

Eric A. Dunipace

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📍 [ericdunipace](https://ericdunipace.github.io)
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MD/PhD Student

Education

- Expected 2023 **Doctor of Medicine**, *David Geffen School of Medicine*, UCLA.
- 2021 **Doctor of Philosophy**, *Biostatistics*, Harvard University.
- 2019 **Master of Arts**, *Biostatistics*, Harvard University.
- 2014 **Master of Science**, *Global Health and Population*, Harvard University.
- 2008 **Bachelor of Arts with Honors**, *Molecular and Cell Biology*, University of California, Berkeley.

Publications

- 2022 Ngamdu, K. S., Mallawaarachchi, I., Dunipace, E. A., Chuang, L.-H., Jafri, S. H., Shah, N. R., Jeong, Y. N., & Morrison, A. R. (2022). Association between periodontal disease and cardiovascular disease using publicly available data from the national health and nutrition examination survey (NHANES). *The American Journal of Cardiology*.
- 2018 Huang, W. A., Dunipace, E. A., Sorg, J. M., & Vaseghi, M. (2018). Liver disease as a predictor of new onset atrial fibrillation. *Journal of the American Heart Association*, 7(15). <https://www.ahajournals.org/doi/10.1161/JAHA.118.008703>
- 2014 Moussally, J., Dunipace, E., & Fu, R. (2014). TraumaLink: Helping people survive traffic accidents in Bangladesh, In *{health and South Asia}*. Cambridge, Massachusetts, The Lakshmi Mittal South Asia Institute at Harvard University.
- 2011 Lightfield, K., Persson, J., Trinidad, N., Brubaker, S., Kofoed, E., Sauer, J.-D., Dunipace, E., Warren, S., Miao, E., & Vance, R. (2011). Differential requirements for NAIP5 in activation of the NLRC4 inflammasome. *Infection and Immunity*, 79(4). <https://doi.org/10.1128/IAI.01187-10>
- 2008 Lightfield, K., Persson, J., Brubaker, S., Witte, C., von Moltke, J., Dunipace, E., Henry, T., Sun, Y.-H., Cado, D., Dietrich, W., Monack, D., Tsolis, R., & Vance, R. (2008). Critical function for Naip5 in inflammasome activation by a conserved carboxy-terminal domain of flagellin. *Nature Immunology*, 9(10). <https://doi.org/10.1038/ni.1646>

Submitted Papers

- 2022 Dunipace, E. A. (2022a). Graph-based tests for multivariate covariate balance under multi-valued treatments. <https://arxiv.org/abs/2207.10855>
- 2022 Dunipace, E. A. (2022b). Optimal transport weights for causal inference. <https://arxiv.org/abs/2109.01991>
- 2021 Dunipace, E. A., & Trippa, L. (2021). Interpretable model summaries using the wasserstein distance, 1–42. <https://arxiv.org/abs/2012.09999>

Invited Presentations

- Dec. 2022 *Optimal Transport Weights for Causal Inference*, CMStatistics 2022. King's College, London, UK
- 2021 *Interpretable Posterior Summaries Using the Wasserstein Distance*, Research Frontiers in Biomathematics seminar series. UCLA. Los Angeles, CA

Conference Presentations

- 2022 *Cavernous Sinus Metastasis of p16-Tonsillar Squamous Cell Carcinoma: A Diagnostic Challenge*, Combined Section Meetings of the Triological Society. Coronado, CA
- 2020 *Optimal transport weights for causal inference*, Joint Statistical Meetings. Online
- 2019 *Interpretable Posterior Summaries Using the Wasserstein Distance*, Joint Statistical Meetings. Denver, CO
- 2015 *Connecting Californians to Care*, Network of Ethnic Physician Organization Summit. Riverside, CA

Doctoral Thesis

Title *Optimal Transport Methods for Causal Inference, Multisample Testing, and Model Interpretation*
Advisors José R. Zubizarreta and Lorenzo Trippa
Year 2021

Master's Thesis

Title *Estimating the Causal Effects of the Maternal Health Voucher Program in Bangladesh*
Advisor Goodarz Danaei
Year 2014

Bachelor's Thesis

Title *Role of Naip5 and Flagellin in Innate Immune Responses to Legionella pneumophila and Salmonella typhimurium*
Advisor Russell Vance
Year 2008

Awards and Scholarships

2018 Certificate of Distinction in Teaching, Department of Biostatistics, Harvard University
2014 David Geffen Scholarship, David Geffen School of Medicine, UCLA
2013 Global Health and Population Departmental Scholarship, Harvard University
2013 Deans' Health and Life Sciences Challenge Finalist, Harvard University
2013 South Asia Institute Summer Research Grant, Harvard University
2013 Maternal Health Task Force Summer Internship, Harvard University
2011 Oscar Geballe Postgraduate Scholarship, Department of Intercollegiate Athletics, UC Berkeley
2008 Outstanding Immunologist, Department of Molecular and Cell Biology, UC Berkeley
2008 Best Recruiter, Cal Men's Swim Team, UC Berkeley

Software

R **approxOT**: approximate optimal transport library
R **causalOT**: optimal transport methods for weighting in causal inference
R **graphTest**: graph-based multisample testing
R **RcppCGAL**: header files for the CGAL library
R **wpproj**: Wasserstein projections for interpretable models

Teaching as Primary Instructor

Summer 2020 **Biostatistics Summer Prep Program for Incoming PhD Students**, *Harvard University*.
Summer 2019 **StatStart Instructor**, *Harvard University*.

Teaching as Teaching Fellow

Fall 2020 **Department of Biostatistics Tutor at Large**, *Harvard University*.
Fall 2019 **Biostatistics 260: Introduction to Data Science**, *Harvard University*.
Summer 2019 **Data Science in Action: Convolutional Neural Networks for Self Driving Cars**, *Harvard University*.
Spring 2019 **Biostatistics 210: Applied Regression Analysis**, *Harvard University*.
Fall 2018 **ID 201: Core Principles of Biostatistics and Epidemiology**, *Harvard University*.
Fall 2018 **Biostatistics 210: Applied Regression Analysis**, *Harvard University*.

Positions

2013–Present **Vice President of Impact Evaluation**, *TraumaLink*, Dhaka, Bangladesh.
2015–2016 **Co-President**, *Connecting Californians to Care*, Los Angeles, CA.
2013 **Research Assistant**, *Global Fund to Fight Aids, Tuberculosis and Malaria*.

- 2013 **Student Summer Fellowship**, *Population Council*, Dhaka, Bangladesh.
- 2012 **Volunteer**, *Ambassadors for Sustained Health*, New York City, NY.
- 2011–2012 **HIV Test Councilor**, *GMHC*, New York City, NY.
- 2011–2012 **MCAT Instructor**, *Kaplan*, New York City, NY.
- 2011 **Research Library Volunteer**, *GMHC*, New York City, NY.
- 2010–2012 **Swim Instructor and Office Staff**, *Imagine Swimming*, New York City, NY.
- 2008–2010 **Research Associate**, *Aurora Algae, Inc. (Defunct)*, Alameda, CA.
- 2006–2008 **Research Assistant**, *Vance Lab*, Berkeley, CA.

Activities

- Consultant Biostatistics Student Consulting Center (2018–2021)
- Mentor Student Mentor, Department of Biostatistics (2020–2021)
- Referee *Trials* (2019–Present), Harvard Public Health Review (2019–2021)
- Tutor Department of Biostatistics (2017–2021)
- Extracurricular Big C Society (2008–Present), Folk-rock band (2008–2010), Cal Men's Swimming Team (2003–2008), Bear Student Athlete Advisory Committee (2006–2008)