

Michelle Norris

Curriculum Vitae

🏠 | 6000 J St., Sacramento, CA 95819
📞 | +1 (916) 278 4300
✉ | norris@csus.edu
🌐 | <https://www.csus.edu/indiv/n/norrisa/>

EMPLOYMENT

AUG 2020–CURRENT

Professor

Department of Mathematics and Statistics
California State University, Sacramento

AUG 2014–AUG 2020

Associate Professor

Department of Mathematics and Statistics
California State University, Sacramento

AUG 2008 – AUG 2014

Assistant Professor

Department of Mathematics and Statistics
California State University, Sacramento

Courses Taught:

- Stat 215A: Introduction to Mathematical Statistics (graduate)
- Math 130A: Function of a Real Variable I
- Math 130B: Function of a Real Variable II
- Stat 115A: Introduction to Probability Theory
- Stat 115B: Introduction to Mathematical Statistics
- Math 190: History of Mathematics
- Math 108: Introduction to Formal Mathematics
- Stat 128: Statistical Computing
- Math 29: Precalculus
- Math 30: Calculus I
- Math 31: Calculus II
- Math 45: Differential Equations for Science and Engineering
- Stat 1: Introduction to Statistics
- Stat 50: Introduction to Probability and Statistics
- Stat 199: Independent Study
- Summer Undergraduate Research Experience (SURE) Mentor, Summer 2016
 - + Optimal Stratification under the Minimum Three-Errors Constraint
Undergraduate Student: Jamie Schreader

EDUCATION

Aug 2008 **Ph.D. in Statistics** Advisor: Wesley O. Johnson *University of California, Davis*

May 1995 **M.A. in Mathematics** *California State University, Sacramento*

Dec 1992 **B.A. in Mathematics, summa cum laude,** *California State University, Sacramento*

RESEARCH INTERESTS

Bayesian Nonparametrics, Longitudinal Diagnostic Screening for Disease, Sampling Theory

PUBLICATIONS AND MANUSCRIPTS

Shanbrom, C., Norris, M., Esgana, C., Krauel, M., Pigno, V. and Lundmark, J. *Assessing student success in a Peer Assisted Learning program using propensity score matching*. Journal of College Science Teaching. (to appear)

Norris, M. (2018) *Sample Design for Medicaid and Healthcare Audits.*, arXiv:1809.02023.

Solt, M.J., Deocampo, D.M. and Norris, M. (2015) *Spatial Distribution of Lead in Sacramento, California, USA*. Int. J. Environ. Res. Public Health **12**, pp. 3174-3187

Norris, M., Johnson, W.O. and Gardner, I.A. (2014). *Bayesian semi-parametric joint modeling of biomarker data with a latent changepoint: Assessing the temporal performance of Enzyme-Linked Immunosorbent Assay (ELISA) testing for paratuberculosis*. Statistics and Its Interface. **7** pp. 417-438

Jafarzadeh, S.R., Norris M. and Thurmond, M.C. (2014) *Prediction of province-level outbreaks of foot-and-mouth disease in Iran using a zero-inflated negative binomial model*. Preventive Veterinary Medicine. **115** pp. 101-8

Utts, J., Norris, M., Suess, E. and Johnson, W. (2010) *The strength of evidence versus the power of belief: are we all Bayesians?* Proceedings of the Eighth International Conference on Teaching Statistics

Norris, M., Johnson, W.O. and Gardner, I.A. (2009). *Modeling bivariate longitudinal diagnostic outcome data in the absence of a gold standard*. Statistics and Its Interface. **2** pp. 171-185

Norris, M. and Johnson, W.O. *Parametric and Semiparametric Models for Longitudinal Data: Application to Joint Modeling of Longitudinal Diagnostic Test Outcomes*, PhD Dissertation

CONSULTING FOR INDUSTRY, GOVERNMENT AND NON-PROFITS

- July 2022 **California Department of Tax and Fee Administration**
Pro bono consulting on the impact of the Three-errors Rule in stratified sampling.
- 2011-2022 **California State Controller's Office**
Consulted on sample size and design for audits of various state-funded programs and agencies. Prepared curricula and conducted four hours of training on statistical sampling for about seven MediCal auditors. Prepared curricula and conducted training on sampling for sixty auditors with diverse specialties. Served as an expert witness on sampling at a settlement hearing.
- Feb 2018 **Sacramento Regional Transit**
Consulted on methods for extrapolating bus ridership based on incomplete sensor data
- April 2016 **Pacific Coast Producers**
Designed and presented three-hours worth of curricula on Statistical Quality Control for about ten plant managers at a vegetable canning facility in Woodland, CA. [3pt]
- 2011, 2014 **Office of the Inspector General**
Consulted on sample size issues for complex, multi-purpose studies of the quality of medical care in California correctional facilities.
- Summer 2015 **Board of Equalization**
Designed and presented curricula on sampling issues for sales and use tax audits to about twenty-five computer audit specialists over three eight-hour days.
- Various dates **Brief ad hoc consulting for non-profits**
Consulted for Friends of the Auburn Ravine, the Pain Exhibit, and the Department of Justice.

CONSULTING FOR ACADEMIA

- Fall 2018 **Matt Idler, CSUS undergraduate Physics major**
Consulted on the implementation of a Kalman filter to predict the trajectory of pions in a particle accelerator.
- Fall 2018 **Urvashi Mulasi, CSUS Assistant Professor of Family and Consumer Sciences**
Consulted on the statistical analysis of survey data on physical activity and dietary habits of Hmong youth.
- Spring 2018 **Young-Im Lee, CSUS Assistant Professor of Political Science**
Consulted on the manuscript *The Impact of Gender and Nomination Paths on Strategic Voting: Experimental Evidence from South Korea* on issues related to logistic regression.
- 2017-8 **Rosemary Brother, CSUS graduate student in Anthropology**
Thesis title: *FROM FEATURES TO FIGURES: Statistical Analysis of Selected California Native American Baskets*. Consulted on a cluster analysis of baskets based on numeric and categorical features.
- 2017 **Katja Kasimatis, University of Oregon PhD candidate in Biology**
Consulted on the mathematics for a manuscript on modeling the equilibria genetic makeup of a population.
- 2017 **Katja Kasimatis, University of Oregon PhD candidate in Biology**
Consulted on the paper *Quantifying male and female pheromone-based mate choice in Caenorhabditis nematodes using a novel microfluidic technique* on statistical methods for comparing proportions among several groups.
- 2016 **Clare Lewis, CSUS Professor of Physical Therapy**
Conducted non-parametric test to determine if sample data show a significant difference in comfort for a therapeutic massage tool compared to manual massage.
- 2011 **Seyed Reza Jafarzadeh, UC Davis graduate student in Preventive Veterinary Medicine**
Thesis title: *A zero-inflated negative binomial model for the province-level outbreaks of foot-and-mouth disease in Iran*.
- 2009-10 **Mike Solt, CSUS graduate student in Geology**
Thesis title: *Multivariate analysis of lead in urban soil in Sacramento, California*. Consulted on kriging and factor analysis of data on lead in soil samples from the Sacramento area.

PRESENTATIONS & INVITED TALKS

A Brief Introduction to R Programming SACRAMENTO STATISTICAL ASSOCIATION'S ANNUAL INSTITUTE ON RESEARCH AND STATISTICS

California State University, Sacramento, May 10, 2018

Graphics with ggplot2 and Decision Trees in R DATA SCIENCE AND GAME DEVELOPMENT HACKATHON

California State University, Sacramento, April 7, 2018

Introduction to Data Analysis with R DATA SCIENCE AND GAME DEVELOPMENT HACKATHON

California State University, Sacramento, April 6, 2018

Sample Design for Audit Populations STUDENT-RUN STATISTICS SEMINAR

University of California, Davis, Dec 5, 2017

Math fun with Brainteasers and Card Tricks EXPANDING YOUR HORIZONS CONFERENCE

California State University, Sacramento, Oct 2014, 2016, and 2017

Bayesian semi-parametric joint modeling of biomarker data with a latent changepoint: Assessing the temporal performance of Enzyme-Linked Immunosorbent Assay (ELISA) testing for paratuberculosis INTERNATIONAL CHINESE STATISTICAL ASSOCIATION CONFERENCE
Fort Collins, Colorado, June 15, 2015

Careers in Higher Education Panelist INTERNSHIP AND CAREER CENTER SEMINAR
University of California, Davis, March 2015 and Nov 2009

Statistical Hocus Pocus? Assessing the Accuracy of a Diagnostic Screening Test When You Don't Even Know Who Has the Disease PI MU EPSILON CONFERENCE
California State University, Sonoma, Sept 21, 2012

Is There Scientific Evidence for ESP? SONOMA STATE MATH COLLOQUIUM
California State University, Sonoma, Oct 26, 2011

Is There Scientific Evidence for ESP? CSUS MATH CLUB/SIAM JOINT TALK
California State University, Sacramento, April, 2010

Using Statistics to Know the "Unknowable" in Disease Screening Problems SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS COLLOQUIUM
California State University, Sacramento, Spring 2008

Bayesian Modeling and Statistical Inference for Longitudinal Diagnostic Outcomes AMERICAN PUBLIC HEALTH ASSOCIATION CONFERENCE
San Diego, CA, Oct 28, 2008

SERVICE

CSU SACRAMENTO Assistant Chair, Mathematics and Statistics Department, 2021-present
Primary RTP Committee Member, 2020-present
Data Science Club Faculty Advisor, 2015-2022
Pi Mu Epsilon Honorary Mathematics Society Faculty Advisor/Co-Advisor, 2011-present
Math Club Faculty Advisor/Co-advisor, 2010-14
Elected to the Advisory Committee, 2019-20
Calculus Faculty Learning Community, 2015-16
Elected Hiring Committee Chair 2018-19
Ad hoc Hiring Policy Committee, Spring 2019
Elected Hiring Committee Member 2015-16
Elected Hiring Committee Member 2013-14
Core Curriculum Committee
Integration Bee Committee Chair, 2017-18
Integration Bee Volunteer
Integration Bee Co-organizer, 2011, 2012, 2013
Calculus Committee
Curriculum Committee
Computing Committee
Social Committee
Undergraduate Math Major Advisor, 2015-present
Diagnostic Testing Committee
Assessment Committee
Physics Program Review Committee, 2011 and 2018

JOURNAL REFEREE *Statistics and its Interface, Biometrics, Computational Statistics and Bayesian Analysis*

COMPUTER SKILLS

Proficiency in R, RStudio, LaTeX, Excel, Word, Canvas Course Management System, Pearson MyLab; familiarity with relational databases, html, UNIX, and SAS.