

DAVID MEHRLE

(he/him/his)

(614) 458-8176

dfm223@cornell.edu

math.cornell.edu/~dmehrle

EDUCATION

- 2016-2022 **Cornell University, Ithaca, NY.**
PhD Candidate in Mathematics, MS Mathematics 2017. Expected graduation: May 2022.
Advisor: Inna Zakharevich.
Research Area: Equivariant homotopy theory, K-theory
- 2015-2016 **Cambridge University, Cambridge, England.**
Master of Advanced Study (Part III Mathematics) with distinction.
- 2011-2015 **Carnegie Mellon University, Pittsburgh, PA.**
MS Mathematics, BS Mathematics with University and College Honors.

PAPERS AND PREPRINTS

- [1] **Free incomplete Tambara functors are almost never flat.** To appear in *International Mathematical Research Notices*. With M.A. Hill and J.D. Quigley. [\[arXiv\]](#)
- [2] **Constructing Families of Moderate-Rank Elliptic Curves over Number Fields.** *Minnesota Journal of Undergraduate Mathematics* 2, 2017. With A. Chang, S.J. Miller, T. Reiter, J. Stahl, and D. Yott. [\[Journal\]](#) [\[arXiv\]](#)
- [3] **Newman's Conjecture in Function Fields.** *Journal of Number Theory* 157, 2015. With A. Chang, S.J. Miller, T. Reiter, J. Stahl, and D. Yott. [\[Journal\]](#) [\[arXiv\]](#)
- [4] **Walk Modularity and Community Structure in Networks.** *Network Science* 3, 2015. With A. Strosser and A. Harkin. [\[Journal\]](#) [\[arXiv\]](#)

TALKS

- November 2021 **Hochschild Homology for Tambara Functors.** UCLA Topology Seminar
- November 2021 **Hochschild Homology for Tambara Functors.** Cut-and-paste K-Theory Focused Research Group Seminar (Online)
- October 2021 **When Free Algebras are not Free Modules and the Weird World of Equivariant Algebra.** Rochester Topology Seminar
- October 2021 **When Free Algebras are not Free Modules and the Weird World of Equivariant Algebra.** Johns Hopkins Topology Seminar
- May 2021 **Free Incomplete Tambara Functors are Almost Never Flat.** GROOT Summer Seminar. [\[YouTube\]](#)
- March 2019 **Topological Hochschild homology of \mathbb{Z} and \mathcal{O}_K as Thom spectra.** Arizona Winter School, University of Arizona. Project presentation.
- March 2018 **Why is Algebraic K-theory Hard?** New York Regional Graduate Mathematics Conference, Syracuse University. Expository Talk.
- October 2017 **Stable Homotopy Theory and Algebra over Spheres.** Binghamton University Graduate Conference on Algebra and Topology (BUGCAT), Binghamton University. Expository Talk.
- July 2017 **An Eckmann-Hilton Argument for 2-categories.** Young Topologists' Meeting, KTH Royal Institute of Technology in Stockholm, Sweden.

GRANTS AND AWARDS

- Fall 2018 **Graduate Student Teaching Award** for teaching friendly, helpful, engaging courses and recitations, and for excellence in course administration.
- Spring 2019 **Cornell University Research Travel Grant** (\$2000) for travel to the Derived Algebraic Geometry and its Applications conference at MSRI.

TEACHING

- Fall 2021 **Teaching Assistant**, Math 1910: Calculus II for Engineers.
- Spring 2021 **Grader**, Math 6510: Graduate Algebraic Topology.
- Fall 2020 **Teaching Assistant**, Math 1300: Mathematical Explorations.
- Spring 2020 **Grader**, Math 3340: Abstract Algebra.
- Fall 2019 **Head Teaching Assistant**, Math 1910: Calculus II for Engineers.
- Summer 2019 **Graduate Mentor**, Cornell Summer Program for Undergraduate Research.
- Fall 2018 **Head Teaching Assistant**, Math 1910: Calculus II for Engineers.
- Summer 2018 **Instructor**, Math 1910: Calculus II for Engineers.
- Fall 2017 **Head Teaching Assistant**, Math 1910: Calculus II for Engineers.
- Spring 2017 **Instructor**, Math 1110: Calculus I.
- Spring 2017 **Instructor**, Math Explorers' Club. An extracurricular program for high-schoolers.
- Fall 2016 **Teaching Assistant**, Math 1910: Calculus II for Engineers.

SERVICE

- Fall 2021 **Facilitator**, Cornell Mathematics Teaching Assistant Training
- Spring 2021 **Co-organizer**, Electronic Computational Homotopy Theory Equivariant Algebra Reading Seminar.
- Fall 2019 **Facilitator**, Cornell Mathematics Teaching Assistant Training
- 2018-2020 **Mentor**, Cornell graduate student mentorship program for new graduate students.
- Fall 2018 **Facilitator**, Cornell Mathematics Teaching Assistant Training
- July 2018 **Co-organizer**, Young Topologists' Meeting 2018. University of Copenhagen, Copenhagen, Denmark.
- Fall 2017 **Facilitator**, Cornell Mathematics Teaching Assistant Training

WORKSHOP PARTICIPATION

- Fall 2021 Electronic Computational Homotopy Theory Reading Seminar: Hermitian K-Theory.
- Fall 2020 Electronic Computational Homotopy Theory Reading Seminar: Kervaire Invariant One.
- Spring 2020 Electronic Computational Homotopy Theory Reading Seminar: Topological Hochschild Homology.
- Fall 2019 Electronic Computational Homotopy Theory Kan Seminar.
- March 2019 Derived Algebraic Geometry and its Applications. Mathematical Sciences Research Institute.
- March 2019 Arizona Winter School. University of Arizona.

February 2019 Introductory Workshop: Derived Algebraic Geometry and Birational Geometry and Moduli Spaces. Mathematical Sciences Research Institute.

August 2017 Midwest Topology Summer School: Trace Methods in K-Theory. University of Indiana.

————— **OTHER**

2017-2022 **Instructor.** Cornell Outdoor Education. Teach a variety of outdoor courses, including rock and ice climbing, mountain biking, and road biking.