Maximilian Rezek

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Education

University of Arizona .... 2019 Aug - Present
PhD Mathematics
Advisor: Christopher Henderson

Wake Forest University .... 2017 Aug - 2019 May
MA Mathematics
Master's Thesis: *The Formation of Singularities in Non-Euclidean Plates*
Advisor: John A. Gemmer

Washington and Lee University .... 2013 Sep - 2017 May
BA Mathematics

Employment

Graduate Teaching Assistant .... 2019 Aug - Present
University of Arizona, Department of Mathematics

Research Assistant .... 2021 Aug - 2021 Dec
University of Arizona, Department of Mathematics (NSF Funded)

Teaching Assistant .... 2017 Aug - 2019 May
Wake Forest University, Department of Mathematics

Research Interests

- I am broadly interested in applied analysis and partial differential equations. Using the framework of analysis to rigorously study problems inspired by the physical world is particularly interesting to me.

- Currently, I am researching traveling wave solutions to the Keller-Segel-FKPP equation.

- For a detailed discussion of my past and current research projects, please visit my website.

Publications

- C. Henderson, M. Rezek, Traveling waves for the Keller-Segel-FKPP equation with strong chemotaxis. *J. Differential Equations*, **379** (2024), 497-523. 10.1016/j.jde.2023.10.030

Awards & Honors

- 2019 Aug - Graduate Teaching Assistantship with Partial Fellowship, University of Arizona

- 2018 Sep - Southeastern-Atlantic Regional Conference on Differential Equations Travel Support, National Science Foundation

- 2018 Sep - Alumni Travel Award, Wake Forest University

- 2017 Aug - Graduate Teaching Assistantship, Wake Forest University

- 2016 Jun - Paid Summer Research Scholar, Washington and Lee University

Selected Presentations

- 2025 Feb - Graduate Colloquium. University of Arizona. Tucson, AZ.

- 2024 Mar - Analysis, Dynamics, and Applications Seminar. University of Arizona. Tucson, AZ.

- 2023 Dec - Graduate Colloquium. University of Arizona. Tucson, AZ.

- 2019 Apr - Master's Thesis Defense. Wake Forest University. Winston-Salem, NC.

- 2019 Mar - Integrating Research in Science Conference. Wake Forest University. Winston-Salem, NC.

- 2019 Mar - Wake Forest Mathematics and Statistics Department Analysis Seminar. Wake Forest University. Winston-Salem, NC.
- 2019 Mar - Graduate Student and Postdoc Research Day (Poster Presentation). Wake Forest University. Winston-Salem, NC.
- 2019 Mar - Association for Women in Mathematics Piedmont-Triad Conference. Wake Forest University. Winston-Salem, NC.
- 2019 Jan - Joint Mathematics Meetings. Baltimore, MD.
- 2018 Nov - Regional Mathematics and Statistics Conference. University of North Carolina at Greensboro. Greensboro, NC.
- 2018 Oct - Southeastern-Atlantic Regional Conference on Differential Equations. University of North Georgia. Dahlonega, GA.
- 2018 Sep - Association for Women in Mathematics Brown Bag Seminar. Wake Forest University. Winston-Salem, NC.
- 2018 Aug - Summer Brown Bag Seminar. Wake Forest University. Winston-Salem, NC.
- 2016 Sep - Shenandoah Undergraduate Mathematics and Statistics Conference. James Madison University. Harrisonburg, VA.
- 2016 Sep - Parent's Weekend Seminar. Washington and Lee University. Lexington, VA.
- 2016 Jul - Summer Brown Bag Seminar. Washington and Lee University. Lexington, VA.

Teaching Experience

University of Arizona

- 2025 Summer - MATH 116: *Calculus Concepts for Business*
  - *Real Analysis PhD Qualifying Exam Review Sessions* ("Qual Leader")
- 2025 Spring - MATH 129: *Calculus II*
- 2024 Fall - MATH 129: *Calculus II*
- 2024 Summer - *Real Analysis PhD Qualifying Exam Review Sessions* ("Qual Leader")
- 2024 Spring - MATH 122B: *First-Semester Calculus*
  - MATH 523B: *Real Analysis* ("Super TA" for graduate course)
- 2023 Fall - MATH 122B: *First-Semester Calculus*
  - MATH 523A: *Real Analysis* ("Super TA" for graduate course)
- 2023 Summer - MATH 116: *Calculus Concepts for Business*
- 2023 Spring - MATH 122B: *First-Semester Calculus*
- 2022 Fall - MATH 122B: *First-Semester Calculus*
- 2022 Summer - MATH 116: *Calculus Concepts for Business*
- 2022 Spring - MATH 120R: *Calculus Preparation*
- 2021 Summer - MATH 116: *Calculus Concepts for Business*
- 2021 Spring - MATH 129: *Calculus II* (TA)
- 2020 Fall - MATH 120R: *Calculus Preparation*
- 2020 Spring - MATH 112: *College Algebra Concepts and Applications* (TA, two sections)
- 2019 Fall - MATH 112: *College Algebra Concepts and Applications* (TA)

Wake Forest University

- 2019 Spring - MST 205/605: *Applied Multivariable Calculus* (TA)
  - MST 251: *Ordinary Differential Equations* (TA)

- 2018 Fall - MST 205/605: *Applied Multivariable Calculus* (TA)
  - MST 251: *Ordinary Differential Equations* (TA)

- 2018 Spring - MST 111: *Calculus with Analytic Geometry I* (TA)

- 2017 Fall - MST 112: *Calculus with Analytic Geometry II* (TA)