Joshua P. French

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Research Interests

Spatial statistics, exceedance set identification, extreme value theory, environmental and ecological applications, public health.

Education

2009	Ph.D.	Statistics	Colorado State University, Fort Collins
2005	M.S.	Statistics	Colorado State University, Fort Collins
2003	B.A.	Mathematics	Point Loma Nazarene University

Professional Experience

2018–present	Associate Professor, Department of Mathematical and Statistical Sciences, University of Colorado Denver
2010–2014	Visiting Scientist, National Center for Atmospheric Research, Boulder, CO
2009–2018	Assistant Professor, Department of Mathematical and Statistical Sciences, University of Colorado Denver
2003–2009	Teaching/Research Assistant, Department of Statistics, Colorado State University, Fort Collins

Publications

Refereed Publications

Bents, S. J., Powell, C., French, J. P., Prevots, D. R., and Mercaldo, R. A. (2025), "Factors predicting incidence of nontuberculous mycobacteria in an era of climate change and altered ecosystems in the United States", *Science of The Total Environment*, 999: 180338. doi: 10.1016/j.scitotenv.2025.180338.

Lipner, E. M., Powell, C., Nelson, S., Fintzi, J. R., French, J. P., Mercaldo, R. A., Falkinham, J. O., and Prevots, D. R. (2025), "The risk of NTM pulmonary infection associated with trace metal exposure from public distribution system water in the United States", *Journal of Exposure Science & Environmental Epidemiology* (). doi: 10.1038/s41370-025-00807-w.

Dassanayake, S., and French, J. P. (2024), "Detecting Disease Outbreak Regions Using Multiple Data Streams", *Statistics in Biosciences*, 16/1: 142–64. doi: 10.1007/s12561-023-09387-5.

French, J. P., Kokoszka, P. S., and McGinnis, S. (2024), "Spatiotemporal functional permutation tests for comparing observed climate behavior to climate model projections", *Advances in Statistical Climatology, Meteorology and Oceanography*, 10/2: 123–41. doi: `10.5194/ascmo-10-123-2024`.

French, J. P., Meysami, M., and Lipner, E. M. (2024), "Prefiltered component-based greedy (Pre-CoG) scan method", *Statistics in Medicine*, 43/21: 4113–30. doi: `10.1002/sim.10170`.

Lipner, E. M., French, J. P., Mercaldo, R. A., Nelson, S., Zelazny, A. M., Marshall, J. E., Strong, M., Falkinham, J. O., and Prevots, D. R. (2023), "The risk of pulmonary NTM infections and water-quality constituents among persons with cystic fibrosis in the United States, 2010–2019", *Environmental Epidemiology*, 7/5. doi: `10.1097/EE9.0000000000000266`.

Mercaldo, R. A., Marshall, J. E., Cangelosi, G. A., Donohue, M., Falkinham, J. O., Fierer, N., French, J. P., Gebert, M. J., Honda, J. R., Lipner, E. M., Marras, T. K., Morimoto, K., Salfinger, M., Stout, J., Thomson, R., and Prevots, D. R. (2023), "Environmental risk of nontuberculous mycobacterial infection: Strategies for advancing methodology", *Tuberculosis*, 139: 102305. doi: `10.1016/j.tube.2023.102305`.

Mercaldo, R. A., Marshall, J. E., Prevots, D. R., Lipner, E. M., and French, J. P. (2023), "Detecting clusters of high nontuberculous mycobacteria infection risk for persons with cystic fibrosis – An analysis of U.S. counties", *Tuberculosis*, 138: 102296. doi: `10.1016/j.tube.2022.102296`.

Meysami, M., French, J. P., and Lipner, E. M. (2023), "Flexible-Elliptical Spatial Scan Method", *Mathematics*, 11/17. doi: `10.3390/math11173627`.

French, J. P., Meysami, M., Hall, L. M., Weaver, N. E., Nguyen, M. C., and Panter, L. (2022), "A comparison of spatial scan methods for cluster detection", *Journal of Statistical Computation and Simulation*, 92/16: 3343–72. doi: `10.1080/00949655.2022.2065676`.

Lipner, E. M., Crooks, J. L., French, J., Strong, M., Nick, J. A., and Prevots, D. R. (2022), "Nontuberculous mycobacterial infection and environmental molybdenum in persons with cystic fibrosis: a case–control study in Colorado", *Journal of Exposure Science & Environmental Epidemiology*, 32/2: 289–94. doi: `10.1038/s41370-021-00360-2`.

Lipner, E. M., French, J. P., Falkinham, J. O., Crooks, J. L., Mercaldo, R. A., Henkle, E., and Prevots, D. R. (2022), "Nontuberculous Mycobacteria Infection Risk and Trace Metals in Surface Water: A Population-based Ecologic Epidemiologic Study in Oregon", *Annals of the American Thoracic Society*, 19/4, PMID: 34582742: 543–50. doi: `10.1513/AnnalsATS.202101-053OC`.

Lipner, E. M., French, J. P., Nelson, S., Falkinham III, J. O., Mercaldo, R. A., Blakney, R. A., Daida, Y. G., Frankland, T. B., Messier, K. P., Honda, J. R., Honda, S., and Prevots, D. R. (2022), "Vanadium in groundwater aquifers increases the risk of MAC pulmonary infection in O'ahu, Hawai'i", *Environmental Epidemiology*, 6/5: e220. doi: `10.1097/EE9.0000000000000220`.

French, J. P., and Kokoszka, P. S. (2021), "A sandwich smoother for spatio-temporal functional data", *Spatial Statistics*, 42, Towards Spatial Data Science: 100413. doi: `10.1016/j.spasta.2020.100413`.

Im, U., Tsigaridis, K., Faluvegi, G., Langen, P. L., French, J. P., Mahmood, R., Manu, T., Salzen, K. von, Thomas, D. C., Whaley, C. H., Klimont, Z., Skov, H., and Brandt, J. (2021), "Present and future aerosol impacts on Arctic climate change in the GISS-E2.1 Earth system model", *Atmospheric Chemistry and Physics Discussions*, 2021: 1–44. doi: `10.5194/acp-2020-1296`.

Meysami, M., French, J. P., and Lipner, E. M. (2021), "Estimating the optimal population upper bound for scan methods in retrospective disease surveillance", *Biometrical Journal*, 63/8: 1633–51. doi: `10.1002/bimj.202000273`.

Lipner, E. M., French, J., Bern, C. R., Walton-Day, K., Knox, D., Strong, M., Prevots, D. R., and Crooks, J. L. (2020), "Nontuberculous Mycobacterial Disease and Molybdenum in Colorado Watersheds", *International Journal of Environmental Research and Public Health*, 17/11. doi: `10.3390/ijerph17113854`.

French, J., Kokoszka, P., Stoev, S., and Hall, L. (2019), "Quantifying the risk of heat waves using extreme value theory and spatio-temporal functional data", *Computational Statistics & Data Analysis*, 131, High-dimensional and functional data analysis: 176–93. doi: `10.1016/j.csda.2018.07.004`.

Hall, L. M., and French, J. P. (2019), "A modified CUSUM test to control postoutbreak false alarms", *Statistics in Medicine*, 38/11: 2047–58. doi: `10.1002/sim.8088`.

French, J. P. (2017), "autoimage: Multiple heat maps for projected coordinates", *The R journal*, 9/1: 284–97, `https://journal.r-project.org/archive/2017/RJ-2017-025/index.html`.

French, J. P., McGinnis, S., and Schwartzman, A. (2017), "Assessing NARCCAP climate model effects using spatial confidence regions", *Advances in Statistical Climatology, Meteorology and Oceanography*, 3/2: 67–92. doi: `10.5194/ascmo-3-67-2017`.

Lipner, E. M., Knox, D., French, J., Rudman, J., Strong, M., and Crooks, J. L. (2017), "A geospatial epidemiologic analysis of nontuberculous mycobacterial infection: an ecological study in Colorado", *Annals of the American Thoracic Society*, 14/10: 1523–32. doi: `10.1513/AnnalsATS.201701-081OC`.

Pansing, E. R., Tomback, D. F., Wunder, M. B., French, J. P., and Wagner, A. C. (2017), "Microsite and elevation zone effects on seed pilferage, germination, and seedling survival during early whitebark pine recruitment", *Ecology and Evolution*, 7/21: 9027–40. doi: `10.5194/ascmo-3-67-2017`.

Dassanayake, S., and French, J. P. (2016), "An improved CUSUM-based procedure for prospective disease surveillance for count data in multiple regions", *Statistics in Medicine*, 35/15: 2481–664. doi: `10.1002/sim.6899`.

French, J. P., and Hoeting, J. A. (2016), "Credible regions for exceedance sets of geostatistical data", *Environmetrics*, 27/1: 4–14. doi: `10.1002/env.2371`.

French, J. P. (2014), "Confidence regions for the level curves of spatial data", *Environmetrics*, 25/7: 498–512. doi: `10.1002/env.2295`.

French, J. P., and Davis, R. A. (2013), "The asymptotic distribution of the maxima of a Gaussian random field on a lattice", *Extremes*, 16/1: 1–26. doi: `10.1007/s10687-012-0149-y`.

French, J. P., and Sain, S. R. (2013), "Spatio-temporal exceedance locations and confidence regions", *The Annals of Applied Statistics*, 7/3: 1421–49. doi: `10.1214/13-AOAS631`.

O'Neill, L. N. P., Markward, M. J., and French, J. P. (2012), "Predictors of Graduation among College Students with Disabilities", *Journal of Postsecondary Education and Disability*, 25/1: 21–36, `https://files.eric.ed.gov/fulltext/EJ970017.pdf`.

Non-Refereed Publications

French, Joshua P. Detecting a Time Series Change Point. *Rcpp Gallery*. `http://gallery.rcpp.org/articles/bayesian-time-series-changepoint/`.

French, Joshua P. How to Use the autoimage package. https://cran.r-project.org/web/packages/autoimage/vignettes/autoimage.html.

French, Joshua P. Producing heat maps with autoimage and ggplot2. https://cran.r-project.org/web/packages/autoimage/vignettes/ggplot2-comparison.html.

French, Joshua P. Recreating rmultinom and rpois with Rcpp. https://gallery.rcpp.org/articles/recreating-rmultinom-and-rpois-with-rcpp/.

French, Joshua P. Demonstration of **smerc** package. https://cran.r-project.org/web/packages/smerc/vignettes/smerc_demo.html.

French, Joshua P. Demonstration of the **smacpod** package. https://cran.r-project.org/web/packages/smacpod/vignettes/smacpod_demo.html.

Books

French, Joshua P. *A Progressive Introduction to Linear Models (draft).* https://jfrench.github.io/LinearRegression/

Teaching

University of Colorado Denver

MATH 2830: Introductory Statistics

MATH 3376: Data Wrangling & Visualization

MATH 4027/5027: Topics in Mathematics (Applied Spatial Statistics)

MATH 4027/5027/7826: Topics in Mathematics (Statistical Methods for Spatial Data)

MATH 4820/5320: Introduction to Mathematical Statistics

MATH 4830/5830: Applied Statistics

MATH 4387/5387: Applied Regression Analysis

MATH 5310: Probability

MATH 5320: Statistical Inference

MATH 6393: Introduction to Bayesian Statistics

MATH 6384: Spatial Data Analysis

MATH 7393: Bayesian Statistics

MATH 7826: Topics in Probability and Statistics (Theoretical Statistics)

Colorado State University

STAT 101: Activity Based Statistics

STAT 110: Statistical Thinking: Concepts and Applications

STAT 201: General Statistics (Recitation)

STAT 301: Introduction to Statistical Methods

STAT/ERHS 307: Introduction to Biostatistics

STAT 340: Multiple Regression Analysis

STAT 650: Design and Linear Modeling II (Distance Coordinator)

Presentations at Meetings and Seminars

Invited Presentations

November 7, 2025. University of Tulsa, Tulsa, OK. *A Computationally Efficient Poisson GLM Spatial Scan Method.*

June 9, 2024. 2024 WNAR/IMS/Graybill Annual Meeting, Fort Collins, CO. *Challenges, Opportunities, and Mentorship Panel.*

August 10, 2023. JSM 2023, Toronto, Canada. *Confidence Regions for Excursion Sets of Massive Spatial Datasets.*

June 21, 2023. WNAR 2023, Anchorage, AK. *Data Visualization in Statistical Research.*

June 4, 2022. Environmental Risks for Nontuberculous Mycobacterial Lung Infections Symposium, Fort Collins, CO. Panelist for *Statistical and analytic challenges in estimating NTM risk.*

June 4, 2022. Environmental Risks for Nontuberculous Mycobacterial Lung Infections Symposium, Fort Collins, CO. *Spatial scan methods for disease cluster detection.*

September 14, 2016. Health Impacts from Climate Change, Aspen Global Change Institute, Aspen, CO. *Spatio-temporal Statistical Methods for Quickly Detecting Disease Outbreaks.*

May 5, 2016. Workshop on Dependance, Stability, and Extremes, Toronto, Canada. *Confidence Regions for Exceedance Sets of Large Geostatistical Data Sets.*

November 20, 2015. AMS Departmental Colloquium, Colorado School of Mines, Golden, CO. *Confidence Regions for Exceedance Sets of Large Geostatistical Data Sets.*

September 23, 2015. Group Meeting/NTM Genomics Meeting, National Jewish Health, Denver, CO. *Confidence Regions for Exceedance Sets of Geostatistical Data.*

November 21, 2014. Department of Statistics, University of Michigan, Ann Arbor, MI. *Credible Regions for Exceedance Sets of Geostatistical Data.*

August 6, 2014. Joint Statistical Meetings, Boston, CO. *Detecting Exceedance Regions for Spatial and Spatio-Temporal Data.*

May 7, 2014. Research Seminar, Department of Biostatistics, University of Colorado Denver (Anschutz Medical Campus), Aurora, CO. *Confidently Identifying Exceedance Regions for Spatial Data.*

December 4, 2013. Faculty Colloquium, University of Colorado Denver, Denver, CO. *Confidently Identifying Exceedance Regions for Spatial Data.*

March 12, 2013. Department of Statistics and Probability Colloquium, Michigan State University, East Lansing, MI. *Spatio-Temporal Exceedance Locations and Confidence Regions.*

June 19, 2012. WNAR-Graybill 2012 Conference, Fort Collins, CO. *Spatial Inference for Climate Change.*

April 17, 2012. Denver R Users Group, Denver, CO. *Bayesian Data Analysis in R.*

April 9, 2012. Data Assimilation Seminar, University of Colorado Denver, Denver, CO. *Spatio-Temporal Exceedance Locations and Confidence Regions.*

June 14, 2011. Research Colloquium, North American Regional Climate Assessment Program (NARCCAP), Boulder, CO. *Spatio-Temporal Exceedance Locations and Confidence Regions.*

November 13, 2009. Fall Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Aurora, CO. *Extremes of Gaussian Random Fields.*

February 17, 2009. University of Northern Colorado, Greeley, CO. *Constructing Confidence Regions for Level Curves.*

February 12, 2009. Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC. *Constructing Confidence Regions for Level Curves.*

February 9, 2009. University of Colorado Denver, Denver, CO. *Constructing Confidence Regions for Level Curves.*

February 3, 2009. Arizona State University, Tempe, AZ. *Constructing Confidence Regions for Level Curves.*

Contributed Presentations

May 30, 2025. Colorado OER Conference, Greeley, CO. *Principles and production of accessible course materials.*

November 1, 2025. Data Science and Artificial Intelligence Symposium, Denver, CO. *Data Science Degree Programs at CU Denver.*

June 10, 2024. 2024 WNAR/IMS/Graybill Annual Meeting, Fort Collins, CO. *Prefiltered Component-based Greedy (PreCoG) Scan Method.*

May 17, 2024. Colorado OER Conference, Denver, CO. *Our Journey to a Z-degree Mathematics BS at CU Denver.* Co-presented with Adam Spiegler and Stephen Hartke.

April 19, 2024. Rocky Mountain MAA Meeting, Colorado Springs, CO. *Immersive mathematics through interactive OER notebooks.*

November 8, 2023. CU Denver Math/Stat Programming Workshop, Denver, CO. *The Need for Speed.*

October 13, 2023. Fall Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Aurora, CO. *Prefiltered Component-based Greedy (PreCoG) Scan Method.*

October 6, 2023. CU Denver Data Science Symposium, Denver, CO. *Quarto, Jupyter, and Interactive Data Analysis for Students.*

October 6, 2023. CU Denver Data Science Symposium, Denver, CO. *Data Science degree programs at CU Denver.*

May 25, 2023. Symposium on Data Science & Statistics, Saint Louis, MO. *A sandwich smoother for spatio-temporal functional data.* (poster)

May 24, 2023. Symposium on Data Science & Statistics, Saint Louis, MO. *A sandwich smoother for spatio-temporal functional data.*

May 19, 2023. 2023 Colorado OER Conference, Denver, CO. *Case Study of CU Denver Math & Stats Grant to Create an OER Computational Pathway* (with Troy Butler and Adam Spiegler).

August 9, 2022. Joint Statistical Meetings, Washington, D.C. *A Sandwich Smoother for Spatio-Temporal Functional Data.*

August 9, 2021. Joint Statistical Meetings (Virtual). *A Semiparametric Approach for Prediction with Large Geostatistical Data Sets.*

November 19, 2020. International Verification Methods Workshop Online. *Nonparametric Permutation Procedures for Evaluating Climate Model Accuracy.*

August 6, 2020. Joint Statistical Meetings (Virtual). *A Nonparametric Bootstrap Approach for Evaluating Climate Model Accuracy.*

July 28, 2019. Joint Statistical Meetings, Denver, CO. *A Sandwich Smoother for Spatio-Temporal Arrays and Time Series.*

July 11, 2019. Spatial Statistics 2019, Sitges, Spain. *A sandwich smoother for spatio-temporal functional data.*

June 25, 2019. Western North American Region of the International Biometric Society, Portland, OR. *Detecting emerging disease clusters with the cumulative sum of scan statistics.*

October 2, 2018. 4th Conference on Stochastic Weather Generators, Boulder, CO. *A sandwich smoother for spatio-temporal arrays and time series.*

July 31, 2018. Joint Statistical Meetings, Vancouver, BC. *Statistical Identification of Climate Hotspots.*

July 31, 2017. Joint Statistical Meetings, Baltimore, MD. *Assessing NARCCAP Climate Model Effects Using Spatial Confidence Regions.*

July 31, 2016. Joint Statistical Meetings, Chicago, IL. *Quantifying waves of extreme weather.*

August 11, 2015. Joint Statistical Meetings, Seattle, WA. *Confidence Regions for the Contour Lines of Spatial Data.*

June 10, 2013. The International Environmetrics Society, 2013, Anchorage, AK. *Confidently Identifying Exceedance Regions for Spatial Data.*

June 6, 2013. Spatial Statistics 2013, Columbus, OH. *Hotspot identification for massive spatial data sets.*

February 13, 2013. SAMSI/NCAR Workshop on Massive Datasets in Environment and Climate, Boulder, CO. *Identifying Hotspots for Massive Spatial Data Sets.* (poster)

November 2, 2012. Fall Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Aurora, CO. *Hotspot Identification for Massive Spatial Data Sets.*

August 1, 2012. Joint Statistical Meetings, San Diego, CA. *Hotspot Identification for Massive Spatial Data Sets.*

April 4, 2012. SIAM Conference on Uncertainty Quantification, Raleigh, NC. *Uncertainty and Differences in Global Climate Models.*

December 6, 2011. American Geophysical Union Fall 2011 Meeting, San Francisco, CA. *Assessing Climate Change and Comparing Climate Models Through Exceedance Regions* (poster).

August 3, 2011. Joint Statistical Meetings, Miami Beach, FL. *Spatio-Temporal Exceedance Locations and Confidence Regions* (topic-contributed).

October 15, 2010. Workshop on Environmetrics, National Center for Atmospheric Research, Boulder, CO. *Constructing Confidence Regions for Exceedance Locations of Spatio-Temporal Data* (poster).

June 25, 2009. Graybill VIII: 6th International Conference on Extreme Value Analysis, Fort Collins, CO. *Confidence Regions for Level Curves.*

June 12-16, 2007. Graybill Conference VI: Symposium on Applied Probability and Time Series in honour of Peter J. Brockwell, Fort Collins, CO. *Spatial Uncertainty in the Contour Lines of a Spatial Process* (poster).

September 7-9, 2005. Conference on Statistics for Aquatic Resources Monitoring, Modeling, and Management, Joint Program for DAMARS and STARMAP, Oregon State University, Corvallis, OR. *Review of Geostatistics in Aquatic Systems* (poster).

April 22, 2005. Spring Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Boulder, CO. *Exploring Spatial Correlation in Rivers.*

March 8, 2003. Southern California MAA Meeting, Harvey Mudd College, Claremont, CA. *The Study of Freshman Attrition Rates of Point Loma Nazarene University* (poster).

Media

Job Market Trends For Recent Grads, October 5th, 2020.
https://www.zippia.com/data-scientist-jobs/trends/

Honors

Colorado Department of Higher Education - Exceptional OER Project Award: The CU Denver Math Z-degrees team (Joshua P. French, Troy Butler, Adam Spiegler, Stephen Hartke, Yaning Liu, Pamela Whitten, Robert Rostermundt, Daniel Klie, Yongxia Kuang), May 2025

CLAS Excellence in Teaching Award, 2024

Boes Award for Excellence in Teaching, Department of Statistics, Colorado State University, May 2009

Best Student Presentation, Colorado-Wyoming ASA meeting, April 2005

Outstanding Senior Award for the Mathematics/Computer Science Department, Point Loma Nazarene University, 2003

Software

SpatialTools. An R package available through the Comprehensive R Archive Network (CRAN). Tools for spatial data analysis. Emphasis on kriging. Provides functions for prediction and simulation. Intended to be relatively straightforward, fast, and flexible. Uses C++ to increase speed of analysis.

ExceedanceTools. An R package available through the Comprehensive R Archive Network (CRAN). Tools for constructing confidence regions for exceedance sets and contour lines.

smacpod. An R package available through the Comprehensive R Archive Network (CRAN). Statistical Methods for the Analysis of Case-Control Point Data. Various statistical methods for analyzing case-control point data.

smerc. An R package available through the Comprehensive R Archive Network (CRAN). Statistical Methods for Regional Counts. Provides statistical methods for the analysis of areal data, with a focus on cluster detection.

gear. An R package available through the Comprehensive R Archive Network (CRAN). Geostatistical Analysis in R. Implements common geostatistical methods in a clean, straightforward, efficient manner.

autoimage. An R package available through the Comprehensive R Archive Network (CRAN). Multiple Heat Maps for Projected Coordinates. Functions for displaying multiple images with a color scale, i.e., heat maps, possibly with projected coordinates. The package relies on the base graphics system, so graphics are rendered rapidly.

cope. An R package available through the Comprehensive R Archive Network (CRAN). Coverage Probability Excursion (CoPE) Sets. Provides functions to compute and plot Coverage Probability Excursion (CoPE) sets for real valued functions on a 2-dimensional domain. CoPE sets are obtained from repeated noisy observations of the function on the entire domain. They are designed to bound the excursion set of the target function at a given level from above and below with a predefined probability. The target function can be a parameter in spatially-indexed linear regression. Support by NIH grant R01 CA157528 is gratefully acknowledged.

hero. An R package available through the Comprehensive R Archive Network (CRAN). An implementation of the sandwich smoother proposed in Fast Bivariate Penalized Splines by Xiao et al. (2012) <doi:10.1111/rssb.12007>. A hero is a specific type of sandwich. Dictionary.com (2018) describes a hero as: a large sandwich, usually consisting of a small loaf of bread or long roll cut in half lengthwise and containing a variety of ingredients, as meat, cheese, lettuce, and tomatoes.

api2lm. An R package available through the Comprehensive R Archive Network (CRAN). Simplifies aspects of linear regression analysis, particularly simultaneous inference. Additionally, supports *A Progressive Introduction to Linear Models* by Joshua French.

Professional Organizations

American Statistical Association, Colorado-Wyoming Chapter, Statistics and the Environment Section

International Biometric Society

Grants

Grant Support/Funded Grants

6/1/2005-7/31/2005, STARMAP: Applying Spatial and Temporal Modeling of Statistical Surveys to Aquatic Resources, Environmental Protection Agency (STAR-Program), R829095. Two months summer support. (N.S. Urquhart and R.A. Davis, Co-PIs)

6/1/2010-6/30/2011, Collaborative Research: The North American Regional Climate Change Assessment Program (NARCCAP)–Using Multiple GCMs and RCMs to Simulate Future Climates and Their Uncertainty, National Science Foundation, ATM-0534173. Two months summer support. (S. Sain, PI)

5/4/2012-5/3/2013, Recorded Online Lectures to Improve Student Experiences in Math Classes, CU Denver CLAS ACT Grant 2012-2013. $5,000. (Joshua French and Diana White, Co-PIs)

4/2013, CU Denver CLAS Dissemination Grant, Spring 2013. $475.

11/2013, CU Denver CLAS Dissemination Grant, Fall 2013. $1,000.

6/2014-5/2015, An Integrated Learning Approach for Interdisciplinary Training in Spatial Statistics, CU Denver CLAS ACT Grant 2014-2015. $5,000. PI: Joshua French.

6/2014, Improved Multiscale Prediction for Large Spatial Data Sets, CU Denver CRISPS Grant 2014-2015. $7,000. PI: Joshua French.

4/1/2015-3/31/202018, Multiple Testing Methods for Random Fields and High-Dimensional Dependent Data, National Institute of Health, R01 CA157528. Approximately three months summer support. PI: Armin Swartzman.

8/1/2015-7/31/2019, FRG: Collaborative Research: Extreme value theory for spatially indexed functional data, National Science Foundation, DMS - STATISTICS 1463642. Co-PIs: Piotr Kokoszka, Joshua French, Stilian Stoev, and Mark M. Meerschaert. $874,886. My portion: $129,326.

8/1/2019-7/31/2022, Collaborative Research: Spectral functional principal components on Abelian groups with applications to spatial functional data, National Science Foundation, DMS-STATISTICS. Co-PIs: Piotr Kokoszka, Joshua French. $200,000. My portion: $80,000.

6/1/2021-9/30/2022. Nontuberculous Mycobacterial Disease- ecologic risk modelling. NIH NIAID subcontract 75N93021P00818. PI: Joshua French. $24,046.

6/1/2022-5/31/2024. OER for the Creation of Interactive Computational Notebooks and a Computational Pathway in Mathematics and Statistics. Troy Butler, Joshua French, Adam Spiegler, Stephen Hartke, Yaning Liu, Gary Olson. Colorado Department of Higher Education. $109,050.

6/1/2023-5/31/2028. Research experience pathways in genomic data science (PATH-GDS) for underrepresented groups. National Science Foundation, National Human Genome Research Institute. Audrey Hendricks, Joshua French, Leslie Lange. $1,283,479.

8/2023, CU Denver CLAS Dissemination Grant, Fall 2023. $1,000.

6/1/2024-5/31/2025. Mathematics and Data Science Z-degrees at CU Denver. Colorado Department of Higher Education. Joshua P. French, Adam Spiegler, Stephen Hartke, Joseph Bilello, Pamela Whitten, Rob Rostermundt, Daniel Klie, Mike Kawai. $68,671.

2/1/2025-5/31/2026. Mathematics and Data Science Z-degrees at CU Denver. Colorado Department of Higher Education. Joshua P. French, Pamela Whitten, Rob Rostermundt, Yaning Liu, Farhad Pourkamali, Yongxia Kuang. $63,413.

Leadership and Service

Departmental

Undergraduate Studies Committee, 2010-2012, 2018-2020.

Graduate Studies Committee, 2012-2013, 2020-current

Merit Evaluation Committee, Spring 2012, Spring 2013, Spring 2017, Spring 2019, Fall 2022

Statistics Hiring Committee, Fall 2012-Spring 2013, Fall 2013-Spring 2014, Fall 2014-Spring 2015, Fall 2015-Spring 2016

Data Science Hiring Committee, Fall 2021-Spring 2022 (Chair)

Computational Math Hiring Committee, Fall 2016-Spring 2017

Budget Advisory Committee, Spring 2013

Executive Committee, Fall 2014-Summer 2016, Fall 2020-current

Statistics group research seminar organizer, Spring 2014, Fall 2014, Fall 2015, Spring 2016, Fall 2016

Linear Algebra Preliminary Exam Committee (Winter 2014, Summer 2014)

Website Redesign Committee (chair, Fall 2017-Spring 2018)

Director of Statistical Programs (Summer 2020-Spring 2023)

College/University

Interdisciplinary Design Committee for BS in Data Science (Spring 2019-Spring 2022)

CLAS Informational Technology Committee (2021-2023)

- Chair (April 2022-Spring 2023)

Director of Data Science (Spring 2023-current)

University Curriculum Committee (Fall 2025-current)

– Vice Chair (Fall 2025-current)

Educational Policies and Planning Committee (Fall 2025-current)

Professional

Conference Organization

June 4, 2022. Environmental Risks for Nontuberculous Mycobacterial Lung Infections Symposium, Fort Collins, CO.

Conference Session Chair

Statistical Analysis of Air Pollution Data, JSM Session 212880. Joint Statistical Meetings 2016, Chicago, IL.

May 2, 2016, 10:50a-12:10p. Workshop on Dependence, Stability, and Extremes, Toronto, Canada.

Interface of SWGs and Climate Models II. October 3, 2018, 1:00-2:15p. 4th Conference on Stochastic Weather Generators, Boulder, CO.

Statistical Models for Animal Behavior and Population Dynamics. August 1, 2019, 10:30a-12:15p. Joint Statistical Meetings 2019, Denver, CO.

Analyses in Ecology, Epidemiology, and Environmental Policy, JSM Session August 11, 2021, 3:30-5:20p. Joint Statistical Meetings 2021, Virtual.

OER in Mathematics Lunch Roundtable Discussion. May 17, 2024. Colorado OER Conference, Denver CO.

Journal Refereeing

Annals of Applied Statistics (2020, 2020)

Bernoulli (2012)

Biostatistics (2023)

Computers and Geosciences (2016)

Ecological Complexity (2020)

Extremes (2014)

Journal of Agricultural, Biological, and Ecological Statistics (2017)

Journal of Computational and Graphical Statistics (2015, 2018, 2022, 2024)

Journal of Data Science (2022)

Journal of the Korean Statistical Society (2012)

Journal of Multivariate Analysis (2014)

Journal of the Royal Statistical Society, Series B (2013)

Journal of the Royal Statistical Society, Series C (2009)

Journal of Statistical Software (2019)

Microbial Ecology (2023)

PLOS One (2016)

R Journal (2016, 2017)

Scandinavian Journal of Statistics (2023)

Spatial Statistics (2019, 2024)

Statistics & Probability Letters (2014)

Stochastic Environmental Research and Risk Assessment (2017)

The American Statistician (2021)

STAT (2024)

Book Refereeing

Oxford University Press

John Wiley & Sons

CRC Press (2019, x2)

Advising

Ph.D. Dissertation Advisor

2014-2016, Sesha Dassanayake: *New Spatio-temporal methods for prospective surveillance of disease outbreaks*

2017-2019, Lauren Hall: *Prospective disease surveillance with the CUSUM and spatial scan methods*

2019-2021, Mohammad Meysami: *Prediction and cluster detection for spatial data with application to public health and environmental sciences*

2016-2024, Lucas Ortiz

2022-current, Kayley Smiley

M.S. Thesis/Project Advisor

2012, Tiffany DeOrsey: *Spatial Analysis of Geochemical Data in Colorado*

2012, Catherine Durso: *An Analysis of the Use and Validity of Test-Based Teacher Evaluations Reported by the Los Angeles Times*

2012, Sesha Dassanayake: *A comparison of Bayesian GLMs applied to customer retention data*

2015, Takao Miller: *Predicting Insurance Policy Costs Using Linear Regression Models*

2015, Hannah Dauber: *Survival Analysis, A Look at Marriage Data*

2016, Duong Than (co-advised with Stephen Hartke): *Comparing Spatial Scanning Methods and a Connection to Graph Theory*

2016, Lucas Ortiz: *Comparing the performance of spatial prediction methods for large datasets*

2017, Jason Fagerness: *A Comparison of Machine Learning Algorithms Applied to Content-based Filtering as used in Recommender Systems*

2018, Lawrence Pelo: *Weighted Runs Created 3 (wRC3): Adjusting wRC+ for Competitive Difficulty*

2018, Hossein Zarrini (co-advised with Erin Austin): *King County Home Sales*

2021, Lisa Beatty: *Days On Market*

2021, Heath Lancaster: *The Importance of Parameter Specification in Bayesian ARMA Models*

2021-2022, Dongdong Lu: *A comparison of the frequentist and Bayesian spatial scan statistic in disease outbreak monitoring*

2021-2022, Alex Hegg: *FWER-controlling clustering identification based on log relative risk for case-control point data*

2021-2022, Max McGrath (co-advised with Nichole Carlson): *An Application of Spatial Filtering to Populations of Lung CT Images*

2022, Joseph Director: *NFL Play Call Prediction Using Sequential Neural Networks*

2021-2022, Collin Powell: *Survey of Intensity Function Estimation Methods for Spatial Statistics*

2022, Ellie Turner (co-advised with Erin Austin): *Methods in Portfolio Optimization and Their Applications*

2022-2023, Kayley Smiley: *Border Analysis for Spatial Scan Methods*

2023-2024, Anthony Jacoby: *A comparison of clustering methods applied to stock market data*

2023-2024, Samuel Budoff: *Neural Net Derived Gene Targets For The Nervous System, & Nervous System Derived Hierarchies For The Neural Net*

2024-2025, Shane Ridoux: *A Bayesian Detection of Epistasis Using Summarized Synergy Networks in Islet Autoimmunity*

2025, Adam Mauro: *Reversible Jump Markov Chain Monte Carlo: Explained and Applied*

B.S. Honors Project Advisor

2014, Lauren Hall: *An application of GLMs to predicting whether high school students will graduate on-time*

2014, Melissa Ly: *Serial correlation and collinearity walk into a bar…*

2021, Caitlin West: *Unusual cluster detection of COVID-19 cases in the US*

Statistics Certificate Advisor

2017, David Heisler (undergraduate): *Linear Regression of Property Listing Prices in Denver*

2019, Jiayi You (undergraduate): *Who commits suicide?*

Ph.D. Committee Member

2016, Daniel Yorgov (chair)

2019, Mengjie Yao (chair)

2019, Subrata Paul (chair)

2020, Emilieigh Williams,

2021, Wenjuan Zhang (chair)

2021, James Haley

2021, Tian Yu Yen (chair)

2021, Minh Nguyen

2021, Nicholas Weaver

2024, Megan Duff

2025, Samuel Budoff

2024, Marcel Roux

current, Travis Smiley

current, Colin Furey

current, Matthew Knodell

current, Jonathon Hirschi (chair)

current, Courtney Franzen

M.S. Committee Member

2010, Mark Shin

2012, Rebecca Crepin

2012, Brittany Schaffer

2014, Carlo Morales

2015, Ana Kenney

2015, Alec McQuilkin

2016, Wayne Watson

2018, Tian Yu Yen (chair)

2018, Danielle Toten,

2020, Jessica Murphy,

2021, Megan Duff

2021, Alexandra Rotondo

2021, Nick Koprowitz

2021, Andrei Matveev

2023, Adelle Price

2023, Travis Smiley

2023, Zachary Combs

2024, Nicole Ball

2024, Jonathon Hirschi

2024, Nicholas Rogers

2025, Emily Aaron

2025, Tristen Orndorff

2025, Kristine Kohlmeier

2025, Matthew Joel

B.S. Honors Project Committee Member

2016, Lawrence Pelo

Certificate Reader

2014, Masud Abdullah (graduate)

2014, Chad Jeffers (undergraduate)

2018, Na Zhou (undergraduate)

2018, Sam May (undergraduate)