Name and Title: Yosh Halberstam, Assistant Professor
Department: Economics

TITLE OF RESEARCH PROJECT: Empirical Micro Applications to Political Economy

Number of 299Y Spots: 2 Number of 399Y Spots: 1

OBJECTIVES AND METHODOLOGY:
One of the most striking empirical regularities in modern democratic elections is the incumbency advantage: the effect of winning one election on the probability of winning the next election. A large literature takes a top-down approach to explaining this advantage, focusing on, for example, the existing campaign infrastructure, ties with the media and access to public resources. These studies relate aggregate voter behavior to political outcomes. However, little is known about how individual voters respond within these mechanisms (or why).

In the proposed project, we will:

1. Develop a theoretical framework that classifies the incumbency advantage into persuasion (changes in party preferences within the electorate) and mobilization (changes between electorates) effects and estimate these effects using election returns.
2. Provide evidence using data from Twitter on the evolution of individual voter preferences and behavior from one election to the next focusing on the transition in attention from candidate selection to political accountability.
3. Explore the role of federal spending allocations by a politician within his constituency in the incumbency advantage to determine whether politicians target the marginal voter (persuasion) or their support base (mobilization).

The literature in empirical microeconomics has developed formal methods for identifying casual relationships using naturally occurring data. Informed by economic theory, these relationships shed light on the behavior and responses of agents in markets, including political markets. We will leverage these methods in the proposed research program.

DESCRIPTION OF STUDENT PARTICIPATION:
I am looking for motivated and driven students who have strong analytical skills and are interested in empirical economics, data analysis, and/or microeconomics in a broader sense. A commitment to high-quality work, prior programming experience (outside of a one-term class), and critical thinking skills are essential.
The student(s) will participate in the research project by completing an independent stepping stone project, which involves:

1. Getting exposed to a range of microeconomic literature.
2. Developing a manageable empirical research question.
3. Completing a review of the relevant literature.
4. Identifying relevant data sets, data cleaning, analysis, and development of appropriate empirical strategies.

For all aspects of the project, students will work closely with the faculty supervisor. The skills gained by working on this project will provide important experience to help prepare both for future research projects (e.g., thesis) and for graduate school.

**MARKING SCHEME (assignments with weight and due date):**

The final grade will be based on:

1. Ongoing participation in and contribution to the research project. This includes weekly meetings with the faculty supervisor and conducting research in an efficient, effective, and professional manner. (30%)
2. Maintaining a written research journal/work log to record research activities as well as discussions with the project supervisor every week. The journal will be marked twice: once by November 15, 2020, and a second time by March 30, 2020. (5% each)
3. Two short (approximately 10 minutes) presentations students are expected to give to the faculty supervisor and other members of the research team; one to propose the project (given by 30 November, 2019 at the latest) and one to present the project’s findings (given by April 1, 2020). (10% each)
4. A final report (approximately 6-8 pages) which follows the format of a scientific paper, including an introduction, a literature review, the model set-up, results and discussion (due by April 5, 2020). (50%)
RESEARCH OPPORTUNITY PROGRAM
299Y PROJECT DESCRIPTIONS 2019-2020
FALL/WINTER

Name and Title: Jonathan Hall, Assistant Professor
Department: Economics

TITLE OF RESEARCH PROJECT: Development of Applied Microeconomic Theory of Highway Tolling

Number of 299Y Spots: 1

OBJECTIVES AND METHODOLOGY:
Applied theory strives to provide models and develop theories that further our understanding of economic phenomena in the real world, guide empirical economists, and aid policy makers. The resulting models are not unlike road maps: simplified representations of the real world, leaving out features that may be essential in a different context, and – most importantly – only as valuable as they are useful in helping us navigate.

The focus on microeconomics means that models are generally built from first principles – from individuals acting as utility maximizers, firms maximizing profits, etc. This project will be focusing on improving our understanding of how tolls should be implemented on urban highways. We will be using models like those in Arnot, De Palma, and Lindsey (1993) and Chu (1995).

Building such models requires strong analytical skills, a strong mathematical foundation, an enjoyment of puzzles, a variety of problem-solving strategies, and a willingness to play, fail, and learn from trial and error.

DESCRIPTION OF STUDENT PARTICIPATION:
I am looking for a motivated and driven student who has strong computer programming (Python or Stata preferred) and mathematical skills (calculus, linear algebra, proofs) and is interested in economic modeling, applied theory, and urban economics. Having a history with math competitions, prior experience with proofs, and/or programming experience would be useful.

The student will have the opportunity to participate in the research project in a number of ways:

1. The student will engage in a review of the relevant literature on congestion pricing.
2. The student will do basic data analysis or simulations.
3. The student will assist with model development and with establishing theoretical results.
4. The student will gain experience in writing economic. The student will be involved in preparing presentations and in the write-up of the results, including additional library research, writing specific sections of the paper, as well as reading and commenting on drafts of the paper.

While the student will engage in all of these, the exact mix will depend on student interest and the research needs of the project. In addition, while the student will focus on the project described above, they will also engage with my other research projects in order to give them a sense of the breadth of topics and methods used in research.
For all aspects of the project, students will work closely with the faculty supervisor. The skills gained by working on this project will provide important experience to help prepare both for future research projects (e.g., thesis) and for graduate school.

**MARKING SCHEME (assignments with weight and due date):**

The final grade will be based on:

- ongoing participation in and contribution to the research project. This includes weekly meetings with the faculty supervisor and conducting research in an efficient, effective, and professional manner. (30%, first half due by December 5, 2019, second half by April)
- maintaining a written research journal/work log to record research activities as well as discussions with the project supervisor every week. (10%)
- two short (approximately 10 minutes) presentations student is expected to give to the faculty supervisor; one as a status update (given by 30 November 2019 at the latest) and one to present the project’s findings (given by April 1, 2020). (10% each)
- literature review (10%, by December 2019)
- a final report (approximately 6-8 pages) which follows the format of a scientific paper, including an introduction, a literature review, the model set-up, results and discussion (30%, by April 2020).