Charu Gupta

Curriculum Vitae (May 2021)

Contact Information

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Education

Postdoctoral Scholar, UCLA Anderson School of Management, incoming 2021
PhD, Managerial Science and Applied Economics, The Wharton School, expected 2021
PhD Visiting Scholar, Haas School of Business, UC Berkeley, 2016–2017
MSc, Economics, London School of Economics and Political Science, 2012
AB, Economics (Honors) and International Relations, *magna cum laude*, Brown University, 2007
Visiting student, Université de Paris I Panthéon-Sorbonne, 2006

Dissertation

Title: *Essays in the Economics of Intellectual Property and Innovation*
Committee: Matthew Grennan (Chair), Daniel Levinthal, Noam Yuchtman

Research Fields

Applied Microeconomics; Economics of Innovation; Strategy; Health Economics

Research Employment

Research Assistant for Professor Matthew Grennan, The Wharton School, 2016
Research Assistant for Professor Robert Town, The Wharton School, 2015–2016
Research Economist, Precision Health Economics, Los Angeles, CA, 2012–2014
Senior Research Associate, Precision Health Economics, Los Angeles, CA, 2011–2012
Senior Research Assistant, Federal Reserve Bank of Boston, 2007–2010

Working Papers

"One product, many patents: Imperfect intellectual property rights in the pharmaceutical industry." *Job Market Paper.*

"Spillovers across product categories in the medical device industry" with Matthew Grennan and Mara Lederman. R&R at *Journal of Economics & Management Strategy.*

"Industry, universities, and intellectual property." White paper prepared for the NBER-IFS International Network on the Value of Medical Research.

Research in Progress

"Valuing novelty in consumer demand for pharmaceuticals"

"Standing on the patents of giants: Concentrated intellectual property rights and cumulative innovation"

Awards and Honors

International Industrial Organization Conference (IIOC) Rising Stars Session, 2021
GAPSA Research Student Travel Grant, 2019
NBER-IFS Value of Medical Research Pre-Doctoral Fellowship, 2018–2019
Institute of Research on Innovation and Science Dissertation Award, 2018
Mack Institute Research Fellowship, The Wharton School, 2017–2020
Distinction (highest honors) in master's thesis, Economics Dept., London School of Economics, 2012
National Science Foundation Graduate Research Fellowship Honorable Mention, 2010
President's Award, Federal Reserve Bank of Boston, 2010
Samuel C. Lamport Prize for outstanding senior thesis, Economics Dept., Brown University, 2007
Phi Beta Kappa & *magna cum laude* (highest honors), Brown University, 2007

Selected PhD Coursework

Microeconomic Theory; Game Theory; Econometrics; Applied Econometrics (Berkeley); Empirical Methods for Counterfactual Analysis; Topics in Applied Microeconomics; Industrial Organization (Berkeley); Corporate Strategy; Economic Foundations of Management; Models and Methods in Health Economics; Industrial Organization of Health Care

I am a current PhD Candidate at Wharton and incoming Postdoctoral Scholar at UCLA Anderson. My research explores intellectual property rights and innovation in the pharmaceutical, medical device, and biotechnology sectors. I am applying to the Doctoral Workshop because I have identified multiple avenues in which I can extend my dissertation research to the economics of artificial intelligence. I am particularly interested in three main topics:

1. ***The role of AI in scientific discovery and innovation***. My job market paper studies how secondary patenting can extend monopoly duration and alter innovation incentives in the pharmaceutical industry. Cockburn, Henderson, and Stern (2019) note that AI can serve as a "method of invention" across many technologies, including for novel drugs. I intend to build on my job market research to evaluate whether patenting activity differs for drug candidates by development method and how drug discovery trajectories may change with increased AI use.

2. ***The implications AI has on antitrust policy***. In joint work with Matthew Grennan and Mara Lederman, we estimate the performance spillovers dominant firms experience across related product lines in the medical device industry and discuss resulting antitrust implications. When such firms also collect and use data from their consumers, this can further their dominance (Agrawal, Gans, and Goldfarb 2019). One avenue to extend our existing research is to determine how the use of health care data by device firms may magnify the spillovers we quantify.

3. ***The use of machine learning in health economics and innovation research***. I am interested in applying machine learning techniques to the analysis of large health care claims and patent datasets. To that end, I attended the 2018 AEA Continuing Education Program in Machine Learning and Econometrics taught by Susan Athey and Guido Imbens. I expect machine learning to be especially useful in exploring the heterogeneous impacts of different pharmaceutical patent types on monopoly duration.

I look forward to the opportunity to broaden my exposure to the economics of AI, to understand better how I can incorporate its study into my own research agenda, and to meet with other graduate students sharing similar interests at the 2021 Doctoral Workshop.