ethics center series:

EPIGENETICS

CHARLES DUPRAS

Protecting Privacy in the Multi-omic Era: A Case Study of Ethical and Legal Challenges Emerging With Epigenetics

Tues. Jan 28 | 11:30am - 12:45pm | SAC Salon A

FREE | Please RSVP so that we can order food: https://forms.gle/xKx5Ltc2zaLwCBFKA

Charles Dupras (postdoctoral fellow at the Center of Genomics and Policy at McGill University) is the second speaker in our Epigenetics Series. Dr. Dupras was recently awarded a three-year fellowship (2017-2020) by the Canadian Institutes of Health Research (CIHR), for pursuing his research on the translation of emerging knowledge in epigenetics.

ABSTRACT: Over the past ten years, the size and number of omics databases set up for the purposes of scientific or biomedical research have rapidly increased. Their content has not only increased quantitatively; it has also diversified qualitatively. Today, they contain not only massive amounts of genetic data about individuals and populations, ranging from single nucleotide polymorphism (SNP) to whole-genome sequencing data, but also other types of omics data such as epigenomic, transcriptomic, proteomic, lipidomic, metabolomic, and microbiomic data. While the accumulation and increased circulation of genetic data has captured much attention by ethicists and legal scholars over the past decades, the potential privacy issues raised specifically by the diversification of omics data, and their intended or unintended integration into multi-omic repositories and computation systems, have been largely overlooked. In this presentation, I will make a case for a multi-omic approach to the protection of privacy. Taking the growing scientific field of epigenetics as a case example of postgenomic sciences that may present new risks for the privacy of patients, research participants and consumers, we show, first, that privacy risks are not unique to genetic data, nor any other data type. Instead, we argue, privacy risks arise and increase with the presence and combination data properties – some of which may be shared across most omics data types – in databases or computation systems. This analysis leads us to present a broader and more inclusive framework for the identification of data-type-independent data properties that may increase privacy risks in the context of multi-omics biobanking and research.