

MACKENZIE MUELLER

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EDUCATION

MS Biostatistics | University of Michigan, Ann Arbor, MI. | *Expected May 2026*

GPA: 3.78

BS Mathematics, BA Spanish | Pacific Lutheran University (PLU), Tacoma, WA. | *May 2024*

GPA: 3.95

AWARDS/HONORS

Full Tuition Funding through Department of Psychology

- Graduate studies fully supported by GSI appointment for Psych 303: Research Methods in Psychology

WANG Center Research Grant Recipient (amount: \$3,000) Puerto Rico | Jan 2024

- Qualitative analysis: how changes in STEM education have affected engagement for female students

SKILLS & QUALIFICATIONS

- Software: R (Proficient), Python, C++, LaTeX, Git, shared repository work
- Statistical Analysis: 1 year in Pharmaceutical Research & Development, Data Visualization & Study Design, Statistical Modeling & Interpretation, Communication of Findings, Reproducible & Clean Code
- Coursework: 6 years of theoretical Math & Stats coursework includes Calc, Simple & Multiple Linear Regression, Survival Analysis, Categorical Analysis, Epidemiology, Probability Theory, Longitudinal Data Analysis, Clinical Trials, Applied Bayesian Inference
- Professional: Excellent Interpersonal, Written, Oral, Leadership, & Statistical Communication Skills; Organization, Time Management

STATISTICAL ANALYSIS & RESEARCH EXPERIENCE

Statistics & Decision Sciences Biostatistics Co-Op

Johnson & Johnson | *Aug 2025 - PRESENT*

- Phase 2 Clinical Trial work on AD Subjects as non-clinical Biostatistics Co-Op supporting Research & Development activities (paper in progress)
- Statistical concepts include: handling **Missing Data**, Regression, **Longitudinal Data Analysis**, PCA
- Coding concepts include: wrangling Time Series Data through **dplyr**, Data Visualization through **ggplot2**, Linear & Nonlinear Mixed Effects Models (simple and multiple) through **lme4** package, ICC calculations

Statistics & Decision Sciences Biostatistics Internship

Johnson & Johnson | *May - Aug 2025*

Minimum amount of DHT Device Data needed to assess Nocturnal Scratch in Atopic Dermatitis (AD) Subjects

- Analyzed, modeled, visualized data & communicated results for Phase 2 Clinical Trial on AD Subjects
- Investigated significant differences in scratch endpoints between cohorts sleep times, reported how missingness can bias endpoints, calculated ICC's & **bootstrapped** confidence intervals to compare groups, utilized **Spearman-Brown** Prophecy formula to determine minimum number of wear days
- Communicated statistical evidence and actionable insights, supporting data-driven decisions and advancing the clinical trial

Multiple Linear Regression Inference

Linear Regression Course Final Project | *Fall 2024*

"The Impact of Sleep Trouble and Other Lifestyle and Health Factors on HDL Cholesterol"

- Applied key concepts including: Linear Regression Assumptions, Model Selection, Model Diagnostics, Outliers, and Influence Points to create an inference model on HDL Cholesterol (**10 page report**)

Statistical Consultant (STATCOM Volunteer)

University of Michigan | *Fall 2024*

- Collaborated with the Center for Success (Ann Arbor) to analyze and summarize survey data from students and mentors, providing actionable insights through statistical analysis, interpretation, and visualization in R

Statistics Capstone Project

PLU | *May 2024*

"Handling Missing Data in Epidemiology Research"

- Constructed tap water consumption linear regression models (R) utilizing data from the National Health and Nutrition Examination Survey to demonstrate how **multiple imputation** can handle missing data (report: **20 pages**)
- Highlighted the importance of addressing missing data and its implications when ignored, specifically regarding data integrity and modeling health disparities between marginalized groups

Big Data Summer Institute Research Intern

University of Michigan | *Summer 2023*

"Predicting Survival Time of LGG Patients: Refining Feature Selection Methods"

- Analyzed the relationship between gene pathways & survival time for Low Grade Glioma (LGG) patients, applying modeling, analysis planning, and interpretation (cross-validation, linear regression, feature selection, Kaplan-Meier survival plots)

Data Management Intern Volunteer

Servicios Financieros, Oaxaca, Mexico | *Spring 2022*

- Engaged in and promoted a non-profit microloan organization specializing in providing access to self-starting businesses/indigenous groups. Tasks included balancing spreadsheets, organizing documents, and field visits (Spanish-speaking position)

RELATED WORK EXPERIENCE

Graduate Student Instructor

University of Michigan | *Aug 2025 - PRESENT*

- GSI for Psych 303: Research Methods; duties include teaching statistics, data analysis, and APA style research writing to psychology undergrads (weekly lecture/lab sections, office hours, and grading)
- Ability to manage deadlines, communicate effectively with faculty, and deliver high-quality work in a collaborative, data-driven academic environment

Big Data Summer Institute Media Intern

University of Michigan | *Sep 2024 - May 2025*

- Restructured the BDSI website to assist in the grant application process for the continuation of the BDSI summer program, managed company BDSI LinkedIn, and assisted with RedCap application portal

Mathematics Tutor & Paper Grader

Pacific Lutheran University | *Sep 2022-May 2024*

- Provided guidance to students in group and individual settings, assisting them with struggles in mathematics coursework & tailoring tutoring to a specific student's needs
- Collaborated with two professors for their respective courses on grading homework assignments