AMY JOHNSON PITTS

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EDUCATION

Columbia University, Mailman School of Public Health , New York, NY — *Expected Graduation: Spring 2025*
Doctorate of Philosophy
Biostatistics

Marist College, Poughkeepsie, NY — *Graduation: May 2020*
Bachelor of Science — *Summa Cum Laude*
Double Major: Applied Mathematics and Data Science & Analytics — *Honors in Mathematics*
Minor: Computer Science

EXPERIENCE

Graduate Teaching Assistant 2020-Present
Biostatistics Department, Mailman School of Public Health

- Fosters learning through holding weekly office hours, and answering student questions during class and over email
- Provides detailed feedback on weekly assignments, quizzes and projects
- Introduction to Health Data Science course class primarily focuses on tidyverse in R and basic biostatistics fundamental topics

Math Lab Lead Tutor 2018-2020
Department of Mathematics, Marist College

- Supervised, trained, and administrated staff of six students
- Provided tutoring in the Math Lab, a peer help/tutoring center staffed entirely by students
- Courses covered are: Calculus I-III, Linear Algebra, Differential Equations, Intro to Mathematical Reasoning, Real Analysis

Biostatistics Research Fellow Summer 2019
Memorial Sloan Kettering Cancer Center, New York, NY

- Accepted to competitive Quantitative Sciences Undergraduate Research Experience (QSURE)
- Explored the effects of missing data in cancer studies under advisement of attending biostatistician
- Created a RShiny Application currently accessible online. Paper currently in process of being written

Research Experience for Undergraduates (REU) Summer 2018
Lafayette College, Easton, Pennsylvania

- Developed a Bayesian procedure to detect breakpoints in time series alongside two other undergrad students and a professor
- Produced working R code and a rough draft of a paper that is in the process of being edited to be submitted for publication
- Presented research at the Joint Mathematics Meetings and was a recipient of an Outstanding Poster Award in 2019

PUBLICATIONS

Pitts, Amy, & Rivas, Pablo, "Finding Time Series Breakpoints with Fully Connected Neural Networks", *Int'l Conf. Artificial Intelligence CSREA Press.* 2019. p.352-357. ISBN: 1-60132-501-0.

Pitts, Amy, & Patil, Sujata. "Missing data in cancer studies" in preparation.

PRESENTATIONS

Presentations:

- Pitts, Amy. Kwizera, Muhire. "Python Tutorial" Columbia Biostatistics Computing Club. Zoom. December 2020.
- Pitts, Amy. Mulligan, Kaitlyn. & Allison Nowakowski. "The Machine Learning Quote Generator" Marist College School of Computer Science & Mathematics. Cisco Webex. May 2020.
- Pitts, Amy. "SeminaR: an R tutorial looking at shiny applications" Marist College Department of Mathematics. Poughkeepsie, NY. November 2019.
- Pitts, Amy. "My Research Experience at Memorial Sloan Kettering Cancer Center" Marist College Department of Mathematics. Poughkeepsie, NY. October 2019.
- Pitts, Amy. "Overleaf Overview" Department of Epidemiology and Biostatistics at Memorial Sloan Kettering Cancer Center. New York, NY. August 2019.
- Pitts, Amy, & Rivas, Pablo. "Finding time series breakpoints with fully connected neural networks" 2019 International Conference of Artificial Intelligence. Las Vegas, NV. July, 2019.
- Pitts, Amy. "Missing Data in Cancer Studies" QSURE Final Presentations hosted in the Department of Epidemiology and Biostatistics at Memorial Sloan Kettering Cancer Center. New York, NY. July 2019.

- Pitts, Amy. Haglich, Kathryn. & Neitzel, Sarah. "A Bayesian method for locating breakpoints in time series" Joint Mathematics Meetings. Baltimore, MD. January 2019.
- Pitts, Amy. "My Research Experience at Lafayette College" Marist College Department of Mathematics. Poughkeepsie, NY. September 2018.

Poster Presentations:

- Pitts, Amy. Haglich, Kathryn. Neitzel, Sarah. & Leibner, Jeffery. "A Bayesian method for locating breakpoints in time series" ACM New York Celebration of Women in Computing. Lake George, NY. April 2019.
- Pitts, Amy. Haglich, Kathryn. Neitzel, Sarah. & Leibner, Jeffery. "A Bayesian method for locating breakpoints in time series" Joint Mathematics Meeting. Baltimore, MD. January 2019.

RELEVANT COURSES

Columbia University:
Statistical Inference, Probability, Biostat Methods I-II, Data Science I-II, Randomized Clinical Trials, Epidemiology Principles

Marist College:
Mathematics: Applied Statistics, Differential Equations, Advanced ODE, Complex Analysis, Mathematical Analysis, Numerical Analysis, Operations Research, Abstract Algebra, Independent Study in Math Biology, Computational Linear Algebra
Computer Science: Algorithms, Software Development I-II, Database Management
Data Science: Machine Learning, Data Mining, Data Analysis, Data Visualization, Data Management

SKILLS/RELEVANT PROJECTS

Experience in Python, R, RStudio, RShiny, LaTeX, Java, HTML, CSS, JavaScript, D3, node.js, git, GitHub, SQL, Access, Maple, Octave, MATLAB, Hadoop, Hive, Pig, Spark, Microsoft Sql Server, and Microsoft Visual Studio

Statistical Methods Comparison (DID and Multilevel Logistic Regression) 2020 – Present
- Comparing a Difference in Difference approach with Multilevel Logistic Regression approach on marijuana usage and legislation data alongside a Professor in the Mailman School of Public Health

An Exploration into SEER Missing Data Fall 2019 – Spring 2020
- Honors project that explores the missing data from a SEER data subset via a survival analysis problem

The Machine Learning Quote Generator Spring 2020
- Project that generates quotes via a Stacked LSTM algorithm training on data gathered from twitter

Missing Data in Cancer Studies Application Summer 2019
- RShiny application that allows the users to explore the how missing data introduces bias into analysis. Project can be accessed at amypitts.shinyapps.io/Missing_Data/

Finding Time Series Breakpoints with Fully Connected Neural Networks Spring 2019
- Machine learning project coded in Python that learned from simulated time series to detect significant point of change

A Bayesian Procedure that Detects Breakpoints in Timeseries Summer 2018
- Working R code completed during my REU experience that outputs the distributions on the location of change points

ACTIVITIES/HONORS

Activities:
- Board Member, Columbia University Biostatistics Computing Club, (2020-Present)
- President, Marist College Alpha Pi Chapter, Pi Mu Epsilon (2019-2020)
- President and Founder, Association for Women in Mathematics (AWM) Chapter at Marist College (2019-2020)
- Vice President, Marist Math Club (2019-2020)
- Treasurer, Equestrian Team (2017-2020)
- Member of Marist Team, 79th annual William-Lowell Putnam Mathematical Competition (2018)

Honors:
- Marist College Excellence in Mathematics Award (2020)
- Inducted into the Marist College Pi Mu Epsilon Chapter Mathematics Honors Society (2019)
- Recipient of an Outstanding Poster Award at the Joint Mathematics Meeting, Baltimore (2019)
- Student Subcommittee Chair, 2019 Marist Math Department Faculty Search Committee (2019)
- Recipient of the Marist College Early Career Undergraduate Mathematics Research Award (2018)
- Awarded Best Visualization at DataFest located at Vassar College (2018)
- Winner of the Hack Harassment Category in Marist College Hackathon (2016)