DANIEL R. KOWAL

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ACADEMIC POSITIONS

Rice University   *July 2017 - present*
Dobelman Family Assistant Professor
Department of Statistics

Cornell University   *August 2012 - August 2017*
Graduate Research Assistant
Department of Statistical Science

EDUCATION

Cornell University   *August 2017*
Ph.D. Statistics, Department of Statistical Science
Minor in Finance

Co-Advisors: David Ruppert, Ph.D., and David S. Matteson, Ph.D.
GPA: 4.00/4.00

Cornell University   *August 2015*
M.S. Statistics, Department of Statistical Science

Washington University in St. Louis   *May 2012*
B.A. Mathematics, *summa cum laude*
Minors in Computer Science and Legal Studies

PUBLICATIONS

(* denotes PhD advisee, ** denotes undergraduate student, † denotes postdoctoral researcher)

In Preparation

· *Zito, J. and **Kowal, D.** The projected dynamic linear model for time series on the sphere. *Preprint anticipated May 2023.*

· **Kowal, D.** and **Wu, B. Monte Carlo inference for semiparametric Bayesian regression. *Preprint anticipated May 2023.*

· *Feldman, J. and **Kowal, D.** Bayesian Quantile Regression with Subset Selection: A Posterior Summarization Perspective. *Preprint anticipated June 2023.*

· *King, B. and **Kowal, D.** Data-Coherent Distributional Forecasting of Count Time Series via Point Forecast Combination. *Preprint anticipated June 2023.*

· *Sun, T. and **Kowal, D.** Ultra-efficient MCMC for Bayesian longitudinal functional data analysis. *Preprint anticipated June 2023.*

· **Kowal, D.** Regression with race or other categorical covariates: towards equity and interpretability. *Preprint anticipated July 2023.*

· †Lee, I. and **Kowal, D.** Constrained Bayesian models for equitable regression with categorical covariates. *Preprint anticipated August 2023.*

· *Liu, C., **Kowal, D.**, Doss-Gollin, J., and Vannucci, M. Dynamic Bayesian Functional Graphical Models with Application to Sea Surface Temperature Data. *Preprint anticipated August 2023.*

Submitted

· *Feldman, J. and **Kowal, D.** Nonparametric Copula Models for Multivariate, Mixed, and Missing Data. *arXiv:2210.14988.*
  - **Student Paper Award (Feldman):** Section on Bayesian Statistical Science (2023)
  - **Student Paper Award (Feldman):** Survey Research Methods, Government Statistics, and Social Statistics Sections (2023, declined)

· *Gao, Y. and **Kowal, D.** Bayesian adaptive and interpretable functional regression for exposure profiles. *arXiv:2203.00784.*
     Student Paper Award (Gao): Section on Bayesian Statistical Science (2023)

· **Kowal, D.** and **Wu, B. Semiparametric discrete data regression with Monte Carlo inference and prediction. *arXiv:2110.12316.*

In Revision

· *King, B. and **Kowal, D.**. Warped Dynamic Linear Models for Time Series of Counts. *arXiv:2110.14790.*
  - **Student Paper Award (King):** Section on Bayesian Statistical Science (2022)
  - **Student Paper Award (King):** Business and Economic Statistics Section (2022, declined)
  - **Distinguished Student Paper Award (King):** International Biometric Society Eastern North American Region (ENAR) Spring Meeting (2022)

· **Kowal, D.** and Canale, A. Semiparametric Functional Factor Models with Bayesian Rank Selection. *arXiv:2108.02151.*

Accepted

· *Liu, C., **Kowal, D.**, and Vannucci, M. Dynamic and Robust Bayesian Graphical Models. *Statistics and Computing*, in press. `https://doi.org/10.1007/s11222-022-10177-0`.
     Student Paper Award (Liu): Business and Economic Statistics Section (2021)

· **Kowal, D.** Subset selection for linear mixed models. *Biometrics*, in press. `https://doi.org/10.1111/biom.13707`.

· **Kowal, D.** and **Wu, B. Semiparametric count data regression for self-reported mental health. *Biometrics*, in press. `https://doi.org/10.1111/biom.13617`.

Published

· **Kowal, D.** (2022). Fast, Optimal, and Targeted Predictions using Parametrized Decision Analysis. *Journal of the American Statistical Association*, 117(540), 1875-1886. `https://doi.org/10.1080/01621459.2021.1891926`.

· *Feldman, J. and **Kowal, D.** (2022). Bayesian Data Synthesis and the Utility-Risk Trade-Off for Mixed Epidemiological Data. *Annals of Applied Statistics*, 16(4), 2577-2602. `https://doi.org/10.1214/22-AOAS1604`.
     Student Paper Award (Feldman): Health Policy Statistics Section (2022)

· Bravo, M., Zephyr, D., **Kowal, D.**, Ensor, K., and Miranda, M. L. (2022). Racial residential segregation shapes relationships between early childhood lead exposure and 4th grade standardized test scores. *Proceedings of the National Academy of Sciences*, 119(34), e2117868119. `https://doi.org/10.1073/pnas.2117868119`.

· **Kowal, D.** (2022). Bayesian subset selection and variable importance for interpretable prediction and classification. *Journal of Machine Learning Research*, 23(108), 1-38. `https://jmlr.org/papers/v23/21-0403.html`.

· **Kowal, D.**, Bravo, M., Leong, H., Bui, A., Griffin, R., Ensor, K., and Miranda, M. L. (2021). Bayesian Variable Selection for Understanding Mixtures in Environmental Exposures. *Statistics in Medicine*, 40(22), 4850-4871. `https://doi.org/10.1002/sim.9099`.

· Karand, J., Reis, K., Ponsiano, S., **Gargurevich, N., **Zhou, J., Fadhil, S., Razac, Y., Rosengard, R., **Kowal, D.**, and Peck, R. (2021). Sex-Dependent Correlates of Arterial Stiffness in Tanzanian Adults. *Tropical Medicine & International Health*, 26(11), 1494-1502. `https://doi.org/10.1111/tmi.13676`.

· **Kowal, D.** (2021). Dynamic Regression Models for Time-Ordered Functional Data. *Bayesian Analysis*, 16(2), 459-487. `https://doi.org/10.1214/20-BA1213`.

· **Kowal, D.** and *Bourgeois, D. (2020). Bayesian Function-on-Scalars Regression for High-Dimensional Data. *Journal of Computational and Graphical Statistics*, 29(3), 629-638. `https://doi.org/10.1080/10618600.2019.1710837`.

· Miao, Y., **Kowal, D.**, Panchal, N., Vila, J., and Vannucci, M. (2020). Nonlinear State-Space Modeling Approaches to Real-time Autonomous Geosteering. *Journal of Petroleum Science and Engineering*, 189, 107025. `https://doi.org/10.1016/j.petrol.2020.107025`.

· **Kowal, D.** and Canale, A. (2020). Simultaneous Transformation and Rounding (STAR) Models for Integer-Valued Data. *Electronic Journal of Statistics*, 14(1), 1744-1772. `https://doi.org/10.1214/20-EJS1707`.

· Miao, Y., Wu, M., Panchal, N., **Kowal, D.**, Vannucci, M., Vila, J., and Liang, F. (2019). Stochastic Clustering and Pattern Matching for Real Time Geosteering. *Geophysics*, 84(5), 1-51. `https://doi.org/10.1190/geo2018-0781.1`.

· **Kowal, D.** (2019). Integer-Valued Functional Data Analysis for Measles Forecasting. *Biometrics*, 75(4), 1321-1333. `https://doi.org/10.1111/biom.13110`.

· **Kowal, D.**, Matteson, D., and Ruppert, D. (2019). Dynamic Shrinkage Processes. *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*, 81(4), 781-804. `https://doi.org/10.1111/rssb.12325`.
  Student Paper Award: Business and Economic Statistics Section (2018)

· **Kowal, D.**, Matteson, D., and Ruppert, D. (2019). Functional autoregression for sparsely sampled data. *Journal of Business & Economic Statistics*, 37(1), 97-109. `https://doi.org/10.1080/07350015.2017.1279058`.
  Student Paper Award: Nonparametric Statistics Section (2017)

· **Kowal, D.**, Matteson, D., and Ruppert, D. (2017). A Bayesian multivariate functional dynamic linear model. *Journal of the American Statistical Association*, 112(518), 733-744. `https://doi.org/10.1080/01621459.2016.1165104`.
  Student Paper Award: Section on Bayesian Statistical Science (2016)

· Kohn, J., Chen, A., Cheng, S., **Kowal, D.**, King, M., and Reinhart-King, C. (2016). Mechanical heterogeneities in the subendothelial matrix develop with age and decrease with exercise. *Journal of Biomechanics*, 49(9), 1447-1453. `https://doi.org/10.1016/j.jbiomech.2016.03.016`.

· Alcoser, T., Bordeleau, F., Carey, S., Lampi, M., **Kowal, D.**, Somasegar, S., Varma, S., Shin, S., and Reinhart-King, C. (2015). Probing the biophysical properties of primary breast tumor-derived fibroblasts. *Cellular and Molecular Bioengineering*, 8(1), 76-85. `https://doi.org/10.1007/s12195-014-0360-9`.
  Editors' Choice Award: *Cellular and Molecular Bioengineering* **(2016)**

Technical Reports

· **Kowal, D.**. A Modified Ljung-Box Test for the Functional Linear Model.

· **Kowal, D.** and Ding, J. (2012). Applications of linear mixed effect models: an analysis of Missouri school data. *Washington U. Senior Honors Thesis Abstracts.*

· **Kowal, D.** (2009). Methods of capturing stereoscopic movies, their uses, and their limitations. *NASA Space Grant Consortium.*

HONORS AND AWARDS

· Blackwell-Rosenbluth Award, International Society for Bayesian Analysis: Inaugural Winner (2021)
· Economics, Finance, and Business (EFaB) Presentation Award, *European Seminar on Bayesian Econometrics* (2021)
· Dobelman Family Assistant Professor of Statistics (2020)
· Young Investigator Award, Army Research Office (2020)
· Arnold Zellner Thesis Award in Econometrics and Statistics: Honorable Mention (2018)
· Student Paper Award, Business and Economic Statistics Section, American Statistical Association, *Dynamic Shrinkage Processes* (2018)
· Student Paper Award, Nonparametric Statistics Section, American Statistical Association, *Functional autoregression for sparsely sampled data* (2017)
· Student Paper Award, Section on Bayesian Statistical Science, American Statistical Association, *Dynamic Shrinkage Processes* (2016)
· *Cellular and Molecular Bioengineering* Editors' Choice Award: *Probing the biophysical properties of primary breast tumor-derived fibroblasts* (2016)
· NSF-ISBA junior travel support grant, *ISBA* (2016), Sardinia, Italy
· NBER-NSF junior travel support grant, *NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics* (2016), Philadelphia, PA
· NBER-NSF junior travel support grant, *NBER-NSF Time Series Conference* (2014), St. Louis, MO
· Benjamin Miller Research Fellowship, Industrial and Labor Relations School, Cornell University (2014)
· Graduate School Fellowship, Department of Statistical Science, Cornell University (2012)
· Member of Phi Beta Kappa (2011)
· Honors Program in Statistics, Department of Mathematics, Washington U. (2012)
· Martin Silverstein Award, Department of Mathematics, Washington U. (2011 - 2012)
· Houston Kirk Scholarship, Department of Mathematics, Washington U. (2011)
· Fossett Fellowship, Department of Earth and Planetary Sciences, Washington U. (2008 - 2012)

GRANT SUPPORT

National Science Foundation

· *Adaptive dependent data models via graph-informed shrinkage and sparsity.* **Kowal, D.** (PI). August 15, 2022 - July 31, 2025. MMS2214726: $287,536.

Army Research Office

· *Optimal Bayesian Approximations for Targeted Prediction.* **Kowal, D.** (PI). June 01, 2020 - September 30, 2022. W911NF-20-1-0184: $229,460. Young Investigator Award.

  - Add-on: Undergraduate Research Apprentice Program, May 01, 2021 - August 31, 2021. $4,500.

National Institute of Environmental Health Sciences

· *Bringing Modern Data Science Tools to Bear on Environmental Mixtures.* Miranda, M. (PI), Baraniuk, R. (co-PI), Ensor, K. (co-PI), and Griffin, R (co-PI). December 01, 2017 - January 31, 2022. R01ES028819: $2,713,280. Role: Investigator.

Rice University

· *Air Quality Impacts of COVID Response Policies.* Cohan, D. (PI) and **Kowal, D.** (co-PI). May 1, 2020 - December 31, 2020. $16,744.
· *Dynamic Functional Data Analysis: New Statistical Tools to "Flatten the Curve".* **Kowal, D.** (PI) and Sun, T. (co-PI). May 18, 2020 - August 18, 2020. $6,750.

Shell International Exploration & Production Inc.

· *Bayesian State-Space Models for Sensors and Drilling Data.* Vannucci, M. (PI). January 1, 2018 - December 31, 2019. Sponsored Research Award. Role: Investigator.

INVITED TALKS

· Subset selection for linear mixed models, *Joint Statistical Meetings (JSM)* (2023, anticipated), Toronto, Canada.
· Semiparametric discrete data regression with Monte Carlo inference and prediction, *International Statistical Institute (ISI) World Statistics Congress* (2023, anticipated), Ottawa, Canada.
· Bayesian adaptive and interpretable functional regression for exposure profiles, *Western North American Region (WNAR) of The International Biometric Society* (2023, anticipated), Anchorage, AK.
· Bayesian adaptive and interpretable functional regression for exposure profiles, *Ruey Tsay's Retirement Celebration and Conference* (2023, anticipated), Chicago, IL.
· Nonparametric Copula Models for Multivariate, Mixed, and Missing Data, *Cornell University, Department of Statistics and Data Science* (2023).
· Bayesian subset selection and variable importance for interpretable prediction, *CMStatistics* (2022), virtual.
· Nonparametric Copula Models for Mixed Data with Informative Missingness, *University of Chicago Booth School of Business: Econometrics and Statistics Colloquium* (2022), Chicago, IL.
· Semiparametric discrete data regression with Monte Carlo inference and prediction, *Duke University, Department of Statistical Science* (2022), Durham, NC.
· Fast, Optimal, and Targeted Predictions using Parametrized Decision Analysis, *Joint Statistical Meetings* (2022), Washington, D.C.
· Semiparametric Functional Factor Models with Bayesian Rank Selection, *International Society for Bayesian Analysis (ISBA) World Meeting* (2022), Montreal, Canada.
· Bayesian subset selection and variable importance for interpretable prediction and classification, *Eastern North American Region (ENAR) Spring Meeting* (2022), Houston, TX.
· Semiparametric Functional Factor Models with Bayesian Rank Selection, *CMStatistics* (2021), virtual.
· Subset selection for linear mixed models, *International Conference on Advances in Interdisciplinary Statistics and Combinatorics* (2021), virtual.
· Semiparametric Functional Factor Models with Bayesian Rank Selection, *Joint Statistical Meetings* (2021), virtual.
· Bayesian decision analysis for collecting nearly-optimal subsets, *International Conference on Machine Learning (ICML) workshop: "SubSetML: Subset Selection in Machine Learning: From Theory to Practice"* spotlight talk (2021), virtual.
· Bayesian Subset Selection and Variable Importance for Interpretable Prediction and Classification, *Powering Research Through Innovative Methods for Mixtures in Epidemiology (PRIME)*, National Institutes of Health (2021), virtual.
· Fast, Optimal, and Targeted Predictions using Parametrized Decision Analysis, *University of Massachusetts Amherst, Statistics and Probability Colloquium* (2021), virtual.
· Fast, Optimal, and Targeted Predictions using Parametrized Decision Analysis, *The Pennsylvania State University, Department of Statistics* (2021), virtual.

- Bayesian functional regression for prediction and variable selection, *The University of Auckland, Bayesian Research Group* (2020), virtual.
- Prediction and Decision Analysis for Dynamic Data, *Ken Kennedy Institute Data Science Conference: Rice Rapid Fire Talks* (2020), virtual.
- Fast and Optimal Bayesian Approximations for Targeted Prediction, *Conference of Texas Statisticians* (2020), virtual.
- Simultaneous Transformation and Rounding (STAR) Models for Integer-Valued Time Series Data, *Joint Statistical Meetings* (2020), virtual.
- A Tour of Bayesian Prediction, Decision Analysis, and Survey Sampling, *Orbital Debris Program Office, NASA* (2020), virtual.
- Fast and Optimal Bayesian Approximations for Targeted Prediction, *Wearable and Implantable Technology (WIT) research group, Johns Hopkins University* (2020), virtual.
- Bayesian Function-on-Scalars Regression for High-Dimensional Data, *ENAR Spring Meeting* (2020), virtual.
- Scalable Bayesian Inference and Summarization for Functional Data, *Collegio Carlo Alberto* (2019), Turin, Italy.
- A Simultaneous Transformation and Rounding Approach for Modeling Integer-Valued Data, *CMStatistics* (2019), London, UK.
- Scalable Bayesian Inference and Summarization for Functional Data, *University of Padua, Department of Statistical Sciences* (2019), Padua, Italy.
- Scalable Bayesian Inference and Summarization for Functional Data, *Rutgers University, Department of Statistics* (2019), New Brunswick, NJ.
- Prediction Models for Integer and Count Data, *Rice University Machine Learning Seminar Series* (2019), Houston, TX.
- Bayesian Function-on-Scalars Regression for High-Dimensional Data, *Joint Statistical Meetings* (2019), Denver, CO.
- Dynamic Function-on-Scalars Regression, *CMStatistics* (2018), Pisa, Italy.
- Dynamic Function-on-Scalars Regression, *European Seminar on Bayesian Econometrics* (2018), New Orleans, LA.
- Dynamic Shrinkage Processes, *Institute for Mathematics and its Applications: Forecasting from Complexity* (2018), Minneapolis, MN.
- Dynamic Shrinkage Processes, *American Statistical Association, Houston Area Chapter* (2018), Houston, TX.
- Dynamic Shrinkage Processes, *University of Washington, Department of Biostatistics* (2018), Seattle, WA.
- Dynamic Shrinkage Processes, *Baylor University, Department of Statistical Science* (2018), Waco, TX.
- Functional autoregression for sparsely sampled data. *CMStatistics* (2017), London, UK.
- Functional autoregression for sparsely sampled data. *INFORMS Annual Meeting* (2017), Houston, TX.
- Dynamic Shrinkage Processes, *Texas A&M, Department of Statistics* (2017), College Station, TX.
- Dynamic Shrinkage Processes, *MD Anderson, Department of Biostatistics* (2017), Houston, TX.
- Understanding and Modeling the Dynamics of Interest Rates, *7th Eubank Conference on Real World Markets* (2017), Houston, TX.
- A Bayesian multivariate functional dynamic linear model, *Carnegie Mellon University, Department of Statistics* (2017), Pittsburgh, PA.
- A Bayesian multivariate functional dynamic linear model, *University of Illinois at Urbana-Champaign, Department of Statistics* (2017), Champaign, IL.
- A Bayesian multivariate functional dynamic linear model, *University of Missouri, Department of Statistics* (2017), Columbia, MO.

- A Bayesian multivariate functional dynamic linear model, *Duke University, Department of Statistical Science* (2017), Durham, NC.
- A Bayesian multivariate functional dynamic linear model, *University of California, Berkeley, Department of Statistics* (2017), Berkeley, CA.
- A Bayesian multivariate functional dynamic linear model, *The University of Texas at Austin, Department of Information, Risk, and Operations Management* (2017), Austin, TX.
- A Bayesian multivariate functional dynamic linear model, *Rice University, Department of Statistics* (2017), Houston, TX.
- A Bayesian multivariate functional dynamic linear model, *Montana State University, Department of Mathematical Sciences* (2017), Bozeman, MT.
- A Bayesian multivariate functional dynamic linear model, *University of Oregon, Department of Operations and Business Analytics* (2016), Eugene, OR.
- A Bayesian multivariate functional dynamic linear model, *North Carolina State University Functional Data Seminar Series* (2016), Raleigh, NC.

CONFERENCE ACTIVITY

Oral Presentations

- Bayesian subset selection and variable importance for interpretable prediction and classification, *Conference on Neural Information Processing Systems (NeurIPS)* (2022), virtual.
- Warped Dynamic Linear Models for Time Series of Counts, *NBER-NSF Time Series Conference* (2021), Houston, TX.
- Semiparametric Functional Factor Models with Bayesian Rank Selection, *European Seminar on Bayesian Econometrics* (2021), virtual.
- Semiparametric Functional Factor Models with Bayesian Rank Selection, *NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics* (2021), virtual.
- Semiparametric Functional Factor Models with Bayesian Rank Selection, *International Society for Bayesian Analysis (ISBA) World Meeting* (2021), virtual.
- Fast and Optimal Bayesian Approximations for Targeted Prediction, *NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics* (2020), virtual.
- Prediction Models for Integer and Count Data, *Rice Data Science Conference* (2019), Houston, TX.
- Dynamic Shrinkage Processes. *Bayesian Nonparametrics* (2019), Oxford, UK.
- Bayesian Function-on-Scalars Regression for High-Dimensional Data, *Conference of Texas Statisticians* (2019), Beaumont, TX (presented by Bourgeois, D.C.).
- Dynamic Shrinkage Processes. *Joint Statistical Meetings* (2018), Vancouver, Canada.
- Dynamic Function-on-Scalars Regression. *New Researchers Conference* (2018), Vancouver, Canada.
- Dynamic Shrinkage Processes. *NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics* (2018), Palo Alto, CA.
- Functional autoregression for sparsely sampled data. *NBER-NSF Time Series Conference* (2017), Chicago, IL.
- Functional autoregression for sparsely sampled data. *Joint Statistical Meetings* (2017), Baltimore, MD.
- A Bayesian multivariate functional dynamic linear model, *R/Finance Conference* (2017), Chicago, IL.
- A Bayesian multivariate functional dynamic linear model, *Cornell University Graduate Student Statistics Seminar Series* (2016), Ithaca, NY.
- A Bayesian multivariate functional dynamic linear model, *Joint Statistical Meetings* (2016), Chicago, IL.
- Gaussian processes for functional autoregression, *NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics* (2016), Philadelphia, PA.
- Gaussian processes for functional autoregression, *Cornell University Graduate Student Statistics Seminar Series* (2015), Ithaca, NY.

- A Bayesian model for dependent functional data, *Joint Statistical Meetings* (2014), Boston, MA.
- A Bayesian functional dynamic linear model, *Cornell University Graduate Student Statistics Seminar Series* (2014), Ithaca, NY.
- Methods of capturing stereoscopic movies, their uses, and their limitations. *NASA Space Grant Consortium* (2009), Missouri State University, Springfield, MO.

Poster Presentations

- **Kowal, D.** Bayesian subset selection and variable importance for interpretable prediction and classification, *Conference on Neural Information Processing Systems (NeurIPS)* (2022, virtual).
- Gargurevich, N., Zhou, J., Karand, J., Reis, K., Stephano, P., Fadhi, S., and **Kowal, D.** Cardiovascular Risk Factors in Tanzania: Discerning Trends in Arterial Stiffness, *Consortium of Universities for Global Health Conference* (2021, *virtual*).
- Choi, Y., Louh, H., Abbott, A., Dayan, A., Li, J., Nguyen, A., Rewolinksi, Z., MacDonald, R., **Kowal, D.**, and Cohan, D. COVID-19 Policy Impacts on NO_2, Ozone, and $PM_{2.5}$ Levels in U.S. Cities, *American Meteorological Society (AMS) Annual Meeting* (2021, *virtual*).
- Cohan, D., **Kowal, D.**, Abbot, X., Choi, Y., Dayan, A., Gurin, A., Jiang, A., Jiang, M., Li, J., Louh, H., MacDonald, R., Meriano, G., Nam, H., Nguyen, A., Niu, L., Rewolinksi, Z., and Wu, L. Responses of human activity and in-situ and satellite-observed air quality in U.S. cities to the COVID pandemic, *American Geophysical Union (AGU) Fall Meeting* (2020, *virtual*).
- Louh, H., Choi, Y., Abbott, A., Dayan, A., Li, J., Nguyen, A., Rewolinksi, Z., MacDonald, R., **Kowal, D.**, and Cohan, D. COVID-19 Policy Impacts on NO_2, Ozone, and $PM_{2.5}$ Levels in U.S. Cities, *American Geophysical Union (AGU) Fall Meeting* (2020, *virtual*).
- Rewolinski, Z., Li, J., Nguyen, A., **Kowal, D.**, and Cohan, D. Impacts of COVID-19 Pandemic on Activity and Emissions, *Community Modeling and Analysis System (CMAS) Conference* (2020, *virtual*).
- **Kowal, D.** Integer-Valued Functional Data Analysis for Measles Forecasting, *International Conference on Health Policy Statistics* (2020), San Diego, CA (declined).
- **Kowal, D.**, Leong, M., Bravo, M., Ensor, K., and Miranda, M. Modeling complex associations among social and environmental mixtures and educational outcomes. *Powering Research Through Innovative Methods for Mixtures in Epidemiology (PRIME) Program Meeting* (2019), National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- Osgood, C., Bravo, M., Leong, M., Tootoo, J., **Kowal, D.**, Ensor, K., and Miranda, M. Building a Space-Time Data Architecture from Disparate Data Sources. *Powering Research Through Innovative Methods for Mixtures in Epidemiology (PRIME) Program Meeting* (2019), National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- King, B. and **Kowal, D.** Forecasting Time Series of Counts using Dynamic Linear Models, *Rice Data Science Conference* (2019), Houston, TX.
- Bourgeois, D. and **Kowal, D.** Using Bayesian Posterior Summarization for Model Selection in Functional Data Analysis, *Rice Data Science Conference* (2018), Houston, TX.
- **Kowal, D.** A Bayesian multivariate functional dynamic linear model, *Cornell Day of Statistics* (2016), Ithaca, NY.
- **Kowal, D.** A Bayesian multivariate functional dynamic linear model, *ISBA* (2016), Sardinia, Italy.
- **Kowal, D.** A Bayesian multivariate functional dynamic linear model, *NBER-NSF Time Series Conference* (2014), St. Louis, MO.
- **Kowal, D.** Applications of linear mixed effects models: an analysis of Missouri school data, *Washington U. Undergraduate Research Symposium* (2012), St. Louis, MO.

Leadership and Additional Participation

- Invited Session Organizer: Statistical methods for mixtures in epidemiology, *ENAR* (2022), Houston, TX.
- Local Scientific and Organizing Committee, *NBER-NSF Time Series Conference* (2021), Houston, TX.

· Session Chair: Analysis of Dynamic High-Dimensional Data, *JSM* (2021), Seattle, WA (*virtual*).
· Session Organizer: Winners: Business and Economic Statistics Student Paper Awards, *JSM* (2021), Seattle, WA (*virtual*).
· Session Organizer and Chair: Winners: Business and Economic Statistics Student Paper Awards, *JSM* (2020), Philadelphia, PA (*virtual*).
· Session Chair: Imaging and streaming data analysis, *ENAR Spring Meeting* (2020), Nashville, TN (*virtual*).
· Invited Session Organizer: Modern Methods for Structured and Dynamically Dependent Data, *Joint Statistical Meetings* (2019), Denver, CO.
· Session Chair: Modern Methods for Structured and Dynamically Dependent Data, *Joint Statistical Meetings* (2019), Denver, CO.
· Session Chair: Analysis of Big Dynamically Dependent Data, *Joint Statistical Meetings* (2018), Vancouver, Canada.
· Session Chair: *New Researchers Conference* (2018), Vancouver, Canada.
· Session Chair: Bayes Theory and Foundations, *Joint Statistical Meetings* (2017), Baltimore, MD.

TEACHING EXPERIENCE

Rice University   July 2017 - present
Assistant Professor   *Houston, TX*

· Bayesian Statistics (STAT 425)
· Bayesian Statistics (STAT 525)
· Linear Regression (STAT 410)
· Senior Capstone (STAT 450) Project Mentor
  - Patterns and Anomalies in Gerrymandered Districts (Daniel Faraldo, Jimmy Kim, Chris Brehm; 2018)
    Poster Award: 2018 Engineering Design Showcase
  - Fear Index Prediction—Exploring the Influence of Worldwide News on the Volatility of the S&P 500 US Options Market (VIX) (Sean Dong, Kevin Guo, Iker Wang, Rayne Yu; 2018)
  - Neighborhood Change and Nonprofit Organizations (Dylan Nguyen; 2021)
  - A Review of Variable Selection for Predictive Modeling in Regression (Peter Zhu; 2021)
· D2K Learning Lab (DSCI 435) Mentor
  - Predicting Illegal Dumping in Houston Using 311 Service Helpline Requests (Sarah Asson, David Brodkey, Richard He, Nick McMillan, Emma Min; 2018)
    Honorable Mention: 2018 D2K Learning Lab Showcase
  - Predicting Realized Variance in the S&P 500 (Jessica Yuan, Wei Wu, Ruimeng Xu, Oliver Jin, Santiago Tellez; 2018)
  - Comparing Implied and Realized Volatility in the ES Futures Marketplace (Arjoon Srikanth, Tara Bian, Santiago Tellez; 2019)
  - Back to the Futures: Discovering Relationships between Futures using Graphical Models and Multivariate Time Series (Hasnain Ali, Jake Flores, Stefano Romano, Jessica Wang; 2019)
  - Connecting the Dots: How the entire financial world is connected (Ye Chen, Seth Kimmel, Ankit Narasimhan, Jordan Pflum, Yifan Zhang; 2020)
  - Air Pollution during COVID-19 (Adam Gurin, Hoai Nam Nguyen, Lihan Wu, Mengjia Jiang; 2020)

Cornell University   September 2013 - May 2015
Graduate Teaching Assistant   *Ithaca, NY*

· Applied Time Series Analysis (STSCI 4550)
· Operations Research Tools for Financial Engineering (ORIE 4630)

· Statistical Computing (BTRY 3520)
· Introductory Statistics (ILRST 2100)

Washington U. August 2011 - May 2012
Undergraduate Teaching Assistant *St. Louis, MO*
· Elementary Probability and Statistics (Math 2200)
· Statistical Computation (Math 475)

STUDENT ADVISING

PhD Students: Primary Advisor
· Chunshan Liu: "Bayesian Graphical Models for Multivariate Time Series" (graduated 2022; co-advised by Marina Vannucci)
· Joseph Feldman: "Recent Advances in Bayesian Copula Models for Mixed Data Types and Quantile Regression"
· Brian King: "Bayesian Modeling of Count-Valued Time Series via Warped Dynamic Linear Models"
· Yunan Gao: "Bayesian Adaptive and Interpretable Functional Regression Models"
· John Zito
· Thomas Sun
· Konstantin Larin

PhD Students: Committee Member
· Eric Kook (STAT; graduated 2019)
· Yizhou Xia (STAT; graduated 2019)
· Yinsen Miao (STAT; graduated 2019)
· Minjie Wang (STAT; graduated 2020)
· Tianyi Yao (STAT; graduated 2021)
· Zhenwei Dai (STAT; graduated 2022)
· Daniel Gorczynski (Ecology and Evolutionary Biology)
· Joshua Fowler (Ecology and Evolutionary Biology)
· Zoey Neale (Ecology and Evolutionary Biology)
· Hengxing Zou (Ecology and Evolutionary Biology)
· Chun-Ying Chao (Environmental Engineering)
· Qiran Shao (Economics)
· Hoai Nam Nguyen (STAT)
· Colin Jones (Political Science)

Undergraduate Students
· Bohan Wu (fall 2019 - spring 2022; graduated)
· Joanne Zhou (fall 2019 - spring 2021; graduated)
· Zach Rewolinski, Lynn Niu, Robin MacDonald, Yunseo Choi, James Li, Anthony Nguyen, Winnie Louh, Gabriel Meriano (COVID Air quality team; summer 2020)
· Nick Gargurevich (fall 2019 - spring 2021; graduated)
· Soha Rizvi (Undergraduate Research Apprentice Program, Army Research Office; summer 2021)
· Ethan Krop (summer 2021)
· Dylan Nguyen (fall 2021; graduated)
· Peter Zhu (fall 2021; graduated)
· Lisa Lin (spring 2022)

- Ryan Huckleberry (spring 2022)
- Vinay Tummarakota (spring 2022)
- Virginia Baskin (summer 2022)
- Jai Uparker (Rice STAT-DATASCI REU, summer 2022)
- Caleb Fikes (summer 2022 - present)
- Prayag Gordy (summer 2022 - present)

International Students

- Andrea Mascaretti, University of Padua, Italy (fall 2022 - spring 2023)
- Gabriel Dilly Vieira Furtado, Instituto Militar de Engenharia, Rio de Janeiro, Brazil (fall 2019)

UNIVERSITY AND DEPARTMENT SERVICE

University Service
Rice University

- Environmental Initiative Steering Committee (2020 - present)
- University Committee for Admissions (2020 - 2022)
- University Committee for Parking and Transportation (2019 - 2022)

Department Service
Rice University

- Graduate Student Seminar Advisor (2022 - present)
- Awards and Special Lectures Committee (2021 - 2022)
- PhD Admissions Committee (2019 - 2021)
- Graduate Curriculum Committee (2018 - 2019)
- Committee on Ethics and Inclusion (2018)
- Undergraduate Curriculum Committee (2017 - 2018)
- STAT 450 Project Judge (2017)
- Academic Career Fair Representative (2017 - present)

PROFESSIONAL SERVICE

Outreach and Mentorship

- Club Sponsor, *Biokind Analytics*, Rice University (2022 - present)
- Texas Alliance for Minorities in Engineering STEM Competition Coordinator (2019 - 2020)
- AP Capstone Research Project Mentor, *The Possible Replacement of Human Financial Advisors with Robo-Advisors*, Carnegie Vanguard High School (2017 - 2018)

Editorial Roles

- Associate Editor, *Data Science in Science* (2022 - present)
- Guest Editor, *Econometrics and Statistics*: 3ed Special Issue on Bayesian Methods in Statistics and Econometrics (2022 - present)
- Co-Editor, *Data Science in Science*: Special Issue on Data Science in Modern Finance (2022 - present)

Journal Referee

- *Annals of Statistics*
- *Annals of Applied Statistics*
- *Applied Stochastic Models in Business and Industry*
- *Bayesian Analysis*

- *Bioinformatics*
- *Biometrics*
- *Biometrika*
- *Biostatistics*
- *BMC Medical Informatics and Decision Making*
- *Computational Statistics and Data Analysis*
- *Electronic Journal of Statistics*
- *Environmental Health Perspectives*
- *Environmetrics*
- *IEEE Transactions on Signal and Information Processing over Networks*
- *Journal of Advanced Transportation*
- *Journal of Applied Statistics*
- *Journal of Business and Economic Statistics*
- *Journal of Computational and Graphical Statistics*
- *Journal of Econometrics*
- *Journal of Multivariate Analysis*
- *Journal of the American Statistical Association: Applications and Case Studies*
- *Journal of the American Statistical Association: Theory and Methods*
- *Journal of the Royal Statistical Society, Series B*
- *Journal of the Royal Statistical Society, Series C*
- *Physica A*
- *Philosophical Transactions A*
- *Stat*
- *Statistica Sinica*
- *Statistical Modelling*
- *Statistics and Computing*
- *Technometrics*
- *The American Statistician*
- *WIREs Computational Statistics*

Grant Reviewer

- Natural Sciences and Engineering Research Council of Canada, Mathematical and Statistical Sciences (2022 - 2023)
- National Science Foundation, Mathematical Sciences (2019 - 2020, 2022)
- National Science Foundation, Methodology, Measurement, and Statistics (2018)

Professional Service

- Program Chair-Elect, Business & Economic Statistics Section, American Statistical Association (2023)
- Treasurer/Secretary, Business & Economic Statistics Section, American Statistical Association (2021 - 2023)
- Publications Officer, Business & Economic Statistics Section, American Statistical Association (2018 - 2021)
- Student Paper Award Committee Chair, Business & Economic Statistics Section, American Statistical Association (2018 - 2021)
- Student Paper Award Committee, Business & Economic Statistics Section, American Statistical Association (2018 - present)
- Finance Committee, International Society for Bayesian Analysis (2018 - 2021)

· Student Paper Award Reviewer, Section on Bayesian Statistical Science, American Statistical Association (2017, 2021)

Professional Memberships

· The Ken Kennedy Institute, Rice University (2019 - present)
· Institute of Biosciences and Bioengineering, Rice University (2018 - present)
· International Society for Bayesian Analysis (2015 - present)
· American Statistical Association (2012 - present)
· Institute of Mathematical Statistics (2012 - present)

Professional Development

· Panel co-organizer, *Success in the Industry Job Market*, Department of Statistics, Rice University (2021)
· Panel organizer, *Success in the Academic Job Market*, Department of Statistics, Rice University (2020)
· Participant, *Building Mentoring Skills for an Academic Career*, Cornell University Center for the Integration of Research, Teaching, and Learning (2017)
· Panelist, *Getting a Faculty Position: Lessons Learned During the Academic Job Search*, Cornell University Center for the Integration of Research, Teaching, and Learning (2017)