D. Zack Garza

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EDUCATION	**University of Georgia**	Aug 2019 – May 2025

- Ph.D. in Mathematics. Supervised by Valery Alexeev.
  Thesis: *Complete compact moduli spaces of Enriques surfaces and related spaces.*

	University of California, San Diego	Aug 2015 – Jun 2018

- B.S. in Mathematics, minor in Computer Science.

	University of California, Berkeley *(Concurrent enrollment)*	Sep 2014 – Jun 2015

	Sierra College	Sep 2011 – Jun 2014

- A.A. in Mathematics, A.S. in Physics, A.A. in Fine Arts.

RESEARCH INTERESTS

Algebraic geometry, complex analytic surfaces, moduli spaces, lattice theory, Coxeter groups, mirror symmetry, Calabi-Yau varieties, hyperkahler geometry, GW/DT theory, derived geometry.

PUBLICATIONS

- *Compact moduli of Enriques surfaces with a numerical polarization of degree 2.* Preprint. Nov 2023
  Joint with Valery Alexeev, Philip Engel, Luca Schaffler.

OTHER WRITING

- Talbot workshop proceedings: scissors congruence and K-theory. June 2022
  Expanded exposition of workshop talks, with added figures and citations.

SELECTED HONORS

- UGA at Oxford Graduate Assistantship. *(Oxford)* Summer 2022, Spring 2023, Summer 2023
- University of Georgia Capturing Science Contest, 2nd Place. *(UCSD)* 2020
- Louise Hoffmasterand and Frank R. Etchberger Graduate Scholarship. *($\times 4$, University of Georgia)* 2019 – 2023
- UCSD AEP Undergraduate Research Scholarship. *(UCSD, Declined)* 2018
- Diana C. Miles Scholarship. *(UCSD)* 2017 – 2018
- Errett Bishop Scholarship. *(UCSD)* 2016 – 2017
- Richard L. and Fern W. Erion and Laidlaw-Erion Scholarship. *(UCSD)* 2016 – 2017
- Muir College Provost Honors. *(UCSD)* 2015 – 2016

TEACHING

- Calculus I. *(University of Georgia)* Spring 2024
- Complex Analysis *(Recitation, University of Georgia)* Fall 2023
- Precalculus. *(University of Georgia)* Fall 2023
- Precalculus. *(2 sections, University of Georgia)* Fall 2022
- Calculus I. *(University of Georgia)* Spring 2022
- Calculus I. *(University of Georgia)* Fall 2021
- Qualifying exam review courses. *(University of Georgia)* Summer 2021
  Algebra, Topology, Real Analysis, Complex Analysis.
- Precalculus. *(2 sections, University of Georgia)* Spring 2021
- Precalculus. *(University of Georgia)* Fall 2020
- Qualifying exam review courses. *(University of Georgia)* Summer 2020
  Algebra, Topology, Real Analysis, Complex Analysis.
- Calculus I. *(Recitation, University of Georgia)* Fall 2019
- Math department study hall tutoring. *(University of Georgia)* Fall 2019 – Spring 2022

SERVICE AND OUTREACH

- Co-organizer, GROOT. *(seminar series)* Summer 2023
- Treasurer, Student Chapter of the AMS. *(University of Georgia)* Fall 2022–Spring 2023
- Organizer, Mock AMS Conference. *(University of Georgia)* Summer 2021
- Co-organizer, Graduate Student Seminar. *(University of Georgia)* Spring 2021 – Spring 2023
- Organizer, GOSS. (seminar series) Summer 2021
- Co-organizer, GOATS. (conferences, 3 iterations) Summer 2020

	■ President, Society of Undergraduate Mathematics Students. *(UC San Diego)*	2016 – 2018
	■ Officer, Mathematics Club. *(Sierra College)*	2013 – 2014

MENTORSHIP
- Directed reading program: *Representation Theory*.   Spring 2024
  Student: Hugh Cunningham
- Complex analysis qualifying exam review sessions.   *(University of Georgia)*   Fall 2023, Spring 2022
- Directed reading program: *Hodge theory*.   Fall 2023
  Student: Hugh Cunningham
- Directed reading program: *Generatingfunctionology*.   Fall 2022
  Student: Sage Bobrow-Goss
- Algebra/Topology/Analysis qualifying exam review sessions.   *(University of Georgia)*   Spring 2022
- Directed reading program: *Fourier analysis*.   Spring 2022
  Student: Joshua Konfrst
- Directed reading program: *Diophantine geometry, introductory algebraic number theory*.   Fall 2021
  Student: Sage Bobrow-Goss
- Directed reading program: *L-functions, the prime number theorem*.   Summer 2021
  Student: Aaron Cofer
- Workshop: Mathematics Subject GRE. *(UCSD)*   Mar 2019
- Workshops: Intermediate LaTeX. *(7 iterations, UCSD)*   2016–2017
- Workshops: Functional programming in Haskell. *(3 iterations, UCSD)*   2016–2017

SELECTED TALKS
- 2024 AMS Spring Southeastern Sectional Meeting, Florida State University.
  Compact moduli of numerically polarized degree 2 Enriques surfaces   Mar 2024

- 2024 AGNES, Boston College.
  Compact moduli of degree two polarized Enriques surfaces   Mar 2024

- Centro de Matemática da Universidade do Porto, Algebraic Geometry Seminar.
  Compact moduli of numerically polarized degree 2 Enriques surfaces   Mar 2024

- University of Georgia, Algebraic Geometry Seminar.
  Compact moduli of Enriques surfaces via "folding" K3 moduli data   Feb 2024

- University of Georgia, Graduate Student Seminar.
  Hodge and lattice-theoretic compactifications of moduli spaces of K3 surfaces   Feb 2023

- University of Georgia, Fukaya categories reading seminar.
  A_∞ categories and defining the Fukaya category   Dec 2022

- University of Georgia, oral exams.
  Engel's proof of Looijenga's conjecture via integral-affine geometry   Oct 2022

- University of Georgia, Number Theory Reading Seminar.
  Applications of Torelli: Faltings' proof of the Mordell conjecture.   Jun 2022

- 2022 MIT Talbot Workshop on Scissors Congruence and K-Theory.
  The annihilator of the Lefschetz motive.   May 2022

- University of Georgia, Graduate Student Seminar.
  An introduction to derived geometry   Feb 2022

- University of Georgia, Graduate Student Topology Seminar.
  Betz-Cohen's graph moduli spaces and cohomology operations.   Nov 2021

- University of Georgia, Number Theory reading seminar.
  Catalan's Conjecture, the cases $q = p = 2$ Nov 2021

- 2021 Mock AMS conference, University of Georgia.
  Weil-Petersson volumes of moduli spaces and zeta values — Nov 2021

- University of Georgia, J-holomorphic curves reading seminar.
  Regularity for J-holomorphic curves. — Jun 2021

- CRAG seminar, University of Georgia
  On the de Rham cohomology of algebraic varieties. — Jul 2021

- University of Georgia.
  Sarkar-Wang's algorithm to compute Heegaard-Floer homology — May 2021

- University of Georgia
  An overview of stable homotopy theory. — Mar 2021

- *Stable homotopy seminar*.
  Constructing the Adams spectral sequence — Mar 2021

- *Stable homotopy seminar*.
  Homotopy groups of spectra — Mar 2021

- University of Georgia
  Morse Theory and Floer Homology, multiple talks — Aug 2020

- 2020 Mock AMS conference, University of Georgia.
  Classification theorems in topology and geometry — Jul 2020

- University of Georgia
  Homotopy groups of spheres — Apr 2020

- CRAG seminar, University of Georgia
  Zeta functions and the Weil conjectures — Feb 2020

- University of Georgia
  The Arnold conjecture: periodic orbits in symplectic geometry. — Feb 2020

- University of Georgia
  Poincaré conjectures and the Kervaire invariant one problem. — Oct 2019

- University of Georgia
  Spectral sequences: a primer. — Oct 2019

- University of Georgia
  Singular, simplicial, de Rham, and Čech cohomology — Sep 2019

- University of California, San Diego.
  Homotopy and the Hopf fibration — Jun 2018

- Undergraduate Research Symposium, University of California, San Diego.
  Spectral sequences and higher homotopy groups of spheres — May 2018

- University of California, San Diego.
  Topological fixed point theorems — Mar 2018

- University of California, San Diego.
  Homology and the snake lemma — Nov 2017

- University of California, San Diego.
  Algebraic geometry: a historical primer   Oct 2017

- University of California, San Diego.
  Introduction to category theory   Oct 2016, Nov 2016, Jan 2017

- Sierra College.
  The combinatorics of graphs and trees   May 2014

MISC.
- Expository writing and open-source collection of course notes in LaTeX:
  https://dzackgarza.com/writing/