

# Rachel Perrier

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Franciscan University of Steubenville  
 Department of Mathematics  
 rperrier@franciscan.edu

1235 University Boulevard  
 Steubenville, OH 43952

## EDUCATION

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- Washington State University** *2017 – 2023*  
 Ph.D., Mathematics  
 Advisor: Dr. Matthew Hudelson  
 Dissertation: Using Higher Dimensional Extensions of TRIP Maps  
 for Analyzing Periodicity of Multidimensional  
 Continued Fractions  
 Graduate Certificate in Teaching College Mathematics *Fall 2022*
- Whitworth University** *2013 – 2017*  
 B.S., Mathematics  
 Minor, Computer Science

## TEACHING EXPERIENCE

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- Franciscan University of Steubenville** *Fall 2023 – present*  
 Assistant Professor of Mathematics
- Washington State University** *Fall 2017 – Spring 2023*  
 Algebra Methods and Introduction to Functions,  
 Coordinated Instructor *Fall 2021, Fall 2020, Fall 2019*  
 Exploring Mathematics, Instructor *Summer 2018*  
 Trigonometry, Instructor *Summer 2019*  
 Calculus I Lab, Teaching Assistant *Fall 2017*  
 Calculus II Lab, Teaching Assistant *Spring 2021, Spring 2020, Spring 2018*  
 Calculus for Business and Economics,  
 Coordinated Instructor *Spring 2022, Summer 2022*  
 Discrete Mathematics, Instructor *Summer 2020*  
 Introductory Linear Algebra, Instructor *Summer 2021*  
 Introduction to Mathematical Reasoning, Instructor *Fall 2022*  
 Graduate Qualifying Exam Linear Algebra Review  
 Sessions, Leader *Fall 2020, Spring 2020*

**Coordinated Instructor:** *A coordinated course where responsibilities included teaching the material to the class; grading assignments and exams, or supervising a grader; and holding regular office hours.* **Instructor:** *Responsible for teaching the material; making*

*a syllabus, assignments, and exams; potentially supervising a grader; and grading exams.*  
**Teaching Assistant:** *Responsible for a recitation course, where I would review material learned during lecture classes and grade homework, quizzes, and exams.* **Leader:** *Responsible for reviewing material and preparing first year graduate students for their qualifying exam in linear algebra.*

### Whitworth University

*Fall 2014 – Spring 2017*

Undergraduate Tutor

Introduction to Complex Variables, Grader

*Spring 2017*

Math History Study Abroad Prep Course, Teaching Assistant

*Fall 2016*

Career and Vocations Seminar, Teaching Assistant

*Spring 2016*

Mathematical Statistics I, Grader

*Fall 2015*

**Teaching Assistant:** *Responsible for grading assignments and checking assignments were completed; recording grades; and giving feedback about complexity of assignments before they were assigned to students.* **Grader:** *Responsible for grading assignments and recording grades.*

### Spokane Public Schools, Spokane, WA

*Fall 2013 – Spring 2014*

Shadle Park High School, AVID Tutor

## RESEARCH EXPERIENCE

### Sums, Derivatives, and Flips of Riordan Arrays

*June 2021 – Fall 2022*

*A joint research working group beginning at the Graduate Research Workshop in Combinatorics 2021 consisting of seven combinatorists. Focuses on three operations performed on Riordan arrays and combinatorial identities that arise from them.*

### Triangular Floorplans

*June 2021 – May 2022*

*A joint research working group beginning at the Graduate Research Workshop in Combinatorics 2021 consisting of six combinatorists. Focuses on identifying the types of triangular floorplans and relating them to 3D rectangular floorplans.*

### Research Assistantship for Diverse Scholars

*Fall 2018 – Spring 2019*

Washington State University

*Developed background in generating functions, algebraic topology, and ordinary continued fractions for potential research topics.*

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## PUBLICATIONS

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- C. Bang, M. von Bell, E. Culver, J. Dickson, S. Dimitrov, R. Perrier, and S. Sundaram. On Sums, Derivatives, and Flips of Riordan Arrays. *Journal of Integer Sequences*, 26(2):7, 2023.
- J. Dickson and R. Perrier. Dots-and-Polygons. *Recreational Mathematics Magazine*, 9(16):21–42, 2022.

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## AWARDS AND HONORS

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- Nancy J. Robertson Endowed Graduate Fellowship in Mathematics *Spring 2022*  
Washington State University
- 3-Minute Thesis Competition Winner *November 2021*  
Department of Mathematics and Statistics, Washington State University  
Competed in College of Arts and Sciences level competition *March 2022*
- Nancy J. Robertson Endowed Graduate Fellowship in Mathematics *Spring 2021*  
Washington State University
- Laureate Society *Spring 2014 – Spring 2017*  
Whitworth University
- McDonald Opportunity Scholar *Fall 2016 – Spring 2017*  
Whitworth University
- Math/Computer Science Achievement Award *May 2015, May 2016*  
Whitworth University
- Myrna Wittwer Scholarship *May 2014*  
Whitworth University

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## SERVICE

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- Conference Session Chair *April 9, 2022*  
2022 Pacific Inland Mathematics Undergraduate Conference  
Washington State University
- Graduate student representative at faculty meetings *Fall 2021 – Spring 2022*  
Washington State University  
*Responsible for attending department faculty meetings and sending out a summary email to the graduate students to notify them of important information.*
- “Mastering MATLAB” Workshop *February 2021*  
Washington State University  
*As Vice President of the university’s AMS Student Chapter, I helped organize and co-presented a workshop to help introduce graduate students to MATLAB.*

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Vice President of Student Chapter of American Mathematical Society (AMS) Washington State University	<i>Fall 2020 – Spring 2021</i>
Vice President and co-founder of Student Chapter of Association for Women in Mathematics (AWM) Washington State University	<i>Spring 2019 – Spring 2020</i>
Secretary of Student Chapter of AMS Washington State University	<i>Fall 2019 – Spring 2020</i>

### CONFERENCES ATTENDED

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2023 Joint Mathematics Meetings, Boston, MA	<i>January 4 – 7, 2022</i>
2022 Field of Dreams Conference, Minneapolis, MN	<i>November 4 – 6, 2022</i>
2022 Joint Mathematics Meetings	<i>April 6 – 9, 2022</i>
Graduate Student Combinatorics Conference 2022	<i>March 26 – 27, 2022</i>
2021 Joint Mathematics Meetings	<i>January 6 – 9, 2021</i>
37th Annual Cascadia Combinatorial Feast	<i>November 21, 2020</i>
FPSAC 2020 Online	<i>July 6 – 24, 2020</i>
Pacific Northwest Section Mathematical Association of America Meeting, Portland, OR	<i>April 12 – 13, 2019</i>
Pacific Northwest Section Mathematical Association of America Meeting, Tacoma, WA	<i>April 10 – 11, 2015</i>

### WORKSHOPS

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Graduate Research Workshop in Combinatorics	<i>June 14 – 25, 2021</i>
MSRI Summer Graduate School, Polynomial Method	<i>July 8 – 19, 2019</i>

### PRESENTATIONS

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<i>On Sums, Derivatives, and Flips of Riordan Arrays,</i> 2023 Joint Mathematics Meetings	<i>January 6, 2023</i>
<i>Sums of Riordan Arrays,</i> Graduate Student Combinatorics Conference 2022	<i>March 26, 2022</i>
<i>Dots-and-Polygons,</i> 2021 Joint Mathematics Meetings	<i>January 7, 2021</i>

**Combinatorics, Linear Algebra, and Number Theory Seminar**

Washington State University

*Analyzing Periodicity of Multidimensional Continued Fractions  
with 3-SIMP Maps**March 27, 2023**On Sums, Derivatives, and Flips of Riordan Arrays**October 24, 2022**Third Degree Analogs to Continued Fractions**March 21, 2022**Triangular Floorplans**November 8, 2021**Some Continued Fraction Whimsy**April 19, 2021**Dots-and-Polygons, Joint talk with Jessica Dickson**October 12, 2020**Dots-and-Polygons**March 23, 2020**Polynomial Method**December 2, 2019**Laplacian Unimodular Equivalence of Graphs**November 26, 2018**Color Generation: An Introduction to Pólya's Enumeration  
Formula**November 27, 2017***PROFESSIONAL ORGANIZATIONS**

Association for Women in Mathematics

*member since Spring 2019*

American Mathematical Society

*member since Fall 2017***PROFESSIONAL DEVELOPMENT**

Panel Discussion: Presenting Your Research to a Lay Audience:

Translating Your 3 MT Skills to Practical Conversations

*October 2021*

From Pity to Human Rights to Value Based: The Case for

Authentic Inclusion of People with Disabilities

*November 2020*

The Post-Pandemic Job Search Blueprint For PhDs &amp; MScs

*September 2020*

Distance Delivery Mastery Certificate

*August 2020*

Teaching from a Distance: Community Building and Connection

*July 2020*

Teaching from a Distance: Assessing Student Learning

*June 2020*

Teaching from a Distance: Strategies and Best Practices

*June 2020*

Industry Resumes &amp; Linked In Presence

*September 2019*

Conversing with a Crowd

*September 2019*

Women Seeking Grants

*August 2019***TECHNICAL SKILLS****Programming Languages:** MATLAB, C++, SQL, Assembly**Learning Management Systems:** Canvas, Blackboard