PSC/IR 389: Senior Honors Seminar

University of Rochester
Fall 2020
Thursdays, 2:00 - 4:40pm
Classroom: 103 LeChase

Instructor: Scott Abramson
Office: We will not meet in person
sabramso@ur.rochester.edu
OHs: Wednesdays 10-12 & by appointment
https://rochester.zoom.us/j/91845951693

Teaching Assistant: Maria Silf
Office: She will not meet in person
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Ohs: TBD

General Information

The fall semester seminar will teach students how to write an original social scientific research paper. Students enrolled in the class are expected to complete a thesis in the spring. In the fall course, they will choose a research topic and question, find an advisor in the political science department, read the relevant literature, generate hypotheses, begin collecting data, think about strategies for addressing confounding concerns, and at the end of the semester produce a paper of roughly 12-15 pages that constitutes a draft of the final thesis. Along the way, students will read high-quality published articles, learn how to interpret regression tables and how to produce their own, understand pros and cons of various research design techniques, replicate two published research articles, and learn how to organize and to write a research paper. This course is primarily geared toward teaching students how to write a statistical empirical research paper.

Reading and software

All the readings will be uploaded to the Blackboard course website. Please contact me if links to any of the articles are broken. Although there are no required texts, the following books present regression and related techniques at a level that should be accessible to advanced undergraduates:

- Angrist, Joshua D. and Jorn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricists' Companion*. Princeton: Princeton University Press.
- Angrist, Joshua D. and Jorn-Steffen Pischke. 2014. *Mastering 'Metrics: The Path from Cause to Effect*. Princeton: Princeton University Press.
- Dunning, Thad. 2012. *Natural Experiments in the Social Sciences: A Design-Based Approach*. New York: Cambridge University Press.
- Freedman, David, Robert Pisani, and Roger Purves. 1997. *Statistics, Third Edition*. New York: W. W. Norton and Co. (Although there is a newer fourth edition, I list the third edition because it is cheaper used on Amazon. The material in Sections III, V, and VIII is particularly pertinent for this course.)
- Green, Donald P. and Alan S. Gerber. 2012. *Field Experiments: Design, Analysis, and*

Interpretation. New York: W.W. Norton & Company.

This course will teach students the basics of the statistical software R. R is free and open source. You can (and should/must) download it at https://cran.r-project.org/. RStudio is a popular code editor and is also available for free at https://www.rstudio.com/. A short tutorial you might want to work through is available here: https://data.princeton.edu/R

Maria will schedule an extra session, consulting with you on our first in-class session. In this extra session the she will will provide a brief refresher statistics and regression and go through basic commands in the statistical software Before this session I suggest you go through the linked material on R I have included above.

Grading

- **33% Two replication papers:** The first major assignment of the course is a roughly 5-page replication paper. The minimal requirements are a paper with two regression tables: one that replicates a table verbatim from an existing article, and one that makes some changes chosen by the student. Students are encouraged to explore various datasets and to be creative with how they alter existing empirical setups. A second replication paper will be due later in the semester, which may either analyze a different article or represent a substantial revision of the re-analysis for the original article.
- **34% "Final" fall paper:** At the end of the fall semester, students will hand in a 12-15 page paper that constitutes a rough draft of the thesis project. This paper will be jointly graded by myself and by your advisor.
- **33% Other written assignments and class participation:** There will be a series of short papers written in response to the readings in advance of class meetings, as well as other written assignments on a near-weekly basis. The assignments are also necessary for effective class participation, the grade for which will depend not simply on attending, but mainly on your contributions to the discussion. It is particularly important to actively engage your classmates' research ideas and to provide constructive feedback. However, you are also encouraged to use class time to find articles and otherwise do research for your projects, so faces buried behind screens while furiously typing is also welcome on occasion.

Submitting assignments and late policy

All written assignments for class, unless otherwise stated, are due via email by 5pm on the Wednesday before the class for which they are assigned. Late assignments will not be accepted. I will provide feedback on the assignments in class the next day. Additionally, all readings are to be completed prior to the class for which they are assigned.

Attendance

Attendance is required at all sessions. Please notify me of any known and unavoidable absences (e.g., University-sponsored academic or sporting event) at the beginning of the semester, and any unforeseen circumstances (e.g., death in the family, illness) as soon as possible as they arise. I understand that unforeseen events occur on occasion, but it is your responsibility, not mine, to keep me informed. This course moves quickly, and a handful of absences will likely require dropping the class.

Political science advisor

Each student will choose an advisor for their senior honors project. You are required to meet with your advisor at least three times during the fall semester. The schedule of classes below provides benchmarks for when these meetings should occur. As discussed more below, your advisor will be your main contact person in the spring. The following lists every full-time faculty member in the political science department that is not on leave in either Fall 2018 or Spring 2019, and constitutes the exhaustive list of possible advisors: Kevin Clarke, John Duggan, Mark Fey, Anderson Frey, Gerald Gamm, Hein Goemans, Gretchen Helmke, Tasos Kalandrakis, Bonnie Meguid, Sergio Montero, Scott Abramson, Bing Powell, Lynda Powell, Larry Rothenberg, Curt Signorino, Randy Stone, Scott Tyson, Dan Alexander, and Mayya Komisarchik. UR's political science website provides information about their research/teaching interests and office hours. Ideally, the student will have taken a course related to their topic with their advisor, although this is not required. Any professor will advise no more than one honors thesis in a given year.

Division of labor

You have many contact points in the honors program: me, your advisor, the TA, and your fellow students. In addition to the instruction in class, my and the advisors' role are to provide direction on the paper and to provide feedback on the broad ideas, writing, etc. I will presumably be your main contact in the fall, whereas this responsibility will shift to your advisor in the spring. The main role of the TA is to help with data details: creating a dataset, code for running regressions, inputting statistical results into your papers, etc. If you have a question on what statistical technique to use, myself or your advisor is probably your best bet, whereas if you have a question on how to implement a statistical technique, please see the TA first. You also have each other to talk to and from whom to receive feedback both during and outside of class. If you have trouble finding data or want to know if a dataset exists (or if the university can help you purchase a dataset), in addition to talking with myself and your advisor, you can also contact UR's social science librarian Justina Elmore (http://libguides.lib.rochester.edu/prf.php?account_id=66013), who will be happy to help.

Identifying a viable topic

There is no magic formula for identifying a viable research topic. Some students will begin the semester with an idea that works, and others will take more than a month to figure it out. DON'T PANIC! The purpose of the fall course is to provide structure for students as (for most) you embark upon your first independent research project. In addition to the material for the course, I would strongly recommend consulting/reading approximately five articles per week that pertain to your topic. This is already incentivized given the various assignments—plus, the assigned reading load in the early weeks is intentionally light—but having a concrete benchmark to think about may help. This does not necessarily mean knowing every fine detail of each article, but at least reading the intro and skimming the rest to get a sense of what has already been researched and what could be interesting to pursue. The only way to discover what needs to be done is by learning what has already been done!

Moving onto the spring thesis

Writing a thesis is a difficult endeavor. Even the most accomplished students will find this process difficult at times (my job requires writing original research papers and I still find it difficult). So, normal bouts of discouragement are inevitable, although hopefully the excitement of new discoveries outweighs the frustration. However, some students may find during the fall course that research simply isn't for them. Such students may choose to take the fall course without finishing the program in the spring (see the end of the syllabus for the spring timeline).

Although the fall course is prep for the spring, the two parts of the honors sequence carry distinct grades and therefore not continuing in the spring does not affect the fall grade. Related, for students who face considerable difficulty identifying viable projects, your advisor and I may recommend that you not continue the program in the spring. In such cases, I will do my best to bring any concerns to your attention sooner rather than later. Despite this caveat, I hope that this course provides a unique and valuable experience for every student.

Academic honesty
All assignments and activities associated with this course must be performed in accordance with the University of Rochester's Academic Honesty Policy. More information is available at: www.rochester.edu/college/honesty.

Disability Resources
The University of Rochester respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of disability, please contact the Office of Disability Resources. The access coordinators in the Office of Disability Resources can meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations. You can reach the Office of Disability Resources at: http://disability@rochester.edu; (585) 276-5075; Taylor Hall.

Course hours
This course follows the College credit hour policy for four-credit courses. This course meets once weekly for 160 minutes per week. The course also includes 40 additional minutes per week meeting with the instructor, TA, advisor, or in small groups for students to discuss their projects.

SCHEDULE OF CLASSES

August 27 – Introduction to social scientific research

In class: Provide overview of honors program in fall and spring semesters. Present basics of social scientific research and quantitative analysis: unit of analysis, treatment variable, dependent variable, sample, etc. Discuss students' initial project ideas. Provide advice on how to find relevant articles and data.

Assignments:

- Read Ross (2001), Friedman (2006). Write a short response (no more than 500 words) that addresses all of the following questions. What research question do these authors seek to answer? What are the main independent and dependent variables? What type of evidence do you find most convincing, and why? What type of evidence do you find least convincing, and why? In what ways does Ross' (2001) evidence differ from Friedman's (2006) evidence? What regression table in Ross (2001) contains the main findings from that article?

- Go through syllabi for political science courses you have taken, in particular ones you were interested in and that covered topics you may want to write about. Look back at relevant articles. Look up related articles on JSTOR and Google Scholar. Then, write no

more than 500 words (total) on at least two possible paper topics you might pursue. These ideas are very much **non**-binding, but writing something out before class will help to clarify your thoughts.
- Most of the honors theses from last year are posted on Blackboard. Skim them to get a sense of what good honors theses look like, although these certainly do not provide exhaustive templates of what constitutes a strong honors thesis.

Thinking about the medium-term: By October 23, you will have handed in a third draft of your project proposal and are required to have chosen an advisor. You are heavily encouraged to start reading articles relevant to projects you might pursue (as discussed above, approximately five per week), and to meet with one or several members of the political science department that you might want to advise you.

September 3 – Analysis I: Experiments and causal inference

In class: Discuss the assigned articles, discuss how to interpret a regression table, present guidelines for replication papers. Determine which students' projects we will discuss on September 19 and which on September 26.

Assignments:
- Read Tomz (2007), Huber et al. (2012), and the appendix to Green and Gerber (2012). Also read recent commentary on MTurk:
  - https://www.washingtonpost.com/blogs/monkey-cage/wp/2015/05/04/researchers-are-rushing-to-amazons-mechanical-turk-should-they/
  - http://duckofminerva.com/2013/07/mechanical-turk-and-experiments-in-the-social-sciences.html
  - https://michaelbuhrmester.wordpress.com/mechanical-turk-guide/
- Write a short response (approximately 500 words) that answers all of the following questions:
  - In each article, what is the unit of analysis? What is the main explanatory variable of interest? Which table conveys the main results? No additional explanation is required for these questions.
  - In your opinion, for which article does the evidence most convincingly support the hypothesis? Please explain in one paragraph.
  - Based on reading these articles, what are the main virtues of testing a hypothesis with experimentally generated data? What are the main drawbacks? Write one or two paragraphs on these questions that use specific examples from the articles.
  - What experimental design, feasible (i.e., within your means) or not, might be appropriate to learn about your topic?

Recommended resources for students interested in experiments (not required reading)
- Green, Donald P. and Alan S. Gerber. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W.W. Norton & Company.
- See the syllabus for Green and Gerber's experiments course in the readings folder
- Glennerster, Rachel and Kudzai Takavarasha. 2013. *Running Randomized Evaluations: A Practical Guide.* Princeton: Princeton University Press.
- Chapter 2 of *Mostly Harmless* and chapter 1 of *Mastering 'Metrics*
- Be mindful of ethical issues when running experiments: http://www.nytimes.com/2014/10/29/upshot/professors-research-project-stirs-political-

outrage-in-montana.html?_r=0

September 10 – Analysis II. Regression analysis and control variables

In class: Discuss articles, hand out regression table assignment, discuss half of class' projects.

Assignments:

- Read Hyde (2007), Cederman et al. (2010), and pgs. 47-81 of *Mastering 'Metrics*
- Write a short response (approximately 500 words) that answers all of the following questions:
    - In each article, what is the unit of analysis? What is the main explanatory variable of interest? Which table conveys the main results? No additional explanation is required for these questions.
    - In your opinion, for which article does the evidence most convincingly support the hypothesis? Please explain in one paragraph.
    - In your opinion, for which article does the evidence least convincingly support the hypothesis? Please explain in one paragraph.
    - Briefly describe how you might be able to use one of these techniques for your own paper.
- Second write-up of project plan for half of class (500 words, addresses one or two possible projects)

Recommended resources for students interested in learning more about natural experiments (not required reading)

- Diamond, Jared and James A. Robinson, Eds. 2011. *Natural Experiments in History*. Belknap Press.
- Dunning, Thad. 2012. *Natural Experiments in the Social Sciences: A Design-Based Approach*. New York: Cambridge University Press.

September 17 – Analysis III. Exploiting change over time

In class: Discuss articles, review regression table assignment, discuss other half of class' projects.

Assignments:

- Read Card and Krueger (1994), Malesky et al. (2014), and pgs. 178-208 of *Mastering Metrics*
- Write a short response (approximately 500 words) that answers all of the following questions:
    - In each article, what is the unit of analysis? What is the main explanatory variable of interest? Which table conveys the main results? No additional explanation is required for these questions.
    - In your opinion, for which article does the evidence most convincingly support the hypothesis? Please explain in one paragraph.

    - In your opinion, for which article does the evidence least convincingly support the hypothesis? Please explain in one paragraph.
    - Briefly describe how you might be able to use one of these techniques for your own paper.
- Hand in assigned worksheet on interpreting a regression table.
- Second write-up of project plan for other half of class (500 words, addresses one or two possible projects)

September 24 – Replication paper #1

In class: Discuss replication papers. Provide guidelines on literature review.

Assignment: Email your replication paper to me and the entire class. Prepare a short presentation and be prepared to speak for a few minutes on the setup and main findings from your article. Also read the other students' replication papers to be able to participate in the class discussion.

Be mindful that you have a second replication paper assignment due in about a month.

October 1 – Analysis IV. Effect Heterogeneity and Post-Treatment Bias (and a little bit on literature reviews)

In class: Present literature reviews and students' projects.

Assignment:

- Read the literature review section of Lee and Paine (2017), and skim the rest to get the idea of what the paper is about. This provides an example of an "active" literature review.
- Hand in a five-page literature review. Following instructions that I will have provided earlier, it should be an "active" literature review.

October 8 – Analysis V. Instrumental Variables & Organizing a research paper

In class: Present paper proposals

Assignments:

- Read pgs. 98-142 of *Mastering Metrics*
- Hand in a third draft of a paper proposal. You are also required to have chosen a thesis advisor by this date, and must discuss your proposal with your advisor prior to handing it in for this assignment. Like the first proposal, it should be roughly 500 words, but should be more focused than before (and should only contain a single project idea). It may be longer for students with a clearer idea for the project they want to pursue.

Notes:

- This week provides an important benchmark: by now, you should have a topic and at least some data that you plan to analyze for the final fall paper. You are, of course, encouraged to expand on your dataset as this semester continues and into the spring. However, because both the final fall paper and your assignment three weeks from now require statistical analysis, it will be difficult to complete the fall semester course if you do not yet have a topic and some idea about data you will use. *CHANGING TOPICS AFTER THIS DATE IS HIGHLY DISCOURAGED*.
- Recall you are required to meet with your advisor at least three times this semester. One will have happened by this date. You also must discuss your second draft with your advisor between November 28 and December 12. Therefore, at some point between October 24 and November 28, you must meet with your advisor one more time.

October 15 – Analysis VI. Regression Discontinuity Designs

In class: Finish paper proposals presentations

Assignment: Read *Mastering Metrics* 147-205

October 22 – Analysis VII. Discrete Choice (Or other Methods Topics on Request)

In class and assignments: Check in with students about their second replication paper.

October 29 - Replication paper #2

In class: Prepare a short presentation on your replication papers. Provide details on the outline due next week.

Assignment: Email your replication paper to me and the entire class. Be prepared to speak for a few minutes on the setup and main findings from your article. Also read the other students' replication papers to be able to participate in the class discussion.

November 5 – Outline of final paper

In class: Presentation of students' outlines and projects.

Assignment: Outline of the thesis paper.

November 13 – First draft and regression table

In class: Presentation of students presentation of drafts.

Assignments:

- Email the first draft to me and your classmates by **5pm on Tuesday, November 11**. The first draft of the final fall paper will begin to fill in parts of the outline. It must include a title, abstract, some sentences in the introduction that elaborate on the abstract, a revised version of your literature review, brief discussion of your data, and at least one regression table (or other statistical results) accompanied by a 1-2 page write-up.
- Read other students' first drafts and be prepared to contribute to discussing their papers.

November 20 – Second draft

In class: Presentation of students' drafts.

Assignments:

- Email the second draft to me and your classmates by **5pm on Tuesday, November 17**. The second draft should incorporate feedback from the November 16 class and possibly incorporate suggestions from your advisor as well. The closer this looks to a final draft of the fall paper, the more concrete advice I can provide to ensure you receive a high grade on the final paper.
- Read other students' second drafts and be prepared to contribute to discussing their papers.

November 27 – Happy Thanksgiving! (But don't forget about your papers!)

In class: Discuss students' drafts.

Also, in between the November 27 and December 10 courses, you must meet with your advisor.

December 10* – Final fall papers

***This is technically after the semester has ended. If this additional class causes problems for any students, please let me know as soon as possible.**

In class: Discuss students' final papers.

Assignments:

- Email your final paper to myself, your advisor, and the entire class by **5pm on Tuesday, December 10**.
- Read other students' papers and be prepared with comments and questions on them for the class discussion.

OVERVIEW OF SPRING SEMESTER

The spring semester is, intentionally, less structured than the fall. You can set a schedule with your advisor that works for both of you. However, you should plan to meet with your advisor every week or every other week, and should rarely go more than two weeks without being in contact with your advisor. You can, of course, also talk to me in the spring, but your advisor

should be your main contact point. The TA will also still be available throughout the spring semester to help with any dataset and statistical issues. The only hard deadlines in the spring are as follows. I will check in with your advisors to ensure these deadlines are met.

- January 22: This is the Friday of the first full week of courses. You should have spoken to your advisor sometime this week, and no later than the next week, to construct a plan of action for finishing the thesis within the next three months.
- February 19: You should have completed a substantially expanded or otherwise revised draft of the fall paper by this point.
- March 5: This is the Friday before spring break (woo!). Students are highly encouraged to have **finalized** their datasets by this point. In my experience from previous years, the consistent criticism even of very good theses is that the students kept changing their data late enough that their advisors did not have time to review the final statistical analyses. You want your paper to go through at least two major rounds of comments with largely the same statistical analysis (or at least the same dataset) to ensure that your paper analyzes the data properly.
- March 22: Penultimate draft of paper due to advisors. This will provide enough time to incorporate their feedback prior to the final thesis draft due three weeks later.
- April 14: Final theses due by 5pm via email. Please include me, your advisor, and your fellow students on the email. This deadline cannot be amended. Otherwise, we will not have enough time prior to graduation to assign and process the honors distinctions.

GRADING STANDARDS FOR FINAL SPRING THESIS

These apply only to the final thesis, not to the paper due at the end of the fall semester.

Honors: Meets standards for an A-/A undergraduate paper that contains an original research component. The paper should be well-written, clearly organized, with an appropriate research design, and with findings that contribute to knowledge on the topic. We anticipate this grade being awarded to most students, perhaps three in four students, with most of the remainder receiving either High Honors or Highest Honors. *We recognize that, on rare occasions, papers will not meet the standard for Honors. When that happens, the paper should receive a grade of "No Honors." Bear in mind that students receiving "No Honors" can still get credit for PSC 393W, but with a course grade no higher than B+.*

High Honors: Meets all standards for Honors, plus (a) outstanding writing, organization, and description of results, (b) high quality execution of empirical tests, where appropriate (criteria include but are not limited to clever research design, significant data collection component, and/ or thoroughness of statistical tests), and (c) significant contribution to knowledge about the topic. We anticipate this grade being awarded to perhaps one in four students.

Highest Honors: Meets all standards for High Honors, plus with a level of accomplishment truly unusual for an undergraduate. This should be a paper that would be regarded as an excellent paper for a second-year graduate student, bearing in mind that we do not expect undergraduates to have the advantage of two years of graduate training in methods and formal theory. May be a candidate for publication with appropriate revisions. We anticipate this grade being awarded rarely, perhaps once for every 10-15 students.