Jordan V. Barrett

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Education

University of Nebraska, Lincoln — Lincoln, NE
Ph.D. in Mathematics, Advisor: Jack Jeffries — 2019–Current

- Thesis: "A Zariski-Nagata Theorem for Smooth Toric Varieties" (in Progress)

Syracuse University — Syracuse, NY
M.S. Mathematics — 2018–2019

Syracuse University — Syracuse, NY
B.S. in Mathematics, GPA: 3.85/4.00 — 2014–2018
B.A. in Physics

Research Experience

Senior Thesis in Mathematics — Syracuse NY
Advisor: Douglas Anderson — 2017 –2018

- "A Characterization of Torus Knots"

Dynamics of Ultrathin Polymer Sheets — Syracuse NY
Advisor: Joseph Paulsen — 2017 –2020

- Assisted in creating formal model of thin sheet motion

Independent Mathematics Project — Syracuse NY
Advisor: Stephan Wehrli — 2016 –2017

- Elucidated binary topological relations of hypersurfaces

High Energy Physics Department Research Assistantship — Syracuse NY
Advisor: Raymond Mountain — 2015 –2016

- Assisted in building/testing UT silicon strip tracker for LHCb at CERN

Mechanical Engineering Internship — Strasbourg, France
Advisor: Philippe Denier — Fall 2014

Upward Bound Math/Science Data-Science Research — Orono, ME
Advisor: Matthew Dube — 2013 –2016

- Completed several applied mathematics projects over four summers

Publications

1. Zac Schrecengost, Jordan V. Barrett, Vincent Démery, and Joseph Paulsen. (2019). Geometry-driven self-assembly of interfacial sheets. In APS March Meeting Abstracts (Vol. 2019, pp. L70-235).

2. Matthew P. Dube, Max J. Egenhofer, Jordan V. Barrett, and Noah J. Simpson (2019). Beyond the digital Jordan curve: Unconstrained simple pixel-based raster relations. Journal of Computer Languages, 54, 100906.

3. Matthew P.Dube, Jordan V. Barrett, and Max J. Egenhofer. "From metric to topology: determining relations in discrete space." Spatial Information Theory. Springer International Publishing, 2015. 151-171.

Teaching

- **REU Organizer/Leader** at University of Nebraska, Lincoln — Summer 2023
  First Generation Commutative Algebra REU (P.I. Eloísa Grifo)
- **Math Circles Activity Leader** at University of Nebraska, Lincoln — Spring 2023
  high school math outreach workshop on the cardinality of infinite sets
- **Teaching Assistant** at University of Nebraska, Lincoln — Spring 2023
  Calculus III (MATH-208)
- **Instructor of Record** at University of Nebraska, Lincoln — Fall 2022
  College Algebra and Trigonometry (MATH-103)
- **McNair Scholars Program GRE Workshop Leader** at University of Nebraska, Lincoln — Summer 2022-2023
  GRE math problem session for UNL McNair Scholars
- **Upward Bound Math/Science Workshop Leader** at University of Nebraska, Lincoln — Summer 2022
  Five day mathematics outreach workshop
- **Teaching Assistant** at University of Nebraska, Lincoln — Summer 2022
  Calculus I (MATH-106)
- **Teaching Assistant** at University of Nebraska, Lincoln — Spring 2022
  Calculus III (MATH-208)
- **Teaching Assistant** at University of Nebraska, Lincoln — Fall 2021
  Calculus I (MATH-106)
- **Teaching Assistant** at Syracuse University — Spring 2019
  Calculus III (MAT-397)
- **Teaching Assistant** at Syracuse University — Fall 2018
  Pre-Calculus (MAT-194)
- **Upward Bound Math/Science Academic Staff** at University of Maine, Orono — Summer 2015 –2016
  Pre-Calculus, Calculus, SAT Prep, History of the Natural Sciences
- **Teaching Assistant** at Syracuse University — Spring 2016
  Intro to Mechanics (PHY-211)

Conferences and Talks

- **Summer CAMP** at University of Nebraska Lincoln — Summer 2023
  Commutative Algebra Market Preparation Workshop
- **MSRI/SLMath CMND Summer School** at University of Notre Dame — Summer 2023
  Commutative Algebra and its Interaction with Algebraic Geometry
- **KUMUNU** at University of Nebraska, Lincoln — Fall 2022
  Commutative Algebra Conference
- **The Pan-American School in Commutative Algebra** at CIMAT, Guanajuato Mexico — Summer 2022
  Graduate Summer School in Commutative Algebra
- **Mathematical Association of America's MathFest** — 2016, 2017
  Gave two 15 minute talks on topology research
- **Conference on Spatial Information Theory** — 2015
  Gave talk on applied topology research

Scholarships and Awards

- NSF Graduate Research Fellowship 2018–2021
- SU University Scholar 2018
- Paul M. Gelling Memorial Physics Scholarship 2018
- Barry M. Goldwater Scholarship 2017
- Astronaut Scholarship 2017
- Syracuse University Euclid Award 2017
- Neil F. Beardsley Memorial Award 2014–2017

Professional Organizations

- American Mathematical Society 2019–Current
  Member
- The SOURCE (Undergraduate Research Office) 2018 –2019
  Founding member of the Syracuse University Undergraduate research office
- Pi Mu Epsilon Mathematics Fraternity Alpha Chapter 2016–2018
  Problem session coordinator
- Society of Physics Students 2015 –2019
  Outreach Officer