

History 328 – Science in American Culture: The Visual Culture of Science in the Nineteenth-century United States  
Cross-listed with Art History 487 – Special Topics in Modern Art

Instructor: Dr. Michelle Smiley  
Class: Tu/Th 2:50-4:10

Office hours: Thu 4:30-5:30 & by appt on Zoom  
Email: [m.smiley@rutgers.edu](mailto:m.smiley@rutgers.edu)



Frederic Edwin Church, *Heart of the Andes*, 1859.

### Course Description

In what ways do pictures shape our understandings of scientific ideas and culture? What objects and actors are typically understood as “scientific” and how might a view of science as visual and aesthetic expand such definitions? This course will take a capacious view of nineteenth-century scientific practice in the United States and wider Atlantic world between 1790 and 1860 with an emphasis on its material, visual, and aesthetic aspects. Where received knowledge tells us that the nineteenth-century saw the birth of modern science as the objective observation of universal truths, we will seek to complicate such assumptions through an examination of paintings, photographs, performances, and everyday practices as dynamic and decentralized sites of knowledge-making. Starting from the premise that art and science are less opposites than interwoven practices, we will explore themes such as 1) the role of settler colonialism in the production of knowledge, 2) understandings of “objectivity” and their limitations, 3) the rise of the invisible as a site of technoscientific investigation. Artworks to be discussed may include Frederic Edwin Church’s *The Heart of the Andes*, the daguerreotype collection of Louis Agassiz, and Adam and Zack Khalil’s *INAATE/SE/*; readings include texts by Frederick Douglass, Michel Foucault, Edouard Glissant, Katherine McKittrick, and Kathryn Yusoff.

**Please note: this class will be taught in a hybrid asynchronous and synchronous format; syllabus subject to change**

## Requirements

Formal analysis assignment	5%
Discussion facilitation	10%
Asynchronous & synchronous participation	30%
Creative map assignment	15%
Paper Proposal & bibliography	10%
Final paper oral presentation	5%
Final research paper (7-9pp)	25%

## Note on participation and responsibility

Participation grades are based on the following: 1) attendance at synchronous meetings; 2) participation in synchronous meetings and via reading responses, both quantity and quality; 3) final oral presentation. This is an upper division seminar: a high level of participation is mandatory whether via synchronous class discussion or asynchronous writing responses. **This course includes difficult imagery and materials. It is your responsibility to review the syllabus and determine whether the course is appropriate for you before final enrollment.** Students who anticipate a problem with the course, regardless of the reason, should contact me during the first week to determine whether you should enroll in an alternate course.

## Academic Honesty and Plagiarism Policy

All written work submitted by students should be their own. Students should be careful when distinguishing their own ideas and writings from other sources. Plagiarism includes quoting or paraphrasing from another source without properly citing it. Plagiarism is grounds for automatically failing the course. For further details:

<http://academicintegrity.rutgers.edu/policy-on-academic-integrity>

## Note on accommodations for students with disabilities

Students who think they may need accommodations in this course because of the impact of a disability are encouraged to meet with me early in the semester. Students should also contact Disability Services as soon as possible, to verify their eligibility for reasonable accommodations. For more information, see

<http://roberson.rutgers.edu/studentlifedisability.html>

## Remote Education Plan

For each scheduled class day, you should follow the schedule of readings (below) carefully. There will always be an assigned reading, and there will frequently be either a taped statement by the instructor or some other assigned media unit (a podcast, film, etc.). At the beginning of each week, the instructor will upload a collection of images and frequently a (short) taped lecture to provide historical context for the assigned themes. A major component of the course will include *short* written responses. On the Thursday of each week one student (or a group of students) will be assigned as discussion facilitators. In your week as a facilitator you will be responsible for generating questions and group exercises that relate to and expand upon the week's assigned readings. Your classmates will then respond to your questions via the Canvas discussion board and you will be responsible for responding to these comments and drawing out themes from your

classmates' thoughts. In some weeks students will also have the option of running a group meeting via Zoom in lieu of a discussion board. This forms the "asynchronous" portion of the course. Each Tuesday meeting will entail a "synchronous" course with the instructor present, including Zoom meetings with the entire class and smaller meetings between students.

### Learning Goals

- Develop knowledge of histories of nineteenth-century science and their intersections with critical theories of science, technology, and aesthetics
- Develop ability to think, speak, and write critically, clearly, and intelligently about difficult visual imagery and historical phenomena
- Develop research skills and the ability to synthesize critical viewpoints and theories, as demonstrated in reading responses and final paper
- Develop oral and audio-visual presentation and argument skills, as demonstrated in reading responses, synchronous participation, creative map assignment, discussion responses and final presentations

### Schedule of Readings & Assignments

#### Week 1: Introduction; Science & Empire

Tu 1/19 Introduction to the Course  
**Synchronous meeting**

Th 1/21 Daniela Bleichmar, "Visible Empire: Scientific Expeditions and Visual Culture in the Hispanic Enlightenment," *Postcolonial Studies* 12, no 4 (2009): 441-466;  
Susan Scott Parrish, "Science, Nature, Race," in *the Oxford Handbook of the Atlantic World: 1450-1850*, eds. Nicholas Canny and Philip Morgan (Oxford, 2011);  
Optional: Zoë Lescaze, "The Artist Whose Medium Is Science," September 16, 2020, *The New York Times Style Magazine*,  
<https://www.nytimes.com/2020/09/16/t-magazine/tavares-strachan.html?searchResultPosition=1&fbclid=IwAR3-pv1x22L0b4T1Yo7WsLHbF2hBWkqVLH4n-wMfSG7hnxifTBIHcDxO6sQ>;  
Explore:  
[https://www.brown.edu/Facilities/John Carter Brown Library/exhibitions/sloane/index.html](https://www.brown.edu/Facilities/John_Carter_Brown_Library/exhibitions/sloane/index.html)  
**Asynchronous breakout rooms**

#### Week 2: Taxonomy: Natural History in Early America

Tu 1/26 Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (Vintage Books, 1994 [1970]), ix-xxiv; 125-138; 217-221; 226-232.  
**Synchronous meeting**

Th 1/28 Christopher Looby, "The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram," *Early American Literature* 22, no. 3 (1987): 252-73;  
Alexander Nemerov, "A World Too Much: Democracy and Natural History in Godman and Audubon," in *Knowing Nature: Art and Science in Philadelphia, 1740-1840*, ed. Amy Meyers (Yale UP, 2011), 356-375.  
**Discussion assignment**

Week 3: The Mechanical Universe: Objectivity & the Waning Enlightenment

Tu 2/2 Lorraine Daston and Peter Galison, "The Image of Objectivity," *Representations* 40 (1992): 81-128.  
**Synchronous meeting**

Th 2/4 Wendy Bellion, "Introduction" and "Theaters of Visuality," in *Citizen/Spectator: Art, Illusion, and Visual Perception in Early National America* (Omohundro Institute of Early American History, 2011), 1-62.  
**Discussion assignment**

Week 4: Plantation Epistemes

Tu 2/9 Katherine McKittrick, *Demonic Grounds: Black Women and the Cartographies of Struggle* (University of Minnesota Press, 2006), 1-35.  
**Synchronous meeting**

Th 2/11 Anna Arabindan-Kesson, "Seeing Empire," *Bully Pulpit, Panorama: Journal of the Association of Historians of American Art* 6, no. 1 (Spring 2020), <https://doi.org/10.24926/24716839.10057>;  
Londa Schiebinger, "Conclusion: The Circulation of Knowledge," in *Secret Cures of Slaves: People, Plants, and Medicine in the Eighteenth-Century Atlantic World* (Stanford UP, 2017), 147-166;  
Explore: <https://enslaved.org/>  
**Discussion assignment**

Week 5: Alexander von Humboldt: Landscapes and Instruments

Tu 2/16 Jennifer Raab, "[Introduction: Seeing in Detail](#)," and "[Science and the Celestial](#)," in *Frederic Church: The Art and Science of Detail* (Yale UP, 2015), ebook available via Rutgers Libraries.  
Listen to Modern Art Notes Podcast: <https://manpodcast.com/portfolio/no-445-humboldt-and-the-united-states/>  
**Synchronous meeting**

Th 2/18 Michael Dettelbach, "The Face of Nature: Precise Measurement, Mapping, and Sensibility in the Work of Alexander von Humboldt," *Studies in History and Philosophy of Science* 30, no. 4 (1999): 473-504.  
Explore online SAAM [lectures](#) and [Humboldt exhibition](#)  
**Discussion assignment**

### Week 6: Mapping

Tu 2/23 Robin Kelsey, "Arthur Schott: Marking the Mexican Boundary," in *Archive Style: Photographs and Illustrations for U.S. Surveys, 1850-1890* (University of California Press, 2007), 21-74.

**Synchronous meeting**

Th 2/25 Irène Hirt, "Mapping Dreams/Dreaming Maps: Bridging Indigenous and Western Geographical Knowledge," *Cartographica: The International Journal for Geographic Information and Geovisualization* 47, no. 2 (summer 2012): 105-20;

Watch: <https://emergencemagazine.org/story/counter-mapping/>

**Asynchronous breakout rooms**

### Week 7: Collecting and Exhibiting

Tu 3/2 **Potpourri:** A variety of essays will be uploaded to the Canvas site, each of which discusses a different aspect of collecting, museums, and exhibition in the nineteenth-century United States. Themes include the rise of commercial orientalism, Peale's Philadelphia Museum, and even the frozen time of preserved butterfly specimens. Pick one (or more!) and come prepared to discuss your chosen reading with your colleagues!

Some of the readings options will include:

Nancy E. Davis, *The Chinese Lady: Afong Moy in Early America* (Oxford UP, 2019), excerpts.

Ellery E. Foutch, "Preserving the Perfect State: Titian Peale's Butterflies," *Victorian Studies* 60, no. 2 (Winter 2018): 171-184;

And more!

**Synchronous meeting**

Th 3/4 Neil Harris, *Humbug: The Art of P. T. Barnum* (University of Chicago Press, 1981), excerpts.

**Discussion assignment**

### Week 8: Doing Indigenous Knowledge

Tu 3/9 Édouard Glissant, "For Opacity," in *The Poetics of Relation*, trans. Betsy Wing (University of Michigan Press, 2010 [1990]), 189-194;

René Dietrich, "The Biopolitical Logics of Settler Colonialism and Disruptive Relationality," *Cultural Studies—Critical Methodologies* 17 (2017): 67-77.

**Synchronous meeting**

Th 3/11 Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Milkweed Editions, 2013), ix-59; 156-66.

**Mapping assignment due**

**Asynchronous breakout rooms**

*Spring Break: no class*

### Week 9: Rocks

Tu 3/23 Kathryn Yusoff, *A Billion Black Anthropocenes or None* (University of Minnesota Press, 2018), excerpts.

Guest speaker: Dr. Dana Luciano

**Synchronous meeting**

Th 3/25 Martin J. Rudwick, "The Emergence of a Visual Language for Geological Science, 1760-1840," *History of Science* 14, no. 3 (1976): 149-195.

**Asynchronous breakout rooms**

**Proposals for final paper topics due**

### Week 10: Racial Science

Tu 3/30 Ann Fabian, "Crania Americana," in *The Skull Collectors: Race, Science, and America's Unburied Dead* (University of Chicago Press, 2010), 79-120;

Brian Wallis, "Black Bodies, White Science: Louis Agassiz's Slave Daguerreotypes," *American Art* 9, no. 2 (1995): 39-61;

**Synchronous meeting**

Th 4/1 Britt Rusert, "Comparative Anatomies: Re-Visions of Racial Science," in *Fugitive Science: Empiricism and Freedom in Early African-American Culture* (NYU Press, 2017), 65-112;

Frederick Douglass, "The Claims of the Negro, Ethnologically Considered," 1854.

**Discussion assignment**

### Week 11: Instruments & Imponderables

Tu 4/6 John Tresch, "Estrangement of Vision. Edgar Allan Poe's Optics," in *Observing Nature—Representing Experience, The Osmotic Dynamics of Romanticism, 1800-1850*, ed. Erna Fiorentini (Reimer Verlag, 2007), 155-86;

Edgar Allan Poe, "[The Daguerreotype](#)," January 15, 1840, *Alexander's Weekly Messenger*, 2.

**Synchronous meeting**

Th 4/8 Michael Leja, "Mumler's Fraudulent Photographs," in *Looking Askance: American Art from Eakins to Duchamp* (University of California Press, 2006), 21-58;

Optional: Bernard Dionysius Geoghegan, "Mind the Gap: Spiritualism and the Infrastructural Uncanny," *Critical inquiry* 42 (Summer 2016): 899-922.

**Discussion assignment**

### Week 12: Undoing Imperial Science

Tu 4/13 Eve Tuck and K. Wayne Yang, "Decolonization is not a metaphor," *Decolonization: Indigeneity, Education & Society* 1, no. 1 (2012): 1-40.

Explore: <https://decolonizethisplace.org/>

**Synchronous meeting & final paper discussion**

Th 4/15 Watch: Adam and Zack Khalil, *The Violence of a Civilization Without Secrets*: <https://vimeo.com/217342747> (10min) and *INAATE/SE/ [it shines a certain way. to a certain place./ it flies. falls./]* (1hr 8min)  
**Synchronous meeting & final thoughts**

Week 14: Student presentations

Tu 4/20 Group A presentations via Zoom  
**Synchronous meeting**

Th 4/22 Group B presentations via Zoom  
**Synchronous meeting**

Week 13: Student presentations

Tu 4/27 Group C presentations via Zoom  
**Synchronous meeting**

Th 4/29 Group D presentations via Zoom  
**Synchronous meeting**

**Final paper: due 5/1 via email**