2014 Main Workshop on Research Design for Causal Inference

Detailed Workshop Schedule (Preliminary)

Dates and Location: Monday July 7 (9:00) – Friday July 11 (ending at 5:00), 2014, at Northwestern Law School, 375 East Chicago Ave., Chicago IL 60611. All sessions (except Friday afternoon) will be in the “Rubloff” building, in Room 150. The Rubloff building is the “new” law building, closest to Lake Michigan, Rubloff 150 is roughly midway between Chicago Ave. on the north side and Superior Ave on the south side.

Registration and meals: Breakfast will be available each morning from 8:30 in Rubloff 155. A registration table will be open on Monday beginning at 8:00. Lunch will be provided between the morning and afternoon sessions. Snacks and liquids (coffee, tea, sodas, juice, water) will be available throughout the day in Rubloff 155.

Conference url: www.law.northwestern.edu/faculty/conferences/causalinfERENCE/frequentist/

Access to Readings: see instructions below


Introduction to Workshop (9:00-9:30) (Bernie Black):
Overview of lessons to be learned during the workshop.

Main lectures: Justin McCrary (9:30-12:30; 1:45-3:45)

Overview of causal inference and the Rubin “potential outcomes” causal model. The “gold standard” of a randomized experiment. Treatment and control groups, and the core role of the assignment (to treatment) mechanism. Causal inference as a missing data problem, and imputation of missing potential outcomes.

Readings: Imbens and Rubin, Causal Inference in Statistics and Social Sciences (draft 2014), chapters 1-8 (chapter 2 is background and can be skipped).

Stata-based examples (3:45-4:45): basic-intermediate and intermediate-advanced sessions

Note: An optional “Introductory to Stata” session will be held over lunch (Mame Maloney)

Bernie’s comment: Mame is a PhD student at Kellogg, who is working with me on healthcare projects. She is way better at Stata than I am.

Monday reception: 5:30-6:30: In central outdoor courtyard (if weather permits, otherwise inside).
Instrumental variable and regression discontinuity methods

Causal inference with instrumental variables (IV), including (i) the core, untestable need to satisfy the “only through” exclusion restriction; (ii) heterogeneous treatment effects; and (iii) intent-to-treat designs for randomized trials (or quasi-experiments) with noncompliance.

(Regression) discontinuity (RD) research designs: sharp and fuzzy designs; bandwidth choice; testing for covariate balance and manipulation of the threshold; discontinuities as substitutes for true randomization and sources of convincing instruments.

Readings:


Stata-based examples (3:30-4:30)

[reading to come]

Observational Studies: Selection on observables

Selection on observables and common support assumptions. Subclassification, matching, and regression estimators of average treatment effects. Propensity score methods: matching and weighting.

Readings:

Imbens and Rubin, Causal Inference in Statistics and Social Sciences (2014), chapters 12-22


**Stata-based examples (3:30-4:30) {Bernie Black}**


**Thursday, July 10, 2014 (Alberto Abadie) (9:00-noon)**

**Matching, Directed Acyclic Graphs (DAGs), Standard errors.**

What to match on: a brief introduction to directed acyclic graphs (DAGs). Robust and clustered standard errors. The bootstrap.

**Readings:** DAGs:


**Reading: Standard Errors**


**Thursday post-lunch talk (Bernie Black): Bloopers: How Smart People Get Causal Inference Wrong**

Examples, drawn from different areas, of how to get causal inference wrong.

**Thursday afternoon, July 10, 2014 (Jens Hainmueller): 1:45-4:45**

**Difference-in-Differences, Panel Data, and Synthetic Controls**

Simple two-period DiD; the “parallel changes” assumption. Leads and lags and distributed lag models. Accommodating covariates. Triple differences.

**Readings:**


**Friday morning, July 11, 2014 (Jens Hainmueller): 9:00-12:00**

Panel data methods. Synthetic controls.


*Suggested additional readings:*


**Friday noon, August 10 (Mat McCubbins) (12:00-12:30)**

An overview of some topics we didn’t cover but would have, given more time.

**Friday afternoon: Feedback on your own research (parallel sessions)**

Attendees will have an opportunity to present their own research design questions from current work in breakout sessions. Goal: obtain feedback on research design; not present results from a complete paper. [We ask presenters to stay for the full session, and can’t promise an early slot for those who must leave early.] (15 min to present, 15 min discussion) Session leaders: Bernie Black, Jens Hainmueller, Mat McCubbins. Parallel sessions as needed to meet attendee demand.

**Access to Readings**

Most readings (other than books), along with many additional research articles, will be posted on the workshop website, at [https://share.northwestern.edu/team/law-ciw](https://share.northwestern.edu/team/law-ciw).

You will need a Northwestern userid and password, which you hopefully already have; if not, email [law-admins@law.northwestern.edu](mailto:law-admins@law.northwestern.edu). Please use adslyournetid as the user name [note that the “domain” should be “ads”].
The first time you access the site, you will hit a second login screen. This time use your username (without “ads”) and password.

Once you are in, you will see various “collections”, such as “readings for all workshops” along the left hand side.

Instructions to move multiple files from Sharepoint to local computer:

1) Open the sharepoint page in internet explorer. Go to the folder containing the documents you want to download.

2) **Check the box** next to “Type” at the upper left corner of the documents display, as though you are “selecting all.”

3) By clicking this, a top ribbon box called “Library Tools” appears. **Click “Library.”**

4) To the middle-right of the “Library” ribbon, you see an area called “Connect and Explore.” Select **“Open with Explorer”**

5) A windows explorer window will pop up. It should be populated with all the documents from the sharepoint site.

6) You can move these files as you would anything else on your computer. For example, you can open a second explorer window and copy and paste to your computer.

Questions during the workshop: Please email Bernie Black (bblack@northwestern.edu) Michael Cooper (causalinferrance@law.northwestern.edu).