

Rice University Math Department–MS 136
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they/them/theirs

Alex Manchester

Education

- 2019-present **Ph.D. in Mathematics, expected in 2024**, *Rice University*, Advisor: Shelly Harvey.
Research interests: knot concordance, 4-dimensional manifolds, and satellite operators, especially in the topological setting
- 2015-2019 **B.S. in Mathematics, with honors**, *University of Chicago*, GPA: 3.88/4.00, Phi Beta Kappa.
Minor in Philosophy

Papers

- 2022 **Action of the Mazur pattern up to topological concordance.**
preprint available at <https://arxiv.org/abs/2212.13640>, submitted for publication
- expected 2023 **Satellite constructions of (h) -solvable and topologically slice links.**
in preparation

Teaching

- 2019-present **Teaching assistant**, *Rice University*.
Various, including help room for introductory calculus and differential equations classes, and flipped classroom calculus and linear algebra
- 2021-present **Tutor**, Houston TX.
Assisted students individually with homework, concepts, and test prep for content ranging from high school algebra through complex analysis
- Summer 2021, **Instructor**, *Rice University*.
Spring 2022 Calculus 2
- Winter 2019 **Teaching assistant**, *University of Chicago*.
Mathematical logic

Service

- March 2023 **Log cabin conference on concordance and knotted surfaces**, Sedona AZ.
Co-organized with Jason Joseph
- 2019-2020 **Tutor**, *Montrose Center*, Houston TX.
Volunteer tutor for twice-monthly youth program aimed at LGBTQ middle- and high-school students
- Fall 2019 **Volunteer**, *Math Explorations*, Houston TX.
Collaboratively explored math problems in month-long weekly program with middle-school students in the Houston area
- Summer 2019 **Counselor**, *Young Scholars Program*, Chicago IL.
Held daily problem/discussion sections for high-school students from the Chicago area taking classes on knot theory and non-Euclidean geometry; assisted in lesson planning and writing student evaluations

Invited Talks

- Feb. 2023 **CIRGET Junior**, Université du Québec à Montréal (virtual).

Jan. 2023 **Joint Mathematics Meeting**, Boston MA.

Nov. 2022 **Geometric Topology Grad and Postdoc Seminar**, (virtual).

Oct. 2022 **AMS Fall Western Sectional Meeting**, University of Utah.