MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, 2015 - Expected completion June 2020
DISSERTATION: "Essays on Innovation in Health Care Markets"

DISSERTATION COMMITTEE AND REFERENCES

Professor Amy Finkelstein
MIT Department of Economics
77 Massachusetts Avenue, E52-442
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Professor Heidi Williams
Stanford Department of Economics
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Professor James Poterba
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PRIOR EDUCATION

Washington and Lee University — 2013
B.S. in Mathematics and Biochemistry
Summa Cum Laude

CITIZENSHIP USA, Netherlands

GENDER Female

LANGUAGES English (native), Dutch (fluent)

FIELDS

Primary Fields: Health Economics, Public Finance

Secondary Fields: Economics of Innovation, Industrial Organization

TEACHING EXPERIENCE

14.46 Innovation Policy and the Economy — 2018
Teaching Assistant to Professor Heidi Williams

RELEVANT POSITIONS

Research Assistant to Professor Glenn Ellison, MIT — 2016
Research Assistant to Professor Amy Finkelstein, NBER and MIT — 2013-2015

FELLOWSHIPS, HONORS, AND AWARDS

Church Sexual Abuse Crisis Research Grant (with Daniel Hungerman and Tyler Giles) — 2019
NBER Pre-Doctoral Fellowship in Aging and Health — 2017-2019
National Science Foundation Graduate Research Fellowship — 2015-2020
MIT Graduate Fellowship — 2015-2017
Washington and Lee University
Phi Beta Kappa Society (elected Junior Year) — 2012
Lee Scholar (full-ride merit scholarship) — 2009-2013

PROFESSIONAL ACTIVITIES

Presentations:
Theory of the Firm Conference on Academic Lobbying, Columbia University Business, Law, and Policy Schools — 2019

Co-President, MIT Graduate Economics Association — 2016-2017

PUBLICATIONS

"Outpatient Wait Times and Quality of Care for Medicaid Patients" (first author with Amy Finkelstein and Liran Einav), *Health Affairs*, 36(5), May 2017: 826-832.

RESEARCH PAPERS

"Funding of Clinical Trials and Reported Drug Efficacy" (Job Market Paper) Clinical trials are a key determinant of drug approvals and also influence prescription decisions. In recent years, an increasing share of clinical trials have been funded by pharmaceutical firms, as opposed to by the public sector. This paper estimates the effect of financial sponsorship on reported drug efficacy, leveraging the insight that the exact same sets of drugs are often compared in different randomized control trials conducted by parties with different financial interests. In principle, randomized control trials comparing the same drugs should yield comparable estimates, regardless of the interests of the trial's funders. In practice, I use newly assembled data on hundreds of psychiatric clinical trials to estimate that a drug appears 0.15 standard deviations more effective when the trial is sponsored by that drug's manufacturer, compared with the same drug in the same trial without the drug manufacturer's involvement. Observable characteristics of trial design and patient enrollment explain little of this effect. In contrast, sponsored papers with non-positive results are more likely to remain unpublished. Back-of-the-envelope calculations suggest this publication mechanism can account for nearly half of the sponsorship effect. The sponsorship effect decreases over time as pre-registration requirements were implemented, which is suggestive, that pre-registration may be effective in overcoming sponsorship bias.

"Screening and Selection: The Case of Mammograms" (with Liran Einav, Amy Finkelstein, Abigail Ostriker, and Heidi Williams), *NBER Working Paper #26162* (2019), *Revise and Resubmit at the American Economic Review*

Debates over whether and when to recommend screening for a potential disease focus on the causal impact of screening for a typical individual *covered* by the recommendation, who may differ from the typical individual who *responds* to the recommendation. We explore this distinction in the context of recommendations that breast cancer screening start at age 40. The raw data suggest that responders to the age 40 recommendation have less cancer than do women who self-select into screening at earlier ages. Combining these patterns with a clinical oncology model allows us to infer that responders to the age 40 recommendation also have less cancer than women who never screen, suggesting that the benefits of recommending early screening are smaller than if responders were representative of covered individuals. For example, we estimate that shifting the recommendation from age 40 to age 45 results in over three times as many deaths if responders were randomly drawn from the population than under the estimated patterns of selection. These results highlight the importance of considering the characteristics of responders when making and designing recommendations.

RESEARCH IN PROGRESS

"Opium for the Masses: The Effect of Declining Religiosity on Drug Poisonings, Suicides, and Alcohol Abuse"

Drug poisonings, opioid overdoses, suicides, and alcoholic liver disease mortality have all increased dramatically in the past two decades. A potential factor in this crisis of 'deaths of despair' is declining community ties and social cohesion. To test this hypothesis, I assess the causal impact of declining religiosity on opioid deaths, instrumenting for religiosity with the Catholic sex-abuse scandal. First, I document that opioid deaths and religiosity are strongly negatively correlated across counties. Then, I find that an 8% decrease in religious employment - equivalent to the decrease observed since the height of the Catholic sex abuse scandal - would increase opioid deaths by 4.8 per 100,000, approximately a third of the current opioid epidemic. The effects of religiosity are concentrated in areas with higher Catholic rates before the scandal. In contrast, I find no evidence that religiosity affects other drug deaths, suicides, or mortality due to alcoholic liver disease.

"Site Selection and Heterogeneous Effects in Clinical Trials"

New drug treatments are required to show efficacy in clinical trials, but efficacy rates in the general population are generally believed to be much lower than trial estimates suggest. One potential explanation is that clinical trials may enroll patients – e.g. younger, healthier patients – who are more likely to benefit from the treatment than the average treatment recipient in the population. I test for this idea by leveraging the fact that in many cases the same drug is tested in different trials and at different site locations within a trial, leading to a distribution of treatment effect estimates across heterogeneous populations. Using individual-level data, I estimate the magnitude of site and participant selection bias in clinical trials – namely, whether the probability that patients of a particular demographic are enrolled in a clinical trial is correlated with their potential treatment effect. I also estimate to what extent this selection bias affects out-of-sample inference of clinical trial results to the general population.