Abigail Loe

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Education

April 2026	University of Michigan, Ann Arbor MI PhD Biostatistics (Expected).
April 2023	University of Michigan, Ann Arbor MI M.S. Biostatistics, GPA:3.94
June 2021	Carleton College, Northfield MN B.A. *Cum Laude*, Mathematics (Women's & Gender Studies), GPA:3.83 Programming Languages R, Python, Java, MATLAB, SAS, SQL

Relevant Experience

Mar 2024 - Present	University of Michigan, CleanUP Clinical Trial **Statistical Analyst** · Discovered novel interaction between a microbe and pulmonary medication that contributed to the decline of patients with pulmonary fibrosis · Developed new visualizations for classifying microbe colonies · Publication in top medical journal expected · Used regression models, survival models, and machine learning, corrected for false discovery rate
Jan 2023 - Present	University of Michigan, PRECISIONS Clinical Trial **Statistical Analyst** · Analyzed combined survival endpoints for a clinical trial investigating a novel treatment for Idiopathic Pulmonary Fibrosis · Edited and updated the Statistical Analysis Plan, while developing a novel imputation algorithm to recover power in settings with high patient dropout · Collaborated with MDs to combine statistical and medical knowledge into patient deliverables
Jan 2022 - Present	University of Michigan, MiSIL Lab **Graduate Student Research Assistant** · Developed flexible regression methods for time-to-recurrent-event data under the direction of Drs. Zhenke Wu and Susan Murray · Analyzed results from a **mobile health clinical trial** · Synthesized existing methods for τ-restricted event time analysis
Aug 2021 - Dec 2024	University of Michigan, Department of Biostatistics · As a part of my course work, I analyzed health data from sources as widely varied as NHANES, Medical Intern Mental Health Study, gut microbiome data, and pulmonary outcomes · Gained experience powering clinical trials and performing interim analyses in our Clinical Trials course

Relevant Coursework

M.S. Level	Clinical Trials, Causal Inference, Bayesian Analysis, Time Series Analysis, Survival Analysis, Computing with Big Data, Regression Analysis, Generalized Linear Models, Longitudinal Data
Ph.D. Level	Missing Data, Optimization and Algorithms, Nonparametric Statistics, Advanced Inference, Advanced Survival Analysis

Teaching

Jun 2025- Jul 2025	University of Michigan, Big Data Summer Institute REU **Graduate Student Instructor** · Designed two research projects geared towards undergraduate students · Developed lectures to ensure students had sufficient training to perform original research
Jan 2025 - Present	University of Michigan, Department of Biostatistics **Study Group Facilitator, Generalized Linear Models** · Taught two study sections of generalized linear regression to Master's and PhD students · Aided students in synthesizing regression concepts to other core coursework
Dec 2024	University of Michigan, Department of Biostatistics **Biostatistics 653 Guest Lecturer** · Guest lectured on "Mixed Effects Random Forest Regression for Longitudinal Data" in a course aimed for second-year Master's of Science Biostatistics students
Dec 2023	University of Michigan, Department of Biostatistics **Biostatistics 523 Guest Lecturer** · Guest lectured on "Random Forest Regression and Survival Data" in a course aimed for second-year Master's of Public Health students
Aug 2022 - Dec 2022	University of Michigan, Department of Biostatistics **Study Group Facilitator, Probability and Distribution Theory** · Taught a study section once a week to first-year Biostatistics students in their core probability course
Aug 2021 – Dec 2021	University of Michigan, Department of Biostatistics **Applied Biostatistics Graduate Student Instructor** · Taught two lab sections once a week, held office hours, and engineered the shift to "Gradescope" for the entire course
Sep 2020 – Nov 2020	Carleton College, Department of Mathematics **Calculus with Review Teaching Assistant** · Supported Professor Deanna Haunsperger by teaching seven TA sections a week, and providing targeted one-on-one tutoring
Sep 2019 – Nov 2020	Carleton College Academic Skills Center **Mathematics Skills Center Tutor** · Presented mathematical approaches to students in Calculus 1 (MATH 111), Calculus 2 (MATH 120), Calculus 3 (MATH 210), Linear Algebra (MATH 232), Mathematical Structures (MATH 236), Probability (MATH 265)
April 2019 – June 2021	Carleton College, Department of Mathematics **Grader and Tutor** · Classes Supported: Linear Algebra (MATH 232), Mathematical Structures (MATH 236), Statistical Inference (STAT 250)

Publications

Kim, JS; **Loe, A**; Ma, SF; Ranjan, P; Lipinski, JH; Mikhail, S; Gurczynski, S; Zhou, X; Huffnagle, G; Downward, JE; Falkowski, N; Stringer, K; Dickson, RP; Huang, Y; Moore, BB; Martinez, FJ; Murray, S; Noth, I; O'Dwyer, DN "Gut Microbiota Features Predict Disease Severity, Treatment Heterogeneity and Transplant-free Survival in Idiopathic Pulmonary Fibrosis" (In preparation).

Loe, A, Murray, S and Wu, Z (2025) "Random Forest for Dynamic Risk Prediction of Recurrent

Events: A Pseudo-Observation Approach." *Biostatistics*, Volume 26, Issue 1, 2025.

Aho, J; Barrios, A; Brasse, A; Burns, L; Cornejo, A; Ekblad, O; Flores, G; Geist, M; Harrison, K; **Loe, A**; Miller, A; Nicholson, T; Ramirex F; Roy, M; Soller, S; "*Minimal Discriminants of Rational Elliptic Curves with Non-trivial Isogeny*" (In preparation).

Loe, A (2022) "Just Statistics: Statistical Analysis, *In the Dark*, and the Failure of the U.S. Justice System". *Undergraduate Journal of Humanistic Studies*, Winter 2022, Volume 12.

Presentations & Abstracts

Kim, J; **Loe, A**; Ma, SF; Lipinski, J; Ranjan, P; Martinez, F; Murray, S; Noth, I; O'Dwyer, DN. "Gut Microbiome in Idiopathic Pulmonary Fibrosis." European Respiratory Society Congress, 2025; 27 September, 2025. Amsterdam, Netherlands.

Loe, A; Kim, J; Ma, SF; Lipinski, J; Ranjan, P; Martinez, F; Murray, S; Noth, I; O'Dwyer, DN. "An OTU-level Analysis of the Gut Microbiome in Pulmonary Fibrosis." *Look to Michigan Biostatistics*, March, 2025; Ann Arbor, MI. *Contributed Poster*

Loe, A; "Random Forest Regression for Longitudinal Data." Biostatistics 653, November, 2024; Ann Arbor, MI. *Guest Lecture*

Loe, A; "Inverse Probability Weighted Pseudo-observations for Alternating Recurrent Events." Joint Statistical Meetings, August, 2024; Portland, OR. *Contributed Poster*

Loe, A; "Right-Censored Recurrent Events." Ann Arbor Chapter of the American Statistical Association, April, 2024; Ann Arbor, MI. *Lecture*

Loe, A; "Analysis of Recurrent Event Data via Random Forest for Dependent Pseudo-Observations." Eastern North American Region of the International Biometrics Society, March, 2024; Baltimore, MD. *Contributed Paper*

Loe, A; "Random Forest Regression and Survival Analysis." Biostatistics 523, December, 2023; Ann Arbor, MI. *Guest Lecture*

Loe, A; "Analysis of Recurrent Event Data via Random Forest for Dependent Pseudo-Observations." Joint Statistical Meetings, August, 2023; Toronto, ON, Canada. *Contributed Papers*

Loe, A; "Just Statistics: Statistical Analysis, *In the Dark*, and the Failure of the U.S. Justice System." Michigan Student Symposium for Interdisciplinary Statistical Sciences, March, 2022; Ann Arbor, MI. *Speed Presentation*

Loe, A; "Just Statistics: Statistical Analysis, *In the Dark*, and the Failure of the U.S. Justice System." Michigan Student Symposium for Interdisciplinary Statistical Sciences, March, 2022; Ann Arbor, MI. *Poster Session*

Loe, A; Geist, M; "Minimal Discriminants of Rational Elliptic Curves." Joint Mathematics Meeting, January, 2020; Denver, CO. *Number Theory Section*

Loe, A; Geist, M; Ekblad O; Cornejo A; "Minimal Discriminants of Rational Elliptic Curves & the Szpiro Ratio." Joint Mathematics Meeting, January, 2020; Denver, CO. *Undergrad Poster Session*

Loe, A; "The ABC Conjecture." Nebraska Conference for Undergraduate Women in Mathematics 2020; Lincoln, NE *Poster Session*

Loe, A; Geist, M. "Minimal Discriminants of Rational Elliptic Curves." St. Olaf College, October, 2019; Northfield, MN *Northfield Undergraduate Mathematics Symposium*

Loe, A; Ekblad, O. "The ABC Conjecture & the Szpiro Ratio." Mathematical Association of America MathFest 2019; Cincinnati, OH *Undergraduate Research Presentations*

Service, Leadership, and Volunteering

2024, 2025	Huron High School Volleyball **Volunteer Assistant Coach**
2024	City of Ann Arbor, **Poll Worker**
2024-2025	University of Michigan Department of Biostatistics, **PhD Admissions Committee**
2024	Huron High School, Volunteer Varsity Volleyball Assistant Coach
2022-Present	University of Michigan Department of Biostatistics, **Peer Mentor**
2022-2023	University of Michigan Department of Biostatistics, **Faculty Search Committee**
2021-2023	University of Michigan School of Public Health, **Admissions Ambassador**
2021- 2022	University of Michigan, **Statistics in the Community**: Poverty Solutions Project
2021-2022	Univeristy of Michigan Department of Biostatistics, **Curriculum Committee Member**
2021-2023	University of Michigan School of Public Health, **Public Health Action Support Team**
2020-2021	Carleton College Department of Mathematics & Statistics, **Student Departmental Advisor**
2017-2020	Carleton College Varsity Volleyball, **Captain**
2018-2021	Carleton College Gender Minorities in Math & Stats, **Board Member**
2017-2021	Carleton College Student-Athlete Advisory Committee, **Team Representative**
2020-2022	Rice County Hope Center, SafeLine Volunteer
2018-2019	Carleton College Varsity Track & Field, High Jump

Awards and Grants

2025	American Statistical Association Gertrude M. Cox Scholarship Winner
2022	MSSISS, Best Master's Student Presentation
2021	Carleton College Sigma Xi Chapter
2020	Global Edge Fellowship, Carleton College ($4000)
2019	Kolenkow-Reitz Fellowship, Carleton College ($1440)
2019	National Science Foundation REU, Pomona College
2019	MAA MathFest Best Undergraduate Presentation