

# LAUREN PARKER CAPPIELLO

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## EMPLOYMENT

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<b>Assistant Professor, Department of Mathematics and Statistics</b> California State University, Sacramento	Aug 2020 - ongoing
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## EDUCATION

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Ph.D., Applied Statistics, University of California, Riverside	2020
B.S., Statistics, <i>summa cum laude</i> , University of California, Riverside	2016

## COURSES TAUGHT

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<b>California State University, Sacramento</b> · Stat 1 Introduction to Statistics · Stat 115A Introduction to Probability Theory · Stat 115B Introduction to Mathematical Statistics · Stat 128 Statistical Computing · Stat 199 Independent Study · Math 26A Calculus I for the Social and Life Sciences · Math 107A Fundamental Mathematical Concepts	Aug 2020 - ongoing
<b>University of California, Riverside</b> · Stat 100A Introduction to Statistics I · Stat 100B Introduction to Statistics II	Jul 2018 - Dec 2019

## PUBLICATIONS

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Green E., Wilkinson T., Howman J., Bayliss J., **Cappiello L.** *Clinical education data management: current landscape in entry-level physical therapist education.* In review.

Flores A., **Cappiello L.**, Quintanilla Salinas I. *Challenges and successes of emergency online teaching in statistics courses.* (Brief Communication). In review. [doi.org/10.48550/arXiv.2302.01476](https://doi.org/10.48550/arXiv.2302.01476)

Herrmann J., Koprowska A., Winters T.J., Villanueva N., Nikityuk V., Pek F.<sup>†</sup>, Reis E.M., Dominguez C., Davis D.E., McPherson E., Rocco S.R., Recendez C., Difuntorum S., Faeth K., Lopez M.D., Awwad H., Ghobashy R.A., **Cappiello L.**, Neidle E.L., Quiones-Soto S., Reams A.B. (2023). *Gene amplification mutations originate prior to selective stress in Acinetobacter baylyi.* G3 Genes|Genomes|Genetics. [doi.org/10.1093/g3journal/jkac327](https://doi.org/10.1093/g3journal/jkac327)

**Cappiello L.**, Zhang Z., Shenn C., Butala N., Cui X., Yeh R. (2021). *Adjusting for population differences using machine learning methods.* J R Stat Soc Series C. [doi.org/10.1111/rssc.12486](https://doi.org/10.1111/rssc.12486)

**Cappiello L.** (2020). *Adjusting for population differences using applied machine learning methods.* Doctoral dissertation, UC Riverside. [escholarship.org/uc/item/5ng9c2bn](https://escholarship.org/uc/item/5ng9c2bn) (Advisors: Zhiwei Zhang and Xinpeng Cui)

**Cappiello L.** (2016). *A novel estimation technique for a five-parameter bivariate beta distribution.* Undergraduate honors capstone project, UC Riverside. (Advisor: James Flegal)

<sup>†</sup> undergraduate student mentee

## RESEARCH PRESENTATIONS

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*Where are all the professors of color?* Lightning talk (with Jasdeep Pannu). Alliance of Hispanic Serving Institution Educators (AHSIE) Best Practices Conference. (March 14, 2023). San Francisco, CA.

*Challenges and successes of emergency online teaching.* Invited colloquium talk. Chico State Math Colloquium. (October 28, 2022). Chico, CA.

*Factors mediating time to doctorate degree and female academic career pathways.* UNCF Institute for Capacity Building - Excelencia - Coleridge Initiative, *Leveraging Big Data to Achieve Equity*. Presentation given to NC-SES/NSF stakeholders. (June 3, 2022). Remote due to COVID-19.

*Applied machine learning methods in adjusting for population differences.* Invited talk. Orange County Biostatistics Symposium. (November 6, 2020). Remote due to COVID-19.

*A novel estimation technique for a five-parameter bivariate beta distribution.* Poster presentation. International Biometric Society Eastern North American Region Meeting. (March 6, 2016). Austin, Texas.

## MENTORING

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### Undergraduate Research

Feini Pek, CSUS Mathematics Major

Fall 2021 - ongoing

- Data analysis for Dr. Andrew Ream's lab in the CSUS Biology Department.
- Independent research project: *A comparative simulation study on various equality of variance tests*.
  - Fei gave a talk on this work at the Student Research & Creative Activity Spring Symposium. (March 6, 2023)

### Sacramento State U-Mentor Program

Mentor

2022

### ATHENA by Women in STEM

Mentor, The Talaria Summer Institute

2020, 2022

## OTHER STATISTICAL CONSULTING AND APPLIED STATISTICS PROJECTS

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### California State Controller's Office - Division of Audits

Principal Investigator

July 2022 - July 2025

- Statistical consulting contract for applied statistics and to provide training on audit sampling.

### UNCF Institute for Capacity Building - Excelencia - Coleridge Initiative

Co-PI, CSUS Team (Gamma Cohort), *Leveraging Big Data to Achieve Equity*

Aug 2022 - Jan 2023

- Worked with data from the National Center for Science and Engineering Statistics to write research report, *Inequities in the pathway toward the professoriate*.

Member, CSUS/CSUN Team (Beta Cohort), *Leveraging Big Data to Achieve Equity*

Jan 2022 - Jun 2022

- Worked with data from the National Center for Science and Engineering Statistics to write research report, *Factors mediating time to doctorate degree and female academic career pathways*.

### American Council of Academic Physical Therapy

Statistical Consultant

Summer 2021

- Data cleaning, analysis, and write up for an American Council of Academic Physical Therapy survey by Erin Green, CSUS Assistant Professor of Physical Therapy.

### University of California, Riverside

Lead Consultant, Graduate Quantitative Methods Center

Jul 2018 - Jun 2019

- Provided statistical and computational consultations to graduate students and postdoctoral researchers.
- Developed and taught workshops, seminars, and instructional labs: *Introduction to Statistical Inference*; *Introduction to ANOVA*; *Introduction to Programming*; *Introduction to Multilevel Modeling*; *Introduction to SAS*; *Introduction to R*; *Intermediate Topics in R*; *Overview of Causal Inference*; *Improving Research Credibility*; *Writing Articles in LaTeX*; *The UCR LaTeX Dissertation Template*; and *Experimental Design*

### Brief ad hoc consulting

Various

- California Department of Justice, Earthshot Labs, California Lottery, CSUS faculty and students

## GRANTS

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### California State University, Sacramento

*STEM4Equity Mini Grant: Statistics Course Redesign*

Fall 2023

- Three units of course release to further the Stat 1 redesign as part of the STEM4Equity project funded by a STEM HSI grant from the U.S. Department of Education.

## California State University, Sacramento

- Curriculum Redesign Grant: Achieving Equitable Outcomes in Undergraduate Programs* Spring 2022
- Stat 1: Introduction to Statistics redesign (with Sayonita Ghosh Hajra, Jasdeep Pannu, and Topaz Wiscons). Funded for \$40,000.
- Curriculum Redesign Grant: Achieving Equitable Outcomes in Undergraduate Programs* Fall 2021
- Math 10: Essentials of Algebra redesign (with Sayonita Ghosh Hajra, Jasdeep Pannu, and Topaz Wiscons). Funded for \$39,654.
- Summer Online Course Design Grant* Spring 2021
- Redesigned Stat 1, Introduction to Statistics, to be a six-week, fully online course that could be taken asynchronously. This course was offered in Summer 2021.

## PROFESSIONAL DEVELOPMENT

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### The Association of College and University Educators (ACUE)

- Microcredential: *Designing Student-Centered Courses* Spring 2022

### Mathematical Association of America

- Fellow, *Project NExT (New Experiences in Teaching)* 2021 - 2022

### California State University, Sacramento

Faculty and Professional Learning Communities

- *Designing Student Centered Courses: Math Group* Spring/Fall 2022
- *Flexible Fundamentals Workshop* Summer 2021
- *Designing for Student Success: Building Inclusive Practices by Interrogating Power and Privilege* 2020 - 2021
- *Teach ON!-Line Summer Camp* Aug 2020

## OTHER PRESENTATIONS AND WORKSHOPS

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- Discussion leader, *MAA Golden Section Project NExT Meeting* August 3, 2022  
MathFest Philadelphia, PA
- Panelist, *Balancing Teaching/Research/Service & Professional and Personal Life* May 12, 2022  
UC Riverside Career Mentoring of Underrepresented STEM Students for the Professoriate Remote
- Panelist, *Alumni Speakers* Jan 10, 2022  
CSUS Summer Grant Program Remote
- Discussion leader (with Dr. Analisa Flores, UC Riverside)  
*Challenges and Successes of Emergency Online Teaching: Where Do We Go From Here?* Aug 2, 2021  
Birds of a Feather Discussion at the Joint Statistical Meeting Remote
- Panelist, *The Transition from Student to the Professoriate* May 13, 2021  
UC Riverside Career Mentoring of Underrepresented STEM Students for the Professoriate Remote
- Panelist, *Getting Hired: CSUs and Community Colleges* May 6, 2021  
UC Riverside Teaching Careers Week Remote
- Panelist, *Meeting With Alumni* Jan 15, 2021  
National Institute of Statistical Sciences Graduate Student Network Remote

## SERVICE TO UNIVERSITY

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### California State University, Sacramento

Statistics Group, Department of Mathematics and Statistics

- Co-wrote the white paper proposing a BS in Statistics (Fall 2022).
  - This program has been approved by the Chancellor's Office to be added to the CSUS Academic Master Plan.
- Courses proposed and developed (with Clark Fitzgerald and Jasdeep Pannu)
  - Linear Models (Stat 196L) *First offered Spring 2023*
  - Statistical Learning (Stat 196M) *First offering TBD*
  - Community Service Learning in Statistics (Stat 196N) *In development*

## Faculty Senate

- Alternate Senator, Department of Mathematics and Statistics 2022 - 2024
- General Education Course Review Subcommittee 2021 - 2024
  - Committee Chair 2022 - 2024

## Committees Served, Department of Mathematics and Statistics

- Scholarship 2022 - 2023
- Curriculum 2020 - 2021; 2022 - 2023
- Search 2021 - 2023
- Social 2021 - 2023
  - Committee Chair 2022 - 2024
- Core Curriculum 2021 - 2022
- Calculus 2020 - 2021

Editor, Cummings J. *Proofs, A Long-Form Mathematics Textbook.* 2021

## University of California, Riverside

- President and co-founder, Statistics Graduate Student Association 2019 - 2020
- Graduate Student Ambassador, Statistics Department 2019 - 2020
- President, Mu Sigma Rho 2018 - 2020
- Secretary, Mu Sigma Rho 2017 - 2018

## SERVICE TO COMMUNITY

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### NorCal DataFest

- Co-Organizer 2022 - ongoing
- NorCal DataFest is a collaboration between CSU Sacramento and CSU Chico to host the American Statistical Association DataFest event.
  - Our first event at CSUS was in April 2023. We anticipate hosting here biannually.

### Math Literacy Project

- Faculty Mentor Spring 2023
- MLP provides hands-on math lessons for middle and high school students.

### Sacramento Statistical Association

- Secretary 2022 - 2023
- SSA hosted the short course, *An introduction to second-generation p-values and their use in statistical practice* by Drs. Jeffrey Blume and Megan Murray (September 1, 2022).

### Mathematical Association of America

Co-Coordinator - Gold '21 Cohort, *Project NExT*

- Organized six Project NExT Sessions for MathFest in Philadelphia, PA. Summer 2022
  - *Maximizing In-Person Student Engagement After Online Learning*
  - *Drowning in Homework: Making Grading More Efficient*
  - *Navigating Student Mental Health Issues*
  - *So You Want to Build a New Course: Curriculum Development*
  - *Project NExT Made Us Do It: Successes, Failures, and What We Wished We Had Known Before*
  - *Supporting a Co-Curricular Math Community*
- Coordinated six Project NExT Sessions for the Joint Mathematical Meeting (remote). Winter/Spring 2022
  - *Mastery-Based Grading*
  - *Undergraduate Research*
  - *De-Westernizing the History of Mathematics*
  - *Establishing Interdisciplinary Collaborations*
  - *Advocating for Students of Color*
  - *Project-Based Learning*

### Undergraduate Statistics Project Competition

- Judge, Undergraduate Statistics Research Project Competition Jan 2022

- Hosted annually by the Consortium for the Advancement of Undergraduate Statistics Education with the American Statistical Association.

### California State University

- Northern California Data Science Alliance 2021 - ongoing

### Gage by 500 Women Scientists

- Resource, *Request a Woman Scientist* 2018 - ongoing

### Reviewer

- Journal of Statistical Theory and Practice

## ONLINE PUBLICATIONS

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*Introduction to Statistics* 2023

- Open source textbook and accompanying slides available at [lgpcappiello.github.io/teaching/stat1/](https://lgpcappiello.github.io/teaching/stat1/)

Educational RShiny Apps (available at [lgpcappiello.github.io/teaching/shinyapps/](https://lgpcappiello.github.io/teaching/shinyapps/)):

- *Simulating the Central Limit Theorem* 2022
- *The Normal Approximation to the Binomial Distribution* 2022
- *Normal Distribution Calculator* 2022

Educational Blog Posts (available at [lgpcappiello.github.io/blog/year-archive/](https://lgpcappiello.github.io/blog/year-archive/)):

- *Using LaTeX Equations in Github Pages* 2022
- *Character Stats* (Discusses simulation and order statistics.) 2022
- *Rolling with Advantage and Disadvantage* (Covers some basic rules of probability.) 2022
- *A Gentle Introduction to Probability Using Dice* 2021
- *Dungeons and Dragons Character Generator, an RShiny App* 2020

*Untitled.* (Accepted 2019) Union of Concerned Scientists blog.

*Learning to Love Statistics.* (2018) University of California, Riverside Graduate Student Resource Center blog. Republished on my website [lgpcappiello.github.io/lovestatistics/](https://lgpcappiello.github.io/lovestatistics/).

## MEDIA

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Interviewed for *Excited to go back: Sac State students weigh in on fall 2021 teaching modalities.* (2021) The State Hornet. [statehornet.com/2021/04/sac-state-students-fall-2021-in-person-opinions/](https://statehornet.com/2021/04/sac-state-students-fall-2021-in-person-opinions/)