# Daniel W. Havens

#### **Contact Information**

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#### Education

| MS            | Mathematics<br>Advisor: | University of New Mexico<br>Maria Cristina Pereyra | 2024 |
|---------------|-------------------------|--|------|
|               | Thesis:                 | On the Limitations and Restrictions of the Hardy-  |      |
|               |                         | Littlewood Circle Method                           |      |
| $\mathbf{BS}$ | Mathematics             | Utah Valley University                             | 2021 |
|               | Advisor:                | Alan Parry   |      |
|               | Thesis:                 | Evolutes that Don't Evolve                         |      |
| $\mathbf{AS}$ | Mathematics             | Utah Valley University                             | 2019 |

#### **Research Interests**

Mathematics Education, Analytic Number Theory, and Additive Combinatorics.

#### **Further Education**

- Workshop Potential Theory Workshop: Intersections in Harmonic Analysis, Partial Differential Equations, and Probability, CIMAT, October 2 6, 2023.
- Seminar Series *Game Theory with Applications*, Utah Valley University, March 18 July 29, 2022.
- Study Abroad KU Leuven, 2021-2022 Academic Year.
- Workshop *Detecting Partisan Gerrymandering*, Utah Valley University, March 26, 2022.
- Pre-REU Program Summer Mathematics Program for High School Students, University of Utah, June-July 2018.

## **Preprints and Projects**

- Simmons, Skyler and Havens, Daniel W., Periodic Orbits in the Co-Sitnikov Problem, preprint.
- Parry, Alan R., **Havens, Daniel W.**, Mogilski, Wiktor, and Simons, Joe, *Analysis Paralysis I-III*, In-Progress.
- Havens, Daniel W., Closure and Hull Operators in General Spaces, In-Progress.
- Bell, Austin, Dyer, Franklin, and Havens, Daniel W., Manic Monads, In-Progress.

### Talks and Presentations

- Havens, Daniel W., Mogilski, Wiktor, Parry, Alan R., Simons, Joe, Analysis Paralysis: Modern Opportunities to Reconsider the Mathematics Curriculum at All Levels
- Havens, Daniel W., The Circle Method; Fourier's Foray into Enumerating Equalities. Utah Valley University, April 23, 2024.
- Havens, Daniel W., The Hardy-Littlewood Circle Method and Higher Order Fourier Analysis, University of New Mexico Analysis Seminar, November 11, 2023.
- Havens, Daniel W., *Prime Problems Throughout History*, Math and More, Coffee and Talks, August 28, 2023.
- Havens, Daniel W., Categorical Completions with Algebraic Applications, Commutative Algebra in the South (Lighting Talks), April 15, 2023.
- Havens, Daniel W., Closures, Completions, and Topological Takeaways, 48th Annual New York Regional Mathematics Conference, April 1, 2023.
- Bell, Austin, **Havens, Daniel W.**, and Garcia, Jose J., *Humanizing Math Education*, UNM Spring Teaching Conference 2023, March 22, 2023.
- Havens, Daniel W., *Preposterous Post-Quantum Cryptography*, Utah Valley University, September 9, 2022.
- Hutsebaut, Janneke, Wallenus, Mirte, Güzel, Burak, Slabbinck, Alisa, Havens, Daniel W., and Briesbouck, Tom, *Progress on the Riemann Hypothesis*, KU Leuven, March 25, 2022.
- Havens, Daniel W., Evolutes that don't Evolve, Utah Valley University, April 23, 2021.
- Havens, Daniel W., Evolutes that don't Evolve, Joint Mathematics Meetings (Undergraduate Poster Session), January 6-9, 2021.

# **Teaching Experience**

- Graduate Teaching Assistant, University of New Mexico, August 2022 May 2024.
  - Recitation Leader and Grader, Advanced Calculus 1, 1 section, Spring 2024.
  - Grader, Advanced Calculus 2, 1 section, Spring 2024.
  - Instructor of Record, Calculus 2, 1 section, Fall 2023.
  - Instructor of Record, Calculus 2, 1 section, Summer 2023.
  - Instructor of Record, Calculus 1, 1 section, Spring 2023.
  - Recitation Leader and Grader, Calculus 2, 3 sections, Fall 2022.

• Special Education Math Paraprofessional, Utah County Academy of Sciences, August 2019 - May 2020.

## Academic Service

- Program Coordinator, University of New Mexico Directed Reading Program, University of New Mexico, May 2023 May 2024.
- Grant Reader, *Graduate and Professional Student Association Grants*, University of New Mexico, Fall 2022, Spring 2023, Summer 2023, and Spring 2024.

# Conferences, Seminars, and Symposia Organized

- Symposium *Math and More, Coffee and Talks*, University of New Mexico, August 28 September 1, 2023.
- Seminar Calculus Teaching for Graduate Teaching Assistants, University of New Mexico, August 21 December 4, 2023.

## **Research Facilitated**

- Spring 2024 Directed Reading Program Projects:
  - Program Coordinator for 13 students.
  - Introduction to Point-Set Topology, University of New Mexico.
- Fall 2023 Directed Reading Program Projects:
  - Program Coordinator for 17 students.
  - An Introduction to General Mathematics, University of New Mexico.
  - An Overview of Aperiodic Tilings, University of New Mexico.
- Summer 2023 Directed Reading Program Projects:
  - Introductory Abstract Algebra, University of New Mexico.
  - Introduction to Proof Writing, University of New Mexico.
- Spring 2023 Directed Reading Program Projects:
  - Introduction to Point-Set Topology, University of New Mexico
  - Applications of Fourier Analysis, University of New Mexico.
  - Introductory Fourier Analysis, University of New Mexico.
- Fall 2022 Directed Reading Program Projects:
  - Introduction to Graph Theory, University of New Mexico.

# **Community Service and Outreach**

- Volunteer, Association for Women in Mathematics Night, Utah Valley University, April 19, 2024.
- Volunteer, 2024 Southwestern Undergraduate Mathematics Research Conference, University of New Mexico April 5-7, 2024.
- Presentation Evaluator, 2024 Joint Math Meetings Undergraduate Poster Session, San Francisco, January 4, 2024
- Presentation Moderator and Evaluator, 2023 UNM McNair Scholars Research Conference, University of New Mexico, September 6-7, 2023.
- Presentation Evaluator, Student Session on Addressing Societal Challenges using Chemical and Biological Engineering, University of New Mexico, May 5, 2023.
- Presentation Moderator and Evaluator, Undergraduate Research Opportunity Conference, University of New Mexico, April 21, 2023 and April 12, 2024.
- Presentation Evaluator, URinspiration International Undergraduate Research Symposium, jointly hosted by the University of Arizona, Florida International University, and the University of New Mexico (held virtually), April 3, 2023, and April 16, 2024.
- Exam Proctor, UNM-PNM Math Contest, University of New Mexico, February 12, 2023 and February 10, 2024.

## Awards, Nominations, Honors, and Certifications

- Outstanding Graduate Student in Teaching, University of New Mexico Department of Mathematics and Statistics, 2023-24 Academic Year.
- Nominated for the Susan Deese-Roberts Outstanding Teaching Assistant award, University of New Mexico, 2022-23 and 2023-24 Academic Years.
  - Honorable Mention for 2022-23 and 2023-24 academic years.
- Student Experience Project Certified Instructor, Fall 2022.
- Outstanding Academic Merit Scholar, Utah Valley University, 2019-2020 and 2020-2021 Academic Years.

# Grants and Funding Received

- Fall 2023 University of New Mexico Graduate Student Association Professional Development Grant.
- Spring 2023 University of New Mexico Efroymson Travel Funding Award.
- AMS Undergraduate Travel Grant for the 2021 Joint Mathematics Meetings.

# **Conferences Attended**

- 2024 MAA Mathfest, Indianapolis, IN, August 7-10, 2024.
- 2024 Southwest Local Algebra Meeting, University of Oklahoma, February 24-25, 2024.
- 2024 Joint Math Meetings, San Francisco, CA, January 3-6, 2024.
- Potential Theory Workshop: Intersections in Harmonic Analysis, Partial Differential Equations, and Probability, CIMAT, September 28 30, 2023.
- 2023 Commutative Algebra in the South, University of Alabama, April 15-16, 2023.
- 48th Annual New York State Regional Graduate Mathematics Conference, Syracuse University, April 1, 2023.
- 2023 Southwest Local Algebra Meeting, University of North Texas, March 4-5, 2022.
- 2022 MAA Intermountain Section Meeting, Utah Valley University, March 25-26, 2022.
- 2021 MAA Mathfest, Online, August 4-7, 2021.
- 2021 MAA Intermountain Section Meeting, Online, March 26-27, 2021.
- 2021 Joint Mathematics Meetings, Online, January 6-9 2021.
- 2020 AMS Fall Western Virtual Sectional Meeting, Online, October 24-25 2020.

## **Professional Affiliations**

- Member of the American Mathematical Society, since 2019.
- Inducted Member of the National Society of Leadership and Success, since 2020.

## **Programming Languages**

- Fluent with Python
  - Proficient with the SciPy Stack
  - Proficient with high performance Python strategies
- Proficient with Sage
- Proficient with Matlab
- Proficient with Macaulay2

#### Languages

- English, Native
- German, Working Proficiency
- Dutch, Reading Proficiency