Katherine J. Henneberger

EDUCATION

University of Kentucky, Department of Mathematics | Lexington, Kentucky
PhD in progress
MS degree, 2022

Bowdoin College | Brunswick, Maine
AB degree, 2020
Majors in Mathematics, Hispanic Studies. Minor in Government and Legal Studies. Dean's list, 2020. Semester abroad in Granada, Spain. President of Bowdoin Democrats, leader of campus Contemporary Dance and Ballet clubs, member of Orchestra.

WORK EXPERIENCE

University of Kentucky, Department of Mathematics | *Graduate Teaching Assistant*   **2020 – Present**
Positions have included Teaching Assistant (Elementary Calculus, Calculus I, Calculus II, Calculus I for Biology, Calculus II for Biology), Grader (Calculus IV), and Primary Instructor (Elementary Calculus, Calculus I).

MGGG Redistricting Lab at Tufts University | *Summer Intern*   **Summers 2019 and 2020**
- Engaged with topics in statistics, graph theory, networks, and topology as they relate to current research projects on political redistricting.
- Analyzed partisan effects of gerrymandering, using Markov Chain algorithms to create ensembles of districting plans based on census data and GIS shapefiles.
- Researched the potential impact of adding a citizenship question to the decennial census.
- Conceptualized a research project focused on multidimensional analysis of city demographics within districting plans using Topological Data Analysis.

Bowdoin College, Department of Mathematics | *Grader*   **2018 – 2020**
Graded for Intermediate Linear Algebra, Group Theory, and Multivariate Calculus.

PUBLICATIONS

K. Henneberger, J. Qin, and L. Huang, "Hyperspectral Band Selection Based on Matrix CUR Decomposition," *The International Geoscience and Remote Sensing Symposium,* 2023 forthcoming.

PRESENTATIONS AND WORKSHOPS

Association for Women in Mathematics Research Symposium | *Poster Presentation*   **October 2023**
"Hyperspectral Band Selection with Matrix CUR Decomposition"

International Geoscience and Remote Sensing Symposium | *Session Chair and Poster Presentation*   **July 2023**
Session: Feature Extraction using Hyperspectral Imaging
Poster: "Hyperspectral Band Selection with Matrix CUR Decomposition"

SLMath Summer Graduate School on Mathematics of Big Data | *Workshop*   **July 2023**
Sketching and (Multi-)Linear Algebra workshop, hosted at IBM Almaden

American Institute of Mathematical Sciences Conference Series on Dynamical Systems and Differential Equations | *Invited Speaker*   **May 2023**
"Hyperspectral Band Selection with Matrix CUR Decomposition"

AWARDS AND LEADERSHIP

Society for Industrial and Applied Mathematics | *Chapter President*   **May 2022 – Present**
- Coordinate speaking engagements with mathematicians from relevant industrial fields.
- Foster collaboration between academic departments, with the purpose of accelerating the development of applied

mathematics and computational methodologies.

Association of Women in Mathematics | *Chapter President*   **May 2021 – Present**
- Support female graduate and undergraduate students through mentorship and an inclusive community.
- Organize events, with the purpose of celebrating and supporting diversity in mathematics.

Bowdoin Public Service Initiative | *Selected Participant, BPS in Washington*   **2018**
Competitively selected to explore topics in government and public policy work through weekly seminars and travel to Washington, D.C.

Gibbons Summer Research Program | *Selected Fellow*   **2017**
Awarded funding to conduct research: "Women's Rights Are Human Rights."

Scholarships
- Amy Marshall Robbins Scholarship (2019, 2023)
- New York Grand Lodge of Free and Accepted Masons Educational Assistance Program (2016, 2017, 2018, 2019)
- Mark Conner Memorial Scholarship (2016, 2017)
- New York-Penn League Charitable Foundation Scholarship (2016)
- Monongalia County Bar Association Scholarship Award (2016)

SERVICE AND MENTORSHIP

Tutor for Undergraduate Students in Mathematics   **2020 – Present**
Provide one-on-one tutoring to University of Kentucky undergraduate students who need coursework assistance in elementary and high-level mathematics courses.

Peer Mentor   **2021 – Present**
Support female mathematicians in their first year of the graduate program at the University of Kentucky.

PROFESSIONAL MEMBERSHIPS

Association of Women in Mathematics
Society for Industrial and Applied Mathematics

SKILLS

Trained in MATLAB, Python, Excel, LaTeX.
Proficient in Spanish.