

BEHAVIORAL GENETICS
Biological Bases of Behavior 451/Psychology 407
Fall Semester, 2014: Monday 2:15-4:45 pm
Focus of seminar: Genomics and Behavior
Location: Psych Labs B50

This course will present an overview of what is known about genetic and non-genetic influences on behavior, particularly emerging knowledge about how behavior and environmental factors alter gene expression and in turn influence risk for behavioral disorders. Following an overview of basic concepts we will have seminar presentations and discussions of recent research. This semester the seminar will focus on three areas, bipolar disorder, autism/schizophrenia and obesity.

Course Director:

R. Arlen Price 898-0214, arlen@exchange.upenn.edu
Office Hours: Before or after class and by arrangement

Class Times: Each session is divided into 2 sections, **2:00-3:20** and **3:30-4:45**
Break and 2nd session times are approximate.

Syllabus:

I. Basic Concepts And Models

September

08 2:15 Introduction and History
08 3:30 Mendelian/Transmission Genetics
15 2:15 Heritability: Family, twin and adoption models
15 3:30 Genetic Syndromes, Major Gene Mutations
22 2:00 Introduction to Linkage and Association
22 2:30 The Genomics Era: The nature of genetic variation
22 3:15 Gene Identification through Linkage and Association
29 2:00 Finish Genomics, Linkage and Association
29 3:30 Discuss 'Missing' Heritability

October

06 2:00 Basic Epigenetics
06 3:30 Guest Lecture: Teresa Reyes, Epigenetic effects on behavior
13 2:00 **Midterm Exam**
20 **No formal class: All presentation topics assigned by this date**

III. Seminar: Current Topics:

27 2:00 Guest Lecture: Ted Brodtkin, Autism and Social Behavior
27 3:30 Introduction to Seminar Portion of Course

November

03 2:00-4:45 Seminar Presentations and Discussion
10 2:00-4:45 Seminar Presentations and Discussion
17 2:00-4:45 Student Presentations and Discussion
24 2:00-4:45 Seminar Presentations and Discussion

December

- 01 2:00-445 Seminar Presentations and Discussion
- 08 2:00 Any remaining student presentations
- 08 2:00 (or later) Course Review and Discussion

TBD Comprehensive Final Exam

Student Seminar Presentations

(Approximately 35-40 min plus 10-15 min discussion):

Objective: Present 1 or more related recently published research papers
(2011-2014).

Possible Presentation Outline:

- A. Give short background to place research in perspective, i.e., with other research.
- B. Briefly present methods, results and conclusions of each research paper
- C. Interpret results and evaluate critically

Evaluation of Seminar Presentations and Participation:

Quality of presentation and grasp of material.

Contribution to discussion of presentations by all students at every session is required.

(The latter is essential to making the seminar work. It also makes the sessions more interesting and fun.)

Seminar readings and presentations will be covered on final exam.

Overall Evaluation:

Midterm Exam	30%
Student Seminar Presentation	30%
Final Exam, (Mostly New Material but Comprehensive)	40%