PPHA 34600: Program Evaluation
SYLLABUS

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All-star TA team:
- Head TAs: Danielle Nemschoff, dinemschoff@uchicago.edu; Daisy Lu, daisylu@uchicago.edu

Course logistics:

- Course website: This course uses Canvas for all materials.

- In-person lectures: Please be on time; we will start promptly. If you are feeling unwell, please do not attend. Slides will be posted to Canvas the night before class. There is no need to email us if you cannot attend class.

- Office hours: We will hold in-person office hours, time TBD. We recommend that you prioritize bringing your questions to TA sessions over office hours, so that your classmates can also benefit from them. If you are interested in joining for office hours, please sign up for a 10 minute slot (link forthcoming). You may sign up alone, or in a group of up to 5. Please be respectful of your classmates when signing up for office hours. Any office hour sign-ups more than 2 weeks in advance without our prior permission will be deleted.

- TA sessions and TA office hours: TAs will hold TA sessions and office hours each week. The first half of each assigned timeslot will be used for TA sessions, and the second half will be used for office hours. TA sessions are not mandatory, but will be extremely helpful. We will not have time to cover coding in class; instead, this will take place through the TA sessions and office hours. We strongly encourage you to attend. You should attend the TA session for which you are registered.

- Quizzes: We will post not-for-credit comprehension check quizzes on the course’s Canvas website. These are not required and will not count towards your grade, but I encourage you to complete them to check your understanding of the material.

- Pre-recorded lectures: After covering material in class, we will post accompanying lecture recordings to the course’s Canvas website. These are intended for your review, rather than as a substitute for in-person class time.

Course description: The goal of this course is to introduce students to program evaluation, provide an overview of current issues and methods for estimating treatment impacts, and prepare students to be effective consumers of empirical evaluations of real-world policies.
A note on course sections: This course is divided into three sections, each with a slightly different focus. PPHA 34600-01 (T-Th 9:30-10:50, Keller 1022) and PPHA 34600-02 (T-Th 11:00-12:20, Keller 1022) will have an energy and environment focus and be taught by Prof. Burlig. PPHA 34600-03 will have an international development focus taught by Prof. Kelley (T-Th 11:00-12:20, Keller 0001). PPHA 34600-04 (M-W 3:00-4:20, Keller 1022) will have a general focus taught by Prof. Lane. Though each section will be taught by a different instructor, we are treating this as one large class. The three sections will share TAs, problem sets, final exams, due dates, the majority of the course material, and the curve, but we will read different papers (see below). Note that if you are taking this course to fulfill a certificate requirement in international policy and development or in energy and environmental policy, you must register for the section that corresponds with your certificate. You should attend the section you are officially registered for.

Prerequisites: PPHA 31002 and PPHA 31102 or equivalent coursework in statistics and economic theory. Students lacking these prerequisites should seek permission from the instructor.

Requirements and grading: Grades will be based on four problem sets and a final exam. Problem sets will count for a total of 75% and the final exam will count for 25%. The course is graded according to the standard core Harris curve, such that approximately 12.5% of students will receive an A, 25% will receive an A-, 25% will receive a B+, 25% will receive a B, and 12.5% will receive a B- and below. You will receive an F in this class if you receive less than 50% of the total points available.

Problem sets: Problem sets must be typed and submitted electronically. Each assignment will receive equal weight. You may work in groups of up to three on your problem sets, ask the course TAs, and get help from Harris’ R consultants, but you must turn in your own problem set, with answers written in your own words. You may share code with other members of your group, but you may not share written answers with other students (including members of your own group). Your group may include students from any section of PPHA 34600 that I am teaching. All coding in problem sets must be done in R. Due dates are as follows:
- Problem Set 1: Tuesday, April 2 at 9 pm.
- Problem Set 2: Tuesday, April 16 at 9 pm.
- Problem Set 3: Tuesday, April 23 at 9 pm.
- Problem Set 4: Tuesday, May 7 at 9pm.

Late Problem Set Tokens: Each student will receive one late problem set “token” which allows them to turn in a problem set up to 48 hours after the deadline without penalty. This token is no questions asked and will be automatically applied to the first late problem set submission for each student. After this token has been used, all late problem sets will receive no credit. Any additional extension requests must go through the Dean of Students office.

Final exam: The take-home final exam will be assigned on May 15th, and due at 9 PM on May 20th. You must do your own work and may not discuss the exam with anyone before it is due. Your exam must be typed and submitted electronically. All coding on the exam must be done in R. Late exams will receive a zero.

Re-grade policy: If you think that there is an error in the grading of your work, you must submit a typed written statement of the details of the problem in question to a TA attached to the assignment in question. The TAs will review both your reasoning and the problem and respond
within one week. We reserve the right to re-grade the assignment in its entirety. If you are requesting a re-grade based on other students’ grades, you must submit your own problem set and the other student’s problem set with your request in order to receive a re-grade. Regrades must be submitted within a week of problem sets being returned.

**Readings:** Materials for this course consist of two main items: (1) our lectures, and the accompanying slides, which will be focused on theory, and (2) a variety of papers that will be available from the course website, which will provide examples of each method. Instruction on and practice with coding will take place in TA sessions. See the schedule and reading list below for topics and associated readings.

**Additional policies:**

**Piazza:** The course will have a Piazza site, accessed through Canvas, and maintained by the TAs. If you have content-related questions, please post them on Piazza. Note that neither we nor the TAs will respond to Piazza questions submitted within 24 hours of a problem set deadline or the exam deadline.

**Email:** Please use Piazza over email for questions related to course content. If your non-content-related email cannot be answered in a paragraph or less, we will ask you to come to office hours or make an appointment so that we can discuss it in person. We will do my best to respond to emails within 48 hours (M-F). If you have not heard from me within 48 hours, please re-send your email. To greatly increase the likelihood that we (or the TAs) see your email, please be sure to include [PPHA 34600] in the subject line. There is no guarantee that we or the TAs respond to emails and/or Piazza posts sent within 24 hours of a problem set deadline or the exam deadline.

**Statistical software:** Data work for this class, including problem sets and/or the final exam, will be done in R. We recommend that you use RStudio in conjunction with the tidyverse.

**Academic honesty:** The Harris School has a formal policy on academic honesty that you are expected to adhere to. Examples of academic dishonesty include (but are not limited to) turning in someone else's work as your own, turning in the same written text as someone else on a problem set/exam, copying solutions to past years' problem sets, and receiving any unapproved assistance on exams. This course has a zero-tolerance policy for academic dishonesty. Any student found in violation of this academic honesty policy will receive an automatic F in the class. We will also refer all cases of cheating to the office of the Dean of Students. They may in turn impose further penalties as per the Harris School Disciplinary Procedures, including probation and expulsion. If you have any questions regarding what would or would not be considered academic dishonesty in this course, please do not hesitate to ask.

**ADA accommodations:** Any student who believes they may need assistance should inform the Office of Student Disability Services by the end of the first week of class. Once you have received an accommodation letter, it should be presented to the course instructor immediately. For more information, see [https://disabilities.uchicago.edu/](https://disabilities.uchicago.edu/).

**List of lecture topics and deadlines (subject to adjustments):**

**Week 1-1:** Why program evaluation?
**Week 1-2:** Treatment parameters and regression
Week 2-1: Randomized controlled trials I
Week 2-2: Randomized controlled trials II
Week 3-1: Randomized controlled trials III
Week 3-2: Evaluation of evaluations
  - Problem set #1 due on April 2
Week 4-1: Selection on observables
Week 4-2: Instrumental variables I
Week 5-1: Instrumental variables II
Week 5-2: Instrumental variables III
Week 6-1: Panel data I
Week 6-2: Panel data II
  - Problem set #2 due on April 16
Week 7-1: Panel data III
Week 7-2: Regression discontinuity I
  - Problem set #3 due on April 23
Week 8-1: Regression discontinuity II
Week 8-2: Big data and machine learning
  - Problem set #4 due on May 7
Week 9-1: Policy lab I
Week 9-2: Policy lab II
  - Final exam due on May 20

Reading list: Readings will be made available through the course website. Please only read the papers that correspond to your section. We are not asking you to read much, so all readings are mandatory unless otherwise noted. Please read the version from the course website to make sure we are all on the same page. If you are looking for extra material, *Mostly Harmless Econometrics* and *Causal Inference: The Mixtape* (available online for free) may be useful references, but are not required beyond where they are specified on the reading list below.

Why program evaluation?
- No readings for the first class.

Treatment parameters and regression

Randomized controlled trials I
Randomized controlled trials II


Randomized controlled trials III

- **Optional reading**: Baird, Sarah, J. Aislinn Bohren, Craig McIntosh, and Berk Ozler. 2014. “Designing experiments to measure spillover effects,” IIEP working paper.

Evaluation of evaluations


Selection on observables


Instrumental variables I


Instrumental variables II

Instrumental variables III

- No new reading. Review Fowlie, Wolfram et al.

Panel data I


Panel data II


Panel data III


Regression discontinuity I


Regression discontinuity II

- **ALL SECTIONS**: Chen, Yuyu, Avraham Ebenstein, Michael Greenstone, and Hongbin Li. 2013. “Evidence on the impact of sustained exposure to air pollution on life expectancy from...


### Big data and machine learning


### Policy lab I


### Policy lab II

- **EEE and DEV:** Lee, Kenneth, Edward Miguel, and Catherine Wolfram. 2019. “Does electrification supercharge economic development?” *Journal of Economic*