

Suzanne M. Dufault, PhD

✉ suzanne.dufault@ucsf.edu • www.linkedin.com/in/suzannedufault
<https://suzanne-dufault-phd.netlify.app>

Currently a postdoctoral TB RAMP scholar at the University of California, San Francisco, I am highly motivated to pursue a career centered on the development and application of statistical methodologies, primarily in service of infectious and chronic disease research.

Education

University of California, Berkeley **Berkeley, CA**
Graduate, PhD in Biostatistics 2017–2020
Dissertation: The Analysis of Cluster-Randomized Test-Negative Designs: Eliminating Dengue

University of California, Berkeley **Berkeley, CA**
Graduate, MA in Biostatistics 2015–2017
Thesis: LASSO for Public Health Data: An Examination of Prevalent Variable Selection Methods and Demonstration of LASSO in R

Macalester College **St. Paul, MN**
Undergraduate, Major in Applied Mathematics & Statistics, Minor in Hispanic Studies 2011–2015

Universidad de Salamanca **Salamanca, Spain**
Study Abroad, Facultad de Filología Spring 2014

Research Experience

Department of Medicine **University of California, San Francisco**
Postdoctoral Researcher November 2021 - present
Advisor: Patrick Phillips, PhD, MS, MA
I am working on methodological and applied research in the design, conduct, and analysis of randomized clinical trials in tuberculosis. Among other ongoing projects, I have developed a Bayesian-supported multi-metric framework for improving decision-making in Phase II clinical trials in partnership with the UNITE4TB consortium.

School of Public Health **University of California, Berkeley**
Postdoctoral Researcher June 2020 - November 2021
Advisor: Katherine Anders, PhD, MsC
In collaboration with Monash University and the World Mosquito Program, I worked to evaluate the disruption of spatiotemporal clustering in dengue when a population of *Wolbachia*-infected mosquitoes has been successfully established. Results have been published in *Scientific Reports* and presented at the 2021 meeting of the American Society of Tropical Medicine and Hygiene.

NIA Grant 5P30AG012839 **University of California, Berkeley**
Graduate Student Researcher Summer 2019
Advisor: Ellen Eisen, ScD
This research used a novel causal approach to nonparametrically investigate the effect of decreasing the odds of job separation on self-injury mortality in an iconic industrial cohort of autoworkers. Results were published in *Epidemiology* and presented at the 2020 Annual Meeting of the Society for Epidemiological Research

NIAID Grant R56AI134724 **University of California, Berkeley**
Graduate Student Researcher Summer 2018 - Summer 2019
Advisor: Nicholas P. Jewell, PhD
This research investigated extensions of the Cluster Randomized-Test Negative Design. Results were published in *Statistics in Medicine* and presented at the 2018 American Statistical Association Joint Statistical Meetings.

School of Public Health

NIOSH Grant Trainee

Advisor: Ellen Eisen, ScD

I worked on analyzing deaths of despair in an iconic industrial cohort of autoworkers. I performed survival and Age-Period-Cohort analyses to explore global trends. Results were presented at the 2018 Annual Meeting of the Society for Epidemiologic Research.

University of California, Berkeley

Fall 2017 - Spring 2018

School of Public Health

Graduate Student Researcher

Advisor: Lia Fernald, PhD, MBA

I catalogued the variable and model selection methods used in published literature using the Peabody Picture Vocabulary Test (PPVT) and Cognitive Development Assessment (CDA) scores from the Young Lives Study. I then demonstrated the utility of LASSO regression in this setting (many covariates, assumed sparsity). This work informed my master's thesis.

University of California, Berkeley

Summer 2016

Consultancies**World Mosquito Program**

Statistical Consultant

Monash University

January 2022 - present

Working primarily with Katherine L. Anders, Stephanie K. Tanamas, and Cameron P. Simmons, I provide statistical support for the development of methods and performance of analyses motivated by the WMP's use of *Wolbachia*-infected mosquitoes for the prevention of dengue and other mosquito-borne viruses.

School of Public Health

Statistical Consultant

University of California, Berkeley

Spring 2019

Working with Sandra McCoy, PhD, and YLabs, I helped develop a trial and analysis plan for a novel mobile intervention targeting risky sexual behaviors among teenagers. Using historical data, I generated simulations to evaluate the effectiveness and reliability of various intervention and estimation strategies and helped inform the randomization scheme.

Buck Institute

Statistical Consultant

Novato, California

Summer 2018 - Fall 2019

Using the UK Biobank, we explore relationships primarily between genotype, pregnancy-induced hypertension, and breast cancer.

School of Public Health

Statistical Consultant

University of California, Berkeley

Spring 2018 - Fall 2021

Working with Amani Allen, PhD, I am working on developing a psychometrically validated scale for measuring the stress of persistent anticipation of racism and discrimination experienced by African American women.

Publications

- **Dufault, S. M.**, Tanamas, S. K., Indriani, C., Utarini, A., Ahmad, R. A., Jewell, N. P., Simmons, C. P., Anders, K. L. (2022) "Disruption of spatiotemporal clustering in dengue cases by *wMel Wolbachia* in Yogyakarta, Indonesia", *Scientific Reports*. <https://doi.org/10.1038/s41598-022-13749-2>
- **Dufault, S.M.**, Chen, K. T., Picciotto, S., Neophytou, A. M., Eisen, E. A. (2022) "The impact of job loss on self-injury mortality in a cohort of autoworkers: application of a novel causal approach", *Epidemiology*. <https://doi.org/10.1097/EDE.0000000000001461>
- Perez, A. D., **Dufault, S.M.**, Spears, E., Allen, A. M. (2022) "Superwoman Schema and John Henryism among African-American women: An intersectional perspective on coping with racism", *Social Science and Medicine*. <https://doi.org/10.1016/j.socscimed.2022.115070>
- Wang, B., **Dufault, S. M.**, Small, D. S., Jewell, N. P. (2022, *in press*) "Randomization inference for cluster-randomized test-negative designs with application to dengue studies: unbiased estimation, partial compliance, and stepped wedge design", *Annals of Applied Statistics*. <https://doi.org/10.48550/arXiv.2202.03379>

- Pinto, S. B., Riback, T. I. S., Sylvestre, G., Costa, G., Peixoto, J., Dias, F. B. S., Tanamas, S. K., Simmons, C. P., **Dufault, S. M.**, Ryan, P. A., O'Neill S. L., Muzzi, F. C., Kutcher, S., Montgomer, J., Green, B. R., Smithyman, R., Eppinghaus, A., Saraceni, V., Durovni, B., Anders, K. L., Moreira, L. A. (2021) "Effectiveness of *Wolbachia*-infected mosquito deployments in reducing the incidence of dengue and other Aedes-borne diseases in Niterói, Brazil: A quasi-experimental study", *PLOS Neglected Tropical Diseases*. <https://doi.org/10.1371/journal.pntd.0009556>
- Utarini, A., Indriani, C., Ahmad, R. A., Tantowijoyo, W., Arguni, E., Ansari, M. R., Supriyati, E., Wardana, D. S., Metika, Y., Ernesia, I., Nurhayati, I., Prabowo, E., Andari, B., Green, B. R., Hodgson, L., Cutcher, Z., Rancès, E., Ryan, P. A., O'Neill, S. L., **Dufault, S. M.**, Tanamas, S. K., Jewell, N. P., Anders, K. L., Simmons, C. P., AWED study group (2021) "Efficacy of *Wolbachia*-infected mosquito deployments for the control of dengue", *New England Journal of Medicine* Volume 384, No. 23. <https://dx.doi.org/10.1056/NEJMoa2030243>
- Eisen, E. A., Chen, K. T., Elser, H.C., Picciotto, S., Riddell, C. A., Combs, M. A., **Dufault, S. M.**, Goldman-Mellor, S., Cohen, J. (2020) "Suicide, overdose, and worker exit in a cohort in Michigan autoworkers", *Journal of Epidemiology & Community Health* Volume 74, Issue 11. <https://dx.doi.org/10.1136/jech-2020-214117>
- Powell, M., **Dufault, S. M.**, Gunderson, E. P., Benz, C.C. (2020) "Cancer and cardiovascular risk in women with hypertensive disorders of pregnancy carrying a common IGF1R variant", *Mayo Clinic Proceedings* Volume 95, Issue 12. <https://doi.org/10.1016/j.mayocp.2020.03.037>
- Anders, KL et al. (2020) "Update to the AWED (Applying Wolbachia to Eliminate Dengue) trial study protocol: a cluster randomised controlled trial in Yogyakarta, Indonesia", *Trials* Volume 21, Issue 1. <https://doi.org/10.1186/s13063-020-04367-2>
- Indriani, Citra, et al. (2020) "Reduced dengue incidence following deployments of *Wolbachia*-infected *Aedes aegypti* in Yogyakarta, Indonesia: a quasi-experimental trial using controlled interrupted time series analysis.", *Gates Open Research*. <https://doi.org/10.12688/gatesopenres.13122.1>
- **Dufault, S. M.**, Jewell, N. P. (2020) "Analysis of counts for cluster randomized trials: negative controls and test-negative designs", *Statistics in Medicine* <https://doi.org/10.1002/sim.8488>
- Powell, M., **Dufault, S. M.**, Henry, J. E., Allison, A. C., Cora, R., Benz, C. C. (2019) "Pregnancy hypertension and a commonly inherited IGF1R variant (rs2016347) reduce breast cancer risk by enhancing mammary gland involution", *Journal of Oncology*. <https://doi.org/10.1155/2019/6018432>
- Jewell, N. P., **Dufault, S.**, Cutcher, Z., Simmons, C. P., Anders, K. L. (2019), "Analysis of cluster-randomized test-negative designs: cluster-level methods", *Biostatistics*. <https://doi.org/10.1093/biostatistics/kxy005>
- Durovni, B., Saraceni V., Eppinghaus, A., Riback, T. I. S., Moreira, L. A., Jewell, N. P., **Dufault, S. M.**, O'Neill, S. L., Simmons, C. P., Tanamas, S. K., Anders, K. L. (2019) "The impact of large-scale deployment of *Wolbachia* mosquitoes on arboviral disease incidence in Rio de Janeiro and Niteroi, Brazil: study protocol for a controlled interrupted time series analysis using disease surveillance data.", *F1000Research* 2020. <https://doi.org/10.12688/f1000research.19859.1>
- Velez, I. D., Santacruz E., Kutcher, S. C., Duque, S. L., Uribe, A., Barajas, J., Gonzalez, S., Patino, A. C., Zuluaga, L., Martinez, L., Munoz, J., Mejia, M. C., Arbelaez, M. P., Pulido, H., Jewell, N. P., **Dufault, S. M.**, O'Neill, S. L., Simmons, C. P., Anders, K. L., Tanamas, S. K. (2019) "The impact of city-wide deployment of *Wolbachia*-carrying mosquitoes on arboviral disease incidence in Medellin and Bello, Colombia: study protocol for an interrupted time-series analysis and a test-negative design study", *F1000Research* 2020. <https://doi.org/10.12688/f1000research.19858.2>

Mentoring Experience

- **University of California, San Francisco** **co-mentor**
Anu Patel, Pharmaceutical Sciences and Pharmacogenetics PhD Program, 3rd rotation Spring 2022
- **London School of Hygiene and Tropic Medicine** **co-mentor**
Ari Fogelson, MSc Medical Statistics, summer project Summer 2021
- **London School of Hygiene and Tropic Medicine** **co-mentor**
Jerome Johnson, MSc Medical Statistics, summer project Summer 2021
- **University of California, Berkeley** **co-mentor**
Kevin T. Chen, MPH Epidemiology and Biostatistics, capstone Fall 2018 - Spring 2019

Teaching Experience

Pharmaceutical Sciences and Pharmacogenomics Program **University of California, San Francisco**
Co-Instructor *Fall 2022 - present*
Co-instructor for the required doctoral course, Foundations in Biostatistical Principles and Methods (Biostat 272). Supplementing traditional statistics teaching with chapters from the R for Data Science (R4DS) textbook, we aim to equip students with an intuitive understanding of best practices in statistics and data science.

School of Public Health **University of California, Berkeley**
Graduate Student Instructor
Student instructor for the following list of graduate level courses. For each course, I developed and distributed supplementary course material, provided office hours for student questions, lectured for two to four hours per week on course content or the application of statistical software (most commonly Stata, R), and assisted in the grading of homeworks, quizzes and exams. Student evaluations were favorable and available upon request.

- Epidemiological Analysis (PB HLTH 252) *Fall 2019*
- Statistical Analysis of Categorical Data (PB HLTH 241) *Spring 2017, Spring 2018*
- Longitudinal Data Analysis (PB HLTH 242C) *Fall 2016, Fall 2017*
- Introduction to Probability and Statistics (PB HLTH 141) *Summer 2016, Summer 2017*
- Introduction to Probability and Statistics in Biology and Public Health (PH 142) *Fall 2015*

School of Public Health **University of California, Berkeley**
Head Instructor *Spring 2019*
Head Instructor for the graduate level course Statistical Analysis of Categorical Data. As head instructor, I lectured for one hour three times a week to a stadium-style room of approximately one hundred and twenty students. I additionally held three hours of weekly office hours to meet with students regarding course content and general statistics mentorship. Responsibilities also include leading a team of three graduate student instructors and two undergraduate student assistants, overseeing the conversion of course materials from Stata to R, setting deadlines, and managing the grading of the midterm and final project. Evaluations available upon request.

Summer School on Modern Methods in Biostatistics and Epidemiology **Cison di Valmarino, Italy**
Co-Instructor
Co-instructor for various short courses. The course in competing risks aimed to provide an understanding of competing risks methodology, focusing on why, when and how the use of a competing risk framework assists in understanding time-to-event data. The course in causal inference served as a primer covering potential outcomes, DAGs, counterfactual theory, MSMs, and a brief introduction to instrumental variables. Each course implemented relevant methodology in Stata through interactive applications and guided lab work.

- Causal Inference *Summer 2019*
- Competing Risks and Multiple State Models *Summer 2017, Summer 2018*

School of Public Health

Co-Instructor

University of California, Berkeley

Fall 2016, Spring 2017

Co-instructor for the student-lead course Special Topics in Biostatistics. The course is designed to prepare students for a rigorous graduate-level education in statistics. It is intended for first- and second-year Biostatistics students concurrently enrolled in STAT 201A/B. Course material includes fundamental mathematical notation and statistical language, proof writing strategy, important concepts in probability, and statistical computation with R and UNIX.

Service

- **Study NCT05406479** **member**
DSMB 2022 - present
- **Peer Review** **reviewer**
PNAS, PLOS ONE, PLOS NTD, Epidemiology, Statistics in Medicine 2020 - present
- **University of California, Berkeley** **secretary**
School of Public Health Student Government Spring 2018 - Spring 2019
- **University of California, Berkeley** **co-chair**
School of Public Health Student Government Spring 2016 - Spring 2018

Invited Meetings

- **UNITE4TB Annual Meeting** **participant**
IMI AMR Accelerator May 2022
- **Improving Vector Control Trial Design** **presenter, participant**
Bill & Melinda Gates Foundation September 2020
- **Wolbachia wMel (WMP Method)** **participant**
13th Meeting of the World Health Organization's Vector Control Advisory Group (VCAG) December 2020

Presentations and Posters

Oral Presentations.....

- **Choosing TB regimens to advance to late-stage clinical trials** **webinar**
RESIST-TB October 2022
Authors: Suzanne M. Dufault, Patrick P. J. Phillips
- **Making better decisions in Phase II clinical trials** **invited speaker**
Bay Area Tuberculosis Symposium September 2022
Authors: Suzanne M. Dufault, Patrick P. J. Phillips
- **Efficacy of Wolbachia-infected Mosquito Deployments for the Control of Dengue**
UC San Francisco Biostatistics & Bioinformatics Seminar May 2022
Authors: Suzanne M. Dufault, Citra Indriani, Stephanie K. Tanamas, Riris A. Ahmad, Adi Utarini, Nicholas P. Jewell, Cameron P. Simmons, Katherine L. Anders
- **Bayesian Supported Regimen Selection Design**
LMU Klinikum Phase II Studies Meeting May 2022
Authors: Suzanne M. Dufault, Patrick P. J. Phillips
- **Efficacy of Wolbachia-infected Mosquito Deployments for the Control of Dengue**
UC Berkeley Causal Inference & Applied Statistics Research Group December 2021
Authors: Suzanne M. Dufault, Citra Indriani, Stephanie K. Tanamas, Riris A. Ahmad, Adi Utarini, Nicholas P. Jewell, Cameron P. Simmons, Katherine L. Anders
- **Disruption of Spatiotemporal Dependence in Dengue Transmission by wMel Wolbachia**
American Society of Tropical Medicine and Hygiene November 2021
Authors: Suzanne M. Dufault, Citra Indriani, Stephanie K. Tanamas, Riris A. Ahmad, Adi Utarini, Nicholas P. Jewell, Cameron P. Simmons, Katherine L. Anders

- **The Impact of Job Loss on Self-Injury Mortality in a Cohort of Autoworkers**
Epidemiology in Occupational Health (EPICOH) October 2021
Authors: Suzanne M. Dufault, Kevin T. Chen, Sally Picciotto, Andreas Neophytou, Ellen Eisen
- **The Impact of Job Loss on Self-Injury Mortality in a Cohort of Autoworkers**
Society for Epidemiologic Research December 2020
Authors: Suzanne M. Dufault, Kevin T. Chen, Sally Picciotto, Andreas Neophytou, Ellen Eisen
- **Analysis of Counts for CRTs: Negative Controls and Test-Negative Designs**
UC Davis Student-Run Statistics Seminar April 2020
Authors: Suzanne M. Dufault
- **Analysis of Cluster-Randomized Test-Negative Design Trials**
University of California, Berkeley Epidemiology-Biostatistics Retreat February 2019
Authors: Suzanne Dufault, Nicholas P. Jewell
- **Deaths of Despair: An Iconic Industrial Cohort of Autoworkers**
Society for Epidemiologic Research June 2018
Authors: Suzanne M. Dufault, Holly Elser, Ellen. A. Eisen

Posters.....

- **Development and Validation of the Anticipatory Racism Threat Scale**
American Psychosomatic Society Annual Meeting March 2022
Authors: Suzanne M. Dufault, Amanda D. Perez, Amani M. Allen
- **The Impact of Midlife Job Loss on Self-Injury Mortality in a Cohort of Autoworkers**
Society for Epidemiologic Research June 2019
Authors: Suzanne M. Dufault, Sally Picciotto, Andreas Neophytou, Ellen Eisen
- **Estimation and Inference for Cluster-Randomized Test-Negative Design Trials**
Joint Statistical Meetings July 2018
Authors: Suzanne M. Dufault, Nicholas P. Jewell

Honors

- **U.C. Berkeley's Division of Biostatistics**
Recipient of Chin Long Chiang Award for Outstanding Doctoral Student 2020
- **University of California Dissertation-Year Fellowship**
Fellow 2019 - 2020
- **American Statistical Association's Scientific and Public Affairs Advisory Committee**
Statistical Significance Poster Award Runner Up 2018
- **San Francisco Bay Area Chapter of the American Statistical Association**
Student Travel Award for the 2018 Joint Statistical Meetings 2018
- **U.C. Berkeley's GSI Teaching and Resources Center**
Outstanding Graduate Student Instructor 2018
- **U.C. Berkeley's Division of Biostatistics**
Reshetko Fellowship Recipient in Honor of Chin Long Chiang 2017
- **Women's Golf Coaches Association**
Academic All-American Student Athlete 2014 - 2015

Media Appearances

- Dufault, Suzanne. Interview with Alexandra McLaughlin. *Postdoc breaks new ground in biostatistics*. (Reprint) Amstat News. April 2021.
- Dufault, Suzanne. Interview with Alexandra McLaughlin. *Breaking new ground with biostatistics*. Macalester Today. Winter 2021.
- Dufault, Suzanne and Nicholas Jewell. Interview with Renaud Manuguerra-Gagne. *Les annees lumieres: Wolbachia, une alliée microscopique dans la lutte contre les virus*. CBC Radio, Montreal. September 13, 2020.
- Dufault, Suzanne. Interview with Emma Rooholfada. *Study shows efficacy of method for reducing dengue fever incidence*. The Daily Cal. August 28, 2020.

Programming Languages

Proficient: LaTeX, R, Stata

Languages

- English (native language)
- Spanish (proficiency in speaking, reading, and writing)

Professional Memberships

- **Society for Clinical Trials**
member 2022 - present
- **American Statistical Association**
member 2018 - present
- **Society for Epidemiologic Research**
member 2018 - 2020
- **American Association for the Advancement of Science**
member 2018
- **Association for Women in Mathematics**
selected member 2014 - 2015

Volunteer Work

- **California Department of Public Health**
biostatistician, RCCC COVID-19 Emergency Response Modeling Branch Spring 2020
- **School of Public Health Action Group**
volunteer Fall 2016 - Fall 2017
- **Volunteer Mobilization Day**
volunteer Fall 2016
- **Little Scots at Macalester College (Title IX Awareness)**
volunteer Big Scot 2014 - 2015
- **Special Olympics**
golf volunteer score keeper 2011 - 2014