

Jemma Schroder

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Research Interests

Broadly interested in low-dimensional topology, specifically applications of gauge theory and stable homotopy theory to understanding smooth four manifolds.

Education

- 2024 – **Graduate Student, University of Texas at Austin** – Austin, TX
Dean’s Strategic Fellowship
- 2020–24 **B.S. in Mathematics, Massachusetts Institute of Technology** – Cambridge, MA

Papers & Preprints

- 2024 **Superradiant droplet emission from a single hydrodynamic cavity near a reflective boundary**
submitted, arXiv: 2408.02620.
- 2022 **Four-periodic infinite staircases for four-dimensional polydisks**
with C. Farley, T. Holm, N. Magill, Z. Wang, M. Weiler & E Zabelina
to appear in *Involve*, arXiv:2210.15069.

Research Experience

- 2023 **Rutgers University**, DIMACS REU (Summer), with Prof. Chris Woodward
- Fall 2022 **MIT**, Undergraduate Research, with Prof. Daniel Álvarez Gavela
- 2022 **Cornell University**, Undergraduate Research (Summer), with Prof. Tara Holm
- 2021 **MIT**, Undergraduate Research, with Prof. John Bush

Reading Programs & Independent Study

- Spr. 2025 **UT Austin Mathematics**, with Prof. Lisa Piccirillo
- Fall 2023 **MIT Mathematics**, with Prof. Paul Seidel

Conferences & Workshops (anticipated & attended)

- Jun. 2025 Summer School & Conference on Modern Tools in Low-Dim Topology – ICPT
- May 2025 Georgia International Topology Conference – University of Georgia
- May 2025 Workshop on Moduli Spaces of Pseudo-Holomorphic Curves – Upstate New York, with John Pardon

Apr 2025 Graduate Student Geometry and Topology Conference – Indiana University
 Nov Texas Geometry and Topology Conference – Texas A& M
 2024

Talks

Spr. 2025 The Pontryagin-Thom Construction
UT Austin Junior Topology Seminar
 Spr. 2025 Introduction to Topological Stacks
Texas State University, Learning seminar on the moduli of pseudoholomorphic curves
 Spr. 2025 Equivariant K-Theory
UT Austin, Bauer Faruta Learning Seminar
 Spr. 2025 Equivariant Stable Homotopy Theory
UT Austin, Bauer Faruta Learning Seminar
 Fall 2024 Generalized Cohomology Theories & Spectra
UT Austin Junior Topology Seminar
 Jan. 2023 Infinite staircases for four-dimensional symplectic polydisks
Joint Mathematics Meeting, AMS-SIAM Special Session

Mentorship and Service

Fall 2024 **UT Austin Mathematics**, Graduate Representative Committee
 2024 – 25 **UT Austin Mathematics Directed Reading Program**, Mentor
 2022 – 24 **MIT Mathematics Diversity & Community Building Committee**
 2021 – 24 **MIT Council for Math Majors**