Jessica J. Zhang

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Education

Princeton University, PhD in mathematics 2025–present

Harvard University, AB in mathematics 2021–2025

Experience

Rutgers Symplectic Summer School 2024
Participated in a summer school for advanced topics in symplectic geometry, including global Kuranishi charts, integer-valued curve-counting invariants, Hamiltonian dynamics, and contact topology.

Princeton RTG Summer School in Geometry and Topology 2023
Attended a summer school for 30 advanced undergraduates and first-year graduate students; topics included Heegaard Floer homology, pseudoholomorphic curves, and surfaces in 4-manifolds.

Harvard Directed Reading Program 2022–2023
Worked on reading projects on Morse theory and Hamiltonian Floer theory, following lecture notes by Chris Wendl and a book by Michèle Audin and Mihai Damian, with Maxim Jeffs.

UC Davis Pure and Applied Math REU 2022
Conducted research with Roger Casals on finding arboreal Lagrangian skeleta for certain 4-manifolds with simple Weinstein handlebody diagrams.

Honors

Centennial Fellowship 2025
David Mumford Prize 2025
Herchel Smith Undergraduate Research Fellow 2024
Barry M. Goldwater Scholar 2024
Phi Beta Kappa "Junior 24" 2024
Harvard College Research Program (HCRP) Fellow 2023
Regeneron Science Talent Search Finalist 2021

Publications

"Elliptic bootstrapping and the nonlinear Cauchy-Riemann equation." *Columbia Journal of Undergraduate Mathematics*, 2024. Expository.

"Exponents of Jacobians of graphs and regular matroids" with Hahn Lheem, Deyuan Li, and Carl Joshua Quines. *Rose-Hulman Undergraduate Math Journal*, 2020. arxiv:1910.06442

Presentations

"The Lee Spectral Sequence for Band Sums" at the 2024 Joint Mathematics Meetings 2024
"Classification of tight contact structures on a solid torus" at the 2021 Joint Mathematics Meetings 2021
"Exponents of Jacobians of connected regular matroids" at the 2020 Joint Mathematics Meetings 2020

Teaching

Undergraduate course assistant 2022–2025
Courses include undergraduate courses in algebra, analysis, differential topology, and algebraic geometry.

Last edited: June 17, 2025