DEPARTMENT OF STATISTICS  
COLLOQUIA SERIES

Monday September 26th, Talk: 4:15 PM — Science Center 300H  
Reception: 3:50 PM

Guest Speaker: Marie–Abele Bind  
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Transporting established insights from classical experimental design to address causal questions in environmental epidemiology, including the understanding of biological mediating mechanisms

Abstract:

There is a fundamental gap in addressing causality in observational studies due to missing data, lack of randomization, and complications due to temporality. Measures of association are not optimal for making relevant policy recommendations because these involve suggestions for interventions, which, by their very nature, are causal, not associational, statements.

My long-term goal is to address important causal questions related to the effects of air pollution and extreme weather conditions on health outcomes (e.g., low birth weight, autism, multiple sclerosis, neurological outcomes, heat stroke, and worldwide nutritional deficiency) that have immediate policy implications, and develop statistical methodology that addresses causality when environmental health data have been collected.

The overall objective is to correctly formulate and estimate causal environmental health effects, especially in the presence of intermediate variables, by capitalizing on the collection of successful statistical methods developed in the fields of missing data as well as classical and modern multi-factorial randomized experiments over the past 80 years (essentially since Fisher, 1935).