Science Forward

Macaulay Honors College Seminar 3 – MHC 20301 HNR3

Meeting Time: Mondays & Wednesdays 2:00pm – 3:15pm

Location: NAC 5/142

Instructor: Dr. Kelly L. O'Donnell
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Office Hours: Email for an appointment in person or via Skype/Zoom/Google Hangout.

ITF: Kelly Eckenrode
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ITF Office Hours: NAC 4/150 Thursdays from 12p-2p or by email

Course Description

Science Forward is a skills-based course that focuses on scientific thinking in the context of a variety of different fields of science. We will focus on the specific skills that allow one to have good Science Sense. These skills fall into broad categories: Number Sense, Data Sense, and Knowledge Sense.

Science Sense is…

- being able to distinguish science from non-science.
- the ability to recognize how people collect and process facts into knowledge.
- the ability to recognize how a collection of facts becomes knowledge.
- being able to question and evaluate information that is presented as scientific.
- being an informed consumer, evaluator, and practitioner of science.

Student Learning Outcomes

- Students will hone their Science Sense during this course, specifically:
    - Students will acquire a proper sense of scale and be able to make order of magnitude estimates with reasonable assumptions.
    - Students will understand and get experience with measurement and data collection through activities in the field (including a BioBlitz common event) and be able to create and communicate their results using graphs and basic statistics.
    - Students will become familiar with proper experimental design and the practice of scientific inquiry.
    - Students will understand that science makes progress and changes through time based upon newly available evidence.
- Students will practice their critical thinking skills and employ reasonable skepticism.
- Students will learn how to communicate science to different audiences through two group projects.
- Students will leave this course with an appreciation for the similar set of skills employed by scientists in seemingly disparate fields of scientific inquiry.
- Students will recognize that these skills are not only applicable to their coursework, but also to their daily lives.

Course Structure and Schedule
The specific fields of science that we explore each week will be the context for our Science Sense training. We roughly follow a spatial/temporal scale order from large (studying the cosmos) to small (studying molecules). details for each class are in the reading list at the end, but here is a quick guide to the right.

This course requires students to read/watch the required science content outside of the classroom and to be prepared to use that content during discussions and activities inside the classroom. It is very important to complete the required videos and readings before coming to class and think about the parts you find most fascinating or most difficult. If you are prepared for class in this way, then we can use class time to address the most difficult aspects of the material and work together to apply the knowledge you have gained.

Class #	Field of Scientific Inquiry
1-2	Philosophy of Science
3-4	Astronomy
5	ITF session
6	Geology
7-8	Climate Change
9-10	Urban Ecology
11-12	Evolution
13-14	Agricultural Science
15-16	Water
17-18	Energy
19-20	Neuroscience
21-22	Intelligence
23-24	Drug Discovery & Design
25	poster practice session
26	Medicine
27	Pseudoscience & Health
28	Science & Society

Attendance
CCNY gives instructors the right to establish their own attendance policy (see https://www.ccny.cuny.edu/standards/faq). In this course, attendance is mandatory at all class meetings (this includes one 3-4 hour shift at the BioBlitz and one 2 hour session at the end of semester poster conference (the STEAM Festival). Attendance and lateness will be recorded in every class meeting. There will be a grade deduction for each unexcused absence and more than two unexcused absences can result in a failing grade. Absences can be excused for religious observances, academic conferences (with documentation), university athletics, or illness, however the following conditions **MUST BE MET**:

1) **Notice prior to class:** the student sends email notification at least one week in advance (or if ill, anytime before class begins)

2) **Request for make up work:** the student requests and completes a make up assignment.

I will not chase these requirements down, YOU must provide them.

Required Text
O'Donnell KL, LA Brundage, and J Ugoretz (executive producers). 2018. Science Forward Video Series. *Science Forward OER*. URL: http://cuny.is/scienceforward. These freely available videos serve as the backbone content for the course (they are labeled as "**SF video**" in the reading list below). We will also be using chapters from free online textbooks, primary scientific literature available in the CUNY libraries and/or popular press articles and videos. No book needs to be purchased for this course.

Academic Integrity
Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the educational mission of the City University of New York and the students' personal and intellectual growth. You are expected to know and follow the guidelines put

forth in the Macaulay Honors Pledge (available here) and CUNY's Policy on Academic Integrity (available here).

Assignments and Grading
Assignments for Science Forward include both individual and group work. You are expected to complete all assignments on time. Using data from the BioBlitz, you will complete a group research project to be presented as a poster at the STEAM Festival in December. Grading details for individual assignments will be provided to you in a separate document. Dates and brief descriptions for these assignments are on the next pages. Your final grade in this course will be a letter grade, although individual assignments will usually be graded on a number scale. The grade breakdown is as follows:

Participation – 30%
Research Poster Project – 30%
Video Project – 20%
News Essay – 10%
Small Writing Assignments – 10%

Accessibility and Accommodation
To the best of our ability, materials used in this course should be accessible to you. Videos in the Science Forward Video Series have closed captioning (when viewed via YouTube), written transcripts, and are available with audio descriptions of the visual content. If you are having trouble accessing any of the assigned readings or videos, do not hesitate to let me know and I will try to fix the issue.

Please make an appointment to see me if you have a disability that requires accommodation for participation in this course. I will make every effort to accommodate your needs. Students with disabilities are also encouraged to contact the CCNY AccessAbility Center for additional assistance.

Anti-Harassment Statement
In order to maintain an environment conducive to personal and intellectual growth, harassment of any kind is prohibited in our classroom and on our course site. CCNY's Office of Affirmative Action, Compliance, and Diversity has additional policy information here. CUNY's policy on sexual misconduct can be found here.

The University strictly prohibits the use of University online resources or facilities, including our course site, for the purpose of harassment of any individual or for the posting of any material that is scandalous, libelous, offensive or otherwise against the University's policies. For online interactions that happen through our course, we will follow the CUNY School of Professional Studies guide to an online academic setting available here.

Science Forward - Grades and Assignment Due Dates

Assignments for Science Forward include both individual and group work. You are expected to complete all assignments on time and you will lose points for late assignments. Using data from the BioBlitz, you will complete a group research project to be presented as a poster at the STEAM Festival in December. Most assignments are divided into smaller pieces with individual deadlines and most of these assignment parts are due via submission forms on our course site. Please do not email me these files unless I explicitly ask for them there.

Descriptions and Timelines

Participation – 30% of final grade

Participation includes attending every class, arriving on time to class, being actively engaged with the material we are discussing, and contributing to group work. Your participation will be judged by the group work you hand in at the end of class and by my observations of you during class.

A note on attendance: If you have an excused absence, you will not lose any participation points for that day. However, participation points will be subtracted for being late to class or missing class without an acceptable excuse. You may make up some lost points for missing group work by doing BOTH of the following: 1) letting me know **before** class that you are unable to attend AND 2) requesting a make up assignment and completing it on time.

You are also required to attend two common events: the **BioBlitz** and the **STEAM Festival**. The BioBlitz is a 24-hour species diversity survey where students are teamed with scientists to find as many species as they can. Each student will attend one 3-4 hour shift of their choosing on either September 7 or 8. The STEAM Festival is where you will present your research poster project. Students are required to attend one session of this conference on either December 7 or 8. Registration for both of these events will happen outside of class at the BioBlitz and STEAM Festival websites.

Small Writing Assignments – 10% of final grade

There will be a small writing assignment (one minute papers, reflections, etc.) at nearly every class meeting. Occasionally, these writings will happen online. They will be graded on a three-point scale (3 = good, 2 = fair, 1 = poor). Your lowest 3 of these will be dropped. They will usually be administered at the beginning of class; if you are late, you won't be able to make them up, so you will receive a 0 for that SWA. One of these assignments will require you to attend a free, off-campus science event of your choice at some point during the semester and reflect on it (this one is called "Science in the City"). Details and a list of qualified events can be found on our course site.

News Essay – 10% of final grade

Your first major assignment is an essay that reports on a scientific finding as if you were writing for a newspaper. You will choose one recent peer-reviewed science article and write it up as the latest news for the science section of this newspaper. You cannot choose an article that has already been covered heavily in the popular press (including blogs). The word count should be between 400-500 words and

the assignment will be graded on a four-point scale. All items are to be submitted to the appropriate location on our course site by 5pm on the dates listed here:

- **Thursday, September 5** – Fill out the form on our course site for the citation of the journal article you are interested in reporting on. You may email me this ahead of time if you are having trouble finding a journal article or if you want extra feedback from me on whether it is appropriate.
- **Monday, September 16** – Essay Worksheet due via online form.
- **Monday, September 23** – Essay due via online form.

Semester-long Research Poster Project – 30% of final grade

The research poster project is the largest portion of your grade and we will be working on it throughout the entire semester. You and your group are to come up with a research question about the BioBlitz and test it using BioBlitz data and/or additional data that you collect during the semester. The final output is a research poster to be presented at the STEAM Festival. This project will be a large undertaking and so it is broken down into smaller parts that are due throughout the semester. Note that some of these dates fall within the due dates for the other assignments. The project will be graded on a four-point scale. All items are due by 5pm on the dates listed below:

- **Monday, September 18** – Research question due via online form.
- **Monday, September 23** – Question choice survey completed. Link will be emailed to you.
- **Monday, October 7** – Project proposal worksheet due via online submission.
- **Monday, October 28** – Annotated bibliography due via online submission.
- **Monday, November 18** – Data analysis and main findings due via online submission.
- **Monday, November 25** – Poster draft due via online submission.
- **Monday, December 2** – Poster practice in class. Be ready to give a 2 minute presentation.
- **December 3-6** – Poster printing days at the Macaulay Building.
- **Friday, December 6** – Deadline for submitting your final poster file.
- **Saturday and Sunday, December 7 and 8** – You will present your printed poster at the STEAM Festival on one of these days.

Video Project – 20%

Your second major group project is a video. The goal is to produce a 2-3 minute video that explores a scientific topic for a public audience in the style of the Science Forward Video Series. There will be time during class to work with your group and our ITF on this project. It will be graded on a four-point scale. All items are due by 5pm on the dates below:

- **Monday, October 21** – Outline due via online submission.
- **Monday, November 4** – Draft video due via online submission.
- **Monday, November 11** – Final video due via online submission.

Science Forward Readings and Assignments

Readings may be changed, but you will be notified at least two weeks in advance of any changes.

#	Date	Topic & Science Senses	Video/Reading	Assignments
1	Wednesday, Aug 28	**Course Intro & Philosophy of Science** **KS:** Nature of Science	1. ***SF video:** The Science Senses ***NOTE:** We will be engaging with this video in class this week. For all other weeks, you must read and watch the materials **BEFORE** coming to class.	• Join the course site and create your student profile.
	Monday, Sept 2	*NO CLASS*	*LABOR DAY*	
2	Wednesday, Sept 4	**Philosophy of Science** **KS:** Nature of Science, Communicating Science, Peer-review	1. **SF video:** What is Science? **2. Reading:** The University of California Museum of Paleontology, and the Regents of the University of California. 2017. "Nature of Science" chapter in *Understanding Evolution* OER. (There are 7 pages to click through)	
3	Thursday, Sept 5 *NOTE: This day follows a **Monday** schedule.*	**Astronomy** **NS:** Estimation, Sense of Scale **KS:** Asking Scientific Questions	1. **SF video:** Tools of Seeing 2. **SF video:** Astronomy 3. **Reading:** Ch 1: Science and the Universe: A Brief Tour *from* OpenStax, *Astronomy*. 13 Oct 2016. 4. **OPTIONAL Reading:** Ch 2: Numbers and Physical Reality *from* White and Dennin. 2008. *Science Appreciation: Introduction to Science Literacy*. Read sections 2-A & 2-B (pgs. 17-38). 5. **OPTIONAL Reading:** Alegado, R. 2019. Opponents of the Thirty Meter Telescope fight the process, not science. *Nature.* 572:7. [pdf link]	• ESSAY: citation due by 5pm.
	Saturday, Sept 7 – Sunday, Sept 8	***BioBlitz!***	*No required readings or videos for this event. Be thinking of scientific questions you can ask of the data you are collecting and HAVE FUN!* **1. OPTIONAL video:** Ward, Jason. 2019. Birds of North America: How to Use Binoculars. **2. OPTIONAL video:** Ward, Jason. 2019. Birds of North America: Warblers in Central Park.	*You will have a written reflection on this event due as a short writing assignment blog post.*

#	Date	Topic & Science Senses	Video/Reading	Assignments
4	Monday, Sept 9	**ITF Workshop**	*No readings or videos. Bring some questions about the scientific research process.*	
5	Wednesday, Sept 11	**Astronomy** **DS:** Proxies	1. **SF video:** Astronomy 2. **Reading:** Billings. 2014. Astronomers Search for Moons Circling Distant Exoplanets. *Scientific American.* 310(1). [pdf] 6. **Reading:** Ch 5: Radiation and Spectra. REQUIRED SECTIONS TO READ: 5.2, 5.3, and 5.6 A Brief Tour *from* OpenStax, *Astronomy*. 13 Oct 2016. 7. **OPTIONAL Reading:** The rest of chapter 5 in the Open Stax Astronomy text.	• BioBlitz Reflection (online SWA) post by 5pm.
6	Monday, Sept 16	**Geology** **KS:** Nature of Science	1. **SF video:** Geology 2. **Reading:** Cleland C. 2001. Historical science, experimental science, and the scientific method. *Geology.* 29(11):987-990. [pdf]	• ESSAY: worksheet due by 5pm.
7	Wednesday, Sept 18	**Climate Change** **NS:** Sense of Scale **KS:** Modeling	1. **SF video:** Climate Change 2. **Reading:** Riebeek. 2011. The Carbon Cycle. *NASA Earth Observatory.* 3. **Reading:** GFDL 2018 Climate Modeling. 4. **Reading:** Hansen. 2004. Defusing the Global Warming Time Bomb. *Scientific American.* [pdf] 5. **OPTIONAL Reading:** Ch 19: Climate Change *from* Earle. 2015. Physical Geology. 6. **OPTIONAL Reading:** Cox *et al.* 2000. Acceleration of global warming due to carbon-cycle feedbacks in a coupled climate model. *Nature.* 408:184-187. [pdf]	• POSTER: Question due by 5pm.
8	Monday, Sept 23	**Climate Change** **DS:** Proxies, Data Analysis, Interpreting Graphs, Uncertainty	1. **SF video:** Scientific Uncertainty 2. **Reading:** Hansen *et al.* 2012. Perception of climate change. *PNAS*. E2415-E2423. 3. **OPTIONAL Reading:** Ch 6: Science and Politics *from* Pigliucci M. 2010. *Nonsense on Stilts: How to Tell Science from Bunk*. University of Chicago Press. [pdf]	• ESSAY: Essay due by 5pm. • Poster: Complete survey (link emailed) by 5pm.

#	Date	Topic & Science Senses	Video/Reading	Assignments
9	Wednesday, Sept 25	**Urban Ecology** **NS:** Making estimates **KS:** Asking Scientific Questions	1. **SF video:** Urban Ecology 2. **Video:** Bozeman Science: Biodiversity. 3. **Video:** TED talk: Sukhdev - What is the price of nature? 4. **Reading:** Ch 44: Ecology and the Biosphere *from* OpenStax, *Biology*. OpenStax. 21 October 2016. Read ONLY: Intro, Sec 44.1, 44.2, 44.5. 5. **Reading:** Cardinale et al. 2012. Biodiversity loss and its impact on humanity. *Nature.* 486:59-67. [pdf] 6. **OPTIONAL Reading:** Costanza et al. 1997. The value of the world's ecosystem services and natural capital. *Nature.* 387:253-260. [pdf]	
	Monday, Sept 30	*NO CLASS*	*Rosh Hashana*	
10	Wednesday, October 2	**Urban Ecology** **KS:** Designing Experiments, Making Progress in Science	1. **Video:** SciShow: The Times and Troubles of the Scientific Method You will be assigned one of the following readings in Class #9. Either: **ONLY ONE Reading:** Helden and Leather. 2004. Biodiversity on urban roundabouts—Hemiptera, management and the species–area relationship. *Basic and Applied Ecology.* 5:367-377. OR **ONLY ONE Reading:** Cheptou PO, O Carrue, S Rouifed & A Cantarel. 2008. Rapid evolution of seed dispersal in an urban environment in the weed *Crepis sancta.* *PNAS.* 105(10):3796-3799.	
11	Monday, Oct 7	**Evolution** **DS:** Visualizing Data **KS:** Nature of Science, Communicating Science, Applying Scientific Knowledge	2. **SF video:** Evolution 3. **Reading:** Darwin 1859. Selections from the first four chapters of the Origin 1859. [pdf] NOTE: This is a long reading, please give yourself some time to enjoy it. 4. **OPTIONAL Reading:** Ch 7: Science in the Courtroom *from* Pigliucci M. 2010. Nonsense on Stilts: How to Tell Science from Bunk. University of Chicago Press. [pdf]	• POSTER: Proposal worksheet due by 5pm.

#	Date	Topic & Science Senses	Video/Reading	Assignments
	Wednesday, October 9	*NO CLASS*	*Yom Kippur*	
	Monday, October 9	*NO CLASS*	*Columbus Day – Think about meeting with your project group to discuss the poster and/or video.*	
12	Wednesday, October 16	**Evolution** **DS:** Analyzing Data, Visualizing Data, Looking for trends **KS:** Applying Scientific Knowledge	1. **Reading:** Palumbi, SR. 2001. Humans as the world's greatest evolutionary force. *Science.* 293(5536):1786-1790. [pdf] 2. **Reading:** Harris M, G Taylor, & J Taylor. 2007. *CatchUp Math and Statistics for the Life Sciences*. New York: WH Freeman and Company. Ch. 28 and 29. [pdf]	
13	Monday, October 21	**Agriculture** **NS:** Sense of Scale, Estimates **DS:** Analyzing Data, Interpreting Graphs	1. **SF video:** The Challenge of Food 2. **Reading:** Godfrey HCJ *et al.* The challenge of feeding 9 billion people. *Science.* 327(5967): 812-818.	• VIDEO: Outline due by 5pm.
14	Wednesday, October 23 (Mole Day!)	**Agriculture** **DS:** Recognizing Bias, Uncertainty **KS:** Making Evidence-based Arguments	1. **Video:** Jonathan Foley TED talk: The other inconvenient truth **2.** **Reading:** Freedman, DH. 2013. Are engineered foods evil? *Scientific American.* Pgs. 80-85. [pdf]	
15	Monday, October 28	**Water** **NS:** Estimates **KS:** Applying Scientific Knowledge	1. **SF video:** Water 2. **Reading:** Ch 13: Water Availability and Use *from* Doršner. 2015. *Essentials of Environmental Science.* 3. **Reading:** Pimentel *et al.* 1997. Water Resources: agriculture, the environment, and society. *BioScience.* 47(2):97-106.	• POSTER: Annotated bibliography due by 5pm.

#	Date	Topic & Science Senses	Video/Reading	Assignments
16	Wednesday, October 30	**Water** **DS:** Analyzing Data, Stats	1. **Video:** Science 360 - Sustainability: Water Series Los Angeles and Water Imports. 2. **Reading:** Ch 2: Descriptive Statistics *from* OpenStax. *Introductory Statistics*. OpenStax. 19 July 2013. 3. **OPTIONAL Reading:** NYC DEP. 2017. NYC 2017 Drinking Water Supply and Quality Report.	
17	Monday, November 4	**Energy** **NS:** Estimates **KS:** Making Progress in Science	1. **SF Video:** Energy 2. **Reading:** Muller RA. 2008. Ch 5: Key Energy Surprises *from* Physics for Future Presidents. New York: WW Norton. Pgs. 65-76. [pdf] *Watch only one of these (to be assigned in class):* 3. Green Revolution: Hydrogen 4. Green Revolution: Biomass 5. Green Revolution: Wind Power 6. Green Revolution: Solar Power 7. Green Revolution: Microbes 8. **OPTIONAL Reading:** Muller RA. 2012. Ch IV: What is Energy? *from* Energy for Future Presidents. New York: WW Norton. Pgs. 281-290. [pdf] 9. **OPTIONAL Video:** SciShow - The Why, How, and How Much of Oil	• VIDEO: Video draft due by 5pm.
18	Wednesday, November 6	**Energy** **DS:** Analyzing Data, Hypothesis testing **KS:** Making Evidence-based Arguments	1. **Reading:** Harris M, G Taylor, & J Taylor. 2007. *CatchUp Math and Statistics for the Life Sciences*. New York: WH Freeman and Company. Ch. 38 and 40. [pdf] **2. Video:** SciShow: Facts About Fracking	
19	Monday, November 11	**Neuroscience & Communication** **DS:** Analyzing Data, Proxies	1. **SF video:** Animal Communication. 2. **Video:** Science360: Mind Mappers. 3. **Reading:** Neuroimagine: Visualizing Brain Structure and Function (Read sections 2, 3, 4.2 and 4.3) from the OER *Neuroethics* by Haberfeld *et al.* 4. **OPTIONAL Reading:** Ch 35: The Nervous System *from* OpenStax, *Biology*. OpenStax. 21 October 2016.	• VIDEO: Final video due.

#	Date	Topic & Science Senses	Video/Reading	Assignments
20	Wednesday, November 13	**Neuroscience & Communication** **DS:** Analyzing Data **KS:** Designing experiments	1. **Reading:** ArriagaZhouJarvis2012 "Of Mice, Birds, and Men: The Mouse Ultrasonic Song System Has Some Features Similar to Humans and Song- Learning Birds"	
21	Monday, November 18	**Intelligence** **DS:** Making Measurements, Collecting and Analyzing Data, Stats, Proxies, Uncertainty, Recognizing Bias **KS:** Applying Scientific Knowledge, Ethics	1. **Reading:** Chapter 7: Thinking and Intelligence *from* OpenStax, *Psychology*. OpenStax. 14 February 2014. 2. **Reading:** Folger T. 2012. Can we keep getting smarter? *Scientific American.* Sept 2012. [pdf]	• POSTER: Results due by 5pm. • 2 Point Threshold Activity in class (make sure you have your laptop)
22	Wednesday, November 20	**Intelligence** **KS:** Applying Scientific Knowledge, Ethics	1. **SF video:** Artificial Intelligence. 2. **Reading:** Levesque HJ. 2013. On our best behavior. From the IJCAI-13 Conference. [pdf]	

23	Monday, November 25	**Drug Discovery & Development** **KS:** Using Models, Applying Scientific Knowledge	1. **SF video:** Drug Discovery and Development. 2. **Reading:** Gorson and Holford. 2016. Small Packages, Big Returns: Uncovering the Venom Diversity of Small Invertebrate Conoidean Snails. *Integrative and Comparative Biology.* 56(5):962-972. [pdf] 3. **Reading:** Chapter 3: Biological Macromolecules *from* OpenStax. Biology. 21 October 2016.	• POSTER: Draft due by 5pm.
24	Wednesday, November 27	**Drug Discovery & Development** **KS:** Using Models, Applying Scientific Knowledge	1. **Video:** TED talk: Collins – We need better drugs now. 2. **Reading:** Mullard. 2012. Drug repurposing progammes get lift off. *Nature.* 11:1-2. [pdf]	
25	Monday, December 2	**POSTER PRACTICE**	*Be ready to give a 2 minute presentation with your poster (projected on screen NOT printed yet).*	• *Print your poster at MHC between 12/3 and 12/6.*
26	Wednesday, December 4	**Medicine** **DS:** Analyzing Data, Interpreting Graphs **KS:** Designing Experiments, Ethics	1. **SF Video:** Cancer 2. **SF Video:** Science and Ethics 3. **Video:** Placebos & Nocebos: How Your Brain Heals and Hurts You 4. **Reading:** Garber, K. 2009. Melanoma drug vindicates targeted approach. *Science.* 326:1619. **5. Reading:** FDA Drug Review Process website. Be sure to look at both the text on these two pages and the infographic. Go to Page 1 AND Page 2	• *Print your poster at MHC between 12/3 and 12/6.*
	Saturday, December 7 – Sunday, December 8	***STEAM Festival!***	*No readings or videos for this event. You will present your poster during one session of the STEAM Festival. You will have a written reflection on this event due as a short writing assignment blog post.*	

#	Date	Topic & Science Senses	Video/Reading	Assignments
27	Monday, December 9	**Medicine** **KS:** Distinguishing Science from Pseudoscience	1. **Video:** Scieence360: 21st Century Scientists: Facundo Fernandez 2. **Reading:** Chapter 26 from Bad Medicine by Christopher Wanjek	• STEAM Festival Reflection (online SWA) post by 5pm.
28	Wednesday, December 11	**Science and Society** **KS:** Nature of Science	1. **Reading:** "Science and Society" and "What has science done for you lately?" in the UC Berkeley's Understanding Science OER. link here (it's 5 pages to click through for the first part and then 7 pages to click through for the second).	• Due 12/14: Last day to submit Science in the City assignment.