Samantha Dean, PhD

sdean39@gmail.com — https://sammigd.github.io/ — Atlanta, GA

EDUCATION

Yale University, New Haven, CT, *2020-2024*
Degree: PhD, Biostatistics; MPhil, Biostatistics
Honors and Awards: National Science Foundation Graduate Research Fellow

The University of Chicago, Chicago, IL, *Class of 2018*
Degree: BA, Statistics with Honors
Honors and Awards: Dean's List, UCISTEM Summer Research Grant, College Research Scholar Grant

Software Skills: Experienced with R, Python for data science and machine learning, SQL, Tableau, command line tools for HPC and Git

WORK EXPERIENCE

Fellow, CDC Influenza Division, *August 2024 - present*

- Worked on household transmission modeling, vaccine effectiveness, internal statistical consultations on machine learning and causal inference methods

Statistical Consultant, Yale University StatLab, *Aug 2022 - May 2024*

- Provided statistical expertise, guidance, and troubleshooting to students, researchers, and faculty for projects covering study design, implementing machine learning algorithms, data visualization, complex survey analysis, and more

Graduate Researcher, Yale University, *Sep 2020 - June 2024*

- Developed advanced statistical methods to estimate causal effects in certain settings of heterogeneous treatment spillover, with Professor Laura Forastiere
- Applied causal inference methods to estimate COVID-19 vaccine effectiveness under time-varying confounding, with Professor Forrest Crawford and the Connecticut Department of Public Health
- Developed weekly deliverables for the Connecticut Department of Public Health to monitor the initial COVID-19 vaccine rollout in the state
- Contributed to work assessing the relationship between human mobility and COVID-19 using cell phone-derived mobility metrics, published in *Science Advances*

Postbac IRTA, NIAID Epidemiology Unit, National Institutes of Health, *June 2019 - July 2020*

- Used large electronic health record relational database to study trends in testing for nontuberculous mycobacterial disease, published in *Emerging Infectious Diseases*
- Implemented stochastic and deterministic methodologies for modeling infectious disease outbreaks

Analyst, IPG Mediabrands, *August 2018 - April 2019*

- Employed supervised learning methodologies for high dimension datasets in Python and R
- Forecasted demand metrics using time series and machine learning regression in R
- Improved team workflow by automating key quality control processes
- Created client-ready data visualizations in Tableau and presented quantitative findings to technical and non-technical audiences

PUBLICATIONS and PRESENTATIONS

Publications

- **Dean S**, Blakney R, Ricotta EE, Chalmers J, Kadri S, Olivier KN. Bronchiectasis-associated infections and outcomes in a large, geographically diverse electronic health record cohort in the United States. BMC Pulmonary Medicine, 2024. https://doi.org/10.1186/s12890-024-02973-3
- Blakney RA, Ricotta EE, Daida YG, Frankland TB, Honda S, Zelazny A, **Dean SG**, Follmann D, Olivier KN, Prevots DR. Incidence of Nontuberculous Mycobacterial Pulmonary Infection, by Ethnic Group, Hawaii, USA, 2005–2019. Emerging Infectious Diseases, 2022. https://doi.org/10.1126/sciadv.abi5499
- Crawford FW, Jones SA, Cartter M, **Dean SG**, Warren JL, Li ZR, et al. Impact of close interpersonal contact on COVID-19 incidence: evidence from one year of mobile device data. Science Advances, 2022. https://doi.org/10.1101/2021.03.10.21253282
- **Dean SG**, Ricotta EE, Fintzi J, Lai YL, Kadri SS, Olivier KN, Zelazny A, Prevots DR. Mycobacterial Testing Trends in the United States, 2009-2015. Emerging Infectious Diseases, 2020. https://dx.doi.org/10.3201/eid2609.200749
- Pierce BL, Tong L, **Dean S**, Argos M, Jasmine F, Rakibuz-Zaman M, Sarwar G, Islam MT, Shahriar H et al. A missense variant in FTCD affects arsenic metabolism and toxicity among arsenic-exposed individuals in Bangladesh. PLOS Genetics, 2019. https://doi.org/10.1371/journal.pgen.1007984
- **Dean SG**, Zhang C, Gao J, Roy S, Shinkle J, Sabarinathan M, Argos M, Tong L, Ahmed A, Islam MT, Islam T, Rakibuz-Zaman M, Sarwar G, et al. The association between telomere length and mortality in Bangladesh. Aging (Albany NY), 2017. https://doi.org/10.18632/aging.101246

Presentations

- Effective treatment allocation strategies conditional on individuals' characteristics under partial interference in randomized experiments. *Contributed talk at American Causal Inference Conference 2024.*
- Effective treatment allocation strategies conditional on individuals' characteristics under partial interference in randomized experiments. *Contributed talk at International Conference on Statistics and Data Science 2022.*
    - ↳ Awarded Student Paper Award and Travel Grant
- Effective treatment allocation strategies conditional on individuals' characteristics under partial interference in randomized experiments. *Poster presented at American Causal Inference Conference 2022.*
- Estimating the association between COVID-19 vaccine coverage and deaths in Connecticut. *Speed talk at JSM Conference 2021.*
- Prevalence of Acute and Chronic Infections in a Large, Geographically Diverse, Bronchiectasis Cohort. *Abstract shared for online ATS Conference 2020.*
    - ↳ Awarded Abstract Scholarship from the ATS Assembly on Pulmonary Infections and TB
- Acid Fast Bacilli Testing Trends at 43 In- and Outpatient Facilities, United States, 2009-2015. *Poster presented at IDWeek Conference 2019.*

TEACHING

- **Public Health Modeling Teaching Fellow,** Yale University, *Summer 2022*, *Summer 2023.* Cost-effectiveness analysis, queuing models, Markov models, and simple epidemic models
- **Frontiers of Public Health Teaching Fellow,** Yale University, *Fall 2021.* Public health topics ranging from tobacco use to global vaccine access
- **Regression Course Grader,** The University of Chicago, *Fall 2017.* Introductory statistical methods for linear modeling
- **UChicago Academic Achievement Program, Statistics TA**, The University of Chicago, *Summer 2016.* Introductory statistical methods