

Stanford University

DEPARTMENT OF ECONOMICS
579 Jane Stanford Way
Stanford CA, 94305
Email: helenar@stanford.edu
Mobile: +1(650)-505-6319

30 January 2024

To the organizers of the NBER Innovation Research Bootcamp 2024:

Enclosed is my application for the NBER Innovation Research Bootcamp 2024. My recommendation letter comes from Prof. Heidi Williams (heidi.lie.williams@dartmouth.edu) and was emailed to Brett Maranjian earlier this week.

I am a fifth-year PhD candidate at Stanford University, where I research behavior and information technologies in healthcare. In my thesis, I study the efficacy of specific junctures of information exchange in medicine, such as training at residency or online search for physicians.

As noted in the bootcamp description, "[t]he economics of innovation touches all fields of economics." My field is no different — many of the most motivating potential applications of novel information technologies are in healthcare, yet the pipeline from innovation to adoption remains largely uncharted. I have two particular interests. First, how to design novel information products to improve decision-making in healthcare. Second, how to evidence and regulate such technologies to improve the translation from innovation to adoption.

Long-term, I plan to build a research agenda with a strong focus on how best to translate innovative information products into healthcare practice. Relevant policy questions include: How do we optimally design reimbursement pathways for evidence generation in highly novel areas (such as medical artificial intelligence)? Should reimbursement be viewed as a subsidy to innovation? What characterizes successful cross-field collaborations, for example between computer scientists and physicians? How should we rethink medical education to train physicians to use novel technologies?

I am excited by the opportunity to learn from frontier researchers and discuss these questions at the bootcamp and NBER Summer Institute on Innovation Policy in July.

Yours sincerely —



Helena Roy

Helena Roy

mail: helenar@stanford.edu
web: https://www.helenaroy.com

Academic

PhD	Stanford	Economics		2019–25
Visiting Scholar	University of Utah	Business and Healthcare		2022-23
MPhil	Nuffield College, Oxford	Economics	Distinction	2017–19
BA	Pembroke College, Cambridge	Economics	Double First (Rank 8/156)	2013–16

Employment

Virdx	Evidence Strategy + Design	Healthcare	June-Sept. 2022 + June-Sept.2023
EPoD (Harvard)	Research Assistant (Prof. Rohini Pande)	Gender and Labor	2018-19
Deutsche Bank	M&A Intern	Natural Resources, Healthcare	Oct. 2012 - Mar. 2013

Research

Work in Progress

with Scott Schaefer (University of Utah)
Judgment and Disclosure in Healthcare Markets: Evidence from Patient Satisfaction Scores

with Helen Kissel (Stanford University)
Patient Mix and Provider Experience: Evidence on Medicaid and Maternal Health in the US
Willingness-to-Pay for Physician-Patient Concordance by Gender and Race

Publications / Other Writing

with Rohini Pande (Yale University) 2021
"If you compete with us, we shan't marry you" The (Mary Paley and) Alfred Marshall Lecture European Economic Review

with Adam Rosenberg (Stanford University) 2020
Comment on: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research OSTP

Grants & Fellowships

Stanford Center for American Democracy Fellowship	Funding for survey experiments ($4,000)	2022 + 2023
Laboratory for the Study of American Values	Funding for survey experiments ($8,750)	2021 + 2023
Stanford DARE Fellowship	Two years of full graduate funding	2022-24
Spectrum PHS Pilot Grant	Funding for Medicaid data acquisition ($30,000)	2022-23
Stanford Impact Labs Fellowship	Funding for policy-focused health research ($4,000)	2022
Stanford Causal Science Center Fellowship	One year of full graduate funding	2021-22
Stanford PACS Small Grant	Funding for survey experiments ($5,000)	2021
ESRC Doctoral Training Fellowship	Four years of full graduate funding (UK equivalent to NSF)	2017-2019

Seminars & Talks

Allied Social Science Associations (ASSA), Federal Communications Commission (FCC) 2022

Extra-curricular and Volunteering

Board Trustee	Social Action for Health (UK)	2022-Present
Triathlete	Stanford University Triathlon Team	2022-Present
Diver	PADI Open Water, PADI Freediver	2019-Present
Mentor	Social Mobility Foundation (UK)	2013-Present

Technical skills

R, Git, Stata, Qualtrics

Economics PhD Courses (2019-2024)

Course	*Quarter + Year*
ECON 210 — Macroeconomics I (Monika Piazzesi + Martin Schneider)	Fall 2019
ECON 278 — Behavioral and Experimental Economics I (Alvin Roth + Muriel Niederle)	Fall 2019
ECON 211 — Macroeconomics II (Monika Piazzesi + Pete Klenow)	Winter 2020
ECON 244 — Market Failures and Public Policy (Heidi Williams + Liran Einav)	Winter 2020
ECON 271 — Intermediate Econometrics II (Guido Imbens)	Winter 2020
ECON 212 — Macroeconomics III (Adrien Auclert + Patrick Kehoe)	Spring 2020
ECON 293 — Machine Learning + Causal Inference (Stefan Wager + Susan Athey)	Spring 2020
ECON 220 — Political Economy I (Andy Hall + Matthew Gentzkow)	Fall 2020
ECON 257 — Industrial Organization I (Ignacio Cuesta + Liran Einav + Paulo Somaini)	Fall 2020
ECON 258 — Industrial Organization IIA (Ali Yurukoglu + Matthew Gentzkow + Neale Mahoney)	Winter 2021
ECON 279 — Behavioral + Experimental Economics II (Doug Bernheim)	Winter 2021
ECON 260 — Industrial Organization IIB (Heidi Williams + Liran Einav)	Spring 2021
ECON 280 — Behavioral + Experimental Economics III (Alvin Roth + Doug Bernheim + Muriel Niederle)	Spring 2021
ECON 249 — Topics in Health Economics I (David Chan + Maria Polyakova + Neale Mahoney)	Spring 2022
ECON 226 — U.S. Economic History (Daniel Fetter + Gavin Wright)	Spring 2022

+ third-year, behavioral, and public seminar courses from third-year onwards.

Non-Economics Courses

Course	*Quarter + Year*
CS 28 — Artificial Intelligence, Entrepreneurship, and Society in the 21st Century	Fall 2019
CS 106A — Programming Methodology	Fall 2019
CS 106B — Programming Abstractions	Winter 2020
CS 107 — Computer Organization and Systems	Spring 2020
POLISCI 423A — The Laboratory for the Study of American Values I	Winter 2021
POLISCI 423B — The Laboratory for the Study of American Values II	Spring 2021

Additional information on all classes can be made available on request.

NBER Innovation Research Bootcamp 2024 — Application Statement

I am a fifth-year PhD candidate at Stanford University, where I research behavior and information technologies in healthcare. Broadly, my research is driven by the question: How do physicians and patients demand, access, and interpret information about their patients' or their own health?

In my thesis, I study the efficacy of specific junctures of information exchange within medicine, including training with a diverse patient mix at residency and the impact on post-residency practice, and searching for physician quality information online. I fuse behavioral insights into decision-making with analysis of large-scale healthcare datasets and well-designed survey experiments. All my research uses novel datasets, including Medicaid claims connected to detail on physician training, and electronic health records acquired from the University of Utah Health.

While my current research examines in detail the impact information can have on healthcare decisions, my goal in future research is to be more prospective. Through my PhD work, as well as internships done at a medical diagnostics start-up, I have come to believe that many of the most promising applications of novel information technologies are in healthcare, yet the pipeline from innovation to adoption remains largely uncharted. This motivates two broad questions driving my long-term research agenda. First, how should we design novel information products to improve decision-making in healthcare? Second, how should we evidence and regulate such technologies to improve translation from innovation to adoption and practice?

The innovations I am most interested in are machine-assisted clinical decision support and telemedicine. (Made exciting, in part, because these technologies hold special promise in more isolated, low-income settings.) In this arena, the "mechanism of action" is often a human decision-maker, and efficacy and side effects may be diffuse and hard to measure. I would like to work on understanding how to design and assess these innovations to optimally assist humans and integrate into healthcare systems.

I hope to align my research agenda with the most pressing policy challenges in the innovation space. I am from the UK and New Zealand, and am interested in studying innovation in a public healthcare system to service a healthier National Health Service (NHS). Relevant questions include: How do we optimally design reimbursement pathways for evidence generation in highly novel areas (such as medical artificial intelligence)? Should reimbursement be viewed as a subsidy to innovation? What characterizes successful cross-field collaborations, for example between computer scientists and physicians? How should we rethink medical education (e.g. statistical/computational components) to train physicians to use novel technologies?

The NBER Innovation Research Bootcamp and Summer Institute meetings offer the perfect opportunity to learn from frontier researchers and discuss these early-stage ideas with other scholars forming their research agendas. In all of these activities, I am keen to learn from innovation research broadly — to understand how novel information technologies have been generated, implemented, and regulated in different industries (e.g. environment/energy, consumer finance), and to use this opportunity to inform innovation policy in healthcare.

Heidi L. Williams
Professor of Economics
Dartmouth College

Dear Sir or Madam,

I am writing on behalf of **Helena Roy**, a PhD student in economics at Stanford who is applying to the NBER Innovation Policy Research Boot Camp. I am very pleased to have the opportunity to recommend Helena as an extremely promising your scholar.

Helena is originally from the UK. She did her undergraduate work at the University of Cambridge (double first class) and a masters degree (MPhil) at the University of Oxford, both in economics. It is not an understatement to say that I think Helena is one of the most impressive students in our program. She is confident without being arrogant, mature, thoughtful, brilliant, and kind. She contributes an enormous amount to the community around her in terms of mentoring and supporting younger students, and is someone I feel very lucky to have as a student in our program.

Perhaps most emblematic of where I see her work going in the coming years is an ongoing project she has with Scott Schaefer at the University of Utah (Stanford BA 1990, Stanford PhD 1995). This collaboration arose because Helena was interested in how patient ratings of physicians ("scores") which are made publicly available affect patient choices, physician behavior, and – ultimately – health outcomes. After doing a tremendous amount of legwork investigating different institutional settings that might be able to provide data and policy variation that could be leveraged to shed light on this set of questions, she read a book *The Long Fix: Solving America's Health Care Crisis with Strategies that Work for Everyone* – authored by radiologist Vivian Lee. Dr. Lee's book chronicles several aspects of her six-year tenure as CEO of University of Utah Health, as dean of the University of Utah School of Medicine, and as senior vice-president for health sciences of the University of Utah. In particular, the book focuses on Lee's effort to produce higher quality health outcomes at lower cost and higher patient satisfaction, and described how in 2012 the University of Utah became the first health system in the US to post patient reviews online. Helena investigated further and found that some medical researchers had been able to access historical records on patient scores that would clearly – if possible for her to re-use them – allow her to answer her questions of interest. I put her in touch with Scott Schaefer when it quickly became clear that Helena would need someone with close contacts in the University of Utah system in order to gain access to the data needed for this agenda, and she and Scott have made tremendous progress on starting to pursue a collaboration on these questions.

To me, this collaboration shows all the signs that one could hope to see of a student. Helena is passionately centered on a core set of questions, and does the legwork needed to find the "right" data and setting to try to answer them. In addition to brilliance and clear-thinking on the research side, she has phenomenal interpersonal skills that have allowed her to seamlessly navigate through conversations with physicians, hospital personnel, and hospital administrators for this project. Her motivation for working in this space comes from a very deep and genuine interest in how technological advances will affect inequality in health outcomes.

On a personal level, Helena is a tour de force, and an incredible role model for the women she interacts with in particular. She exudes gracious self-confidence and a presence of mind to make those around her feel comfortable and included. I think very highly of Helena and hope that you will give her application careful consideration for this program.

Sincerely,

Heidi L. Williams

Department of Economics
6106 Rockefeller Center, Dartmouth College, Hanover, New Hampshire 03755