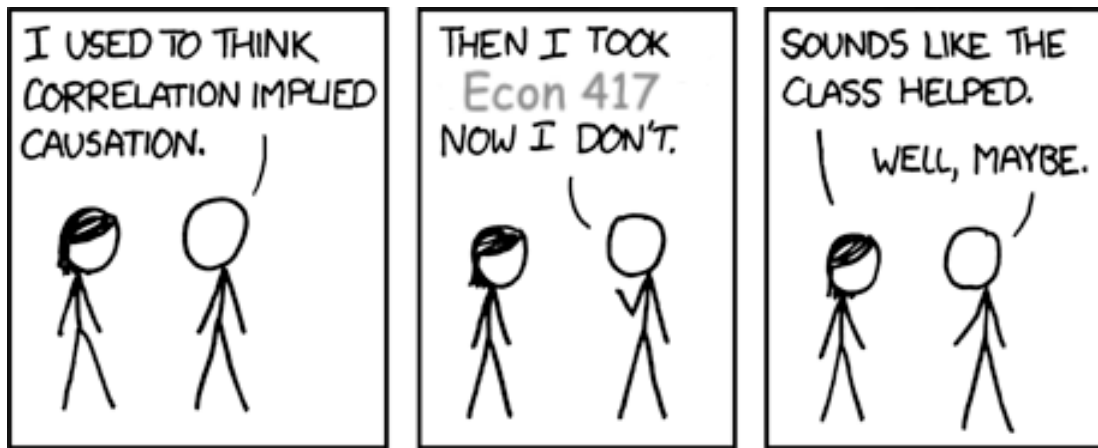


ECON 417: Estimating Policy and Program Impacts Spring 2020

Professor Jessica Goldberg
Tydings 3115C
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Office hours: Tuesdays, 3:30-5:00 pm

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Course Description: Governments, businesses, non-profits, funders, and other organizations must allocate scarce resources between competing uses. Understanding the causal effect of policies, programs or investments on key outcomes can guide the choices of these decision-makers. Correlations between policies and outcomes or changes in outcomes after new policies are adopted are rarely sufficient for estimating the causal effect, however. This course focuses on econometric strategies for obtaining unbiased causal estimates, including experimental methods, instrumental variables, regression discontinuity, and differences-in-differences. There will be an emphasis on using Stata and on interpreting the results of econometric analysis.



From XKCD.com

Class Meetings:

Section 101 – Tydings 2102, Mondays and Wednesdays, 11:00-12:15

Section 201 – Tydings 2102, Mondays and Wednesdays, 2:00-3:15

Textbooks and other readings:

Angrist, Joshua D. and Jorn-Steffen Pischke. Mastering 'Metrics: The Path from Cause to Effect. Princeton University Press, 2015. **(This is the main textbook for Econ 416 and it contains required readings.¹)**

Gertler, Paul J. and Sebastian Martinez, Patrick Premand, Laura B. Rawlings, and Christel M. J. Vermeersch. Impact Evaluation in Practice. The World Bank, 2016 (2nd edition). **(This text is distributed for free by the World Bank. You can download it from <https://openknowledge.worldbank.org/handle/10986/25030>.** There are some assigned readings from this book.)

Kandkher, Shahidur and Gavatri B. Koolwal and Hussain A. Samad. Handbook on Impact Evaluation: Quantitative Methods and Practices. The World Bank, 2010. **(This text is distributed for free by the World Bank. You can download it from <https://openknowledge.worldbank.org/handle/10986/2693>.** This book contains one assigned reading and some optional readings. It also provides useful examples of Stata code.)

Optional: Stock, James H. and Mark W. Watson. Introduction to Econometrics, 3rd edition. Pearson, 2015.

Selected other readings are available on the course's ELMS site.

Additionally, every student is required to have access to Stata. You can purchase a 6-month student license for Stata/IC for \$48 directly from Stata, here: <https://www.stata.com/order/new/edu/gradplans/student-pricing/> Stata is available on computers at McKeldin Library, but you will need to use it in class on four occasions, and you will need to have access to Stata to complete problem sets.

Grading:

- 1) A midterm exam (20%) and a final exam (30% of course grade)

Students are required to take the exam on class exam dates, and at their assigned lecture time. **Students will not be permitted to take exams at the time reserved for a section of Econ 417 in which they are not enrolled.** Exams are considered major scheduled grading events. Make-up exams will be granted only to those students who communicate with the professor within 48 hours of the scheduled exam time and provide written verification of a reason that complies with University policy: medical conditions, religious observances, participation in University events at the request of University authorities, and compelling circumstances beyond your control. For religious observance or participation in University events, students must inform the professor not later than the second week of classes. **If a student misses an exam and cannot provide documentation of a valid excuse, the grade will be recorded as a zero. Self-signed notes will not be accepted as an excuse for absence from midterm or final exams.** For more details, please see the website referenced in the "Expectations of Students" section below.

Students are permitted to use non-graphing calculators on some exams. Graphing calculators, phones, tablets, or other substitutes are not permitted. **The Department of Economics no longer supplies calculators for exams;** students are responsible for bringing a non-graphing calculator for their own use and students who do not bring their own permissible calculators will be required to take the exam without using a calculator. No sharing of calculators is permitted during exams.

¹ This book is an excellent resource in many ways, and it is the best text available for this course. However, the authors attempt to add humor in ways that often involve cultural appropriation and stereotypes about Asian cultures. I have attempted to provide alternative readings where available, but the material in Angrist and Pischke's book is frequently the best resource for this course.

2) One impact evaluation proposal (20% of course grade)

Students will use the skills developed in this course to propose an evaluation of a real program or policy.

Students may discuss their proposals with classmates before beginning to write, but it is a violation of the university honor code to copy all or part of another student's proposal (or the charts or graphs included in another student's memo). Students should not share drafts with each other. Each student must turn in his or her own proposal. **Violations of the university honor code, including using words or ideas of others without proper attribution, will result in receiving a 0 for this assignment and may result in referral to the University's Office of Student Conduct. Please review information the Department of Psychology provides about plagiarism, which I have made available on the course ELMS page.**

Proposals must be submitted on ELMS, and uploaded as PDF files. Please ensure that you know how to create and upload a PDF file to ELMS before the due date. Proposals submitted after the due date and time will be penalized: grades will be reduced by one letter grade for each day late (for example, from an A to a B for submissions within 24 hours of the due date, from an A to a C for submissions more than 24 but less than 48 hours after the due date, etc.). Failure to submit a proposal within 5 days of the due date will result in a 0 being recorded for your grade. Students with a valid medical excuse according to the University's policy should communicate with me as soon as possible in order to make arrangements for alternate submission.

3) Problem sets (30% of course grade)

Problem sets will require Stata. Students will submit .do files and written answers via ELMS. Late submissions will be penalized by 20 points for each day late (for example, by 20 points for submissions within 24 hours of the due date, 40 points for submissions within 48 hours of the due date, etc.). Failure to submit a problem set within 5 days of the due date will result in a 0 being recorded for your grade on that assignment.

Academic Integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all undergraduate students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. See www.studenthonorcouncil.umd.edu.

Course Website: Students should use their directory ID and password to access www.elms.umd.edu. Relevant documents and announcements will be posted on the course website. It is expected that students will check the course website every week.

The University has adopted email as the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Students are responsible for updating their current email address via the appropriate link on <http://www.testudo.umd.edu/Registrar.html>. Failure to check email, errors in forwarding email, and returned email due to "mailbox full" or "user unknown" will not excuse a student from missing announcements or deadlines. I will try to reply to your e-mails within 24 hours during the school week, but please do not expect a response over the weekend.

Students with disabilities who require special accommodations must get in touch with the instructor within the first three weeks of class.

Expectations of Students: Read the assigned readings **before** the class in which they will be covered, and ask questions whenever you find something confusing or problematic. Complete assignments before they are due, making sure you leave yourself enough time to get answers to any questions you might have.

Attend lectures for the section for which you are registered, and take notes in class. If you miss any lectures, you are still responsible for the material that was covered. The material we cover each week builds on the content of the previous weeks. You should try to catch up right away; if you do not, you will find yourself slipping farther and farther behind. Get notes from a classmate and thoroughly review the relevant readings. After going through these steps, if you have questions, then visit the graduate teaching assistant or me during office hours.

If you find that you will be unable to participate in class activities for more than three days in a row due to illness or other valid excuses (see <https://s3.amazonaws.com/drupal-base-s3-drupalshards3-1qwpjwcnqwwsr/president/s3fs-public/documents/policies/V-1.00G.pdf> for the University's policy on absences) you must contact me by email to explain. You will not be allowed postpone a midterm or other assignment because of absences earlier in the semester unless you have informed me IN ADVANCE of your situation.

I encourage you to come to office hours to discuss course material or other issues related to impact evaluation or development economics. **Keep in mind that many of your post graduate plans, including graduate school and job applications, will require that you obtain letters of recommendation from professors. Speaking with you outside of class time makes it possible for me to write a more useful, stronger letter of recommendation.** If you aren't sure what to talk about during office hours, here are some questions you can ask to get a conversation started:

- What's your research about? How did you get involved in those projects?
- What's a crazy thing that happened on one of your projects? What did you learn from it?
- What's something important that researchers have learned from impact evaluations recently?
- What work experience is useful if I am interested in using impact evaluation in my job? What are some things I can do to increase my chances of getting an interesting job that use impact evaluation?
- What things should I think about if I am interested in graduate school? What's the difference between studying economics and studying public policy?

Reading list and assignment schedule:

The following reading list is subject to change. Please check ELMS frequently for additional materials or changes to the schedule.

	Date	Topic	Required reading	Optional readings	Other resources	Deadlines
1	1/27/19	Introduction; What is impact evaluation	Gertler et al. chapter 1 (pages 3-26)	Running Randomized Evaluations chapter 1 (pages 1-24)	https://www.povertyactionlab.org/research-resources/introduction-evaluations	
2	1/29/19	Why evaluate?	Clemens and Demonbynes, Journal of Development Effectiveness 2011; Sachs et al., Lancet 2012	Sachs et al., Lancet 2012 (correction); Sachs et al. Lancet 2018; Masset et al. JDE 2020		
3	2/3/19	Potential outcomes and randomized controlled trials (methods)	Mastering Metrics, chapter 1 (pages 1-17)	Alternate treatment of the material: Gertler et al. chapter 3 (pages 45-61); More technical material: Mastering Metrics chapter 1 (pages 34-48)	https://mru.org/courses/mastering-econometrics/ceteris-paribus https://seeing-theory.brown.edu/basic-probability/index.html#section2	
4	2/5/19	Potential outcomes and randomized controlled trials (methods)	Mastering Metrics, chapter 1 (pages 17-30) and chapter 2 (pages 55-78); Gertler et al. (pages 64-66)	Alternative treatment of the material: Gertler (pages 80-84); More technical material: Mastering Metrics, chapter 2 (pages 82-97)	https://seeing-theory.brown.edu/regression-analysis/index.html#section1	
5	2/10/19	Stata refresher	Banerjee et al., Science 2015	Stata review: World Bank Impact Evaluation text, chapter 11 (pages 145-164)	http://www.princeton.edu/~otorres/Stata/ https://data.princeton.edu/stata/ http://geocenter.github.io/StataTraining/ https://www.stata.com/links/resources-for-learning-stata/	
6	2/12/19	Randomized controlled trials (applications)	Banerjee et al., American Economic Journal: Applied Economics 2015		https://insights.som.yale.edu/insights/can-the-graduation-approach-help-to-end-extreme-poverty https://www.youtube.com/watch?v=MOGkAWMKWwg	
7	2/17/19	Randomized controlled trials (in class exercise)		Stata examples: World Bank Impact Evaluation text, chapter 12 (pages 171-179)	https://www.povertyactionlab.org/policy-insight/microcredit-impacts-and-limitations https://www.youtube.com/watch?time_continue=11&v=DX2NMm1_dm4&feature=emb_logo	Problem set 1 due Feb. 17 at 5 pm, via ELMS
8	2/19/19	Instrumental variables (methods)	Mastering Metrics, chapter 3 (pages 98-115)		https://www.youtube.com/watch?v=4xF_DMbL14w&list=PL1M5TsfDV6VsE11CCeMuBL0owBpwp4xru	
9	2/24/19	Instrumental variables (methods)	Mastering Metrics, chapter 3 (pages 115-146)			Problem set 2 due on Feb. 24 at 5 pm, via ELMS
10	2/26/19	Instrumental variables (applications)	Angrist and Evans, AER 1988			

	Date	Topic	Required reading	Optional readings	Other resources	Deadlines
11	3/2/19	Instrumental variables (in class exercise)	TBD	Stata examples: World Bank Impact Evaluation book, pages 103-109		
12	3/4/19	Guest lecture on the use of impact evaluation for policy				submit one review question via ELMS by March 6 at 5 pm
13	3/9/19	Review			https://www.povertyactionlab.org/sites/default/files/resources/Case2_Balsakhi_India_.pdf World Bank Impact Evaluation text, pages 49-50 (questions 1-3), pages 111-112 (questions 1, 3, 4)	Problem set 3 due on March 9 at 5 pm, via ELMS
14	3/11/19	Midterm				
	Spring break					
15	3/23/19	Designing an evaluation	Gertler et al. chapter 2 (pages 31-42) and chapter 11 (pages 187-196)			
16	3/25/19	Regression discontinuity (methods)	Mastering Metrics, chapter 4 (pages 147-164)	Alternate treatment of the material: Gertler et al., chapter 5 (pages 81-93)		One page description of a program to be evaluated by March 25 at 5pm, via ELMS
17	3/30/19	Regression discontinuity (methods)	Mastering Metrics, chapter 4 (pages 164-177)			
18	4/1/19	Regression discontinuity (applications)	Ozier, Journal of Human Resources 2018			Draft of the results chain due on April 1 at 5 pm, via ELMS
19	4/6/19	Regression discontinuity (in class exercise)	Tuttle, American Economic Journal: Economic Policy 2019			

	Date	Topic	Required reading	Optional readings	Other resources	Deadlines
20	4/8/19	Differences-in-differences (methods)	Mastering Metrics, chapter 5 (pages 178-192)			Draft of the description of the outcome, and the explanation of program rules for the impact evaluation due on April 8 at 5 pm, via ELMS
21	4/13/19	Differences-in-differences (methods)	Mastering Metrics, chapter 5 (pages 192-208)			Problem set 4 due on April 13 at 5pm, via ELMS
22	4/15/19	Differences-in-differences (applications)	Duflo, American Economic Review 2001			
23	4/20/19	Differences-in-differences (in class exercise)	Godlonton and Okeke, Journal of Development Economics 2016	Stata examples: World Bank Impact Evaluation text, chapter 14 (pages 189-201)		Draft of the description of a hypothetical experiment for the impact evaluation proposal due on April 20 at 5 pm, via ELMS
24	4/22/19	Matching	Gertler et al. chapter 8 (pages 143-156)	Alternative treatment of the material: World Bank Impact Evaluation text, chapter 4 (pages 53-66)		
25	4/27/19	Matching		Stata examples: World Bank Impact Evaluation text, chapter 12 (pages 181-188)		Problem set 5 due on April 27 at 5pm, via ELMS
26	4/29/19	Comparisons between RCT, RD, IV, and Diff in Diff	Mastering Metrics, chapter 6 (pages 209-238); review Gertler et al. pages 193-195.			

	Date	Topic	Required reading	Optional readings	Other resources	Deadlines
27	5/4/19	External validity	TBD			Impact evaluation proposal due May 4 at 5pm, via ELMS
28	5/6/19	Implementing an evaluation				
29	5/11/19	Review			https://www.povertyactionlab.org/sites/default/files/documents/Case_GetOutTheVote_0.pdf	submit one review question via ELMS by May 9 at 5 pm