January 23, 2024

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

Dear Selection Committee,

I am writing to convey my interest in participating in the Innovation Research Boot Camp. My research encompasses the intersections of education economics, development economics, and industrial organization. Innovation is a common thread in my research. I explore ways to enhance performance through feedback, introduce innovation labs in schools, and implement place-based redistribution to address community needs. Attending the boot camp is exciting as it presents a unique opportunity to delve into the foundational aspects of the field.

My dissertation investigates high school students' course-taking behavior in Texas, emphasizing the impact of social influence and performance feedback in the unique setting created by the x-percent plan for automatic admission. Additionally, I assess the effect of providing access to innovation laboratories in middle schools in India, analyzing its impact on attendance and learning outcomes. Simultaneously, I work on developing effective strategies to ensure access to high-quality early childhood education for low-income families in Texas.

My research is geared towards reducing equity gaps in education to promote individual success and contribute to overall economic growth. Crucially, the impact of my work extends beyond education. By delving into the introduction of innovation, implementing place-based redistribution, and refining performance feedback strategies, my research holds relevance for diverse competitive settings.

Additionally, I am currently engaged in assessing the impact of an out-of-school nutrition program on girls' school enrollment in India, quantifying price elasticities in the demand for sanitary napkins, and evaluating the effects of a large-scale pharmacy program on sanitary napkin usage. In the past, I successfully managed a field experiment focused on enhancing job training programs for underserved youth in urban slums. The amalgamation of my work and experiences has furnished me with the essential tools and skills vital for my research. Participating in the boot camp presents an invaluable opportunity to further refine and augment these skills through engaging lectures, interactions with peers from diverse backgrounds, and receiving constructive feedback on my research.

I am attaching my CV and research proposal for your review. My advisor, Flavio Cunha, will provide a letter of recommendation. I am enthusiastic about the prospect of participating in the boot camp and contributing to discussions on the economics of innovation. Thank you for considering my application.

Sincerely,
Ritika Sethi
Ph.D. Candidate
Department of Ecomics
Rice University
832.964.9465
rs98@rice.edu

Research Agenda – Ritika Sethi

My research spans diverse studies aimed at understanding and addressing critical issues in education and development. The prospect of participating in the Innovation Research Boot Camp excites me as it aligns with my research trajectory and provides a unique opportunity to engage with foundational aspects of the economics of innovation. The immersive environment, coupled with lectures from prominent scholars, promises to enrich my understanding, refine my methodologies, and open avenues for collaborative exploration.

In "Ignorance is Bliss? Evaluating the Impact of Rank Disclosure on High School Students' Course Choices," I explore the effects of rank information adjustment on course-taking. Utilizing a dynamic tournament model, the research simulates course-taking under different rank disclosure policies, providing data-informed recommendations for policymakers. Moving on to "Can Desegregation Close the Racial Gap in High School Coursework," I investigate the interplay between desegregation, institutional bias, and individual behavior in education. Utilizing a game-theoretic model and optimization-based approach, the study reveals that minority students in predominantly White schools enroll in more college-prep coursework due to stronger social incentives, despite lower encouragement to apply to college.

In collaboration with Flavio Cunha and Jung Youn Lee, "If You Build It, They Will Come: A Demand Analysis of Household-Level Childcare Choices," I estimate the demand for child care to unveil families' preferences for proximity and willingness to travel for higher-quality childcare, and address the identification of childcare deserts through a location choice problem. In collaboration with Tanmay Devi, Lopa Jena, and Dibya Mishra, in "Evaluating the Impact of Innovation Laboratories on Attendance and Learning Outcomes," I assess the impact of innovation laboratories in middle schools on attendance and learning outcomes. Utilizing unique large-scale data, the study provides detailed insights into daily attendance and learning outcomes across grades and subjects.

In "Pharmacy Proximity and Period Poverty: Assessing the Impact of Subsidized Menstrual Product Availability on Menstrual Management," with Dibya Mishra, I explore the impact of availability of subsidized sanitary napkins in India. In "A Study of Sanitary Napkin Demand in India" with Rossella Calvi and Maura Coughlin, I utilize extensive scanner data from Indian grocery stores and geocoded health surveys to estimate the demand for sanitary napkins. Finally, in the study "Beyond a Free Lunch: Unintended Consequences of an Out-of-School Nutrition Program on Adolescent Girls' School Enrollment" (with Tanmay Devi, Ajinkya Keskar, and Dibya Mishra), I uncover the unintended consequences of increased dropout rates and earlier marriage, associated with the provision of meals for out-of-school girls reducing the allure of in-school nutrition.

RITIKA SETHI

6100 Main St., Houston, TX 77005

+1-8329649465 ritika.sethi@rice.edu

Economics Ph.D. candidate with experience in causal inference and and structural estimation methods

Research interests: Economics of Education, Industrial Organization, Development Economics

EDUCATION

Rice University **2025 (expected)**

Ph.D. in Economics *Houston, TX*

- Courses: Econometrics, Labor Economics, Industrial Organization, Computational Economics, Sociology of Education, Matching and Market Design, Development Economics

University College London **2016**

M.Sc. Economics *London, United Kingdom*

University of Delhi **2015**

B.A. (Honors) Economics *New Delhi, India*

RESEARCH EXPERIENCE

Texas Policy Lab **Aug 2021 – present**

Research Assistant (Supervisor: Flavio Cunha) *Houston, TX*

- Handled state-wide micro-data, estimated a model of demand for child care

Rice University **May 2020 – June 2020, May 2021 – June 2021**

Research Assistant (Supervisor: Hulya Eraslan, Robin Sickles) *Houston, TX*

- Web-scraped data, regression discontinuity design analysis, technological spillover model estimation

Indian School of Business **Feb 2017 – May 2019**

Research Associate (Supervisor: Tarun Jain) *Hyderabad, India*

- Managed an RCT, managed a large administrative dataset, programmatically automated the workflow, policy evaluation

National Council of Applied Economic Research **June 2015 – July 2015**

Research Intern *New Delhi, India*

TEACHING EXPERIENCE

Rice University **Aug 2020 – May 2021**

Teaching Assistant *Houston, TX*

- Applied Econometrics, Development Economics, Economics of Human Capital, Public Economics

O.P. Jindal Global University **Aug 2016 – Nov 2016**

Adjunct Research Associate *Sonepat, India*

- Instructor for microeconomics to undergraduate law students

PUBLICATIONS

"A Comment on DiNecco et al. (2022): Pre-Colonial Warfare and Long-Run Development in India" with Rachel Forshaw, Tim Olkers and Manali Sovani, **Canadian Journal of Economics** (2023)

WORKING PAPERS

"Can Desegregation Close the Racial Gap in High School Coursework?"

"If You Build It, They Will Come: A Demand Analysis of Household-Level Child Care Choices" with Flavio Cunha and Jung Youn Lee

"Pharmacy Proximity and Period Poverty: Assessing the Impact of Subsidized Menstrual Product Avail ability on Menstrual Management" with Dibya Mishra

WORK IN PROGRESS

"Ignorance is Bliss? Evaluating the Impact of Rank Disclosure on High School Students' Course"

"Beyond a Free Lunch: Unintended Consequences of an Out-of-School Nutrition Program on Adolescent Girls' School Enrollment" with Tanmay Devi, Ajinkya Keskar and Dibya Mishra

"A Scanner Data Analysis of Demand for Menstrual Health Products in India" with Rossella Calvi and Maura Coughlin

"Evaluating the Impact of Innovation Laboratories on Attendance and Learning Outcomes" with Tanmay Devi, Lopa Jena, Dibya Mishra and Ritika Sethi

PRESENTATIONS

2024 (including schedule): Econometric Society Asia Meeting, Association for Education Finance & Policy Annual Conference

2023: Association for Education Finance & Policy Annual Conference, Royal Economic Society Annual Conference, Association for Public Policy Analysis and Management Fall Conference, Southern Economic Association Annual Meeting, Indian Statistical Institute Annual Conference

2022: Southern Economic Association Annual Meeting

FELLOWSHIP AND AWARDS

Florence Fulton Endowed Fellowship in Economics **Aug 2020**
Rice University *Houston, TX*

Rice COVID-19 Research Fund **June, 2020**
Rice University *Houston, TX*

Hansen Family Fellowship in Economics **Aug, 2019**
Rice University *Houston, TX*

Graduate Fellowship **2019-2024**
Rice University *Houston, TX*

Travel Grants: Alfred P Sloan Foundation (Nov 2022), Association for Education & Finance Policy (Jan 2023), Royal Economic Society (Mar 2023), Rice University (Nov 2022, Jan 2023, Mar 2023, Nov 2023)

PROFESSIONAL ACTIVITIES

Discussant: Southern Economic Association Annual Meeting
Reviewer: Economic Modeling
Contributor: Urban Institute Learning Curve
Mentee: Association for Mentorship and Inclusion in Economics

SKILLS

Julia, Stata, Matlab, R, LaTeX, ArcGis, SurveyCTO

Flavio Cunha
Ervin K. Zingler Professor of Economics
Faculty Director, Texas Policy Lab
Chair, Department of Economics
Magister, Wiess College

Dear Colleague,

I am writing this letter in enthusiastic support of Ms. Ritika Sethi's application for the NBER Innovation Research Boot Camp. As Ritika's advisor, I have had the privilege of closely observing her academic journey and research endeavors. Ritika has been an engaged participant in my graduate-level Labor Economics course and a competent teaching assistant for my undergraduate-level Economics of Human Capital Formation course. Furthermore, Ritika has been contributing significantly as a research assistant at the Texas Policy Lab, where we collaborate on projects to enhance access to high-quality early childhood education for socially vulnerable populations in Texas.

In her job market paper, Ritika explores the role of rank disclosure on enrollment in advanced placement courses among high school students in Texas. Texas has an x-percent plan that offers automatic admission to in-state universities based on high school rank. Multiple school districts have started to keep rank a secret. This understandably can influence students' coursetaking in high school and their subsequent career trajectories. There is not much research on the role of adjusting performance feedback and this research fills this crucial gap.

Ritika has obtained transcript data from multiple school districts and leverages a quasi-experimental setting to explore how adjustment in how much information students have about their rank impacts their coursetaking. Her analysis uncovers that withholding rank disclosure may exacerbate existing equity gaps in STEM enrollment, as students respond differently to information frictions. She also finds that the impact of rank disclosure varies by what stage of their academic journey the study is at. Building on these insights, Ritika develops a dynamic tournament, discrete choice model, exploring diverse counterfactual rank disclosure policies with implications for policymakers considering such policies. To account for unobserved heterogeneity in utility as well as state transition, she relies on the sequential EM algorithm.

In her third-year paper, Ritika explores how between-school segregation impacts within-school segregation concerning enrollment in college preparatory coursework, mediated by institutional bias and social incentives. This research question is crucial due to the lasting impact of high school course choices on an individual's long-term success particularly in light of persistent equity gaps in STEM fields. There is limited evidence on how within-school segregation, especially concerning course enrollment, evolves with changes in between-school segregation.

Ritika utilizes data from surveyed students across multiple cohorts in a selection of Texas schools. She employs a model that treats coursetaking as a simultaneous-move game, allowing for endogenous beliefs about classmates' decisions and teachers' encouragement to influence students' utility. She is interested in capturing the role of student composition in shaping this utility by shaping how beliefs about classmates' choices are formed. By incorporating school fixed

Flavio Cunha
Ervin K. Zingler Professor of Economics
Faculty Director, Texas Policy Lab
Chair, Department of Economics
Magister, Wiess College

effects, she treats the variation in student composition across cohorts as effectively random. This approach is aligned with established practices in the literature and is supported by empirical patterns observed in her data. The model is estimated using a nested fixed-point approach.

Ritika introduces an innovative approach to studying the implications of between-school desegregation, incorporating an entropy-based measure of segregation. She solves a non-linear optimization problem to reassign students between schools, generating counterfactual levels of segregation. Subsequently, she re-solves for the game equilibrium at these segregation levels. Her findings reveal that teachers in White-majority schools are less inclined to encourage Black and Hispanic students to apply to college. However, these students demonstrate a higher likelihood of enrolling in college preparatory coursework, driven by elevated social incentives in White-majority schools to take these courses.

In a paper that Ritika is working on with me, we assess the trade-off between families' preferences for proximity and the quality of childcare provision. This analysis is particularly significant in light of recent efforts to broaden access to subsidized childcare nationwide. Our research addresses limitations in existing studies that rely on suboptimal definitions of childcare deserts based on counts and arbitrary market boundaries.

We utilize statewide administrative data from Texas. This is microdata on families and providers, including their geographical locations. Employing a discrete choice model, we address provider-specific unobserved quality that we estimate through a contraction mapping and account for endogeneity in observed quality. The innovative aspect of our methodology lies in the construction of instruments for observed quality, facilitated by the overlapping definition of markets.

We find that while families value proximity, they are willing to travel farther for higher quality. We also find that socially vulnerable families are less likely to enroll in higher-quality child care. Using the model estimates, we solve a social planner problem, identifying optimal sites for opening new high-quality problems or upgrading the quality of existing ones. The goal is to maximize expected market shares while minimizing the cannibalization of existing high-quality programs. Our proposed policy identifies locations with comparable outcomes to current methods of identifying deserts but with significantly lower program deployment. Furthermore, we quantify the supply-side interventions required to achieve results similar to a demand-side intervention aimed at improving enrollment in high-quality care among socially vulnerable families.

I wholeheartedly recommend Ritika for the NBER Innovation Research Boot Camp. I am confident that she will not only benefit from the program but also make substantial contributions to the discussions. Please feel free to contact me if you require any additional information or clarification.

