DAVID MEHRLE

(he/him/his)

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

- 2021 Eleanor Norton York Award for academic achievements and progress in research.
- 2018 **Graduate Student Teaching Award** for teaching friendly, helpful, engaging courses and recitations, and for excellence in course administration.
- 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 extracirricular 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.