PUBLIC CONTROVERSIES:

THE RHETORIC OF SCIENCE AND DATA LITERACY

TEXTS AND REFERENCES:

Oreske, N. (2019). *Why Trust Science?* Princeton University Press.
ISBN-13: 978-0691179001

COURSE DESCRIPTION

Rhetoric both produces scientific knowledge and communicates it. Beyond simply writing about science, this course considers the philosophy, history, and rhetoric of science. That is, we are concerned with how we produce knowledge and apply that knowledge in society. This course examines the rhetorical features of science and the ways in which humans construct knowledge about the world. We discuss science as a general field of knowledge and way of knowing (epistemology), but we also delve deeper into specific topics such as climate change, medicine and vaccination, health and bodies, and media representations of science. Further, this course also conceives of scientific data as rhetorical, like language. In scientific discourse, we cite statistics to support arguments; we describe in subjective detail findings in research studies; we selectively circulate narratives built from numbers. As important as it is to learn how to collect scientific data, it is equally important to learn how to analyze and say something with, and about, that data, because data never speaks for itself. In an era of citizen science, this course prepares Honors students for the deliberative nature of science by teaching them how science is defined, constructed, and communicated.

QUESTIONS WE EXPLORE

Where does scientific knowledge originate?
How does language mediate our understanding of reality?
How does rhetoric shape our understanding of science?
Is science a "rhetorical activity?"
Does rhetoric produce knowledge or simply communicate it? How do we situate knowledge and ourselves in relation to it?
Which responsibilities and duties attend the communication of science?

GENERAL SYLLABUS

MODULES

Module Zero: Defining Our Terms

We define foundational vocabulary: rhetoric, science, and data.

Module One: Defining Science
We review foundational and popular understandings of science as a discipline from the Pre-Socratics to the Enlightenment to the Postmodern current day. We also include non-Western, indigenous cosmogonies of the "natural" world as counternarratives.

Module Two: Constructing Science
We consider science as a constructive discipline that shifts over time and alters our understanding of reality, empirical and otherwise.

Module Three: Communicating Science
We practice communicating scientific research and data to diverse audiences and interested parties.

Module Four: Controversies
We examine contemporary scientific controversies, and we offer strategies and interventions for better communication.

ASSESSMENTS

Article Discussion (200 pts.)
Students will lead a class discussion of an assigned article, providing an overview of its central arguments and conclusions and facilitate a class discussion and/or activity. This discussion should be around fifteen minutes.

Public Controversy Critique Blog Post (100 pts.)
Students will identify a topic of scientific controversy and offer a critique of its public interpretation and debate. For example, students may critique the current discourse surrounding anti-vaccine sentiment and its interaction with scientific research on vaccine efficacy. The post should be one single-spaced page.

Midterm Annotated Bibliography (200 pts.)
Students will create an annotated bibliography. They will research 8-10 sources (half scholarly and half non-scholarly) for their Final Project and provide 1.) onetwo paragraphs summary for each source and 2.) one application/connection paragraph for each source. That is, how will this source be useful for your final project? The annotated bibliography should be double-spaced and adhere to MLA 8 conventions.

Public Controversy Intervention Blog Post (100 pts.)
Students will identify a topic of scientific controversy and move beyond mere critique by introducing a rhetorical intervention/solution. For example, if students explore the public controversy of mask mandates during a global pandemic, they

should advocate an "intervention" to help solve the rhetorical problem. The task here is to communicate across ideological divides as opposed to solving the scientific crisis. The post should be one single-spaced page.

Final Project: *YouTube* Explainer Video of a Scientific Controversy (300 pts.)
Students will create a short *YouTube* video (5-7 minutes) with an accompanying video script explaining a public scientific controversy to a general audience. They will take a rhetorical approach. Students should include current, relevant data to justify claims and should also include counternarratives to nuance their discussion. Group work for this assignment is optional but not required.

Engagement (100 pts.)
Students will complete weekly reading checks and will also keep a plant communication diary. More details on this to come, but generally each student will document their communication with a more-than-human living being. This record can take the form of a blog, website, diary, or series of short videos.

Calendar

Module 0, Defining Our Terms: We define foundational vocabulary: rhetoric, science, and data.

T 1/11	Introductions: Instructors, Students, Class/Syllabus Review of Rhetoric Sign-Up for Article Discussion (200 pts. throughout) Boke, Charis. chapter "Plant Time" in An Ecotopian Lexicon. University of Minnesota Press, 2019.
T 1/18	Chapters 1 and 2 from Oreskes, Naomi. *Why Trust Science?* Princeton University Press, 2019. Harris, Allen. (1991). "Rhetoric of Science." College English 53(3), 282-307.

Module 1, Defining Science: We review foundational and popular understandings of science as a discipline from the Pre-Socratics to the Enlightenment to the Postmodern current day. We also include non-Western, indigenous cosmogonies of the "natural" world as counternarratives.

T 1/25	Kuhn, T. S. (1996). Excerpt from Structure of Scientific Revolutions (pp. 1-22). Chicago, IL: University of Chicago Press. Barad, Karen. Chapter Eight: "The Ontology of Knowing, the Intra-activity of Becoming, and the Ethics of Mattering" from Meeting the Universe Halfway. Duke University Press, 2007 Share Plant Diary Excerpts for Engagement (100 pts. throughout)
T 2/1	Ornatowski, Cezar. (2007). Rhetoric of Science: Oxymoron or Tautology? The Writing Instructor. 1-15. Coda: "Values in Science" from Oreskes, Naomi. Why Trust Science? Princeton University Press, 2019. Public Controversy Critique Blog Post (100 pts.)

Module 2, Constructing Science: We consider science as a constructive discipline that shifts over time and alters our understanding of reality, empirical and otherwise.

T 2/8	Abeles, Oren. (2016). The agricultural figures of Darwin's evolutionary rhetoric. *Quarterly Journal of Speech,* 102(1), 41–61. O'Gieblyn, Meghan. Excerpt from *God, Human, Animal, Machine: Technology, Metaphor, and the Search for Meaning*. Doubleday, 2021.
T 2/15	Smagorinsky, P. (2008). The Method Section as Conceptual Epicenter in Constructing Social Science Research Reports. *Written Communication,* 25(3), 389–411. Lisa Stenmark. "Thinking through Three Revolutions." *Unsettling Science and Religion*, edited by Lisa Stenmark and Whitney Bauman, Lexington Books, 2018, pp. 69-87. Data Literacy Exercise and Review

T 2/22	Fahnestock, J. (1999). Accommodating Science: The Rhetorical Life of Scientific Facts. Alex Carr Johnson. "Toward A Bright and Messy Future: The Global Ecological Crisis, the Problem of Heteronormative Bias, and the Necessity of a Queer Ecological Imagination." *Unsettling Science and Religion*, edited by Lisa Stenmark and Whitney Bauman, Lexington Books, 2018, pp. 221-240. Positionality Exercise Midterm Annotated Bibliography (200 pts.)

Module 3, Communicating Science: We practice communicating scientific research and data to diverse audiences and interested parties.

T 3/1	Ceccarelli, Leah. (2011). "Manufactured Scientific Controversy: Science, Rhetoric, and Public Debate." *Rhetoric and Public Affairs* 14(2), 195-228. Meghan O'Gieblyn. "A Species of Origins." *Interior States: Essays.* Anchor Books, 2018.
T 3/8	Philip Eubanks. Excerpt from *The Troubled Rhetoric and Communication of Climate Change: The argumentative situation*. Routledge, 2015. Katharine Hayhoe. Excerpt from *Saving Us: A Climate Scientist's Case for Hope and Healing in a Divided World*. One Signal Publishers, 2021. Share Plant Diary Excerpts for Engagement (100 pts. throughout)
T 3/15	Spring Break; No Class
T 3/22	McKay, Adam. *Don't Look Up*. Netflix. 2021. (In-class screening)

Module 4, Controversies: We investigate examples of significant scientific controversies from history.