

I am applying to the University of Montana's Mathematics PhD program to work alongside professors and students that are doing methodological studies, statistical survey research, and mathematics education.

My goal is to be a part of a program where I can develop skills and contribute to statistical research while also inspiring others through teaching.

My experience and expertise has evolved through a wide range of projects utilizing my analytical skill sets. Statistical projects have utilized Microsoft Excel and Access through automated processes and databases. In recent years, I've also explored and gained experience with various coding languages that include R, STATA, Python, and HTML.

I worked with Economics Prof. Jeff Parker to compile data and run analysis of European unemployment in an internship at Reed College. I also worked for Reed's Alumni Association throughout my undergraduate studies, going from call-center fundraising to collecting, organizing, and analyzing undergraduate caller statistics as a co-student manager. In discussing the caller statistics, I emphasized the importance of statistics for framing constructive conversations, rather than using statistics punitively.

Directly after college, I worked for Fisher Investments—one of the largest independent wealth management firms in the country—supporting their market research efforts in the financial sector. During the two-and-a-half-years I spent at Fisher, I created and conducted surveys, interviews, and focus groups; I worked independently and collaboratively to create and analyze the feedback. Ultimately, I decided to leave Fisher to continue pursuing academic rigor and challenge myself further.

In 2020, I went back to Reed College and audited Mathematical Statistics (Math-392) and Statistics Practicum (Math-343). Both upper level courses built on my statistics education. The latter led Prof. Kelly McConville to make me part of their team to research estimation methods with the Forestry Service. This work was made into a manuscript that won 2nd place at the Undergraduate Statistics Project Competition. I subsequently presented the paper at the Electronic Undergraduate Statistics Research Conference. I've continued to work on the manuscript, which is set to be published in 2021.

Academically, I am interested in survey estimation and research methodology in a social sciences context. I have researched non-responders, specifically exploring alternatives to imputing non-responses. In forestry data science, I explored alternative estimation methods, as well as systematic sampling design. Aside from research, I am particularly interested in pursuing mathematics education and as a professor I hope to teach statistics in college.

My goal is to serve as a researcher and a teacher. Statistical education is an increasingly important field. The topics detailed in *Data Feminism* and *Automating Inequality* influenced my direction and beliefs a great deal. With more analytics programs, and an increased focus on data-driven policy, people outside the field of statistics need to be equipped with the skills to critically engage with data. I want to be part of the research and teaching necessary to that future.

Thank you for your consideration of my application to University of Montana's Mathematics PhD program.