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Application

Jay Prakash Nagar
Fuqua School of Business, Duke University

Contact information

- Jay Prakash Nagar, fourth-year PhD student, Fuqua School of Business, Duke University, Durham, NC, USA
- Email: jayprakash.nagar@duke.edu (alternate: j.prakashnagar@gmail.com)
- Website: `https://sites.google.com/view/jay-prakash-nagar/home`

Graduate coursework

I am a fourth-year PhD student in the Strategy area at Duke University's Fuqua School of Business, enrolled since August 2023, with training in applied microeconomics and the economics of innovation and entrepreneurship.

I have completed the required PhD course sequence: microeconomic theory and econometrics at the Department of Economics, machine learning and natural language processing at the Department of Computer Science, and innovation and entrepreneurship in the Business Administration track. In these classes I learned microeconomic theory and game theory, causal inference, and panel and time-series econometrics. In the computing courses I studied supervised and unsupervised machine learning and text as data, from embeddings to the fundamentals of transformer models. The innovation courses covered economic theories of patents, markets for technology, entrepreneurial strategy, and venture financing. I passed the preliminary exam in April 2026.

Research interests

I am interested in how science translates into innovation: what shapes who benefits from scientific knowledge and how, and how geography and institutions shape that process.

My previous work approaches this by measuring the value of innovation. Jointly with Ashish Arora, Sharon Belenzon, and Elia Ferracuti (*Organization Science*, 2026), I reexamined how the value of scientific inventions is estimated. The article extends a method that uses the stock-market reaction to a discrete event, a patent grant or an acquisition, to measure the incremental value the event creates for the firm.

Two studies published in *Research Policy* address it from an institutional perspective. With Stefano Breschi and Andrea Fosfuri (2024), I asked whether the scientific output funded by the European Research Council is used in inventions, and where those inventions are made; this is where my interest in how geography shapes the transformation of science into innovation began. With Andrea Fosfuri (2026), I examined how the timing of venture capital investment shapes whether science-based firms reach commercialization.

Research in process

My current research works on several dimensions of this question. How far does science travel before it turns into invention? How do machines alter the information markets receive about firms? What is paid for the knowledge firms buy? And how did immigrant inventors shape the geography of invention in America?

Global Integration in Science-Based Innovation (with Dan Gross, Duke). We build a

structural gravity model of home bias in patent-to-publication citations and estimate it on USPTO and OpenAlex data. The model lets us ask what it would cost to close or fragment the science system, including a US-China split. Presented at the Academy of Management in August 2026; the draft is close to circulation.

LLM capacity and earnings-announcement uncertainty (with Mukul Kaushik, UNC Kenan-Flagler). We ask whether the growth of LLM context windows, which sets how much of a disclosure a machine reader can process at once, changes how markets price earnings announcements. We measure each filing's length against model capacity with a tokenizer built over SEC filings and relate it to variance risk premia around announcements. The pipeline is built and estimation is underway.

The value of acquisitions (with Roger Masclans). We measure how much value an acquisition creates for the acquiring firm and revisit whether acquisitions create value at all. The method extends the KPSS signal-extraction approach from patents to deals: a Bayesian filter with deal-specific truncation separates the deal's contribution to the stock-market reaction from noise, and we validate the estimates against ex post outcomes.

Historical patent data for migration and innovation (with Stefano Breschi, Dario Diodato, Andrea Morrison, Sergio Petralia, and coauthors). We build a dataset of US patents from the Age of Mass Migration, with inventor names and locations cleaned and harmonized so that patents can be linked to historical census records on origin and migration. Because a name and location often match several census records, we train a machine-learning classifier to pick the correct one and discard the rest.

Published.

- "Revisiting the Private Value of Scientific Inventions," *Organization Science*, 2026 (with Ashish Arora, Sharon Belenzon, and Elia Ferracuti).
- "Timing is Key: Navigating Venture Capital Funding for Science-Based Startups," *Research Policy*, 2026 (with Andrea Fosfuri).
- "ERC Science and Invention: Does ERC Break Free from the EU Paradox?" *Research Policy*, 2024 (with Stefano Breschi and Andrea Fosfuri).
- "City Size, Deprivation and Other Indicators of Development: Evidence from India," *World Development*, 2018, 106, 273–283 (with Arup Mitra).

Dissertation

I am in the early stages of my dissertation. It will look at how AI changes the innovation process: how firms discover, assess, and integrate knowledge once machines can both read and produce it, and what that implies for who captures the value of new inventions; and how AI changes the production of scientific knowledge, including the importance of priority when ideas can be produced and disseminated by machines.

Committee: Prof. Ashish Arora (co-advisor) and Prof. Daniel P. Gross (co-advisor).