Alex M. Paschal

CONTACT INFORMATION

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EDUCATION

École normale supérieure de Lyon, Lyon, France

M2,[1] Mathematics, August 2025–March 2026 (expected).

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

B.S., Mathematics, August 2023–May 2027 (expected).

RESEARCH EXPERIENCE

The Ohio State University, Columbus, Ohio

Thermodynamic formalism: countable state symbolic dynamics, non-compact dynamical systems, (generalized) specification properties. June 2024–Present. ROMUS and tOSU-IM program participant. Mentored by Daniel Thompson.

PUBLICATIONS

[1] Alex Paschal, Amy Somers, and Daniel Thompson. The Variational Principle for Pressure of Countable State Shift Spaces With Specification. *In preparation*.

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

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

CONFERENCE TALKS

[4] Young Mathematicians Conference, the Ohio State University, July 30–August 1, 2025, Columbus, Ohio.

[5] 58th Spring Topology and Dynamics Conference, Christopher Newport University, March 6–8, 2025, Newport News, Virginia.

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

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

[8] Young Mathematicians Conference, the Ohio State University, August 13–15, 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.

[1] This is the second year of a master's program.

CONFERENCES ATTENDED

[11] ISTA Summer School in Dynamical Systems, Federal Institute for Adult Education, September 22—26, Strobl, Austria.

OTHER WRITING

[12] Alex Paschal. Thermodynamic Formalism in Holomorphic Dynamics. *In preparation*.

OTHER TALKS

[13] Alex Paschal. "Thermodynamic Formalism in Countable State Symbolic Dynamics." tOSU-IM Symposium, the Ohio State University, June 27, 2025, Columumbus, Ohio.

[14] Alex Paschal and Amy Somers. "The Variational Principle for Pressure of Countable State Shift Spaces With Specification." Beyond Uniformy Hyperbolicity Conference, International Centre for Theoretical Physics, June 2–13, 2025, Trieste, Italy. *Lightning talk*.

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

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

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

[18] Alex Paschal and Amy Somers. "The Variational Principle for Entropy of Countable State Shift Spaces With Specification." Consortium of Summer Undergraduate Research Experiences, the Ohio State University, July 25, 2024, Columbus, Ohio.

[19] Alex Paschal and Amy Somers. "Entropy in Countable State Symbolic Dynamics." ROMUS Symposium, the Ohio State University, July 3, 2024, Columbus, Ohio.

[20] 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.