Alex M. Paschal

CONTACT INFORMATION

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EDUCATION

University of North Carolina at Chapel Hill, Chapel Hill, NC

B.S., Mathematics, August 2023 - Present.

RESEARCH EXPERIENCE

The Ohio State University, Columbus, OH

Thermodynamic formalism, June 2024–Present. ROMUS and tOSU-IM program participant. Mentored by Daniel Thompson.

University of North Carolina at Chapel Hill, Chapel Hill, NC

Analytic number theory, October 2023–Present. Mentored by Idris Assani.

PUBLICATIONS

[1] Alex Paschal and Amy Somers. The Variational Principle for Entropy of Countable State Shift Spaces With Specification. *Submitted*.

[2] Idris Assani, Aiden Chester, and Alex Paschal. On Robin's Inequality and the Kaneko-Lagarias Inequality. *Submitted*, available here.

CONFERENCE TALKS

[3] Beyond Uniform Hyperbolicity Conference, International Centre for Theoretical Physics, June 2–13, 2025, Trieste, Italy.

[4] 58th Spring Topology and Dynamics Conference, Christopher Newport University, March 6–8, 2025, Newport News, Virginia.

[5] Joint Mathematics Meeting, January 8–11, 2025, Seattle, Washington.

[6] Regional Mathematics and Statistics Conference, University of North Carolina Greensboro, November 8–9, 2024, Greensboro, North Carolina.

[7] Young Mathematicians Conference, Ohio State University, August 13–15, 2024, Columbus, Ohio.

[8] Consortium of Summer Undergraduate Research Experiences, Ohio State University, July 25, 2024, Columbus, Ohio.

CONFERENCE POSTERS

[9] Beyond Uniform Hyperbolicity Conference, International Centre for Theoretical Physics, June 2–13, 2025, Trieste, Italy.

[10] Midwest Dynamical Systems Conference, Northwestern University, April 25–27, Evanston, Illinois.

OTHER TALKS

[11] Alex Paschal. "Gödel's First Incompleteness Theorem." Carolina Math Club, March 4, 2025, Chapel Hill, NC. Notes available here.

[12] Alex Paschal. "Paradox in Logical Systems." Carolina Math Club, February 28, 2025, Chapel Hill, NC. Notes available here.

[13] Alex Paschal. "What is Symbolic Dynamics?" Carolina Math Club, August 17, 2024, Chapel Hill, NC.

[14] Alex Paschal. "Superabundant Numbers and the Riemann Hypothesis." Carolina Math Club, April 1, 2024, Chapel Hill, NC.

SERVICE

University of North Carolina at Chapel Hill, Chapel Hill, NC

Undergraduate Learning Assistant

- MATH 522 (Advanced Calculus II) (Spring 2025)
- MATH 521 (Advanced Calculus I) (Spring 2024 and Fall 2024)
- MATH 381 (Discrete Mathematics) (Fall 2023)

Carolina Math Club

- President (Spring 2025)
- Academic Chair (Spring 2024 and Fall 2024)

TECHNOLOGY

Proficient: Python, LaTeX, Wolfram Language (Mathematica).
Familiar: Java, Rust, Javascript.