Becoming Stupid:
Anti-Science in American Politics (POL 3310)

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Electronic Devices in the Classroom

No electronic devices in the classroom, please. No laptops, no tablets, no cell phones.

The exception is for students who need to use an electronic device because of a disability. If you’re in this situation, just bring a letter stating so from Disability Services and we’ll make whatever accommodation you need.

No texting in the classroom, period. Sometimes, of course, you need to text during class hours – arranging an appointment for a sick child, or answering a boss about what shift you can work that day. This is entirely understandable – just stand up and walk out of the classroom, and return when you’re done texting. I’m fine with that. Just don’t text in the room.

Grading

20% short papers & assignments  
35% ten-page research paper due May 5  
20% your contribution to your classmates’ education  
25% tests

Short papers & assignments

Although you must turn in all the short assignments to pass the course, only some of them are graded and count toward the 20% of your grade awarded for short assignments. The ones that are graded will be designated on the syllabus.
Please Print All Assignments

Anything you turn in, even the shortest assignments, should be printed out. Please do not turn in anything that is handwritten.

If you are turning in a late assignment …

… then please do not email it and ask me to print it out. Instead, print it yourself and give it to the TA.

Tests

Tests will be short and unannounced. Tests cover both readings and what happens in class. If you must miss a class, notify me by email or phone message before class begins. Make-ups of missed tests are sometimes possible, but not if you failed to notify me in advance of the absence. Also, since you are still responsible for material you missed in class, be sure to make arrangements to get class notes from a classmate, in case there is a test the day you return.

If you notify me before a class that you will be absent – and you absence comes on the day of a test – then I will not attempt to track you down with a make-up test. Instead, it is your responsibility on the day that you return to class to ask for the test before class begins.

Make-up tests may have questions on the readings for the day you missed or for the current day’s readings or both.

There is no fixed number of tests over the course of the semester. A test on any given class day is a random event. So if you see a set of blanks for a certain number of tests on Moodle, that’s just how the Moodle program sets up the web page. It has nothing to do with how many tests we’ll actually have.

Readings

In class I call on individual students cold and ask them to discuss the readings. You’re safe from being embarrassed if the readings are fresh in your mind. Therefore it is best to do the readings in the last couple of days before each class, rather than in advance. You will also do better on tests if you do the readings closer to the class day.

Since the substance of this course is highly topical, readings may be updated in the week prior to a given class, with syllabus revisions appearing on Moodle. All readings will be posted on Moodle at least two days before they are due in class.
Contribution to your Classmates’ Education

The grade for your contribution to the class is not about how much you talk. It is about what you contribute to your classmates’ education. There are many ways to contribute. This will be explained in detail in class at the beginning of the semester, with plenty of time allotted for any questions you may want to ask about it.

If you are graduating this semester …

… then make sure you have all of your assignments turned in by the last day of class. If you ask for extensions – or if you just turn things in late – then I cannot guarantee that they’ll be graded in time for graduation.

CLASSES:

January 19 – Introduction

January 21 – Mystic Science

Assignments:

   Watch it here:
   http://vimeo.com/89241669
   [length: 10 minutes]

2. Using whatever resources you like, get the answers to four questions. You don’t have to turn in anything written. Just be ready to answer these questions in class:
   (a) What was the scientific issue that made Galileo an enemy of the Church?
   (b) Why did the Church go after Galileo? What was so threatening about his discovery?
   (c) How did the Church convince Galileo to renounce what he knew to be true?

3. Again, using whatever resources you like, find out what “retrograde motion” means when we’re looking at other planets from Earth. Once you have a rough sense of what retrograde motion is, these very short clips will help you to visualize it:

   https://www.youtube.com/watch?v=72FrZz_zJFU
January 26 – What Do Americans Know about Science?

1. Read about a time when Americans were positive and excited about science:

2. Take this online quiz:
   Pew Research – Science & Technology Knowledge Quiz
   http://www.pewresearch.org/quiz/science-knowledge/

   Print out:
   - Number of correct answers you got
   - Which questions you got wrong
   - DO NOT put your name on this
   - Bring it to class

3. Contribute to a class-wide investigation of college students’ exposure to science. We’ll do this by sharing everybody’s U of M transcripts in class. But we’ll do it in a way that will protect everybody’s privacy.

   Print out your transcript and bring it to class. But first, use scissors or ink to obliterate all identifying information:
   - name
   - ID number
   - address
   - birth date
   - other schools you’ve attended besides the U
   - anything else that would tell whose transcript it is

4. Read the short quotation from Steven Pinker. You know a lot of students. Is Pinker missing something here? Or does he have it right? Be ready to give your opinion in class.

5. Science in the American popular culture:

   Find at least three interesting cultural items that illuminate how American culture sees science. We are *not* looking for news or opinion pieces. What we’re looking for is popular entertainment:
   - television shows
   - movies
   - comics
• novels
• video games
• anything else you think is good

From sources like these, find cases where science plays a part. Or find cases where a scientist appears. Or even an ordinary person who happens to be interested in science.

Then ask yourself: How are scientists and science portrayed? In class, be ready to talk about the cases you found, and what they tell you about American attitudes.

January 28 – Anti-Intellectualism in American Life

1. Read the following item – “Who Wrote This?” – on Moodle. Think about its take on science, make a guess about what kind of person wrote it, and write down your guess. Then search and find out:
   (a) where it is taken from
   (b) who oversaw the drafting of it.

2. Complete these three readings. If there is anything you don’t understand in the two pieces on Richard Hofstadter and his 1964 book, Anti-Intellectualism in American Life, then look them up. In other words, if the articles use words or terms you unfamiliar with – or if they refer to people or historical events you’re not clear about – then make sure know them before you come to class.

   Peter Weber, “America Doesn’t Trust its Experts Anymore,” The Week, October 6, 2014


   David Masciotra, “Richard Hofstadter and America’s New Wave of Anti-Intellectualism,” The Daily Beast, March 9, 2014

3. Find out:
   (a) What do people mean when they say, "Evolution is only a theory"?
   (b) In science, what is a theory? In other words, what does “theory” mean to scientists?

February 2 – Theistic Evolution, Creationism & Intelligent Design

1. Abiogenesis
Please get a good understanding of the term “abiogenesis.”
Make sure you understand its relevance to our course’s current topic.

2. Please figure out the differences between these religious reactions to evolution:

(a) Theistic Evolution  [this particular reading is the Roman Catholic version]

Patrick Cusworth, “Pope Francis’s Comments on the Big Bang Are not Revolutionary,” The Catholic Herald, October 31, 2014

http://www.catholicherald.co.uk/commentandblogs/2014/10/31/pope-franciss-comments-on-the-big-bang-are-not-revolutionary-catholic-teaching-has-long-professed-the-likelihood-of-human-evolution/

(b) Young Earth Creationism

Henry Morris, “Is Belief in the Young Earth Necessary to Be a Christian?” Institute for Creation Research
http://www.icr.org/article/belief-young-earth-necessary-be-christian/

Henry Morris, “Recent Creation Is a Vital Doctrine,” Institute for Creation Research
http://www.icr.org/article/237/306

(c) Old Earth Creationism

[length: 9 minutes]

A Creationist critique of Intelligent Design:
Hugh Ross, “More Than Intelligent Design,” Reasons to Believe, July 1, 2002
http://www.reasons.org/articles/more-than-intelligent-design

(d) Intelligent Design

http://www.intelligentdesign.org/whatisid.php


3. The 6,000 Years Problem:
If we knew for sure that the universe is only 6,000 years old, then which scientific
fields would we have to throw out? Make a list and bring it to class. In class be ready to explain why each field that you chose belongs on the list.

4. The Dinosaur Problem:
One scientific fact nearly all Americans are aware of is the fossil record of dinosaurs. Because dinosaurs hold a large place in the public imagination, most Creationists make an effort to deal with it. Please search the internet and find what you think is the most interesting Creationism explanation of the dinosaurs.

February 4 - Fake Science – The Logic & Politics of Intelligent Design

1. What's the argument in this video? Be ready to explain it in class:

   “Santorum Wants Schools To Undermine Evolution”
   https://www.youtube.com/watch?v=GLo_jfru8jA
   length: 1 minute

2. For our previous class you read a short introduction to Intelligent Design from the Discovery Institute. Today's assignment asks you to read the key paragraph from that introduction — this time side-by-side with an argument about refrigerators:

   Read: “Two Design Statements”

   Now, write a couple of short paragraphs answering two questions:

   (a) How would you rate each of the two arguments?
   (b) Is the logic in each the same or different?


4. Read these three short pieces

   Henry M. Morris, “Evil-Ution,” Back to Genesis, No. 140


   “Kansas Outlaws Practice of Evolution,” *The Onion*, November 28, 2006

February 9 - Evolution: Who Is Winning? What even Counts as Winning?

Two brief readings:

   Mike Huckabee, “Introduction” to *God, Guns, Grits, and Gravy*, St. Martin’s
Press, 2015

Dominic Preziosi, “Mike Huckabee, Bard of 'Bubba-ville',” Commonweal, January 29, 2015

**WRITING ASSIGNMENT**  [this one will be graded]:

Write a well-researched short (maximum 3 pages) paper on who is winning in the fight over evolution.

First, establish what you think really counts as winning. You don’t have to tackle everything about the evolution fight. But identify what you think really counts – it might be something about:

- major court cases
- state laws
- politics
- elections
- control of school boards
- schools
- what is actually taught in classrooms
- textbooks
- public opinion
- general trends in science knowledge or confidence in science
- cultural representations of evolution or anti-evolution
- the nature of media coverage
- OR MANY, MANY OTHER POSSIBILITIES NOT LISTED HERE. YOU DECIDE ON YOUR OWN IDEA.

After you’ve identified what counts as winning – that is, what you think really matters in this fight – explain why you made that choice. Then devote the bulk of your paper to analyzing who is winning. Doing this well will require good research and convincing evidence.

Remember, your job here is not showcase your personal opinions or political beliefs. Your job is incisive and enlightening political analysis.

**February 11 – GMOs**

**First thing:** Make sure you know what a GMO actually is.

Michael Specter, “The Mosquito Solution: Can Genetic Modification Eliminate a Deadly Tropical Disease?” The New Yorker, July 9, 2012

http://grist.org/food/the-genetically-modified-food-debate-where-do-we-begin/

Farm Basics - Bt Corn #709 (Air Date 11/6/11) [length: 4½ minutes]
https://www.youtube.com/watch?v=DbO_J0u8i-8

On the home page for the producers of the Bt Corn video you just watched, SCROLL DOWN TO THE BOTTOM AND CLICK ON A FEW OF THEIR SPONSORS. Does this affect your opinion of the video?
http://www.agphd.com/

“Your Food Contains GMOs. Help Us Get Them Labeled.” Center for Food Safety, 2015
https://www.youtube.com/watch?v=Q43N6GA8aus
[ Length = 2 minutes ]


http://rameznaam.com/2013/04/28/the-evidence-on-gmo-safety/

February 16 – What Connects Evolution Deniers & Anti-GMO People?

Readings:

“Scientists and the Public Disagree on Key Issues,” Science Friday, National Public Radio, January 30, 2015
http://www.sciencefriday.com/segment/01/30/2015/scientists-and-the-public-disagree-on-key-issues.html
[ length: 30 minutes ]

Joel Achenbach, “Why Do Many Reasonable People Doubt Science?” National Geographic, March 2015
http://ngm.nationalgeographic.com/2015/03/science-doubters/achtenbach-text

WRITTEN ASSIGNMENT – THIS ONE WILL BE GRADED

Length: 2-3 pages

Let’s say you’re trying to understand distrust and hostility toward science in the United States. If you knew only about the case of evolution deniers, you would come
to one set of conclusions. If you knew only about the case of anti-GMO people, you would come to an entirely different set of conclusions. That’s hardly surprising, for the two groups have almost nothing in common culturally, politically, even geographically.

But the fact is you know about both cases, so you should be able to make draw more refined, nuanced, and accurate conclusions about anti-science in the United States. You might consider the two groups’ beliefs, motivations, assumptions, fantasies, methods, and political strategies. You don’t have to cover everything; nor do you have to restrict yourself to the items I just listed. But you do have to:

1. Tell us something we didn’t know already – something interesting and enlightening about anti-science.
2. Do further compelling, relevant research beyond the assigned readings for the course in order to be convincing.
3. Make a clear, strong, argument.

**February 18 – Epidemics, Fear, and Hating Immigrants**

1. Please study this photograph, taken by Samuel Aranda for *The New York Times* in 2014:
   
   A 4-year-old girl thought to have Ebola lay on a floor covered with bodily fluids at the Makeni Regional Hospital in Makeni, Sierra Leone.  
   

2. Read:
   
   

3. Here are two of the most respected people in epidemiology and public health – Michael Osterholm and Paul Farmer. They disagree with each other.
   (a) Write down the points of contention between them
   (b) Note whether you tend to side with one or the other


   
   https://www.youtube.com/watch?v=I_pNMym5KMc

4. And finally, please read these four articles:
February 23 - Vaccines

Find out what is covered by the DTaP vaccine. Find out who William Carlos Williams was. Then read:

William Carlos Williams, “The Use of Force” (1938)

You may choose to look at the symptom that the doctor in the story is looking for. If you want, search for pictures of “diphtheria pseudomembrane.” Not recommended if you’re susceptible to being upset by pictures.

Short written assignment:
Please choose three different anti-vaccine websites. Write half-page analysis of what they believe is driving physicians and scientists to recommend vaccines for children.

http://spectator.org/articles/38310/andrew-wakefields-lethal-legacy

Matthew Daley and Jason Glanz, “Straight Talk about Vaccination,” Scientific American, August 16, 2011


**February 25 – Scientifically Unsound Notions of Sexuality**

*Assignment:*

Please collect a list of popular beliefs and political positions on sexuality that are scientifically unsound. Think very broadly: think of all the various aspects of sexuality that you can; think of all different kind of sources, whether from popular culture, from political life, from your upbringing, or from the endlessly weird internet. What we need here is as much variety as possible. Extra points for anything coming from a politician. You don’t have to turn anything in, but do come equipped with a set of bullet points (printed out) that other people can read. Finally, think about the motives that people have for promoting scientifically unsound beliefs about sexuality.

**March 1 – NO CLASS**

**March 3 - How to Stop Being Gay: Conversion Therapy / Reparative Therapy**

Excerpt from Joseph, Nicolosi, *Healing Homosexuality: Case Stories of Reparative Therapy*

Gabriel Arana, “My So-Called Ex-Gay Life,” *American Prospect*


**March 8 – Irrationality within Science (Part 1): Genuine Harm**

1. Please read two items:

2. WRITTEN ASSIGNMENT – THIS ONE WILL BE GRADED

Length: 2 pages

Find at least two cases of science doing real harm. Make sure your cases are in separate unrelated fields of science. For example, if one case is pharmaceuticals, the other might be physics, but not medicine. Any field of science is fine. Unusual, fresh choices are best – definitely try to avoid the obvious cases that have been done to death (for example – no papers on nuclear weapons, please!). Also, please stick to real science – not just the favorite overdone issues favored by ideologues of the left or right.

In your paper, analyze what went wrong, and whether the trouble is inherent in science or just peculiar to your particular cases. Figure out whether (or how) your cases have fed into a larger public distrust of science. And, based on your cases, offer some kind of analysis (what kind is up to you) that will tell us something we didn’t already know about the relation between science and society/politics/the public/or whatever.

March 10 - The Mad Scientist

Watch a mad scientist movie. Old movies are fine. New movies are okay, too. Obscure ones are even better. Classics of the genre (Dr. Strangelove, the most brilliant of all, for example) are excellent.

Write up some notes (to be collected, but not graded) for a detailed analysis of how what you saw relates to what’s happened in our course so far. And for goodness sake, don’t look up your movie to see what’s was written about it in a Wikipedia article. I’ve read them all, I’ve seen the movies, and I know the difference.

[SPRING BREAK]

March 22 - Climate Change – The Basics


American Association for the Advancement of Science, “What We Know: The Reality, Risks, and Response to Climate Change,” 2014

Patrick Michaels, Global Warming Scientists Scrap Real Science, Bow Before President Obama Instead,” Forbes, March 27, 2014

March 24 – Proudly Stupid: Politicians on Climate Change

1. Please re-familiarize yourself with the concept of “Teach the Controversy.” This came up earlier in the semester regarding evolution. If you've forgotten what it is, look it up.

2. Please read this one – including all the comments – with an eye to why scientists are pushing the global warming hoax:


3. Search the internet for other explanations you for why climate scientists are lying. Jot them down and bring them to class.

3. Please read:


   http://www.forbes.com/sites/jamestaylor/2014/12/03/media-go-into-panic-how-to-spin-record-cold/

March 29 & March 31 – It Starts with Tobacco: Selling Anti-Science

Documentary, Merchants of Doubt (2014), based on:

• Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming, co-authored by:
  • by Naomi Oreskes (History of Science, Harvard University)
April 5 – Corporate Money & Anti-Science Propaganda

1. **Short written assignment:**

   If you look around the internet, you'll find different definitions of a phenomenon variously called “good corporate citizenship” or “socially responsible companies.” Some of these definitions make sense; some don’t. (Also, you need to be aware that some of the definitions are self-serving and were planted on the internet under false identities by corporations themselves.) Acquaint yourself with the territory, then write your own definition of socially responsible corporate behavior — one that makes sense to you personally. Then see if you can find an example from real life that fits your definition.

2. **Please read:**


April 7 - Pseudoscience

1. Please be ready to talk in detail about the reasoning of someone you know personally who adheres to an irrational belief. (We don’t want to know their names. Keep this anonymous.) Examples of irrational beliefs might include pseudosciences, conspiracy theories, or a conviction that if one keeps buying lottery tickets, then eventually winning the lottery is a certainty. But you’ll think of other examples as well – depending on who you know. It would be best if you know the person well, or at least can talk knowledgeably and in detail about the basis and reasoning behind their particular irrational belief.

2. Write and print out one (or more, if you like) idea for a research paper. Your paper can be on anything related to the subject of anti-science. Choose something that you’re really curious about or something that you really care about. It does not have to be one of the specific subjects we covered in class – in fact it's better if it is not identical to something we covered. Be creative and original.

Get right to the point: a third of a page per idea should be sufficient. Please specify:
• why the topic is important
• the particular question you will answer, or position you take
• what kind of evidence you will use to answer the question or make your argument
• BRING TWO PRINTED COPIES OF THIS TO CLASS

April 12 – Sex

1. Read these brief items in order – from the CDC (Centers for Disease Control)

What is HPV?
http://www.cdc.gov/hpv/whatishpv.html
Symptoms and Health Consequences
http://www.cdc.gov/hpv/signs-symptoms.html
Prevention
http://www.cdc.gov/hpv/prevention.html

2. Please read:
Laura Beil, “The Truth About the HPV Vaccine,” Cosmopolitan, March 4, 2014
http://www.cosmopolitan.com/sex-love/advice/a5848/hpv-vaccine-truth/


Christopher Kaczor, “Christian Parents and the HPV Vaccine,” First Things

3. Find ways in which people misunderstand sexuality or reproduction. Bonus for examples of politicians who misunderstand sexuality or reproduction. You don’t have to write anything, but be ready to talk in detail about this in class:
   • the nature of the misunderstanding
   • is it plain ignorance?
   • is it prejudice?
   • is there some ulterior political motive or underlying purpose that drives it?

April 19 – Irrationality within Science (Part 2): Women in Science

Suzanne Goldenberg, “Why Women Are Poor at Science, By Harvard President,” The Guardian, January 18, 2005


Watch as much of this video as you want – 3 minutes, 5 minutes, or all 54 minutes. It’s up to you.
   https://www.youtube.com/watch?v=0eaWHUMjgqk

THEN, scroll down and read the comments. Please find the ones relevant to the issue of women in science. (At the bottom, click “Show more” to get the complete set.) Don’t worry, there aren’t too many.

April 21 - CONCLUSIONS (1): Political Psychologists Explain Anti-Science
No names on this one, please. Keep it anonymous:
  Think about your sources of news. The medium – newspaper, radio, television, whatever – doesn’t matter, they’re all good. The question is this: Over the course of an average week, which are the specific news sources you consult most frequently? (If you’re not sure you can trust yourself to answer this question honestly, then you might try clicking on “History” in your internet browser and see what’s there for the past week.)
PLEAS
E PRINT YOUR LIST AND BRING IT TO CLASS.


Stephan Lewandowsky, “Acceptance of Science and Ideology, Shaping Tomorrow’s World, April 28, 2011
http://www.shapingtomorrowsworld.org/ideologyScience.html

http://www.nature.com/polopoly_fs/1.11166!/menu/main/topColumns/topLeftColumn/pdf/488255a.pdf

Ezra Klein, “How Politics Makes Us Stupid,” Vox, April 6, 2014

April 26 - CONCLUSIONS (2): Science & Democracy

Sean Illing, “Neil deGrasse Tyson lets the science deniers have it: ‘The beginning of the end of an informed democracy’,” Salon, October 20, 2015
http://www.salon.com/2015/10/20/neil_degrasse_tyson_lets_the_science_deniers_have_it_the_beginning_of_the_end_of_an_informed_democracy/

Written assignment:

This whole semester you’ve probably been under the illusion that this course is about science. It’s not. It’s about democracy.

Think back over the whole course and consider everything we have done, from the beginning of the semester till now. Then answer this question: What implications does the rise of anti-science have for democracy?

Please write your answer in one page or less and bring it to class. Oh, and don’t write in vague generalities. Be specific.
April 28 – Science in the 2016 Presidential Election

May 3 - Help with Research Papers — IN SOCIAL SCIENCES BUILDING

This class time will be devoted to individual help on your research papers. Both TA and professor be in their offices in the Social Sciences Building. You are not required to come, but you are welcome if you’d like to talk.

May 5 - Research Papers Due

That is, 10 pages of superlative research, analysis, and convincing argument – all clearly written and tightly edited.