PSYC 550: Psychiatric Pharmacogenetics

Psychiatric pharmacogenetics involves the study of four classes of genes:

- Pharmacodynamic genes: These are genes encoding drug targets (or proteins physiologically related to those targets).
- Pharmacotypic genes: Genes impacting disease presentation and subtype (genetics of the disease itself)
- Pharmacokinetic genes:
  – Genes associated with drug transport (eg ABCB1/MDR1)
  – Genes associated with metabolism (eg CYP genes)
- Adverse drug reaction susceptibility genes (eg G6PD or HLA genes)

This course builds on the FAES course "Genetic Polymorphisms Affecting Human Cognition". The present course will focus on the genetics of psychiatric disease (pharmacotypic genes) and on genetic polymorphisms relevant to commonly used psychiatric medications (pharmacokinetic genes and the genetics of adverse drug reaction susceptibility genes).

Learning Objectives

At the conclusion of the course the student should:

- Be familiar with the common genetic polymorphisms that affect the risk of psychiatric disease, and response to psychoactive drugs.
- Have a basic understanding of the molecular biology and neuroanatomy associated with those polymorphisms.
- Understand the basic concepts population genetics and the limitations of genetic association studies.

Credits: 2
Class Type: Graduate Course
Prerequisites:
PSYC 525
Program: Biology, Genetics, and Medicine