PA 281: DISCOVERING WHAT WORKS IN HEALTH POLICY, Fall 2023

CREDITS: 3

CANVAS COURSE URL: https://canvas.wisc.edu/courses/324070

COURSE DESIGNATIONS AND ATTRIBUTES: General

MEETING TIME AND LOCATION: Monday/Wednesday 16:00-17:15, Nicholas 4235.

INSTRUCTIONAL MODE: in-person

The credit standard for this course is met by an expectation of a total of 180 hours of student engagement with the course learning activities (at least 45 hours per credit), which include regularly scheduled instructor - student meeting times (150 minutes per week), reading, writing, problem sets, and other student work as described in the syllabus.

INSTRUCTOR: Héctor Pifarré i Arolas

OFFICE HOURS: Monday 15:00 – 15:45 (Social Sciences 4432) and by appointment (send me an email).

INSTRUCTOR EMAIL: hparolas@lafollette.wisc.edu

COURSE DESCRIPTION

Does having health insurance make a person live longer? Does air pollution affect people's health? Does drinking water with lead affect education outcomes? Assessing the causal effects of policies and practices is a fundamental goal of research in the social sciences. This course introduces the key conceptual and methodological tools used in public program evaluation, with an emphasis on understanding the forces that shape health and disease as well as various policy solutions.

Students will learn how to distinguish causation from correlation using counterfactual thinking. To that end, students will be introduced to the *Potential Outcomes Framework*. This framework for understanding cause and effect is widely used in economics and public policy and has recently begun to influence research in sociology, political science, education, and public health. We will explore a wide variety of experimental and quasi-experimental strategies used to estimate causal effects, including randomized experiments, matching, regression, instrumental variables, fixed effects, regression discontinuity, difference-in-differences, and synthetic control.

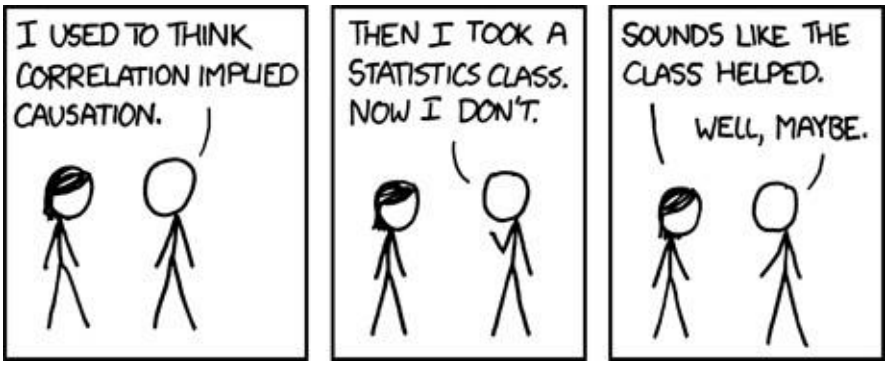
This course provides a non-technical introduction to the causal inference methods that are most salient to policymakers. Class meetings will typically be divided into lecture, student presentations, and group discussions. Questions and comments are highly encouraged throughout.

PREREQUISITES: None.

COURSE LEANRING OUTCOMES
After completing this course, students will be able to:

1) Distinguish causal from correlational evidence in both general and academic texts.
2) Identify relevant counterfactuals using the *Potential Outcomes Framework.*
3) Interpret the external and internal validity of an estimated causal effect.
4) Conceptually apply quasi-experimental methods to health policy issues.
5) Communicate the strengths and weaknesses of previous research into the causal effects of various health interventions.

This course will help students see how using counterfactual thinking to distinguish causation from correlation can impact how they see the world.



TEXTBOOK AND OTHER RESOURCES
Mastering 'Metrics: The Path from Cause to Effect by Joshua D. Angrist and J ö rn-Steffen Pischke (Princeton University Press, 2015). (Available on reserve at the College Library).

We will also use readings that illustrate "real world" applications of the methods we learn in class. All the readings are available online or will be made available on CANVAS.

Required readings should be completed **before** we meet each week.

COURSE ASSIGNMENTS
Course grades will be based on the following components and descriptions of some of these components will be given separately:

Class attendance and participation: 20%
Attendance is required for this class. Please email me if you cannot make it to class for any reason. Class participation is also an essential component of the course and is critical to your learning and that of your peers. You will be expected to read assigned materials prior to class and

come prepared to discuss the material and ask questions about ideas and information you find interesting, important, or confusing.

Discussion questions: 10%
Students are required to upload on canvas at least one discussion question by the midnight before class. These must be Socratic style questions about the required reading, which means they should stimulate class dialogue by asking questions that prompt critical thinking and reflection. Clarifying questions and content questions are also encouraged but do not count towards a student's required number of questions.

Short assignments: 10%
Topic-specific brief assignments to further develop the themes covered in class.

Small group presentations: **10%**
Weekly short presentations on an article related to the week's lectures.

Final health policy memo: **50%**
Students will submit a final paper on a health-related policy topic reviewing our current understanding of the issue. Then, they will present their findings in a group class presentation.
Grading for the assignment will be broken down as follows:

1) **Final paper** (**30%**)
2) **Final presentation** (**20%**)

GRADING STRUCTURE

A >= 93%, AB >= 89%, B >= 80%, BC >= 75%, C >= 65%, D >= 55%, F <55%

COURSE WEBPAGE

We have a CANVAS webpage for this course. You can find most course materials there, including the syllabus, readings, and so forth. You will also submit your assignments through CANVAS. You are responsible for accessing the course webpage on a regular basis.

PRIVACY OF STUDENT RECORDS & THE USE OF AUDIO RECORDED LECTURES STATEMENT

Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to

commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

ILLNESS POLICY

If you are sick, please stay at home and rest. Email me or check with classmates to get the material you have missed. If you believe that your illness or anything else may result in a long absence from class, please contact me immediately so that we can work out a plan to make sure that you do not fall too far behind.

CLASS MANNERS

- Please come to class on time. If you know that you will be late, please let me know in advance.
- Please do not leave class early. If you must leave early, please let me know in advance.
- Please mute your phone prior to class.

COURSE EVALUATIONS

Students will be provided with an opportunity to evaluate this course and your learning experience at midterms and at the end of the course. Student participation is an integral component of this course, and your confidential feedback is important to me. I strongly encourage you to participate in the course evaluation.

USEFUL RESOURCES

- *University Health Services*
- *Students' Rules, Rights & Responsibilities*
- *Academic Calendar & Religious Observances*
- *Undergraduate Academic Advising and Career Services*
- *Office of the Registrar*
- *Office of Student Financial Aid*
- *Dean of Students Office*

DIVERSITY & INCLUSION STATEMENT

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

ACADEMIC INTEGRITY STATEMENT

By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of disciplinary action include, but is not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES STATEMENT

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA. (See: McBurney Disability Resource Center.)

COURSE READINGS

Listed readings will be adjusted and updated to accommodate new materials, class needs, and student interests and experience. A detailed course schedule with dates and readings will be posted on CANVAS. Changes to the readings will be communicated in class and/or by e-mail and will be posted and updated in the detailed course reading schedule.

Causation vs. Correlation

- Chetty. 2013. Yes, Economics Is a Science. *The New York Times.*
- Smith. 2018. How Econ Went from Philosophy to Science. *Bloomberg*.

The Problem of Confounding

- Tonks, A. 1999. Children who sleep with light on may damage their sight. BMJ: British Medical Journal.
- Zadnik, K., Jones, L. A., Irvin, B. C., Kleinstein, R. N., Manny, R. E., Shin, J. A., & Mutti, D. O. 2000. Myopia and ambient night-time lighting. Nature.
- Quinn, G. E. et al. 1999. Myopia and ambient lighting at night. Nature
- Roylance. 1999. Nightlght for sleeping children may lead to myopia, study hints.
- Maugh II. 1999. Night lights linked to babies' nearsightnedness.

The Potential Outcomes Framework

- *Mastering 'Metrics,* pp. xi -11. (from 'Introduction' until the paragraph before the cartoon: Breaking the Deadlock: Just RANDomize)

Randomized Experiments 1

- *Mastering 'Metrics,* pp.18-33

Randomized Experiments 2

- Dupas et al. 2013. Why Don't the Poor Save More? Evidence from Health Savings Experiments. American Economic Review.

Internal and External Validity 1

- Baicker et al. 2013. The Oregon Experiment–Effects of Medicaid on Clinical Outcomes. New England Journal of Medicine.
- Andersen et al. 2010. Preference heterogeneity in experiments: Comparing the field and laboratory. Journal of Economic Behavior & Organization.

Internal and External Validity 2

- Roe & Just. 2009. Internal and External Validity in Economics Research. American Journal of Agricultural Economics.
- Dekkers et al. 2010. How to assess the external validity of therapeutic trials: a conceptual approach. International journal of epidemiology

Ethics

- Hesse-Biber & Leavy. 2010. The Practice of Qualitative Research. Cambridge: MIT Press. (Chapter 4: Ethics of Social Research.).
- Sarin, A., 2019, November. Indecent proposals in economics. In The India Forum.
- Brandon et al. 2005. The legacy of Tuskegee and trust in medical care: is Tuskegee responsible for race differences in mistrust of medical care?. Journal of the National Medical Association.

Limitations of Randomized Experiments

- Deaton et al. 2016. The limitations of randomized controlled trials. VOX.
- Guérin et al. 2019. 2019 Nobel Prize in Economics: the limits of the clinical trial method.

Roadmap for Quasi-natural Experiments

- *No readings (class materials)*

Matching

- Stein et al. 2016. Innate immunity and asthma risk in Amish and Hutterite farm children. New England journal of medicine.
- Venkataramani et al. 2018. Association between playing American football in the National Football League and long-term mortality. JAMA.

Peer Review 1

- Smith. 2006. Peer review: a flawed process at the heart of science and journals. Journal of the royal society of medicine.
- Carroll. 2018. Peer review: The worst way to judge research, except for all the others. The New York Times.
- Vazire. 2020. Peer-reviewed scientific journals don't really do their job. Wired.

Peer Review 2

- Johnson et al. 2019. Officer characteristics and racial disparities in fatal officer-involved shootings. PNAS.
- Knox et al. 2020. Making inferences about racial disparities in police violence. PNAS.
- Knox et al. 2021. The role of officer race and gender in police-civilian interactions in Chicago. Science.

Differences-in-Differences 1

- *Mastering 'Metrics,* pp. 178-203.

Differences-in-Differences 2

- Rossin-Slater et al. 2020. Local Exposure to School Shootings and Youth Anti-Depressant Use. PNAS.
- Card & Krueger 1994. Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania. American Economic Review.

Research and Policy 1

- 2017. Researchers should reach beyond the science bubble. Nature.
- Bhattacharya. 2012. Scientists have sold their souls – and basic research – to business. The Guardian.

Research and Policy 2

- Friedberg et al. 2022. Every Health Plan Stands To Benefit From A Nudge Unit. Health Affairs.
- DellaVigna et al. 2022. RCTs to scale: Comprehensive evidence from two nudge units. Econometrica.

Regression Discontinuity 1

- Mastering 'Metrics, pp.178-203.

Regression Discontinuity 2

- Chen et al. 2018. Effect of air quality alerts on human health: a regression discontinuity

analysis in Toronto, Canada. The Lancet Planetary Health.
- Almond et al. 2010. Estimating marginal returns to medical care: Evidence from at-risk newborns. The quarterly journal of economics.

Science Journalism

- 2017. Science journalism can be evidence-based, compelling — and wrong. Nature.
- Resnick. 2017. Study: half of the studies you read about in the news are wrong. Vox.
- Randerson. 2012. Should science journalists read the papers on which their stories are based. The Guardian.
- 2022. Could science be communicated better during the next pandemic? – the lessons the SMC has learned during COVID-19. Science Media Centre