


July 2024

## PERSONAL STATEMENT

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I am an engineer and chronic disease epidemiologist working towards an integration of precision medicine, disease surveillance, and data solutions for improving public health. My experience spans maternal and child health, micronutrient deficiencies, mental health, cognition, and now, cardiometabolic health. I use structured data sources (electronic health records, sensors, cohort studies, surveys) to identify new ways of closing care gaps for vulnerable populations through epidemiological research projects. My current research focuses on three broad areas: integration of precision medicine and disease surveillance, family as a unit of health, and feedback loops of cardiometabolic disease management among vulnerable populations (HIV, serious mental illness, cognitive impairment). All my research is done in collaboration with clinicians and social scientists, using traditional statistical models (longitudinal analysis, latent variable models), causal inference (observational, graphical), and machine learning approaches (supervised and unsupervised methods).

 Reproducible Research: <https://github.com/jvargh7>

## PROFESSIONAL EXPERIENCE

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|---|-------------------|
| <b>Co-Director, EGDCR Diabetes Translational Accelerator</b><br>Emory Global Diabetes Research Center, Atlanta  | 12/2023 –         |
| <b>Assistant Research Professor, Rollins School of Public Health</b><br>Hubert Department of Global Health & Emory Global Diabetes Research Center, Atlanta | 08/2023 –         |
| <b>Postdoctoral Fellow, Emory Global Diabetes Research Center</b><br>Hubert Department of Global Health, Emory University, Atlanta                          | 05/2022 – 07/2023 |
| <b>Graduate Research Assistant, COVID-19 Health Equity Dashboard</b><br>Hubert Department of Global Health, Emory University, Atlanta                       | 06/2021 – 09/2021 |
| <b>Research Analyst, Division of Nutrition</b><br>St. John's Research Institute, Bengaluru, India   | 09/2015 – 06/2018 |
| <b>Junior Consultant, Forecasting – Marketing Analytics</b><br>IMS Health GTO, Bengaluru, India   | 07/2014 – 08/2015 |

## EDUCATION

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|---|-------------------|
| <b>Laney Graduate School, Emory University</b> (Atlanta, USA)<br>Ph.D. in Nutrition and Health Sciences<br><i>Title:</i> The association of wealth over the life course with health and disease in adulthood: An analysis of six birth cohorts from five low- and middle-income countries | 09/2018 – 04/2022 |
| <b>Indian Institute of Technology Madras</b> (Chennai, India)<br>B.Tech. and M.Tech. in Biotechnology   | 08/2009 – 06/2014 |

## AWARDS & HONORS

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|   |      |
|---|------|
| <b>Early Career Award in Primary Care</b> ( <i>Best Abstract</i> )<br>American Diabetes Association       | 2024 |
| <b>Outstanding Scholarly Research Award in the Natural Sciences</b> ( <i>Best Doctoral Dissertation</i> ) |      |

Laney Graduate School, Emory University 2022

### Best Presentation

Bangalore Boston Nutrition Collaborative (BBNC) 2016

### IMS Client Delight Award

IMS Health 2015

### 48<sup>th</sup> Indian Pharmaceutical Congress Prize (*Best Masters Thesis*)

IIT Madras 2014

## PUBLICATIONS

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# Student/Trainee

### 2024

1. Namitha Mary Varghese<sup>#</sup>, **Jithin Sam Varghese**. Sex Differences in Association of Joint Glycemic, Blood Pressure and Lipid Control and Two-year Risk of Falls among Older Adults with Diabetes. *Journal of Diabetes and Its Complications*. 2024. Accepted.
2. **Jithin Sam Varghese**, Emily Peterson, Mohammed K. Ali, Nikhil Tandon. Advancing Diabetes Surveillance Ecosystems: A Case Study of India. *The Lancet Diabetes & Endocrinology*. 2024. [https://doi.org/10.1016/S2213-8587\(24\)00124-4](https://doi.org/10.1016/S2213-8587(24)00124-4).
3. **Jithin Sam Varghese**, Arpita Ghosh, Aryeh D. Stein, KM Venkat Narayan, Shivani A. Patel. The association of hypertension among married Indian couples: a nationally representative study. *Scientific Reports*. 2024. <https://doi.org/10.1038/s41598-024-61169-1>
4. Rodrigo M Carillo Larco, Wilmer Cristobal Guzman-Vilca, **Jithin Sam Varghese**, Francisco J Pasquel, Roberta Caixeta, Carmen Antini, Antonio Bernabe-Ortiz. Compliance with eye and foot preventive care in people with self-reported diabetes in Latin America and the Caribbean: Pooled, cross-sectional analysis of nine national surveys. *Primary Care Diabetes*. 2024. <https://doi.org/10.1016/j.pcd.2024.03.001>

### 2023

5. **Jithin Sam Varghese\***, Nikhil Srinivasapura Venkateshmurthy\*, Nikkil Sudharsanan, Jeemon Panniyamakal, Shivani A. Patel, Harsha Thirumurthy, Ambuj Roy, Nikhil Tandon, K.M. Venkat Narayan, Dorairaj Prabhakaran, Mohammed K. Ali. Hypertension diagnosis, treatment, and control in India. *JAMA Network Open*. 2023. <https://doi.org/10.1001/jamanetworkopen.2023.39098>. \* Equal contributions. Click [here](#) for interactive dashboard that displays state- and district-level care cascades.
6. **Jithin Sam Varghese\***, Peiyi Lu\*, Daesung Choi, Lindsay Kobayashi, Mohammed K. Ali, Shivani Patel, Chihua Li. Spousal concordance of hypertension among middle-aged and older heterosexual couples around the world: evidence from studies of aging in the USA, England, China, and India. *Journal of the American Heart Association*. 2023. <https://doi.org/10.1161/JAHA.123.030765>. \* Equal contributions. Altmetric Score > 1000 (*Top 1% of articles by public attention*). Featured by [American Heart Association](#), [National Heart, Lung and Blood Institute](#), [Today show](#), [CNN.com](#), [Fox 32 Chicago](#), [Detroit Local 4](#) etc.
7. **Jithin Sam Varghese**, Rodrigo M. Carillo Larco, K.M. Venkat Narayan. *Correspondence*: Achieving replicable subphenotypes of adult-onset diabetes. *The Lancet Diabetes & Endocrinology*. [https://doi.org/10.1016/S2213-8587\(23\)00195-X](https://doi.org/10.1016/S2213-8587(23)00195-X)  
Article: Stefan and Schulze 2023 *The Lancet Diabetes & Endocrinology*
8. **Jithin Sam Varghese**, Ranjit Mohan Anjana, Pascal Geldsetzer, Nikkil Sudharsanan, Jennifer Manne-Goehler, Harsha Thirumurthy, Soura Bhattacharyya, K.M. Venkat Narayan, Viswanathan Mohan, Nikhil Tandon, Mohammed K. Ali. National estimates of the adult diabetes care continuum in India, 2019-2021. *JAMA Internal Medicine*. 2023. <https://doi.org/10.1001/jamainternmed.2023.3070>  
Click [here](#) for interactive dashboard that displays state- and district-level care cascades.

9. Anna Paul, Nalini Sarah Newbigging, Audrin Lenin, S Mahasampath Gowri, **Jithin Sam Varghese**, Arun Jose Nell, Kundavaram Paul Prabhakar Abhilash, Ramya Iyadurai, George M Varghese; Role of clinical parameters and neutrophil gelatinase-associated lipocalin (NGAL) as predictors of bacterial sepsis in patients presenting to the Emergency Department with fever. *Indian J Crit Care Med.* Mar 2023;27(3):176-182. <https://doi.org/10.5005/jp-journals-10071-24419>
10. K.M. Venkat Narayan, **Jithin Sam Varghese**, Yara S. Beyh, Soura Bhattacharyya, Shweta Khandelwal, Gokul S. Krishnan, Karen R. Siegel, Tinku Thomas, Anura V. Kurpad. A strategic framework for defeating diabetes in India: A 21<sup>st</sup> century agenda. *Journal of Indian Institute of Science.* 2023; <https://doi.org/10.1007/s41745-022-00354-5>

## 2022

11. **Jithin Sam Varghese**, Rachel Waford Hall, Linda S Adair, Shivani A Patel, Reynaldo Martorell, Delia Belleza, Maria F Kroker-Lobos, Nanette R Lee, Lukhanyo Nyati, Manuel Ramirez-Zea, Linda M Richter, Aryeh D. Stein. Subjective social status is associated with happiness but not weight status or psychological distress: an analysis of three prospective birth cohorts from low- and middle-income countries. *Wellbeing, Space & Society.* 2022. 3: 100115; <https://doi.org/10.1016/j.wss.2022.100115>.
12. **Jithin Sam Varghese**, Clive Osmond, Aryeh D. Stein. Conditional wealth to estimate association of wealth mobility with health and human capital in low- and middle-income country cohorts. *BMC Med Res Methodol.* 2022;22(1); <https://doi.org/10.1186/s12874-022-01757-9>
13. **Jithin Sam Varghese**, KM Venkat Narayan. Ethnic differences between Asians and non-Asians in clustering-based classification of adult-onset diabetes mellitus: A systematic narrative review. *Prim Care Diabetes.* Sep 22 2022; <https://doi.org/10.1016/j.pcd.2022.09.007>.  
Click [here](#) for interactive dashboard that displays between study and between ethnicity variability in clusters.
14. **Jithin Sam Varghese**, Aashish Gupta, Rukshan Mehta, Aryeh D. Stein, Shivani A. Patel. Changes in child undernutrition and overweight in India from 2006 to 2021: an ecological analysis of 36 states. *Global Health Science & Practice.* September 2022; <https://doi.org/10.9745/GHSP-D-21-00569>
15. Monica Mazariegos, **Jithin Sam Varghese**, Maria F Kroker-Lobos, Ann M DiGirolamo, Manuel Ramirez-Zea, Usha Ramakrishnan, Aryeh D. Stein. Age at childbirth and change in BMI across the life-course: evidence from the INCAP Longitudinal Study. *BMC Pregnancy Childbirth.* Feb 24 2022;22(1):151; <https://doi.org/10.1186/s12884-022-04485-6>
16. Ann DiGirolamo, **Jithin Sam Varghese**, Maria F Kroker Lobos, Monica Mazariegos, Manuel Ramirez-Zea, Reynaldo Martorell, Aryeh D. Stein. Protein-energy Supplementation in Early-life Decreases the Odds of Mental Distress in Later Adulthood in Guatemala. *J Nutr.* Apr 1 2022;152(4):1159-1167; <https://doi.org/10.1093/jn/nxac005>  
Editor's choice article for [April 2022](#)
17. Cesar G Victora, Fernando P. Hartwig, Luis P. Vdaletti, Reynaldo Martorell, Clive Osmond, Linda Richter, Aryeh D Stein, Aluisio JD Barros, Linda Adair, Fernando C Barros, Santosh K Bhargava, Bernardo L Horta, Maria F. Kroker-Lobos, Nanette R Lee, Ana Maria B Menezes, Joseph Murray, Shane Norris, Harshpal S Sachdev, Alan Stein, **Jithin Sam Varghese**, Zulfiqar Bhutta, Robert E Black. Effects of early-life poverty on health and human capital in children and adolescents: analyses of national surveys and birth cohort studies in LMICs. *The Lancet.* 2022;399(10336); [https://doi.org/10.1016/S0140-6736\(21\)02716-1](https://doi.org/10.1016/S0140-6736(21)02716-1)

## 2021

18. **Jithin Sam Varghese**, Linda S. Adair, Shivani A. Patel, Sonny Agustin Bechayda, Santosh K. Bhargava, Delia B. Carba, Bernardo L. Horta, Natalia P. Lima, Reynaldo Martorell, Ana M.B. Menezes, Shane A. Norris, Linda M. Richter, Manuel Ramirez-Zea, Harshpal Singh Sachdev, Fernando C. Wehrmeister, Aryeh D. Stein, for the COHORTS group. Changes in asset-based wealth across the life course in birth cohorts from five low- and middle-income countries. *SSM Popul Health.* Dec 2021;16:100976; <https://doi.org/10.1016/j.ssmph.2021.100976>
19. Jeswin Baby, **Jithin Sam Varghese**, Shruthi Cyriac, KM Venkat Narayan, Anura V Kurpad, Tinku Thomas, Shivani A. Patel. Contribution of economic and nutritional context to overweight/obesity dynamics in Indian women from 1998 to 2016: a multilevel analysis of national survey data. *BMJ Open.* Dec 9 2021;11(12):e050598; <https://doi.org/10.1136/bmjopen-2021-050598>

20. **Jithin Sam Varghese**, Shivani A. Patel, Reynaldo Martorell, Manuel Ramirez-Zea, Aryeh D. Stein; Relative and absolute wealth mobility since birth in relation to health and human capital in middle adulthood: An analysis of a Guatemalan birth cohort. *SSM Popul Health*. Sep 2021;15:100852; <https://doi.org/10.1016/j.ssmph.2021.100852>
21. **Jithin Sam Varghese**, Rachel Waford Hall, Ann DiGirolamo, Reynaldo Martorell, Manuel Ramirez-Zea, Aryeh D. Stein. Socioeconomic position over the life-course and subjective social status in relation to nutritional status and mental health among Guatemalan adults. *SSM Popul Health*. Sep 2021;15:100880; <https://doi.org/10.1016/j.ssmph.2021.100880>
22. **Jithin Sam Varghese**, John Maluccio, Solveig A. Cunningham, Manuel Ramirez-Zea, Aryeh D. Stein. Development of a temporally harmonized asset index: evidence from across 50 years of follow up of a birth cohort in Guatemala. *BMC Med Res Methodol*. Apr 26 2021;21(1):85; <https://doi.org/10.1186/s12874-021-01263-4>
23. **Jithin Sam Varghese**, Joyce C. Ho, Ranjit Mohan Anjana, Shivani A. Patel, S Jebarani, Viswanathan Baskar, KM Venkat Narayan, V. Mohan. Profiles of Intraday Glucose in Type 2 Diabetes and Their Association with Complications: An Analysis of Continuous Glucose Monitoring Data. *Diabetes Technol Ther*. Aug 2021;23(8):555-564; <https://doi.org/10.1089/dia.2020.0672>

## 2019

24. **Jithin Sam Varghese**, Aryeh D. Stein. Malnutrition among women and children in India: limited evidence of clustering of underweight, anemia, overweight, and stunting within individuals and households at both state and district levels. *Am J Clin Nutr*. Apr 1 2019;109(4):1207-1215; <https://doi.org/10.1093/ajcn/nqy374>
25. Adam Hanif, Rachel Shah, Jiong Yan, **Jithin Sam Varghese**, Shivani A. Patel, Blaine E. Cribbs, Ghazala O'Keefe, Andrew M. Hendrick, Jessica G. Shantha, Baker Hubbard III, Purnima S. Patel, Prethy Rao, Steven Yeh, Nieraj Jain. Strength of Association between Pentosan Polysulfate and a Novel Maculopathy. *Ophthalmology*. Oct 2019;126(10):1464-1466; <https://doi.org/10.1016/j.ophtha.2019.04.024>
26. **Jithin Sam Varghese**, Sumathi Swaminathan, Anura V Kurpad, Tinku Thomas. Demand and supply factors of iron-folic acid supplementation and its association with anaemia in North Indian pregnant women. *PLoS One*. 2019;14(1):e0210634.; <https://doi.org/10.1371/journal.pone.0210634>
27. **Jithin Sam Varghese**, Tinku Thomas, Anura V Kurpad. Evaluation of haemoglobin cut-off for mild anaemia in Asians - analysis of multiple rounds of two national nutrition surveys. *Indian J Med Res*. Oct 2019;150(4):385-389; [https://doi.org/10.4103/ijmr.IJMR\\_334\\_18](https://doi.org/10.4103/ijmr.IJMR_334_18)
28. Sumathi Swaminathan, Santu Ghosh, **Jithin Sam Varghese**, Harshpal S Sachdev, Anura V Kurpad, Tinku Thomas. Dietary Iron Intake and Anemia Are Weakly Associated, Limiting Effective Iron Fortification Strategies in India. *J Nutr*. May 1 2019;149(5):831-839; <https://doi.org/10.1093/jn/nxz009>

## 2018

29. Sanjukta Rao, Tinku Thomas, Sumathi Swaminathan, **Jithin Sam Varghese**, Anura V Kurpad, Ankita Mondal, Bharati Kulkarni, Harshpal Singh Sachdev, Umesh Kapil. Current Practice of Iron doses for Treatment of Iron Deficiency Anaemia – A Review. *Indian J Commun Health*. Apr 25 2018; 30 (1 Supp): 31-38; <https://doi.org/10.47203/IJCH.2018.v30i01SUPP.005>
30. Ankita Mondal, Tinku Thomas, Sumathi Swaminathan, Sanjukta Rao, **Jithin Sam Varghese**, Bharati Kulkarni, Harshpal Singh Sachdev, Umesh Kapil, Anura V Kurpad. Guidelines for Iron supplementation for Prophylaxis of Anaemia in a National Programme – A Review. *Indian J Commun Health*. Apr 2 2018; 30 (1 Supp): 9-30; <https://doi.org/10.47203/IJCH.2018.v30i01SUPP.004>

## SELECTED CONFERENCE PRESENTATIONS

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1. **Jithin Sam Varghese**, Namitha Mary Varghese, K.M. Venkat Narayan. Medication use among youth-onset diabetes in India: an analysis of socio-economic factors and cost of care. Oral presentation at ADA Scientific Sessions 2023, San Diego, CA.
2. **Jithin Sam Varghese**, Chihua Li. Peiyi Lu. Lack of Concordance of Blood Pressure Control among Heterosexual Couples with Diabetes—An Analysis of Aging Cohorts from USA, China, and India. Poster presentation at ADA Scientific Sessions 2023, San Diego, CA.

3. Aamna Soniwala, Sophia Kim, K.M. Venkat Narayan, **Jithin Sam Varghese**. Global Equity in Precision Medicine in Diabetes Research—A Scientometric Review. Poster presentation at ADA Scientific Sessions 2023, San Diego, CA.
4. Amalia Abraham, Ryan Smith, Citlalli Perez-Guzman, Farbod Zahedi Tajrishi, Lizda Guerrero-Arroyo, **Jithin Sam Varghese**, Francisco J. Pasquel. Metabolomics Analysis Reveals Links Between Stress-Hyperglycemia and Underlying Differences in Branched-Chain Amino acid Metabolism and Microbiome-Host Interactions Among Cardiac Surgery Patients. Oral presentation at ADA Scientific Sessions 2023, San Diego, CA.
5. **Jithin Sam Varghese**. An Ecological Analysis of Food Expenditure Patterns During Periods of Economic Recovery and Economic Shock in India. Poster presentation at Nutrition 2022, Online.
6. **Jithin Sam Varghese**, Shivani A. Patel. Concordance of diabetes and hypertension among married couples in India: an analysis of nationally representative data. Oral presentation at Society for Epidemiological Research conference 2022, Chicago, IL.
7. **Jithin Sam Varghese**, Rutuja Chhajed, Sumathi Swaminathan, Tinku Thomas, Vinod Kamat, Anura V Kurpad. Development of a dashboard simulating India's nutrition scenario and potential of fortification interventions. Poster presentation at Nutrition 2018 in Boston, MA.

## INVITED TALKS

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1. **Jithin Sam Varghese**. Regression analysis for epidemiology (Quantitative Methods Webinar Series – July 2022 at DSI-NRF Center of Excellence in Human Development, Johannesburg, South Africa)
2. **Jithin Sam Varghese**. An overview of cohort studies (CAPHER-India workshop 2022 in New Delhi, India)

## TEACHING EXPERIENCE

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| <b>Teaching Assistant</b> , Rollins School of Public Health, Emory University<br><i>GH 523 – Quantitative Data Analysis</i><br>Lecture and lab course with 20 students   | Fall 2019                        |
| <b>Guest Lecturer</b> , Rollins School of Public Health, Emory University<br><i>GH 534 - Diabetes: A Model for Global Non-communicable Disease Prevention &amp; Control</i><br><i>NHS 581 – Human Nutrition II</i> | Spring 2024<br>Spring 2020, 2021 |
| <b>Session Lead</b> , Laney Graduate School, Emory University<br><i>JPE 600 – Jones Programme in Ethics JPE Ambassador</i>   | Summer 2020, 2021                |

## SERVICE

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|---|-------------------|
| Faculty Representative, Coalition for Access to NCD Medicines and Products  | 04/2024 –         |
| Student Member, Emory International Council (2020-2021)                     | 01/2021 – 05/2021 |
| Co-Chair, Mentorship Committee, Nutrition and Health Sciences students club | 09/2019 – 05/2020 |
| Institute Secretary, International and Alumni Relations at IIT Madras       | 04/2013 – 03/2014 |

## PROFESSIONAL ACTIVITIES & MEMBERSHIP

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Editorial Board Member for *Journal of Diabetes Science & Technology*

Reviewer for *Journal of Nutrition*, *Public Health Nutrition*, *Journal of DoHAD*, *SSM Population Health*, *PLoS ONE*, *Diabetic Medicine*, *Annals of Epidemiology*, *Diabetes Technology & Therapeutics*, *Frontiers in Public Health*, *BMC Public Health*, *International Journal of Epidemiology*, *Annals of Internal Medicine*, *PLoS Global Health*, *American Journal of Hypertension*, *JAMA Network Open*

## SOFTWARE

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Advanced: R, Shiny; Working knowledge: SAS, VBA, Python, PsychoPy

## GRANTS & FUNDING

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National Institutes of Health (3R01DK120814-05S1) 08/2022 – 07/2023  
**Diabetes Risk after COVID-19 in Racial and Ethnic Minority Communities:** Potential association between COVID-19 infection and new-onset T2DM using causal inference methods for electronic health records. (PI: Chakkalakal; Role: Co-Investigator)

Bill & Melinda Gates Foundation  
**Child Development and Adult Social and Human Capital: COHORTS:** Harmonization of survey data over the life course for six birth cohorts. (PI: Stein; Role: Data Manager/Doctoral Student)

Interdisciplinary Cyber Physical Systems Division, DST, India 10/2017 – 08/2018  
**EpidaViz:** Developing obesity, diabetes and hypertension centered data products from private and public data sources. (PI: Mony; Role: Co-Investigator)

BIRAC, DBT, India 06/2017 – 12/2017  
**Knit Anemia Phase 1:** Identifying local dietary & nutrient-level risk factors for anemia in non-pregnant, non-lactating women. (PI: Kurpad; Role: Data Science Lead)

Tata Trusts 01/2017 – 04/2017  
**Nutritional Status and Fortification Simulation Dashboard:** Data harmonization for national health and nutrition surveys, and prototype development of analytics products. (PI: Kurpad; Role: Data Science Lead)

## TRAINEES/STUDENT COLLABORATORS

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### Doctor of Philosophy

|   |               |
|---|---------------|
| Ruwanthi Ekanayake (MD/PhD; <i>Rotation</i> )                     | Spring 2024 – |
| Zhongyu Li (Nutrition; <i>Rotation</i> )                          | Spring 2024 – |
| Felix Teufel (GHD, <i>Rotation</i> )                              | Summer 2024 – |
| Thomas Hsiao (Biostatistics; <i>Graduate Research Assistant</i> ) | Spring 2024 – |
| Erica Kocher (Nutrition; <i>Graduate Research Assistant</i> )     | Spring 2024 – |

### Master of Public Health

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| Srividya Vempati (MPH Epidemiology)    | Spring 2023 |
| Adithi Shyam (MPH Global Epidemiology) | Spring 2024 |

### Bachelor of Arts/Bachelor of Science

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|---|---------------|
| Aamna Soniwala (HLTH 399R, HLTH 499R, Honors Thesis)          | Fall 2022 –   |
| Sophia Kim (BIOL 499R)  | Spring 2023 – |
| Krishna Om Sanaka (ANT 397)                                   | Spring 2024 – |
| Jack MacQuillan ( <i>Diabetes Translational Accelerator</i> ) | Spring 2024   |