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 Graudation: 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 (10 hours/week) - (The First Year Graduate Course in Algebraic Topology)

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 Recciprocal 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