**Scientific and Technological Controversies**

**COMS 361 (CRN 11576) / BASC 201 (CRN 15793)**

Department of Art History and Communication Studies

McGill University

Professor Gabriella Coleman

T, TH 13:05-14:05 + conference section

Arts W-215

Fall 2012

**Professor:** Dr. Gabriella Coleman / Wolfe Chair in Scientific and Technological Literacy

**Office:** Arts W-110

**Office hours**: Sign up sheet: Tuesday: 2:30-3:30

**Phone:** 514-398-8572

**E-mail:** gabriella.coleman@mcgill.ca

**Teaching Assistant:** Chris Gutierrez

**Office Hours: Wed** 1:00 – 2:00 (more hours will be available before mid term and to talk about presentations). Arts B-22

**OVERVIEW**

This course introduces students to a range of issues concerning the constitution, history, and role of controversies in science and technology. The class takes a broad view of controversies and includes, among other topics: the resolution and constitution of scientific claims, debates over the process of scientific discovery and technological invention, the moral dimensions of science and technology, the social conduits for establishing truth and debunking bad science, the role of non-experts, from patient activists to journalists, in the critique of and participation in science and technology, and the role of new technologies in engendering new political possibilities, from building “better” humans to weaponized software. The course is divided into four blocks: 1. Truthiness 2. Doing Science and Making Technology 3. Body and Mind 4. The Politics of Digital Technology. The course is resolutely interdisciplinary and features traditional academic piece from across the disciplines (including sociology, anthropology, history of science law, bio-ethics and philosophy), along with Op-Eds, podcasts, and journalism articles. Students will also be asked to critically engage with these distinct genres of writing and reasoning in their discussion and assignments.

**READINGS**

A course packet is available at the McGill Bookstore. Readings not included in course packet are posted on our course website.

Jennifer Garland, the librarian for Communication Studies, is available for support and research assistance and has office hours: Wednesdays, 1-3pm in Blackader-Lauterman.

The following books are required and available for purchase at Paragraph Books (2220 Av Mcgill College) and are also on reserve at the McGill library:

Susan McKinnon (2006) *Neo-liberal Genetics: The Myths and Moral Tales of Evolutionary Psychology*

Stuart Firestein (2012) *Ignorance: How It Drives Science*

Ben Goldacre (2009) *Bad Science*

Ben Nugent (2007) *American Nerd: The Story of My People*

**REQUIRMENTS, METHOD OF EVALUATION, AND ASSINGMENTS**

Mid-term exam 30%

Reading Responses 25% (separate instructions will be given)

Public Health Campaign 20% (group project, separate instructions will be given)

Op-Ed Final 25% (separate instructions will be given)

Attendance at lectures and class discussion is mandatory. If you have to miss the lecture, please arrange to get notes and any videos shown in class from a classmate. All cellphones, electronic devices, and wireless connections must be turned off for the duration of class. *Conference participation* is mandatory and come prepared to discuss the weeks’ readings. Students are permitted one unpenalized absence and thereafter will be penalized 1% from final course grade. More than 5 absences will result in class failure.

*The midterm exam* consists of two parts. One will be a short take home essay and we will also have a multiple choice exam in class on November 8th and will cover reading and lecture material up to that point. I will discuss its format several weeks before the exam in class.

During the course of the semester, students have to turn in one reading responses. You will be assigned a date/set of readings depending on your last name and a separate handout will be provided with detailed instructions. Since the reading responses will be integrated into my lecture, they must be e-mailed to me the morning of class by 10 a.m. Do not send the reading responses as an attachment but in the body of the email and please use the following e-mail subject: *Sci-Tech Response*). Students must also turn in a double spaced-, stapled paper copy of the reading response the day of class.

There are two other class projects and instructions will be provided later during the course of the semester.

*Grade Breakdown:*

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| Grade | Grade point | Percentages |
| A | 4.0 | 85 -100 |
| A- | 3.7 | 80 – 84 |
| B+ | 3.3 | 75 – 79 |
| B | 3.0 | 70 – 74 |
| B- | 2.7 | 65 – 69 |
| C+ | 2.3 | 60 – 64 |
| C | 2.0 | 55 – 59 |
| D (Conditional Pass) | 1.0 | 50 – 54 |
| F (Fail) | 0 | 0 - 49 |

**EMAIL POLICY**

During the academic year, I receive a considerable amount of email. In order for me to respond to my e-mail efficiently, please follow the following guidelines:

1. If you cannot see me during my office hours, e-mail me to set up an appointment; I will try to respond as soon as possible but I usually cannot accommodate a meeting in 24 or even 48 hours.

2. I read and reply to e-mail once a day and usually do not read or reply to e-mail after 5 PM or weekends.

3. Follow instructions for turning in assignments. For this class you are expected to turn in the reading responses via e-mail by 10 a.m. *and* in class. No other assignments submitted by e-mail will be accepted.

4. Grade inquiries and disputes will not be considered or discussed via e-mail. For all grade inquiries and questions about assignments, please set up an appointment with me.

5. I will not reply to e-mail inquiries regarding course matters (assignment requirements, due dates, exam structure, readings, etc.) that arise from missing class or inattention to the course syllabus. Inquiries requesting clarification will receive replies, though I would strongly prefer these inquiries to be made in class or during office hours.

**OTHER INFORMATION AND MCGILL POLICIES**

*Language:* In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded

*Accommodations*: Students requiring special testing accommodations or other classroom modifications should notify Prof. Coleman and the Office for Students with Disabilities as soon as possible. The OSD is located in Suite 3100, Brown Student Services Building, ph: 398-6009 (voice), 398-8198 (TDD), [www.mcgill.ca/osd/](http://www.mcgill.ca/osd/).

*Academic Integrity*: McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism, and other academic offences under the Code of Student Conduct and Disciplinary Procedures. (see [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/) for more information). L’université McGill attaché une haute importance à l’honnêteté académique. Il incombe par consequent à tous les étudiants de comprendre ce que l’on entend par tricherie, plagiat et autres infractions académiques, ainsi que les consequences que peuvent avoir de telles actions, selon le Code de conduite de l’étudiant et des procedures disciplinaires (pour les plus amples renseignements, veuillez consulter le site [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/)).

*Academic resources*: Students looking for additional assistance with academic reading, study, research and writing skills should consult the McGill academic resources website at: www.mcgill.ca/students/academicresources/.

*Counseling*: McGill’s Counseling Service provides extensive personal, academic, and career counseling to undergraduate and graduate students, including workshops on study skills, multiple choice exams, text anxiety/stress management. They are located in Brown Student Services Bldg, 398-3601 www.mcgill.ca/counselling/. A list of groups and workshops can be found at: [www.mcgill.ca/counselling/groups/](http://www.mcgill.ca/counselling/groups/)

*Illness*: Students are responsible for material covered in all classes, including anything missed due to illness. Examinations will not be re-scheduled and assignment due date extensions will not be provided, for any reason other than documented illness. Students unable to attend examinations or complete assignments due to illness are expected to contact me prior to the examination or due date by email and by phone. Appropriate documentation will be required to support requests for special consideration due to illness (see <http://www.mcgill.ca/students/advising/faq#a14>).

**SCHEDULE**

The following is a “working schedule.” **Class materials are subject to change** based on the interests, understanding, and general pace of the class. It is your responsibility to keep on top of any schedule changes, whether you are in class or not. If you have a concern about any of the materials, please speak to me.

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| **Week 1** |

**September 4: Voting Day**

No class

**September 6: Introduction**

Introductory lecture

**Conference section**

No conference section this week

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| **Week 2** |

**September 11: Framing Technology**

Langdon Winner “Do Artifacts Have Politics?” *The Whale and the Reactor*, 1986.

**Block One: Truthiness**

**September 13: Truth’s Hegemony and Shades of Reality**

Ian Hacking “Making Up People” *Science Studies Reader*, 1999.

Fredrick Nietzsche “On Truth and Lies”

http://oregonstate.edu/instruct/phl201/modules/Philosophers/Nietzsche/Truth\_and\_Lie\_in\_an\_Extra-Moral\_Sense.htm

**Conference section**

No Conference section this week

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| **Week 3** |

**September 18: Establishing Truth and Debunking “Truth”**

Nancy Tomes “The Gospel Emergent.” *The Gospel of Germs*, 1998.

**September 20: Bad Science**

Susan McKinnon *Neoliberal Genetics*, 2006.

**Conference section**

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| **Week 4** |

**September 25: Bad Science/ Journalistic Mediation**

Ben Goldacre *Bad Science*, 2010. [chapters TBD]

Patrick Ball “When It Comes to Human Rights, There Are No Online Security Shortcuts.” *Wired*, 2012.

http://www.mail-archive.com/liberationtech@lists.stanford.edu/msg00873.html

Gabriella Coleman “Everything You Know about Anonymous is Wrong” *Al Jazeera English*, 2012.

http://www.aljazeera.com/indepth/opinion/2012/05/201255152158991826.html

Christopher Soghoian“When Secrets aren’t Safe with Journalists.” *New York Times* http://www.nytimes.com/2011/10/27/opinion/without-computer-security-sources-secrets-arent-safe-with-journalists.html

**Block Two: Making Technology and Doing Science**

**September 27: How Open Should Science Be?**

Adrian Johns “Intellectual Property and the Nature of Science” *Cultural Studies*, 2006.

Michael Specter “The Deadliest Virus” *The New Yorker*, 2012.

Listen to before class: “When Patents Attack” *This American Life*, 2011.

http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack/

**Conference section**

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| **Week 5** |

**October 2: How Open Should Technology Be?**

Chris Kelty “Inventing Copyleft” *Contexts of Invention*, 2010.

**October 4: Space Research**

1. Guest Lecture by Janet Vertesi

### Janet Vertesi “The Mars Exploration Rover Mission.” *Leadership in Science and Technology: A SAGE Reference Handbook,* 2011.

**Conference section**

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| **Week 6** |

**October 9**:  **Ignorance**

Stuart Firestein *Ignorance*, 2012.(chapter 1, 2, 3, and 7)

**October 11: The Moral Economy of Science**

Lorraine Daston “The Moral Economy of Science.” *Osiris*, 1995.

**Conference section**

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| **Week 7** |

**Block Three: Body and Mind**

**October 16: Building Better Humans**

Michael Sandel “The Case Against Perfection.” *The Atlantic*, 2004.

http://www.theatlantic.com/magazine/archive/2004/04/the-case-against-perfection/302927/

Henry Greely et al. “Toward responsible use of cognitive-enhancing drugs by the healthy” *Nature*, 2008.

**October 18: New Genetic Technologies and Disability Rights**

Adrienne Asch “Disability Equality and Prenatal Testing: Contradictory or Compatible?” *Florida State University law Review*, 2003.

Ruth Cowan “Medical Genetics is not Eugenics.” *Chronicle for Higher Education*, 2008.

http://chronicle.com/article/Medical-Genetics-Is-Not/25463

**Conference section**

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| **Week 8** |

**October 23: Gender**

Jennifer Light “When Computers were Women.” *Technology and Culture*, 1999.

Emily Martin “The Egg and the Sperm.” *Beyond the Body Proper,* 2007.

**Listen to before class**:

http://www.cbc.ca/ideas/episodes/2012/04/26/the-gender-trap-part-2/

**October 25: The Brain**

Cornelius Borck “Toys are Us: Models and Metaphors in Brain Research.” *Critical Neuroscience*, 2012.

Sudan Greenfield “How Digital Culture is Rewiring our Brain.” *Sydney Morning Herald,* 2012

http://www.smh.com.au/opinion/society-and-culture/how-digital-culture-is-rewiring-our-brains-20120806-23q5p.html

**Conference section**

Public Health presentations

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| **Week 9** |

**October 30: Anxiety**

Guest Lecture by our teaching assistant, Christopher Gutierrez

# Maura Kelly, “Trickle-Down Distress: How America's Broken Meritocracy Drives Our National Anxiety Epidemic” *The Atlantic* , 2012

A Very Modern Trauma [on PTSD], <http://mindhacks.com/2012/08/11/a-very-modern-trauma/>

**Block Four: The Politics of Digital Technology**

**November 1: Technology and Democracy**

Evgeny Morozov “Whither Internet Control?” *Journal of Democracy*, 2011.

Felix Stadler “Between Democracy and Love.” *The Social Media Reader*, 2012.

Alice Matonni “Beyond Celebration: Toward a More Nuanced Assessment of Facebook’s Role in Occupy Wall Street” *Cultural Anthropology*, 2012. http://culanth.org/?q=node/643

**Conference section**

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| **Week 10** |

**November 6: Review Session**

Mid term review

**November 8: Exam**

In Class Exam and bring in your mid-term essays

**Conference section**

(no conference section)

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| **Week 11** |

**November 13: Privacy and Anonymity**

Guest Lecture by Christopher Prince, Strategic Policy Analyst Office of the Privacy Commissioner of Canada

Daniel Solove“I’ve Got Nothing to Hide and Other Misunderstandings of Privacy.” *San Diego Law Review*, 2007

Report by Office of the Privacy Commisioner of Canada “A Matter of Trust: Integrating Privacy and Public Saftey in the 21st Century” (preamble only), 2010

<http://www.priv.gc.ca/information/pub/gd_sec_201011_e.asp#toc3>

**November 15: OP-EDs!**

Presentation on how to write an op-ed

**Conference section**

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| **Week 12** |

**November 20: Hidden from Plain Sight**

Tarelton Gillespie “Can an Algorithm be Wrong?” *Limn*

http://limn.it/can-an-algorithm-be-wrong/

Trevor Timm and Parker Higgins “Nobody Knows You’re a Drone.” *The New Inquiry*, 2012.

http://thenewinquiry.com/essays/nobody-knows-youre-a-drone/

In class: TED talk Kevin Slain: “How Algorithms Shape Our World,” 2011. <http://www.ted.com/talks/kevin_slavin_how_algorithms_shape_our_world.html>

**November 22: Corporate (Technological) Rule**

Siva Vaidhyanathan “Render us To Caesar: How Google Came to Rule the Web.” The Go*oglization of Everything*, 2011.

**Conference section**

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| **Week 13** |

**November 27: Technological Identities (and so much more)**

Ben Nugent *American Nerd: The Story of My People,* 2008.

**November 29: Technological Identities (and so much more)**

Ben Nugent *American Nerd: The Story of My People*, 2008.

**Listen to before class:**

*The Turing Problem:*

*http://www.radiolab.org/blogs/radiolab-blog/2012/mar/19/turing-problem/*

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| **Week 14** |

**December 4: Final Class**

Wrap up

**OpEd due Monday December 4rd in class**

