

BIOSTATISTICS SEMINAR



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Challenges in Developing Learning Algorithms to Personalize Treatment in Real Time

A formidable challenge in designing sequential treatments is to determine when and in which context it is best to deliver treatments. Consider treatment for individuals struggling with chronic health conditions. Operationally designing the sequential treatments involves the construction of decision rules that input current context of an individual and output a recommended treatment. That is, the treatment is adapted to the individual's context; the context may include current health status, current level of social support and current level of adherence for example. Data sets on individuals with records of time-varying context and treatment delivery can be used to inform the construction of the decision rules. There is much interest in personalizing the decision rules, particularly in real time as the individual experiences sequences of treatment. Here we discuss our work in designing online "bandit" learning algorithms for use in personalizing mobile health interventions, immature domain science concerning the system dynamics but the need to use incorporate some domain science due to low signal to noise ratio non-stationary and limited data.

Thursday November 21, 2019

3:30 pm - 4:30 pm

Blue Cross and Blue Shield of North Carolina Foundation Auditorium



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