

# Anshul Kumar

Curriculum Vitae as of 15 June 2022

## Contact Information

Health Professions Education Program  
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## Employment

|   |                                   |
|---|-----------------------------------|
| MGH Institute of Health Professions (MGHIHP)  |                                   |
| <i>Assistant Professor</i>  | <i>April 2019 – Present</i>       |
| <i>Part-Time Lecturer</i>   | <i>January 2019 – March 2019</i>  |
| Tufts University  |                                   |
| <i>Part-Time Lecturer, CH 1 – Introduction to Community Health</i>  | <i>January 2019 – May 2019</i>    |
| Global Health Education and Learning Incubator, Harvard University and<br>Center for Health Decision Science, Harvard School of Public Health |                                   |
| <i>Postdoctoral Research Fellow</i>   | <i>February 2018 – March 2019</i> |

## Education

|  |                 |
|--|-----------------|
| Graduate School of Arts and Sciences, Harvard University |                 |
| <i>PhD in Sociology</i>                                  | <i>May 2018</i> |
| <i>A.M. in Sociology</i>                                 | <i>May 2014</i> |
| College of Arts and Sciences, Cornell University         |                 |
| <i>B.A. in Sociology, B.A. in Economics</i>              | <i>May 2009</i> |

## Written Materials

### *Peer-reviewed publications*

Jafri, Farrukh N., et al. 2022. "In Situ Simulation as a Tool to Longitudinally Identify and Track Latent Safety Threats in a Structured Quality Improvement Initiative for SARS-CoV-2 Airway Management: A Single-Center Study." *Simulation in Healthcare*. <https://doi.org/10.1097/SIH.0000000000000633>.

Jafri Farrukh N., et al. 2021. "The Addition of High-Technology Into the Stop the Bleed Program Among School Personnel Improves Short-Term Skill Application, Not Long-Term Retention." *Simulation in Healthcare: Journal of the Society for Simulation in Healthcare* 16(6): e159-e167.  
<https://doi.org/10.1097/sih.0000000000000546>.

Jafri Farrukh N., et al. 2020. "A Microdebriefing Crisis Resource Management Program for Simulated Pediatric Resuscitation in a Community Hospital: A Feasibility Study." *Simulation in Healthcare: Journal of the Society for Simulation in Healthcare* 16(3): 163-169.  
<http://doi.org/10.1097/sih.0000000000000480>.

Marks, Brynn E., et al. 2020. "Improving Pediatric Endocrinology Trainees' Knowledge about Insulin Pumps and Continuous Glucose Monitors with Online Spaced Education: Technology Knowledge Optimization in T1D (TeKnO T1D)." *Pediatric Diabetes* 21(5): 814-823.  
<https://doi.org/10.1111/pedi.13010>.

Kumar, Anshul. 2019. "Cultures of learning in developing education systems: Government and NGO classrooms in India." *International Journal of Educational Research* 95: 76-89.  
<https://doi.org/10.1016/j.ijer.2019.02.009>.

### *Teaching materials*

Kumar, Anshul. 2022. *Responsible statistics in R for behavioral and health data (working title)*. Textbook used for course HE-902 at MGHHP. <https://bookdown.org/anshul302/HE902-MGHIHP-Spring2020/> or <http://tinyurl.com/he902stats>.

Kumar, Anshul. 2022. *Introductory predictive analytics and machine learning in education and healthcare*. Course book for HE-930 at MGHHP. <https://bookdown.org/anshul302/paml/>

Kumar, Anshul. 2021. *MGHIHP HE-802, Spring 2021*. Course book.  
<https://bookdown.org/anshul302/HE802-MGHIHP-Spring2020/>.

Kumar, Anshul, et al. Equal first authorship. *Coronavirus Vaccine / कोरोनावाइरस वैक्सीन*. (COVID-19 vaccine information and resources for Indian audiences). <https://globalhealtheducation.github.io/>.

### *Software, code, and tools*

Kumar, Anshul & Edwards, Roger. 2021. *AdaptiveLearnalytics: Adaptive Predictive Learning Analytic Tools*. <https://github.com/readcreate/AdaptiveLearnalytics>.

Kumar, Anshul. 2021. Predictive analytics tutorial: identify groups in your data using unsupervised machine learning. <http://tinyurl.com/AnshulCluster1>.

### *Unpublished research*

Kumar, Anshul, et al. 2022. "The application of adaptive minimum match k-nearest neighbors to identify at-risk students in health professions education." Pre-print: <https://doi.org/10.35542/osf.io/wtuv6> and <https://arxiv.org/abs/2108.07709>.

Kumar, Anshul. 2018. *Innovating in Education: NGO Interventions in New Delhi Government Schools*. PhD Dissertation. Committee: Chris Winship, Orlando Patterson, Katherine Merseth.

Kumar, Anshul. 2013. "The organization and behavior of HIV-affected families in 18 African countries." (Graduate Qualifying paper).

Kumar, Anshul. 2009. "Food and Nutrition in Kabula – a Qualitative Examination in Western Kenya." Sociology Honors Thesis at Cornell University. Advisor: David Brown.

### **Selected Projects**

COVID-19 Education and Community Health Worker Training in India

*Principal investigator, with Claudia Rosu*

March 2020 – Present

- Collaboration of 30-40 people from Sinchan Education & Rural Entrepreneurship Foundation, Lahanti Club community group, Universidad Anáhuac Mexico, Tufts University, Harvard University, MGHHP.
- Delivery of COVID-19 educational lessons and evaluation instruments regarding COVID-19 basics, mask usage, hand hygiene, vaccine, nutrition myths/facts, and MIS-C.
- Mass General Brigham IRB protocols #2020P003752 (PI: Claudia Rosu) and #2020P003554 (PI: Anshul Kumar).
- Partially funded by a \$5,000 COVID-19 Small Grant from MGHHP

Application of Machine Learning Techniques to Physician Assistant Student Performance Data

*Principal Investigator*

February 2020 – Present

- Analysis of previous student data to identify future students at risk of failing certification exams.
- Mass General Brigham IRB protocol #2020P000514.

Inequality in Water and Sanitation Conditions in DHS Countries

July 2018 – Present

*Principal Investigator*

- Quantitative cross-country examination of factors influencing differential access to hygienic drinking water and toilets, using data from Demographic and Health Surveys.

Water and Sanitation in Gulu, Uganda

July 2018 – Aug 2019

*Advisor to organization Water and Health for All*

- Advise organization on processing, analysis, and interpretation of survey data related to water quality in Gulu, Uganda.

Pre-Texts for India

May 2018 – May 2019

*Principal Investigator, with Polly Lauer and Jahnvi Singh*

- Conducting one-year controlled pilot to bring Pre-Texts teaching methodology to a network of schools in Coimbatore, Tamil Nadu, India, with specific focus on literacy, math, and health.
- Funded by a \$5,000 seed grant from the Lakshmi Mittal and Family South Asia Institute at Harvard University.
- Supervised by Professor Doris Sommer.

## Teaching

*Courses taught as instructor*

- Advanced Statistical Modeling for Health Professions Education (HE902), MGHHP, Spring, 2020-2022.
- Advanced Quantitative Methods and Measurement (HE802), MGHHP, Spring, 2019-2021
- Statistics/Predictive Analytics for Health Professions Education (HE930), MGHHP, Summer, 2020-2022.
- Pharmacy Research Methods Certificate Program, MGHHP, 2021-2022.
- Introduction to Community Health (CH1), Tufts University, Spring 2019

*Courses taught as teaching assistant*

Harvard University

- Fundamental Concepts of Public Health (GHP556) with Suerie Moon and Julio Frenk; summer 2015
- Global Health Challenges: Complexities of Evidence-Based Policy (SW24) with Professor Sue Goldie; spring 2014
- Life and Death in the USA (SOC190) with Professor Nicholas Christakis; spring 2012, spring 2013
- The American Family (SOC107) with Professor Marty Whyte; fall 2011, fall 2012, fall 2013

## Peer Review

- 4th International Conference on Physics, Mathematics and Statistics. December 2020.
- Fourth International Conference on Social Science Public Health and Education, August 2021.

## Additional Skills and Training

Data and Computer Skills

- Proficient in data analysis and manipulation in R, Python, Stata, Google Drive API, Google Colab.
- Statistical and demography training from National Science Foundation Research Experience for Undergraduates Program in Minority Group Social Demography; Population Research Center, University of Texas, Austin. Summer 2008.

- Relevant coursework: Advanced Quantitative Research Methods (taught by Chris Winship), Social Network Analysis (Peter Marsden), Computational Methods for Complex Networks (Gueorgi Kossinets), Population Dynamics (David Brown).

Other selected graduate-level coursework: Charter Schools (with Katherine Merseth and Nelson Smith), Sociology of Development (Martin Whyte), Sociology of Families and Kinship (Martin Whyte).

Language abilities: Native English, intermediate Hindi and French.

Nationality: USA