James Marshall Flegal

CONTACT INFORMATION

Department of Statistics
University of California, Riverside
1428 Olmsted Hall
Riverside, CA 92521

jflegal@ucr.edu
https://james-flegal.github.io

RESEARCH INTERESTS

Bayesian methodology, Markov chain Monte Carlo methodology, Monte Carlo standard errors, perfect sampling, simultaneous simulation error, statistical computing, time-average covariance matrix estimation

EDUCATION

University of Minnesota, Minneapolis, MN

Ph.D. Statistics, 2008

- Dissertation Title: *Monte Carlo Standard Errors for Markov Chain Monte Carlo*
- Adviser: Galin L. Jones; Co-Adviser: Glen Meeden
- Clarence L. Remynse Scholarship, 2003–2007

Northwestern University, Evanston, IL

B.S. Mechanical Engineering, 1999

- Clarence L. Remynse Scholarship, 1996–1999

EXPERIENCE

University of California, Riverside, CA

Associate Professor, Department of Statistics	since July 2015
Assistant Professor, Department of Statistics	July 2008–June 2015
Institute for Integrative Genome Biology (IIGB)	since July 2008
Data Science Center (DiSCoveR)	since December 2016

Caterpillar, Raleigh, NC

Design Engineer	September 2000–December 2002

Continental Research & Engineering, Denver, CO

Research Engineer & Analyst	September 1999–September 2000

RESEARCH GRANTS

Principal Investigator, University of California, Office of the President (Innovative Learning Technology Initiative), "Online Instruction for Introduction to Statistics - STAT 100AB," 2018-2025, $210,000.

Other Professional, National Aeronautics and Space Administration (NASA MIRO FIELDS), "Fellowships and Internships in Extremely Large Data Sets (FIELDS): A Training and Research Program in Big Data and Visualization" (PI B. Mobasher, Physics and Astronomy), 2015-2020, $4,444,837. (Includes yearlong support for Jianan Hui working under my supervision.)

Principal Investigator, University of California, Riverside (UCR Regents Faculty Fellowship), "A sequential stopping rule for high-dimensional Markov chain Monte Carlo," 2014-2015, $6,000.

Principal Investigator, National Science Foundation (NSF-DMS, Statistics), "Collaborative research: Developing a theoretical and methodological framework for high-dimensional Markov chain Monte Carlo," 2013-2016, $99,998.

Refereed Publications

Vats, D. and **Flegal, J. M.** (2022). Lugsail lag windows for estimating time-average covariance matrices. *Biometrika*, Vol. **109**, 735–750.

Liu, Y.[§], Vats, D., and **Flegal, J. M.**[†] (2022). Batch size selection for variance estimators in MCMC. *Methodology and Computing in Applied Probability*, Vol. **24**, 65–93.

Vats, D., **Flegal, J. M.**, and Jones, G. L. (2022). Monte Carlo simulation: Are we there yet? In Piegorsch, W.W., Levine, R.A., Zhang, H.H., and Lee, T.C.M. (eds.). Computational Statistics in Data Science, pp. 81–98.

Flegal, J. M. (2021). Invited Discussion: "Multilevel Linear Models, Gibbs Samplers and Multigrid Decompositions" by Zanella, G. and Roberts, G.. *Bayesian Analysis*, Vol. **4**, 1352–1356.

Hui, J.[§], **Flegal, J. M.** and Johnson, A. A. (2021). Geometric ergodicity of a more efficient conditional Metropolis-Hastings algorithm. *Communications in Statistics, Theory and Methods*, Vol. **50**, 4528–4547.

Robertson, N.[§], **Flegal, J. M.**[†], Vats, D., and Jones, G. L. (2021). Assessing and visualizing simultaneous simulation error. *Journal of Computational and Graphical Statistics*, Vol. **30**, 324–334.

Vats, D., **Flegal, J. M.**, and Jones, G. L. (2021). Monte Carlo simulation: Are we there yet? *Wiley StatsRef: Statistics Reference Online*, 1–15.

Vats, D., Robertson, N.[§], **Flegal, J. M.**, and Jones, G. L. (2020). Analyzing Markov chain Monte Carlo output. *WIREs Comput Stat.* 2020;12:e1501.

Le, N. X. T., Rivas, R. **Flegal, J. M.**, and Hristidis, V. (2019). Decrease product rating uncertainty through focused reviews solicitation. *International Journal of Semantic Computing*, Vol. **13**, 1–25.

Le, N. X. T., Rivas, R. **Flegal, J. M.**, and Hristidis, V. (2019). Targeted solicitation of product reviews. *IEEE International Conference on Semantic Computing (ICSC 2019)*, 308–315 (25% acceptance rate for full papers).

Vats, D., **Flegal, J. M.**, and Jones, G. L. (2019). Multivariate output analysis for Markov chain Monte Carlo. *Biometrika*, Vol. **106**, 321–337.

Hui, J.[§], Aragon, M., Cui, X. and **Flegal, J. M.** (2018). A machine learning approach to galaxy-LSS classification I: Imprints on halo merger trees. *Monthly Notices of the Royal Astronomical Society (MNRAS)*, Vol. **475**, 4494–4503.

Liu, Y.[§] and **Flegal, J. M.**[†] (2018). Weighted batch means estimators in Markov chain Monte Carlo. *Electronic Journal of Statistics*, Vol. **12**, 3397–3442.

Park, I. W., Hooper, J., **Flegal, J. M.**, and Jenerette, G. D. (2018). Impacts of climate, disturbance, and topography on distribution of herbaceous cover in Southern California chaparral: Insights from a remote sensing method. *Diversity & Distributions*, Vol. **24**, 497–508.

Roy, V., Tan, A., and **Flegal, J. M.** (2018). Estimating standard errors for importance sampling estimators with multiple Markov chains. *Statistica Sinica*, Vol. **28**, 1079–1101.

[§]PhD student under my supervision.
[†]Corresponding author.

Vats, D., **Flegal, J. M.**, and Jones, G. L. (2018). Strong consistency of multivariate spectral variance estimators in Markov chain Monte Carlo. *Bernoulli*, Vol. **24**, 1860–1909.

Crackel, R.[§] and **Flegal, J. M.**[†] (2017). Bayesian inference for a flexible class of bivariate beta distributions, *Journal of Statistical Computation and Simulation*, Vol. **87**, 295–312.

Gong, L.[§] and **Flegal, J. M.** (2016). A practical sequential stopping rule for high-dimensional Markov chain Monte Carlo, *Journal of Computational and Graphical Statistics*, Vol. **25**, 684–700. (Winner of a 2014 student paper award from the Section on Bayesian Statistical Sciences.)

Spindler, S. R., Mote, P. L. and **Flegal, J. M.** (2016). Combined statin and angiotensin converting enzyme (ACE) inhibitor treatment increases the lifespan of long-lived F1 male mice. *AGE (Journal of the American Aging Association)*, Vol. **38**, 379–391.

Flegal, J. M.[†] and Gong, L.[§] (2015). Relative fixed-width stopping rules for Markov chain Monte Carlo simulations, *Statistica Sinica*, Vol. **25**, 655–676.

Spindler, S. R., Mote, P. L. Lublin, A. A., **Flegal, J. M.**, Dhahbi, J. M. and Li, R. (2015). Nordihydroguaiaretic acid extends the lifespan of *Drosophila* and mice, increases mortality-related tumors and hemorrhagic diathesis, and alters energy homeostasis in mice, *Journal of Gerontology: Biological Sciences*, Vol. **70**, 1479–1489.

Doss, C. R., **Flegal, J. M.**[†], Jones, G. L. and Neath, R. C. (2014). Markov chain Monte Carlo estimation of quantiles, *Electronic Journal of Statistics*, Vol. **8**, 2448-2478.

Jeske, D. R., **Flegal, J. M.** and Spindler, S. R. (2014). Minimum size survival analysis sampling plans for comparing multiple treatment groups to a single control group, *Communications in Statistics, Theory and Methods*, Vol. **43**, No. 13, 2689–2701.

Johnson, A. A. and **Flegal, J. M.** (2014). A modified conditional Metropolis-Hastings sampler, *Computational Statistics & Data Analysis*, Vol. **78**, 141–152.

Spindler, S. R., Mote, P. L. and **Flegal, J. M.** (2014). Lifespan effects of simple and complex nutraceutical combinations fed isocalorically to mice, *AGE (Journal of the American Aging Association)*, Vol. **36**, No. 2, 705–718.

Spindler, S. R., Mote, P. L. and **Flegal, J. M.** (2014). Dietary supplementation with krill oil and Lovaza shortens the lifespan of long-lived F1 mice, *AGE (Journal of the American Aging Association)*, Vol. **36**, No. 3, 1345–1352.

Spindler, S. R., Mote, P. L., **Flegal, J. M.** and Teter, B. (2013). Influence on longevity of blueberry, cinnamon, green and black tea, pomegranate, sesame, curcumin, morin, Pycnogenol, quercetin and taxifolin fed isocalorically to long-lived, outcrossed mice, *Rejuvenation Research*, Vol. **16(2)**, 143–151.

Spindler, S. R., Mote, P. L., Li, R., Dhahbi, J. M., Yamakawa, A., **Flegal, J. M.**, Jeske, D. R. and Lublin, A. L. (2013). β1-adrenergic receptor blockade with metoprolol or nebivolol extends the lifespan of *Drosophila* and long-lived mice, *AGE (Journal of the American Aging Association)*, Vol. **35**, No. 6, 2099–2109.

Flegal, J. M. (2012). Applicability of subsampling bootstrap methods in Markov chain Monte Carlo, *Monte Carlo and Quasi-Monte Carlo Methods 2010*, Editors, Wozniakowski, H. and Plaskota, L., Springer Proceedings in Mathematics & Statistics, **23**, 363–372.

Flegal, J. M.† and Herbei, R. (2012). Exact sampling for intractable probability distributions via a Bernoulli factory, *Electronic Journal of Statistics*, Vol. **6**, 10–37.

Flegal, J. M.† and Jones, G. L. (2011). Implementing Markov chain Monte Carlo: Estimating with confidence, *Handbook of Markov Chain Monte Carlo*, Editors, Brooks, S.P., Gelman, A.E., Jones, G.L., and Meng, X.L., Chapman & Hall/CRC Press, 175–197.

Flegal, J. M.† and Jones, G. L. (2010). Batch Means and spectral variance estimators in Markov chain Monte Carlo, *The Annals of Statistics*, Vol. **38**, No. 2, 1034–1070.

Flegal, J. M.†, Haran, M. and Jones, G. L. (2008). Markov chain Monte Carlo: Can we trust the third significant figure? *Statistical Science*, Vol. **23**, No. 2, 250–260.

Submitted and In Preparation

Flegal, J. M.† and Kurtz-Garcia, R. P.§ (2023). Implementing MCMC: Multivariate estimation with confidence. Invited submission to *Handbook of Markov Chain Monte Carlo (2nd Edition)*.

Flegal, J. M.†, Jones, G. L., Nilakanta, H., and Yang, J§ (2023). Simultaneous confidence bands for (Markov chain) Monte Carlo simulations. In preparation for *Stat*.

Kurtz-Garcia, R. P.§ and **Flegal, J. M.** (2023) Testing optimal bandwidth for zero lugsail estimators. In preparation for *Annals of Statistics*.

Bastola, D.§, **Flegal, J. M.**, and Vats, D. (2023+). Higher order optimal batch sizes for estimating long-run variances. In preparation for *Statistics and Computing*.

Software

`SimTools`: Vats, D., **Flegal, J. M.**, and Jones, G. L.. Variability assessment for simulation methods in `R`. Available from `GitHub`.

`mcmcse`: **Flegal, J. M.**, Hughes, J., Vats, D., Dai, N., Gupta, K. and Maji, U. Calculates standard errors for estimators based on Markov chain Monte Carlo simulations. Version 1.5-0 available from `CRAN`.

Book Reviews

Do Dice Play God? The Mathematics of Uncertainty by Ian Stewart (2022), *The American Statistician*, Vol. **76**, No. 1, 85–88.

Fundamentals of Probability with Stochastic Processes, Fourth Edition by Saeed Ghahramani (2021), *The American Statistician*, Vol. **75**, No. 1, 113–114.

Data Visualization: Charts, Maps, and Interactive Graphics by Robert Grant (2021), *The American Statistician*, Vol. **75**, No. 1, 113.

Probability with Applications in Engineering, Science, and Technology, Second Edition by Matthew A. Carlton and Jay L. Devore (2019), *The American Statistician*, Vol. **73**, No. 1, 98.

Practical Bayesian Inference: A Primer for Physical Scientists by Coryn A. L. Bailer-Jones (2018), *The American Statistician*, Vol. **72**, No. 3, 298.

Modeling and Analysis of Stochastic Systems, Third Edition by Vidyadhar G. Kulkarni (2017), *Journal of the American Statistical Association* Vol. **112**, 1780.

Learning Base R by Lawrence M. Leemis (2016), *The American Statistician*, Vol. **70**, No. 3, 315.

A Second Course in Statistics: Regression Analysis, 7th Edition by William Mendenhall and Terry Sincich (2014), *The American Statistician*, Vol. **68**, No. 3, 212.

Statistical Thinking in Sports by Jim Albert and Ruud H. Koning (eds) (2009), *Technometrics*, Vol. **51**, No. 1, 106.

Invited Presentations

"Simultaneous confidence bands for (Markov chain) Monte Carlo simulations," March, 2023, Eighth Bayesian, Fiducial and Frequentist Conference (BFF8), Cincinnati, OH.

"Simultaneous confidence bands for (Markov chain) Monte Carlo simulations," March, 2023, Bayes Comp 2023, Levi, FINLAND.

"Lugsail lag windows for estimating time-average covariance matrices," July, 2022, 15th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC 2022), Linz, AUSTRIA.

"Lugsail lag windows for estimating time-average covariance matrices," June, 2022, 6th International Conference on Econometrics and Statistics (EcoSta 2022), Kyoto, JAPAN.

Panelist for discussion webinar of Zanella and Roberts, "Multilevel linear models, Gibbs samplers and multigrid decompositions". January 26, 2022, *Bayesian Analysis* organized webinar.

"Lugsail lag windows for estimating time-average covariance matrices," December, 2021, 14th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2021), London, UNITED KINGDOM.

"Lugsail lag windows for estimating time-average covariance matrices," July, 2021, Statistics 2021 Canada – 6th Canadian Conference in Applied Statistics (*online*), Montreal, CANADA.

"Visualizing simultaneous uncertainty in Monte Carlo experiments," June, 2021, 5th International Conference on Econometrics and Statistics (EcoSta 2021, *online*), Seoul, KOREA.

"Multivariate output analysis for MCMC," August 10, 2020, 14th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (*online*), Oxford, UNITED KINGDOM.

"Visualizing simultaneous uncertainty in Monte Carlo experiments," July, 2020, 4th International Conference on Econometrics and Statistics (EcoSta 2020), Seoul, KOREA.[¶]

"Visualizing simultaneous uncertainty in Monte Carlo experiments," May, 2020, Statistical Learning and Data Science / Nonparametric Statistics (SLDS) Conference, Irvine, CA.[¶]

"Visualizing simultaneous uncertainty in Monte Carlo experiments," December 16, 2019, 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019), London, UNITED KINGDOM.

"Weighted batch means estimators in MCMC," October 11, 2019, 3rd International Conference on Statistical Distributions and Applications (ICOSDA 2019), Grand Rapids, MI.

[¶]Cancelled due to COVID-19.

"Weighted batch means estimators in MCMC," June 26, 2019, 3rd International Conference on Econometrics and Statistics (EcoSta 2019), Taichung, TAIWAN.

"Multivariate output analysis for MCMC," April 7, 2018, Statistics, Monte Carlo, and So Much More: A Conference in Honor of Charlie Geyer, Minneapolis, MN.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," November 2, 2013, AMS Western Section Meeting, Riverside, CA.

"Quantile Estimation via Markov Chain Monte Carlo," June 27, 2012, ISBA 2012 World Meeting, Kyoto, JAPAN.

"MCMC: Can We Trust the Third Significant Figure?," June 6, 2012, 29th Quality and Productivity Research Conference, Long Beach, CA.

"Exact sampling for intractable probability distributions via a Bernoulli factory," February 14, 2012, 10th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Sydney, AUSTRALIA.

"Exact sampling for intractable probability distributions via a Bernoulli factory," December 29, 2011, Statistical Concepts and Methods for the Modern World, Colombo, SRI LANKA.

"MCMC: Can We Trust the Third Significant Figure?," July 28, 2009, 12th North American Meeting of New Researchers in Statistics and Probability, Baltimore, MD.

Contributed Presentations

"Weighted batch means estimators in MCMC," topic contributed, July 31, 2019, Joint Statistical Meetings, Denver, CO.

"Multivariate output analysis for MCMC," topic contributed, August 1, 2018, Joint Statistical Meetings, Vancouver, BC, CANADA.

"A practical sequential stopping rule for high-dimensional MCMC," topic contributed, January 5, 2016, MCMSki6 2016, Lenzerheide, SWITZERLAND.

"Relative fixed-width stopping rules for high-dimensional MCMC," topic contributed, August 12 2015, Joint Statistical Meetings, Seattle, WA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," topic contributed, August 5, 2013, Joint Statistical Meetings, Montreal, QC, CANADA.

"Exact sampling for intractable probability distributions via a Bernoulli factory," August 3, 2011, Joint Statistical Meetings, Miami, FL.

"Exact sampling for intractable probability distributions via a Bernoulli factory," poster (recognized as **Outstanding Young Investigator Poster**), January 5, 2011, MCMSki3 2011, Park City, UT.

"Quantile estimation via Markov chain Monte Carlo," August 18, 2010, 9th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Warsaw, POLAND.

"Quantile estimation via Markov chain Monte Carlo," August 11, 2010, 73rd Annual Meeting of the Institute of Mathematical Statistics, Gothenburg, SWEDEN.

"Quantile estimation via Markov chain Monte Carlo," August 3, 2010, Joint Statistical Meetings, Vancouver, BC, CANADA.

"Batch Means and Spectral Variance Estimators in MCMC," August 6, 2009, Joint Statistical Meetings, Washington D.C..

"Spectral Variance Estimators in Markov Chain Monte Carlo," poster, January 8, 2008, Adap'Ski 08, Bormio, ITALY.

"Using Subsampling in Markov Chain Monte Carlo," August 1, 2007, Joint Statistical Meetings, Salt Lake City, UT.

Department Seminars

"Simultaneous confidence bands for (Markov chain) Monte Carlo simulations," April 27, 2023, Center for Communications Research, The Institute for Defense Analyses (IDA), La Jolla, CA.

"Lugsail lag windows for estimating time-average covariance matrices," June 22, 2021, Department of Statistics, The Chinese University of Hong Kong, Shatin, HONG KONG.

"Lugsail lag windows for estimating time-average covariance matrices," April 22, 2021, School of Statistics, University of Minnesota, Minneapolis, MN.

"Multivariate output analysis for MCMC," February 4, 2020, Department of Statistics, University of California, Riverside, CA.

"Weighted batch means estimators in MCMC," January 18, 2019, Department of Statistics, University of Warwick, Coventry, UNITED KINGDOM.

"Multivariate output analysis for MCMC," December 8, 2017, Data Science Seminar Series, University of California, Riverside, CA.

"Multivariate output analysis for MCMC," November 9, 2017, Department of Statistics, University of California, Irvine, CA.

"Multivariate output analysis for MCMC," September 6, 2017, Department of Mathematics and Statistics, San Diego State University, San Diego, CA.

"A practical sequential stopping rule for high-dimensional MCMC," April 5, 2017, Department of Biostatistics, University of California, Los Angeles, CA.

"A practical sequential stopping rule for high-dimensional MCMC," February 1, 2016, Department of Statistics, Indiana University, Bloomington, IN.

"A practical sequential stopping rule for high-dimensional MCMC," January 22, 2016, School of Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ.

"A practical sequential stopping rule for high-dimensional MCMC," December 15, 2015, Department of Applied and Computational Mathematics and Statistics, University of Notre Dame, Notre Dame, IN.

"A practical sequential stopping rule for high-dimensional MCMC," November 12, 2015, Applied Statistics Group, Lawrence Livermore National Laboratory, Livermore, CA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," December 5, 2014, Department of Economics, University of California, Riverside, CA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," November 14, 2014, Department of Mathematical Sciences, University of Nevada, Las

Vegas, NV.

"MCMC: Can We Trust the Third Significant Figure?," October 28, 2014, Department of Statistics, University of California, Riverside, CA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," October, 2014, Department of Statistics, National Cheng-Kung University, Tainan City, TAIWAN.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," April 14, 2014, Department of Statistics, Iowa State University, Ames, IA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," November 21, 2013, Department of Statistics, University of California, Davis, CA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," September 18, 2013, Department of Mathematics and Statistics, San Diego State University, San Diego, CA.

"Relative fixed-width stopping rules for Markov chain Monte Carlo simulations," November 13, 2012, Department of Statistics, University of California, Riverside, CA.

"MCMC: Can We Trust the Third Significant Figure?," September 13, 2012, RAND Statistics Group, RAND Corporation, Santa Monica, CA.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," April 23, 2012, Department of Electrical Engineering, University of California, Riverside, CA.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," October 12, 2011, Department of Biostatistics, Johns Hopkins University, Baltimore, MD.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," October 5, 2011, Department of Biostatistics, University of California, Los Angeles, CA.

"MCMC: Can We Trust the Third Significant Figure?," September 14, 2011, Department of Mathematics and Statistics, San Diego State University, San Diego, CA.

"Exact sampling for intractable probability distributions via a Bernoulli factory," February 8, 2011, Department of Statistics, University of California, Los Angeles, CA.

"Exact sampling for intractable probability distributions via a Bernoulli factory," January 25, 2011, Department of Statistics, University of California, Riverside, CA.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," November 5, 2010, Department of Mathematics, University of Southern California, Los Angeles, CA.

"MCMC: Can We Trust the Third Significant Figure?," July 22, 2010, Department of Mathematics, Claremont McKenna College, Claremont, CA.

"Statistical Methods from Tolerance Stackups to the PGA Tour," May 5, 2010, Honors Program First-Year Colloquium, University of California, Riverside, CA.

"MCMC: Can We Trust the Third Significant Figure?," April 23, 2010, Department of Mathematics, California State University, Fullerton, CA.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," April 1, 2010, Department of Statistics, The Ohio State University, Columbus, OH.

"Expectation and Quantile Estimation via Markov Chain Monte Carlo," January 25,

2010, Department of Statistics, University of California, Irvine, CA.

"Batch Means and Spectral Variance Estimators in MCMC," November 5, 2009, Department of Statistics, University of Florida, Gainesville, FL.

"Batch Means and Spectral Variance Estimators in MCMC," October 29, 2009, Department of Statistics, University of California, Davis, CA.

"Batch Means and Spectral Variance Estimators in MCMC," August 21, 2009, School of Mathematics & Statistics, University of New South Wales, Sydney, AUSTRALIA.

"Evaluating Uncertainty for Expectations and Quantiles in MCMC," March 24, 2009, Department of Economics, University of Modena e Reggio Emilia, Modena, ITALY.

"MCMC: Can We Trust the Third Significant Figure?," February 6, 2009, Department of Economics, University of California, Riverside, CA.

Short Courses

"DSSI Seminar Series - Markov Chain Monte Carlo Methods in Statistics", July 11-20, 2018, Data Science Summer Institute Program at Lawrence Livermore National Laboratory, Livermore, CA.

"BMSC 254: Statistics," October 6, 2017, Biomedical Sciences Graduate Student Seminar, Riverside, CA.

"BMSC 254: Statistics," October 28, 2016, Biomedical Sciences Graduate Student Seminar, Riverside, CA.

"Statistics for Data Scientists," February 12, 2016, Data Science Workshop for University of California, Riverside and NASA Jet Propulsion Laboratory, Riverside, CA.

Instruction

University of California, Riverside, CA

NASC 93‡ *Statistics in Popular Culture* Fall 2014, 2018

STAT 010* *Introduction to Statistics* (formally STAT 100A)
Fall 2021, Winter 2021, Spring 2020, 2021, 2023

STAT 155 *Probability and Statistics for Science and Engineering* Fall 2010

STAT 160A *Elements of Probability and Statistical Theory*
Fall 2008, 2009, 2011, 2012, 2013, 2014

STAT 160B *Elements of Probability and Statistical Theory*
Winter 2009, 2010, 2011, 2012, 2013, 2014, 2015

STAT 160C *Elements of Probability and Statistical Theory*
Spring 2012, 2015, 2016, 2020*

STAT 203A *Bayesian Statistics I* Winter 2009, 2018, Spring 2021*, 2023

STAT 206‡* *Statistical Computing* Fall 2016, 2017, 2018, 2019, 2020, 2021, 2022

STAT 207‡ *Advanced Statistical Computing*
Spring 2015, Winter 2016, 2017, 2018, 2020, 2022

‡Proposed and developed course.
*Proposed and developed online version.

STAT 210C *Theoretical Statistics and Probability* Spring 2011

STAT 215 *Stochastic Processes* Spring 2010, 2012, 2014, 2016, 2017, 2018, 2022

STAT 288 *Literature Seminar* Fall 2010, 2013

University of Minnesota, Minneapolis, MN

STAT 3011 *Introduction to Statistical Analysis*
Fall 2005, 2006, 2007, Spring 2007, 2008, Summer 2007

PhD Students

Noe Vidales, 2020-Current, TBD.

Rebecca Kurtz-Garcia, July 2023, "Testing Optimal Bandwidth for Zero Lugsail Estimators". First Position: Assistant Professor of Statistics at Smith College.

Deepak Bastola, August 2021, "Higher order accurate variance estimation in Markov chain Monte Carlo". First Position: Visiting Assistant Professor in Statistics at Carleton College.

Jinhui Yang, June 2021, "Simultaneous confidence bands for Monte Carlo simulations." First Position: Data Scientist at Amazon.

Nathan Robertson, September 2019, "Visualizing Monte Carlo error and terminating Markov chain Monte Carlo simulation".

Jianan Hui, July 2017, "Methods in Markov chain Monte Carlo and spatiotemporal data analysis." First Position: Senior Biostatistician at Boehringer Ingelheim.

Ying Liu, March 2017, "Optimal variance estimation for a multivariate Markov chain central limit theorem." First Position: Research Associate at Harvard T.H. Chan School of Public Health.

Lei Gong, August 2015, "Fixed-width stopping procedures for Markov chain Monte Carlo." First Position: Data Scientist at Thumbtack, Inc.

Roberto Crackel, January 2015, "Likelihood free inference for a flexible class of bivariate beta distributions." First Position: Mathematical Statistician at U.S. Food and Drug Administration.

Other Mentoring

Nicolina Sandoval (Cal-Bridge Mentor), 2023–Current

Siddharth Pathak (Google Summer of Code Mentor), 2023

Kushagra Gupta (Google Summer of Code Mentor), 2021

Dootika Vats (Postdoctoral Adviser), 2019

Lauren (Perry) Cappiello (Honors Thesis Adviser), 2015–2016

Research Experience for Undergraduates: Jacqueline Banks (2010), Calvin Ericson (2011), Harry Mak (2011), Krischin Layon (2020)

Dissertation Committee: Matthew Arvanitis, Deepak Bastola, Xiaohong Che, Roberto Crackel, Elijah DePalma, Yingzhuo Fu, Chen Gao, Lei Gong, Anne Hansen, Fei He, Jianan Hui, Michael Izbicki (Computer Science), Rebecca Kurtz-Garcia, Ying Liu, Monobina Mukherjee (Environmental Science), Nathan Robertson, Sakar Sigdel,

Noe Vidales, Yuhua Xiong (Environmental Science), Cheng-Hsueh Yang, Jinhui Yang

Oral Examination Committee: Matthew Arvanitis, Deepak Bastola, Scott Benecke, Michael (Tyler) Brannan, Ashley Cacho, Roberto Crackel, Elijah DePalma, Jacob Fauber (Computer Science), Chen Gao, Lei Gong, Anne Hansen, Fei He, Queen Ikhelowa, Chengkuan Hong (Computer Science), Jing Jin (Computer Science), Luke Klein, Rebecca Kurtz-Garcia, Huiling Liu, Yiming Ma (Electrical Engineering), Hua Peng, Luyao Peng, Nathan Robertson, Sakar Sigdel, Linli Tang, Noe Vidales, Yuhua Xiong (Environmental Science), Jiacheng Xue, Cheng-Hsueh Yang, Jinhui Yang, Xiaoyang Zhou

Editorial Activities

Associate Editor for *Journal of Computational and Graphical Statistics* 2021–Current

Associate Editor for *Journal of the American Statistical Association* 2014–2022

Served as a referee for *Audeamus* (once), *Biometrika* (once), *BMC Bioinformatics* (3 times), *Canadian Journal of Statistics* (once), *Communications in Statistics - Simulation and Computation* (3 times), *Communications in Statistics - Theory and Methods* (once), *Econometric Theory* (twice), *Electronic Journal of Statistics* (6 times), *Geographical Analysis* (twice), *Journal of Agricultural, Biological, and Environmental Statistics* (once), *Journal of the American Statistical Association* (twice), *Journal of Computational and Graphical Statistics* (10 times), *Journal of Machine Learning Research* (once), *Journal of Multivariate Analysis* (twice), *Journal of Statistical Planning and Inference* (once), *Journal of Statistical Computation and Simulation* (once), *Journal of the Royal Statistical Society, Series B* (4 times), *Scandinavian Journal of Statistics* (once), *Statistica Sinica* (3 times), *Statistics and Computing* (6 times), *The American Statistician* (3 times), *The Annals of Statistics* (3 times), *The proceedings of The 9th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing* (once).

Refereed 14 2-page extended abstracts for Symposium on Data Science and Statistics (SDSS 2020).

Refereed 5 papers for ACM-IMS Foundations of Data Science Conference (FODS-2020).

Conference Organization

Scientific Organizing Committee for 2023 IRSA Conference *The Fast and the Curious: Modern Markov Chain Monte Carlo*. May 2023. Minneapolis, MN.

Scientific Program Committee for 6th International Conference on Econometrics and Statistics (EcoSta 2022). June, 2022. Kyoto, JAPAN.

Organizer of "Advances in Bayesian methodology and computation" Invited session. June, 2022. International Conference on Econometrics and Statistics (EcoSta 2022), Kyoto, JAPAN.

Organizer of "Developments in output analysis for Markov chain Monte Carlo" Invited session. December, 2021. International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2021), London, UNITED KIGNDOM.

Program Committee Member for ACM-IMS Foundations of Data Science Conference (FODS-2020). October, 2020. Seattle, WA.

Organizer of "Output analysis for Markov chain Monte Carlo" special session. Au-

gust 2020. 14th International Conference in Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (MCQMC), Oxford, UNITED KINGDOM.

Program Committee Member and Computational Statistics Track Co-Organizer for Symposium on Data Science and Statistics (SDSS 2020). June, 2020. Pittsburg, PA.

Organizer of "Developments in Markov Chain theory and methodology" Invited session. July, 2020. International Conference on Econometrics and Statistics (EcoSta 2020), Seoul, KOREA.

Scientific Program Committee Member for International Conference on Statistical Distributions and Applications (ICOSDA 2019). October, 2019. Grand Rapids, MI.

Organizer of "Advances in Bayesian Theory and Computation" Topic invited session. October, 2019. International Conference on Statistical Distributions and Applications (ICOSDA 2019), Grand Rapids, MI.

Organizer of "Recent theoretical advancements for MCMC algorithms" Section on Bayesian Statistical Science topic contributed session. August 1, 2018. Joint Statistical Meeting 2018, Vancouver, BC, CANADA.

Organizer of "Recent developments in Markov chain Monte Carlo methodology" ISBA topic contributed session. January, 2016. MCMSki 2016, Lenzerheide, SWITZERLAND.

Organizer and Chair of "Markov chain Monte Carlo for contemporary statistical applications" Section on Bayesian Statistical Science invited session. August 12, 2015. Joint Statistical Meeting 2015, Seattle, WA.

Organizer of "Advances in Bayesian computation motivated by applications" IMS topic contributed session. August 12, 2015. Joint Statistical Meeting 2015, Seattle, WA.

Co-Organizer of "Developments in Markov Chain theory and methodology" AMS invited session. November 2, 2013. American Mathematical Society Western Section Meeting, Riverside, CA.

Organizer of "Developments in Markov Chain Monte Carlo methodology" IMS invited session. August 6, 2013. Joint Statistical Meeting 2013, Montreal, QC, CANADA.

Chair for "Recent advances in Bayesian computation" invited session. August 8, 2013. Joint Statistical Meetings, Montreal, QC, CANADA.

Organizer of "Bayesian methods in quality" invited session. June 6, 2012. Quality and Productivity Research Conference, Long Beach, CA.

Organizer of "Recent advances in MCMC" special session. February 15, 2012. 10th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Sydney, AUSTRALIA.

Co-Organizer of "AMS special session on Markov Chains and their statistical applications" Mathematics Research Communities session. January 13, 2010. Joint Mathematics Meetings, San Francisco, CA.

Chair for "Introductory overview lecture: Designing longitudinal studies" session. August 4, 2009. Joint Statistical Meetings, Washington D.C..

GRANT REVIEWS Ad hoc reviewer for NSF Methodology, Measurement, and Statistics Program. April,

2011, November 2011, October 2018.

Ad hoc reviewer for EPSRC Mathematical Sciences. August 2012.

Major University Service

University of California, Riverside, CA

UCR Committee on Courses (Chair 2023–Current)	2022–2025
UCR Committee on Educational Policy	2023–2025
UCR Quantitative Reasoning Assessment Team	2023
Vice Chair, Department of Statistics	2021–2022
Statistics Undergraduate Adviser	2009–2012, 2019–2022
Statistics Faculty Search Committee	2011, 2013, 2014, 2015, 2022
Data Science Program Committee	2021–Current
CNAS UAAC Director Search Committee	2021
Master of Science in Business Analytics (MSBA) Steering Committee	2020–Current
CNAS Committee on Research and Instructional Space	2017–Current
Statistics LPSOE Search Committee	2020
Big Data Cluster Search Committee	2017
Business Analytics Cluster Search Committee	2017
Spatial Analysis Cluster Search Committee	2017
CNAS Executive Committee	2013–2016
Statistics Graduate Recruitment and Financial Aid Committee	2012–2016

Membership

American Statistical Association, Institute of Mathematical Statistics, International Association for Statistical Computing, International Society for Bayesian Analysis (Bayesian Computation Section Lifetime Member), International Statistical Institute (Elected Member)

Publication Officer for the ASA Section on Statistical Computing	2020-2023