Cover Letter

Date: January 31, 2023
Subject: Application for NBER Innovation Research Boot Camp 2023

Dear Professor Bryan, Professor Ganguli, Professor Myers:

My name is Drishti Baid and I am a PhD student in Public Policy and Management at the University of Southern California. I am writing to apply for the NBER Innovation Research Boot Camp 2023. My primary field of research is health policy and economics with a focus on (1) valuation of medical innovations and associated health returns and (2) regulatory policy pertaining to medical innovations. I am keen to attend the boot camp as my current and future research agenda pertaining to these policy areas are closely related to the economics of innovation, and associated fields of public finance and industrial organization, as well as the prior and ongoing research of many of the scheduled lecturers. As part of my application, please find the name and contact information of my PhD advisor and recommendation letter writer below:

Name: Professor Darius Lakdawalla
Email: dlakdawa@usc.edu
Contact number: +1 213-821-7957
Address: Schaeffer Center for Health Policy and Economics
University of Southern California
635 Downey Way, VPD #414-K
Los Angeles, CA 90089-3331

Within this PDF file, please find the other components of my application included:

1. A curriculum vitae, including a list of all current and completed PhD courses (page 2)
2. A one-page statement of purpose which explains why I aspire to attend this boot camp and provides a brief description of my current and future research agenda (page 7)

Thank you for taking the time to review my application.

Sincerely,
Drishti

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Drishti Baid (she/her)
PhD student, Public Policy and Management
Sol Price School of Public Policy, University of Southern California

Drishti Baid

Email: dbaid@usc.edu / baidddrishti@gmail.com
Tel: +1 (415) 839-0103
URL: sites.google.com/view/drishtibaid

EDUCATION

2021 - **PhD in Public Policy (Research Interest: Health Policy)**
Sol Price School of Public Policy
University of Southern California (USC)
GPA: 4.0
Policy areas: Innovation in pharmaceutical markets
Competition and anti-trust issues in the pharmaceutical industry
Advisor: Prof. Darius Lakdawalla

2013 - 17 **Bachelor of Social Sciences with Honours (Economics) – Highest Distinction**
National University of Singapore (NUS)
GPA: 4.7 on a scale of 5.0

Thesis
Title: "Impact of Housing Demolitions on Students' Educational Outcomes: Evidence from a Natural Experiment in France"
Advisor: Asst. Prof Nina Guyon

RESEARCH EXPERIENCE

2022 – **Research Assistant (part-time)** at Leonard D. Schaeffer Center for Health Policy & Economics, University of Southern California
Supervisors: Prof. Darius Lakdawalla, Asst. Prof. Karen Mulligan
Topics: Quantifying risk preferences over health
Theoretical foundations of cost-effectiveness analyses
Duties: Data Analysis (primary), Manuscript writing

Research Assistant (full-time) at Duke-NUS Medical School
2017 – 21 *Department:* Program in Health Systems and Services Research
Supervisors: Prof. Eric A. Finkelstein, Asst. Prof. Semra Ozdemir
Topics: Interventions to reduce burden of non-communicable diseases
Patient preferences and willingness to pay for novel treatments
Cognitive biases and decision-making at the end of life
Duties: Data Analysis (primary), Manuscript writing, Project Management, Grant writing

2020 – 22 **Volunteer Research Assistant (part-time)** at Dept. of Sociology, Yale University
Supervisors: Asst. Prof. Emma Zang
Topics: Racial disparities in COVID-19 outcomes in the USA
State-level policy responses to COVID-19 pandemic in the USA
Duties: Data Analysis (primary), Manuscript writing, Project Management
Leading a team of 10 undergraduates to construct a policy database

2014 – 16 **Research Assistant (part-time)** at Dept. of Economics, NUS
Supervisors: Asst. Prof. Slesh Shrestha, Asst. Prof. Emily Beam
Topics: Information Interventions to Facilitate Job Mobility among Migrants in Singapore; Incentivizing Local Governance in Rural India, Job fairs in the Phillipines
Duties: Literature review, Developed and pilot tested intervention materials;
Lead a team of over 15 data collectors; Coded and tested tablet-based survey.

TEACHING EXPERIENCE

2023	**Teaching Assistant** for PPD 415 Health Policy (Undergraduate), USC
2019 - 21	**Teaching Assistant** for SPH5401 Health Economics and Financing (Masters), NUS
2019 - 20	**Software Trainer** for SPH5412 Health Technology Assessment (Masters), NUS
2016 - 17	**Teaching Assistant** for EC2303 Foundations of Econometrics (Undergraduate), NUS
	Teaching evaluations are available on my personal site.
2015	**Peer Tutor**, Centre for English Language Communication, NUS

PEER-REVIEWED PUBLICATIONS

1. Zang, E., Flores Morales, J., Luo, L., & **Baid, D.** (2023). Explaining obesity disparities by urbanicity, 2006 to 2016: A decomposition analysis. *Obesity*.

2. Malkin, J. D., **Baid, D**., Alsukait, R. F., Alghaith, T., Alluhidan, M., Alabdulkarim, H., ... & Alazemi, N. (2022). The economic burden of overweight and obesity in Saudi Arabia. *Plos one*, *17*(3), e0264993.

3. Finkelstein, E. A., Bhadelia, A., Goh, C., **Baid, D.,** Singh, R., Bhatnagar, S., & Connor, S. R. (2021). Cross Country Comparison of Expert Assessments of the Quality of Death and Dying 2021. *Journal of pain and symptom management*.

4. Sepulveda, J. M. G., **Baid, D.,** Johnson, F. R., & Finkelstein, E. A. (2021). What is a good death? A choice experiment on care indicators for patients at end of life. *Journal of pain and symptom management*.

5. Finkelstein, E., **Baid, D.**, Almudarra, S., Alqunaibet, A., Msemburi, W., Watkins, D., ... & Herbst, C. H. (2021). Calculating the Economic Burden of NCDs in Saudi Arabia: An Application of Three Common Approaches. DOI: https://doi.org/10.1596/978-1-4648-1717-5_ch4

6. **Baid, D.,** Hayles, E., & Finkelstein, E. A. (2021). Return on Investment of Workplace Wellness Programs for Chronic Disease Prevention: A Systematic Review. *American Journal of Preventive Medicine*.

7. Finkelstein, E. A., **Baid, D.,** Cheung, Y. B., Schweitzer, M. E., Malhotra, C., Volpp, K., ... & Somasundaram D/O, N. (2021). Hope, Bias and Survival Expectations of Advanced Cancer Patients: A cross-sectional study. *Psycho-Oncology*.

8. Fenwick, E. K., Ozdemir, S., Man, R. E., **Baid, D.,** Htoon, H. M., Gan, A. T., ... & Lamoureux, E. L. (2021). Development and Validation of a Preference-Based Glaucoma Utility Instrument Using Discrete Choice Experiment. *JAMA ophthalmology*.

9. Ozdemir, S., **Baid, D**., Verghese, N. R., ... & Goh, S. Y. (2020). Patient preferences for medications in managing type 2 diabetes mellitus: a discrete choice experiment. *Value in Health*, *23*(7), 842-850.

10. Tan, C. W., Ozdemir, S., **Baid, D.,** ... & Sng, B. L. (2020). Patients' preferences and trade-off during labour epidural analgesia: A discrete choice experiment. *Journal of clinical anesthesia*, *66*, 109919.

11. Teo, I., **Baid, D**., Ozdemir, S., ... & Neo, P. S. H. (2019). Family caregivers of advanced cancer patients: self-perceived competency and meaning-making. *BMJ Supportive & Palliative Care*.

12. Finkelstein, E. A., Bilger, M., & **Baid, D**. (2019). Effectiveness and cost-effectiveness of incentives as a tool for prevention of non-communicable diseases: A systematic review. *Social Science & Medicine*, *232*, 340-350.

13. Finkelstein, E. A., Malkin, J. D., **Baid, D**., ... & Herbst, C. H. (2021). The impact of seven major non-communicable diseases on direct medical costs, absenteeism, and presenteeism in Gulf Cooperation Council countries. *Journal of medical economics*, 1-1.

14. Finkelstein, E. A., Cheung, Y. B., Schweitzer, M. E., Lee, L. H., Kanesvaran, R., & **Baid, D.** (2021). Accuracy incentives and framing effects to minimize the influence of cognitive bias among advanced cancer patients. *Journal of Health Psychology*.

UNDER REVIEW

1. **Baid, D.,** Yun, B., Zang, E. What explains the COVID-19 mortality gap between "Black counties" and "White counties" in the USA? *Under review.*

WORKING PAPERS

1. **Baid, D.,** Lakdawalla, D.N., Finkelstein, E.A. Societal preferences for subsidizing marginally life-extending treatments for patients with advanced illnesses: A discrete choice experiment. *Work in progress.*

CONFERENCE PRESENTATIONS

2023 **Participant**, NBER Health Economics Research Boot Camp 2022
University of California, Berkeley

2022 **Poster Session,** ISPOR 2022
Title: Use of a Discrete Choice Experiment to Quantify Palliative Care Experts Preferences for Optimizing Care Delivery to Patients with Life-Limiting Illnesses

2022 **Oral Session (Student Roundtable)**, USC-SNU "Brain Korea" Joint Intl. Conference
Session: Examining the Role of Public Administration and Policy During the COVID-19 Pandemic and Post-Pandemic Period
Title: Explaining racial disparities in COVID-19 death rates at the county level: A decomposition analysis.

2021 **Oral Session**, Society for Medical Decision Making: 43rd Annual North American Meeting
Title 1: What contributes to a good death? A choice experiment on care indicators for terminally ill patients
Title 2: Public preferences for subsidizing moderately life-extending treatments for patients with advanced illnesses

2021 **Oral Session**, PAA 2021 Virtual Annual Meeting, Spatial & Geographic Disparities in Health
Title: Decomposing the Rural-Urban Obesity Gap Over Time in the United States

2019 **Oral Session**, Duke-NUS Early Career Scientists Symposium
Title: Preferences of Women for Labour Experience under Epidural Analgesia*
**Shortlisted for Best Oral Presentation Award*

2019 **Poster Session,** Singapore 14th Public Health and Occupational Medicine Conference
Title: Patient Preferences in Treatments for Managing Type 2 Diabetes: A Discrete Choice Experiment

2019 **Poster Session (2 presentations)**, 23rd Annual Scientific Meeting: SingHealth
Title 1: Protective Role of Self-Perceived Competency and Meaning-making for Caregivers of Advanced Cancer Patients in Singapore*
Title 2: Bereavement Adjustment of Caregivers of Advanced Cancer Patients in Singapore: Preliminary Findings from COMPASS Cohort Study
**Shortlisted for Best Poster Award*

NON-ACADEMIC PUBLICATIONS

1. Finkelstein, E., **Baid, D**., Alluhidan, M., Alsukait, R. F., Dong, D., Alfraih, A., ... & Herbst, C. H. (2022). The Economic Burden of Overweight and Obesity in Saudi Arabia. *Prepared as a Book Chapter for the World Bank (Middle East and North Africa).* Published: August 2022.

2. Finkelstein, EA., and **Baid, D.** "Commentary: COVID-19 unlikely to become a thing of the past anytime soon." Published 07 May 2021. https://www.channelnewsasia.com/news/commentary/covid-19-coronavirus-variants-new-india-south-africa-uk-vaccines-14755672

3. Zang, E., **Baid, D**., Kaur, H. "Why India & China Must Rethink Practices of Dowry & Bride Price." The Quint, Opinion. Published 18 November 2020. https://www.thequint.com/voices/opinion/indian-chinese-patriarchal-societies-marriage-bride-price-dowry-women-ill-effects#read-more

4. Finkelstein, EA., Ozdemir, S., and **Baid, D**. "Covid vaccination and a Quest for Herd Immunity in Singapore." The Straits Times, Opinion. Published 24 October 2020. https://www.straitstimes.com/opinion/covid-vaccination-and-the-quest-for-herd-immunity-in-singapore.

5. **Baid, D.** "Lacuna matata: Missing words at the dining table". Unravel Magazine, Issue 10. Published on 21 April 2017. https://unravellingmag.com/articles/lacuna-matata/.

ACADEMIC AWARDS AND HONOURS

2013 – 15, 2017	**Dean's List** *Awarded to the top 5% of the cohort per semester*
2017	**Dean's Scholar List** *Awarded to the top 1% of the cohort per semester*
2017	**NUSS Medal for Outstanding Achievement** *Awarded to the best graduate throughout course of study (Faculty of Arts and Social Sciences) with outstanding all-round achievements.*
2017	**CAPT College Award 2017** *Recognition for role of Resident Assistant. Awarded to 10 out of over 600 students for contributions to College of Alice and Peter Tan undergraduate residence.*

COMPLETE LIST OF COURSEWORK (PhD level only)

Fall 2021	PPD 711 Theory of Public Management
	PPD 706 Research Design
	PPD 503 Economics for Public Policy
	PPD 514 Microeconomics for Health
	PPD 790 Directed Research
Spring 2022	PPD 560 Methods for Policy Analysis
	PPDE 668 Applied Econometrics
	PPD 587 Risk Analysis
	PPD 514 Economic Concepts Applied to Health
	PPD 790 Directed Research
Fall 2023	PPD 712 Seminar in Public Policy
	PPD 716 Econometrics for Policy, Planning and Management I

	PMEP 510 Foundations of Health Economics
	PPD 710A Research Seminar
Spring 2023 *(ongoing)*	PM 591 Machine Learning for Health Sciences
	PPD 700 Teaching Seminar
	PPD 710B Research Seminar
	ECON 527 Theory of Value: Classical Origins and Neoclassical Critique

SOFTWARE SKILLS

Data Analysis: STATA, NLOGIT, SPSS (proficient), SAS, TreeAge (intermediate), R (basic)
Survey Platforms: Qualtrics, Open Data Kit
Presentations and Design: LaTeX, Adobe Photoshop, Microsoft Suite

PERSONAL INFORMATION

Languages: English (fluent), Hindi (native), Spanish (elementary)
Citizenship: Indian national, Permanent Resident of Singapore
Recreation: Running and photography

I, Drishti Baid, am a PhD student in Public Policy and Management at the Sol Price School of Public Policy, University of Southern California. My primary field of research is health policy and economics with a focus on (1) valuation of medical innovations and their health returns and (2) regulatory policy in the biomedical sector. I am keen to attend the NBER Innovation Research Bootcamp 2023 as it is a timely and relevant opportunity for me to develop a comprehensive understanding of the literature on the economics of innovation, innovation policy and open policy debates as I formally embark on my dissertation research in Fall 2023.

My ongoing research focuses on quantifying societal value of novel, high-cost medical innovations. In a recent working paper under the guidance of Professor Darius Lakdawalla, I examine societal preferences for subsidizing marginally life-extending treatments (offering longevity gains ranging from 2 to 12 months) targeting terminally-ill patients. While cost-effectiveness analysis (CEA) is used by several governments to inform decisions to subsidize life-extending treatments, it relies on several simplifying assumptions about how the public values health gains associated with EOL treatments. Using data from a web-based general population survey in Singapore, I empirically examine three of these assumptions and find strong evidence to suggest that traditional CEA methods are not consistent with how the public values health gains from life-extending treatments in an EOL context. In a related vein, collaborators at USC and I are building on recent theoretical advancements in CEA methods (Lakdawalla & Phelps, 2020) by empirically estimating risk preference parameters over health outcomes. These estimates would allow policymakers to better align CEA methods with public preferences.

My current research projects pertaining to cost-effectiveness analyses and health preference measurement motivates me to consider a much broader question as I move forward in my graduate career: *How can regulation and valuation of medical innovations be aligned with the goal of maximising social welfare?* In my future research, I hope to gain a deeper understanding of the factors that influence the rate and returns from innovation in the biomedical industry. This goal calls for a greater understanding of the relationship between innovation and the institutions that invest in and regulate innovation. Within the economics of innovation and innovation policy literature, I am keen to learn about the existing theory and evidence pertaining to (a) the public sector's role in investing and incentivising medical innovation, (b) impact of competition and antitrust issues, and (c) the social returns to innovation. As I engage with this literature, my primary aim is to identify policy-relevant research gaps, such as the unclear impact of vertical relationships between pharmacy benefit managers and insurance providers on the returns to innovation (Brot-Goldberg et al., 2022) or the scant evidence on the health returns to medical innovations (Bennette et al., 2019), that I may strive to inform through my dissertation research.

Given my graduate-level and pre-doctoral research experience, I am motivated and prepared to make the most of the training provided at the NBER Innovation Research Bootcamp 2023. I look forward to the possibility of learning from the renown speakers whose work relates closely with my own research interests and my objectives for future research.

References

Bennette, C.S., Basu, A., Ramsey, S.D., Helms, Z., & Bach, P.B. (2019). Health Returns to Pharmaceutical Innovation in the Market for Oral Chemotherapy in Response to Insurance Coverage Expansion. *American Journal of Health Economics*, 5, 360-375.

Brot-Goldberg, Z.C., Che, C., & Handel, B.R. (2022). Pharmacy Benefit Managers and Vertical Relationships in Drug Supply: State of Current Research. National Bureau of Economic Research.

Lakdawalla, D.N., & Phelps, C.E. (2020). Health technology assessment with risk aversion in health. *Journal of Health Economics*, 72, 102346.

USC Schaeffer
Leonard D. Schaeffer Center
for Health Policy & Economics

Sol Price School of Public Policy
School of Pharmacy

Darius N. Lakdawalla, PhD
Quintiles Chair in Pharmaceutical Development and Regulatory Innovation

January 31, 2023

Innovation Research Boot Camp

To the Selection Committee:

It is my pleasure to recommend my student, Drishti Baid, for admission into this year's NBER Innovation Research Boot Camp. Drishti is completing her second year of the PhD program in USC's Sol Price School of Public Policy, and she has elected "The Economics of Pharmaceutical Innovation" as her Major Field for her upcoming qualifying exams; as such, the "Boot Camp" is a perfect fit for her interests. I am her primary advisor, and she has collaborated with me on several research projects. Before arriving at USC, Drishti worked as a research assistant within Professor Eric Finkelstein's health economics group at the National University of Singapore (NUS). She is one of the best doctoral students I have ever worked with.

Drishti has already produced a nice piece of research that leverages a discrete choice experiment survey that she helped field during her tenure at NUS; I believe her paper to be a clever, creative, and well-executed study that contributes to the literature on valuing health improvements and survival gains. She is coauthoring another stud with me that estimates consumer preferences for bearing health risks; this study is designed to parameterize generalized risk-adjusted cost-effectiveness (GRACE) valuations of medical technology.

Drishti has been and continues to be a joy to work with. I have been impressed by her conscientiousness, curiosity, motivation, and detail-oriented approach. Her mature approach to economic theory is matched by her skill as a programmer and her care with data. Thu, she has the skills and interest to be an "all-arounder" as a health economist. I am hopeful you will regard her as a fit for the Innovation Research Boot Camp. Please do not hesitate to contact me if you have questions or need further information.

Sincerely,

Darius Lakdawalla

Darius N. Lakdawalla

University of Southern California
635 Downey Way, VPD 312, Los Angeles, California 90089-3333 • Tel: 213 821 7940