

Sophie Kriz

Curriculum Vitae

Education

2020–present **Bachelor of Science (in progress)**, *The University of Michigan*, Ann Arbor, GPA – 4.0
Major: Honors Mathematics
Intended Graduation: May, 2023

Selected Courses

Math 295: Honors Math I, A+
Math 296: Honors Math II, A+
Math 395: Honors Analysis I, A
Math 396: Honors Analysis II, A
Math 493: Honors Algebra I, A+
Math 494: Honors Algebra II, A+
Physics 415: Independent Study, Lagrangian and Hamiltonian Mechanics (Prof. F. Adams), A
Math 631: Algebraic Geometry I, A
Math 632: Algebraic Geometry II, A
Math 697: Low-dimensional Topology, A
Math 695: Algebraic Topology, A+
Math 731: Algebraic Groups, A
Math 676: Class Field Theory, A
Math 732: Introduction to Singularities, A
Math 676: Class Field Theory, A
Math 732: Introduction to Singularities, A
Math 738: Category Theory for Representation Theorists, in progress
Math 678: Modular Forms, in progress

National Awards

2021–present Barry Goldwater Scholarship
2022 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student - Honorable Mention

2023 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student - Honorable Mention (announced)

University Awards

2021 Evelyn O. Bychinsky Award in Mathematics
2021 George Piranian Excellence in Mathematical Writing Award
2021 William J. Branstrom Freshman Prize
2021-present Alice Webber Glover Scholarship in Mathematics
2022 Frank Raymond Award in Geometry & Topology
2022 Sophomore Honors Award with Distinction

Employment

Winter 2021, Winter 2022 Grader for Math 592 (The First Year Graduate Course in Algebraic Topology) - 10 hours/week
Fall 2022 Course Assistant for Math 295 (Honors Mathematics I) - 10 hours/week

Publications - Papers

1. Equivariant Cohomology and the Super Reciprocal Plane of a Hyperplane Arrangement, *Algebraic and Geometric Topology*, 22, no. 3, (2022), 991-1015.
2. Noether's Problem for Orientation p -Subgroups of Symmetric Groups, *Comm. in Algebra* 46 (2018) 5261-5272
3. On Weil Reciprocity in Motivic Cohomology, preprint, 2018, accepted for publication in *Mathematische Zeitschrift*, <https://krizsophie.github.io/Motives22102.pdf>
4. Actads, *Science China Math. (Springer-Verlag)*, 65, (2022), 1909-1952
5. Notes on Equivariant Homology with Constant Coefficients, *Pacific J. Math.* 309, no. 2, (2020) 381-399
6. On Completion and the Evenness Conjecture for Homotopical Equivariant Cobordism, preprint, 2021, <https://krizsophie.github.io/EvennessConjecture22051.pdf>
7. Some Remarks on Mackey Functors, 2022, <https://arxiv.org/abs/2205.12192>
8. On the Local Cohomology of L -Shaped Integral FI -Modules, *J. Algebra*, 611, (2022) 149-174.
9. On the Structure of Simple Generic FI -Modules in Positive Characteristic, preprint, 2022, <https://krizsophie.github.io/FunctorsDLambda22051.pdf>
10. On the Frobenius Type of Semisimple Pre-Tannakian Categories in Characteristic $p > 0$, preprint, 2022, <https://krizsophie.github.io/VerlindePosCombined22054.pdf>

11. On the Canonicity of the Singularities of Quotients of the Fulton-MacPherson Compactification, preprint, 2022, <https://krizsophie.github.io/Canonicity22061.pdf>

Publications - Books

- (joint with I.Kriz) Introduction to Algebraic Geometry, 470 pp. 2021, Springer-Birkhauser, ISBN 978-3-030-62644-0, <https://link.springer.com/book/10.1007/978-3-030-62644-0>

Conferences/Talks

1. Equivariant Cohomology and the Super Reciprocal Plane of a Hyperplane Arrangement, *Equivariant Geometry and Topology session, CMS Winter Meeting, Niagara Falls, 2016*
2. On Weil Reciprocity in Motivic Cohomology, *Special Session in Structured Homotopy Theory, AMS Fall Central Sectional Meeting, October 2018*
3. On Equivariant Homology with Constant Coefficients, *Algebraic Topology Seminar, University of Michigan, October 2020*
4. On the Structure of Simple Generic FI -Modules in Positive Characteristic, *OTTERS Seminar, University of Michigan, February 2022*
5. A Counterexample to the Homotopical Evenness Conjecture and a Completion Theorem, *Topology Seminar, University of Minnesota, February 2022*
6. On Representation Stability of Symmetric Groups in Positive Characteristic, *Stability in Topology, Arithmetic, and Representation Theory, Purdue University, March 2022*
7. Some Results on Modular Representation Stability of Symmetric Groups, *AMS-SIAM Special Session on Research in Mathematics by Undergraduates and Students in Post-baccalaureate Programs, April 2022*
8. *WARTHOG, Workshop on Algebra and Representation Theory, Eugene, Oregon, June 2022*
9. A Completion Theorem and a Counterexample to the Evenness Conjecture for Homotopical Equivariant Cobordism, *Seminar in Equivariant Bordism and Applications, UNAM-Oaxaca, Mexico, October 2022*
10. *Equivariant Bordism Theory and Applications, Banff International Research Station, Canada, June 2023, <https://www.birs.ca/events/2023/5-day-workshops/23w5138>, upcoming*

Other Activities

- 2018-present **Reviewer**, *zbMATH*
(8 reviews written)
- 2019-2020 **Volunteer**, *Readers and Best*, children's literacy program, University of Michigan
- 2018, 2020 **Participant**, *Fireside Chat with the University of Michigan President*

2022 **Volunteer, Mentor**, *Math Corps*, educational program for middle and high school students, University of Michigan
Member, *American Mathematical Society*

— Languages

English First language
French Advanced

— Hobbies

Piano: <https://krizsophie.github.io/#piano>
Painting
Nature hiking