Sara A. Stoudt, PhD

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Research Interests

applied and computational statistics in ecology, environmental science, and metrology, teaching the communication of statistics, data journalism

Education

University of California, Berkeley, Berkeley, CA

Ph.D., Statistics, Fall 2015 - Summer 2020
Advisors: Will Fithian (Department of Statistics) and Perry de Valpine (Department of Environmental Science, Policy and Management)
National Physical Science Consortium Fellow
National Science Foundation Research Traineeship: Data Sciences for the 21st Century, Environment and Society

Smith College, Northampton, MA

B.A., Mathematics and Statistics, 2015

Dissertation Research

- identifiability in species distribution and abundance models
- community metric estimation in latent factor joint species distribution models under model mis-specification
- statistics communication

Job Experience

Bucknell University Fall 2021 - currently
- tenure-track Assistant Professor in Mathematics Department

Smith College Fall 2020 - Spring 2021
- Lecturer in Statistical and Data Science Program

Berkeley Institute for Data Sciences Fellow Fall 2018 - Spring 2020
- Diversity and Inclusion Working Group
- Best Practices Working Group

Data Desk Intern - Los Angeles Times Summer 2019
- Census data aggregator
- Governor Newsom social media analysis

Data Science Intern - Farmers Business Network Summer 2018
- Crop yield prediction

Summer (Undergraduate/Graduate) Research Fellow Summers 2013-2017
- Statistical Engineering Division, National Institute of Standards and Technology
  - Measuring optical apertures for solar irradiance monitoring
  - Homogenization of surface temperature records
  - Errors-in-variables modeling for force calibrations
  - Interpolating atmospheric greenhouse gas fluxes
  - Evaluating the accuracy, consistency, and stability of measurements of the Planck constant

Teaching Experience

Assistant Professor, Mathematics Department, Bucknell University

- MATH 216 Statistics I (2 sections - 52 total, 50 total) Fall 2021, Spring 2023
- MATH 217 Statistics II (11 and 20 students) Spring 2022, Fall 2022
- MATH 304 Statistical Inference Theory (7 and 6 students) Fall 2021, Spring 2022
- FOUN 098-53 Storytelling with Data (17 students) Fall 2022
- MATH 407 Stat Design Scientific Studies (7 students) Spring 2023
- Bucknell Academy Summer Experience (one week): Numbers in the News: Storytelling with Data Summer 2023

Lecturer, Statistical and Data Sciences Program, Smith College

- Communicating with Data (remote, almost 70 students) Fall 2020
- Introduction to Probability and Statistics (remote, about 45 students) Fall 2020, Spring 2021

Graduate Student Instructor (GSI), Statistics, UC Berkeley

- Co-developed and co-instructed new writing in statistics course (about 15 students) Fall 2017
- Co-developed and co-instructed new blogging for data science independent study (about 5 students) Spring 2018
- Outstanding GSI award

Miscellaneous Primary Instructor

- Statistical Methods using Python Workshops (Internship Network in the Mathematical Sciences, Fall 2023)
- Data Storytelling Workshop (Correlation One's Women's Summit, 2020) (cancelled due to COVID-19)
- Introduction to Statistics in R Workshop (National Institute for Computer-Assisted Reporting (NICAR), 2020)
- Unleashing the power of biodiversity data with data science (Lewis and Clark workshop 2019, co-instructed with Ciera Martinez)

Miscellaneous Teaching Assistant

- Linear Regression Workshop (National Institute for Computer-Assisted Reporting, 2020)
- Peer Data Review coach (Open News, 2019)
- R bootcamp (D-Lab/UC Berkeley Statistics Department, 2018)
- Software Carpentry (Data Science for the 21st Century Training Program, 2018)

Peer-Reviewed Publications

- Stoudt, S., de Valpine, P., and Fithian, W. "Non-parametric identifiability in species distribution and abundance models: why it matters and how to diagnose a lack of it using simulation" Journal of Statistical Theory and Practice, special issue Ecological Statistics 17(39), 2023.
- Stoudt, S., Scotina, A, and Luebke, K "Supporting Statistics and Data Science Education with learnr" Technology Innovations in Statistics Education), 14(1), 2022.
- Stoudt, S., and Nolan, D. "Revision Beyond the Copyedit: Encouraging Students to Reorganize, Restructure, and Refocus in Writing Assignments" Proceedings of International Conference on Teaching Statistics (ICOTS)), 2022.
- Stoudt, S. "Collaborative Writing Workflows in the Data-Driven Classroom: A Conversation Starter" *Journal of Statistics and Data Science Education* June, 2022.
- Stoudt, S., Goldstein, B. R., and de Valpine, P. "Identifying Engaging Bird Species and Traits with Community Science Observations" *Proceedings of the National Academy of Sciences* Volume 119, Number 16, April, 2022.
- Stoudt, S., and Possolo, A. "Statistical and Computational Tools for Metrologists" Chapter for Advanced Mathematical and Computational Tools in Metrology and Testing XII, Series on Advances in Mathematics for Applied Sciences, Vol. 90, pp. 109-125., February 2022.
- Nolan, D., and Stoudt, S. "The Promise of Portfolios: Training Modern Data Scientist" *Harvard Data Science Review*, Issue 3.3, July 2021.

- Nolan, D. and Stoudt, S. "Communicating with Data: The Art of Writing for Data Science", Oxford University Press, May 2021.
- Stoudt, S., Vasquez, V., and Martinez, C. "Principles for data analysis workflows" *PLOS Computational Biology* Volume 17, Number 3, March 2021.
- Stoudt, S., Pintar, A., and Possolo, A. "Coverage Intervals" *Journal of Research of National Institute of Standards and Technology* Volume 126, Number 126004, March 2021
- Stoudt, S., Pintar, A., and Possolo, A. "Uncertainty Evaluations from Small Datasets" *Metrologia* Volume 58, Number 1, January 2021
- Possolo, A., Schlamminger, S., Stoudt, S., Pratt, J. R., and Williams, C. J. "Evaluation of the accuracy, consistency, and stability of measurements of the Planck constant used in the redefinition of the International System of Units" *Metrologia* Volume 55, Number 1, December 2017
- Stoudt, S. "Geostatistical Models for the Spatial Distribution of Uranium in the Continental United States" *Advances in Geocomputation: Geocomputation 2015 - The 13th International Conference* Springer Advances in Geographic Information Science, 2017, pp. 325-334.
- Stoudt, S., Badian-Pessot, P., Mahop, B. N., Earley, E., Menter, J., Flores, Y., Williams, D., Zhang, W., Maharajan, L., Bao, Y., Rosenbauer, L., Nguyen, V., Mendiratta, V., and Tania, N. "Modeling Internet Traffic Generations Based on Individual Users and Activities for Telecommunication Applications" *American Journal of Undergraduate Research* Volume 13, Issue 3, August 2016, pp. 53-65.
- Bartel, T., Possolo, A., and Stoudt, S. "Force Calibrations using Errors-in-Variables Regression and Monte Carlo Uncertainty Evaluations" *Metrologia* Volume 53, Number 3, June 2016, pp. 965-980(16).
- Stoudt, S., Cao, Y., Udwin, D., and Horton, N. J. "What Percent of the Continental US is Within One Mile of a Road?" *Statistics Education Web,* 2014.

Publications In Progress

- Goldstein, Benjamin R., Stoudt, S., Lewthwaite, Jayme M. M., Shirey, Vaughn, Mendoza, E., and Guzman, Laura Melissa. "Logistical and preference bias in participatory science butterfly data" (*under review* at Frontiers in Ecology and the Environment
- Doser, J. and Stoudt, .S. " 'Fractional replication' in single-visit multi-season occupancy models: Impacts of spatio-temporal autocorrelation on identifiability" (*under review* at Methods of Ecology and Evolution)
- Hong, J., Stoudt, S., and de Valpine, P. "Fast maximum likelihood estimation for general hierarchical models" (*under review* at Journal of Applied Statistics)
- Stoudt, S., and Danchev, V. "Ten simple rules for building and maintaining a responsible data science workflow" (under review at PLOS Computational Biology)

Other Publications

- Stoudt, S. and Doser, J. "Exploring model identifiability with a stress-testing framework" *spOcc* package vignette, October 2023.
- Stoudt, S. Review of "Design and Analysis of Experiments and Observational Studies using R" by Nathan Taback *MAA Reviews,* October 2023
- Stoudt, S. Can TV make you a better stats communicator? *Significance*, August 2023
- Stoudt, S. "What would happen if...? Statistical Thinking as Speculative Fiction", Vector, accepted contribution for special issue on Prediction, Innovation, and Futures, Spring 2023.
- Stoudt, S. Review of "Bernoulli's Fallacy" by Aubrey Clayton *MAA Reviews*, May 2022.
- Stoudt, S. Review of "Statistical Learning from a Regression Perspective" by Richard A. Berk *MAA Reviews*, December 2021.

- Nolan, D. and Stoudt, S. "Captions: The Unsung Heroes of Data Communication" *Proceedings of the International Association for Statistical Education (IASE) 2021*, September 2021.
- Stoudt, S. Review of "Design of Observational Studies" by Paul R. Rosenbaum *MAA Reviews*, July 2021.
- Goeva, A., Jones, P., Stoudt, S., and Trisovic, A. "Recipes for Connector Courses from the Early-Career Board Kitchen" *Harvard Data Science Review (Invited Commentary)*, June 2021.
- Frost, S., Goeva, A., Pombra, J., Seaton, W., Stoudt, S., Trisovic, A, Wang, C., and Zucker, C.."Kaleidoscopic Perspectives on Practicum-based Data Science Education" *Harvard Data Science Review (Invited Commentary)*, February 2021.
- Nolan, D., and Stoudt, S. "Reading to Write" *Significance*, December 2020.
- Goeva, A., Stoudt, S., and Trisovic, A. "Toward Reproducible and Extensible Research: from Values to Action" *Harvard Data Science Review (Invited Commentary)*, December 2020.
- Frost, S., Goeva, A., Seaton, W. Stoudt, S., and Trisovic, A. "Early-Career View on Data Science Challenges: Responsibility, Rigor, and Accessibility" *Harvard Data Science Review (Invited Commentary)*, September 2020.
- Sholler, D., Stoudt, S., Kennedy, C., Hoces de la Guardia, F. Lanusse, F., Ram, K. Ottoboni, K., Stuart, M., Vareth, M., Varoquaux, N. , Barter, R. , Geiger, R. S., Peterson, S., and van der Walt, S. "Resistance to Adoption of Best Practices: a report from the Berkeley Institute for Data Science's Best Practices in Data Science Series", 2018.
- Geiger, R. S., Sholler, D., Culich, A., Martinez, C., Hoces de la Guardia, F., Lanusse, R., Ottoboni, K., Stuart, M., Vareth, M., Varoquaux, N., Stoudt, S., and van der Walt, S. "Challenges of Doing Data-Intensive Research in Teams, Labs, and Groups: Report from the BIDS Best Practices in Data Science Series", 2018.
- Geiger, R. S., DeMasi, O., Culich, A. Zoglauer, A., Das, D. Hoces de la Guardia, F., Ottoboni, K., Fenner, M., Varoquaux, N., Barter, R., Barnes, R., Stoudt, S., Dorton, S., and van der Walt, S. "Best Practices for Fostering Diversity and Inclusion in Data Science: Report from the BIDS Best Practices in Data Science Series", 2018.
- Sholler, D., Das, D., Hoces de la Guardia, F., Hoffmann, C., Lanusse, F., Varoquaux, N., Garcia, R., Geiger, R. S., McDevitt, S., Peterson, S., and Stoudt, S. "Best Practices for Managing Turnover in Data Science Groups, Teams, and Labs", 2018.
- Stoudt, S., Santana, L., and Baumer, B. "In Pursuit of Perfection: An Ensemble Method for Predicting March Madness Match-Up Probabilities" *JSM 2014 Proceedings*

Non-Academic Writing and Multimedia

- "A Summer set.seed() Sestina," *AMS Feature Column*, August 2023.
- Data analysis for hey Won't Play a Lady-O on Country Radio: Examining Back-to-Back Plays by Gender, Race and Sexual Orientation by Jan Diehm and Jada Watson, May 2023.
- Co-editor of Data Science by Design's "Our Environment" Anthology, June 2023.
- "Statistical Concepts and Intersectionality ," *AMS Feature Column*, July 2022.
- Co-editor of Data Science by Design's "Future of Data Science" Anthology, June 2022.
- "The Origins of Ordinary Least Squares Assumptions: Some Are More Breakable Than Others," *AMS Feature Column*, March 2022.
- Data Science Education from the Lens of Communication, *Data Science Education Program Podcast*, December 2021.
- Data Science by Design (DSxD): A Community of Creators, *ADSA Community Blog*, with Martinez, C and Vasquez, V., November 2021.
- "Why Do We Plot Data" (Explainer Zine) *Harvard Data Science Review*, with Blumenthal, K., Goeva, A., Stoudt, S., Trisovic, A., and Trisovic, P., September 2021.

- Ecology for the Masses Stats Corner (2020-2022)
- Under Ice Ice Pressure Baby, CAUSEweb Fun Collection, June 2021
- COVID-19 Case Fatality Rate Bias Visual Explainer with Aleksandrina Goeva, Harvard Data Science Review, February 2021.
- "Data Visualization Beyond the Screen", Northeast Big Data Innovation Hub Blog, January 2021.
- scripts for 15 episodes of Study Hall: Data Literacy (produced by Arizona State University and the Crash Course team at Complexly) (released weekly throughout Fall 2020)
- Communicating with Data newsletter, jointly written with students in my Fall '20 course.
- Interviewed for Music Journalism Insider newsletter
- Just how does Kidz Bop censor songs? (The Pudding)
- You Know Karen (The Pudding)
- Berkeley Science Review (3 posts)
- Tag Yourself (Logic Magazine)
- Tidy Tuesday and #rstats blog
- What does probability mean anyway?
- Fixed, mixed, and random effects

Awards

- Code review for "How do public officials make Land Bank decisions? Artificial Intelligence may seek patterns" (story won All Ohio Excellence in Journalism Awards) 2022
- RStudio Diversity Scholar 2020
- Berkeley Institute for Data Science Fellow 2018-2020
- Outstanding Graduate Student Instructor award 2018
- National Physical Science Consortium Fellow 2015-2018
- Data Sciences for the 21st Century: Environment and Society Graduate Training Program 2015-2017
- Gertrude M. Cox Scholarship 2015
- Elected to Mu Sigma Rho 2015
- Goldwater Scholar 2014
- Elected to Phi Beta Kappa Society 2014
- First Place: Statistics in Sports Undergraduate Research Competition at Joint Statistical Meetings 2014
- Best in Show: Five College Data Fest 2014, 2015

Grants

- "Building a Just Computing Movement: Integrating curricular and co-curricular experiences" Mozilla Foundation, 2023-2024
- Bucknell University Curricular Development Grant to develop Foundation Seminar (Storytelling with Data), Summer 2022
- awarded (co-PI) Code for Science and Society Virtual Event Grant to build Data Science by Design community and organize CreatorConf, 2021.
- awarded (co-PI) Academic Data Science Alliance Career Development Network Seed Grant to support the Data Science by Design community and create the Future of Data Science Anthology, 2021.
- awarded Curriculum Enhancement Grant from Smith College's Design Thinking Initiative to fund mailing maker kits to Communicating with Data students, Fall 2020.
- awarded grants from UC Berkeley Wellness Fund, UC Berkeley Chancellor's Advisory Committee on Student Services and Fees, and UC Berkeley Student Technology Fund Committee to fund the "Fostering diverse and inclusive data science at Berkeley" series at BIDS (2019)

PRESENTATIONS

- "Birds, Butterflies, Community Scientists, Oh My!: What Participatory Science Data Can Tell Us About Both Nature and Data Collectors" *Invited Talk*, Gettysburg College Math/Stat Colloquium, November 2023
- "Data Science by Design: Supporting and Celebrating the Creativity of Data Scientists" Talk, Academic Data Science Alliance Annual Meeting, October 2023
- "Storyboarding: finding the 'so what?'" *Guest Lecture*, Lewis and Clark College Intro to Data Science class, October 2023
- "A Data Stories Tell-All" *Invited Talk*, Lewis and Clark College Data Science Colloquium, October 2023
- "What (else) is data science?" *Guest Lecture*, Bucknell Dinner Seminar, September 2023
- "Data Science in the Wild" *Talk*, Bucknell Mathematics Department Faculty Seminar, September 2023
- "Birds, Butterflies, Community Scientists, Oh My!: What Participatory Science Data Can Tell Us About Both Nature and Data Collectors" *Invited Talk*, Swarthmore College Math/Stat Colloquium, September 2023
- "Birds, Butterflies, Community Scientists, Oh My!: What Participatory Science Data Can Tell Us About Both Nature and Data Collectors" *Invited Talk*, Juniata College Math/Stats Colloquium, September 2023
- 'Collaborative writing workflows: building blocks towards reproducibility'
  Invited Session, Joint Statistical Meetings, August 2023
- "Behind the scenes look at Data Science by Design Anthology Vo. 2: Our Environment"
  Invited Panel, Academic Data Science Alliance Career Development Network Webinar, July 2023
- "Wait, What Do You Mean?": Helping Students Become "Full Stack" Communicators
  Invited Keynote, United States Conference on Teaching Statistics, June 2023
- Alternative grading: a more meaningful representation of student learning
  Talk, United States Conference on Teaching Statistics, June 2023, with Allison Theobold, Ciaran Evans, and Jessie Oehrlein
- Communicating Statistics: Tools, Tips, and Tricks
  Invited Keynote Panel, Symposium on Data Science and Statistics, May 2023, with Christine Zhang and Roger Peng
- Flipping the Script on Community Science Data: Learning about the Data Collectors On the Way to Learning about Ecology
  Invited Talk, Penn State University Department of Statistics Seminar, November 2022
- When Data Doesn't Speak for Itself: Storyboarding to Find A Narrative
  Invited Talk, Auckland Mathematical Association Online Series, November 2022
- Reading to Write
  Guest Lecture, Communicating Data and Statistics course, Columbia Journalism School, September 2022
- Revision Beyond the Copyedit: Encouraging Students to Reorganize, Restructure, and Refocus in Writing Assignments
  Talk, International Conference on Teaching Statistics (ICOTS), September 2022, with Deborah Nolan
- Audiences and Arguments: Teaching the Strategies of Effective Data Communicators
  Invited Talk, Joint Statistics Meetings (JSM), August 2022
- GAISE recommendations, teaching intro stats and assessing learning
  Invited Talk, Preparing to Teach, August 2022, with Allison Theobold.
- Wrong but Useful? Identifiability Regimes of Species Distribution and Abundance Models Under Model Mis-specification
  Talk, International Statistical Ecology Conference (ISEC), June 2022, joint work with Perry de Valpine and Will Fithian
- Draw me a map v. paint me a picture: helping students know when to write about

process and when to write about findings
Talk, eCOTS, May 2022, with Deborah Nolan

- Data Storytelling: What Does Your Data Have To Say? How Do You Say It?
  Panel, Community College Data Science Conference, May 2022, with Jeff Leek and Pragyan Nayak
- Storyboarding: finding the "so what?", (Guest Lecture, MATH 230) April 2022.
- A Logical Lark? The Promise and Pitfalls of Community Science Data
  Invited Talk, University of Maryland Behavior, Ecology, Evolution, and Systematics Seminar, April 2022, joint work with Ben Goldstein, Perry de Valpine, and Will Fithian
- The Design of Simulation Studies: Crafting Best and Worst Case Scenarios (and Everything in Between)
  Invited Talk, University of Arizona Data Cooperative, March 2022
- Going Analog: Emerging from the Weeds and Broadening our Audience
  Invited Talk, Iowa State University Graphics Group, March 2022
- Data Science by Design - Experimenting With a New Community of Practice For Data Creatives
  Talk, ADSA Annual Meeting, November 2021 (postponed - COVID, January 2022), joint work with Ciera Martinez and Valeri Vasquez
- All Species Distribution and Abundance Models Are Wrong, Which Are Useful?
  Talk, The Wildlife Society (TWS) Annual Conference, November 2021, joint work with Perry de Valpine and Will Fithian
- Building Responsible Data Science Workflows
  Panel, PyData Global, October 2021, with Valentin Danchev, Ben Marwick, Dr. Brandeis Marshall, Kirstie Whitaker, Thibault Lestang, and Yacine Jernite
- Harvard Data Science Review's (HDSR) First Zine
  Lightning Talk, Cut+Paste: Zines for Science Communication, October 2021, joint work with Kelly Blumenthal, Aleks Goeva, Ana Trisovic, and Pavle Trisovic
- Captions: The Unsung Heroes of Data Communication
  Talk, International Association for Statistical Education (IASE), September 2021, joint work with Deborah Nolan
- Storyboarding as Part of the Process of Statistical Investigation
  Lightning Talk and Live Discussion, USCOTS Beyond Session, June 2021, with Deborah Nolan
- Communicating with Data: Practicing and Teaching
  Talk, Data Science for Social and Environmental Justice Virtual Writing and Research Development Group, June 2021, joint work with Deborah Nolan
- Data Communication
  Panelist, National Workshop on Data Science Education, UC Berkeley, June 2021, with Jeff Leek, Amelia McNamara, Trity Pourbahrami, and Deborah Nolan
- Creativity to Learn, Creativity to Teach
  Session Co-lead, Data Science by Design Creator Conf, May 2021, with Allison Horst and Sean Kross
- Generalized Additive Models: Allowing for some wiggle room in your models
  Invited Talk, Social Science Data Lab, Mannheim Centre for European Social Research at the University of Mannheim, Germany, March 2021
- From No Prereqs to Data Storytellers: Borrowing from the Journalist's Toolbox to Teach Students to Communicate with Data
  Talk, Computation+Journalism Conference, February 2021
- The Art of Writing for Data Science
  Guest Lecture, Communicating Data and Statistics course, Columbia Journalism School, February 2021
- Ideas Swap on Using Kits for Hands-on Making
  Panel, Smith College, January 2021

- Species Distribution and Abundance Models: The Good, The Bad, and The Not Identifiable
  Talk, Smith College Sigma Xi Lectures, November 2020
- Joint Species Distribution Models: Are they walking the walk or just talking the talk?
  Talk (Invited), Boston Women in Machine Learning and Data Science, October 2020
- Econometrics Meets Ecology
  Talk (Invited), USFCA students at Women and Diversity in Economics Club, October 2020
- Communicating with Data: How and where does it fit in the data science curriculum?
  Breakout Session Co-lead, Academic Data Science Alliance Annual Meeting, October 2020, with Deborah Nolan
- Principles for data-intensive research workflows: Guidance for the classroom and the computational laboratory
  Breakout Session Co-lead, Academic Data Science Alliance Annual Meeting, October 2020, with Valeri Vasquez and Ciera Martinez
- An overview of and lessons learned from hosting a data science workshop series for undergraduate students from under-represented backgrounds
  Co-presenter, Academic Data Science Alliance Annual Meeting, October 2020, with Orianna Demasi and Stacey Dorton
- Saying "Yes": A Data Memoir
  Talk (Invited), RLadies Amherst, April 2020
- Groove is in the Heart and the Data
  Lightning Talk, RLadies San Francisco, December 2019
- Talking With the Public About Data Science
  Panelist, Moore-Sloan Data Science Environment Annual Summit, November 2019, with Joshua Tucker, Andrea Jones-Rooy, and moderator Meredith Broussard
- Diversity and Inclusion in Data Science
  Talk and Discussion Lead, Moore-Sloan Data Science Environment Annual Summit, November 2019, on behalf of BIDS Diversity and Inclusion Working Group
- Goodness-of-Fit Checks and Diagnostic Plots for Hierarchical Joint Species Distribution Models
  Poster, American Fisheries Society and The Wildlife Society Joint Annual Conference, September 2019, with Will Fithian and Perry de Valpine
- Species Distribution and Abundance Models: The Good, The Bad, and The Not Identifiable
  Talk and Poster, Berkeley Statistics Annual Research Symposium, UC Berkeley March 2019, with Will Fithian and Perry de Valpine
- Identifiability in the Wild: Econometrics Meets Ecology
  Talk, Third Annual Berkeley-Stanford Econometrics Jamboree, UC Berkeley, November 2018, with Will Fithian and Perry de Valpine
- Clarifying the Identifiability Controversy in Species Distribution Modeling
  Poster, Berkeley Statistics Annual Research Symposium, UC Berkeley March 2018, with Will Fithian and Perry de Valpine
- Sampling-Based Approaches to Maximum Likelihood Estimation for Latent Variable Models
  Poster, Berkeley Statistics Annual Research Symposium, UC Berkeley March 2017, with Johnny Hong and Perry de Valpine
- Interdisciplinary Graduate Education in Data Science: DS421 NRT
  Poster, Berkeley Institute for Data Science Data Science Faire, UC Berkeley May 2017, with DS421 Cohort 1
- Streamlining Climate Model Accessibility for Integration into Site-Specific Life Science Research
  Talk, Data Science for the 21st Century Annual Symposium, UC Berkeley May 2017,

with Jenna Baughman
- Sampling-Based Approaches to Maximum Likelihood Estimation for Latent Variable Models
  Poster, BSTARS, UC Berkeley March 2017, with Johnny Hong and Perry de Valpine
- Uncertainty Quantification and Statistics
  Talk (Invited), NIST Presentation to SPIRAL students, July 2016 and July 2017
- Geostatistical Models for the Spatial Distribution of Uranium in the Continental United States
  Plenary Talk (Invited), First Electronic Undergraduate Statistics Research Conference, October 2015
- Internet Traffic Generation
  Talk (Invited), MAA Mathfest, August 2015, with Erika Earley, Yadira Flores, and Jordan Menter
- "Big Force" Calibrations: An Errors in Variables Approach *Talk*, Summer Undergraduate Research Fellow Colloquia, National Institute of Standards and Technology, August 2015, with Antonio Possolo and Tom Bartel
- Geostatistical Models for the Spatial Distribution of Uranium in the Continental United States
  Poster, Geocomputation, May 2015
- Correcting Temperature Records for Biases Unrelated to the Climate
  Talk, Summer Undergraduate Research Fellow Colloquia, National Institute of Standards and Technology, August 2014 (also given at WIMIN Conference in September 2014), with Antonio Possolo
- The Perfect Bracket: Machine Learning in NCAA Basketball
  SPEED poster and presentation, Joint Statistical Meetings, August 2014, with Loren Santana and Ben Baumer
- Taking a Closer Look at Learning: Factors Associated with Changes in Academic Performance During the Transition from Elementary to Middle School
  Poster, Women in Statistics Conference, May 2014, with Dana Hsu, Anna Rockower, and Katherine Halvorsen
- Measuring Optical Apertures for Solar Irradiance Monitoring
  Plenary Talk (Invited), Summer Undergraduate Research Fellow Colloquia, National Institute of Standards and Technology, August 2013, (also given at SMATH conference in September 2013) with Maritoni Litorja, and Antonio Possolo

Bucknell Service

- Mentoring and Recruitment Committee, Fall 2022-Spring 2023
- Common Reading Discussion Leader, Fall 2022
- Bucknell Mathematics Department Curriculum Committee, Fall 2021-Spring 2022
- Bucknell Mathematics Department Seminar Committee, Fall 2021-Spring 2022
- Bucknell Mathematics Alumni Panel Moderator, September 2021

Other Service

- Associate Editor for the Journal of Statistics and Data Science Education, Fall 2022-ongoing
- Code review for "A scooped-up side lot and the riverfront parcel that mysteriously got away: How rules written for distressed 'Rust Belt' property may benefit a select few", Fall 2022
- ASA Statistics and Data Science Education Section Mentor, Fall 2022-Spring 2023
- co-organizer of Data Science by Design's Reconnect Event (September 2022) and ongoing member of Leadership Committee for the "Our Environment" Anthology (June 2023)
- elected Communications Officer (to serve 2023-2025) for the ASA Statistics and Data Science Education Section
- reviews completed in first year at Bucknell: International Conference on Teaching

Statistics conference proceedings (5), PLOS ONE (2 rounds of 1 submission), Journal of Statistics and Data Science Education (1), Frontiers in Ecology and the Environment (2 rounds of 1 submission), Ecology (1)

- Judging ASA Special Awards in Statistics at Regeneron International Science and Engineering Fair, Spring 2022
- MathStatBites Deputy Editor, Spring 2022-ongoing (acting Editor-in-Chief Fall 2023)
- AMS Feature Column Contributor, Spring 2022-ongoing
- Undergraduate Statistics Project Competition judging, February and August 2022
- New York Times What's Going On In This Graph Moderation, January 2022, March 2023, October 2023
- The Wildlife Society Ask a Biometrician Workshop (early-career consultant), November 1st, 2021
- co-organizer of Data Science by Design (DSxD) initiative, including Creator Conf in May 2021 and the Future of Data Science Anthology (June 2022)
- organizer of graduate school panel for Smith College Statistical and Data Sciences Program and Five College Statistics students, November 2020
- member of Harvard Data Science Review Early Career Board, Fall 2020-ongoing
- Women in Statistics and Data Science Rotating Twitter Curator, August 2020
- Co-organizer of Code and Coffee East Bay for the Bay Area Women in Machine Learning & Data Science Meetup group, Spring 2019 - Spring 2020
- Member of BIDS Diversity and Inclusion Working Group, Fall 2018 - Spring 2020
- We Are RLadies Rotating Twitter Curator, October 2018
- Co-president of the Statistics Graduate Student Association (SGSA), Fall 2017 - Spring 2018
- Co-organizer of UC Berkeley DataFest, Springs 2016 - 2018
- Co-organizer of SGSA Gender Issues Roundtable Discussion, Fall 2016
- Co-organizer of Statistics Graduate Student Association Diversity Discussion, Spring 2017
- Statistics Graduate Student Association Diversity Affairs Member, Fall 2016 - Spring 2017
- Graduate Student Volunteer: "Roadless America" Interactive Activity for Cal Day 2016 and 2017

Relevant Activities

- Mathematical Association of America Project NExT Fellow — Summer 2022 - Summer 2023
- Blogdown website production for the Murmuration project — 2021
- Author of base R to dplyr vignette — 2020
- Author of base R to stringr vignette — 2019
- Developer of interactive visualization for the Wealth Tax Simulator — 2019
- NCAR Graduate Workshop on Environmental Data Analytics (by application) — 2016
- San Francisco Estuary Institute consulting — 2016
- SAMSI International Temperature Initiative (by application) — 2014