Alexander C Murph

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Please see my website for further information about my research and a comprehensive selection of my teaching materials, including recordings of my lectures.

Education

May 2023	**University of NC at Chapel Hill**, Chapel Hill, NC Doctor of Philosophy in Statistics & Operations Research (ABD) ∘ Advisors: Jan Hannig (UNC), Jonathan P Williams (NC State), & Curtis B Storlie (Mayo Clinic)
May 2018	**Bucknell University**, Lewisburg, PA BS in Mathematics, BA in Computer Science, Minor in Women's & Gender Studies ∘ Thesis Advisors: Assoc. Prof. Abby Flynt, Assoc. Prof. Brian King

Research and Work Experience

Aug 2021 - Present	Mayo Clinic Kern Center, *Visiting Graduate Student* ∘ Responsible for PhD program funding Aug 2021 through graduation
May 2021 - Aug 2021	Mayo Clinic Kern Center, *Intern*
Aug 2019 - Present	University of NC at Chapel Hill, *Research Assistant*
Jun 2020 - Dec 2020	University of NC at Chapel Hill, *Course Instructor*
Aug 2016 - May 2018	Bucknell University, *Lead Residential Advisor*
Aug 2016 - May 2018	Geisinger Heath Center, *Research Apprentice*
May 2017 - Aug 2017	Nielsen, *Professional Services Analyst Intern*

Publications

- Murph, A., Storlie, C. Bayesian Changepoint Detection for Mixed Data with Missing Values, Late Draft.

- Murph, A., Hannig, J., & Williams, J. Generalized Fiducial Inference on Differentiable Manifolds, Late Draft.

- Murph, A., Hannig, J., & Williams, J. Introduction to Generalized Fiducial Inference, Accepted to Chapman & Hall Handbook on BFF inference.

- Faden, E., Mitchell, A., Murph, A., Myers, T., & Ryan, N. (2021). Mr. Hulot's Invisible Gorilla: Jacques Tati and Inattentional Blindness, *Projections*, 15(2), 1-29.

- Murph, A., Flynt, A., & King, B.R. (2021). Comparing finite sequences of discrete events with non-uniform time intervals, *Sequential Analysis*, 40(3), 291-313.

Teaching & Course Development Experience

Fall 2020	Data Science for COVID-19 *Course Instructor* Created a course covering how a data scientist might approach the problems that arise in a global catastrophe like the COVID-19 pandemic. We had speakers from South Korea, England, and South Africa, as well as local scholars from the US. This international roster of speakers mirrored what was a fully international classroom; we had over 100 students hailing from 12 countries taking the class in 12 different timezones.
Summer 2020	Introduction to Data Analysis *Course Instructor* Designed and taught an introductory statistics course. Focused on making the difficult and sudden transition to remote learning as painless as possible for my students, while still demanding diligence and genuine mastery of the material.
Spring 2020	Machine Learning *Teaching Assistant* Assisted a graduate-level Machine Learning class with Dr. Andrew Nobel. I wrote all computing assignments for this class using the R programming language.

Talks and Presentations

June 2022	IEEE International Conference on Healthcare Informatics 10, *Rochester, MN* *Poster Presenter*
May 2022	NISS Graduate Student Research Conference, *Virtual* *Speaker*
May 2022	Bayesian, Fiducial, & Frequentist 7, Toronto *Poster Presenter*
Mar 2017	AMIA 2017 Joint Summits on Translational Science, San Francisco *Poster Presenter*
Nov 2016	EPaDel Mathematics Conference, Villanova University, PA *Student Speaker*

Community Involvment

Nov 2019 Present	AYA Cancer Advising Board *Founding Member, Coordinator* I created a board of fellow young adult cancer survivors to oversee the development of a transfusion space specifically for Adolescent and Young Adults (AYAs) at the UNC Cancer Center. We continue to advise the UNC Cancer Center on multiple projects and grant proposals.
June 2020 Present	DataOPS Outreach Team *Treasurer* I am an active member of my department's recent diversity initiative to provide fun, accessible data education to underrepresented high-school students.

Scholarships & Funding

Apr 2022	Raj Chandra Bose Student Travel Award ($ 750)
Aug 2021	SAMSI RA Fellowship NSF funding to allow me to focus entirely on research for Fall 2021.
Aug 2014	Bucknell Mathematics Scholarship ($ 40,000) The Bucknell Mathematics Scholars Program recognizes a very limited number applicants with strong potential to excel as students of mathematics.
Aug 2014	Cancer for College ($ 5,000) Non-profit organization that grants scholarships to cancer survivors wanting to obtain an undergraduate degree

Computer Skills

Basic:	HTML, Photoshop
Intermediate:	Java, Julia, Perl, TensorFlow
Advanced:	R, C/C++, STAN, Python, Matlab, Mathematica, Git, LaTeX, Cluster Computing, Linux

Honors

Eagle Scout
<u>Honors Societies</u>: Phi Beta Kappa, Pi Mu Epsilon
<u>Bucknell Awards</u>: Bucknell Class Award of Excellence '18, Bucknell Mathematics Award