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Friday, November 20, 2020

12:00-1:00 pm

Zoom below:

<https://uwmadison.zoom.us/j/91539041760?pwd=OVdaR2VnOStGS0JmRzJMT2dEQIU1UT09>

Testing an Elaborate Theory of a Causal Hypothesis

Abstract: When R.A. Fisher was asked what can be done in observational studies to clarify the step from association to causation, he replied, “Make your theories elaborate” -- when constructing a causal hypothesis, envisage as many different consequences of its truth as possible and plan observational studies to discover whether each of these consequences is found to hold. William Cochran called “this multiphase attack...one of the most potent weapons in observational studies.” Statistical tests for the various pieces of the elaborate theory help to clarify how much the causal hypothesis is corroborated. In practice, the degree of corroboration of the causal hypothesis has been assessed by a verbal description of which of the several tests provides evidence for which of the several predictions. This verbal approach can miss quantitative patterns. We develop a quantitative approach to making statistical inference about the amount of the elaborate theory that is supported by evidence. This is joint work with Bikram Karmakar.



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