jessemurray.com
github.com/jessebmurray

Jesse Murray

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Education

Columbia University — **New York, NY** — **Aug 2020 – Dec 2021**
- M.S. in Data Science

Drew University — **Madison, NJ** — **Aug 2016 – May 2020**
- B.Sc. in Physics, Mathematics minor (GPA: 4.000 / 4.000)
- GRE: 169/170 Quantitative, 165/170 Verbal, 5/6 Analytical Writing

The Juilliard School — **New York, NY** — **Aug 2015 – May 2016**
- Cello Program

Research Experience

Eye-tracking Research Team Lead — **Drew University** — **May 2019 – Present**
- Obtained new results about how the first and last two letters of a solution word are particularly informative in solving a word puzzle (anagram) by designing and running a highly stimulus-manipulated eye-tracking experiment on 29 subjects and applying statistical tests to the data. Cleaned, prepared, and analyzed raw data of over 1.8 million rows with Pandas and NumPy. Currently leading a six-member research team advised by Dr. Minjoon Kouh. Presented at the University of Scranton Brain and Behavior Conference on March 7th. Poster can be viewed on jessemurray.com.

Statistics Researcher — **Drew University** — **Nov 2019 – Present**
- Created a population model of polygenic inheritance derived from the linear regression and normality of polygenic traits. R^2=0.81 with Galton's height data and R^2=0.96 with US family income data. The calculus involved model was simulated in python. Recently began working with Dr. Yi Lu to edit a paper for undergraduate journal submission. Paper can be viewed on jessemurray.com.

Atmospheric Chemistry Researcher — **Drew University** — **May 2017 – Aug 2017**
- Studied adsorption rates of the atmospheric aerosol, Pinene, onto sand samples through infrared spectroscopy under varying humidity and temperature conditions. Simulated molecules with Gaussian and analyzed data with IGOR Pro.

Skills

- Statistical analysis, modeling, and coding projects (jessemurray.com)
- Expertise in Python and its data science libraries: NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn
- Fluency in C, R, SQL, some experience with HTML, MATLAB
- Skilled in calculus-based statistics, probability, multivariable calculus, linear algebra, differential equations
- Cello, piano, music theory, perfect pitch composition

Additional Experience

University Tutor — **Drew University** — **Jan 2017 – Jan 2020**
- Tutored undergraduate students in physics I and II, calculus I, II and III, pre-calculus, statistics, astronomy, biology, chemistry, organic chemistry. Led drop-ins for math-related courses, explained problems to large groups of students.

President of Math Club — **Drew University** — **Jan 2019 – Jan 2020**
- Completely revamped the club, put up posters around the school of intriguing math problems and began weekly meetings to solve those problems, lead discussions, and present projects. Created a professor talk series in which quantitative professors give math-related lectures.

Research and Teaching Assistant — **Drew University** — **Jul 2019 – Aug 2019**
- Helped students at the New Jersey Governor's School in the Sciences complete a project about implementing machine learning with iRobot hardware for human detection. Graded and tutored students in special relativity class.

Awards, Scholarships, Honors

Marshall C. Harrington Prize in Physics and Astronomy: Awarded in Spring 2020 from the Drew University Physics Department (for completion of an outstanding research project). **Pi Mu Epsilon:** Inducted into Mathematics honor society in Spring 2020. **Arnold S. Boxer Memorial Prize in Physics:** Awarded from the Drew University Physics Department in Spring 2019. **Sigma Pi Sigma:** Inducted into Physics honor society in Spring 2019. **Phi Beta Kappa:** Inducted in Spring 2018. **Weddell Family Scholarship:** Awarded from the Drew University Physics Department in Spring 2018. **John F. Ollom Prize in Physics:** Awarded from the Drew University Physics Department in Spring 2017. **Dean's Transfer Scholarship:** Awarded from Drew University in Fall 2016.