Douglas Ezra Morrison

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

Application interests: infectious diseases, analysis of biomarkers, population health, mobile health.

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 Defended, May 25, 2021. Filing date: Summer 2021
2009 - 2010	**MS, Statistics**, Stanford University
2005 - 2009	**BS, Symbolic Systems** (neuroscience concentration), Stanford University

Research Positions

2020 – present	**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 - present	**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 - present	**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 Software

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

Publications: 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

2. 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

3. 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

4. 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

5. 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.

6. 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.

7. 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.

8. 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.

9. Pershing S, Morrison D, Hernandez-Boussard T. **Cataract surgery complications and revisit rates among three states**. Am J Ophthalmol. 2016;171:130–8.

10. 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.

11. 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.

12. Moghavem N, Morrison D, Ratliff JK, Hernandez-Boussard T. **Cranial neurosurgical 30-day readmissions by clinical indication**. J Neurosurg. 2015;123(1):189–97.

13. 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.

14. Wapnir I, Dua M, Kieryn A, Paro J, <u>Morrison D</u>, 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.

15. Hitchner E, Zayed MA, Lee G, <u>Morrison D</u>, Lane B, Zhou W. **Intravascular ultrasound as a clinical adjunct for carotid plaque characterization**. J Vasc Surg. 2014;59(3):774–s80.

Conference Presentations (*indicates presenting authors)

1. <u>Morrison D</u>*, 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*, <u>Morrison, D</u>. **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. <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.

2. 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.

Research Funding, Honors, and Awards

2021 **Carolbeth Korn Award** 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

2020 - present **Volunteer Tutor,** Mathematics, Speak UP iTutors, Los Angeles, CA.

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)

2006   **Teaching Assistant**, Mathematics and Probability Theory, Education Program for Gifted Youth Summer Institutes, Stanford, CA.

2005   **Tutor**, mathematics, statistics, economics, physics, biology, history, and English, Santa Rosa Junior College Tutorial Center, Santa Rosa, CA.

Mentorship

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   **Reviewer,** Annals of Applied Statistics

2020 - present   **Volunteer Tutor,** Mathematics, Speak UP iTutors, Los Angeles, CA

2020 - present   **Vice President of Financial Affairs,** UCLA Biostatistics Student Association

2020   **Election Commissioner**, UCLA Biostatistics Student Association

Professional Affiliations

2010 - present   **Member**, American Statistical Association

Professional References

Ron Brookmeyer
Dean and Distinguished Professor of Biostatistics
Fielding School of Public Health, University of California Los Angeles
Email: rbrookmeyer@ucla.edu
Relationship: dissertation committee chair and research supervisor

Tom Belin
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Relationship: research supervisor