

Adam Loy

Curriculum Vitae

July 2026

Department of Mathematics and Statistics
Carleton College
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Experience

Carleton College

STEM Director	2026–present
Associate Professor	2023–present
Assistant Professor	2017–2023

Lawrence University

Assistant Professor	2014–2017
Visiting Assistant Professor	2013–2014

Iowa State University

Research Assistant	2012–2013
Teaching Assistant	2007–2012

Des Moines Area Community College

Adjunct Instructor	2010
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Education

Ph.D., Statistics, Iowa State University	2013
M.S., Statistics, Iowa State University	2009
B.A., Mathematics/Statistics, Luther College	2007

Honors & Awards

- Best Research Paper for Impact and Quality Award for “Understanding Corn Belt farmer perspectives on climate change to inform engagement strategies for adaptation and mitigation,” *Journal of Soil and Water Conservation*, 2018
- Student paper competition winner for “Are You Normal? The Problem of Confounded Residual Structures in Hierarchical Linear Models,” ASA Sections on Statistical Computing and Graphics, 2013
- Second place in the 2013 Data Expo for “A Tale of Four Cities: Exploring the Soul of Biloxi, Detroit, Milledgeville, and State College,” ASA Sections on Statistical Computing and Graphics, 2013
- Award for Undergraduate Mentoring in Statistics, Iowa State University, 2012
- Preparing Future Faculty Associate, Iowa State University, 2012
- Teaching Excellence Award, Iowa State University, 2010

- Second place in the 2009 Data Expo for “Delayed, Canceled, On Time, Boarding. . . Flying in the USA,” ASA Sections on Statistical Computing and Graphics, 2009
- Jebe Fellowship, Iowa State University, 2007
- Phi Beta Kappa, National Honor Society, 2007
- Omicron Delta Epsilon, International Honor Society for Economics, 2007
- Pi Mu Epsilon, National Mathematics Honorary Society, 2006

Teaching

Courses Taught.....

Carleton College

Introduction to Statistics	W18, S18, F18, W19, W22, S23*, S24, S26
Introduction to Data Science	W19, S20, F21, W23, F25
Applied Regression Analysis	S18, S19, F22, W24, F25, S26
Statistical Learning	F24
Probability	F17, F20*, F23*, W25
Introduction to Statistical Inference	W18, W22, W25, W26
Statistical Consulting	F19, W20, S20, F23, W24, S24
Bayesian Statistics	F18, F19, F21, F22

DataCamp

Interactive Data Visualization with plotly in R
 Intermediate Interactive Data Visualization with plotly in R

Lawrence University

Freshman Studies II	W15, W16
Data-Scientific Programming	W17, S17
Elementary Statistics	W14, S14, W15, S16, F16*
Introduction to Probability and Statistics	F13*, F14*
Applied Statistical Methods	S15
Probability	F15, F16
Statistical Modeling	W17
Probability Theory	W14, W16
Statistical Theory	S14, S16, S17

Iowa State University

Principles of Statistics	F09, S10, SS10, S11
Introduction to Statistics	SS11
Introduction to Statistics for Engineers	F10, F11, S12

Des Moines Area Community College

Statistics	F10
Business Statistics	F10

F = Fall, W = Winter, S = Spring, SS = Summer, * = two sections

Research advising.....

Summer research: Ellie Hopkins and Angela Liang. The Department of Mathematics and Statistics funded two students to work on the American Statistical Association's data challenge expo. The students will wrangle and visualize data from the What Works Clearinghouse database, to answer a research question that they develop. They will present their results at the 2026 Joint Statistical Meetings in Boston, Massachusetts in August.

Summer research: Bryanna Schaffer and Christie Song. The Towsley Endowment for the Sciences and the Mathematics and Statistics Department funded two students to work on the American Statistical Association's data challenge expo. The students explored mental health and substance use disorders during the pre- and post-COVID-19 years using data from the General Social Survey and Substance Abuse and Mental Health Services Administration. They presented their analysis at the 2024 Joint Statistical Meetings in Portland, Oregon, won second place in the data challenge, and published an article in *CHANCE* magazine (<https://doi.org/10.1080/09332480.2025.2510161>). Summer 2024.

Summer research: Ty Folks. The Summer Science Fellows program at Carleton provided funding for a summer project in statistics. We plan to explore potential use cases of ChatGPT in the Carleton community. This includes creating a prototype app that can use the Mathematics and Statistics Department's webpage as the reference text to answer faculty and student questions. We will also create an annotated bibliography of potential readings about ChatGPT that can be brought into the data science classroom. Summer 2023.

Comps: Teagan Johnson, Elijah Jones, Ton Meesena, Sam Rosenberg. Applications of statistical learning methods for pattern detection in scatterplots. This group used scagnostic measures (a set of summary statistic for scatterplots) and statistical learning models, including random forests and generalized additive models, in an effort to automatically separate scatterplots into classes. They also compared their results to standard models in computer vision. Winter and spring 2023. Their paper won first place in the Spring 2023 the Undergraduate Research Project Competition sponsored by the Consortium for the Advancement of Undergraduate Statistics Education. <https://www.causeweb.org/usproc/usresp/2023/spring/winners>

Summer research: Sydney Bell. The Towsley Endowment for the Sciences provided funding for a summer research student. The goal of this project is to create an R package that implements a (more) complete modeling framework for gauge R&R models in R, following the tidymodels philosophy. Summer 2022.

Summer research: Zhihan Yang Navigating the opinionated waters of Bayesian computation. The Mathematics and Statistics Department funded a summer research partner to review different ways MCMC can be implemented in R. This review compared and contrasted the flexibility, extensibility, and required cognitive load of each implementation, and wrote an article making recommendations to undergraduate statistics educators. Summer 2022.

Comps: Sagal Ahmed, Henry Farnsworthh, Karryn Leake, Jeremiah Mackin-Alonzi. Survival analysis. This group read through much of Klein and Moeschberger's *Survival Analysis: Techniques for Truncated Data* (2nd ed.) and then used these tools to model survival of patients diagnosed with head and neck squamous cell carcinoma. Fall 2021 and winter 2022.

Summer research: Yicheng Shen, Yucheng Yang. Carleton College provided funding for Yicheng and Yucheng to continue exploring the efficacy of diagnostic tools for linear mixed-effects (LME) models. They devised a large simulation study, analyzed the results, and disseminated their findings in a technical report. Summer 2021.

Independent research: Muyang Shi. Exploring the efficacy of diagnostic tools for LME models. Muyang designed a simulation study to explore the efficacy of residual plots to diagnose key assumptions for LME models. Carleton College provided funding for this project to continue during winter break. Fall and winter break 2020.

Summer research: Jaylin Lowe, Jack Moran. Carleton College provided funding for Jaylin and Jack to overhaul the HLMdiag R package. This overhaul included updates so that HLMdiag uses tidyverse tools, streamlining the interface of functions for ease of use, along with fixing known bugs. aloy.github.io/HLMdiag/. Jaylin presented this work at the 2020 Women in Statistics and Data Science virtual conference, and both Jaylin and Jack presented this work at the 2020 Northfield Undergraduate Mathematics Symposium. In addition, Jack and Jaylin won first prize in the undergraduate division of the 2021 Twin Cities ASA Chapter spring poster competition. Summer 2020.

Summer research: Jenna Korobova. Carleton College provided funding for Jenna to help implement bootstrap procedures for nested linear-mixed effects models in the R package `lmeresampler`. This was a major revision and extension to the R package, which included an extension to generalized linear mixed-effects models and an investigation of parallel computing. aloy.github.io/lmeresampler/. Summer 2020.

Independent research: Elliot Pickens. Graphical inference with convolutional neural networks. Elliot explored a way to use convolutional neural networks to detect trends in scatterplots, taking inspiration from previous work done in quantifying scatterplots using scatterplot diagnostics. He won honorable mention in the spring 2019 Undergraduate Statistics Research Project competition. Spring 2019.

Independent research: Nobuaki Masaki. Diagnostic tools for gauge R & R studies. Nobuaki ran a simulation study to explore the impacts of model violations on gauge R & R models. He also reviewed the efficacy of traditional diagnostic tools at identifying these violations. Spring 2019.

Comps: Elliot Cahn, Noah Feldman, Dylan Rye, Christian Zaytoun. Predicting win probabilities in collegiate football. This group explored the ability of statistical and mathematical models to predict the probability that a team wins a collegiate football game. Winter and spring 2019.

Comps: Cari Connick, Logan Crowl, Sophia Gunn, Aidan Mullan. Applications of statistical learning methods for pattern detection in scatterplots. This group used scagnostic measures (a set of summary statistic for scatterplots) and statistical learning models (e.g. random forests and SVMs) in an effort to automatically separate scatterplots into classes. Winter and spring 2018.

Google Summer of Code: Alexandre Almeida. Google Summer of Code provided funding for Alexandre to help develop an R package improving and extending Q-Q plots in the `ggplot2` framework. aloy.github.io/qplotr/. This work resulted in an *R Journal* article in addition to the published R package. Summer 2017.

Summer Research: Alex Damisch. Lawrence University provided funding for Alex to develop Shiny

applications that can be used in elementary statistics courses. In addition to being easy to use, the intent is for these apps to help motivate the use of R. Summer 2015.

Summer Research: Spenser Steele. Lawrence University provided funding for Spenser to develop an R package implementing bootstrap procedures for linear mixed-effects models. The package has since been published on CRAN: <https://cran.r-project.org/web/packages/lmeresampler/>. Summer 2014.

Internship: Biyue Dai. Biyue worked to develop improved enrollment-projection models to be used by the administration of Lawrence University for strategic planning. During the course of this internship, Biyue learned about logistic regression models and Markov chain models, as well as the R statistical programming language. Fall 2013, Winter 2014.

Data science advising.....

MinneMUDAC. Advised teams of undergraduates from Carleton during a month-long data analytics competition culminating in presentations at Optum in Eden Prairie, MN.

- o Fall 2019 (2 teams) – one team won the bonus round, more accurate predictions than any other undergraduate team
- o Fall 2018 (2 teams)

MUDAC. Advised teams of undergraduates during the 24-hour data Midwest Undergraduate Data Analytics Competition.

- o Carleton College, April 2019 (both teams placed in the top 5, out of 30); April 2020; April 2024 (one of our teams placed first)
- o Iowa State University, April 2012

Data Visualization Student Challenge. Co-mentored a team of undergraduates from Iowa State University in a data visualization competition sponsored by the United States Department of Transportation. The goal of the competition was to produce a visualization that would aid transportation investment and decision making. Fall 2012.

Workshops Taught.....

A Week of R. Team-taught a four-day workshop introducing faculty and graduate students to the R programming language. The sessions included: Introduction to R, A Day of R Graphics, Data wRestling, and (Extended) Linear Models in R. Iowa State University. May 2013.

A Week of R. Team-taught a five-day workshop introducing faculty and graduate students to the R programming language. The sessions included: Introduction to R, Advanced Graphics in R, Data Formatting and Reshaping in R, (Extended) Linear Models in R, and R Packages. Iowa State University. June 2012, August 2012.

Introduction to R Workshop. Team-taught a one-day workshop introducing faculty and graduate students to the R programming language. Iowa State University. June 2010, August 2010.

Grants

- o Faculty Career Enhancement (FaCE) grant, Associate Colleges of the Midwest. *Teaching Statistical Learning: An Active Learning Approach Using R and Tidymodels*. This provided funds to develop

material for my statistical learning course with Jaime Davila at St. Olaf. \$5,000 (2025).

- Ethical Inquiry Inside the Classroom Grant, Carleton College. Funding for 1.5 weeks of summer work to incorporate an ethics component into the new statistical learning course (Summer 2024).
- Hewlett Mellon Fellowship, Carleton College. Funding for one term of sabbatical leave (2020-2021).
- The West Foundation. This grant provided funds to renovate Lawrence University's statistics computer lab to accommodate students in introductory statistics courses and enabled the use of hybrid and flipped classroom approaches. \$50,000 (January 2017).
- Associated Colleges of the Midwest Faculty Career Enhancement (ACM FaCE) grant. *Harnessing Big Data: Planning for Collaborative Courses in Data Science*. This provided funds to develop material that will incorporate data science into introductory and intermediate statistics courses. \$9,300 (May 2016).
- Recipient of curricular development funds from the Teagle Hybrid Learning Project to help develop material that will incorporate data science into the statistics curriculum at Lawrence University. \$9,300 (May 2016).

Publications

* Indicates an undergraduate student coauthor

Journal Articles

- Curley, B., Downey, J., Kinnaird, K., **Loy, A.**, and Reyes, E. (2024). Questions (and Answers) for Non-Traditional Grading. *Journal of Statistics and Data Science Education* **32**(3), 283–295.
- Loy, A.** and Korobova, J.* (2023). Bootstrapping Clustered Data in R Using lmeresampler. *The R Journal* **14**(4), 103–120.
- Loy, A.** (2021a). Bringing Visual Inference to the Classroom. *Journal of Statistics and Data Science Education* **29**(2), 171–182.
- Maurer, K., Osthus, D., and **Loy, A.** (2019). A Tale of Four Cities: Exploring the Soul of State College, Detroit, Milledgeville, and Biloxi. *Computational Statistics* **34**(4), 1465–1487.
- Loy, A.**, Kuiper, S., and Chihara, L. (2019). Supporting Data Science in the Statistics Curriculum. *Journal of Statistics Education* **27**(1), 2–11.
- Almeida, A., **Loy, A.**, and Hofmann, H. (2018). ggplot2 Compatible Quantile-Quantile Plots in R. *The R Journal* **10**(2), 248–261.
- Loy, A.**, Hofmann, H., and Cook, D. (2017). Model Choice and Diagnostics for Linear Mixed-Effects Models Using Statistics on Street Corners. *Journal of Computational and Graphical Statistics* **26**(3), 478–492.
- Loy, A.**, Follett, L., and Hofmann, H. (2016). Variations of Q-Q Plots—The Power of our Eyes! *The American Statistician* **70**(2), 202–214.
- Loy, A.** and Hofmann, H. (2015). Are You Normal? The Problem of Confounded Residual Structures in Hierarchical Linear Models. *Journal of Computational and Graphical Statistics* **24**(4), 1191–1209.
- Wright Morton, L., Hobbs, J., Arbuckle, J. G., Jr., and **Loy, A.** (2015). Upper Midwest Climate Variations: Farmer Responses to Excess Water Risks. *Journal of Environmental Quality* **44**(3), 1191–1209.
- Arbuckle, J. G., Jr., Hobbs, J., **Loy, A.**, Wright Morton, L., Prokopy, L. S., and Tyndall, J. (2014). Understanding Corn Belt Farmer Perspectives on Climate Change to Inform Engagement Strategies for Adaptation and Mitigation. *Journal of Soil and Water Conservation* **69**(6), 505–516.

Loy, A. and Hofmann, H. (2014). HLMdiag: A Suite of Diagnostics for Hierarchical Linear Models in R. *Journal of Statistical Software* **56**(5), 1–28.

Arbuckle, J. G., Jr., Prokopy, L. S., Haigh, T., Hobbs, J., Knoot, T., Knutson, C., **Loy, A.**, Mase, A. S., McGuire, J., Wright Morton, L., Tyndall, J., and Widhalm, M. (2013). Climate Change Beliefs, Concerns, and Attitudes toward Adaptation and Mitigation among Farmers in the Midwestern United States. *Climatic Change* **117**(4), 943–950.

Loy, A. and Hofmann, H. (2013). Diagnostic Tools for Hierarchical Linear Models. *Wiley Interdisciplinary Reviews: Computational Statistics* **5**(1), 48–61.

Hofmann, H., Cook, D., Kielion, C., Schloerke, B., Hobbs, J., **Loy, A.**, Mosley, L., Rockoff, D., Huang, Y., Wrolstad, D., and Yin, T. (2011). Delayed, Canceled, On Time, Boarding . . . Flying in the USA. *Journal of Computational and Graphical Statistics* **20**(2), 287–290.

Books

Wackerly, D. D., Chen, J. T., and **Loy, A.** (2026). *Mathematical Statistics with Applications*. 8th edition. Independence, KY: Cengage.

Other Publications

Loy, A. (July 2022a). *Using Ed Discussion as a Course Communication Tool*. stattlc.com.

Loy, A. (June 2022b). *Building Flexibility into your Course with “Oops tokens”*. stattlc.com.

Loy, A. (2021b). Book review of *Chance, Logic, and Intuition* by Steven Tijms. *MAA Reviews*.

Loy, A. (Oct. 2019). *Visual Inference: Using Sesame Street Logic to Introduce Key Statistical Ideas*. stattlc.com.

Foti, S., Le, L., Ziegler, L., Whitaker, D., and **Loy, A.** (Sept. 2019). *Get the p outta here! Discussing the USCOTS 2019 significance sessions*. stattlc.com.

Church, S., Haigh, T., Widhalm, M., Prokopy, L. S., Arbuckle, J. G., Jr., Hobbs, J., Knoot, T., Knutson, C., **Loy, A.**, Mase, A. S., McGuire, J., Wright Morton, L., and Tyndall, J. (Aug. 2015). *Farmer Perspectives on Agricultural Practices, Information, and Weather Variability in the Corn Belt: A Statistical Atlas, Volume 2*. Tech. rep. CSCPAP 0184-2015. West Lafayette, IN: Purdue University Research Repository.

Loy, A. (2015). Embracing Data Science. *The UMAP Journal* **36**(4). Invited guest editorial, 285–292.

Loy, A., Hobbs, J., Arbuckle, J. G., Jr., Wright Morton, L., Prokopy, L. S., Haigh, T., Knoot, T., Knutson, C., Mase, A. S., McGuire, J., Tyndall, J., and Widhalm, M. (2013). *Farmer Perspectives on Agriculture and Weather Variability in the Corn Belt: A Statistical Atlas, Volume 1*. Tech. rep. CSCPAP 0153-2013. Ames, IA: Cropping Systems Coordinated Agricultural Project (CAP): Climate Change, Mitigation.

Loy, A. and Hofmann, H. (2009). Visual Monitoring of Data Streams. In: *JSM Proceedings, Section on Statistical Graphics*. American Statistical Association. Washington, DC.

Presentations

“Rethinking Introductory Statistics in the Age of Generative AI.” Keynote speaker, 2026 Regional Electronic Conference On Teaching Statistics, Ames, IA, June 2026.

“Welcome to the Meta-Verse: Learning about Scholarship of Teaching and Learning.” Panel discussion, LTC Winter Break Conference, Northfield, MN, December 2025.

- "Talking Through Teaching Tensions Together: Exploring Alternate Models of Conversation." (with Brenna Curley, Jillian Downey, Katherine Kinnaird, and Eric Reyes). Poster presentation, U.S. Conference on Teaching Statistics, Ames, IA, July 2025.
- "Teaching statistical learning: An active approach using R and tidymodels." (with Jaime Davila). Workshop, U.S. Conference on Teaching Statistics, Ames, IA, July 2025.
- "Flipping Stat1 and Stat2: Advice and Reflections." Topic-contributed conference presentation, Joint Statistical Meetings, Portland, OR, August 2024.
- "JAGS and NIMBLE and STAN, oh my! Navigating the pedagogical waters of MCMC sampling software for the undergraduate curriculum." Topic-contributed conference presentation, Joint Statistical Meetings, Toronto, Canada, August 2023.
- "Communicating Progress in a Statistics Course through Non-traditional Grading." (with Brenna Curley and Eric Reyes). Workshop, U.S. Conference on Teaching Statistics, State College, PA, June 2023.
- "Perspectives on Non-traditional Grading in Statistics Courses." Topic-contributed panel discussion, Joint Statistical Meetings, Washington, D.C., August 2022.
- "Bridging the gap between coding and programming." Invited conference presentation, ICSA Applied Statistics Symposium, Gainesville, FL, June 2022.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited seminar talk, Department of Mathematics, Luther College, Northfield, MN, May 2022.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited seminar talk, Department of Mathematics, Statistics, and Computer Science, St. Olaf College, Northfield, MN, April 2022.
- "Bringing visual inference to the classroom." CAUSE webinar, Virtual, February 2022.
- "Bootstrapping Multilevel Models in R using lmeresampler." Lightning talk, Joint Statistical Meetings, August 2021.
- "Bootstrapping Multilevel Models in R using lmeresampler." Elevator pitch, useR!, Virtual, July 2021.
- "Lessons for the Future from a Year of COVID Teaching." Special session on Online/Hybrid Teaching in Statistics and Data Science, Symposium on Data Science and Statistics, Virtual, June 2021.
- "Exploring automatic evaluation of statistical graphics." Invited seminar talk, Joint machine learning reading group, George Washington University, Virtual, February 2021.
- "Bringing visual inference to the classroom." Invited seminar talk, Department of Statistics, University of Nebraska-Lincoln, Virtual, October 2020.
- "Bringing visual inference to the classroom." Contributed conference presentation, Joint Statistical Meetings, August 2020.
- "Bringing visual inference to the classroom." Refereed conference presentation, Symposium on Data Science and Statistics, June 2020.
- "Exploring automatic evaluation of statistical graphics." Invited seminar talk, Graphics Working Group, Iowa State University, Ames, IA, October 2019.
- "Can't a computer do that? Exploring automatic evaluation of statistical graphics." Invited seminar talk, Gustavus Adolphus College MCS Seminar, St. Peter, MN, September 2019.
- "Visual inference for model checking." Invited paper, Joint Statistical Meetings, Denver, CO, July 2019.

- "Bringing visual inference to the classroom." Peer-reviewed poster presentation, United States Conference on Teaching Statistics (USCOTS), State College, PA, May 2019.
- "A discussion of visual inference." Invited seminar talk, Invited Statistical Sciences Seminar Series, Los Alamos National Laboratory, Los Alamos, NM, December 2018.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited seminar talk, Department of Mathematics and Statistics, Macalester College, St. Paul, MN, November 2018.
- "Statistics in the Data Science Curriculum." Invited panel discussion, The 2018 Liberal Arts Data Science Workshop, Sarasota, FL, January 2018.
- "Training Statisticians to Be Effective Instructors." Invited panel discussion, Joint Statistical Meetings, Baltimore, MD, August 2017.
- "Infusing Data Science into the Statistics Curriculum." Roundtable discussion, Joint Statistical Meetings, Baltimore, MD, August 2017.
- "Modules for Infusing Data Science into the Statistics Curriculum." Preconference workshop, United States Conference on Teaching Statistics (USCOTS), State College, PA, May 2017.
- "Modules for Infusing Data Science into the Statistics Curriculum." Peer-reviewed poster presentation, United States Conference on Teaching Statistics (USCOTS), State College, PA, May 2017.
- "Making Decisions with Data: Planning for Collaborative Courses in Data Science." Grant report with Shonda Kuiper, Teagle Hybrid Learning Conference, Oak Brook, IL, April 2017.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited colloquium talk, Department of Mathematics and Statistics, Carleton College, Northfield, MN, January 2017.
- "Variations of Q-Q Plots—The Power of our Eyes!" Contributed poster, Joint Statistical Meetings, Chicago, IL, August 2016.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited colloquium talk, Department of Mathematics and Computer Science, Ripon College, Ripon, WI, April 2016.
- "Q-Q plots: To De-trend, or Not to De-trend." Invited colloquium talk, Department of Mathematics and Computer Science, Beloit College, Beloit, WI, February 2016.
- "Better Diagnostics for Linear Mixed-Effects Models Using Visual Inference." Invited seminar talk, Graphics Working Group, Iowa State University, Ames, IA, December 2014.
- "Visual Inference for Linear Mixed-Effects Models." Contributed poster, Joint Statistical Meetings, Boston, MA, August 2014.
- "Understanding Farmer Perspectives on Climate Change and Adaptation to Increased Weather Variability." Guest lecture for Environmental Studies 300, Lawrence University, Appleton, WI, March 2014.
- "A Discussion of Visual Inference." Invited talk, Department of Mathematics, Oberlin College, Oberlin, OH, December 2013.
- "A Discussion of Visual Inference." Invited talk, Department of Mathematics and Statistics, Grinnell College, Grinnell, IA, December 2013.
- "Escaping Asymptopia: How Visual Inference Can Help Solve Finite Sample Problems." Invited talk, Department of Mathematics, Lawrence University, Appleton, WI, November 2013.

“Are You Normal? The Problem of Confounded Residual Structures in Hierarchical Models.” Topic contributed talk, Joint Statistical Meetings, Montréal, Canada, August 2013.

“A Tale of Four Cities: Exploring the Soul of Biloxi, Detroit, Milledgeville, and State College.” Data Expo poster with Karsten Maurer and Dave Osthus (second place), Joint Statistical Meetings, Montréal, Canada, August 2013.

Software

CarletonStats: I became the maintainer of the R package developed by Laura Chihara for use in statistics classes at Carleton College in 2023.

qqplotr: An R package providing ggplot2 compatible quantile plots. Alexandre Almeida and Heike Hofmann coauthored this package during Google Summer of Code 2017.

lmeresampler: An R package implementing bootstrap procedures for nested linear mixed-effects models fit using either the lme4 or nlme packages. Spenser Steele* and Jenna Korobova* coauthored this package.

HLMdiag: An R package providing a suite of diagnostic tools for hierarchical linear models fit using either the lme4 or nlme packages. Jaylin Lowe* and Jack Moran* helped update and maintain this package.

Consulting

KagenAir. Compared two new mobile app-based system-control questionnaires for rhinitis and asthma to validated questionnaires. The goal of the project is to demonstrate that the app-based questionnaires are measuring rhinitis and asthma with a comparable level of accuracy. 2015–2020.

Community Early Learning Center. Created and maintained a MySQL database to store sociodemographic and assessment data for the five partner organizations, enabling them to utilize longitudinal data in their analyses. Prior to the database, the partner organizations treated each year in isolation. This database will be used for research by developmental psychologists at Lawrence University and the University of Wisconsin–Fox Valley. 2014–2017.

Jeff Clark (Geology). Explored a data set of meander geometry measurements from rivers around the world in five distinct environments (arid, temperate, tropical, periglacial, and bedrock) in an effort to determine if geometric features differ across environments. 2014–2015.

Lori Hilt (Psychology). Advised in the selection of models to analyze a psychology experiment. Reshaped data for use with statistical software. 2013–2014.

Statistics in the Community (StatCom). Provided pro bono statistical consulting including survey preparation, data management and manipulation, tabular and graphical summaries, and analysis. Completed projects include: the Ericson Public Library Community Survey and the Perry Public Library Community Survey. 2011–2013.

Professional Memberships

- o American Statistical Association

Service

Departmental Service.....

- STEM Board representative, Carleton College, 2023–present
- Mathematics and Statistics colloquium co-organizer, 2021–2023, 2024–present
- Search committee chair, Carleton College,
 - Visiting position in Statistics, Winter 2026
 - Tenure-track statistics position, Fall 2023
- Independent comps committee member, Carleton College, 2017–2025
- Faculty advisor for MinneMUDAC, Carleton College, 2018–2024
- Faculty advisor, Midwest Undergraduate Data Analytics Competition, Carleton College, 2019–2024
- Mathematics and Statistics events committee member, Carleton College, 2018–2019
- Search committee member, Carleton College
 - Visiting statistics position, Winter/Spring 2019, Winter/Spring 2024, Winter 2025
 - Visiting mathematics position, Spring 2023
 - Tenure-track mathematics position, Winter 2018, 2019, 2020, 2022
 - Tenure-track statistics position, Fall 2021
 - Visiting mathematics/statistics position, Winter/Spring 2020
- Search committee member, Lawrence University
 - Visiting position in Statistics, Winter/Spring 2017
 - Tenure-track position in Mathematics, Winter 2017
 - Visiting position in Mathematics, Spring 2016
 - Tenure-track position in Biology, Fall 2015
 - Visiting position in Mathematics, Winter 2014

College Service.....

- Student Fellowships Committee member, Carleton College, 2023–2026
- Admissions and Financial Aid Committee member, Carleton College, 2021–2023
- Institutional Review Board member, Carleton College, 2018–2020
- Writing portfolio reader, Carleton College, 2019, 2020, 2022, 2023
- Data science working group, Lawrence University, 2015–2017
- Benefits advisory committee, Lawrence University, 2015–2017
- Phi Beta Kappa Secretary, Lawrence University, 2016–2017
- Diversity point person for systems and data services librarian search committee, Lawrence University, Summer/Fall 2016
- Huebner Pre-Law Fellowship Review Panel, Lawrence University, 2016–2017
- Honors thesis committee member (2), Lawrence University

Professional Service.....

- Conference Committee, Symposium on Data Science & Statistics, 2024–present
- Program Chair-Elect, ASA Section on Statistical Graphics, 2026
- Associate editor
 - *Journal of Statistics and Data Science Education*, 2022–present
 - *R Journal*, 2021–2026
- External department reviews
 - Truman State University Department of Computer and Data Science, 2025

- Winona State University Department of Mathematics and Statistics, 2026
- o Executive committee member (elected) and ENAR liaison to program committee, ASA Section on Statistics and Data Science Education, 2022–2024
- o Editorial board member, *StatTLC* blog, 2019–present
- o Judge, Undergraduate Statistics Project Competition, The Consortium for the Advancement of Undergraduate Statistics Education (CAUSE), 2018, 2020, 2021
- o Conference session chair, Symposium on Data Science & Statistics, 2020
- o Organizing committee member, Southern Stat Chat: Effective Pedagogy in Data Science, 2018–2019
- o Discussant, Professional Opportunities at Smaller Colleges and Universities, Joint Statistical Meetings, August 2016
- o Director, Wisconsin Chapter of the American Statistical Association, 2015–2017
- o Conference reviewer for eCOTS Posters and Beyond Committee (2022, 2024), USCOTS Posters and Beyond Committee (2019, 2021, 2023), and ICOTS (2026)
- o Journal reviewer for *Journal of Statistics and Data Science Education*, *Journal of Computational and Graphical Statistics*, *Journal of Statistical Software*, *R Journal*, *The American Statistician*, *Computational Statistics*, *Journal of Data Science*, *Journal of Soil and Water Conservation*, VIS 2020, VIS 2021
- o Textbook proposal reviewer for CRC, Routledge, Wiley, Pearson

Community Service.....

- o Panelist, Science, Technology, Engineering, Computer Science, and Mathematics Career Panel, Northfield High School, Nov. 29, 2022.
- o St. John's Lutheran Church, Children's Board Member, 2021–present
- o Community Early Learning Center, Research Committee Member, 2014–2017