

SARAH MCDONALD

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EDUCATION

BSc, Mathematics and BA, Economics; Marymount University, May 2020

- Honors Program, *Summa cum laude*

Oxford Study Abroad Programme, 2017

RESEARCH EXPERIENCE

Research Assistant, Acting Fellow, and Intern, Data Science for the Public Good Program 2019-Present
Biocomplexity Institute & Initiative, Social & Decision Analytics Division, University of Virginia

- Conducted network and node-level analysis of labor force workflows in Fairfax County, Virginia at census tract level using LEHD Origin-Destination Employment Statistics data (Fairfax County Government funding).
- Structured and scripted a dashboard with interactive visualizations for locating potentially vulnerable Virginia high school seniors impacted by COVID-19 (Bill and Melinda Gates Foundation funding).
- Applied sequence analysis to analyze resume data; identified and organized an inventory of federal, private, and not-for-profit data for describing the national skilled technical workforce on an interactive dashboard; visualized educational pathways, career pathways, and skill supply and demand for skilled technical workers in Virginia metropolitan areas (National Science Foundation funding).
- Led two undergraduate interns through a three-month project benchmarking proprietary data with the Job Openings and Labor Turnover Survey and Occupational Employment Statistics data.
- Communicated with program sponsors through oral presentations, poster presentations, and written weekly updates.
- Collaborated with multidisciplinary, vertically integrated teams of students and faculty.
- Used git and Github for version control, and R packages (e.g., tidyverse, data.table) to acquire, profile, clean, transform, analyze, and visualize data.

Honors Scholar, Undergraduate Honors Thesis, Marymount University Honors Program 2019-2020

- Independently designed and executed a research project examining the effect of Catholic sex abuse scandals on Catholic higher education in the United States.
- Retrieved multiple datasets through web scraping; processed and merged complex data, including the Integrated Postsecondary Education Data System.
- Used multiple linear regression to explore the influence of negative publicity due to scandals in the Catholic Church on enrollment at Catholic colleges, universities, and seminaries.

HONORS & AWARDS

Academic Excellence Award (Economics), Marymount University, 2020

Academic Excellence Award (Mathematics), Marymount University, 2020

Senior Leadership Award, Marymount University, 2020

UNIVERSITY SERVICE

President, Student Government Association, Marymount University, 2019-2020

President and Chapter Founder, American Statistical Association, Marymount University Chapter, 2018-2020

Resident Assistant, Office of Campus and Residential Services, Marymount University, 2017-2019

Peer Tutor, Center for Teaching and Learning, Marymount University, 2018-2019

- Conducted one-on-one tutoring sessions for college students in mathematics courses at all levels, from remedial mathematics to graduate-level courses.

SKILLS

R, RStudio: dplyr, tidyr, stringr, ggplot2, plotly, leaflet, data.table, sf, shiny, knitr, rvest, igraph, statebins

SQL, Java, HTML, CSS, LaTeX, GitHub, git

Microsoft Office: Excel, Access, Word, PowerPoint