Catalina Medina

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Last updated September 19, 2025.

Education

PhD, Statistics   June 2025
Co-advised by: Volodymyr Minin and Mine Dogucu
University of California, Irvine

BS, Mathematics with specialization in Statistics and Minor in Biology   May 2019
University of Nevada, Reno

Professional Appointments

Assistant Professor of Data Science   August 2025 - Present
California State University, Channel Islands
Department of Mathematics

Research Interests

- Bayesian statistics and epidemiological applications of statistics to better understand disease and infection, especially through collaborations with public health researchers.
- Statistics and data science education research promoting student engagement with open access materials.

Manuscripts

Peer-Reviewed Publications

- **Medina, C. M.**, Palacios J. A., Minin, V. M. (2025). Accounting for reporting delays in real-time phylodynamic analyses with preferential sampling. *PLoS Computational Biology*, 20(5): e1012970.

- Dogucu, M., Demirci, S., Bendekgey, H., Ricci, F. Z., & **Medina, C. M.** (2025). A Systematic Literature Review of Undergraduate Data Science Education Research. *Journal of Statistics and Data Science Education*, 1–20.

- Ricci, F., **Medina, C. M.**, & Dogucu, M. (2024). Designing and implementing an automated grading workflow for providing personalized feedback to open-ended data science assignments. *Technology Innovations in Statistics Education*, 15(1).

- Parker, D.M., **Medina, C.**, Bohl, J., Lon, C., Chea, S., Lay, S., Kong, D., Nhek, S., Man, S., Doehl, J.S.P., Leang, R., Kry, H., Rekol, H., Oliveira, F., Minin, V.M., & Manning, J.E. (2023). Determinants of exposure to Aedes mosquitoes: a comprehensive geospatial analysis in peri-urban Cambodia. *Acta Tropica*, 239, 106829.

- Parker, D.M., Bruckner, T., Vieira, V.M., **Medina, C.**, Minin, V.N., Felgner, P.L., Dratch, A., Zahn, M., Bartell, S.M., & Boden-Albala, B. (2021). Predictors of test positivity, mortality, and seropositivity during the early coronavirus disease epidemic, Orange County, California, USA. *Emerging Infectious Diseases*, 27(10), 2604.

Teaching Experience

California State University, Channel Islands

- Introduction to Data Science (DATA 200)   Fall 2025

- Statistical Models (MATH 430)   Fall 2025

University of California, Irvine

- Basic Statistics (STATS 7)   Summer 2022

University of Nevada, Reno

- Elementary Algebra (MATH 95)   Summer 2019
- Intermediate Algebra (MATH 96)   Summer 2019

Teaching Preparation

- California State University Pre-Professor Program Fellow   Fall 2024
  Graduate Division, UC Irvine and California State University, Long Beach
    - Guest lectured undergraduate-level Biostatistics (HSC 403)   Nov. 19, 2024
    - Guest lectured graduate-level Regression Analysis (Stats 510)   Nov. 12 & 14, 2024
- Preparing for Careers in Teaching Statistics and Data Science Workshop   Summer 2024
  Section on Statistics and Data Science Education, American Statistical Association
- Summer Teaching Apprenticeship Program Fellow   Summer 2022
  Division of Teaching Excellence and Innovation, UC Irvine

Awards

- Excellence in Research Award   2023
  Latino Excellence and Achievement, Donald Bren School of ICS, UC Irvine
- Conference Travel Award   2022 & 2018
  National Diversity in STEM Conference, Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- Outstanding Graduate Teaching Assistant Award   2020
  Department of Statistics, UC Irvine
- Undergraduate Research Award   2019
  University of Nevada, Reno
- Prize for Undergraduate Research in Quantitative Biology (Runner-up)   2018
  NSF-Simons Center for Quantitative Biology, Northwestern University
- Capstone Conference Travel Award   2018
  Mathematical Biosciences Institute, Ohio State University

Conference Presentations

Accounting for Reporting Delays in Real-Time Inference of Infectious Diseases Dynamics Using Pathogen Genetic Sequences

- *SACNAS National Diversity in STEM (NDiSTEM) Conference*   Oct. 2024
  Talk, Phoenix, AZ
- *Joint Statistical Meeting (JSM)*   Aug. 2024
  Speed talk & poster presentation, Portland, OR
- *Statistical and Machine Learning Applications in Biomedical Sciences Workshop*   Feb. 2024
  Poster, UC Irvine

- *SACNAS NDiSTEM Conference* Oct. 2022
Poster, San Juan, Puerto Rico

Automate Your Grading Workflow With gradetools: A Grading Assistant in RStudio

- *Electronic Conference on Teaching Statistics (eCOTS) Regional* Jun. 2024
Flash talk, UC Irvine

- *United States Conference on Teaching Statistics (USCOTS)* Jun. 2023
Workshop, State College, PA

- *Researchers of Statistics Education (ROSE) Conference* May 2023
Invited presentation, online

Building Data Science Education Research Plan for Teacher-Scholars

- *Electronic Conference On Teaching Statistics (eCOTS)* Jun. 2023
Breakout session, selected as "hot topic of the day", online

Determinants of Exposure to Aedes Mosquitoes: A Comprehensive Geospatial Analysis in Peri-Urban Cambodia

- *GEOMED: Interdisciplinary Conference on Spatial Statistics, Spatial Epidemiology, and Geographical Aspects of Public Health* Oct. 2022
Poster, UC Irvine

Host-Pathogen Dynamics: Quantifying Process-Level Variation Using a System-Specific Dynamical Model in a Non-Linear Mixed Effects Modeling Framework

- *College of Science Poster Session* Nov. 2018
Poster, University of Nevada, Reno

- *Conference on Quantitative Approaches in Biology* Nov. 2018
Poster, Northwestern University

- *SACNAS NDiSTEM Conference* Oct. 2018
Poster, San Antonio, TX

- *McNair Symposium* Aug. 2018
Talk, University of Nevada, Reno

- *Mathematical Biosciences Institute Capstone Conference* Aug. 2018
Poster, Ohio State University

- *National McNair Conference* Jul. 2018
Talk, University of California, Los Angeles

Service and Outreach

Departmental Service

- Graduate student representative, UC Irvine Statistics Department Fall 2021 - Spring 2024
  - Managed graduate student involvement in faculty hiring process
  - Organized and led visitation day for admitted PhD students
  - Founded, organized, and led orientation for first-year graduate students
  - Reported on graduate student matters at weekly faculty meetings

Professional Service

- Session organizer: Facilitating Biomedical Discoveries and Public Health Decision Making Oct. 2024
SACNAS NDiSTEM Conference, Phoenix, AZ

- Panel moderator: What's Next in Four-Year Institutions? Jun. 2024
eCOTS, UC Irvine

- Panelist: Graduate School   Nov. 2020
  Association for Women in Mathematics, University of Nevada, Reno

Outreach

- Panel moderator: Biostatistics Career Panel   Aug. 2022 & 2023
  ISI-BUDS, UC Irvine

- Panel moderator: Diversity Equity and Inclusion in Biostatistics   Jul. 2023
  ISI-BUDS, UC Irvine

- Panelist: Societal and Ethical Issues in Computational and Informational Sciences   Apr. 2023
  Diverse Educational Community and Doctoral Experience, UC Irvine

- Panelist: Graduate School   Jul. 2020
  ISI-BUDS, UC Irvine

- Creator of animated maps to visualize Orange County COVID-19 cases, tests, and percent positivity by zip code for the public   2021
  COVID-19 Trends by UC Irvine

- Panelist: Careers for Mathematics, Physics, and Atmospheric Science Majors   Nov. 2020
  First-year seminar, University of Nevada, Reno

- Invited presentation: My Early Graduate School Experience and Life at UC Irvine   Dec. 2020
  McNair Scholars University of Nevada, Reno

Mentoring

- Competitive Edge Summer Research Program mentor   Summer 2023
  Graduate Division, UC Irvine

- Mentoring Excellence Certificate   Summer 2023
  Graduate Division, UC Irvine

- First year statistics graduate student mentor   2021 - 2023
  Diverse Educational Community and Doctoral Experience, UC Irvine

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Programs and Professional Membership

- American Statistical Association
- Society for the Advancement of Chinanos/Hispanics and Native Americans in Science (SACNAS)
- 2018-2019 McNair Scholar at University of Nevada, Reno

Software Developed

- `phylodyn2` R package for viral phylodynamic inference with ability to account for reporting delays in real-time analyses with preferential sampling.

- `gradetools` R package to help automate grading workflows and facilitate in creating individualized assignment feedback for students.