PSC/IR 389: Senior Honors Seminar

University of Rochester
Fall 2017
Thursdays, 2:00-4:40pm
Classroom: 160 LeChase

Instructor: Jack Paine
Office: 326 Harkness
jackpaine@rochester.edu
www.jackpaine.com
OHs: Tuesdays 11:30-12:30, Wednesdays 11:15-12:15

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, although it will also provide guidance for writing a thesis using other methods.

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 package STATA. Although it is not required for students to purchase a personal STATA license, students may find it more convenient to have STATA on their computer rather than to have to go to the library to complete the handful of assignments that will require STATA or to conduct data analysis for their project. The one-year student site license is somewhat expensive, at $125, although this price may appear more reasonable when thinking about STATA as a textbook. The UR IT site (http://tech.rochester.edu/software/stata/) links students to the following website to purchase the software:
http://www.stata.com/order/new/edu/gradplans/campus-gradplan/.

Grading
- **33% 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.
- **34% "Final" fall paper:** At the end of the fall semester, students will hand in a 12-15 page paper that either constitutes a rough draft of the thesis project or otherwise makes progress toward the paper that will be completed at the end of the spring. 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 2017 or Spring 2018, and constitutes the exhaustive list of possible advisors (in alphabetical order): Scott Abramson, Kevin Clarke, John Duggan, Mark Fey, Anderson Frey, Gerald Gamm, Hein Goemans, Gretchen Helmke, Tasos Kalandrakis, Mary Kroeger, Bethany Lacina, Bonnie Meguid, Sergio Montero, Jack Paine, Bing Powell, Lynda Powell, Larry Rothenberg, Curt Signorino, and Randy Stone. 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: myself, 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!

SCHEDULE OF CLASSES

August 31 – Review of statistics and overview of STATA

In class: I will be traveling for a political conference this week and the TA will teach today's course. The class will provide a brief overview of statistics and regression, and go through basic commands in the statistical software package STATA.

September 7 – 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) and 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 26, 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 14 – 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 21 and which on September 28.

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 21 – 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 28 – 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.

- o 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)

October 5 – Replication paper #1

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

Assignment: Email your replication paper to myself 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.

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

October 12 – Draft of literature review

In class: Discuss 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 19 – Analysis IV. Additional methods topics

In class and assignments: TBD based on students' projects. Possibilities include interaction terms, logistic regression, instrumental variables, and qualitative methods. Check in with students about their second replication paper.

October 26 – Organizing a research paper

In class: Discuss handouts on organizing a research paper. Discuss students' projects.

Assignments: 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 30 and December 14. Therefore, at some point between October 26 and November 30, you must meet with your advisor one more time.

November 2 – Replication paper #2

In class: Discuss replication papers. Provide details on the outline due next week.

Assignment: Email your replication paper to myself 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 9 – Outline of final paper

In class: Discuss students' outlines and projects.

Assignment: Outline of the thesis paper.

November 16 – First draft and regression table

In class: Discuss students' drafts.

Assignments:
- Email the first draft to me and your classmates by **5pm on Tuesday, November 14**. 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 23 – Happy Thanksgiving! (But don't forget about your papers!)

November 30 – Second draft

In class: Discuss students' drafts.

Assignments:
- Email the second draft to me and your classmates by <mark>5pm on Tuesday, November 28</mark>. 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.

December 7 – No class, work on revising your papers and meet with your advisor.
I will hold extra office hours during class time if students want to discuss their papers. However, I will not read a new draft of the paper in between the second and final draft. If you want advice or feedback on a specific part, I will read up to 2 pages of a document. Also, in between the November 30 and December 14 courses, you must meet with your advisor.

December 14* – Final fall papers

*This is technically after the semester has ended. However, if we have this class on December 7, I doubt students would have enough time to incorporate the feedback provided on their previous draft. If this "extra" course 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 <mark>5pm on Tuesday, December 5</mark>.
- 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 26: 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.
- March 4: New draft of paper due to advisor.
- March 25: 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 16: 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.