BIOINFORMATICS 2017 Fall SEMINAR SERIES

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3:30pm
DBI Room 102

Turing Large Healthcare Data into Clinical Intelligence Outcomes Research of Revascularization Strategies

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ABSTRACT:

In the area of cardiovascular disease, patients experiencing coronary heart disease symptoms face difficult decisions regarding the best personalized treatment decisions given their long-term risks and personal preferences: the comparative effectiveness of percutaneous coronary intervention (PCI) and coronary-artery bypass grafting (CABG). The American College of Cardiology Foundation and the Society of Thoracic Surgeons collaborated to compare the rates of long-term survival after PCI and CABG. We found that there was a long-term survival advantage among patients who underwent CABG as compared with patients who underwent PCI. Also, our health economic analysis revealed that Over a period of 4 years or longer, patients undergoing CABG had better outcomes but at higher costs than those undergoing PCI. In precision medicine, we would like to explore that whether the comparative effectiveness of PCI and CABG would actually be testing how information from a genetic risk score for statin effect modification would affect: 1) treatment decisions among the options (CABG vs. PCI); 2) their decisional conflict (sureness, understanding of risk-benefit ratio, feeling they have enough support and advice to make decision). These precision medicine questions are inherently suited for exploring the causal effect of using the genetic risk scores on hard cardiovascular disease outcomes.