

"It is far better to grasp the universe as it really is
than to persist in delusion, however satisfying and
reassuring."
--Carl Sagan

Introduction

Supplementary Material for CFB3333/PHY3333
Professors John Cotton and Stephen Sekula
August 20, 2012

Based on the following information on the web:

<http://www.physics.smu.edu/pseudo/Intro/>

The Big First Day To Do List

- **Lecturers' background information**
- Explanation of code names
- Survey of beliefs
- Why do I need this course?
- Course information and requirements
- Plagiarism warning
- Astrology information
- Explanation of code numbers
- Attendance Quiz #1

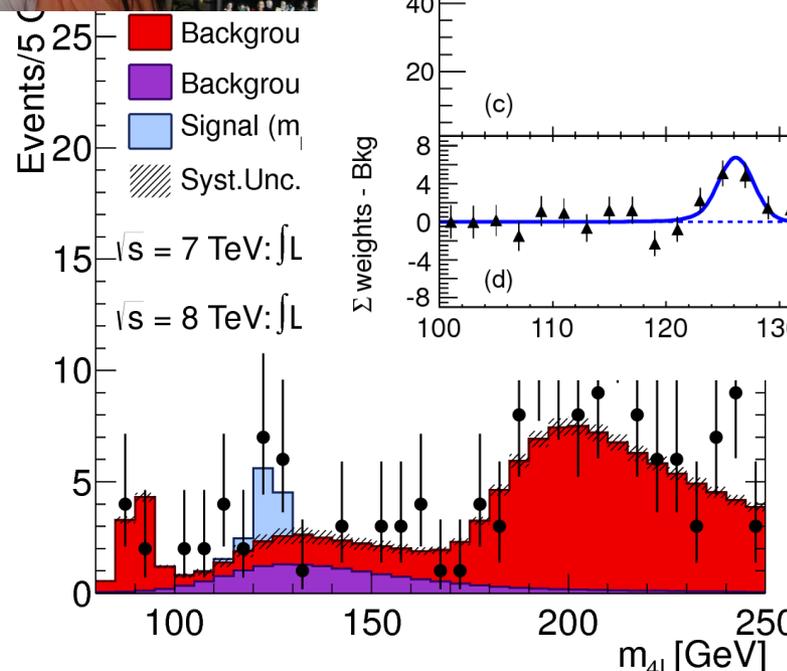
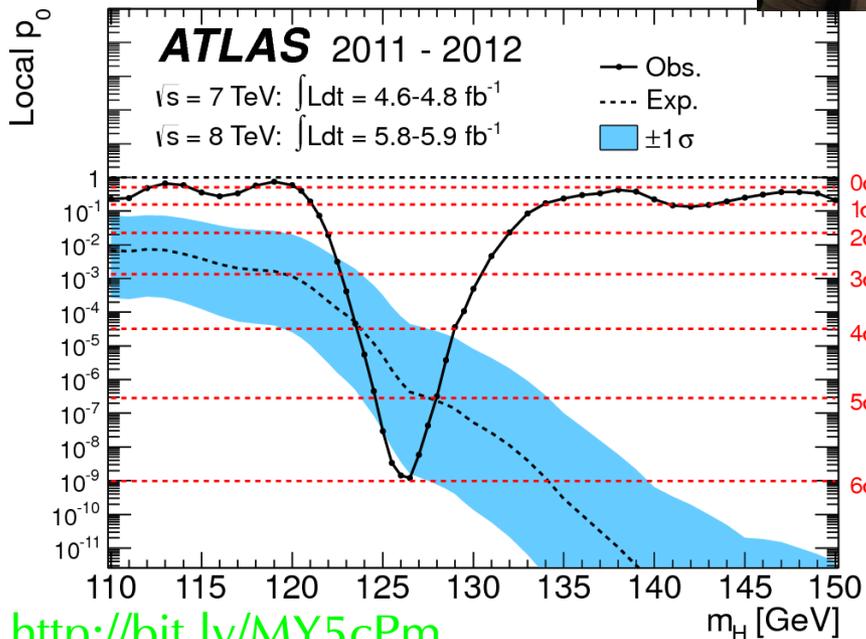
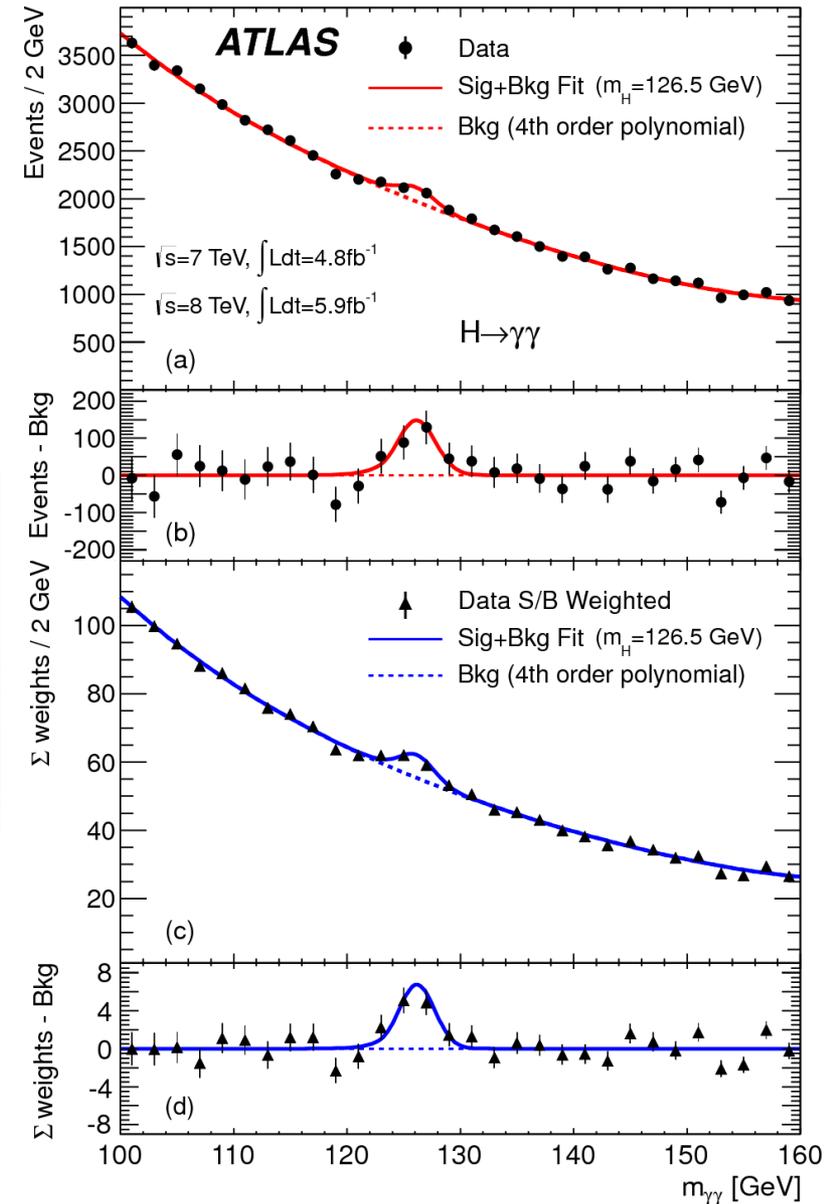
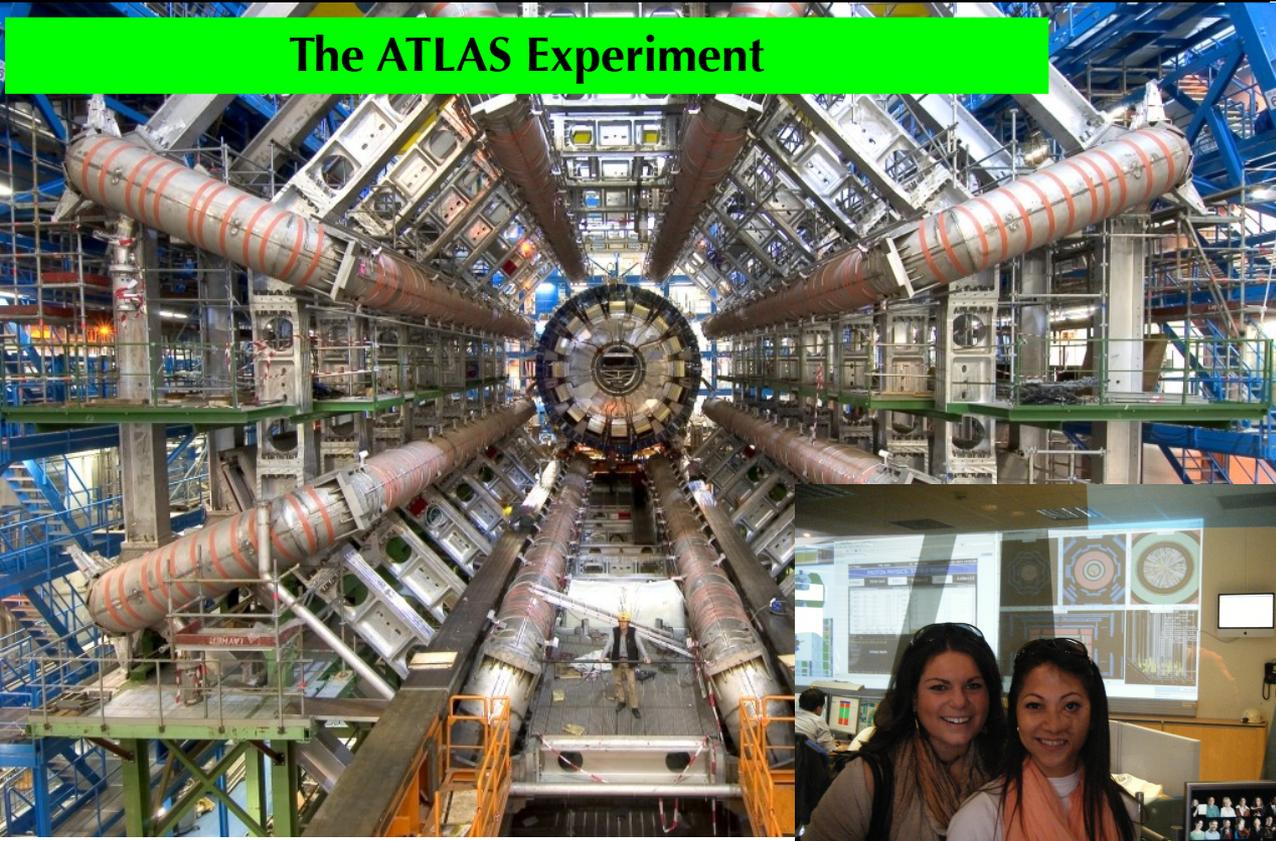
Meet your instructors

Professor John Cotton
Fondren Science 7

Professor Steve Sekula
Fondren Science 39
Twitter: @drsekula
<http://www.physics.smu.edu/sekula/>

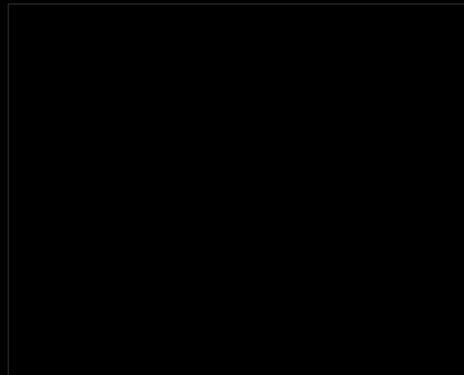
Both of us can be reached by email at pseudo@physics.smu.edu. We check this address 1-2 times per week during the semester.

The ATLAS Experiment



“Higgs Boson for Idiots”
by JACKSFILMS

<http://www.youtube.com/watch?v=rNndRK8bOu0&noredirect=1>



Interdisciplinary

You will benefit from input from additional speakers, ranging from library research to business to biology to physics.

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Why do I need this course?

- 28% of Americans surveyed believe in astrology; 18% aren't sure
- 60% believe in ESP
- 30% believe in visits by extraterrestrials
- 25-50% believe in ghosts, faith healing, communication with the dead, and lucky numbers
- You're entitled to your beliefs, but WHY you believe what you believe is important – firm beliefs can be totally wrong, and can harm or even kill.

Pseudoscience Kills

- Peter Duesberg, Professor of Molecular and Cell Biology at UC Berkeley, denies that HIV causes AIDS. Christine Maggiore, founder of Alive & Well AIDS Alternatives, and HIV+ follower of Duesberg did not take antiretroviral drugs and breast fed her two children. Her daughter, Eliza Jane (age 3), died of AIDS-related pneumonia in May 2005. Maggiore died of AIDS-related complications in 2008.



Pseudoscience Kills

Chiropractic pre-dates the Germ Theory of Disease (c.f. "Chiropractors and Vaccination: A Historical Perspective." Campbell, Busse, Injeyan. Pediatrics (The Journal of the American Academy of Pediatrics). 2000.

<http://www.pediatricsdigest.mobi/content/105/4/e43.full>

- Chiropractors are not medical doctors. No medical school in the nation offers chiropractic training.
- Chiropractors tend to dismiss vaccination as a medical means of treating disease – they believe that microscopic deviations of the spine are the source of all human disease
- They actively opposed the March of Dimes and the Polio Vaccine in 1955.
- Surveys have suggested chiropractors reject vaccination for their patients and their families. A 1998 survey of Boston chiropractors found that 63% did not advise their patients to vaccinate.

<http://www.chirobase.org/06DD/chiroimmu.html>



Dr. Marcus Ettinger delivers a chiropractic adjustment to C1 (neck) of a 4 week old baby

Pseudoscience Kills

Studies show no difference between chiropractic and placebo. Studies show that chiropractic manipulation carries tremendous health risks.

- Manipulation of the neck caused fatal strokes in 45-year-old Lana Dale Lewis in 1996, and 21-year-old Laurie Jean Mathiason in 1998.
- Reference: Skeptical Inquirer Vol. 28, No. 3, May/June 2004.
- <http://quackfiles.blogspot.com/2006/12/must-see-dangers-of-chiropractic.html>

Actor Kevin Sorbo. At the height of his career (~1997), he had a chiropractor manipulate his neck to help him relieve arm pain. Moments after leaving the chiropractor, he suffered three strokes. A real medical doctor might have diagnosed the aneurysm causing his arm pain, which was accelerated when his neck was manipulated and caused the strokes. He was lucky to survive.



Pseudoscience Kills

People are refusing to vaccinate their children in growing numbers . . . why? Many reasons:

- They believe they are living “healthy lifestyles” free from medicines and chemicals. They think disease is natural and kids should experience it.
- They argue that no one can force them to vaccinate (the American idea of “freedom from being told what to do”)
- They cite discredited research linking vaccination to other diseases, for which there is no actual evidence. For instance, Jenny McCarthy is the modern spokesperson for anti-vaccination as autism prevention. Tons of published and peer-reviewed research has shown over and over that there has never been such a link. Yet the myth persists.

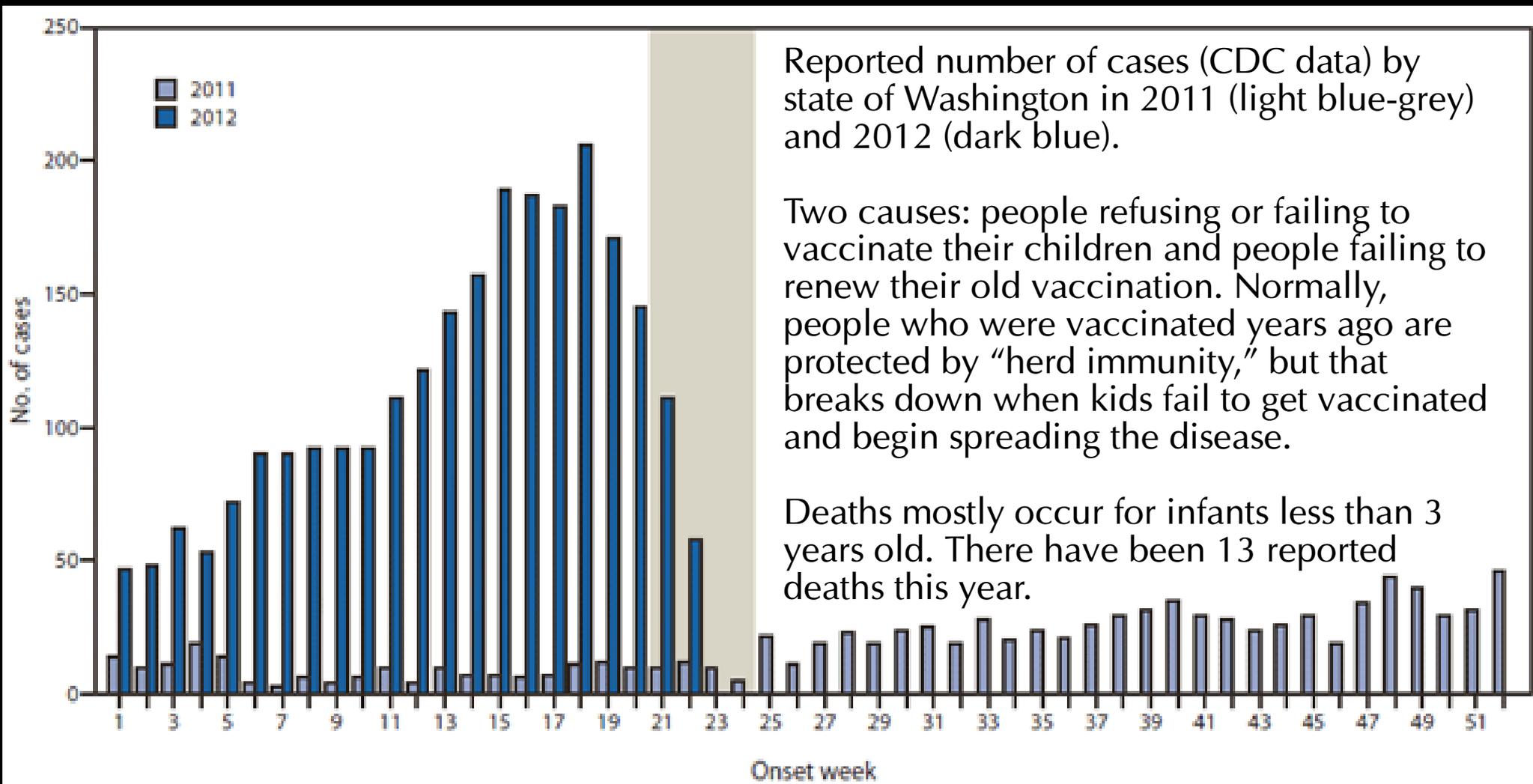
Jenny McCarthy, her one-time boyfriend Jim Carrey (actor, comedian), and her son. McCarthy’s son was diagnosed with autism and she claims he recovered thanks to diet. She claims he got autism from vaccination. He was likely mis-diagnosed.



Andrew Wakefield kicked off the modern anti-vaccination movement by publishing a later-retracted and much discredited research paper that claimed a link between vaccination and autism. No independent research could reproduce his claims. He lives in Texas now.



Pseudoscience Kills



Pseudoscience Kills

- 10-year-old Candace Newmaker died while being smothered with pillows and a flannel sheet during "attachment therapy" in 2001.
 - Reference: <http://healthwatcher.net/Quackerywatch/Attachment-therapy/>
- 5-yr old Abubakar Tariq Nadama died while receiving chelation therapy August 2005. He was autistic. He was being treated for heavy metal (lead, mercury, etc.) poisoning. Lead and mercury DO NOT CAUSE AUTISM.
 - Reference: <http://www.post-gazette.com/pg/05237/559756.stm>

More Examples on the Web

<http://www.physics.smu.edu/pseudo/Intro/>

More To Do...!

- Course information and requirements
- Plagiarism warning
- Astrology information collected for an individualized horoscope reading
- Explanation of code numbers
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Goals, Objectives, Learning Outcomes

General Cultural Formations Learning Outcomes

Students will demonstrate the ability to use inter/multi-disciplinary approaches for understanding complex issues.

Specific CFB3333/PHY3333 Learning Outcomes

Students will be able to detect pseudoscience in its many guises: paranormal phenomena, free-energy devices, alternative medicine, intelligent design creationism, and many others.

Students will learn to think critically and to question outlandish claims, hype, and outright BS.

Students' writing will improve.

Students will be able to distinguish credible sources of information from nonsense; students will become intelligent consumers of information.

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Grades

CFB 3333

Attendance / Participation	5%	
Homework / Abstracts	10%	(drop lowest one)
Reading quizzes	10%	(drop lowest one)
Book report #1	10%	
Book report #2	10%	
7-page paper	15%	
(average first and second attempts of midterm paper)		
15-page paper	20%	
Final examination	20%	

Attendance Policy

- Attendance is part of your final grade
 - checked via attendance quizzes, etc.
- You are allowed 6 UNEXCUSED ABSENCES
 - As of the 7th, you automatically fail the course
 - No pleading, no whining, no “buts”
 - Excused absences don’t count as part of your 6
 - see <http://www.physics.smu.edu/pseudo/attendance.html>
and <http://www.physics.smu.edu/pseudo/disability.html>

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Be a Smart Consumer: How does CFB3333 Stack Up?

- See how the CFB3333 workload compares to other Cultural Formations classes. Dean Dennis Cordell in the General Education Office says that the minimum CF load is:
 - 150 pages per week reading (over 2000 per semester),
 - 20 pages writing + rewrites per semester
- CF3324 An Archeology of Values - Foster, Gattens
 - Two 5-page analysis papers, midterm, final, attendance, grooming.
 - 10 required books.
- CFA3336 Gender and Globalization - Lockwood
 - Two 7-8-page papers, midterm, final, attendance.
 - 4 books.
- CFA3399 In Search of Ice Age Americans - Meltzer
 - 15-20-page (minimum) research paper, midterm, final, attendance, tardiness.
 - 2 books, 26 journal articles.
- Notice that all of these classes include a midterm exam which we have chosen not to give.