SocGen 105A: Ways of Knowing in the Life and Human Sciences
Lecture and Discussion
T-TH 12:30-1:45
Instructor: Christopher M. Kelty
Public Affairs 1222
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Office Hours: By Appointment

What this course will teach you
In SocGen 5 you learned about problems that cross the line between different disciplines—between the social, historical and biological. Diabetes, antibiotic resistance, and obesity are problems that have multiple facets and that require knowledge from many disciplines in order to understand why and how they exist and might be addressed. In this class we move to the next level: understanding how the different styles of knowledge underlying these disciplines actually work—and might be made to work together. You will learn some of basic concepts and problems of “epistemology” (how we know, not what we know) and you will learn to distinguish different “styles of thought” in science—observational, laboratory, statistical, theoretical, etc. By the end of the course you should be able to identify the differences between these different styles, the similarities and overlaps among them, and their relative hierarchy in any given case. We will also debate—and you should be able to articulate arguments about—controversial issues like truth and relativism, the power and influence of science, objectivity and rationality, and the role of denial, secrecy and ignorance in science.

How this course is structured
This class is structured to give students alternating lecture and discussion time. There are 10 lectures in the class (usually on Tuesdays), and the rest of the days will be devoted to discussion sections in which we focus more closely on the texts and assignments in the class, engage in small-group activities, or look at visual and other material together. Attendance is required at all class meetings, unless otherwise specified.

Course Requirements
Prerequisites
SOCGEN 5 is an enforced prerequisite for Human Biology and Society majors.

Readings
Students are required to read all posted assignments before the class date on which they are assigned.

Participation in Discussion
Students are expected to participate in discussion, express curiosity and think critically about the topics of the course.

How you will be graded in this course
See “Grades and Assignments” for details.
**Syllabus**

*Part 1: Introduction to Ways of Knowing*

Is there one way of knowing or are there many? If there are many can they be compared, ranked or preferred? Can all knowledge be reduced to facts, or theories, or logic? Is it dependent on our brains or on something else? What’s the difference between belief and knowledge? Where do good ideas come from? And what is ignorance? What does it mean not to know something? How is knowing related to technology, the public, or the media?

The first part of the class will introduce students to the philosophical issues of epistemology and challenge you to think about hard problems like relativism and the distinctiveness of scientific knowledge.

*Part 2: Styles of Scientific thought*

If there are different styles of thought in science, how do they work and where do they come from? Are they styles of thought only, or are they also styles of inquiry, work, technology or representation? Are styles complementary, incommensurable, or just different ways of saying the same thing? Part 2 of this class explores a range of different styles, and how they might overlap with each other.

Part 2a: Philosophy and history
Part 2b: Observational knowledge
Part 2c: Laboratory knowledge
Part 2d: Statistical knowledge
Part 2e: Creative/Introspective knowledge
Part 2f: Knowing with computers

*Part 3: Ways of NOT knowing*

Knowing is one thing, but NOT knowing is much more interesting. The third part of the class asks what ignorance is and how it works, and raises thorny issues about things like secrecy and “denialism” in science.

**Schedule (Subject to Change)**

*Sept 27 Lecture 1: Introduction to Ways of Knowing*

Class Mechanics and an introduction to ways of knowing


**Watch:** “Yury Gitman and Joel Murphy – Pulse Sensor,” [http://vimeo.com/29197117](http://vimeo.com/29197117)

*Oct 2 No Class*

*Oct 4 Lecture 2: Styles of Scientific Thinking*

What is a style of thought, and how do we distinguish them?


**Watch:** Stephen Johnson, “Where good ideas come from” TED talk: [http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from.html](http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from.html)


Oct 9 Lecture 3: Philosophy and history as a way of knowing
Epistemology, philosophy of science, epistemological history.


Oct 11 Discussion TBD

Oct 16 Lecture 4: Observational style
The observational mode; astrology and divination; systematic observation; qualitative and quantitative observation; the educated eye vs. mechanical objectivity; observing behavior vs. observing culture


Oct 18 Discussion
Discussion of observational methods, special guest: Jessica Lynch Alfaro of the Institute for Society and Genetics.


Oct 23 Lecture 5: From Observation to Experiment
Anthropologists observe what goes on in a lab...


Watch: Brian Cox, “CERN’s Supercollider” http://www.ted.com/talks/brian_cox_on_cern_s_supercollider.html

Oct 25 No class

Oct 30 Lecture 6: The Experimental Style
What counts as style in an experiment?


Nov 1 Discussion TBD

Nov 6 (Election Day) Lecture 7: Statistical Knowledge
The rise of statistics and probability as the guardian of truth.

Reading: Gigerenzer et.al., The Empire of Chance: How probability changed science and everyday life, Cambridge: Cambridge University Press, 1989 (pgs 203-214; 235-270)


Nov 8 Discussion TBD

Nov 13 Lecture 8: Introspective and Theoretical Styles of Knowing
Know thyself.


Nov 15 Discussion
Special Guest Michael Wartenbe (PhD, Information Studies) on the Quantified Self Movement


Nov 20 Lecture 9: Knowing with a Computer
How are computers and “Big Data” changing what we know?


Watch: Massimo Banzi “How Arduino is open sourcing imagination” TED talk http://www.ted.com/talks/massimo_banzi_how_arduino_is_open_sourcing_imagination.html

Nov 22. Thanksgiving No Class

Nov 27 Lecture 10: Ways of Not knowing 1
Ignorance of Ignorance is not Knowledge.


Nov 29 Discussion TBD

Dec 4 Lecture 11 Part 3 Ways of not knowing 2
Readings and Topics TBD

Dec 6 Presentations (if any) and Discussion

Optional Final Thu Dec 13 11:30-2:30
(See Grades and Assignments)

*If you wish to request an accommodation due to a suspected or documented disability, please inform your instructor and contact the Office for Students with Disabilities as soon as possible at A255 Murphy Hall, (310) 825-1501, (310) 206-6083(telephone device for the deaf). Website: www.osd.ucla.edu*