

# New Directions in Causal Inference

## Course Outline

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## 1 Data Science Methods in Causal Inference

- Why (and how) do we build models?
- Prediction versus inference
- Causal forests for heterogeneous treatment effects
- Double-LASSO methods for variable selection

## 2 Sensitivity Analyses

- Sensitivity to model specification
- Sensitivity to an unidentifiable parameter
- Sensitivity to unobserved confounders

## 3 Modern Difference-in-Differences

- Canonical difference-in-differences
- The stepped wedge design
- The Calloway-Sant'Anna approach to multiple time periods

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