

“Science from the South”

Global, Postcolonial, and Non-Western Histories of Science and Technology

History of Science 921

Tu 2:25PM - 5:25PM: EDUCATION 151

Instructor: Daniel Williford/ daniel.williford@wisc.edu

Office Hours: Tu, 12-2 pm, on Zoom or by appointment

This course is designed to introduce graduate students from a variety of disciplines to global, postcolonial, and non-Western histories of modern science and technology. Though born out of distinct intellectual traditions, the approaches we will explore share a preoccupation with how histories of science and technology remain “haunted.” We will engage with a series of subfields that have emerged during the past three decades along with their antecedents: Postcolonial Science Studies, histories of technology in Africa, the Middle East, and South Asia, studies of race and imperial science. What precisely is “postcolonial” about Postcolonial Science Studies? How does an emphasis on forms of knowledge that originated outside of Euro-American contexts shift what the “history of science” is? What new methods might these projects enable or necessitate?

We aim to strike a balance between older and more recent texts, historiographic and empirical work, theory and method. We will move between fields—both within and outside of HSMT—in an effort trace the acute epistemological and political challenges posed to and by the history of science in the past three decades. My hope is that while exploring these emerging approaches, we can move beyond evaluations of their merits or potential pitfalls toward new articulations and formulations of the “problem” that each of these subfields has attempted to address.

Official Description: Designed to develop historiographic command of global approaches to the history of science and technology. Emphasizes recent work in the history of science and technology that decenters Europe. Topics include imperial histories of science and technology, the role of local knowledges in the development of modern science and technology, non-Western scientific traditions and methods, the “globalization” of scientific and technological projects, the critiques of postcolonial studies of science, and debates about decolonizing technology. Emphasis on developing critical thinking about science and technology through formal and informal writing. No prior experience in the history of science or technology is required, but would be helpful.

Requisites: None

Credit Policy: This 3-credit course has 3 hours of group meetings per week. The course also carries the expectation that you will spend an average of at least 3 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 for reading, writing, and preparing for discussions for this class.

Regular and Substantive Student-Instructor Interaction: This course provides for regular and substantive student-instructor interaction through direct instruction, providing feedback on student work, providing information about course content, and facilitating discussion of course content.

Learning Objectives

Graduate students completing this course will:

- practice a variety of reading strategies
- gain familiarity with relevant texts, topics, and approaches in History of Science, Medicine, and Technology (HSMT)
- become acquainted with current methodological issues in the field
- be able to articulate, critique, or elaborate a range of theories, research methods, and
 - approaches to inquiry in HSMT (HSMT MA Learning Goal #1)

Course Requirements

Reading: Each week, we will read the equivalent of a book and one to two articles. A few thoughts about approaching these texts: try to leave yourself enough time to think about the readings and how they play off one another. Where do they converge and diverge? How would you think about the more programmatic and historiographic pieces in relation to the empirical ones? What broad questions do they raise about the history of science and technology or related disciplines? I have included a piece by Paul Edwards in the suggested readings section on “How to Read an Academic Book” that offers some helpful reading strategies.

Participation and Leading Discussion (25%): For the first four weeks we will set the agenda for discussion collectively, I will ask each of you what you most want to talk about, adding in my own items at the end. Starting in the week five of the semester, each member of the seminar will sign up for one of the remaining weeks and will be responsible for leading discussion on that day. There will be times when I may offer some additional context for certain texts or general questions to the group. The seminar is a space for you to speak freely about the material we will be engaging together.

Writing (Reading Responses) (25%): Each week, with the exception of the first week of the semester, you should submit a short, approximately 500-word, post on Canvas in response to the readings. The reading response posts are a chance for you to practice short-form academic writing. They should not be summaries of the texts (which given the number of readings many weeks would be impossible anyway) but analytic engagements where you consider a theme or question in relation to the texts, look for common arguments or disagreements, and reflect on relevant concepts and their implications. Broadly, they should help to set up our conversation in the seminar for that week.

Working Groups and Collaborative Project (25%): In the first week of the semester, we will divide into three working groups. Early on, each group will define an area of inquiry related to global/postcolonial/decolonial HSMT that they would like to pursue further. Each group will be responsible for coming up with a list of readings that the seminar will read together during one of the final three weeks of the semester. During their selected week, members of the working group will present their findings on the topic and lead discussion on the texts that they selected.

Each working group is also responsible for producing a short collaborative final project. This could be a short, written text, a creative project, a manifesto, a pedagogical program, a brief “podcast” discussion of their topic, etc. Whatever final product the members decide to create should be included with the readings they selected for their assigned week at the end of the semester.

Individual Project (25%): The final individual project in this course is for you to tailor to your own needs and trajectory. It could be a review essay of around 3000 words. It could be the beginnings of a professional portfolio containing several shorter writing samples. It could be a syllabus accompanied by a pedagogical statement. It could be a creative research project connected to the themes of our course. You should send me a short one-page proposal for your project before class on Week 7 and plan to meet with me to discuss it before Thanksgiving break.

Grade Distribution

A	AB	B	BC	C	D	F
93.0–100%	88.0–92.9%	83.0–87.9%	78.0–82.9%	70.0–77.9%	60.0–69.9%	0–59.9%

Course Materials:

TallBear, Kim. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. Minneapolis: University of Minnesota Press, 2013.

Hogarth, Rana. *Medicalizing Blackness: Making Racial Difference in the Atlantic World, 1780-1840*. Chapel Hill, NC: University of North Carolina Press, 2017.

Osseo-Asare, Abena Dove. *Bitter Roots: The Search for Healing Plants in Africa*. Chicago: University of Chicago Press, 2014.

Larkin, Brian. *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria*. Durham: Duke University Press, 2008.

La paperson. *A Third University Is Possible*. Univ Of Minnesota Press, 2017.

We will read substantial selections from each of the books listed above. Apart from La paperson, they are available in electronic form in the UW-Madison library. You might also prefer to buy them. **All other texts**—book sections or articles—are uploaded or linked to our Canvas course in the Files section.

Accommodations: I am committed to accessibility and fairness for all students. If you have any conflicts due to religious holidays or need disability accommodations, please let me know within the first two weeks of the course so we can work out accommodations.

Reference Works and Readers:

Harding, Sandra, ed. *The Postcolonial Science and Technology Studies Reader*. Duke University Press, 2011. <https://doi.org/10.1515/9780822393849>.

“An Introduction to the History of Science in Non-Western Traditions - History of Science Society.” Edited by Douglas Allchin and Robert DeKosky.
https://hssonline.org/page/teaching_nonwestern.

The Science Studies Reader. Edited by Mario Biagioli et al. New York: Routledge, 1999.
<https://search.library.wisc.edu/catalog/999842321002121>.

Ulrike Felt, Rayvon Fouché edited by, Clark A. Miller, Laurel Smith-Doerr. *The Handbook of Science and Technology Studies*. Fourth edition. Cambridge, Massachusetts: The MIT Press, 2017. <https://search.library.wisc.edu/catalog/9912289443602121>.

Methodological Texts:

Fan, Fa-ti. “Science in Cultural Borderlands,” *East Asian Science, Technology and Society: An International Journal* 1, no. 2 (December 2007): 213–31.

Sivasundaram, Sujit. “Sciences and the Global: On Methods, Questions, and Theory.” *Isis* 101, no. 1 (2010): 146–58.

Ruiz-Trejo, Marisa G., and Dau García-Dauder. “Epistemic-Corporeal Workshops: Putting Strong Reflexivity into Practice.” *Tapuya: Latin American Science, Technology and Society* 2, no. 1 (January 1, 2019): 42–58.

“Methodological Projects,” *CLEAR* (blog), January 3, 2021,
<https://civiclaboratory.nl/methodological-projects/>. And check out the “CLEAR Lab Book.”

Journals in the Field(s):

Tapuya: Latin American Science, Technology and Society
East Asian Science, Technology and Society
Social Studies of Science
History and Technology
Technology and Culture
Isis
Osiris
Science, Technology, & Human Values

Course Schedule

Week 1: Global, Postcolonial, Decolonial, Non-Western

Hall, Stuart. "The West and the Rest: Discourse and Power." *Formations of modernity*. Polity Press: The Open University, 1992, 185-227.

Spivak, Gayatri Chakravorty. "Can the Subaltern Speak?" in *Marxism and the Interpretation of Culture*. Edited by Cary Nelson and Lawrence Grossberg. Urbana, IL: University of Illinois Press, 1998, 271-313.

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (1988): 575–99.

Anderson, Warwick. "From subjugated knowledge to conjugated subjects: science and globalisation, or postcolonial studies of science?." *Postcolonial Studies* 12 (2009): 389-400.

Harding, Sandra. "Beyond postcolonial theory: Two undertheorized perspectives on science and technology." *Women, science, and technology: A Reader in feminist science studies*. Edited by Mary Weyer et al., 431-54. New York: Routledge, 2013.

"Introduction" in Clapperton Chakanetsa Mavhunga, *What Do Science, Technology, and Innovation Mean from Africa?* Cambridge, MA: MIT Press, 2017.

Week 2: From the Global History of Science to the History of Knowledge

Sivasundaram, Elshakry, Tilley, Safier, Kapila. "Special Issue on the Global History of Science." *Isis* 101, no. 1 (March 2010): 95-158.

Fan, Fa-ti. "The Global Turn in the History of Science." *East Asian Science, Technology and Society: An International Journal* 6, no. 2 (June 1, 2012): 249–58.

Lorraine Daston, "The History of Science and the History of Knowledge," *KNOW: A Journal on the Formation of Knowledge* 1 (2017): 131–54.

Verburgt, Lukas M. "The History of Knowledge and the Future History of Ignorance." *KNOW: A Journal on the Formation of Knowledge* 4, no. 1 (March 2020): 1–24.

Week 3: Science, Race, and Empire

Seth, Suman. 2017. "Colonial history and postcolonial science studies." *Radical History Review*, 127: 63-85.

Rana Hogarth, *Medicalizing Blackness: Making Racial Difference in the Atlantic World, 1780-1840* Chapel Hill, NC: University of North Carolina Press, 2017. [Introduction, Ch 1, 3, 6]

Podcast: New Books in Medicine: A Discussion with Suman Seth on *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire*.

Mukharji, Projit Bihari. "Profiling the Profiloscope: Facialization of Race Technologies and the Rise of Biometric Nationalism in Inter-War British India." *History and Technology* 31, no. 4 (October 2, 2015): 376–96.

Week 4: NO CLASS...

...but do meet with your working groups during or outside of the seminar time slot to finalize your topic.

Week 5: Decolonization

"Medicine and Colonialism." In Fanon, Frantz. *A Dying Colonialism*. New York, NY: Grove Press, 1994.

Mbembe, Achille. "Disenclosure" in *Out of the Dark Night: Essays on Decolonization*. *Out of the Dark Night*. Columbia University Press, 2021.

Tuck, Eve, and K. Wayne Yang. 2012. "Decolonization is not a metaphor." *Decolonization: Indigeneity, education & society* 1, no. 1, 1-40.

Kumar, Prakash, Projit Bihari Mukharji, and Amit Prasad. "Decolonizing Science in Asia." *Verge: Studies in Global Asias* 4, no. 1 (2018): 24-43.

Anderson, Warwick. "Decolonizing Histories in Theory and Practice: An Introduction." 369-375; "Finding Decolonial Metaphors in Postcolonial Histories." *History and Theory* 59(3): 430-438.

Selections from La paperson. *A Third University Is Possible*. Univ Of Minnesota Press, 2017.

Week 6: "Global" Histories / "Local" Knowledges

Osseo-Asare, Abena Dove. *Bitter Roots: The Search for Healing Plants in Africa*. Chicago: University of Chicago Press, 2014.

Watson-Verran, Helen, & Turnbull, David. 1995. "Science and other indigenous knowledge systems." *Handbook of Science and Technology Studies*, edited by Sheila Jasanoff et al., 115-139.

Frumer, Yulia. "Navigation and Global Time," in *Making Time: Astronomical Time Measurement in Tokugawa Japan*. 110-130. Chicago: University of Chicago Press, 2018.

Week 7: Persons, Bodies, Kin

Final Project Proposal Submitted Before Class Today

TallBear, Kim. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. Minneapolis: University of Minnesota Press, 2013.

Hashmi, Zehra. "Making Reliable Persons: Managing Descent and Genealogical Computation in Pakistan." *Comparative Studies in Society and History* 63, no. 4 (October 2021): 948–78.

Kowal, Emma, Joanna Radin, and Jenny Reardon. "Indigenous Body Parts, Mutating Temporalities, and the Half-Lives of Postcolonial Technoscience." *Social Studies of Science* 43, no. 4 (August 1, 2013): 465–83.

Week 8: Technology, Infrastructure, Mediation

"This is the Voice of Algeria." In Fanon, Frantz. *A Dying Colonialism*. New York: Grove Press, 1994.

Gómez-Urrego, José David. "The Intersections between Infrastructures and Expectations: Repair and Breakdown in Yachay, the City of Knowledge in Ecuador." *Tapuya: Latin American Science, Technology and Society* 2, no. 1 (January 2019): 495–539.

Larkin, Brian. *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria*. Durham: Duke University Press, 2008. **[Introduction, Ch. 1-2, 7]**

Podcast: New Books in African Studies: A discussion with Noémi Tousignant, Edges of Exposure: Toxicology and the Problem of Capacity in Postcolonial Senegal.

Week 9: Haunting the Sciences

"West Africa's Ritual Geology, 800–1900" (58-85) in D'Avignon, Robyn. *A Ritual Geology: Gold and Subterranean Knowledge in Savanna West Africa*. Durham: Duke University Press, 2022.

"Introduction" and "Effendi Hauntologies" (85-114) in On Barak, *On Time: Technology and Temporality in Modern Egypt* (Berkeley: University of California Press, 2013).

"Theologies of Nature," in Elshakry, Marwa. *Reading Darwin in Arabic, 1860-1950*. Chicago: University of Chicago Press, 2014.

Mukharji, Projit Bihari. "Occulted Materialities." *History and Technology* 34, no. 1 (January 2, 2018): 31–40.

"Testimony in Counter Point," 33-75 in Pandolfo, Stefania. *Knot of the Soul: Madness, Psychoanalysis, Islam*. Chicago; London: University of Chicago Press, 2018.

Week 10: Postcolonial Digital Studies

Joanna Radin, "'Digital Natives': How Medical and Indigenous Histories Matter for Big Data," *Osiris* 32 (2017): 43–64

Philip, Kavita, Lilly Irani, and Paul Dourish. 2012. "Postcolonial computing: A tactical survey." *Science, Technology, & Human Values* 37(1): 3-29.

Ali, Syed Mustafa. 2016. "A brief introduction to decolonial computing." *XRDS: Crossroads, The ACM Magazine for Students* 22(4): 16-21.

Benjamin, Ruha. 2019. "Engineered Inequity: Are Robots Racist?" in *Race After Technology: Abolitionist Tools for the New Jim Code*. Polity Press. 49-76.

Couldry, Nick, and Ulises A. Mejias. 2019. "Data colonialism: Rethinking big data's relation to the contemporary subject." *Television & New Media* 20(4) 336-349.

Burrell, Jenna. 2011. "User agency in the middle range: Rumors and the reinvention of the Internet in Accra, Ghana." *Science, Technology, & Human Values* 36(2): 139-159.

Week 11: Postcolonial Environments

Badami, Nandita. "Let There Be Light (Or, In Defense of Darkness)." *South Atlantic Quarterly* 120, no. 1 (January 1, 2021): 51–61.

Carey, Mark. *In the Shadow of Melting Glaciers: Climate Change and Andean Society*. New York: Oxford University Press, 2010. **[Introduction, Ch. 7]**

Chakrabarty, Dipesh. 2012. "Postcolonial studies and the challenge of climate change." *New Literary History* 43(1): 1-18.

Hecht, Gabrielle. 2009. "Africa and the nuclear world: labor, occupational health, and the transnational production of uranium." *Comparative Studies in Society and History* 51(4): 896-926.

Fa-ti, Fan. "Collective Monitoring, Collective Defense': Science, Earthquakes, and Politics in Communist China." *Science in Context* 25, no. 1 (March 2012): 127–54.

Week 12: Working Group #1 Topic and Readings TBD

Week 13: Working Group #2 Topic and Readings TBD

Week 14: Working Group #3 Topic and Readings TBD