

WORKSHOP ON CAUSAL INFERENCE @ USC Marshall School of Business

The **causal inference workshop** will be taught by Scott Cunningham (<http://scunning.com/>), author of the book Causal Inference: The Mixtape.

WHEN: Tuesday/Wednesday June 4-5

WHERE: JFF LL 105

Participation is free, but I'd like to have a rough head count, so if you are interested in participating just shoot an email to Davide Proserpio @ proserpi@marshall.usc.edu.

MATERIAL

The material for the workshop can be downloaded here:

<https://www.dropbox.com/sh/4r8yo4gt1exfotn/AADrXx-tAdFF5RQPoBuv5rZda?dl=0>

SCHEDULE FOR BOTH DAYS

Breakfast 8:00 - 8:30 (provided)

Session 1 (1:45min): 8:30 - 10:15

Break (15min): 10:15 - 10:30

Session 2 (1:45min): 10:30 - 12:15

Lunch: 12:15 - 13:15 (provided)

Session 3 (2 hours): 13:15 - 15:15

Break (15min): 15:15 - 15:30

Session 4 (2 hours): 15:30 - 17:30

PROGRAM DETAILS

The workshop would cover the material in the Mixtape book. The core ideas are:

- 1) The potential outcomes model (Rubin)
- 2) Directed acyclical graphical modeling and do calculus (Pearl)
- 3) Properties of linear regression

Research designs in observational data covered:

SELECTION ON OBSERVABLES

- 1) Matching and the backdoor criterion
- 2) Regression discontinuity. It will cover fuzzy and sharp designs

SELECTION ON UNOBSERVABLES

- 3) Instrumental variables
- 4) Panel data and differences-in-differences
- 5) Synthetic control
- 6) (Maybe) matrix completion methods by Athey, et al. 2018