Rahul Gupta
Fuqua School of Business
P.O. Box 90120
100 Fuqua Drive
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March 28, 2016

Thomas Hellmann
Saïd Business School
University of Oxford
Park End Street
Oxford OX1 1HP
UK

Dear Professor Hellmann:

My participation in this year's NBER Entrepreneurship Research Boot Camp will advance my research agenda by allowing me to exchange ideas, refine research questions, and further develop a sophisticated understanding of current scholarship with leading scholars and fellow graduate students. From my two-year full-time Research Associate appointment at Harvard Business School with Professors William Kerr and Joan Farre-Mensa to my first year of doctoral study at Duke University's Fuqua School of Business, I have consistently pursued a research agenda in entrepreneurship and the economics of innovation consistent with that of the ERBC.

After commencing the process for Census Bureau Special Sworn Status to formalizing a cohesive research agenda in entrepreneurship, I enter the stage of my research and academic career where I stand to benefit from and contribute most to interactions with my peers at the ERBC. One strand of my research in entrepreneurship examines the spillover effects of entrepreneurial activity on existing plants and firms and how entrepreneurs can exploit gains from agglomeration economics in clusters. Another line examines the relationships between innovative and entrepreneurial activity and local labor market dynamics in terms of the market for star scientists and the inter-sectoral mobility of workers. The final component of my research agenda considers how local capital markets influence entrepreneurial and firm R&D outcomes and decisions by supporting spinoffs, churning, and the migration of entrepreneurs. My perspectives on regional labor dynamics, firm productivity, and entrepreneurial finance are well-aligned with the ERBC's agenda and speakers.

I look forward to using insights from and contributing to the dialogue of the ERBC to advance research in entrepreneurship, foster academic linkages with my peers, and embark on the latter and research stages of my doctoral study.

Professor Aaron Chatterji (address: Duke University, Fuqua School of Business, 100 Fuqua Drive, Durham, NC 27708; email: ronnie@duke.edu; tel: (919) 660-7903) is providing my letter of recommendation, though my CV lists additional references of faculty familiar with my research profile. I can be contacted by email at rahul.r.gupta@duke.edu or phone at (260) 417-8297. Thank you for your consideration.

Kind Regards,
Rahul R. Gupta

# Rahul R. Gupta

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## EDUCATION

**Duke University, Fuqua School of Business, 2015-2020 (expected)**

PhD in Business Administration

Advisors: Aaron Chatterji and Wesley Cohen

**Doctoral courses completed/in progress*: Microeconomic Theory I/II, Econometric Theory I/II, Seminar in Strategy, Seminar in Empirical Corporate Finance; Theoretical and Empirical Perspectives on Entrepreneurship (Audited; Harvard, Spring 2014)

**Boston University, Graduate School of Arts and Sciences, 2013**

M.A. in Economics

**Indiana University, Kelley School of Business and College of Arts and Sciences, 2012**

B.S. & B.A. in Finance, Mathematics, and Economics

## RESEARCH FIELDS

Economics of Agglomeration, Entrepreneurship, and Innovation
Labor Economics
Entrepreneurial Finance

## RESEARCH APPOINTMENTS

Harvard University, Harvard Business School, 2013-2015

Research Associate

Supervisors: William Kerr and Joan Farre-Mensa

- Duranton, Gilles, Ejaz Ghani, Arti Gover Goswami, and William Kerr, "Effects of land misallocation on capital allocations in India", World Bank Policy Research WP, 2015.
- Kerr, William and Martin Mandorff, "Social networks, ethnicity, and entrepreneurship", NBER WP 16042, 2015.
- Ghani, Ejaz, William Kerr, and Ishani Tewari, "Specialization, diversity, and Indian manufacturing growth", World Bank Policy Research WP, 2013.
- Other projects (on-going at end of appointment) include the spatial dynamics of US innovation (Prof. Kerr) and corporate cash policies for private and public firms (Prof. Farre-Mensa).

## SEMINAR PRESENTATIONS

Duke Strategy Brownbag, 2016

## FELLOWSHIPS

Duke University, Doctoral Fellowship for Tuition and Stipend, 2015-2021

## TEACHING EXPERIENCE

Duke University, Fuqua School of Business

- Foundations of Strategy (MBA core course), Grader, 2015

Indiana University, Department of Economics

- Economics Department, Tutor, 2011-2012
- Statistics for Economics and Business, Teaching Assistant, 2011

## COMMUNITY ACTIVITIES

Horizons for Homeless Children, Volunteer, Boston, MA 2014 – 2015

## LANGUAGES

English (native), Hindi (speaking fluency), French (intermediate)

## REFERENCES


*Aaron Chatterji
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Duke University
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William Kerr
Professor
Harvard University
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Wesley Cohen
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Joan Farre-Mensa
Assistant Professor
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jfarremensa@hbs.edu

My research agenda focuses on the determinants and outcomes of entrepreneurship and the clustering of innovative activity. Though in the early stages of my doctoral program, my prior research experience has allowed me to craft a proposal with the Census Bureau and pursue a consistent line of research. I am entering the stage of the research process where the returns to conferring with leading scholars and my graduate student peers in entrepreneurship research are maximized. The Entrepreneurship Research Boot Camp (ERBC) will provide me with new perspectives on the open questions in the literature from which to better design and execute my research agenda with sound theoretical and empirical underpinnings and advance scholarship in entrepreneurship. I expect to fully contribute to discussions, providing my own insights and perspectives while building linkages with prominent scholars and doctoral students in the field. In particular, this year's preliminary list of speakers is uniformly in line with my research interests: Prof. Aghion (entrepreneurship and growth); Prof. Bloom (innovation and productivity); Professors Hellmann, Lerner, and Schoar (entrepreneurial finance and financing of innovation); Prof. Haltiwanger (labor allocation and plant-level productivity); Prof. Hurst (financing constraints and entrepreneurial formation); and Prof. Stern (clustering of entrepreneurial and innovative activity).

Having served as a full-time research associate to Professors William Kerr and Joan Farre-Mensa at Harvard Business School from 2013 to 2015, I was afforded the opportunity to think carefully about the research questions in entrepreneurship and innovation that now comprise my research agenda and portfolio. During the first year of my PhD program, I formulated and submitted a research proposal to the Census Research Data Center and began developing a cohesive agenda for my second year paper and beyond. My research agenda is motivated by big picture empirical facts like income inequality, the bifurcation of labor markets between skilled and unskilled labor, and the debate on the productivity slowdown. However, my research seeks to understand the firm- and plant-level dynamics generating these trends in the context of local entrepreneurial and innovative clusters. Though policymakers at the all levels of government have sought to address these issues through place-based policies, loan guarantees, and inducing local industrial clusters, the underlying processes and mechanisms determining entrepreneurial success that lead to socially optimal labor and firm outcomes are less understood.

I study these questions as an interaction between labor economics and entrepreneurial finance unified through entrepreneurship and innovation. The following represents a listing of projects I am either currently commencing or committed to pursuing over the course of my doctoral study: the determinants and financing of innovation and R&D in firms, the role of entrepreneurial and innovative firms in generating plant productivity distributions, the spillover effects of firm entry and spatial clustering of entrepreneurial activity on productivity and innovative output in incumbent firms, and optimal strategies on part of entrepreneurs and policymakers for capturing returns to agglomeration economies.

The Census Bureau proposal is geared towards explaining firm productivity heterogeneity and employment dynamics through the lens of localized firm entry patterns and innovative activity. By accessing Census microdata, I hope to uncover the local industrial conditions that are most conducive to entrepreneurial success. These conditions are manifested by inter-sectoral linkages or sector-specific spillovers and reflected in local industrial specialization and subsequent entrepreneurial formation. They may shape the innovation process, determine R&D intensities for firms, and vary across industries and regions. Scholars differ on whether specialized or diverse industrial bases are most conducive for subsequent entrepreneurship and innovation. The relationship may be dynamic and specific to interactions between region specific traits, labor mobility, and industrial heterogeneity. The channel linking specialization or diversity to entrepreneurial formation

arises from whether knowledge sharing and labor pooling are accentuated in regions with diverse skills or instead an abundance of particular technical abilities and lead to entrepreneurial success. The innovative and productivity benefits arising from Marshallian agglomeration economies or the pressure on incumbents to innovate by innovative entrants are evidenced by estimating the evolution of plant productivity from the Longitudinal Business Database, observing changes in patent output and scope, and assessing hazard rates for entrepreneurs. Innovative entrants may not only generate spillover effects to neighboring firms, but also reap benefits themselves. Understanding the labor and capital allocation decisions that successful and failing incumbents and entrepreneurs firms pursue across industries and technology classes may provide evidence into the precise channels by which spillover effects are generated and realized. Identification strategies include a regression discontinuity approach comparing competitive innovation/small business funding award winners (e.g.: SBIR) and their counties to those nearly missing the cutoff (Howell, 2015), implementation of a Oaxaca-Blinder decomposition to compare entrepreneurial county firms to company towns, and capturing agglomeration economies through estimates of TFP (perhaps similar to Greenstone, Hornbeck, and Moretti, 2010).[1]

A related line of research aims to understand how firms and localities retain R&D scientists and provide insight into mechanisms by which clusters perpetuate, decay, or adapt to changing industry dynamics. The Longitudinal Employer-Household Dynamics database allows researchers to observe employee movements, providing evidence of entrepreneurial clustering through a churning process, migration of R&D scientists to an attractive region, or a spinoff process endogenous to the existing cluster. However, this strand of research is not restricted to scientists in the high-tech sector. Prior scholarship documents the wage benefits to unskilled labor in the presence of high-skilled peers, but the literature generally leaves open both the sorting mechanisms of workers into the high-tech or low-tech sectors, incumbent or entrepreneurial firms, and the evolution of worker skills, tasks, productivity, and the firms that best capture them. In other words, I am interested in growth-entrepreneurship's spillover effects across the skill distribution.

One piece of my future research direction deals with local capital markets and entrepreneurship. The availability of financial capital and relaxing of financial constraints may enable employees to leave companies and start their own, induce entrepreneurial entry from other regions, or simply lead to churning. The spinoff process has been known to shape the economies of Silicon Valley today and Detroit decades ago. This Schumpeterian process is conceivably enabled by financial capital in a region. The composition and development of local capital markets consists of data from the FDIC's Summary of Deposits and VentureXpert to determine the distribution of community banks, large banks, and venture capital in a region. Access to certain types of capital is a potential determinant of the nature and profile of successful entrepreneurial ventures whether they be spinoffs of existing firms, cross-sector collaborations between scientists and employees in a region, or small entities centered about a few star scientists. The evolution of local capital markets may also determine the entrepreneur's optimal financing strategy, undertaking of frontier R&D projects, and ability to weather macroeconomic shock.

Attending the ERBC will allow me to more rigorously develop these ideas into well-posed questions founded on sound theory and empirics. Having formulated a research proposal, considered various econometric techniques for causal identification, and being in the process of obtaining relevant data through the Census Bureau merged with other databases, the ERBC arrives as I embark on independent research and advance my academic career. The ERBC will provide me with a critical perspective of my research and that of my peers, the opportunity to discuss open questions in the literature, and consider methods with leading scholars and students to further scholarship.

[1]Greenstone, Michael, Richard Hornbeck, and Enrico Moretti, 2010, "Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings." *Journal of Political Economy* 118(3).
Howell, Sabrina T, 2015, "Financing constraints as barriers to innovation: Evidence from R&D grants to energy startups." *SSRN 2687457*.

To Whom It May Concern:

I am writing to strongly recommend Rahul Gupta for the NBER Entrepreneurship Research Bootcamp. Rahul is a Ph.D. student in the Strategy area. I have known him for two years, beginning when I was a Visiting Professor and he was a Research Associate at HBS. I was incredibly excited when he joined our doctoral program since he was our top target. After the first year, he has surpassed all of my expectations.

Rahul will be finished with his first year of classes when the bootcamp begins, but I would view him as a much more advanced and mature candidate. Due to his time at HBS and the mentorship he received there, he came to Duke with a very clear idea of his research interests. Moreover, he had already identified several datasets he would use in his research and has begun the process of getting access to them. I don't think there could be a safer bet than Rahul in terms of selecting participants for this bootcamp. I would say that there are only a few job candidates for faculty positions each year that display the maturity and intellectual curiosity that Rahul has as a first year student. He is the best entering doctoral student that I have encountered up to this point.

Rahul is broadly interested in using Census data to understand how shocks to financial institutions and access to capital impact firm entry and growth. His work will ultimately end up at the intersection between economics, strategy and entrepreneurial finance and I think he will be a very successful academic. I expect him to primarily make his mark in economics and finance journals given his interests and inclinations today, thought that could of course change.

So far, Rahul has impressed me as a student who is very independent and programmatic in his research. He has not swayed much in terms of what he thinks is interesting and important. He is also well-trained and precise enough at this early stage to know what he can and cannot answer with available data. With some additional years of development, the sky is the limit.

It gives me great pleasure to recommend Rahul this bootcamp. Please let me know if you have any questions about Rahul and I would be glad to chat further about him.

Sincerely,

Aaron Chatterji

Associate Professor

Duke University