Paige Yeung

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Research Interests

Mathematical ecology; population dynamics; dynamical systems; agent-based models; reaction–diffusion systems

Education

Ph.D. Mathematics, University of Minnesota (advisor: Arnd Scheel) *Sep 2025 –*
M.S. Mathematics, University of Minnesota *Sep 2025 – Jun 2026*
B.S. Mathematics, Massachusetts Institute of Technology *Sep 2021 – May 2025*
Minor in Earth, Atmospheric, and Planetary Sciences · GPA: 4.9/5.0

Awards & Fellowships

NSF Graduate Research Fellowship *2026*
U.S. Department of Education GAANN Fellowship *2025*
NSF Graduate Research Fellowship Program Honorable Mention *2025*
AMS JMM Undergraduate Travel Grant *2025*
MIT Climate and Sustainability Research Scholar *2023*

Publications

3. Clifton, O., Chavez, A., Madrigal, A., Warren, A., **Yeung, P.**, Scheel, A. Vacuum bubble and fissure formation in collective motion with competing attractive and repulsive forces. *Journal of Nonlinear Waves* **2** (2026), e8.
2. Carter, P., Doelman, A., van Heijster, P., Levy, D., Maini, P., Okey, E., **Yeung, P.** Deformations of acid-mediated invasive tumors in a model with Allee effect. *J. Math. Biol.* **90** (2025), Article 55.
1. **Yeung, P.**, Perian, Q., Robertson, P., Fitzgerald, M., Fowler, M., Sienkiewicz, F., Tock, K. Searching for transit timing variations and fitting a new ephemeris to transits of TrES-1 b. *J. Kor. Astron. Soc.* **55** (2022), 111–121.

Selected Research Projects

UMN Complex Systems REU *Summer 2024*
Advisor: Arnd Scheel · Mentors: Olivia Clifton, Angel Chavez
Analytically investigated particle behavior and conditions for vacuum formation in the continuum limit of a model of collective motion. Joint work with A. Madrigal and A. Warren led to a publication in *JNW* and JMM presentation.

Leiden University Patterns and PDEs REU *Summer 2023*
Advisors: Paul Carter, Arjen Doelman
Studied interface dynamics in a reaction–diffusion model of tumor invasion, focusing on deformation mechanisms and stability. Joint work with D. Levy and E. Okey led to a publication in *J. Math. Biol.* and JMM presentation.

MIT Department of Earth, Atmospheric, and Planetary Sciences *Fall 2023 – Spring 2025*
Advisor: Daniel Rothman · Mentor: Perrin Davidson
Researched dynamics of interacting climate tipping elements, e.g. Amazon rainforest dieback and polar ice sheet collapse, with emphasis on threshold behavior and coupling effects. Results presented at AGU 2024.

Talks & Presentations

Joint Mathematics Meetings (Undergraduate Poster Session) *Jan 2025*
"Bubbles and Fissures: Gap Formation in a Two-Dimensional Swarm Model"

American Geophysical Union Annual Meeting *Dec 2024*
"Dynamics in a Model for Interacting Tipping Elements in the Climate System"

Joint Mathematics Meetings (AMS Session on ODEs & Dynamical Systems) *Jan 2024*
"Front Dynamics in a Reaction–Diffusion Model for Tumor Growth"

Teaching Experience

Graduate Teaching Assistant, Calculus II (Math 1272), University of Minnesota *Fall 2026*
Graduate Teaching Assistant, Calculus I (Math 1271), University of Minnesota *Fall 2025*
Undergraduate Assistant, Real Analysis (18.100B), MIT *Spring 2025*
Grader, Real Analysis (18.100B) & Theory of Probability (18.675), MIT *Spring 2024, Fall 2024*
Undergraduate Assistant, Logic and Set Theory (18.510), MIT *Fall 2023*

Service

UMN Mathematics Directed Reading Program, Mentor	*Fall 2025*
Program in Mathematics for Young Scientists (PROMYS), Counselor	*Summer 2025*
MIT Undergraduate Society for Women in Mathematics, President	*Fall 2023 – Fall 2024*
MIT Undergraduate Society for Women in Mathematics, Exec Member	*Fall 2022 – Spring 2023*
MIT Undergraduate Mathematics Association, Mentor	*Fall 2022*