

# DAVID MEHRLE

(he/him/his)

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## EMPLOYMENT

- July 2022– June 2026 **Postdoctoral Scholar**, University of Kentucky.
- July 2023 – June 2025 **NSF Research Training Group Postdoctoral Researcher**, [electronic Computational Homotopy Theory](#) (eCHT) online research community.

## EDUCATION

- May 2022 **PhD in Mathematics**, Cornell University.  
**Advisor:** Inna Zakharevich  
**Thesis title:** Commutative and Homological Algebra of Incomplete Tambara Functors
- May 2018 **MS in Mathematics**, Cornell University.
- June 2016 **Master of Advanced Study**, Cambridge University.  
Part III Mathematics. Graduated with distinction.
- May 2015 **MS in Mathematics**, Carnegie Mellon University.
- May 2015 **BS in Mathematics**, Carnegie Mellon University.

## PAPERS AND PREPRINTS

- [1] **The homotopy of the  $KU_G$ -local equivariant sphere spectrum.** *arXiv preprint*, 2023. With T.N. Carawan, R. Field, B.J. Guillou, and N.J. Stapleton. [\[arXiv\]](#)
- [2] **Free incomplete Tambara functors are almost never flat.** *International Mathematical Research Notices*, 2022. With M.A. Hill and J.D. Quigley. [\[Journal\]](#) [\[arXiv\]](#)
- [3] **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. [\[Journal\]](#) [\[arXiv\]](#)
- [4] **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. [\[Journal\]](#) [\[arXiv\]](#)
- [5] **Walk Modularity and Community Structure in Networks.** *Network Science* 3, 2015. With A. Strosser and A. Harkin. [\[Journal\]](#) [\[arXiv\]](#)

## AWARDS

- 2022 **Gitner Prize for Teaching Assistants.** A university-wide award for teaching assistants across all departments.
- 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.

## INVITED TALKS

- April 2023 Electronic Computational Homotopy Theory Research Seminar (Online)
- Nov. 2022 University of Virginia Topology Seminar
- March 2022 SUNY Binghamton Topology Seminar

Nov. 2021 UCLA Topology Seminar  
 Nov. 2021 Cut-and-paste K-Theory Focused Research Group Seminar (Online)  
 October 2021 Rochester Topology Seminar  
 October 2021 Johns Hopkins Topology Seminar  
 May 2021 GROOT Summer Seminar [\[YouTube\]](#)

## TEACHING

UNIVERSITY OF KENTUCKY (primary instructor unless otherwise noted)

Spring 2023 MA 352: Knot Theory  
 Spring 2023 MA 213: Multivariable Calculus  
 Fall 2022 MA 322: Matrix Algebra and Applications

### CORNELL UNIVERSITY

Spring 2022 **Teaching Assistant**, Math 1920: Multivariable Calculus for Engineers.  
 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

2023 **Journal Referee**.  
 2023 **Reviewer** for zbMATH.  
 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

August 2022 University of Virginia RTG Collaborative Workshop.

- 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. Taught a variety of outdoor courses, including rock and ice climbing, mountain biking, and road biking.
- 2022 **Wilderness First Responder.** Certification expires 2025.