

Amy Qing Hai Li

The University of Texas at Austin

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Citizenship: U.S.A.

Education

2020- PH.D. in Mathematics expected May 2026, UT Austin

Advisor: Sam Payne

2016-2020 B.A. *magna cum laude* in Mathematics, Wellesley College

Research Interests

Intersection theory of Hurwitz spaces and the moduli spaces of curves. In particular, studying the structure of their rational cohomology and Chow rings.

Papers & Preprints

1. Vanishing H^1 for Hurwitz spaces of fully-marked admissible covers of low degree
In preparation.
2. Chow rings of Hurwitz spaces with marked ramification
(with E. Clader, Z. Hu, H. Larson, and R. Lopez). [arXiv:2505.04903](https://arxiv.org/abs/2505.04903).
3. Holomorphic forms and non-tautological cycles on moduli spaces of curves
(with V. Arena, S. Canning, E. Clader, R. Haburcak, S. C. Mok, and C. Tamborini).
[arXiv:2402.03874](https://arxiv.org/abs/2402.03874). In *Selecta Mathematica* (2025). DOI: [s00029-025-01038-5](https://doi.org/10.1007/978-3-030-54765-3_1).
4. Partial Configuration Spaces as Pullbacks of Diagrams of Configuration Spaces
(with I. Volic). In *Advanced Technologies, Systems, and Applications V*, Springer
(2020). DOI: [10.1007/978-3-030-54765-3_1](https://doi.org/10.1007/978-3-030-54765-3_1).
5. Measuring microfluidic flow rates: Monotonicity, convexity, and uncertainty
(with P. Patrone, G. Cooksey, and A. Kearsley). In *Applied Mathematics Letters*,
Volume 112, 2021. DOI: [j.aml.2020.106694](https://doi.org/10.1016/j.aml.2020.106694).

Talks

Upcoming Algebraic geometry seminar, Washington University in St. Louis. November 2025.

Algebraic geometry seminar, UIUC. November 2025.

2025 “Intersection theory on Hurwitz spaces of covers in low degree,” Algebraic Geometry Seminar, Brown University. October 2025.

“Intersection theory on Hurwitz spaces of admissible covers,” Algebraic Geometry Seminar, The Ohio State University. September 2025.

“The boundary of Hurwitz space and vanishing H^1 ,” (Mini-talk) Algebraic and tropical geometry of moduli spaces of curves, Università di Bologna. September 2025.

“Vanishing H^1 of the Hurwitz spaces of admissible covers of low degree,” Special Session on Logarithmic geometry and Gromov–Witten theory, AMS Fall Western Sectional. August 2025.

“The Chow ring of Hurwitz spaces with marked ramification,” Perspectives on Hurwitz Theory, Trinity College Dublin. June 2025.

“On the vanishing of H^1 of the moduli space of degree 3 admissible covers,” (Mini-talk) Combinatorial Algebraic Geometry: Highlighting Underrepresented Genders, Goethe University Frankfurt am Main. April 2025.

“Double covers and non-tautological classes,” (Mini-talk) Georgia Algebraic Geometry Symposium (GAGS), UG Athens. March 2025.

“Holomorphic forms and non-tautological classes,” Junior Algebraic Geometry at Warwick (JAWS), University of Warwick. February 2025.

2023 “Hurwitz Numbers: An Enumeration Problem,” UT Undergraduate Math Club, UT Austin. September 2023.

“Tropical Geometry and the Moduli Space of Curves,” Texas Women in Math Symposium (TWiMs), UT Austin. February 2023.

2022 “An introduction to abelian varieties,” Beginning Algebraic Geometry Seminar, UT Austin. April 2022.

Teaching

UT Austin

Fall 2024 Multivariable Calculus: Teaching Assistant

Gave 2 hours of supplementary lectures and 4 hours of office hours each week, graded weekly quizzes and semester exams. Overall evaluation: 4.5/5.

Fall 2023 Introduction to Mathematical Statistics: Grader

Held 2 hours of office hours each week, graded weekly homework.

Spring 2022 Linear Algebra: Grader

Held 2 hours of office hours each week, graded weekly homework.

Fall 2022 From Numbers to Chaos: Teaching Assistant

& Fall 2021 Survey course for first-year undergraduates. Gave 2 hours of supplementary lectures each week, 2 hours of office hours each week, and separate appointments with students to help them write expository papers. Graded papers and exams. Overall evaluation: 4.4/5.

Wellesley College

Fall 2018 Calculus II: Supplemental Instruction Leader

Gave 2 hours of supplementary lectures and 1 hour of office hours each week.

2017-2020 Tutor
Subjects: Real Analysis, Abstract Algebra, Complex Analysis, Linear Algebra, Calculus I/II/III. Staffed the drop-in evening help sessions and met individual students for hourly tutoring sessions.

Service

2024- Géométrie Algébrique en Liberté XXXIII, Leiden, the Netherlands
Géométrie Algébrique en Liberté XXXII Toulouse, France.
US Organizer.

Fall 2022 Beginning Algebraic Geometry Seminar, UT Austin
Organizer.

Sm. 2022 Summer Minicourses, UT Austin
& Sm. 2021 Organizer.

2020-2021 Graduate Representative Committee, UT Austin
Served on the student-elected Graduate Representative Committee as a liason between the math graduate students and math faculty.

Outreach

2024-2025 Sunday Morning Math Group, UT Austin
Proctored AMC exams for local middle and high-school students. Volunteered as a graduate student helper at SMMG talks.

2023-2024 Texas Prison Education Initiative
Worked as an instructor for a college math course serving incarcerated women at a state prison in Lockhart, Texas.

2022-2023 Directed Reading Program, UT Austin
Mentored undergraduate students in reading projects on algebraic topology, differential topology, algebraic geometry, Galois theory, and algebraic number theory.

Honors & awards

2020- Provost's Graduate Excellence Fellowship, UT Austin
2022 Frank Gerth III Teaching Excellence Award, UT Austin
2020 Martha Davenport Heard Prize in Mathematics, Wellesley College
2019 The Waldemar J. Trjitzinsky Memorial Award, American Mathematical Society
2019 The Samuel and Hilda Levitt Fellowship, Wellesley College
2018 Martha Davenport Heard Sophomore Prize in Mathematics, Wellesley College