

MEDI 525: Genetic Polymorphisms Affecting Human Cognition

The study of relationships between human genotype and cognitive phenotypes are in their infancy, but even at this early stage there are a number of very well documented correlations between specific genetic polymorphisms and cognitive phenotypes such as risk of alcoholism, cognitive outcome after traumatic brain injury, and, particular personality phenotypes. We will review some of the classic papers describing specific genetic effects on cognitive phenotypes, but the focus of the course will be on the underlying molecular biology and genetics rather than the nuances of psychological testing. This course will not address the thorny questions of how to precisely define and measure cognitive phenotypes or, once the phenotypes are defined, to assess the genetic contributions to their variability. Rather we will discuss the molecular biology of specific genetic polymorphisms which are commonly studied in this context the biological reasonableness of some of these results.

Learning Objectives

At the conclusion of the course the student should:

- Be familiar with the most commonly studied human genetic polymorphisms associated with variation in cognitive phenotypes.
- 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

Program: Biology, Genetics, and Medicine