



BIOINFORMATICS 2017 Spring SEMINAR SERIES

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<http://bioinformatics.udel.edu/Seminars/Current>

MONDAY, April 10, 2017
3:30pm
DBI Room 102

Computing Phenotypes from Electronic Health Records

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ABSTRACT:

The Patient Centered Outcomes Institute (PCORI) funds a series of Clinical Data Research Networks (CDRNs). Nemours, which is a pediatric healthcare system with hospitals in Wilmington, DE and Orlando, FL participates in one of the CDRNs called PEDSnet. PEDSnet is a network of 8 leading pediatric healthcare systems who have agreed to map their EHR data to a common data model based on the Observational Medical Outcomes Partnership's Common Data Model. The combined 8-institution dataset, which comprises medical records on over 5 million children, provides an unparalleled resource for comparative effectiveness research (CER) to determine, for example, which drugs, procedures, or treatment plans lead to the best outcomes for children's health. However, the validity of CER studies from EHR data depends crucially on correctly identifying which patients in the dataset are representative of specific diseases or conditions. That is, correctly identifying patient phenotypes. In this presentation, I'll describe the PEDSnet common data model (CDM), the processes we go through to map EHR data into the CDM, and approaches to computing (i.e., accurately identifying) the phenotypes of patients from the CDM. I'll conclude with some discussion of how we will be extending our computable phenotypes using machine learning to align EHR data with next generation sequencing data.