

# **SLLS Conference 2026: Pre-Conference Workshop 2**

## **Beyond Correlation: A Researcher's Toolkit for Causal Reasoning**

### **Presenter**

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### **Duration**

Full Day

### **About**

Most research questions in applied health and social science research are causal: we aim to identify potential targets for interventions focused on improving health and wellbeing. Because randomized trials are not always feasible, we frequently rely on observational studies. Causal objectives are then often not made explicit. Acknowledging the causal nature of our research questions triggers causal reasoning which, in turn, can reduce bias and improve the quality of observational research and the resulting policy and practice recommendations. Specific causal inference methods have been developed within epidemiology and computer sciences, but their use in applied research remains limited. The overall objective of this workshop is to introduce participants to the broad domain of causal inference methods based on counterfactual theory and the potential outcomes framework.

The workshop will start with a theoretical introduction explaining the different data science tasks, counterfactual theory, the advantages of randomization and directed acyclic graphs (DAGs). Then, the use of DAGs to visualize the causal reasoning underlying a causal question will be explained. Participants will learn the basics of DAGs and how they can be developed and used to guide research design, data collection and data-analysis. Free software to develop DAGs (dagitty) will be introduced. Exercises of increasing complexity focusing on different research themes will be provided and potential solutions will be discussed in group. The presenters will present and discuss DAGs they have developed for their own research projects and the attendees will work in small groups to develop a DAG for a self-selected research question. The resulting DAGs will be discussed with the whole group. At the end of the workshop, links between the topics introduced during the workshop and more advanced causal inference topics (e.g., target trial emulation, causal mediation analyses) will be made to illustrate avenues for further exploration.