Antonella D. Basso

antonella_basso@alumni.brown.edu ♦ antonellabasso.github.io
+1 (978) 319-2922

EDUCATION

2023	**Sc.M. in Biostatistics,** Brown University
2021	**B.A. in Mathematics & Philosophy,** Agnes Scott College Minor: Artificial Intelligence GPA: 3.63/4.0; *Cum Laude*
2019	**Study Abroad,** Liverpool Hope University *International Student Exchange Program (ISEP)* Spent a semester in Liverpool, England, completing coursework in Multivariable Calculus, AI, Programming in C/C++, Group Theory, and Chaos Theory.

AWARDS & HONORS

2017-2021	**Honors Scholarship,** Agnes Scott College
2020	**Honorable Mention: Archive of Excellence,** Agnes Scott College
2018	**Mathematics Departmental Award,** Agnes Scott College

WORK & RESEARCH EXPERIENCE

2022 – Present — Brown University School of Public Health, Master's Thesis
Mentored by Alice Paul, Ph.D., Operations Research and Information Engineering
Developed an intuitive causal-based method for fair predictive modeling that appeals to path-specific effects (PSEs) and penalized maximum likelihood estimation under a counterfactual reasoning framework. Implemented the proposed methodology on a simulated biased dataset to remove direct discrimination from predictions. Demonstrated how the approach allows decision makers to interact with the model to make well-informed, explainable choices that simultaneously satisfy their contextual aims and adhere to principles of justice. Discussed limitations and potential extensions to the work for strengthening performance, broadening applicability, and maximizing social impact.

2022 — MIT Community Innovators Lab (CoLab), Research & Policy Intern
Mentored by Dr. Fatemeh Hosseini
Interned at MIT's CoLab as a paid research and policy analyst for the Centering Equity in Long-Term Care Class of the Mel King Community Fellowship Program. Conducted research on the impact of current LTSS financing models on job quality for care workers and on retention in the field. Articulated metrics for measuring job quality in the care industry. Analyzed data and research pertaining to improving job quality and satisfaction in the LTSS sector. Synthesized key findings and learning points into an accessible report, and provided other research support to team members as needed.

| 2020 – 2021 | **Harvard T.H Chan School of Public Health, Biostatistics Research Intern** |

2020 – 2021   **Harvard T.H Chan School of Public Health, Biostatistics Research Intern**
Mentored by Rachel Nethery, Ph.D., Biostatistics
Selected to be a part of the Summer Program in Biostatistics and Computational Biology at Harvard University, an intensive, paid research experience. Completed introductory courses in Biostatistics, Health Data Science, Epidemiology, and AI/ML. Contributed to a collaborative environmental research project and presented it at Harvard's annual symposium, which involved investigating and addressing the prominence of coal ash contamination amongst upgradient groundwater wells in Illinois through exploratory statistical analysis and cluster-based machine learning approaches in Python and R.

2020   **Agnes Scott College, Undergraduate Thesis on Algorithmic Fairness**
Mentored by Harald Thorsrud, Ph.D., Philosophy
Pursued independent, philosophy-based research, which aims to identify the sources of algorithmic bias; shed light on the limitations of statistically defined algorithmic fairness; and propose a novel, more robust understanding of algorithmic fairness that is grounded on principles of social justice.

TEACHING EXPERIENCE

2018 – 2019   **Mathematics Tutor**
Tutored three homeschooled children in 4th-6th grade mathematics once per week. Researched standard mathematics curriculums to develop a unique curriculum and plan lessons that incorporated engaging activities, emphasizing a hands-on approach to teaching to show students the applications of mathematics and generate interest.

LEADERSHIP & COMMUNITY INVOLVEMENT

2019   **I.Am.GradComputing Workshop**, Georgia Institute of Technology
Participated in an immersive, 3-day, research-focused workshop for women in computing that are interested in or are planning to attend graduate school. Explored different areas in computer science and learned about the benefits of pursuing a graduate degree. Engaged in a "hackathon" that challenged my computational, problem solving, and technical skills, as well as my teamwork and communication skills; and allowed me to network with women in the field.

2019   **STEM Women Conference,** Manchester, England
Attended the STEM Women conference and networking event in Manchester, England. Networked with various professionals in tech and STEM-related fields.

2019   **Women's Lacrosse Team,** Liverpool Hope University
Joined the Women's Lacrosse Team at Liverpool Hope University. Partook in weekly practices, team-led events, and participated in several Lacrosse games.

2018   **Agnes Scott College Global Journeys,** Reykjavik, Iceland
Completed an intercultural course with immersive faculty-led travel (to Iceland). Studied Iceland's use of geothermal energy; role of women in society; the economic impacts of the 2008 Financial Crisis.

SKILLS & LANGUAGES

- Advanced proficiency in Python, R and LaTeX.
- Intermediate in STATA, HTML & CSS and Git.
- Basic knowledge of Linux/Unix, C/C++ and MATLAB.
- Native in Spanish; fluent in English; conversational in French and ASL.

PROFESSIONAL MEMBERSHIPS

2020 – Present   **Women In Technology (WIT) CAMPUS**

Minor in Artificial Intelligence

Include current PDA research project

2020	**Agnes Scott College, Ethics Research Project**
	Participated in an independent research project in a "Theories of Equality" course, which addresses the social injustices resulting from inequitable access to healthcare in the U.S. in favor of a universal healthcare system that acknowledges the human right to healthcare, as supported by principles of democratic egalitarianism.

I am passionate about social justice and have ample experience utilizing data science, statistics, and ML methods to promote equity. Particularly, the majority of my undergraduate and graduate work is motivated by expanding research within the space of algorithmic fairness.

I am currently a Sc.M. student in Biostatistics at Brown University, where I am gaining experience and refining my skills in statistics, data science/analysis, and AI/ML, with a focus on public health applications. As a second year graduate student, I am now eager to explore my passions for social justice and quantitative science in a research endeavor to promote fairness in ML and predictive models via causal-based methods, under the mentorship of [Dr. Alice Paul](https://vivo.brown.edu/display/apaul6).

Interests: biostatistics, data science, statistical & machine learning, predictive modeling, algorithmic fairness, public health, policy, social justice, Python/R