

Jeff Grogger
Harris School

Winter 2020
University of Chicago

PP 58002: Data Analytics II: Introduction to Program Evaluation

Winter 2020: Tuesdays, 6:00-8:50 pm; 1871, Room TBA.

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Course content: The purpose of the course is to introduce students to program evaluation and provide an overview of current issues and methods. This is a course directed not at people who seek to carry out evaluations themselves, but rather who might need to use the results from program evaluations, select contractors to carry out evaluations, or supervise their work.

Texts: Readings for each class are spelled out below. We will also make use of the text by Joshua Angrist and Joern-Steffen Pischke (AP). *Mastering Metrics*. Princeton Press.

You may also find useful their somewhat more advanced text, *Mostly Harmless Econometrics*.

Class logistics: To understand the requirements and grading for the class, it's necessary to understand how the class will work. First, think of each class as divided into two half-classes. The first week will be devoted largely to review, as will be the first half of the second class.

Starting with the second week, the second half of one class will be devoted to introducing a new topic and the theory that underlies it. I will use the indicated readings to highlight the theoretical points; students will be expected to have read these papers and participate with questions and answers during the lecture. The first half of the next class will discuss further applications, before another new topic is introduced in the second half, and so on.

For a concrete example, look at week 3. The second half of the class that week will discuss theoretical issues involved in social experiments, using Heckman and Smith (1995) and Finkelstein et al (2012) to highlight key issues. Then in the first half-class of week 4, we will discuss the social experiments reported in Chetty et al (2016) and King et al (2009).

Grading: Each week, students will prepare presentation decks (ppt, latex, or similar) on the papers to be discussed during the first half-class. They will be due by 5 p.m. on the day of class and will be submitted electronically via Canvas. These decks should be prepared as if you were going to present the paper, focusing in particular on the theoretical issues that we covered during the preceding week. Further guidelines on how to prepare these presentations will be distributed during the first week of the term. These presentation decks will count for 75 percent of your course grade.

Final exam: The final exam will count for the other 25 percent. Prior to the last class, I will distribute two or three evaluation studies. The final exam, which will be handed out at the end of the last class, will include a number of questions asking you to analyze, evaluate, and synthesize these studies. The exam will be a take-home that will be due at **11:59 pm on Saturday, March 14**. You must do your own work; discussion among students between the time that the exam is made available and the time it is due is expressly prohibited.

Course schedule and readings

Week	First half-class, including readings on which presentation decks will be based:	Second half-class, including readings that will be covered during lecture:
1.	Preliminaries; Gertler et al 2011 , chs. 1, 2, and 10; CDC 1999 , pp. 1-31 (NOTE: no presentation decks this week).	Mathematical review; review of OLS and IV regression; AP, section 1.1 and ch. 1 appendix; AP, chs. 2 and 3 (including appendices);
2.	The evaluation problem and sample selection bias; AP, ch. 1; Smith 2000 , sections 1 and 2 (NOTE: no presentation decks this week).	Treatment parameters; Smith 2000 , sections 1 and 2; Gertler et al 2011 , ch. 3; Aizer and Doyle 2015
3.	Before-after and simple cross-section estimators; Southern Coalition for Social Justice, nd ; Earth Institute 2010 (exec. summary and appendix 1) MVP Evaluation Protocol (2009) (section VI)	Social experiments; AP, ch. 1; Heckman and Smith 1995 ; Finkelstein et al 2012
4.	Social experiments; Chetty et al 2016 ; King et al 2009	Regression discontinuity; AP, ch. 4; McCrary 2008 ; Deshpande 2016
5.	Regression discontinuity;	Differences-in-differences;

	Hansen 2015 ; Pinotti 2017	AP, ch. 5; Doleac and Hansen 2017
6.	Differences-in-differences; Grogger 2002; Ridgeway, et al, 2018	Matching; Black and Smith 2004 ; Black et al 2008
7.	Matching; Desmond and Gershenson 2016	Permutation inference; Fisher 1935 , pp. 1-26; Rosenbaum 2002, ch. 2; Chetty et al. 2009
8.	Permutation inference; Cunningham and Shah 2017 ; TBD	Synthetic control; Abadie and Gardeazabal 2003 Abadie et al 2010
9.	Synthetic control; Grogger 2017 ; Powell et al 2015	Multiple hypothesis testing; Ridgeway and MacDonald 2009 ;
10.	TBD	TBD

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