Charu Gupta

Curriculum Vitae (January 2023)

Contact Information

University of California, Los Angeles
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Education

Postdoctoral Scholar, UCLA Anderson School of Management, 2021–present
PhD, Managerial Science & Applied Economics, The Wharton School, University of Pennsylvania, 2021
MS, Health Care Management, The Wharton School, University of Pennsylvania, 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) & 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; Technology 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

Teaching

Teaching Assistant, The Wharton School
- MGMT 721, Mergers and Acquisitions (EMBA), Fall 2018
- HCMG 391, Health Care Entrepreneurship (undergraduate), Fall 2018
- HCMG 213, Health Care Strategy (undergraduate), Fall 2018
- MGMT 612, Managing the Emerging Enterprise (MBA core), Fall 2016
- ECON 39/HCMG 212, Health Economics (undergraduate), Spring 2016

Graduate Student Instructor, UC Berkeley, Department of Economics
- ECON 100A, Microeconomic Analysis (undergraduate), Summer 2017

Working Papers

"One product, many patents: Imperfect intellectual property rights in the pharmaceutical industry"

"Spillovers across product categories in the medical device industry" with Matthew Grennan and Mara Lederman

"Drug repurposing policy: Lessons from the COVID-19 pandemic" with Wesley Greenblatt and Jennifer Kao. Revised & resubmitted.

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

Research in Progress

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

"Valuing novelty in consumer demand for pharmaceuticals"

"Does going public affect pharmaceutical innovation? Evidence from clinical trials" with Jennifer Kao

"Strategic entry in regulated markets" with Jennifer Kao

"Medical innovation with competing risks" with Alexander Olssen

Awards and Honors

Price Center for Entrepreneurship & Innovation Research Grant, UCLA Anderson, 2021-2022
International Industrial Organization Conference (IIOC) Rising Stars Session, 2021
GAPSA Research Student Travel Grant, University of Pennsylvania, 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

Professional Activities

NBER Summer Institute, invited participant, 2018, 2020–2022
Wharton PhD Peer Mentor, 2018–2019
NBER Entrepreneurship Research Boot Camp, 2018
Price Theory Summer Camp, Becker Friedman Institute, 2018
Strategy Science Pre-Conference Doctoral Workshop, 2018
AEA Continuing Education Program, Machine Learning and Econometrics, 2018
Leonard Davis Institute of Health Economics, Associate Fellow, 2017–2021
Summer Undergraduate Minority Research (SUMR) Program mentor, 2016
Mack Innovation Doctoral Association, 2014–2021; Executive Board, 2017–2019; President, 2018–2019
Wharton Society for the Advancement of Women in Business Academia, 2014–2021

Memberships

American Economic Association; European Economic Association; American Law and Economics Association; American Society of Health Economists; Academy of Management; Strategic Management Society

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

References

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Professor Daniel Levinthal
The Wharton School
University of Pennsylvania
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I am a recent PhD graduate from Wharton and current Postdoctoral Scholar at UCLA Anderson. My research to-date explores intellectual property rights and innovation in the pharmaceutical, biotechnology, and medical device sectors. I am applying to the NBER Digitization Tutorial because digitization and artificial intelligence are playing increasingly important roles in health care technology strategy, and I intend to incorporate questions related to digitization into my research agenda. I am especially interested in four main topics:

1. ***The growth of digital technologies in health care***. My current and prior research concerns the timing and implications of technology adoption. In joint work with Matthew Grennan and Mara Lederman, we use detailed hospital-month level data on medical device manufacturer sales to study the introduction of major product innovations on device demand across product lines. In my master's thesis at the London School of Economics, I evaluated how the adoption of the internet in the 1990s and 2000s influenced US voter turnout, and in recent work, I explore the strategic timing of generic drug entry. I am particularly interested in expanding my research on technology adoption to the growth of digital technologies in health care, such as electronic health records, and how they influence physician prescribing behavior.

2. ***How digitization alters antitrust policy***. In the work described above on medical devices, we estimate the performance spillovers dominant firms experience across related product lines and discuss resulting antitrust implications. If innovation in one product line leads to an incumbant firm's success in related products, it may make entry in those related product lines more difficult for new firms with potentially better products. When dominant 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 multiproduct device firms may magnify the spillovers we quantify.

3. ***The effect of digitization on IP rights and follow-on innovation***. In my job market paper for the 2023–2024 academic market, I examine how intellectual property rights to upstream research discoveries impact the development of follow-on scientific research and commercial innovation in biotechnology. The changing nature of science is continually changing legal standards as to what is patentable and that can influence the rate and direction of subsequent scientific developments. With the mapping of genes and advance of personalized medicine, an important area for future study is how digitization impacts the design of intellectual property rights and incentives to innovate in health care markets.

4. ***The role of AI in scientific discovery and innovation***. In ongoing research, I study 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 current research to evaluate whether patenting activity differs for drug candidates by development method and how drug discovery trajectories may change with increased AI use.

Participating in the 2023 NBER Digitization Tutorial would allow me to gain exposure to the economics of digitization, to learn from preeminent researchers in the field, and to meet other junior scholars with similar interests. I know the tutorial will help advance my research agenda on technology strategy in health care markets, and I hope to offer a unique contribution to other attendees given my background in health economics. I look forward to the opportunity to be an active participant at the Digitization Tutorial.