

W. Kyle Beatty

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I am a PhD candidate in statistics at Johns Hopkins advised by Carey Priebe. My principal research focus is statistical inference on random graphs, using both spectral embedding and subgraph counting methods.

EDUCATION

Johns Hopkins University — PhD in Applied Mathematics	Expected 2028
Johns Hopkins University — M.S. in Applied Mathematics	2026
Gettysburg College — B.A. in Mathematics, summa cum laude	2023

RELEVANT COURSEWORK

Statistics & Probability: Mathematical Statistics; Statistical Theory; Measure-Theoretic Probability; High-Dimensional Probability; Random Matrix Theory

Machine Learning & Linear Algebra: Machine Learning I; Manifold Learning for Subsequent Inference; Matrix Analysis

Computing: Data Structures; Databases; Complexity Theory

SKILLS

Data Science Software: Python (NumPy, pandas, sklearn), R, SQL

General Programming Languages: Java, C, Rust

Languages: English (native); French (DALF C1); Spanish (B2)

PUBLICATIONS AND PRESENTATIONS

Community Detection in Sparse Graph Models <i>Poster presentation, Joint Statistical Meetings, Boston, MA</i>	August 2026
Spectral Clustering of Sparse Random Graphs <i>Poster presentation, Southern Regional Conference on Statistics, Pensacola, FL</i>	June 2026
On the diameter of undirected Cayley graphs of finite abelian groups B. Bajnok and W. K. Beatty. <i>Combinatorics and Number Theory</i> 14(1), pp. 1–12. doi: 10.2140/cnt.2025.14.1	Jan. 2025
Minimum Signed s-Spanning Sets for Non-Cyclic Abelian Groups <i>Paper presentation, Joint Mathematics Meetings, Boston, MA</i>	Jan. 2024

WORK EXPERIENCE

Programming Intern, Spectrohm	June-August 2024
I developed Python tools to process and manipulate HDF5 data from prototype transmission line tomography devices.	

TEACHING EXPERIENCE

Teaching Assistant, Johns Hopkins University	2023 – 2026
Combinatorial Analysis, Graph Theory, Intro to Optimization, Convex Geometry, Combinatorial Optimization	
Teaching Assistant, Gettysburg College	2020 – 2023
Calculus, Linear Algebra, Introduction to Abstract Mathematics, Research in Additive Combinatorics	

LEADERSHIP & SERVICE

SIAM Student Chapter Secretary, Johns Hopkins University	Aug. 2026 – present
Graduate Student Representative, Johns Hopkins University	Aug. 2024 – present
First-Year Onboarding Liaison, Johns Hopkins University	June 2024 – May 2025

AWARDS & HONORS

J. Rogers Musselman Mathematics Award	2022
Baum Mathematical Prize	2021
Malcolm R. Dougherty Award	2020