

Nathaniel D. Mark

CONTACT INFORMATION

Columbia University
Economics Department
420 W. 118th St.
New York, NY USA

Phone: +1(914)874-1097
E-mail: ndm2125@columbia.edu
Research Website:
Teaching Website: www.nathanieldmark.weebly.com

RESEARCH INTERESTS

Health Economics, Industrial Organization, Econometrics, Cliometrics

EDUCATION

Columbia University, New York, NY

Ph.D., Economics, Expected May 2021

- M.Phil. Completed, May 2018
- M.A. Completed, May 2017
- Field Specializations: *Industrial Organization* and *Econometrics*
- Completed PhD Coursework:
  - Core Courses: *Math Methods for Economists, Macroeconomic Analysis I&II, Microeconomic Analysis I&II, Intro to Econometrics I&II, Perspectives on Economics*
  - Field Courses: *Industrial Organization I, Empirical Industrial Organization, Industrial Organization III, Microeconometrics, Macroeconometrics, Topics in Econometrics, Topics in Health Economics*

London School of Economics, London, UK

M.Sc., Economics, with Merit, July 2015

- Specialization: *Industrial Organization*
- Thesis: "Competing Over Quality: Testing Implications of Vertical Differentiation Theory in US Hospital Duopolies" (Advisor: Prof. Pasquale Schiraldi)

The Johns Hopkins University, Baltimore, MD

B.A., Economics, with Departmental and General Honors, May 2014

- Major: *Economics*
- Minors: *History*, *Mathematics*, and *Applied Mathematics and Statistics*
- Economics Thesis: "An Analysis of Proximity to Public Transportation Hubs and Real Estate Valuation" (Advisor: Prof. Bruce Hamilton)
- History Thesis: "Building a Community: The Physical and Cultural Development of Pittsburgh's Highland Park Neighborhood, 1778-1900" (Advisor: Prof. Mary Ryan)
- Independent Study: "Fashionable Sin: The Social History of Tobacco and the History of the Anti-Tobacco Movement in England, 1500-1919" (Advisor: Prof. Gabriel Paquette)

Works in Progress

- "Efficient Estimation of Mixed Multinomial Logit with Covariate Distribution Knowledge"
- "NHSC Policy and Health Care Personnel Distributions in the US"
- "Primary Care Payment Reforms and Physician Distributions in Ontario, Canada"

Teaching Experience

Columbia University, New York, NY

Teaching Assistant, Undergraduate Courses

- Introduction to Econometrics (Fall 2016, Spring 2017, Fall 2018)
- Industrial Organization (Fall 2017)
- Time Series Econometrics (Spring 2018)

Teaching Assistant, Graduate Courses

- Mathematics for Economists [Ph.D] (Summer 2017)

Awards

- Wueller Teaching Award [for best teaching of a core undergraduate economics course] (Fall 2016/Spring 2017)

Village Learning Place, Baltimore, MD

Teaching Assistant

- 3rd and 4th Grade Students (2011)

Committee Memberships and Advising Positions

Columbia University, New York, NY

- Industrial Organization Colloquium, Student Organizer (Fall 2018 - Present)
- Industrial Organization Reading Group, Organizer (Summer 2018)
- ISERP Interdisciplinary Graduate Student Seminar Series, Organizer (Fall 2017-Present)
- Association for Graduate Economics Students, Treasurer (Fall 2016- Present)
- Economics Department, Undergraduate Advisor (Spring 2018)

The Johns Hopkins University, Baltimore, MD

- Career Center, Peer Advisor (Spring 2011- Spring 2012)

Research Assistantships

Columbia University, New York, NY

- Research Assistant, Prof. Katherine Ho, Economics Department (Feb 2017 - Present)

The Johns Hopkins University, Baltimore, MD

- Research Assistant, Prof. Louis Galambos, Institute for Applied Economics, Global Health, and the Study of Business Enterprise (Jan 2014 -June 2015)
- Research Assistant, Prof. Nicholas Papageorge, Economics Department (Sep 2013 - Aug 2014)
- Research Assistant, Prof. Steve Hanke, Institute for Applied Economics, Global Health, and the Study of Business Enterprise (June 2012 - Sep 2013)
- Research Assistant, Jessica Holzer, Bloomberg School of Public Health (Jan 2012 - Apr 2012)

United States Patent and Trademark Office, Alexandria, VA

- Student Trainee (Economist), Office of the Chief Financial Officer (June 2012 - Jan 2013)

TECHNICAL EXPERIENCE

- **Course Experience:** R, Stata, Matlab, Python
- **Work/Research Experience:** R, Stata, LaTeX, Excel, ArcGIS, SAS

PERSONAL INFORMATION

- **Native Language:** English
- **Citizenship:** USA
- **Marital Status:** Single

Princeton University **Department of Economics**
285 Julis Romo Rabinowitz Building
Princeton, New Jersey 08544

September 17, 2018

Elisa Pepe
National Bureau for Economic Research

Dear Ms Pepe,

I am writing to provide a recommendation in support of Nathan Mark's application to attend the NBER's Health Economics Research Boot Camp for Graduate Students this December. Nate is beginning his fourth year in the Economics PhD Program at Columbia University. I am his primary advisor (despite having moved from Columbia to Princeton over the summer). He took my second year class in Industrial Organization; has been the Teaching Assistant for my undergraduate class; and is currently a co-author on a project with Michael Dickstein that I describe briefly below.

Nate is one of the most promising students I advised during my 13 years at Columbia. I would rank him in the same equivalence class as Zach Brown, who just started as an assistant professor at the University of Michigan, and Jessie Handbury, now an assistant professor at Wharton. He entered Columbia with an interest in the economics of health care and it has remained the focus of his research, with a side dose of industrial organization.

Nate's primary research question for his dissertation concerns the impact of various government policies on physicians' decisions regarding the location of their practices. Around the world, physicians live and work in rural areas at a much lower rate than the general population. This issue is particularly pronounced in the US and Canada, and various government policies have been proposed to address it. For example, physicians could receive tax credits or other forms of payment if they choose to locate in rural areas; they could receive tuition relief; or rural students could be given incentives to attend medical schools (including medical schools in rural areas). Nate has obtained a dataset from Ontario that contains detailed information on physicians' location choices over time, their medical school history, and their revenues. This is sufficiently detailed to allow him to estimate a model that can be used to evaluate the different potential policies.

The paper consists of a demand-side model of patient choice of physicians and a supply-side model of physician choice of location. The work does not shy away from difficult modeling issues. For example, Nate does not observe exact locations of patients or physicians in his data.

Telephone: (609) 258-7632 FAX: (609) 258-6419 Email: kate.ho@princeton.edu

This generates bias in the estimation procedures. Nate corrects for this bias, rather than ignoring it.

Nate is also working on two other projects related to the health care sector. One is a reduced-form paper focused on the effectiveness of a federal program to incentivize physicians to move to rural areas. This work applies a quasi-experimental design to estimate treatment effects of incentives on health clinics. In addition, he is working with Michael Dickstein and me on another paper that focuses on the small-group insurance market. Mike and I obtained all-payer claims data from Oregon and originally planned to employ Nate as an RA. His contribution to the project has been so substantial that we recently promoted him to co-author status.

Overall I think very highly of Nate. He would benefit significantly from the exposure to new ideas, and personalities, that the NBER boot camp would provide. I hope you can find room for him.

I would be happy to provide further information if this would be helpful.

Sincerely,



Kate Ho
Professor of Economics
Co-director, Center for Health and Wellbeing
Princeton University

Nathaniel Mark

Columbia University

September 13, 2018

Application for the NBER Health Economics Research Boot Camp for Graduate Students

Cover Letter

Thank for organizing the NBER Health Economics Research Boot Camp. As a young researcher at the beginning of my career, I value opportunities to observe different perspectives of health economics from the leading economists in the field. Additionally, interacting with other PhD students in health economics is a rare, but very important input in producing high quality research. For these reasons, I am applying to the NBER Health Economics Research Boot Camp. My information are as follows:

Name: Nathaniel Mark

University: Columbia University

Year: 4th Year

Primary Advisor: Kate Ho (Princeton)

Secondary Advisor: Tobias Salz (Columbia)

University Address:

1022 International Affairs Building (IAB)
Mail Code 3308
420 West 118th Street

Personal Address:

195 Claremont Ave
Apt. 39
New York, NY 10027

Phone Number: (914) 874-1097

Email Address: ndm2125@columbia.edu

Nathaniel Mark

Columbia University

September 13, 2018

Application for the NBER Health Economics Research Boot Camp for Graduate Students

Essay

Health care is not an ordinary industry. The labor force is highly educated, organized, and powerful. Not-for-profit firms are the norm. The output (health care) is simultaneously a consumption good and an investment good. Most importantly, healthcare interacts with enumerable sociological and economic aspects of human life.

These complexities hinder empirical inference. Thus, many health care policies are not well-understood, despite their large influence on the economy and the wellbeing of the population. My research focuses on applying advanced econometric tools to the analysis of such policies.

My primary current research agenda examines the so-called *maldistribution* of physicians. Across diverse locales around the world, rural and high-poverty areas have a shortage of primary care physicians. Governments have introduced incentive programs to combat these shortages. Studies of such incentive programs rely on counterfactuals using estimated discrete choice models. That is, a function describing physicians' choice of locations is estimated. Policy effects are estimated by simulating the difference in the physician maldistribution between two policy environments.

Two of my current research projects contribute to this literature. In one project, I use data from the Canadian province of Ontario to estimate a structural model of primary care physician choice of location. In previous research, counterfactuals did not account for endogenous changes in demand when estimating effects of policy changes. To remedy this, I estimate a demand system both for physician services and physician roster space over locations. In the physician discrete choice model, physicians respond to both policy incentives and demand for physician services when choosing locations.

Estimating demand for physician services requires non-standard modeling techniques to account for physician capacity constraints and unobserved locations. The econometric theory literature on estimating discrete choice models with limited knowledge of covariates is small. I am developing conditions under which coefficients of such a model are partially identified or point identified, and algorithms to attain the identifiable sets.

In addition, this paper contributes to the literature on optimal physician payment schemes. Over the last two decades, Ontario has added capitation and mixed-capitation payment schemes as alternatives to traditional fee-for-service. I explore how payment schemes interact with demand and choice of location. That is, do certain payment schemes incentivize practicing in rural locations more than others?

A second project examines the effect of the National Health Service Corps (NHSC) incentives on the ability of Health Clinics to recruit, retain, and offer low wages to physicians in the US. The NHSC provides medical school scholarships and education loan repayments for physicians who practice in areas with a high enough Health Professional Shortage Area (HPSA) score. This project exploits discontinuities in the HPSA scoring equation to compare health clinics that are eligible for NHSC incentives to similar health clinics that are not eligible to incentives. Preliminary results find that NHSC scholarship programs have large effects on health clinic outcomes, while NHSC loan-repayment eligibility has an insignificant effect.

I plan to continue applying advanced econometric techniques to explore patient and physician behavior, and its policy implications. I am interested in the heterogenous switching costs associated with patients changing physicians. Understanding switching costs would have many practical implications for policy and market design. Additionally, I would like to explore physician avoidance behavior. Many patients, even with health insurance, never go to the doctor. Understanding this behavior is both interesting and important for health outcomes and the market for health insurance.

I would benefit from The NBER Health Economics Research Boot Camp in two main ways. First, I would learn perspectives and tools of the trade from the best health economists in the country. Perspectives on best practices and expertise on the frontier of research differ across institutions. In consequence, to reach my full potential, I need to learn from experts at other institutions. This boot camp is one of the few opportunities to do so. Second, the boot camp would allow me to interact with other young health economists. This social experience should not be underappreciated. It will build potential research partnerships, grow my network of expertise, and provide further perspective on the current state of research in health economics. Interactions of these types are what differentiate good research from great research. I would like to thank you for this opportunity as I strive for the latter.