MEDI 234: Precision Medicine

The Human Genome Project (HGP) revolutionized biomedical research through the discovery and integration of Big Data. Post-HGP endeavors, such as ClinVar and the All of Us Research Program, formerly known as the Precision Medicine Initiative Cohort Program, have been designed to rapidly accelerate our research progress into clinical practice. Prevention and treatment strategies that take individual variability into account are not new concepts. However, precision medicine advances the field by leveraging technological progresses and 'omics' data to improve prediction, diagnosis, prognosis, and treatment for individual patients. This course will explore the possibilities, promises, and pitfalls of precision medicine, using real-world examples, and is intended to bridge the gap between basic biomedical research and its practical clinical applications. "What is needed now is a broad research program to encourage creative approaches to precision medicine, test them rigorously, and ultimately use them to build the evidence base needed to guide clinical practice." Dr. Francis Collins, 2015.

Learning Objectives

- Assess how The Human Genome Project has advanced technology in biomedical research
- Translate research and technology into the delivery of healthcare and basic science research findings to the benefit of the general public
- Discuss implications in privacy and policy laws for precision medicine in the age of the Affordable Care Act and the All of Us Research Program
- Present coherent case studies encompassing previous objectives, including caveats in the use of current technologies

Credits: 1
Class Type: Graduate Course
Program: Biology, Genetics, and Medicine