonial Context,” *Osiris* 15, no. 1 (2000), 282-96

Stacey Langwick, “From non-aligned medicines to market-based herbals: China’s relationship to the shifting politics of traditional medicine in Tanzania.” *Medical Anthropology* 29, no. 1 (2010): 15-43.

Abena Dove Osseo-Asare, “Take Arrow Poisons for the Heart,” in *Bitter Roots: The search for healing plants in Africa* (Chicago: University of Chicago Press, 2014)

Recommended:

Kevles, Daniel. “Of Mice & Money: The Story of the World’s First Animal Patent,” *Daedalus* 131, no. 2 (2002), 78-88.

Week 15: Engineering the Future

1. Genetic Engineering
2. Geoengineering

Gabriel Popkin, “Can Genetic Engineering Bring Back the American Chestnut?” *The New York Times*, 30 April 2020

Elizabeth Kolbert, excerpt, *Under a White Sky: The Nature of the Future* (2021)

Student Wellness Resources

Rutgers Universitywide COVID-19 Information

<https://coronavirus.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 professional 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/>

39 Union Street

New Brunswick, NJ 08901

848-932-5500

ruoffcampus@echo.rutgers.edu

