Leah (Buck) McNabb

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EDUCATION

Purdue University
Ph.D., Mathematics, May 2024
M.S., Mathematics, August 2023
Research Area: Quadrature Domains
GPA: 3.77/4.0

Muskingum University
B.S., Mathematics, May 2017
Minors: English and German
GPA: 4.0/4.0

EXPERIENCE

Graduate Teaching Assistant **Purdue University** **August 2017 - Present**

- Lectured for Calculus I, Calculus II, Applied Calculus I, and Math for Elementary School Teachers I; Taught Recitation for Calculus I, II, III, and Quantitative Reasoning
- Duties for the above classes: write/grade quizzes, demonstrate problem solutions, oversee group work, write/give lectures, write/grade exams, hold office hours, moderate an online forum for student questions, assign grades, coordinate with personal homework/quiz graders
- Acted as a course coordinator for Calculus II during summer 2022 and 2023: scheduled all office hours, managed final exam production
- Taught a large-lecture section of Applied Calculus I (approximately 100 students) in spring 2023
- Evaluated graduate students for placement as a teaching assistant or grader by observing 10-minute teaching demonstrations

Leadership Team Member **Purdue University** **May 2019 - May 2020**

- Supported women in STEM by working as part of the Women in Science Programs leadership team to plan monthly science-based, life-based, and/ or social events led by area experts

Mathematics Tutor **Muskingum University** **August 2014 - May 2017**

- Tutored fellow students in Liberal Arts Mathematics, College Algebra, Precalculus, Calculus I, II, and III, Differential Equations, Geometry, Abstract Algebra, and Analysis

Student Assistant **Muskingum University** **January 2014 - May 2017**

- Graded homework in College Algebra, Precalculus, Calculus I, and Calculus II
- Student Instructional Aid for Calculus I and Calculus II: attended lectures, assisted in answering student questions

SERVICE

CESCs Member **Purdue University** **August 2022 - Present**

- Serve as the graduate student member of the Calculus and Elementary Services Committees (CESCs), which oversee operations for quantitative reasoning, algebra, pre-calculus, applied calculus, calculus, and honors calculus courses

Workshop Co-Organizer **Purdue University** **August 2021 - Present**

- Improve pedagogy of graduate students by facilitating weekly teaching discussions
- Organize training for graduate students in areas such as teaching, career planning, research, computing, etc. by organizing workshops led by area experts

Mentor **Purdue University** **May 2018 - Present**

- Provide guidance and support to a total of seven first-year graduate students to help them achieve their goals
- Facilitate regular check-ins to monitor progress of and provide informal feedback to mentees

PGSG Senator **Purdue University** **August 2021 - May 2022**

- Represented the interests and concerns of the math graduate students to the senate
- Gained experience in the legislative processes of a university-focused senate by reviewing and voting on legislation
- Informed and engaged constituents by coordinating Purdue Graduate Student Government's (PGSG) social media

Graduate Representative **Purdue University** **May 2020 - May 2021**

- Represented the interests and concerns of the math graduate students to the administration of the math department
- Maintained community during the pandemic by planning and hosting virtual events for math graduate students, faculty, and staff
- Developed and proposed a yearly budget

AWARDS AND HONORS

Excellence in Teaching **Purdue Univ. Math Dept.** **Awarded 2020**

- Award recognizing outstanding dedication and effectiveness in teaching

Undergraduate Honors **Muskingum University** **Awarded 2014 - 2017**

- Awards: The Mathematics Award, Muskingum University Distinguished Scholar Award, James L. Smith Award in Mathematics, Mary Sharp Award in German, Science Student of the Month, L. Coleman Knight Award in Mathematics
- Honor Societies: Phi Sigma Iota, Phi Kappa Phi, Kappa Mu Epsilon (president 16-17, treasurer 15-16), Omicron Delta Kappa, Sigma Tau Delta (treasurer 16-17), Lambda Sigma Society

TECHNICAL SKILLS

- Python
- Wolfram Mathematica
- LaTeX
- Microsoft Office
- Coursework with SQL
- Coursework in Data Science
- MyLab Math
- WebAssign
- Brightspace
- Blackboard

PUBLICATIONS AND PROBLEMS

- Buck, Leah, Kelly Emmrich, and Tamás Forgács. "Sufficient Conditions for a Linear Operator on $\mathbb{R}[x]$ to be Monotone." *Houston Journal of Mathematics* v. 45 no. 1 (2019) p. 201-212.
- "Problem 1025, A straight-forward inequality." *The College Mathematics Journal* v. 46 no. 2 (March 2015).
- "Problem 1936, A sequence of pairwise tangent disks." *Mathematics Magazine* v. 88 no. 1 (February 2015).

PRESENTATIONS

- Presented a talk on "An Introduction to Quadrature Domains and the X Marks the Spot Problem" at the Purdue AWM Symposium - April 2023
- Presented a talk on "An Introduction to Quadrature Domains and the X Marks the Spot Problem" at the Indiana MAA Spring Section Meeting - March 2023
- Presented a talk on "An Introduction to Quadrature Domains and the X Marks the Spot Problem" at Purdue University's Graduate Student Analysis Seminar - February 2023
- Presented a talk on "An Introduction to Quadrature Domains and the X Marks the Spot Problem" at Purdue University Mathematics Department's Student Colloquium - October 2022
- Presented an invited talk on "An Introduction to Quadrature Domains and the X Marks the Spot Problem" at Rose-Hulman Institute of Technology - September 2022

- Presented a poster and gave a talk on "Constructing a Universal Algebraic Differential Equation Based on Certain Trigonometric Relationships" during Muskingum University's Science Week - 2017
- Presented a talk on "Sufficient Conditions for a Linear Operator on $\mathbb{R}[x]$ to be Monotone," AMS-MAA-SIAM special session on Research Conducted by Undergraduates at the Joint Mathematics Meetings, Atlanta - 2017
- Presented a talk on "Constructing a Universal Algebraic Differential Equation Based on Certain Trigonometric Relationships" at The Young Mathematician's Conference at The Ohio State University - 2016
- Presented a talk on "Constructing a Universal Algebraic Differential Equation Based on Certain Trigonometric Relationships" at The Mathematical Association of America, Spring Ohio Section Meeting, Ohio Northern University - 2016
- Presented a poster on "Sufficient Conditions for a Linear Operator on $\mathbb{R}[x]$ to be Monotone" at the Fall Research and Internship Forum at Muskingum University - 2016

PROFESSIONAL DEVELOPMENT

- Attended the 2021 Mastery Grading Conference - University STEM Focus (newly renamed Grading 4 Growth) - June 2021
- Attended the 2021 Mathematics Teacher-Scholar Symposium (MaTSS) hosted by Reed College - May 2021
- Attended Purdue University's Maximizing Student Potential Conference - March 2021

PROFESSIONAL ASSOCIATIONS

- Student member of the Mathematical Association of America, 2021 - Present
- Graduate student member of the American Mathematical Society, 2017 - Present

SCHOLARSHIPS AND GRANTS

- Carl C. Cowen Scholarship, awarded by Purdue University Mathematics Department, Spring 2022
- NSF Research Assistantship, Purdue University (funded through Laszlo Lempert), Spring 2021
- Kunze Scholarship, awarded by Purdue University Mathematics Department, Fall 2017