ZOE L. REHNBERG

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EDUCATION

2022	Ph.D., Statistics. University of Michigan, Ann Arbor, MI (expected: May 2022).
	Advisor: Johann Gagnon-Bartsch
2019	M.A., Statistics. University of Michigan, Ann Arbor, MI.
2016	B.A., Mathematics. Washington University in St. Louis, St. Louis, MO.
	Minors: Physics; Anthropology (Global Health and Environment)
	Honors: *summa cum laude*; high distinction in mathematics

CURRENT RESEARCH

I develop methodology for the processing and analysis of high-throughput, well-based biological and pharmacogenomic data. These methods include a normalization technique that addresses the presence of complex spatial biases in well-based biological data and a fast approximate cross-validation approach for high-dimensional linear discriminant analysis classification.

PUBLICATIONS

Submitted Manuscripts

1. Rehnberg, Z.L., Rao, A., and Gagnon-Bartsch, J.A. "Technical Variation in Drug Screening Studies."

In Preparation

1. Rehnberg, Z.L. and Gagnon-Bartsch, J.A. "Spatially Varying Normalization for Well-Based Assays."

2. Rehnberg, Z.L. and Gagnon-Bartsch, J.A. "Computationally Efficient Approximate Cross-Validation for High-Dimensional Linear Discriminant Analysis."

TEACHING EXPERIENCE

Graduate Student Instructor

Developed and taught weekly 60-90 minute labs; held weekly office hours; graded homework assignments, lab assignments, quizzes, and exams; collaborated with course instructor on content/assessments.

Winter 2019	**STATS 480: Survey Sampling Techniques**
	Upper-level undergraduate course.
Fall 2018	**STATS 403: Introduction to Quantitative Research Methods**
	Upper-level undergraduate course.
Winter 2018	**STATS 280: Honors Introduction to Statistics and Data Analysis**
	Advanced first course in statistics.
Fall 2017	**STATS 413: Applied Regression Analysis**
	Upper-level undergraduate course in regression.
Winter 2017	**STATS 425: Introduction to Probability**
	First course in probability.
Fall 2016	**STATS 250: Introduction to Statistics and Data Analysis**
	Large, cross-disciplinary first course in statistics.

Graduate Student Mentor

Summer 2021	**Department of Statistics Summer Math Preparation Course**
	Developed and taught six weeks of linear algebra and calculus review material appropriate for students entering the University of Michigan statistics PhD and MS programs.
Summer 2019, Summer 2018	**University of Michigan Big Data Summer Institute**
	Mentored advanced undergraduate students in a six-week research project focused on the analysis of cancer drug screening data.
Winter 2019, Fall 2018, Winter 2018	**Graduate Student Instructor Mentor**
	Mentored all Department of Statistics graduate student instructors teaching advanced undergraduate or graduate statistics classes. Obtained feedback about teaching and mentoring in preparation for changes to the mentoring program.

MENTORING EXPERIENCE

Undergraduate Students

Vivian Wong	December 2020 - June 2021
Kathy Huo	December 2020 - May 2021
Nicole Kim	December 2019 - May 2020
Benjamin Rappoport	December 2019 - May 2020
Zhihao Guo	December 2018 - November 2019

PRESENTATIONS AND POSTERS

Presentations

March 2021	**Computationally Efficient Classification in Large Drug Screening Studies**.
	ENAR 2021 Spring Meeting. Contributed talk.
March 2020	**Irreproducibility in Large-Scale Drug Sensitivity Data**.
	ENAR 2020 Spring Meeting, Nashville, TN. Contributed talk.
November 2019	**Irreproducibility in Large-Scale Drug Sensitivity Data**.
	Michigan Institute for Data Science Symposium, Ann Arbor, MI. Contributed talk.
July 2019	**Characterizing Irreproducibility in Drug Sensitivity Data from a Large Pharmacogenomic Study**.
	Joint Statistical Meetings, Denver, CO. Contributed talk.
June 2019	**Irreproducibility in Drug Sensitivity Data from a Large Pharmacogenomic Study**.
	WNAR/IMS/JR Annual Meeting, Portland, OR. Invited talk.
January 2016	**ETF-Based Models for Liquidity Risk**.
	Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE. Contributed talk.
January 2015	**Exponential Random Graph Models Under Measurement Error**.
	Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE. Contributed talk.

Posters

February 2021	**Empirical Maximum Likelihood Normalization for Drug Screening Data**.
	Michigan Student Symposium for Interdisciplinary Statistical Sciences. Contributed poster.
February 2020	**Irreproducibility in Large-Scale Drug Sensitivity Data**.
	Michigan Student Symposium for Interdisciplinary Statistical Sciences, Ann Arbor, MI. Contributed poster.
January 2016	**ETF-Based Models for Liquidity Risk**.
	Joint Mathematics Meetings, Seattle, WA. Contributed poster.

AWARDS

- **Best Poster Presentation.** Michigan Student Symposium for Interdisciplinary Statistical Sciences, 2021.

- **Best Poster Presentation.** Michigan Student Symposium for Interdisciplinary Statistical Sciences, 2020.

- **Outstanding Teaching Team Award.** Department of Statistics, University of Michigan, 2019.

  With Shyamala Nagaraj and Olivia Hackworth.

- **Honorable Mention for Teaching Award.** Department of Statistics, University of Michigan, 2018.

- **Honorable Mention for Graduate Research Fellowship.** National Science Foundation, 2018.

- **Outstanding First Year Ph.D. Student Award.** Department of Statistics, University of Michigan, 2017.

- **Martin Silverstein Award.** Department of Mathematics and Statistics, Washington University in St. Louis, 2016.

  Awarded to the top undergraduate student in probability and statistics.

GRANTS

Student Allies for Diversity Grant. Rackham Graduate School, University of Michigan, 2021.

Received funding (with Charlotte Mann) to develop and implement a summer math preparation curriculum for graduate students from underrepresented educational, cultural, or geographic backgrounds who are entering the Department of Statistics.

SERVICE

Graduate Student Justice, Equity, Diversity, and Inclusion Working Group. Department of Statistics, University of Michigan.

Founding member; creator and chair of the Racial Justice Reading Group; active from June 2020 - present.

Michigan Student Symposium for Interdisciplinary Statistical Sciences Organizing Committee. University of Michigan.

Department of Statistics organizer for the 2020 symposium.

Ph.D. Student Council. Department of Statistics, University of Michigan.

Founding member; member of the Curriculum Committee and Recruitment & Admissions Committee; Council Co-Chair from January - December 2020; active from December 2018 - present.

PROFESSIONAL DEVELOPMENT

Graduate Teacher Certificate. Center for Research on Learning and Teaching, University of Michigan, 2021.

Multi-year certificate program including orientation to college-level teaching and learning, exposure to new teaching strategies, experience as a Graduate Student Instructor, and mentorship on teaching. This certificate is intended for graduate students pursuing a college teaching career.

Professional Development Diversity, Equity, and Inclusion Certificate. Rackham Graduate School, University of Michigan, 2021.

Year-long certificate program to prepare to work in a diverse environment while fostering a climate of inclusivity.

Preparing Future Faculty Certificate. Rackham Graduate School and Center for Research on Learning and Teaching, University of Michigan, 2020.

Five-week nationally-recognized program to prepare doctoral candidates for the academic job search and success in their subsequent faculty positions.

Preparing to Teach. Conference on Teaching Statistics (eCOTS), May 2020.

Two-day workshop to prepare graduate students for a role as undergraduate faculty responsible for teaching statistics and data science.

PROGRAMMING SKILLS

R, Python, C++

OTHER INTERESTS

Running, hiking, playing soccer, gardening, knitting, and reading for my book clubs