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
- Classes include Introduction to Health Data Science, Randomized Clinical Trials, Biostatistical Methods II, and Statistical Methods for Casual Inference

Biostatistics Research Fellow Summer 2021
Bristol Myers Squibb, Remote Internship

- Selected into the 2021 summer Bristol Myers Squibb PhD Internship Program in the early clinical trial biostatistics department
- Explored 2 projects: comparing dose escalation designs through simulations and go/no go decisions using a Bayesian framework
- Both project's corresponding R shiny application can be found on my website

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. Ehrich, Fiona. "R-Shiny Crash Course" Columbia Biostatistics Computing Club. Feb 2020.
- Pitts, Amy. "Bayesian Go/No-Go Rules & Two-stage Designs and Comparison of Dose Escalation Designs in Early Oncology Studies", Bristol Myers Squibb. Aug 2021.
- Pitts, Amy. "Predicting Mesothelioma Disease Status Using Demographic, Clinical, and Exposure-Related Factors", Marist College Pi Mu Epsilon Induction Ceremony. May 2021.
- Pitts, Amy. Kwizera, Muhire. "Python Tutorial" Columbia Biostatistics Computing Club. Zoom. Dec 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: tutorial on R-Shiny" Marist College Department of Mathematics. Poughkeepsie, NY. Nov 2019.
- Pitts, Amy. "My Research Experience at Memorial Sloan Kettering Cancer Center" Marist College Department of Mathematics. Poughkeepsie, NY. Oct 2019.
- Pitts, Amy. "Overleaf Overview" Department of Epidemiology and Biostatistics at Memorial Sloan Kettering Cancer Center. New York, NY. Aug 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. Jan 2019.

RELEVANT COURSES

Columbia University:
Theory: Asymptotic Stats, Casual Inference, Probability for Biostatisticians, Theory of Statistical Inference I-II, Advanced Methods, Probability, Biostat Methods I-II
Applied: Data Mining, Adv Stat Computing, SPRIS I-II, Data Science I-II, Randomized Clinical Trials, Epidemiology
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, PASS, Java, HTML, CSS, JavaScript, D3, 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 – 2021
- 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

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:
- Invited to give the key note speech & the presidential address at the Marist College Pi Mu Epsilon Induction Ceremony (2021)
- 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)
- Recipient of the Marist College Early Career Undergraduate Mathematics Research Award (2018)
- Awarded Best Visualization at DataFest located at Vassar College (2018)