Maryclare Griffin

Assistant Professor
University of Massachusetts Amherst
Department of Mathematics and Statistics
1446 Lederle Graduate Research Tower
Amherst, MA 01003

http://maryclare.github.io
maryclaregri@umass.edu

Employment

Department of Mathematics and Statistics 2019-Present
University of Massachusetts Amherst
Assistant Professor

Center for Applied Mathematics 2018-2019
Cornell University
Postdoctoral Associate

Education

University of Washington, Seattle, WA 2013-2018
Ph.D., Statistics
Advisor: Peter Hoff, Thesis Title: "Model-Based Penalized Regression"

Duke University, Durham, NC 2016-2018
Visiting Ph.D. Student

University of Chicago, Chicago, IL 2008-2012
B.A., Economics with Honors, Statistics

Publications and Manuscripts

Submitted/In Revision

Kim D., Griffin M., Nolan D., Kitts J., Gile K. G. "Bayesian Resolution of Discrepant Self-Reported Network Ties."
Submitted, available on request.

Griffin, M., "Review and Demonstration of a Mixture Representation for Simulation from Densities Involving Sums of Powers."
Submitted.

Griffin, M., Samorodnitsky, G., Matteson, D. S. "Likelihood Inference for Possibly Non-Stationary Processes via Adaptive Overdifferencing."
Minor revisions requested.

Published

Winn-Nuñez, E. T., Griffin, M., Crawford, L. (2024) "A Simple Approach for Local and Global Variable Importance in Nonlinear Regression Models."
Computational Statistics and Data Analysis. 194:1-18

Griffin, M. (2024) "Improved Pathwise Coordinate Descent for Power Penalties."
Journal of Computational and Graphical Statistics. 33(1):310-315.

Griffin, M., Hoff, P. D. (2024) "Structured Shrinkage Priors."
Journal of Computational and Graphical Statistics. 33(1):1-14.
Selected for the ASA Editors' Choice Collection.

Gelsinger, M., Griffin, M., Matteson, D. S., Guinness, J. (2023) "Log-Gaussian Cox Process Modeling of Large Spatial Lightning Data using Spectral and Laplace Approximations."
Annals of Applied Statistics. 17(3): 2078-2094.

Zhang, W., Griffin, M., Matteson, D. S. (2023) "Modeling a Nonlinear Biophysical Trend Followed by Long-Memory Equilibrium with Unknown Change Point."
Annals of Applied Statistics. 17(1):860-880.

Griffin, M., Hoff, P. D. (2020) "Testing Sparsity-Inducing Penalties."
Journal of Computational and Graphical Statistics. 29(1):128-139.

Griffin, M., Hoff, P. D. (2019) "Lasso ANOVA Decompositions for Matrix and Tensor Data."
Computational Statistics and Data Analysis. 137:181-194

Griffin, M., Gile K. J., Fredriksen-Goldsen K., Handcock M. S., Erosheva E. A. (2018) "A simulation-based framework for assessing the feasibility of respondent-driven sampling for estimating characteristics in populations of lesbian, gay and bisexual older adults."
Annals of Applied Statistics. 12(4):2252-2278.

Holstein, C., Griffin, M., Hong J., Sampson P. (2015) "A Statistical Method for Determining and Comparing Limits of Detection of Bioassays."
Analytical Chemistry. 87(19):9795-9801.

Software

Griffin, M. (2018) `gnorm`: Generalized Normal/Exponential Power Distribution for `R`, version 1.0.0.

Funding

National Science Foundation Division of Undergraduate Education S-STEM Award (#2130262). Direct $1,381,459, Indirect $118,315.	2022-2028
National Science Foundation Division of Mathematical Sciences Statistics Research Award (#2113079). Direct $94,033, Indirect $55,949.	2021-2024
Mutual Mentoring Team Grant. Direct $5,502.	2020
National Science Foundation Graduate Research Fellowship	2013-2018
University of Washington, Blalock Fellowship	2013

Honors and Awards

College of Natural Sciences Faculty Peer Mentoring Award	2024
NSF Advance Fellow	2023-2024
Institute for Social Science Research (ISSR) Scholar	2021-2022
National Science Foundation Graduate Research Fellowship	2013-2018
Frontiers in Forecasting Best Poster Prize	2018
Women in Statistics and Data Science Conference Travel Award	2016
Survey Research Methods, Government Statistics, and Social Statistics Sections Student Paper Award	2015
University of Chicago, Goldberg Award in Economics	2012

Teaching

University of Massachusetts Amherst†

Instructor for STAT 540/STAT 630: Statistical Learning F2024

Instructor for STAT 535: Statistical Computing F2023

Instructor for STAT 525: Regression Analysis S2020, F2020, S2021, S2023

Instructor for STATISTC 697TS: Time Series Analysis and Applications S2020, S2022

Cornell University

Instructor for STSCI4550/ILRST4550/ORIE5550: Applied Time Series Analysis S2019

University of Washington

Teaching Assistant for CSS&S564: Bayesian Statistics S2016

Presentations

Invited Talks

Bayesian Generalized Linear Models for Correlated Data with Fewer Latent Variables.
Western North American Region of The International Biometric Society Conference. Fort Collins, CO; June 2024.

A Simple Approach for Local and Global Variable Importance in Nonlinear Regression Models.
New England Statistics Symposium, Storrs CT; June 2024.

Testing and estimation for sparsity-inducing power penalties.
Dartmouth College, Hanover NH; February 2024.

Testing and estimation for sparsity-inducing power penalties.
Rutgers University, New Brunswick, NJ; November 2023.

Log-Gaussian Cox Process Modeling of Large Spatial Lightening Data using Spectral and Laplace Approximations.
The EnviBayes Workshop on Complex Environmental Data, Colorado State University, Fort Collins, CO; September 2023.

Log-Gaussian Cox Process Modeling of Large Spatial Lightening Data using Spectral and Laplace Approximations.
Western North American Region of The International Biometric Society Conference. Anchorage, AK; June 2023.

Log-Gaussian Cox Process Modeling of Large Spatial Lightening Data using Spectral and Laplace Approximations.
New England Statistics Symposium, Boston, MA; June 2023.

Estimation of Possibly Non-Stationary Long Memory Processes via Adaptive Overdifferencing.
Conference on Advances in Time Series Analysis with a Celebration of the 70th Birthday and Retirement of Professor Ruey Tsay, Chicago, IL; May 2023.

An Introduction to Model-Based Penalized Regression.
Department of Statistics, Colby College, Waterville, ME; April 2023.

Structured Shrinkage Priors.
Department of Statistics, University of Connecticut, Storrs, CT; April 2023.

† 500-numbered courses are regular upper-undergraduate level, 600-numbered courses are graduate topics courses.

Likelihood Inference for Possibly Non-Stationary Processes via Adaptive Overdifferencing.
Department of Mathematics and Statistics,
Washington University, Virtual; March 2022.

Likelihood Inference for Possibly Non-Stationary Processes via Adaptive Overdifferencing.
Booth School of Business, Econometrics and Statistics Colloquium,
University of Chicago, Chicago, IL; October 2021.

Likelihood Inference for Possibly Non-Stationary Processes via Adaptive Overdifferencing.
New England Statistics Symposium, Providence, RI; October 2021.

Bayesian generalized linear models for correlated data with fewer latent variables.
CMStatistics, Virtual; December 2020.

Structured Shrinkage Priors.
Department of Statistical Science,
University College London, Virtual; November 2020.

Estimation of Possibly Non-Stationary Long Memory Processes via Adaptive Overdifferencing.
Paul H. Chook Department of Information Systems and Statistics,
Baruch College, Virtual; October 2020.

Estimation of Possibly Non-Stationary Long Memory Processes via Adaptive Overdifferencing.
Department of Mathematics,
University of Maryland, Virtual; October 2020.

A review of the computational aspects of penalized regression from a model-based perspective.
Department of Mathematics and Statistics, Applied Mathematics and Computation Seminar,
University of Massachusetts Amherst, Amherst, MA; February 2020.

Estimation for possibly non-stationary long memory processes.
Department of Biostatistics and Epidemiology,
University of Massachusetts Amherst, Amherst, MA; January 2020.

Estimation for possibly non-stationary long memory processes.
Computational Social Science Institute,
University of Massachusetts Amherst, Amherst, MA; November 2019.

An Introduction to Model-Based Penalized Regression.
Department of Mathematics and Statistics,
Amherst College, Amherst, MA; November 2019.

Too Many Predictors, Too Few Responses.
Research Bytes @ MassMutual,
Western Mass Statistics and Data Science, Amherst, MA; November 2019.

Structured Shrinkage Priors.
Department of Statistics,
George Mason University, Fairfax, VA; September 2019.

Model-Based Penalized Regression.
Department of Mathematics and Statistics,
University of Massachusetts Amherst, Amherst, MA; December 2018.

Testing Sparsity-Inducing Penalties.
Department of Biostatistics and Computational Biology Departmental Colloquia,
University of Rochester, Rochester, NY; October 2018.

Beyond the Bayesian Lasso: A Review of Continuous Shrinkage Priors.
Joint Statistical Meetings, Vancouver, WA; August 2018.

Invited Panels

Wrapping Up and Moving On: Advice for the Final Stretch of Graduate School.
Women in Statistics and Data Science Conference, Virtual; October 2021.

Navigating the World of Data Science.
Voices of Data Science Conference, Virtual; February 2021.

Using Data to Inform the ASA's Policy on Sexual Misconduct.
International Conference on Health Policy Statistics, San Diego, CA; January 2020.

Contributed/Topic Contributed Talks

Bayesian Generalized Linear Models for Correlated Data with Fewer Latent Variables.
Joint Statistical Meetings,
Portland, OR; August 2024.

Estimation of Possibly Non-Stationary Long Memory Processes via Adaptive Overdifferencing.
Joint Statistical Meetings,
Toronto, ON; August 2023.

Generalized Structured Shrinkage Priors Using Correlated Scales.
Joint Statistical Meetings, Virtual; August 2021.

Structured Shrinkage Priors.
Joint Statistical Meetings, Denver, CO; August 2019.

Long Memory Time Series Methods for the Analysis of Electronic Impedance Sensing Data.
Western North American Region of The International Biometric Society Conference.
Portland, OR; June 2019.

Structured Shrinkage Priors.
New England Statistics Symposium, Hartford, CT; May 2019.

Model-Based Testing of Sparsity Inducing Penalties.
Western North American Region of The International Biometric Society Conference.
Santa Fe, NM; June 2017.

Using Hierarchical Models to Understand P300-Wave–Based Brain-Computer Interface Performance Among Disabled Adults.
Joint Statistical Meetings, Chicago, IL; August 2016.

Assessing Feasibility of Respondent-Driven Sampling Using Pilot Data with an Application to Older Lesbian, Gay, and Bisexual Adults.
Joint Statistical Meetings, Seattle, WA; August 2015.

Invited Lightning Session

Log-Gaussian Cox Process Modeling of Large Spatial Lightning Data using Spectral and Laplace Approximations.
American Geophysical Union Fall Meeting, Virtual; December 2021.

Poster Presentations

Testing Sparsity-Inducing Penalties.
21st Meeting of New Researchers in Statistics and Probability.
Fort Collins, CO, August 2019.

Pathwise Coordinate Descent for Power Penalized Regression.
Non-convex Optimization and Deep Learning Workshop.
Boston, MA, January 2019.

Testing Sparsity-Inducing Penalties.
Bridging the Divide, Machine Learning in Medicine Symposium.
Ithaca, NY, September 2018.

Testing Sparsity-Inducing Penalties.
Cornell Day of Statistics.
Ithaca, NY, September 2018.

Testing Sparsity-Inducing Penalties.
Frontiers in Forecasting, Institute for Mathematics and Its Applications.
Minneapolis, MN, February 2018.

Sparse, Structured Matrix Estimation via ℓ_1 Penalization of ANOVA Decomposition.
Opening Workshop of the 2016-2017 Program on Optimization, SAMSI.
Research Triangle Park, NC, September 2016.

Postdoctoral and Student Advising

Dissertation Advisor

Yilin Zhu	2024-Present
Ning Duan	2024-Present

Oral Exam Chair

Thomas Robacker	Expected Fall 2024
Ning Duan	Summer 2024
Yilin Zhu	Fall 2023

Honors Thesis Chair

Maya Jacob	Fall 2024-Present
Vutjiya Senabunyarithi	Fall 2024-Present
Gabrielle Walczak	Summer 2023-Spring 2024

Oral Exam Committee Member

Yun Jiang, Department of Mathematics and Statistics	Spring 2023

Doctoral Dissertation Committee Member

Gabriel Lewis, Department of Economics	2022-2024
Nutcha Wattanachit, Department of Biostatistics and Epidemiology	2022-2023
Dongah Kim, Department of Mathematics and Statistics	2021-2022

Independent Studies

Gabrielle Walczak, UMass Amherst	Fall 2023, Spring 2024

Undergraduate Research Mentoring

Natalie Pacheco (S-STEM REU), UMass Amherst	Summer 2024
Trung Do (Department REU), UMass Amherst	Summer 2023
Anh Pham Tran (Department REU), UMass Amherst	Summer 2023
Vutjiya Senabunyarithi (Lee SIP REU), UMass Amherst	Summer 2023
Gabrielle Walczak (NSF REU), UMass Amherst	Summer 2023
Dayishaa Daga (Department REU), Mount Holyoke College	Summer 2021
Thyra Tuttle, UMass Amherst	Spring 2021

Assigned Visiting Assistant Professor Research Mentor 2020-2024

Service and Affiliations

Department of Mathematics and Statistics, University of Massachusetts Amherst

Undergraduate Affairs Committee	2023-2025
Statistics & Probability Seminar Planning Committee	2019-2020, 2021-2022, 2023-2025
Qualifying Exam Committee Member	Spring 2020-Spring 2022, Spring 2023-Fall 2024
Major Advisor for ∼10 Students/Year	Fall 2020-Spring 2022, Spring 2023-Spring 2025
Anti-Racism Committee	2021-2025
Onboarding Committee	2023-2024
Statistics Faculty Search Committee (Elected)	Spring 2023, 2023-2024
Bylaws Committee	2022-2023
Statistics Graduate Admissions Committee	2021-2022
Visiting Assistant Professor Faculty Search Committee (Elected)	2020-2021
Five College Statistics Liaison	2020-2021
Climate Committee	2019-2020

University of Massachusetts Amherst

Early Career Faculty Interview Committee for Associate Dean for Development	2021-2022
Computational Social Science Institute (CSSI) Steering Committee	2021-2022

Committee of Presidents of Statistical Societies (COPSS)

COPSS Diversity, Equity, and Inclusion (DEI) Task Force	2020-2021

American Statistical Association

Biometrics Section Continuing Education Chair	2024-2025
SLDS Section Student Paper Award Committee Member	2021-2024
ASA Task Force on Sexual Harassment and Assault	2018-2019

New England Statistics Society

Student Competition Judge	2023-2024

University of Washington

StatCom Member	2016-2018
Graduate Student Representative	2014-2015
Graduate and Professional Student Senate Representative	2013-2014

Workshops and Conferences

Topic Contributed Session Organizer, "Innovative Adaptive Statistical Models for Time Series Data" and "Statistical Applications and Methods in Public Health: Highlights from Recent Mental, Reproductive, Maternal, and Adolescent Health Research with Policy Relevance"

Joint Statistical Meetings, Portland, OR; August 2024.

Invited Session Organizer, "Finding and Plugging Leaks in the Pipeline to (Bio)Statistics Careers."

Western North American Region of The International Biometric Society Conference, Fort Collins, CO; June 2024.

Invited Session Organizer, "Beyond Independent and Identically Distributed: Models for Non-Standard Data"

New England Statistics Symposium, Storrs, CT; June 2024.

Invited Panel Organizer, "Women in the Statistics Workforce: Perspectives from Academia and Industry "

Women in Statistics and Data Science Conference, Seattle, WA; October 2023.

Topic Contributed Session Organizer, "Bayesian Computation for Streaming, Shapes, and Selection"

Joint Statistical Meetings, Toronto, ON; August 2023.

Invited Session Organizer, "Advances in Scalable Regression Models for Complex Data."

Western North American Region of The International Biometric Society Conference, Anchorage, AK; June 2023.

Invited Session Organizer, "Spatial Statistics in a Changing World," "Innovating in Causal Inference," and "Cutting Edge Statistical Methods for Genetics and Genomics Data"

New England Statistics Symposium, Boston, MA; June 2023.

Invited Session Organizer and Chair, "Modern Solutions to Pressing Problems."

CMStatistics, London, UK (Hybrid); December 2021.

Invited Session Organizer, "Innovations in exact and approximate time series analysis."

New England Statistics Symposium, Providence RI (Hybrid); October 2021.

Invited Session Organizer, "Contemporary Mixed Model Methodology and Applications."

Joint Statistical Meetings, Philadelphia, PA; August 2020.

Invited Session Organizer, "Modern and Practical Solutions to Difficult High Dimensional Regression Problems."

Joint Statistical Meetings, Denver, CO; August 2019.

Invited Session Organizer, "Cutting Edge Methods for Modern Problems in Statistical Genetics and Genomics"

Western North American Region of The International Biometric Society Conference, Portland, OR; June 2019.

Reviewer

Annals of Applied Statistics
Applied Stochastic Models in Business and Industry
Bayesian Analysis
Biometrika
Biostatistics
Journal of the American Statistical Association, Theory and Methods
Journal of Computational and Graphical Statistics
Journal of Econometrics
Journal of the Royal Statistical Society, Series A
NeuroImage
Observational Studies
The R Journal
Stat
Statistica Sinica
Statistics Surveys
Technometrics
NSF 2020-2021, 2023-2024

Associate Editor

Journal of Computational and Graphical Statistics
Data Science in Science

Member

American Statistical Association
Institute of Mathematical Statistics

Caucus for Women in Statistics
International Biometric Society