Empirical Legal Studies

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University of Colorado Boulder

Course Overview

It is often said that lawyers hate math.(Remember the groans when you were taught Learned Hand's formula for liability in Torts? Or asked to calculate the expectation damages in Contracts?) We might imagine a pedestal on which lawyers and legal scholars sit, steeped in logic and doctrinal intricacies, but lacking a facility with the methods of social science. On a second pedestal sit empirical social scientists who often suggest that legal problems can be solved with numbers rather than values. This disconnect was captured by an exasperated Chief Justice Roberts during a recent oral argument on the relevance of social science research in determining whether partisan gerrymandering violates the U.S. Constitution:

> *The whole point is you're taking these issues away from democracy and you're throwing them into the courts pursuant to, and it may be simply my educational background, but I can only describe as sociological gobbledygook.*

> — Gill v. Whitford (2017)

The purpose of this course is to explore the gap between law and social science. On a practical level, this course will provide you with a sufficient introduction to empirical legal scholarship so you will be able to evaluate existing studies, become conversant in basic statistical methods, and begin to undertake empirical investigations of your own. In short, this course will prepare you to "think like a social scientist." But there is more. In this course you will learn how to marshal empirical scholarship *specifically* to answer questions that are relevant to the law. While the tools for this task are of relatively recent vintage, the need for empirical legal scholars has long been recognized:

> *For the rational study of the law the black letter man may be the man of the present, but the man of the future is the man of statistics and the master of economics.*

> — Oliver Wendell Holmes (1897)

> *It is the work of lawyers to make the law in action conform to the law in the books, not by futile thunderings against popular lawlessness, nor eloquent exhortations to obedience of the written law, but by making law in the books such that the law in action can conform to it, and providing a speedy, cheap, and efficient legal mode of applying it.*

> — Roscoe Pound (1910)

Required text

- ADAM CHILTON & KYLE ROZEMA, TRIAL BY NUMBERS (OXFORD PRESS 2024)

- Supplemental required readings (`Canvas`).

- Statistical package and IDE/GUI — preferred $\mathbb{R}$ and R Studio

Learning Outcomes

By the end of the semester, you should be able to:

- Produce descriptive and summary statistics on data relevant to legal debates.
- Calculate correlation statistics in $\mathbb{R}$ using different modeling techniques.
- Develop an empirical strategy to make causal inferences about an empirical legal topic.
- Evaluate the quality of existing empirical analysis—in legal documents and academic articles.
- Gather and organize original data to assist in an empirical legal inquiry.

Grades and Assignments

The above learning outcomes will be assessed through a series of problem sets, critical response papers, and a research proposal.

Problem Sets	40%
Critical Response Papers	20%
Research Proposal	30%
Participation	10%

Regular attendance and good faith class participation are essential and expected. I also expect that you will complete the reading and other assignments prior to each class meeting. Assignments turned in late will be penalized half a letter grade per day.

Accommodation for Disabilities

Disability Services determines accommodations based on documented disabilities in the academic environment. If you qualify for accommodations because of a disability, submit your accommodation letter from Disability Services to your faculty member in a timely manner so your needs can be addressed. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance.

If you have a temporary medical condition or required medical isolation for which you require accommodation, please alert me that you will be missing class or seeking access via Zoom as soon as you can. Also see Temporary Medical Conditions on the Disability Services website.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology such as ChatGPT), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: honor@colorado.edu, 303-492-5550. Students found responsible for violating the Honor Code will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit Honor Code for more information on the academic integrity policy.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and support resources can be found on the OIEC website.

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents related to these policies regardless of when or where something occurred. This is to ensure that individuals impacted receive an outreach from OIEC about their options for addressing a concern and the support resources available. To learn more about reporting and support resources for a variety of issues, visit Don't Ignore It.

Mental Health and Wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.

Schedule of Topics and Readings

"SEEING" — DATA & STATISTICS

Mon. August 25

- Class Overview
- Intro to $\mathbb{R}$

Reading

1. "The Ladder of Causation," in JUDEAL PEARL & DANA MACKENZIE, THE BOOK OF WHY (2018), pp. 23–36 (on Canvas)
2. "Social Science Evidence and the Rule Against Hearsay," in *Social Science in Law: Cases and Materials, 10th ed.* (Monahan & Walker eds.), pp. 111–117 (on Canvas)

Weds. August 27 – Probability

- Standards of proof
- Bayes' Theorem
- Conditional probabilities

Reading

1. TBN Chapter 2 pp. 8–19
2. *People v. Collins*, 68 Cal.2d 319 (1968)
   [PS1 distributed (due via Canvas on Weds. September 3 at 10:30 a.m.)]

Mon. September 1: NO CLASS (Labor Day)

Weds. September 3 – Descriptive Statistics

- Central tendency
- Distributions

Reading

1. TBN Chapter 3, pp. 20–42

*** Due: PS1

Mon. September 8

- Summarizing data
- Time-series vs. cross-section

Reading

1. "Summarizing Data," in Lee Epstein & Andrew D. Martin, An Introduction to Empirical Legal Research (2014), ch. 6, pp. 119–141 (on `Canvas`)
2. Discuss PS1

Weds. September 10

- Judging equality
- Disparity metrics

Reading

1. Jaya Ramji-Nogales, Andrew Schoenholtz, & Philip Schrag, *Refugee Roulette: Disparities in Asylum Adjudication*, 60 Stan. L. Rev. 295 (2007–2008) [read pp. 295–96, 299–349, 372–89]

Mon. September 15

- Correlation
- Scatterplots

Reading

1. "Correlation," in *Statistics, 4th ed.*, (Freedman, Pisani & Purves eds.), ch. 8, pp. 119–140 (on `Canvas`)

"DOING" — INTERVENTIONS & EXPERIMENTS

Weds. September 17

- Selection bias
- Potential outcomes

Reading

1. TBN Chapter 4, pp. 43–52
   [PS2 distributed (due via `Canvas` on Weds. September 29 at 10:30 a.m.)]

Mon. September 22

- Experiments
- Random assignment

Reading

1. TBN Chapter 4, pp. 52–59

Weds. September 24

- Predicting recidivism
- Incarceration and deterrence

Reading

1. Donald P. Green & Daniel Winik, *Using Random Judge Assignments to Estimate the Effects of Incarceration and Probation on Recidivism Among Drug Offenders*, 48 CRIMINOLOGY 339 (2010)

Mon. September 29

- Apples-to-apples comparisons
- Disaggregating treatment effect from observed outcomes

Reading

1. Spencer Expert Report, *Lopez v. Griswold*, No. 22-cv-00247-JLK (on `Canvas`)
2. Discuss PS2

*** Due: PS2

Weds. October 1

- Curse of dimensionality
- Cross-group vs. within-group comparisons

Reading

- TBN Chapter 5, pp. 60–68

Mon. October 6

- Interpreting regression
- Continuous vs. categorical vs. indicator/dummy vs. transformed variables

Reading

1. TBN Chapter 5, pp. 68–79

Weds. October 8

- Specifying regression
- Making sense of $Y = \alpha + \beta T + \gamma Y + \varepsilon$

No Reading

(Critical Synopsis #1 distributed (due via `Canvas` on Mon. October 20 at 10:30 a.m.))

Mon. October 13

- Critiquing regression models
- Checklist for rebutting expert reports and testimony

Reading

1. TBD

Weds. October 15

- Critiquing regression models cont'd
- Investigating a model and its assumptions

Reading

1. TBD

Mon. October 20

- Putting it all together: selection bias and regression

Reading

1. Excerpts from expert reports (on `Canvas`)
* [PS3 distributed (due via `Canvas` on Weds. October 30 at 2:30 p.m.)]

*** Due: Critical Synopsis #1

Weds. October 22

- Review and Discussion

Reading

1. Discuss Critical Synopsis #1

"IMAGINING" — COUNTERFACTUALS

Mon. October 27

- Difference-in-differences
- Comparing first and second differences

Reading

1. TBN Chapter 4, pp. 104–114

Weds. October 29

- Difference-in-differences cont'd
- Estimating DiD / Regression specification
- Identifying assumption: parallel time trends

Reading

1. TBN Chapter 4, pp. 114–131
   * Critical Synopsis #2 distributed (due via `Canvas` on Mon. November 10 at 10:30 a.m.)

*** Due: PS3

Mon. November 3

- Review and Discussion (PS3)
- Synthetic controls as generalization of DiD

Reading

1. Discuss PS3
2. Robert McClelland & Livia Mucciolo, *What is the Synthetic Control Method?*, Tax Policy Center (May 2022)

Weds. November 5

- Regression Discontinuity
- Applications and Interpretation

Reading

1. TBN Chapter 5, pp. 132–140
   (PS5 distributed (due via `Canvas` on Weds. December 3 at 11:59 p.m.))

Mon. November 10

- Regression Discontinuity
- Estimating and Assumptions

Reading

1. TBN Chapter 5, pp. 140–151
   [PS4 distributed (due via `Canvas` on Weds. November 17 at 10:30 a.m.)]

*** Due: Critical Synopsis #2

Weds. November 12

- Instrumental Variables pt. 1

Reading

1. TBN Chapter 6, pp. 152–161

Mon. November 17

- Instrumental variables, pt. 2

Reading

1. TBN Chapter 6, pp. 161–180

*** Due: PS4

Weds. November 19

- Analyzing experimental data
- Discrimination in Colorado?

Reading

1. In-class exercise: Audit Study of Colorado's B&B industry

Nov. 24–28: NO CLASS (Fall Break)

Mon. December 1

- Student presentations

Weds. December 3

- Student presentations

*** Due: PS5 (Research Proposals)