ALEXANDER C. MURPH

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EDUCATION

University of NC at Chapel Hill August 2018 - Present
Doctoral Candidate *Chapel Hill, NC*

- Passed qualifying exams August 2019. Ph.D. Candidate in Statistics & Operations Research.
- Advisor: Jan Hannig.

Bucknell University
Class of 2018 *Lewisburg, PA*

- B.S. in Mathematics, B.A. in Computer Science, Minor in Women's & Gender Studies

PUBLICATIONS

- Faden, E., Mitchell, A., Murph, A., Myers, T., & Ryan, N. (2021). Mr. Hulot's Invisible Gorilla: Jacques Tati and Inattentional Blindness, *Projections*, Accepted Oct 5, 2020.
- Murph, A., Hannig, J., & Williams, J. Examples in Fiducial Inference, Under Review.
- Murph, A., Flynt, A., & King, B. Comparing Finite Sequences of Discrete Events with Non-Uniform Time Intervals, Under Review.

EXPERIENCE

UNC Statistics & Operations Research Department September 2019 - Present
Research Assistant *Chapel Hill, NC*

- Developing methodology to perform constrained differentiation on the manifold of positive-definite precision matrices with fixed zeros. This is a major missing piece of theory for the application of fiduciary statistics to covariance selection for Gaussian Graphical Models.
- Develops novel Metropolis-Hastings Monte Carlo algorithms for inference of the joint parameter space (n, p) of the Binomial distribution.
- Researches novel fiducial approaches to classical inferential problems.

UNC College of Arts & Sciences August 2018-Present
Teaching Apprentice *Chapel Hill, NC*

- Data Science of COVID-19 (Fall 2020): Acting as principle instructor for a topics course for first-year students on modern research developing around the SARS-CoV-2 virus. Works close with a small group of faculty to develop the course in a short period to time.
- Introduction to Data Analysis (Summer 2020): Taught two sections of introductory statistics entirely on my own. Duties included writing tests, homework, and lectures, meeting with students in and out of office hours, and providing support for students struggling amidst a global pandemic. Gained experience writing Perl code for the WebAssign portal.
- Machine Learning (Spring 2020): Developed all computing assignments (in R) for STOR Department's Machine Learning class. Held office hours, provided feedback on student's mathematical proofs, helped develop lecture materials with faculty teacher.

Please see my website for a comprehensive selection of my teaching materials, including recordings of my lectures.

EXTRACURRICULAR WORK

UNC Cancer Center AYA Advisory Committee November 2015 - Present
Coordinator *Chapel Hill, NC*

- Actively participates in efforts at Bucknell to make community more diverse.

TECHNICAL SKILLS AND ACHIEVEMENTS

Computer Skills - Advanced	Python, Java, R, Matlab, Mathematica, Julia, LaTeX, Minitab, Microsoft Office, C, SAS, Perl
Achievements/Awards	Eagle Scout, Phi Beta Kappa, Bucknell Class of '18 Mathematics Award