

# Scientific and Technological Controversies

BASC 201/Fall 2019

Truth, Lies, Surveillance, and Bias in Science, Technology, & Journalism

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Monday & Wednesday – 11:35 PM – 1:05 PM, DUFF TH/TR 1

**Student Office Hours:** You can come visit me and ask questions about the class, work, career advice, and so on.

**Sign up here:** <https://pad.riseup.net/p/ColemanFallOfficeHours>

West Arts 285

Wednesday 1:30 PM - 3:00 PM and by appointment.

## Class Overview:

This class uses the angle of controversy to introduce students to various academic and popular approaches to the social scientific and humanistic study of science and technology. The class draws on classic academic works in diverse fields such as the history and philosophy of science, anthropology, and bioethics, while also integrating a broad range of engaging and accessible materials (editorials, op-eds and journalistic pieces) that educate and evoke critique and transformation of the complex contemporary practices, methods, and politics of science and technology.

This year the class will be organized around the interrelated themes of truth, lies, visibility/invisibility, and bias in the fields of Science, Technology, and Journalism. Among many themes, the course will examine: the nature of truth, uncertainty, and paradigm shifts in science, the role of values and bias in the design of technological production and scientific discovery, fights for openness and transparency in science and technology, and the politics of algorithms, surveillance, and leaking.

The class is organized around two weekly lectures, course readings, and movies and podcasts that students must listen to or watch before class.

## **WEEK 1: SEPTEMBER 4**

### **September 4: Introduction/s**

Loretta Jackson Heyes, “We don’t need more STEM majors. We need more STEM majors with liberal arts training.” Washington Post, February 18, 2015.

<https://www.washingtonpost.com/posteverything/wp/2015/02/18/we-dont-need-more-stem-majors-we-need-more-stem-majors-with-liberal-arts-training/>

Cindy May, "A Learning Secret: Don't Take Notes with a Laptop." *Scientific American*, June 3, 2014. <http://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/>

Please Hum Now: <https://hackcur.io/please-hum-now/>

**WEEK 2: SEPTEMBER 9 & 11**

**September 9: Ignorance and Uncertainty, How It Drives Science**

Stuart Firestein, "Ignorance: How It Drives Science." 2012. (Introduction, Chapter 1, 2)

**September 11: Ignorance, the Disunity of Science, and Uncertainty, How it Drives Science (even more)**

Stuart Firestein, "Ignorance: How It Drives Science." 2012 (Chapter 5, 6, and 7)

Listen to before class: "The Disunity of Science with Peter Galison." CBC, How To Think About Science - 2017 <http://www.cbc.ca/radio/ideas/how-to-think-about-science-part-1-1.464999>

Read Galison's bio here: <https://www.cbc.ca/radio/ideas/how-to-think-about-science-part-1-24-1.2953274>

**WEEK 3: SEPTEMBER 16 & 18**

**September 16: Exploiting/Manufacturing Scientific Uncertainty**

Watch before class: Robert Kenner, "Merchants of Doubt." 2014.

<http://linker2.worldcat.org.proxy3.library.mcgill.ca/?jHome=http%3A%2F%2Fmedia3.criterionpic.com%2Fdisplay%2F006%3Ft%3DMON2020&linktype=best>

Naomi Oreskes and Erik M. Conway, "Merchants of Doubt." 2011 (Intro. and Chapter 1)

\*For note taking: don't focus on all of the tiny details! You will get overwhelmed - there are just too many. Focus on key points, arguments, or historical turning points. For instance, on p. 16 they author's offer a key point: "The industry's position was that there was "no proof" that tobacco was bad, and they fostered that position by manufacturing "a debate" convincing the mass media that responsible journalist had an obligation to present "both sides." Writing this point down, either by copying the quote verbatim or a

short summary in your notebook is a good way to proceed for note taking in preparation for the quiz.

### **September 18: Exploiting/Manufacturing Scientific Uncertainty**

Naomi Oreskes and Erik M. Conway, "Merchants of Doubt." 2011 (p. 140-148, 162-168, p. 169-183, 197-215)

### **WEEK 4: SEPTEMBER 23 & 25**

### **September 23: The Morality of Truth and Lies**

Read first: Stanley Fish, "Don't Blame Nietzsche for Donald Trump." Foreign Policy, August 9, 2016. <http://foreignpolicy.com/2016/08/09/dont-blame-nietzsche-for-donald-trump/>

Friedrich Nietzsche, "On Truth and Lies." Unpublished manuscript, 1873.  
[http://oregonstate.edu/instruct/phl201/modules/Philosophers/Nietzsche/Truth\\_and\\_Lie\\_in\\_an\\_Extra-Moral\\_Sense.htm](http://oregonstate.edu/instruct/phl201/modules/Philosophers/Nietzsche/Truth_and_Lie_in_an_Extra-Moral_Sense.htm)

### **September 25: Language and Reality**

Carol Cohn, "Sex and Death in the Rational World of Defense Intellectuals." Signs, 1987.

Listen: "Gender and Science with Evelyn Fox Keller." CBC, How To Think About Science - 2017 <http://www.cbc.ca/radio/ideas/how-to-think-about-science-part-14-1.464990>

Transcript:

<https://static1.squarespace.com/static/542c2af8e4b00b7cfca08972/t/58ffb590db29d67edabd4e26/1493153189310/How+To+Think+About+Science.pdf>

Read Keller bio here: <https://www.cbc.ca/radio/ideas/how-to-think-about-science-part-1-24-1.2953274>

### **WEEK 5: SEPTEMBER 30 & OCTOBER 2**

### **September 30: Paradigms and Scientific Dogma**

Thomas S. Kuhn, "The Function of Dogma in Scientific Research." In A. C. Crombie (ed.), Scientific Change, 1963.

Listen: "Kuhn and the History of Science with Lorraine Daston." CBC, How To Think About Science, 2017 <http://www.cbc.ca/radio/ideas/how-to-think-about-science-part-2-1.464988>

Transcript:

<https://static1.squarespace.com/static/542c2af8e4b00b7cfca08972/t/58ffb590db29d67edabd4e26/1493153189310/How+To+Think+About+Science.pdf>

### **October 2: Knowledge and Truth in the Making**

Nancy Tomes, "The Gospel Emergent." The Gospel of Germs, 1998.

Science Satire Serpent, "Heroes of Science-Barry J. Marshall" 2012.

<http://sciencedevil.wordpress.com/2012/12/21/hero-of-science-barry-j-marshall/>

### **WEEK 6: OCTOBER 7 & 9**

### **October 7: One Truth, Occluding Other Truths: The Microbiome**

Ed Yong, "I Contain Multitudes: The Microbes Within Us and a Grander View of Life." 2016. (Chapter 2)

Peter Andrey Smith "Can the Bacteria in Your Gut Explain Your Mood?" New York Times Magazine, 2015. <https://www.nytimes.com/2015/06/28/magazine/can-the-bacteria-in-your-gut-explain-your-mood.html>

### **October 9: The Truth of Rationality and the Mad Pride Movement**

Gabriella Coleman, "The Politics of Rationality Psychiatric Survivors' Challenge to Psychiatry." *Tactical Biopolitics: Art, Activism, and Technoscience*, 2008.

Jonah Bossewitch, "Brave New Apps: The Arrival of Surveillance Psychiatry." *Mad in America*, 2019. <https://www.madinamerica.com/2019/08/brave-new-apps-the-arrival-of-surveillance-psychiatry/?fbclid=IwAR3A6jIIMKglurg07Y02ujLQILYU-U7xSC7IxUYJ0z6BWQp96I2IYQ-x0GM>

### **WEEK 7: OCTOBER 14 & 16**

### **October 14: No class and device free experiment begins.**

### **October 16: Guest Lecture with Ziya Tong**

Ziya Tong, "Introduction" and excerpts: The Reality Bubble: Blind Spots, Hidden Truths, and the Dangerous Illusions that Shape our World, 2019.

Ziya Tong, currently the vice chair of WWF Canada, has worked as a TV producer, host, and journalist for over a decade. Perhaps best known for anchoring the Discovery Channel's Daily Planet from 2008-2018, she has also hosted ZeD on CBC, hosted and produced Wired Science on PBS and The Leading Edge on The Knowledge Network. An avid adventurer and scuba diver, the title of her guest lecture is *Out of Sight, Out of Mind: The Adventures of a Science Communicator*. There will also be time to ask her questions about working in TV, journalism, environmental advocacy.

### **WEEK 8: OCTOBER 21 & 23**

#### **October 21: Knowledge From Below**

##### **Midterm Essay Due**

Steven Epstein, "The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials." *Science, Technology, & Human Values*, 1995. <http://ambounds.org/docs/716/Steven%20Epstein.pdf>

Tao Tao Holmes, "The Illegal Birth Control Handbook That Spread Across College Campuses in 1968." *Atlas Obscura*, 2016. <http://www.atlasobscura.com/articles/the-illegal-birth-control-handbook-that-spread-across-college-campuses-in-1968>

#### **October 23: Disability and Eugenics (aka Techno-Scientific Solutionism Run Amok)**

\*The reading is quite short so discussion post must address the film and reading in equal parts

Adam Cohen, "Introduction" and pp. 128-135. *Imbeciles: The Supreme Court, American Eugenics, and the Sterilization of Carrie Buck*, 2016.

Visit and mention one thing you learned from the site in the discussion post:  
<http://eugenicsarchive.ca/>

Movie: Glynis Whiting, "The Sterilization of Leilani Muir." 1996. [available via McGill library website]

### **WEEK 9: OCTOBER 28 & 30**

#### **October 28: Disability and Work/Play**

\*Both are popular pieces and both are required for the discussion post.

Sunny Taylor, "The Right Not to Work: Power and Disability." Monthly Review, 2004.  
<https://monthlyreview.org/2004/03/01/the-right-not-to-work-power-and-disability/>

David Graeber, "What's the Point if We Can't have Fun." The Baffler, 2014.  
<https://thebaffler.com/salvos/whats-the-point-if-we-cant-have-fun>

**October 30: Midterm Exam**

### **WEEK 10: NOVEMBER 4 & 6**

#### **November 4: Implicit Bias, the Myth of Meritocracy, and A-holes at Work**

\*Clive Thompson will be beaming in via video for part of the class.

Clive Thompson, "10X, Rock Starts, and the Myth of Meritocracy." Coders: The Making of a New Tribe, 2019.

Kenneth Chang, "Bias Persists for Women of Science, a Study Finds." New York Times, 2012. <https://www.nytimes.com/2012/09/25/science/bias-persists-against-women-of-science-a-study-says.html>

Jessica Nordel, "Is this How Discrimination Ends?" The Atlantic, 2017.  
<https://www.theatlantic.com/science/archive/2017/05/unconscious-bias-training/525405/>

Shana Lynch, "Work With a Jerk? Here's How To Survive." Stanford Business, 2017.  
<https://www.gsb.stanford.edu/insights/work-jerk-heres-how-survive>

#### **Truth, Lies, Surveillance, Lies in Technology and Journalism**

#### **November 6: Surveillance and Privacy: Introduction and the Long View**

Amanda Power, "The Medieval Roots of Surveillance." 2015.  
<https://www.laphamsquarterly.org/spies/under-watchful-eyes>

David Lyon, "Surveillance Studies: An Overview." Surveillance Studies Reader, 2018.

Glenn Greenwald, "Why Privacy Matters." Ted Talks, 2014.  
[https://www.ted.com/talks/glenn\\_greenwald\\_why\\_privacy\\_matters?language=en](https://www.ted.com/talks/glenn_greenwald_why_privacy_matters?language=en)

### **WEEK 11: NOVEMBER 11 & 13**

## November 11: Work, Labor, and Surveillance

Kristie Ball, "Workplace Surveillance: An Overview." Surveillance Studies Reader, 2018.

Mark Adrejevic, "The Work of Being Watched Interactive Media and the Exploitation of Self-Disclosure." Surveillance Studies Reader, 2018.

Esther Kaplan, "The Spy Who Fired Me." Harper's Magazine, March 2015.  
<https://harpers.org/archive/2015/03/the-spy-who-fired-me/>

Listen: "Brown Box." Radiolab, January 28, 2014.  
<https://www.wnycstudios.org/story/brown-box/>

## November 13: AI and Privacy, Guest Lecture with Professor Ignacio Cofone

Ignacio Cofone is an Assistant Professor at McGill University's Faculty of Law, where he teaches Privacy Law, Business Associations, and Artificial Intelligence Law. His research explores how the law should adapt to technological and social change with a focus on privacy and algorithmic decision-making

Cathy O'Neil, "Amazon's Gender-Biased Algorithm Is Not Alone." Bloomberg, 2018  
<https://www.bloomberg.com/opinion/articles/2018-10-16/amazon-s-gender-biased-algorithm-is-not-alone>

Jeffery Dastin, "Amazon scraps secret AI recruiting tool that showed bias against women." Reuters, 2018 <https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scrapes-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G>

Julia Angwin, Jeff Larson, Surya Mattu, Lauren Kirchner, "Machine Bias." ProPublica, 2016.  
<https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

Sam Corbett-Davies, Eva Pierson, Avi Feller, Sharad, Goel, "A computer program used for bail and sentencing decisions was labeled biased against blacks. it's actually not that clear." Washington Post, 2016

<https://www.washingtonpost.com/news/monkey-cage/wp/2016/10/17/can-an-algorithm-be-racist-our-analysis-is-more-cautious-than-propublica/>

## WEEK 12: NOVEMBER 18 & 20

## November 18: Surveillance is not Equally Distributed

Simone Browne, "Dark Matters." Surveillance Studies Reader, 2018.

Malkia Cyril, "Watching the Black Body." The End of Trust, McSweeney's 54, 2018.  
[https://www.eff.org/files/2019/02/22/end\\_of\\_trust\\_interior\\_pages\\_lores.pdf](https://www.eff.org/files/2019/02/22/end_of_trust_interior_pages_lores.pdf)

### **November 20: The Trouble with Reality & Journalism/Propaganda/Bias Revisited**

Brooke Gladstone, "The Trouble with Reality: A Rumination on Moral Panic in Our Time." 2017.

Listen: "The History of Persuasion." WYNC, On The Media, 2019.

<https://www.wnycstudios.org/story/on-the-media-history-persuasion-part-1>

<https://www.wnycstudios.org/story/on-the-media-history-persuasion-part-2>

<https://www.wnycstudios.org/story/on-the-media-history-persuasion-part-3>

### **WEEK 13: NOVEMBER 25 & 27 AND DECEMBER 3**

#### **OMFG! What is to be Done?**

*Ending on a Positive, Practical Note (because what's the point if we don't?)*

### **November 25: Whistle blowing & Anonymity**

Watch video and read written portion:

Ann Skeet interviews whistle blower Tyler Shultz, 2018/2019.

<https://www.scu.edu/ethics/focus-areas/leadership-ethics/resources/a-conversation-with-theranos-whistleblower-tyler-shultz/>

Gabriella Coleman, "Reconsidering Anonymity in the Age of Narcissism." McSweeney's 54, 2018. [https://www.eff.org/files/2019/02/22/end\\_of\\_trust\\_interior\\_pages\\_lores.pdf](https://www.eff.org/files/2019/02/22/end_of_trust_interior_pages_lores.pdf)

### **November 27: Red Teaming, Security, and Hacking**

Micah Zenko, Red Teaming, 2015/ [Introduction and other chapters TBD]

Security/Anti security: <https://hackcur.io/category/anti-security/> (hactk1vat3) watch and read the videos/entries under this category

**December 3: Last class :)**

### **Final Essays Due**

Wrap up

Final thoughts

