

Thomas Hameister

Curriculum Vitae

Education

- 2018–present **Mathematics, Ph.D. Candidate**, *University of Chicago*, In progress. Advised by Ngô Bảo Châu.
- 2014–2018 **Mathematics, BS**, *University of Wisconsin-Madison*, GPA: 4.0/4.0.

Interests

Interested broadly in the geometry of the Hitchin fibration and its many manifestations in representation theory and number theory. Currently studying Hitchin systems associated to symmetric pairs, with applications to relative trace formulae and duality of branes on the Hitchin moduli space.

Research

- 2023 Fall Thomas Hameister and Benedict Morrissey. “Hitchin Fibrations for Symmetric Pairs”. In progress.
- 2023 Fall Thomas Hameister and Ngô Bảo Châu. “The companion section for classical groups”. In revision.
- 2017 Fall Elise delMas, Thomas Hameister, and Victor Reiner. “A refined count of Coxeter element reflection factorizations”. In: *The Electronic Journal of Combinatorics* 25.1 (2018), pp. 1–28.
- 2017 Fall Thomas Hameister, Sujit Rao, and Connor Simpson. “Chow rings of vector space matroids”. *J. of Combinatorics*, Vol. 12, No. 1 (2021), pp. 55-83.

Invited Research Talks

- November 2023 Representation Theory/Number Theory Seminar at Boston College. Abstract linked [\[here\]](#).
- April 2023 Conference on the Hitchin system, Langlands duality and mirror symmetry in Madrid, Spain. Abstract and video linked [\[here\]](#)
- March 2023 Number Theory Seminar at Duke University in Durham, North Carolina. Video recording linked [\[here\]](#)

Teaching

- 2024 Winter Lecturer for Math 113: Studies in Mathematics 2 (a survey of ideas in basic geometry with a large amount of freedom given for course curriculum)
- 2023 Fall Lecturer for Math 152: Integral Calculus

- 2023 Winter Lecturer for Math 113: Studies in Mathematics 2 (a survey of ideas in basic geometry with a large amount of freedom given for course curriculum)
- 2022 Fall Lecturer for Math 15250: Calculus for Economics, Pilot year for the course
- 2021-2022 Lecturer for Math 151-152: Calculus I-II Sequence. (In person.)
- 2020-2021 Lecturer for Math 151-153: Calculus I-III Sequence. (Conducted virtually.)
- 2019-2020 College Fellow for Math 257-259: Honors Algebra sequence.

Service and Outreach

- 2019-2020 Pizza Seminar. Organizer for weekly seminar for UChicago grad students. [website]
- 2019-21 Mentor in UChicago REU. Some of the 9 past student papers are linked [here],
Summers [here], and [here].
- 2019 Summer Chicago Hopes for Kids. Weekly volunteer for literacy program at a homeless shelter on Chicago's South Side.
- 2018-2019 Society for Women in Mathematics (SWiM) Mentorship Program Participant.
- Spring 2019 GRE Preparatory Sessions. Organized and ran prep sessions for undergraduates planning on taking the Mathematics GRE exam.
- 2014-2018 Achievement Connections Tutor. Algebra and Geometry tutor for struggling first and second year students at Madison West High School.

Awards/Honors

- 2022 Graves Prize. UChicago math department award for excellence in teaching.
- 2017 Dowling Scholarship Award Recipient. For outstanding undergraduate mathematics majors at UW Madison.
- 2016 Frank and Violet Higgitt Foundation Award Recipient. For outstanding performance among undergraduate mathematics majors at UW Madison.
- 2014 Van Vleck Scholarship Recipient. For First Place in UW Madison Mathematics Talent Search competition.

Assorted Recreational Talks

- May 2022 UChicago Pizza Seminar. Triality and Representations of Spin Groups
- March 2022 Two talks in adviser's special seminar on the Hitchin Fibration
- April 2021 UChicago Pizza Seminar. On the exceptional group G_2 .
- March 2021 Talk in Adviser's Seminar: Hitchin/Langlands Duality for Moduli Spaces of Higgs Bundles
- November 2020 Talk in Adviser's Seminar: Companion Matrix Constructions and Sections of the Hitchin Fibration for Classical Lie Groups
- October 2019 UChicago Pizza Seminar. On factorizations of Coxeter elements in reflection groups.
- February 2019 Seminar on the Proof of the Weil Conjectures. Topics in étale cohomology.

- December 2018 Graduate Student Algebraic Geometry Seminar. On Deligne's *Picard Groups of Moduli Problems*.
- April 2018 UW Madison Combinatorics Seminar. On Chow rings of vector space matroids.