Sociology 636b
Ecology & Evolutionary Biology 636b
Topics in Biosocial Science

Wednesday 4:30–6:30 p.m.
Spring Term 2020
Location: Room 335, 17 Hillhouse Ave.

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Course Description:

This graduate seminar (with limited enrollment, but open to all graduate students at Yale, and undergraduates with permission) will cover topics at the intersection of the natural and social sciences, including behavior genetics, gene-environment interactions, gene-culture co-evolution, social epigenetics, and diverse other topics. We will focus on the ways in which our genes and our bodies are in a (short and long) conversation with our social environment. To what extent does our genetic makeup influence our behaviors? To what extent do our behaviors and social experiences influence our genes? To what extent do our genes increase or decrease our risk for particular outcomes given particular environmental exposures? What are the biological bases of resilience? And how does the social environment come to regulate our genome? How do social exposures reshape neural and endocrine processes? How do social exposures “get under our skin”? How are they literally embodied?

This class is a topical seminar, meaning that the material covered each year will vary, and that it will be driven by student interest and fresh scientific discoveries. We are going to run this seminar jointly, and students will suggest topics, articles, critiques, and so on, at will. Students will also lead classes, and suggest topics and readings for those classes. As a result, the syllabus will likely change as the semester progresses. Each student will lead one or more classes (depending on enrollment and topics). In 2020, we will make use of my recent book (just published in March 2019), Blueprint: The Evolutionary Origins of a Good Society to cover some of the topics. A set of proposed topics and readings for the first part of the course is laid out below.
Course Requirements:

- class participation (20%)
- in-class presentation(s) (30%)
- final paper (50%)

Students will sign up to lead or co-lead one or two of the classes during the semester (depending on enrollment and topics chosen).

The final paper (approximately 20 pages) may either be: 1) an actual research paper the student is working on, 2) a research proposal, or 3) a more conventional term paper or literature review. Guidelines for each and the due date will be discussed in class.

You should ensure that any written work you submit for evaluation is the result of your own research and writing, and that it reflects your own approach to the topic. You must also adhere to standard citation practices and properly cite any books, articles, websites, etc..

Remember: Academic integrity is a core institutional value at Yale. This includes, among other things, truth in presentation; diligence and precision in citing works and ideas; and acknowledging collaborations with others. In view of our commitment to maintaining the highest standards of academic integrity, the Graduate School Code of Conduct specifically prohibits the following forms of behavior, as you might easily expect: cheating on all forms of assessment; falsification or fabrication of data; plagiarism (i.e., the failure in any written exercise to acknowledge ideas, research, or language taken from others); and multiple submission of the same work without obtaining explicit written permission from the instructor before the material is submitted. Students found guilty of violations of academic integrity are subject to one of several nasty penalties, according to the rules of Yale University.

While there are no pre-requisites for this course, a year-long course in biology is recommended.
Class 1: January 15
Course Introduction

Class 2: January 22
Social Order, and Reductionism, Essentialism, Determinism, and Positivism


Class 3: January 29
Social Exposures and Biological Outcomes

L. Jin, F. Elwert, J. Freese, and N.A. Christakis, “Preliminary Evidence Regarding the Hypothesis that the Sex Ratio at Sexual Maturity May Affect Longevity in Men,” *Demography* 2010; 47: 579-586

Class 4: February 5
Gene-Culture Co-Evolution and the Exophenotype

T.S. Simpson et al., “Genetic Evidence for High-Altitude Adaptation in Tibet,” *Science* 2010; 329: 71-75


**Class 5: February 12**

**Animal Society and Culture**


**Class 6: February 19**

**Social Networks, Social Interactions, and Friendship**


B Hare, V. Wobber, and R. Wrangham, “The Self-Domestication Hypothesis: Evolution of Bonobo Psychology Is Due to Selection Against Aggression,” *Animal Behaviour* 2012; 83; 573-585


**Class 7: February 26**  
**Behavior Genetics and Gene-Environment Interactions**


**Class 8: March 4**  
**Social Epigenetics**


March 7–23
NO CLASS, Spring Break

Class 9: March 25
Swarm Intelligence and Animal Voting


During the latter part of the semester, we will pick topics to discuss. Possibilities include the following, as well as any others students may suggest:

Kin Recognition
Biology of Love and Partner Choice
Monogamy, Pair Bonding, and Polygamy
Facial Symmetry and Beauty
Neural correlates of social decision-making and experience (self perception, confidence, risk taking, novelty seeking, cooperation, etc.)
Animal Cognition and Decision Making
Neuroplasticity
Evolution of Cooperation
The Genetics of Personality
Race, Caste, Groups, and Genetics
Convergent Evolution in Social Processes
Evolution of Music and Art
Biological and Social Emergence
Biologically Inspired Engineering
Human Pheromones
Animal Communication
Evolution Shaping Human Minds for Fitness or Accuracy
Philosophers on the “State of Nature”

Class 10: April 1

Class 11: April 8

Class 12: April 15

Class 13: April 22