Douglas Ezra Morrison

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Methodological interests: causal inference, incomplete data, time-to-event models, interval censoring, incidence estimation, transportability, data fusion, systems modeling, statistical process control, machine learning, Bayesian methods, computational statistics, interactive data visualization.

Application interests: infectious diseases, health services, biomarkers, mHealth, quality improvement.

Education

2015 - 2021	**PhD, Biostatistics**, University of California, Los Angeles. Dissertation*: Statistical Challenges in Incidence Estimation using Cross-Sectional Data and Multi-Biomarker Assay Algorithms.* Advisor: Dr. Ron Brookmeyer. Conferred, September 10, 2021.
2009 – 2010	**MS, Statistics**, Stanford University.
2005 – 2009	**BS, Symbolic Systems** (neuroscience concentration), Stanford University.

Research Experience

2022-present	**Assistant Professor/Assistant Professor in Residence**, Division of Biostatistics, Department of Public Health Sciences, University of California, Davis, CA.
2021-2022	**Postdoctoral Scholar,** with Dr. Onyebuchi Arah, *Epidemiology,* and Dr. Moira Inkelas, *Health Policy & Management,* UCLA: COVID-19 surveillance and mitigation in the K-12 setting.
2020 – 2021	**Graduate Student Researcher,** with Dr. Moira Inkelas, *Health Policy & Management*, Dr. Onyebuchi Arah, *Epidemiology,* and Dr. Roch Nianogo, *Epidemiology,* UCLA: Agent-based models of school reopening strategies during the COVID-19 pandemic.
2016 - 2021	**Graduate Student Researcher**, with Dr. Tom Belin*, Biostatistics Department*, and Dr. Vivek Shetty*, School of Dentistry*, UCLA: Development and assessment of mobile health apps for monitoring and promoting oral health behaviors.
2015 - 2021	**Graduate Student Researcher**, with Dr. Ron Brookmeyer*, Biostatistics Department,* UCLA: Statistical methods for estimating HIV incidence from cross-sectional surveys of biomarker prevalence.
2012 - 2015	**Statistician**, *Surgery Department,* Stanford University School of Medicine: Served as shared statistical resource for department, focusing on health services research and effectiveness of new surgical imaging tools. Worked with large-scale state- and national-level AHRQ HCUP administrative data sets.
2010 - 2011	**Biostatistician/Bioinformatician**, *Aviir, Inc.*, Irvine, CA: Prediction of acute cardiovascular events using novel biomarkers; ELISA assay calibration.

Publications: Statistical Methods

1. Morrison D, Laeyendecker O, Brookmeyer R. **Regression with Interval-Censored Covariates: Application to Cross-Sectional Incidence Estimation**. Biometrics 2021. doi:10.1111/biom.13472
2. Morrison D, Laeyendecker O, Brookmeyer R. **Cross-sectional HIV incidence estimation in an evolving epidemic**. Stat Med. 2019;38(19):3614–27. doi:10.1002/sim.8196

3. Morrison D, Laeyendecker O, Konikoff J, Brookmeyer R. **Cross-Sectional HIV Incidence Estimation with Missing Biomarkers**. Stat Commun Infect Dis. 2018;10(1). doi:10.1515/scid-2017-0003

Publications: Statistical Applications

1. Elmore JG, Wang PC, Kerr KF, Schriger DL, Morrison DE, Brookmeyer R, Pfeffer MA, Payne TH, Currier JS. **Excess Patient Visits for Cough and Pulmonary Disease at a Large US Health System in the Months Prior to the COVID-19 Pandemic: Time-Series Analysis.** J Med Internet Res 2020;22(9): doi:10.2196/21562
2. Shetty V, Morrison D, Belin T, Hnat T, Kumar S. **Development and feasibility testing of a scalable system for passively monitoring oral health behaviors in the home setting.** JMIR Mhealth Uhealth. 2020;8(6): doi:10.2196/17347
3. Laeyendecker O, Konikoff J, Morrison D, Brookmeyer R, Wang J, Celum C, et al. **Identification and validation of a multi-assay algorithm for cross-sectional HIV incidence estimation in populations with subtype C infection**. J Int AIDS Soc. 2018;21(2): doi:10.1002/jia2.25082
4. Hernandez-Boussard T, Morrison D, Tian L, Basu S. **Disparities in Healthcare Coverage and Utilization After Expanded Dependent Coverage**. J Health Dispar Res Pract. 2017;10(4):8.
5. Hernandez-Boussard TM, McDonald KM, Morrison D, Rhoads KF. **Risks of adverse events in colorectal patients: population-based study**. J Surg Res. 2016;202(2):328–34.
6. Hernandez-Boussard T, Morrison D, Goldstein BA, Hsia RY. **Relationship of Affordable Care Act Implementation to Emergency Department Utilization Among Young Adults**. Ann Emerg Med. 2016;67(6):714–20.
7. Hitchner E, Morrison D, Liao P, Rosen A, Zhou W. **Genetic polymorphisms influence cognition in patients undergoing carotid interventions**. Int J Angiol. 2016;25(03):168–73.
8. Pershing S, Morrison D, Hernandez-Boussard T. **Cataract surgery complications and revisit rates among three states**. Am J Ophthalmol. 2016;171:130–8.
9. DeClerck MP, Bailey Y, Craig D, Lin M, Auerbach LJ, Linney O, Morrison D, Patry W, Auerbach PS. **Efficacy of topical treatments for Chrysaora chinensis species: A human model in comparison with an in vitro model**. Wilderness Environ Med. 2016;27(1):25–38.
10. Yanamadala S, Morrison D, Curtin C, McDonald K, Hernandez-Boussard T. **Electronic health records and quality of care: an observational study modeling impact on mortality, readmissions, and complications.** Med (United States). 2016;95(19):e3332.
11. Moghavem N, Morrison D, Ratliff JK, Hernandez-Boussard T. **Cranial neurosurgical 30-day readmissions by clinical indication**. J Neurosurg. 2015;123(1):189–97.
12. Mell MW, Wang NE, Morrison D, Hernandez-Boussard T. **Interfacility transfer and mortality for patients with ruptured abdominal aortic aneurysm.** J Vasc Surg. 2014; 60(3), 553-557.
13. Wapnir I, Dua M, Kieryn A, Paro J, Morrison D, Kahn D, et al. **Intraoperative Imaging of Nipple Perfusion Patterns and Ischemic Complications in Nipple-Sparing Mastectomies.** Ann Surg Oncol. 2014;21(1):100–6.
14. Hitchner E, Zayed MA, Lee G, Morrison D, Lane B, Zhou W. **Intravascular ultrasound as a clinical adjunct for carotid plaque characterization**. J Vasc Surg. 2014;59(3):774–s80.

Preprints: Statistical Applications

1. Morrison D. E., Nianogo R., Manuel V., Arah O. A., Anderson N., Kuo T., & Inkelas M. **Modeling infection dynamics and mitigation strategies to support K-6 in-person instruction during the COVID-19 pandemic.** medRxiv 2021; doi:10.1101/2021.02.27.21252535

Conference Presentations (*indicates presenting authors)

1. Morrison D*, Kuo T, Nianogo R, Manuel V, Inkelas M, Arah O. **Modeling COVID-19 Dynamics and Program Interventions for K-12 School Re-Opening**, AcademyHealth Annual Research Meeting 2021, online.
2. O'Leary, M*, Stockwell, R*, Morrison, D. **Skills-based grading: a novel approach to teaching formal semantics**, Annual Meeting of the Linguistic Society of America 2021, online.

3. <u>Morrison D</u>*, Laeyendecker O, Brookmeyer R. **Transporting Cross-Sectional Incidence Estimation Algorithms Between Populations**, Joint Statistical Meetings 2019, Denver, CO.
4. <u>Morrison D</u>*, Brookmeyer R, Laeyendecker O. **Biomarker-Based Cross-Sectional Incidence Estimation with Incomplete Data**, Joint Statistical Meetings 2017, Baltimore, MD.
5. Hernandez-Boussard T*, <u>Morrison D</u>, Tian L, Basu S. **Increased Racial Disparities in Healthcare Utilization after Expanded Dependent Insurance Coverage**. 2016 Annual Research Meeting of AcademyHealth, Boston, MA.
6. <u>Morrison D</u>*, Desai M, Curtin C, Hernandez-Boussard, T. **A Comparison of Cross-Sectional and Longitudinal Analyses for Adverse Events Data**. Joint Statistical Meetings 2014, Boston, MA.

Conference Posters (*indicates presenting authors)

1. Tobin J*, Greer Z*, <u>Morrison D</u>. eRecruitment Strategies for the COVID-19 Era. UCLA School of Dentistry Research Day, 2022, Los Angeles, CA.
2. <u>Morrison D</u>*, Manuel V, Inkelas, M, Kuo, T, Arah, OA, Anderson, N, Nianogo, R. **Modeling COVID-19 infection dynamics and program interventions for K-12 school re-opening**, Translational Science 2021, online.
3. Desar A*, Patton C*, Le M*, Lin N*, <u>Morrison D,</u> Shetty V. **A Smartphone-based ePlatform for Passive Monitoring of Oral Health Behaviors**. UCLA Undergraduate Research Poster Day, 2019, Los Angeles, CA.

Statistical Software

1. <u>Morrison D</u>, Brookmeyer R. **rwicc ("Regression With Interval-Censored Covariates")**. R package: https://d-morrison.github.io/rwicc/

Research Funding, Honors, and Awards

2021	**Carolbeth Korn Prize** for most outstanding graduating student, UCLA Fielding School of Public Health: $10,000.
2020	**Celia and Joseph Blann Fellowship** for academic excellence and commitment to public health, UCLA Fielding School of Public Health: $10,000.
2017-2018	**Graduate Research Mentorship**, UCLA Graduate Education: $36,000. *Measuring HIV Incidence Using Multi-Biomarker Assay Algorithms.*

Teaching Positions

2017	**Teaching Assistant**, Introduction to Biostatistics (Biostatistics 100B), University of California, Los Angeles, CA. Student Evaluations "Overall Rating": Mean 8.5, Median 9, SD 0.9 (9-pt. scale).

Mentorship

2022	Mentored dental student analyzing recruitment strategies for dentistry research, culminating in a poster presentation at the UCLA School Of Dentistry Research Day (Tobin et al, 2022).
2021	Mentor to an undergraduate working on COVID-19 data dashboards.
2018 - 2019	Mentor to four undergraduates working on collecting usability and accuracy data for a mobile health app and system for recording oral health behaviors. This mentorship culminated in a poster presentation at the UCLA Undergraduate Research Poster Day (Desar et al, 2019).

Chaired Sessions

1. **Strategies and Implications for Establishing Biostatistics Entities in Medical Centers**. Invited Panel, Section on Statistical Consulting, Joint Statistical Meetings 2014, Boston, MA.

Academic Service

2021-2022	**Reviewer,** Scientific Reports
2021	**Reviewer,** Annals of Applied Statistics

Professional Affiliations

2010 - present	**Member**, American Statistical Association
2021 – present	**Member,** AcademyHealth