Venkatesh Subramanian
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Feb 6, 2026

National Bureau of Economic Research,
1050 Massachusetts Avenue, Cambridge, MA 02138

Dear Dr. Bryan, Dr. Ganguli, Dr. Myers, and members of the panel,

Please accept my resume in application for participating in the NBER Innovation Research Boot Camp 2026. I am a doctoral student in Public Policy and Political Economy at the University of Texas at Dallas (UTD) where I am on track to be a dissertation candidate by April 2026. Given my present choice of dissertation topic and aspirations to build a research agenda around innovation policy in the future, I can benefit enormously from participating in the Boot Camp as I describe below.

My dissertation topic revolves around incentives to encourage innovation in antibiotics to combat the threat of Antimicrobial Resistance (AMR). Specifically, my dissertation proposes to study the impact of public health insurance in the US on patent innovation in antibiotics using reduced-form causal inference techniques. This study will primarily highlight the use of the insurance market as a 'pull incentive mechanism' for innovation, a subject of interest in the economics literature on AMR. But, given that it studies the impact of one of the significant line items in the US federal budget – Medicare – it also highlights the role of public health insurance in health innovation.

This choice of dissertation topic was shaped by my career journey. This journey began as a student of Physics in India, and this background in science continues to bolster my interest in studying innovation. This was followed by a job as a Senior Data Analyst at Cartesian Consulting, where I provided data insights on-demand to business leaders. This experience was vital in honing my data analytics skills in descriptive, and predictive inference. Then, I moved to Dallas where I honed my causal inference skills both via coursework, and by teaching in courses on research design at UTD. Also, at UTD, I secured the Graduate Archer Fellowship which funded me to live and work in DC during the summer of 2023. Here, I learned about the AMR policy problem from a fellow in the cohort. Then, in Fall 2023, I took a course titled 'The Innovation Economy' where my background in science, and experiences as a data analyst coalesced into a class project on AMR which has now become my dissertation topic. Finally, coursework on 'Public Economics' was useful in turning my attention to the public health insurance market.

My data analytics skillset, and choice of topic have put me on track to write a dissertation focused on antibiotic innovation. In the future, I aspire to leverage my dissertation research experience in creating ex-post evidence to branch out into creating ex-ante evidence for innovation policymakers. Opportunities for networking with like-minded researchers are vital to further this aspiration which makes this Boot Camp a boon for me. So, thank you for organizing this program and considering my application!

Sincerely,
Venkatesh Subramanian

References:

Dr. Natalia Lamberova
The University of Texas at Dallas
natalia.lamberova@utdallas.edu

Venkatesh Subramanian

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EDUCATION

The University of Texas at Dallas, Dallas, TX, USA.
PhD in Public Policy and Political Economy, *May 2027*
MS in Social Data Analytics and Research, *Dec 2025*
GPA: 3.937/4
Graduate Archer Fellowship (Summer 2023)
Notable coursework: Industry, Technology, and Science Policy (Spring 2026); The Innovation Economy (Fall 2023); Public Economics I (Fall 2025); Research Design II (Spring 2023); Quantitative Systems Pharmacology (Spring 2025)

The Takshashila Institution, Bengaluru, KA, India
Graduate Certificate in Advanced Public Policy, *Apr 2022*
Graduate Certificate in Tech Policy, *Dec 2020*

National Institute of Technology Karnataka, Mangaluru, KA, India
Master of Science in Physics, *May 2019*
CGPA: 7.89/10
Thesis project: Identified the best fit random graph model using a Python implementation of Graphlet algorithms

University of Madras, Chennai, TN, India
Bachelor of Science in Physics, *May 2017*
CGPA: 9.14/10
"Best outgoing student of BSc Physics" award

EXPERIENCE

School of Economic, Political and Policy Sciences, The University of Texas at Dallas, Dallas, TX, USA
Teaching Assistant, *Aug 2023 –Present*

- Facilitated workshops on causal inference methodologies for grad students in Research Design II (Spring 2024, 2025, 2026)
- Delivered lectures in the classroom alongside grading duties in Research Design in the Social and Policy Sciences (Fall 2025), Topics in Science, Technology and Institutions (Fall 2024), and Approaches to Peace (Fall 2023)

Center for Global Development, Washington DC, USA
Summer delegate, *June 2023 – Aug 2023*

- Co-published a working paper titled "The Cost-Effectiveness of Health Aid: An Exploratory Quantitative Analysis"
- Analyzed Creditor Reporting System (CRS) using Python and implemented a mapping mechanism from CRS projects to DCP3 interventions
- Contributed to the internal weekly policy update newsletter

Cartesian Consulting, Bengaluru, KA, India
Senior Analyst, *Jul 2020 – Jan 2022*
Analyst, *June 2019 – Jul 2020*

- Developed an ETL pipeline with Bash and SQL alongside a Quality-Check pipeline for a daily Point-Of-Sale dataset
- Visualized retail store closures across India using a Choropleth map made with Plotly dash during the COVID19 pandemic
- Analyzed and visualized behavior of 10M+ customers to assist in redesigning a retail client's customer loyalty program
- Consulted with stakeholders from a 10+ person cross functional team via verbal and written communications
- Awarded 'Rookie of the year 2019' and 'Employee of the year 2020'

PUBLICATION

Fan, V. Y., Webster, B. S., Subramanian, V., Grépin, K. A., Watkins, D. A., & Dieleman, J. L. (2024). *The Cost-Effectiveness of Health Aid: An Exploratory Quantitative Analysis* (No. 700). https://ideas.repec.org/p/cgd/wpaper/700.html

SKILLS

Computational skills: R (Data analysis & visualization), Python (Web scraping), SQL, Git, Linux Bash, Latex, Microsoft Excel
Languages: English (Full professional proficiency), Tamizh (Native or bilingual proficiency), Hindi (Limited working proficiency)

CITIZENSHIP

Indian citizen with US F1 VISA; Eligible to work in the US (internships and full time) for up to 36 months

LIST OF PhD COURSEWORK

Current (Spring 2026)

- Industry, Technology, and Science Policy
- Proseminar in Political Institutions and American Politics

Completed (Sorted by relevance to Innovation Economics)

- The Innovation Economy (Fall 2023)
- Public Economics I (Fall 2025)
- Quantitative Systems Pharmacology (Spring 2025)
- Research Design II (Spring 2023)
- Advanced Managerial Economics (Fall 2023)
- Game Theory for Political Scientists (Spring 2024)
- Information Economics and Mechanism Design (Spring 2025)
- Economics for Public Policy (Spring 2025)
- Bayesian Analysis for Social and Behavioral Sciences (Fall 2023)
- Machine Learning for Socio-Economic and Geo-Referenced Data (Spring 2023)
- Descriptive and Inferential Statistics (Fall 2022)
- Regression and Multivariate Analysis (Spring 2023)
- Research Design I (Fall 2022)
- Ethics, Culture, and Public Policy (Fall 2024)
- Political Economic Theories (Fall 2024)
- Methods of Data Collection and Production (Fall 2022)
- Comparative Courts and Law (Spring 2024)
- Environmental Economics and Policy (Spring 2024)
- Python Programming for Social Science (Summer 2024)
- EPPS Policy Lab (Summer 2024)

Statement of Purpose

Submitted for NBER Innovation Research Boot Camp 2026

Venkatesh Subramanian,
PhD student in Public Policy and Political Economy, The University of Texas at Dallas

Presently, my doctoral dissertation research revolves around incentives to encourage innovation in antibiotics to combat the threat of Bacterial Antimicrobial Resistance (AMR). AMR has been recognized as a global public health problem with 1.27 million worldwide deaths in 2019 attributed to it. To combat the threat of AMR, several policy incentives are currently being explored to 'pull' and/or 'push' antibiotic drug innovation further. In light of this, my dissertation proposes to study the impact of public health insurance in the US on patent innovation in antibiotics using reduced-form causal inference techniques. Specifically, I plan to construe a 2007 policy change in the Diagnostic-Related Group (DRG) classification system used in Medicare Part A as a plausibly exogenous shock to patent innovation. This policy change created a differential increase across DRGs in reimbursement rates to hospitals for treating inpatients with more severe comorbidities. My proposed study requires overcoming the challenge of attributing patents to DRGs. I do so by leveraging SureChEMBL, a publicly available cheminformatics database of global chemical patents annotated with the relevant Medical Subject Headings (MeSH) terms. Thanks to well-established medical vocabularies, these MeSH terms can act as the bridge to attribute patents to DRGs. Overall, in my current research, I hope to highlight the role of public health insurance in encouraging drug innovation, thus adding policy evidence to combat AMR.

In the future, I aspire to broaden my skillset to use structural estimation techniques to create ex-ante evidence to address innovation policy problems as opposed to reduced-form ex-post evidence as I do now. In the literature on the economics of AMR, such models are already under development, for instance, to simulate the effects of a tax on broad spectrum antibiotics (Bokhari et al, 2024), changes to drug approval timelines (Majewska, 2024), and market exclusivity policies (Kong & Zhao, 2025) among many other similar policies. In the long run, I hope to continue answering policy-relevant questions in innovation economics using both reduced-form and structural estimation techniques.

My reason for attending the Boot Camp is twofold. Firstly, I'd like to network with scholars in the hopes of getting feedback on my current research direction. Specifically, Dr. Azoulay's feedback on my current work can be invaluable given his recent publication on a closely related topic - the impact of Indirect Medical Education (IME) subsidies provided as part of Medicare Part A on research in Academic Medical Centers (See Azoulay, Heggeness, and Kao (2025)). Secondly, I'd like to learn from scholars who use structural estimation techniques, and understand the challenges involved in working with these models. Given that my department doesn't teach a course on such techniques, the Boot Camp will be invaluable for me to learn from others who use them, and, in the ideal case, find a potential collaborator.

Thank you for considering my application!