Avi Kenny, Ph.D. – Curriculum Vitae

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1. Education

- Ph.D., Biostatistics. University of Washington, Seattle, WA (Sep 2018 – Aug 2023).
- B.A., Biology. Brown University, Providence, RI. (Sep 2007 – May 2011).

2. Professional Positions

- Assistant Professor, Biostatistics & Bioinformatics, Duke University, Durham, NC (Feb 2024 – present)
    - Secondary appointment at the Duke Global Health Institute
- Research Assistant (under Dr. Marco Carone), University of Washington, Seattle, WA (Aug 2021 – present).
- Research Assistant (under Dr. James Hughes), University of Washington, Seattle, WA (Sep 2018 – Aug 2021).
- Director of Research, Monitoring, and Evaluation, Last Mile Health, Monrovia, Liberia (Feb 2014 – Jun 2018).
    - Led a team of sixteen full-time staff, managed a $600,000 annual budget, and represented the research, monitoring, and evaluation department on the Executive Team.
    - Crafted the organization's long-term research strategy, served as the in-country principal investigator for four research studies, led the design and execution of seven large-scale cluster sample surveys, and conducted a complete GIS mapping of five of Liberia's fifteen counties.
    - Designed a custom mobile health app that was (at the time) the only platform in the world capable of transferring data and application updates in fully-disconnected settings.
    - Co-created a monitoring system to collect data from 4,000 community health workers and 400 clinical supervisors together with the Liberia Ministry of Health.
- Database Consultant, Studio in a School, New York, NY (Jun 2013 – Jun 2014).
- Senior Associate, Strategy and Operations, Teach For America, New York, NY (Dec 2012 – Feb 2014).
- Monitoring and Evaluation Officer, Last Mile Health, Zwedru, Liberia (Sep 2011 – Nov 2012).
- Monitoring and Evaluation Intern, Gardens for Health International, Providence, RI and Kigali, Rwanda (Oct 2009 – Sep 2010).
- Research Assistant (under Dr. Johanna Schmitt), Brown University, Providence RI (Sep 2009 – Dec 2009).
- Test Developer, Advantage Testing, Rye, NY (Jun 2008 – Aug 2008).

3. Teaching

- Guest lecturer, Biostatistics 561, University of Washington (May 2023).
- Instructor, Biostatistics 111, University of Washington (Apr 2020 – Jun 2020).
- Guest lecturer, Biostatistics 572, University of Washington (Apr 2021).
- Guest lecturer, Biostatistics 111, University of Washington (May 2019).
- Guest lecturer, Biostatistics 111, University of Washington (May 2021).

4. External Professional Activities

Conference Presentations

- "Nonparametric inference for the controlled vaccine efficacy curve under the assumption of monotonicity", Joint Statistical Meetings (Aug 2023).
- "Immune correlates analysis of the Imbokodo HIV-1 vaccine efficacy trial", International AIDS

Conference (Jul 2022).

Other Presentations

- "Analysis of stepped wedge cluster randomized trials in the presence of a time-varying treatment effect", CLEAR (Clinical Learning, Evidence and Research) Center for Musculoskeletal Disorders webinar (Oct 2023).
- "Immune correlates analysis of the Imbokodo HIV-1 vaccine efficacy trial", HIV Vaccine Trials Network (HVTN) weekly statistical group meeting (May 2022).
- "Nonparametric inference for controlled effects in vaccine clinical trials under monotonicity", University of Washington Biostatistics Student Seminar (Jan 2023).
- "SimEngine: a modular framework for statistical simulations in R", University of Washington Biostatistics Student Seminar (Feb 2022).
- "Analysis of stepped wedge cluster randomized trials in the presence of a time-varying treatment effect", Yale University stepped wedge trials research group (Nov 2021).
- "Analysis of stepped wedge cluster randomized trials in the presence of a time-varying treatment effect", University of Washington Biostatistics Student Seminar (Oct 2021).
- "Stepped wedge cluster randomized controlled trials", University of Washington Biostatistics Student Seminar (Jan 2021).
- "Estimating the relationship between cabotegravir blood levels and HIV incidence", HIV Prevention Trials Network (HPTN) weekly statistical group meeting (May 2019).
- "Research, Monitoring, and Evaluation at Last Mile Health", University of Washington Biostatistics Student Seminar (Apr 2019).

Manuscript Reviewer

- Biometrics
- BMC Medical Research Methodology
- Journal of Causal Inference
- Journal of Medical Internet Research
- Prevention Science
- Statistics in Medicine

Mentorship

- Peer Mentor, University of Washington Biostatistics department (2019 – 2023).
- Undergraduate Advisor, University of Washington School of Public Health (2021 -- 2022).

Departmental Service

- Student representative, Computing Policy Committee (2020 – 2021 and 2022 – 2023).
- Student representative, Educational Policy and Teaching Evaluation Committee (2019 – 2020 and 2021 – 2022).
- Trainer, "Intro to Running R Code on the Department Cluster" (Oct 2021 and Sep 2022).
- Co-author, "Biostatistics Department Curriculum Feedback Survey" (May 2021).
- Panelist, University of Washington School of Public Health Career Panel (Apr 2021).
- Co-author, "Guidance for Advisor/Advisee Conversations" departmental documentation (Mar 2020).
- Member, Biostatistics Activities and Events Squad (2018 – 2019 and 2020 – 2021).
- Author, "Running R Code on the Department Cluster Computing System" (May 2019).

5. Publications

1) **Kenny A**, Gilbert PB, Carone M. Nonparametric inference for the controlled risk and controlled vaccine efficacy curves. *Pre-publication*.

2) **Kenny A**, Gilbert PB, Carone M. Inference for controlled risk and controlled vaccine efficacy curves using a marginalized Cox proportional hazards model. *Pre-publication*.
3) Jockers D, Ngafuan R, Baernighausen T, Kessley A, White EE, **Kenny A**, Kraemer JD, Geedeh J, Rozelle J, Holmes L, Obaje H, Wheh S, Pedersen J, Siedner MJ, Mendin S, Subah M, Hirschhorn LR. Under-five mortality before and after implementation of the Liberia National Community Health Assistant (NCHA) program: A study protocol. PloS One, 19(3):e0272172, 2024.
4) Gilbert P, Fong Y, Hejazi N, **Kenny A**, Huang Y, Carone M, Benkeser D, Follmann D. Four Statistical Frameworks for Assessing an Immune Correlate of Protection (Surrogate Endpoint) from a Randomized, Controlled, Vaccine Efficacy Trial. *Vaccine* (accepted), 2024.
5) Zhang B, Fong Y, Fintzi J, …, **Kenny A**, …, Follmann D. Omicron COVID-19 immune correlates analysis of a third dose of mRNA-1273 in the COVE Trial. *medRxiv*, 2023.
6) Gilbert P, Fong Y, **Kenny A**, Carone M. A controlled effects approach to assessing immune correlates of protection. *Biostatistics*, 24(4):850-865, 2023.
7) Huang Y, Hejazi NS, Blette B, …, **Kenny A**, …, Gilbert PB. Stochastic interventional vaccine efficacy and principal surrogate effect modification analyses of antibody markers as correlates of protection against symptomatic COVID-19 in the COVE mRNA-1273 trial. *Viruses*, 15(10), 2023.
8) Benkeser D, Montefiori DC, McDermott AB, …, **Kenny A**, …, Gilbert PB. Comparing and combining antibody assays as correlates of protection against COVID-19 in the COVE mRNA-1273 vaccine efficacy trial. *Science Translational Medicine*, 15(692):eade90, 2023.
9) Seaton K, Huang Y, …, **Kenny A**, …, Gilbert PB, Tomaras GD. Pharmacokinetic serum concentrations of VRC01 correlate with prevention of HIV-1 acquisition. *eBioMedicine*, 93(104590):1-15, 2023.
10) **Kenny A**, Voldal E, Xia F, Heagerty PJ, Hughes JP. Analysis of stepped wedge cluster randomized trials in the presence of a time-varying treatment effect. *Statistics in Medicine*, 41(22):4311-4339, 2022.
11) Berrondo C, Carone M, Katz C, **Kenny A**. Adherence to perioperative antibiotic prophylaxis recommendations and its impact on postoperative surgical site infections. *Cureus*, 14(6):e25859, 2022.
12) Fong Y, McDermott AB, …, **Kenny A**, …, Gilbert PB, Koup RA, Donis RO. Immune correlates analysis of the ENSEMBLE single Ad26.COV2.S dose vaccine efficacy clinical trial. *Nature Microbiology*, 7:1996–2010, 2022.
13) Voldal E, Xia F, **Kenny A**, Heagerty PJ, Hughes JP. Random effect misspecification in stepped wedge designs. *Clinical Trials*, 19(4):380-383, 2022.
14) Voldal E, Xia F, **Kenny A**, Heagerty PJ, Hughes JP. Model misspecification in stepped wedge trials: Random effects for time or treatment. *Statistics in Medicine*, 41(10):1751-1766, 2022.
15) Downey J, McKenna AH, Mendin SF, Waters A, Dunbar N, Tehmeh LG, White E, Siedner MJ, Panjabi R Kraemer JD, **Kenny A**, Ly J, Bass J, Huang KN, Khan S, Uchtmann N, Agarwal A, Hirschhorn L. Measuring knowledge of community health workers at the last mile in Liberia: feasibility and results of clinical vignette assessments. *Global Health: Science and Practice*, 9(S1):S111-S121, 2021.
16) **Kenny A**, Gordon N, Downey J, Eddins O, Buchholz K, Menyon A, Mansah W. Design and implementation of a mobile health electronic data capture platform that functions in fully-disconnected settings: a pilot study in rural Liberia. *BMC Medical Informatics and Decision Making*, 20(39):1-8, 2020.
17) Bruzelius E, Le M, **Kenny A**, Downey J, Danieletto M, Baum A, Doupe P, Silva B, Landrigan P, Singh P. Satellite images and machine learning can identify remote communities to facilitate access to health services. *Journal of the American Medical Informatics Association*, 26(8-9):806-812, 2019.
18) White E, Downey J, Sathananthan V, Kanjee Z, **Kenny A**, Waters A, Rabinowich J, Raghavan M, Dorr L, Halder A, Nyumah J, Duokie D, Boima T, Panjabi R, Siedner MJ, Kraemer JD. A community health worker intervention to increase childhood disease treatment coverage in rural Liberia: a controlled before-and-after evaluation. *American Journal of Public Health*, 108(9):1252-1259, 2018.
19) **Kenny A**, Gordon N, Griffiths T, Kraemer JD, Siedner MJ. Validation relaxation: a quality assurance strategy for electronic data collection. *Journal of Medical Internet Research*, 19(8):e297, 2017.
20) Luckow PW, **Kenny A**, White E, Ballard M, Dorr L, Erlandson K, Grant B, Johnson A, Lorenzen B, Mukherjee S, Ly J, McDaniel A, Nowine N, Sathananthan V, Sechler GA, Kraemer JD, Siedner MJ, Panjabi, R. Implementation research on community health workers' provision of maternal and child health

services in rural Liberia. *Bulletin of the World Health Organization*, 95(2):113-120, 2017.

21) Kentoffio K, Kraemer JD, Griffiths T, **Kenny A**, Panjabi R, Sechler GA, Selinsky S, Siedner MJ. Charting health system reconstruction in post-war Liberia: a comparison of rural vs. remote healthcare utilization. *BMC Health Services Research*, 16(1):1-9, 2016.
22) Ly J, Sathananthan V, Griffiths T, Kanjee Z, **Kenny A**, Gordon N, Basu G, Battistoli D, Dorr L, Lorenzen B, Thompson DR, Waters A, Moore U, Roberts R, Smith W, Siedner MJ, Kraemer JD. Facility-based delivery during the Ebola virus disease epidemic in rural Liberia: analysis from a cross-sectional, population-based household survey. *PLoS Medicine*, 13(8):e1002096, 2016.
23) **Kenny A**, Basu G, Ballard M, Griffiths T, Kentoffio K, Niyonzima JB, Sechler GA, Selinsky S, Panjabi R, Siedner MJ, Kraemer JD. Remoteness and maternal and child health service utilization in rural Liberia: a population-based survey. *Journal of Global Health*, 5(2):020401, 2015.

6. Honors and Awards

- Outstanding PhD Student in Biostatistics, University of Washington School of Public Health Excellence Awards (2023).
- Achievement Rewards for College Scientists (ARCS) Featured Fellow and Student Speaker (2021).
- Achievement Rewards for College Scientists (ARCS) Foundation Fellowship (2018 – 2020).
- Richard Smoke Summer Fellowship (2010).

7. Software Development

- *SimEngine* (R package). An open-source framework for statistical simulations in R.
- *vaccine* (R package). Statistical tools for immune correlates analysis of vaccine clinical trial data.
- *Last Mile Data*. A comprehensive offline-capable data collection, analysis, and reporting platform built for Last Mile Health
- *DADA-base*. An institutional knowledge and process automation platform built for Studio in a School.