POLI SCI 395
Political Research Seminar
Evidence-Informed Decision-Making
Spring 2025

Instructor: Gustavo Diaz (he/him/his)
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Lecture: Tues/Thurs 2:00 – 3:20pm, Scott Hall 201 Ripton Room
Canvas: TBD
Student Hours: Wednesday 2:00 – 4:00pm, Scott Hall 103 or by appointment

Course Overview

This seminar explores how evidence generated from statistical research methods can be used to inform decision-making in academia, government, and industry. We will examine the merits and pitfalls of contemporary tools in experimentation and data science when it comes to policy evaluation or or justifying organizational change. We will learn that connecting evidence to decisions often requires additional language and argumentation, which will lead us to more advanced techniques designed specifically to inform decision-making with minimal assumptions.

Topics

[HERE TABLE WITH LINKS TO EACH WEEK]

Learning Objectives

- Understand how evidence drawn from statistical research methods can be used to inform decision-making in academia, government, and industry
- Acquire new language to engage in conversations about evidence-informed decision-making in a broad set of domains
- Practice discussing and writing about the application of new methods in quantitative and computational social science

Requirements

POLI_SCI 210 or POLI_SCI 312 or equivalent experience with research design or data analysis.

Required Reading

There is **no required textbook** for this course. Instead, readings for each are linked in the schedule below. All readings are available online for free or through university library subscription.

Readings are listed by intended reading order

Readings for each week are divided by **theory** and **applications** of the methods, techniques, approaches, or issues we will discuss that week. In some weeks, we will discuss the theory first and applications second. In weeks in which the technical details are more dense, we will discuss applications first and theory second.

Since we are a small group, we can discuss division of labor arrangements to make sure that every reading is covered in extensive detail. You are still expected to be (at least) familiar with every assigned reading.

Evaluation

Your final grade in this course will depend on the following:

- Participation
- Discussion leading
- Discussion memos
- Final project: Pre-registration plan OR data exploration paper

Participation

Discussion leading

Discussion memos

Grading

This course uses a labor-based grading agreement, commonly known as contract grading. In this course, instead of being given a final grade based on how "good" your submitted assignments are, your final grade will be based on the amount of work you put into the course. The goal is to decouple grades from performance and emphasize learning and effort.

You will get

Northwestern University Syllabus Standards

This course follows the Northwestern University Syllabus Standards. Students are responsible for familiarizing themselves with this information.

Schedule

Week 1 (Thursday, April 3): Preliminaries

Watch before meeting

- Gravert, Christina. "Why we need evidence-based decisions in every business." TEDxManchester (15 minutes)
- Goldberg, Amir. "Class Takeaways – People Analytics." Stanford Graduate School of Business (5 minutes)

Week 2 (April 8/10): The Evidence-Informed Movement

Theory

- Bluhm, Robyn and Kristin Borgerson. 2011. "Evidence-Based Medicine." In *Philoshophy of Medicine*, pp. 203-238
- Bowers, Jake and Paul Testa. 2019. "Better Government, Better Science: The Promise of and Challenges Facing the Evidence-Informed Policy Movement." *Annual Review of Political Science* 22: 521-542
- Samii, Cyrus. 2023. "Methodologies for 'Political Science as Problem Solving.'" Forthcoming in *Oxford Handbook of Methodological Pluralism*

Applications

- Grant, Adam. 2019. "The Surprising Value of Obvious Insights." *MIT Sloan Management Review* 60 (3): 8-10
- Congdon, William J. and Maya Shankar. 2015. "The White House Social & Behavioral Sciences Team: Lessons learned from year one." *Behavioral Science & Policy* 1 (2): 77-86
- Kleibrin, Alexander and Edurne Magro. 2018. "The making of responsive innovation policies: varieties of evidence and their contestation in the Basque Country." *Palgrave Communications* 4: 74
- Walker, Carl, Ewen Speed, and Danny Taggart. 2018. "Turning psychology into policy: a case of square pegs and round holes?". *Palgrave Communications* 4: 108

Week 3 (April 15/17): Randomized Controlled Trials

Theory

- Gertler, Paul J. et al. 2016. *Impact Evaluation in Practice.* Washington, DC: Inter-American Development Bank and World Bank. Chapters 3-4
- Rosenbaum, Paul. 2010. *Design of Observational Studies.* Springer. Chapter 2

Applications

- Banerjee, Abhijit, Esther Duflo, and Garima Sharma. 2021. "Long-Term Effects of the Targeting the Ultra Poor Program." *American Economic Review: Insights* 3 (4): 471-486
- Pennycook, Gordon, et al. 2021. "Shifting attention to accuracy can reduce misinformation online." *Nature* 592: 590-595 (including the methods section)
- Kim, Jae Yeon, et al. 2025. "Administrative Checkpoints, Burdens, and Human-centered Design: Increasing Interview Access to Raise SNAP Participation." *Journal of Policy Analysis and Management* [URL coming soon]

Week 4 (April 22/24): Learning from Experiments

Theory

- Deaton, Angus and Nancy Cartwright. 2018. "Understanding and misunderstanding randomized controlled trials." *Social Science & Medicine* 210: 2-21
- Giacomini, Mita. 2009. "Theory-Based Medicine and the Role of Evidence: Why the Emperor Needs New Clothes, Again." *Perspectives in Biology and Medicine* 52 (2): 234-251
- Dubova, Marina, Arseny Moskvichev, and Kevin Zollman. 2023. "Against theory-motivated experimentation in science." Working paper

Applications

- Egami, Naoki, and Erin Hartman. 2023. "Elements of External Validity: Framework, Design, and Analysis." *American Political Science Review* 117 (3): 1070-1088 (skim mathematical details)
- Banerjee, Abhijit, et al. 2017. "From Proof of Concept to Scalable Policies: Challenges and Solutions, with an Application." *Journal of Economic Perspectives* 31 (4): 73-102
- Corduneanu-Huci, Cristina, Michael T. Dorsch, and Paul Maarek. 2021. "The politics of experimentation: Political competition and randomized controlled trials." *Journal of Comparative Economics* 49 (1): 1-21

Week 5 (April 29/May 1): Advanced Experimental Designs

[Schedule TBD because maybe guest speaker]

Applications

Theory

Topics will include:

- Adjusting treatment effects to population
- Coordinated trials
- Staggered adoption
- Adaptive-experimentation

https://www.nature.com/articles/s41562-023-01810-7

https://onlinelibrary.wiley.com/doi/10.1111/ajps.12597

https://mollyow.shinyapps.io/adaptive/

Week 6 (May 6/8): Data Science for Good

Theory

- Brady, Henry. 2019. "The Challenge of Big Data and Data Science." *Annual Review of Political Science* 22: 297-323
- Agrawal, Ajay, Joshua Gans, and Avi Goldfarb. 2018. *Prediction Machines: The Simple Economics of Artificial Intelligence.* Harvard Business Review Press. Chapters 1-11 (easy to read)

Applications

https://doi.org/10.1111/1748-8583.12090 [or next week?]

https://doi.org/10.1177/23794607241308636

https://doi.org/10.1126/science.aaf7894

Week 7 (May 13/15): Data Science for Evil

https://doi.org/10.1177/23794607241296686

https://doi.org/10.1177/23794607241300788

https://doi.org/10.1093/jla/laz001

https://doi.org/10.1126/science.aaf7894

https://doi.org/10.1126/science.aao4408

https://doi.org/10.1038%2Fs41586-020-03136-0

https://mbosley.github.io/papers/ai-prejudice-paper.pdf

Week 8 (May 20/22): AI and Experiments

https://doi.org/10.1126/sciadv.aao5580

https://doi.org/10.3217%2F978-3-85125-668-0-16

https://doi.org/10.1080/0960085X.2021.1960905

https://doi.org/10.1257%2Fjep.38.2.201

https://doi.org/10.1257%2Fjep.38.2.181

https://doi.org/10.1093/jla/laz001 [Here or elsewhere?]

https://doi.org/10.48550/arXiv.2403.07031

Week 9 (May 27/29): Generative AI

https://www.jstor.org/stable/23566518 (or more recent triple machine learning stuff)

https://doi.org/10.1038/s41562-023-01589-7

https://doi.org/10.1073/pnas.2318127122 Maybe?

https://www.journals.uchicago.edu/doi/10.1086/735504

https://doi.org/10.48550/arXiv.2311.08527

https://doi.org/10.1177/23794607241311793

Week 10 (June 3/5): WCAS Reading Week Starts on June 4

TBD Depending on updates schedule