NBER Innovation Research Boot Camp

Harsh Gupta
Stanford University
Email: hgupta13@stanford.edu
Advisor: Prof. Heidi Williams

January 16, 2022

Harsh Gupta
Department of Economics
Stanford University

Education

2019- Stanford University
Doctorate of Philisophy, Economics

2017-2019 University of California, Los Angeles
Master's of Arts, Economics

2015-2019 University of California, Los Angeles
Bachelor's of Science, Mathematics/Economics (Magna Cum Laude)

Research Assistant/ Teaching Positions

2020-2022 Research Assistant, Dr. Matthew Gentzkow, Stanford Department of Economics

2018-2019 Research Assistant, Dr. Hugo Hopenhayn, UCLA Department of Economics

2017-2018 Research Assistant, California Policy Lab, UCLA

Research Interests

- Industrial Organization - Innovation
- Health Economics
- Network Theory

Working Papers

"Do Female Researchers Increase Female Enrollment in Clinical Trials", 2022

"Mixed Logit Models and Network Formation" (with Mason Porter), 2022

Research Projects: Current and Planned

"Health Consequences of Under-representation in Clinical Trials", 2022

"Ideological Preferences in the Coverage of Scientific Research by Media Outlets" (with Matthew Brown), 2022

Industry Experience

2017 Data Science Intern, ALG Inc., A TrueCar Company

Research Funding

IRiSS Research Data Grants (2021) - $3,000

Honors and Awards

2019 Honors Pass, Econometrics and Quantitative Methods Comprehensive Exam, UCLA

2018-2019 Undergraduate Research Fellows,UCLA

2017-2019 Departmental Scholars' Program, UCLA

2018-2019 Richard Carlton Meeker Jr. Scholarship, UCLA

2017 Phi Beta Kappa, UCLA

Contact/Personal Information

E-mail: hgupta13@stanford.edu

Website: http://web.stanford.edu/~hgupta13/

Languages: English, Hindi, Bengali

Citizenship: Indian

Leland Stanford Jr. University
Stanford, CA 94305
USA

Graduate Unofficial Transcript - Detailed

Name : Gupta,Harsh
Student ID : 06347024

Print Date: 01/16/2022

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* Worksheet - For office use by authorized Stanford personnel *

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--------- Academic Program ---------

Program : Economics
09/23/2019 : Economics (PhD)
Active in Program

--------- Transfer Credits ---------

Applied Toward Economics
Transfer Credit from University of California Los Angeles
Quarter Units Posted: 45.00

Total Quarter Units Posted: 45.00

Allowable Transfer Credit subject to restrictions.

--------- Beginning of Academic Record ---------

2019-2020 Autumn

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	210	LEC	MACROECONOMICS I Martin Schneider; Monika Piazzesi	4.00	4.00	A
ECON	241	LEC	PUBLIC ECONOMICS I B. Bernheim; Caroline Hoxby	3.00	3.00	A+
ECON	292	CAS	QUANTITATIVE METHODS FOR EMPIRICAL RESEARCH Guido Imbens	3.00	3.00	A

GR Term GPA 4.090 Term Totals 10.00 10.00
GR Cum GPA 4.090 Cum Totals 10.00 10.00

2019-2020 Winter

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	211	LEC	MACROECONOMICS II Monika Piazzesi; Pete Klenow	3.00	3.00	A
ECON	244	LEC	MARKET FAILURES AND PUBLIC POLICY Heidi Williams; Liran Einav	3.00	3.00	A
ECON	271	LEC	INTERMEDIATE ECONOMETRICS II Guido Imbens	3.00	3.00	A
WELLNESS	130	SEM	MEDITATION Frederic Luskin	1.00	0.00	NC

GR Term GPA 4.000 Term Totals 10.00 9.00
GR Cum GPA 4.047 Cum Totals 20.00 19.00

2019-2020 Spring

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	204	LEC	MICROECONOMICS III Fuhito Kojima; Matthew Jackson	3.00	3.00	S
ECON	212	LEC	MACROECONOMICS III Adrien Auclert; Patrick Kehoe	2.00	2.00	S
ECON	272	LEC	INTERMEDIATE ECONOMETRICS III Liran Einav; Luigi Bocola Luigi Pistaferri; Thomas MaCurdy	2.00	2.00	S
ECON	293	CAS	MACHINE LEARNING AND CAUSAL INFERENCE Stefan Wager; Susan Athey	3.00	3.00	S

GR Term GPA 0.000 Term Totals 10.00 10.00
GR Cum GPA 4.047 Cum Totals 30.00 29.00

2019-2020 Summer

Course		Cmpt	Title	Attempted	Earned	Grade
CS	229	LEC	MACHINE LEARNING Anand Avati	3.00	3.00	CR
ECON	239D	INS	DIRECTED READING Matthew Gentzkow	7.00	7.00	CR

GR Term GPA 0.000 Term Totals 10.00 10.00
GR Cum GPA 4.047 Cum Totals 40.00 39.00

2020-2021 Autumn

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	257	LEC	INDUSTRIAL ORGANIZATION 1 Jose Ignacio Cuesta; Liran Einav Paulo Somaini	4.00	4.00	A+
OUTDOOR	103	ACT	FOUNDATIONS OF OUTDOOR EDUCATION Emily McCune; Sue Lowley	2.00	2.00	S
PEDS	220	LEC	COVID-19 ELECTIVE Rishi Mediratta	1.00	1.00	S
STATS	300A	LEC	THEORY OF STATISTICS I Dominik Rothenhaeusler	3.00	3.00	A-

GR Term GPA 4.042 Term Totals 10.00 10.00
GR Cum GPA 4.046 Cum Totals 50.00 49.00

Information must be kept confidential and must not be disclosed to other parties without the written consent of the student.

Leland Stanford Jr. University
Stanford, CA 94305
USA

Graduate Unofficial Transcript - Detailed

Name : Gupta,Harsh
Student ID : 06347024

2020-2021 Winter

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	247	LEC	LABOR ECONOMICS II Joanne DeMarchena; Nicholas Bloom	5.00	5.00	A
ECON	258	LEC	INDUSTRIAL ORGANIZATION IIA Ali Yurukoglu; Matthew Gentzkow Neale Mahoney	5.00	5.00	A+

GR Term GPA	4.150	Term Totals	10.00	10.00	
GR Cum GPA	4.075	Cum Totals	60.00	59.00	

2020-2021 Spring

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	249	LEC	TOPICS IN HEALTH ECONOMICS I David Chan; Maria Polyakova Neale Mahoney	5.00	5.00	A
ECON	260	LEC	INDUSTRIAL ORGANIZATION III Heidi Williams; Liran Einav	4.00	4.00	A

GR Term GPA	4.000	Term Totals	9.00	9.00	
GR Cum GPA	4.060	Cum Totals	69.00	68.00	

2020-2021 Summer

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	239D	INS	DIRECTED READING Matthew Gentzkow	1.00	1.00	CR

GR Term GPA	0.000	Term Totals	1.00	1.00	
GR Cum GPA	4.060	Cum Totals	70.00	69.00	

2021-2022 Autumn

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	300	SEM	THIRD-YEAR SEMINAR Alessandra Voena; Heidi Williams	6.00	6.00	S
ECON	355	SEM	INDUSTRIAL ORGANIZATION WORKSHOP Brad Larsen; Heidi Williams Jonathan Levin; Jose Ignacio Cuesta Liran Einav; Matthew Gentzkow	3.00	3.00	S

GR Term GPA	0.000	Term Totals	9.00	9.00	
GR Cum GPA	4.060	Cum Totals	79.00	78.00	

2021-2022 Winter

Course		Cmpt	Title	Attempted	Earned	Grade
ECON	355	SEM	INDUSTRIAL ORGANIZATION WORKSHOP Brad Larsen; Heidi Williams Jonathan Levin; Jose Ignacio Cuesta Liran Einav; Matthew Gentzkow	8.00	0.00	

GR Term GPA	0.000	Term Totals	8.00	0.00	
GR Cum GPA	4.060	Cum Totals	87.00	78.00	

Graduate Career Totals

Cum GPA	4.060	Cum Totals	87.00	78.00

--------- Non-Course Milestones ---------

Candidacy Qualifying Process -
Plan: ECON-PHD
Completed - 09/20/2021

Candidacy Form - Doctoral Candidacy Form
Plan: ECON-PHD
Completed - 09/20/2021

Dissertn Read Committee Approv -
Plan: ECON-PHD
Not Completed

University Oral Exam (doct) -
Plan: ECON-PHD
Not Completed

Doctoral Dissertation -
Plan: ECON-PHD
Not Completed

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* Worksheet - For office use by authorized Stanford personnel *
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END OF TRANSCRIPT

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Application Essay

The economics of innovation asks a diverse set of questions that are of interest to researchers, practitioners, and policymakers across the globe. These questions are answered by an eclectic group of researchers who bring different perspectives and tools which further enhances the richness of this field. For me, the Innovation Research Boot Camp (IRBC) is a unique opportunity to learn more about this vast field and gain fresh insights on the research questions that I am currently working on.

The IRBC lectures will help me learn about the key questions in the field and the cutting-edge methodology used to answer them by leading scholars. The Summer Institute meeting will expose me to the current frontier of research in the economics of innovation. These activities will help me become a more well-rounded scholar and enable me to more effectively tackle the challenges in my own research. The opportunity to interact with other aspiring researchers will further enrich the learning experience.

Moreover, the engagement opportunities with both faculty and students will greatly improve the research I am currently working on and inspire novel research ideas for the future. These interactions will also help form professional relationships that will help me grow as a researcher for years to come. I briefly discuss the specific research I am currently working on that would benefit greatly from the IRBC.

Clinical Trials and Inequality Innovation results in tremendous social returns[1], however the benefits from innovation are not equally distributed in society which can exacerbate existing inequities in society with potentially severe distributional consequence[2]. My current research focuses on how race and sex interact with the innovation process and affects who benefits from innovation with a particular emphasis on clinical trials. Clinical trials are central to biomedical innovation from both a scientific and regulatory perspective. The composition of individuals participating in a given clinical trial can affect both the rate and direction of resulting innovation. Despite its importance, it is well known that there is a lack of participation of female and Black patients in clinical trials[3]. However, very little is known about how the lack of trial participation affects various outcomes of interest and what policies are efficient and equitable.

In my project *"Health Consequences of Underrepresentation in Clinical Trials: Evidence from Lung Cancer"*, I am studying how the lack of participation of Black patients in clinical trials affects prescription decisions for novel drugs and health outcomes in the context of late-stage non-small cell lung cancer (NSCLC). Specifically, I am investigating whether physicians make worse treatment decisions for Black patients because of a lack of information on novel treatments. Moreover, I am studying how these decisions affect overall survival. For this project, I have manually collected novel data on clinical trials. In the future, I plan to use regulations mandating domestic clinical

[1] Jones and Summers (2020).

[2] For example, see Cutler, Meara, and Richards-Shubik (2012); Jaravel (2019).

[3] Feldman, Ammar, Lo, Trepman, van Zuylen, and Etzioni (2019); Murthy, Krumholz, and Gross (2004); Stewart, Bertoni, Staten, Levine, and Gross (2007)

trials in Japan and China as exogenous shocks to Asian trial participation. I will then compare how prescription decisions and health outcomes change for Asian American patients relative to Black patients using detailed and comprehensive health records from Medicare and the Veterans Health Administration.

In a related project *"Equity, Efficiency, and Offshoring in Biomedical Innovation: Evidence from Clinical Trials"* (with Marcella Alsan, Maya Durvasula, and Heidi Williams), we are investigating - using survey experiments and observational data - the demand for diverse trials among racial minorities and whether diverse trials encourage racial minorities to adopt novel treatments. We hope to distinguish between two mechanisms: concerns about the representativeness of knowledge about drug safety and efficacy, versus mistrust of biomedical research more broadly. On the supply side, we will examine whether the recent practice of offshoring clinical trials - contracting with secondary firms to conduct trials in foreign countries - has further reduced the participation of U.S.-based racial and ethnic minorities.

Last, I am interested in examining policies that will help increase the participation of minorities in clinical trials. In *"Do Female Researchers Increase Female Enrollment in Clinical Trials?"* I show that an increase in the share of female researchers in associated with an increase in the share of female participation for a given clinical trial. Key mechanisms by which female researchers increase female participation in clinical trials include designing appropriate trial criteria, hiring more female facility staff, obtaining more research funding, and more effective advertisement. From a policy perspective, this paper provides evidence to support the recent move towards employing more female researchers in clinical trials.

Political Economy of Science In addition to inequality in biomedical innovation, I am also interested in the role of political beliefs in scientific research.

I am investigating how political ideology affects the diffusion of science in *"Ideological Preferences in the Coverage of Scientific Research by Media Outlets"* (with Matthew Brown). We develop a new method to measure the political slant of scientific research and find that online media outlets are more likely to cover science that is aligned with their political ideology. We are currently examining how ideological preferences compare to preferences for quality of science and what are the downstream impacts of ideological preferences on the information available to consumers.

For this project, we developed a novel linking method that provides information on the political ideology of over $250,000$ researchers and scientists in the United States. I believe that this new data set can help answer a number of interesting questions on the political economy of science such as the formation of collaboration networks, scientist career dynamics, and funding of research. I look forward to exploring and developing these questions in the future.

In summary, I believe that the IRBC will help me learn more about the field that I am most passionate about and improve the research that I am currently pursuing. I thank the organizers for all their hardwork and for considering my application.

References

David M Cutler, Ellen Meara, and Seth Richards-Shubik. Induced innovation and social inequality evidence from infant medical care. *Journal of Human Resources*, 47(2):456–492, 2012.

Sergey Feldman, Waleed Ammar, Kyle Lo, Elly Trepman, Madeleine van Zuylen, and Oren Etzioni. Quantifying sex bias in clinical studies at scale with automated data extraction. *JAMA network open*, 2(7):e196700–e196700, 2019.

Xavier Jaravel. The unequal gains from product innovations: Evidence from the us retail sector. *The Quarterly Journal of Economics*, 134(2):715–783, 2019.

Benjamin F Jones and Lawrence H Summers. A calculation of the social returns to innovation. Technical report, National Bureau of Economic Research, 2020.

Vivek H Murthy, Harlan M Krumholz, and Cary P Gross. Participation in cancer clinical trials: race-, sex-, and age-based disparities. *Jama*, 291(22):2720–2726, 2004.

John H Stewart, Alain G Bertoni, Jennifer L Staten, Edward A Levine, and Cary P Gross. Participation in surgical oncology clinical trials: gender-, race/ethnicity-, and age-based disparities. *Annals of surgical oncology*, 14(12):3328–3334, 2007.

Cover letter

I am writing letters for several PhD students and recent PhDs for the Innovation Research Boot Camp. So far, 2022 has been a bit of a disaster as our kids' school delayed their opening and has then been remote due to COVID. Given my reduced work hours, I hope that you will forgive me for sending letters when available that I have written for other purposes, or short letters when I have not previously written a letter for the student previously. This in no way reflects on the students, but rather just reflects the disaster of my 2022 schedule. Thank you for your understanding.

Heidi Williams (hlwill@stanford.edu)

Stanford University

HEIDI WILLIAMS
Charles R. Schwab Professor of Economics

Dear all,

I am delighted to be writing with my very strong recommendation of **Harsh Gupta** for the NBER Innovation Research Boot Camp.

Harsh did his undergraduate degree in mathematics and economics (graduating magna cum laude) at UCLA. At UCLA, my sense is that Hugo Hopenhayn was his primary mentor/adviser. Harsh's undergraduate thesis was a study of patent litigation (advised by Simon Board). At Stanford, essentially since day 1 his research interests have been focused on innovation.

Harsh is now a third year PhD student at Stanford, and has been exceptionally productive on the research front. He has two papers that are essentially ready to submit to journals that I hope (expect?) will be published at AER:Insights:

1. The first paper (sole-authored) documents a fascinating new fact: within disease and year (so, for lung cancer clinical trials in 2001 for example), clinical trials with female principal investigators enroll a higher share of female patients. He kicks the tires on establishing that empirical fact, and presents a variety of qualitative evidence exploring potential mechanisms. Perhaps the most direct evidence that emerges on mechanisms is that trials with female principal investigators are less likely to put in place enrollment restrictions that exclude women of childbearing age from the trials – a finding that I find fascinating and which is incredibly policy-relevant.
2. The second paper (co-authored with a fellow Stanford third year PhD student) documents a second fascinating new fact: academic papers written by authors who donate to conservative politicians are more likely to be picked up/cited by conservative news outlets. This finding is totally new, and to me suggests an interesting set of follow-on questions related to the political economy of science communication.

Harsh is also working jointly with Marcella Alsan, Maya Durvasula, and I on a research project looking at the supply and demand for diversity in clinical trials, which I asked him to join given his tremendous topical expertise.

Harsh has greatly benefitted from interacting with some of my former PhD students with interests in innovation – Ryan Hill and Carolyn Stein – and has expressed that he would love to meet more peers that might be potential collaborators in this space. The boot camp would be perfect for him, and I think he would enormously benefit from attending.

Sincerely,

Heidi Williams

Heidi L. Williams

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