

# Mona Merling

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| BASIC INFORMATION       | University of Pennsylvania<br>Department of Mathematics<br>209 South 33rd Street<br>Philadelphia, PA 19104-6395  | <i>Email:</i> mmerling@upenn.edu<br><i>Webpage:</i> math.upenn.edu/~mmerling<br><i>Citizenship:</i> Romania & USA |
| RESEARCH INTERESTS      | Algebraic topology. In particular, algebraic K-theory, equivariant stable homotopy theory, and their applications to manifolds.  |   |
| ACADEMIC APPOINTMENTS   | <b>University of Pennsylvania</b> , Philadelphia, PA<br>Associate Professor, July 2024 -<br>Assistant Professor, July 2018 - June 2024<br><br><b>Johns Hopkins University</b> , Baltimore, MD<br>J.J. Sylvester Assistant Professor, July 2014 - June 2018<br>Postdoctoral mentor: Jack Morava   |   |
| EDUCATION               | <b>University of Chicago</b> , Chicago, IL<br>Ph.D. in Mathematics, June 2014<br>Advisor: Peter May<br>M.S. in Mathematics, June 2010<br><br><b>Bard College</b> , Annandale, NY<br>B.A. in Mathematics, May 2009  |   |
| INVITED ACADEMIC VISITS | <b>Isaac Newton Institute</b> , Cambridge, UK<br>Equivariant Homotopy Theory in Context Program Guest, May-June 2025<br><br><b>Mathematics Sciences Research Institute</b> , Berkeley<br>Floer Homotopy Theory Program, Research Member, September-December 2022<br><br><b>Mathematics Sciences Research Institute</b> , Berkeley<br>Summer Stay, July 2020 (canceled due to COVID)<br><br><b>Isaac Newton Institute</b> , Cambridge, UK<br>K-theory, Algebraic Cycles and Motivic Homotopy Theory Program Guest, (remote June 2022, postponed from 2020 due to COVID)<br><br><b>Max Planck Institute for Mathematics</b> , Bonn, Germany<br>Research Guest, July-November 2018<br><br><b>Isaac Newton Institute</b> , Cambridge, UK<br>Homotopy Harnessing Higher Structures Program Guest, July 2018 (2 weeks)<br><br><b>Hausdorff Institute for Mathematics</b> , Bonn, Germany<br>Junior Trimester Program Guest, September-October 2016 |   |

**University of Copenhagen, Denmark**

Invited Visitor, August 2013 (2 weeks)

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| RESEARCH<br>GRANTS AND<br>AWARDS                                       | Simons Fellow  | 2025    |
|  | AWM Joan & Joseph Birman Research Prize in Topology and Geometry   | 2025    |
|  | PI, NSF FRG grant DMS-2052988 “Collaborative Research: Trace Methods and Applications for Cut-and-Paste $K$ -Theory” (collaborative grant with Blumberg, Bohmann, Gerhardt, Hill, Mandell, Malkiewich, Ponto, Zakharevich) | 2021-24 |
|  | PI, NSF CAREER grant DMS-1943925 “Applications of equivariant homotopy theory to manifolds”  | 2020-25 |
|  | PI, NSF grant DMS-1709461/1850644 “Groups, manifolds, and stable homotopy theory”  | 2017-20 |
|  | AMS-Simons Travel Grant  | 2015-17 |
| CONFERENCE<br>GRANTS   | co-PI, NSF grant DMS-2348092 “Algebraic structures in topology 2024,” San Juan, Puerto Rico, (with PI Rivera and co-PIs Kaufmann and Miller)   | 2023-24 |
|  | PI, NSF grant DMS-2017119 “Mid-Atlantic Topology Conference,” University of Pennsylvania, (with co-PIs Block and Knudsen)  | 2020-21 |
|  | School of Arts and Sciences Conference Grant, University of Pennsylvania   | 2020    |
|  | University Research Fund Conference Grant, University of Pennsylvania  | 2020    |
|  | co-PI, NSF grant DMS-1619569 “Mid-Atlantic Topology Symposium: New Directions,” Johns Hopkins University, (with PI Morava and co-PI Riehl)   | 2016    |
| EDUCATION<br>GRANTS  | Klein Family Social Justice Grant, University of Pennsylvania<br><i>Grant for supporting a mathematics prison teaching program in collaboration with the Prison Teaching Initiative at Princeton</i>                       | 2021    |
|  | NV Grant, Center for Educational Resources, Johns Hopkins University<br><i>Grant for designing and implementing a narrative visual component for two mathematics classes in the form of video final presentations</i>      | 2016    |
| TEACHING<br>AWARDS   | Departmental Good Teaching Award, University of Pennsylvania, math 4100  | 2024    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 6010  | 2024    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 1234  | 2023    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 1300  | 2023    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 520   | 2022    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 500   | 2021    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 123   | 2021    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 619   | 2021    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 123   | 2020    |
|  | Departmental Good Teaching Award, University of Pennsylvania, math 730   | 2020    |
| Departmental Good Teaching Award, University of Pennsylvania, math 410 | 2019   |         |
| Departmental Good Teaching Award, University of Pennsylvania, math 619 | 2019   |         |

Lawrence and Josephine Graves Prize for Excellence in Undergraduate Teaching, 2013  
University of Chicago

- VOLUMES EDITED New directions in homotopy theory, (co-edited with N. Kitchloo, J. Morava, E. Riehl, W. S. Wilson), *Contemporary Mathematics*, Volume 707, (2018).
- PUBLICATIONS & PREPRINTS Parametrized scissors congruence  $K$ -theory of manifolds and cobordism categories (with G. Raptis and J. Semikina), [arXiv:2504.01810](#), (2025), 30 pages.
- Scissors congruence  $K$ -theory for equivariant manifolds (with M. Ng, J. Semikina, A. Sendón Blanco, and L. Williams), submitted, [arXiv:2501.06928](#), (2025), 20 pages.
- Topological  $\Delta G$ -homology for rings with twisted  $G$ -action (with G. Angelini-Knoll and M. Péroux), submitted, [arXiv:2409.18187](#), (2024), 69 pages.
- Algebraic  $K$ -theory for squares categories (with J. Campbell, J. Kuijper, and I. Zakharevich), submitted, [arXiv:2310.02852](#) (2023), 28 pages.
- On the functoriality of the space of equivariant smooth  $h$ -cobordisms (with T. Goodwillie, K. Igusa and C. Malkiewich), submitted, [arXiv:2303.14892](#) (2023), 65 pages.
- A trace map on higher scissors congruence groups (with A.M. Bohmann, T. Gerhardt, C. Malkiewich, and I. Zakharevich), *International Mathematics Research Notices*, Volume 153 (2024), [arXiv:2303.08172](#), 30 pages.
- Deformation retraction of the group of strict contactomorphisms of the three-sphere to the unitary group (with D. DeTurck, H. Gluck, L. Lichtenfelz, J. Yang and Y. Wang), *Journal of Geometry and Physics*, Volume 206 (2024), [arXiv:2108.08961](#), 43 pages.
- Multiplicative equivariant  $K$ -theory and the Barratt-Priddy-Quillen theorem, (with B. Guillou, J.P. May and A. Osorno), *Advances in Mathematics*, Volume 414 (2023), [arXiv:2001.05563](#), 91 pages.
- Equivariant infinite loop space theory. The space level story, (with J.P. May and A. Osorno), [arXiv:1704.03413](#), to appear in *Memoirs of the AMS*, 121 pages.
- The equivariant parametrized  $h$ -cobordism theorem, the non-manifold part, (with C. Malkiewich), *Advances in Mathematics*, Volume 399 (2022), [arXiv:2001.05563](#), 41 pages.
- Cut and paste invariants of manifolds via algebraic  $K$ -theory, (with R. Hoekzema, L. Murray, C. Rovi, J. Semikina), *Topology and its Applications*, Volume 316 (2022), [arXiv:2001.00176](#), 22 pages.
- Coassembly is a homotopy limit map, (with C. Malkiewich), *Annals of  $K$ -Theory* Volume 5 Issue 3 (2020), pages 373–394, [arXiv:1904.05858](#).
- Symmetric monoidal  $G$ -categories and their strictification, (with B. Guillou, J.P. May and A. Osorno), *Quarterly Journal of Mathematics*, Volume 71, Issue 1 (2020), pages 207–246, [arXiv:1809.03017](#).
- Equivariant  $A$ -theory, (with C. Malkiewich), *Documenta Mathematica*, 24 (2019), pages 815–55, [arXiv:1609.03429](#).

A symmetric monoidal and equivariant Segal machine, (with B. Guillou, J.P. May and A. Osorno), *Journal of Pure and Applied Algebra*, Volume 226 (6) (2019), pages 2425–2454, [arXiv:1711.09183](#).

Motivic homotopical Galois extensions, (with A. Beaudry, K. Hess, M. Kedziorek, and V. Stojanoska), *Topology and its Applications*, Volume 235 (2018), pages 290–338, [arXiv:1611.00382](#).

Equivariant algebraic  $K$ -theory of  $G$ -rings, *Mathematische Zeitschrift*, 285(3), (2017), pages 1205–1248, [arXiv:1505.07562](#).

Categorical models for equivariant classifying spaces, (with B. Guillou and J.P. May), *Algebraic and Geometric Topology*, 17-5 (2017), pages 2565–2602, [arXiv:1201.5178](#).

Unbased calculus for functors to chain complexes, (with M. Basterra, K. Bauer, A. Beaudry, R. Eldred, B. Johnson and S. Yeakel), *Contemporary Mathematics*, Vol. 641 (2015), pages 29–48, [arXiv:1409.1553v2](#).

Function fields with class number indivisible by a prime  $l$ , (with M. Daub, J. Lang, A. Pacelli, N. Pitiwan, M. Rosen), *Acta Arithmetica*, 150 (2011), pages 339–359, [arXiv:0906.3728](#).

Gassmann equivalent dessins, (with R. Perlis), *Communications in Algebra*, Vol. 38, Issue 6 (2010), pages 2129–2137.

CONFERENCE  
PROCEEDINGS

Moduli spaces of equivariant  $h$ -cobordisms, *Oberwolfach reports*, Report No. 34, (2023), pages 11-14.

$G$ -manifolds and algebraic  $K$ -theory, *Oberwolfach reports*, Report No. 31, (2018), pages 37-40.

OTHER  
PUBLICATIONS

A brief illustrated guide to ‘scissors congruence’ – an ancient geometric idea that’s still fueling cutting-edge mathematical research (with M. Calle), *The Conversation*, (2023).

Encouraging Curiosity, Self-Directed Study and Belonging in Penn Students: The Directed Reading Program in Math, *Penn Almanac (Talk about Teaching and Learning)*, Volume 69 Issue 25 (2023).

Widening the Pipeline (with J. Hartmann), *Notices of the AMS (Early Career section)*, Volume 67, Number 11, (2020).

The User’s Guide Project: Giving Experiential Context to Research Papers, (with C. Malkiewich, D. White, L. Wolcott, and C. Yarnall), *Journal of Humanistic Mathematics*, Volume 5 Issue 2 (2015), pages 186–188.

PRESS

New Math: The Directed Reading Program pairs undergraduates with graduate student mentors for advanced learning, *OMNIA magazine* 2020

Math education and engagement in West Philadelphia, *Penn Today* 2021

Penn Arts & Sciences: Making a Difference in Global Communities and Klein Family Social Justice Grants, *Penn Almanac* 2021

Changing the Equation for the Incarcerated, *OMNIA magazine*, pages 46-47 2023

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|--|---|--|--|
| PHD STUDENT<br>SUPERVISION                     | Thomas Brazelton, University of Pennsylvania, PhD 2023<br><i>(co-advised with Kirsten Wickelgren at Duke)</i> |  |  |
|  | Elijah Gunther, University of Pennsylvania, PhD 2023  |  |  |
|  | Andres Mejia, University of Pennsylvania, PhD 2024  |  |  |
|  | Maxine Calle, University of Pennsylvania, expected PhD completion 2025  |  |  |
|  | Kartik Tandon, University of Pennsylvania, expected PhD completion 2027                                       |  |  |
|  | Fangji Liu, University of Pennsylvania, expected PhD completion 2028  |  |  |
|  | Albert (Jinghui) Yang, University of Pennsylvania, expected PhD completion 2028                               |  |  |
| MASTERS<br>THESIS<br>SUPERVISION               | Saad Slaoui, University of Pennsylvania   |  |  |
|  |   | spring 2019  |  |
|  | Yinfeng Lu, University of Pennsylvania  |  |  |
|  |   | spring 2023  |  |
|  | Zhong Zhang, University of Pennsylvania   |  |  |
|  |   | 2023-24  |  |
|  | Oualid Merzouga, University of Pennsylvania   |  |  |
|  |   | spring 2023  |  |
|  | Robin Murugadoss, University of Pennsylvania  |  |  |
|  | 2023-24   |  |  |
| Frenly Espino, University of Pennsylvania      |   |  |  |
|  | 2023-24   |  |  |
| Chayansudha Biswas, University of Pennsylvania |   |  |  |
|  | 2023-24   |  |  |
| Yaojie Hu, University of Pennsylvania          |   |  |  |
|  | spring 2024   |  |  |
| David Zhu, University of Pennsylvania          |   |  |  |
|  | 2024-25   |  |  |
| Colton Griffin, University of Pennsylvania     |   |  |  |
|  | spring 2025   |  |  |
| Josh Tabb, University of Pennsylvania          |   |  |  |
|  | spring 2025   |  |  |
| POSTDOC<br>MENTORSHIP                          | Maximilien Peroux, University of Pennsylvania   |  |  |
|  |   | 2020-23  |  |
| Ningchuan Zhang, University of Pennsylvania    |   |  |  |
|  | 2020-23   |  |  |
| TEACHING<br>EXPERIENCE                         | <b>Princeton Prison Teaching Initiative, Co-Instructor</b>  |  |  |
|  | Fall  | 2024   | math 015 Basic College Mathematics (South Woods State Prison)            |
|  | Spring  | 2023   | Math in the Courtroom (South Woods State Prison, <i>BA level class</i> ) |
|  | Spring  | 2022   | math 015 Basic College Mathematics (South Woods State Prison)            |
|  | Fall  | 2021   | math 020 College Algebra (Garden State Correctional Facility)            |
|  | <b>University of Pennsylvania, Instructor</b>   |  |  |
|  | Spring  | 2025   | math 2030 Proving Things, Algebra  |
|  | Spring  | 2025   | math 6190 Algebraic Topology III (Kan seminar in $K$ -theory)            |
|  | Fall  | 2024   | math 1700 Ideas in Math  |
|  | Spring  | 2024   | math 6010 Algebraic Topology I (graduate)                                |
|  | Spring  | 2024   | math 4100 Complex Analysis   |
|  | Fall  | 2023   | math 1234 Community Math Teaching Project (ABCS class)                   |
|  | Spring  | 2023   | math 6190 Algebraic Topology III (graduate)                              |
|  | Spring  | 2023   | math 1300 Introduction to Calculus                                       |
|  | Spring  | 2022   | math 520 Representation Theory of Finite Groups                          |
|  | Fall  | 2021   | math 500 Topology  |
|  | Fall  | 2021   | math 123 Community Math Teaching Project (ABCS class)                    |
| Spring   | 2021  | math 619 Algebraic Topology III (graduate)                   |  |
| Fall   | 2020  | math 123 Community Math Teaching Project (ABCS class)        |  |
| Spring   | 2020  | math 730 Algebraic $K$ -theory (graduate, Kan seminar style) |  |
| Fall   | 2019  | math 410 Complex Analysis                                    |  |
| Spring   | 2019  | math 619 Algebraic Topology III (graduate)                   |  |
| Spring   | 2019  | math 370 Abstract Algebra                                    |  |
| <b>Johns Hopkins University, Instructor</b>    |   |  |  |

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|--------|------|----------|---|
| Spring | 2018 | math 106 | Calculus I for biology                                |
| Fall   | 2017 | math 727 | Topics in Algebraic Topology (graduate)               |
| Fall   | 2017 | math 615 | Algebraic Topology I (graduate)                       |
| Spring | 2017 | math 422 | Representation Theory                                 |
| Spring | 2017 | math 616 | Algebraic Topology II (graduate)                      |
| Spring | 2016 | math 422 | Representation Theory                                 |
| Spring | 2016 | math 401 | Advanced Algebra                                      |
| Fall   | 2015 | math 401 | Advanced Algebra                                      |
| Fall   | 2015 | math 328 | Non-Euclidean geometry (inquiry based learning style) |
| Spring | 2015 | math 107 | Calculus II for biology                               |
| Fall   | 2014 | math 328 | Non-Euclidean geometry (inquiry based learning style) |

### University of Chicago, Instructor

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|--------|------|----------|---|
| Winter | 2014 | math 176 | Geometry IBL (co-taught with John Boller) |
| Spring | 2013 | math 112 | Studies in mathematics                    |
| Winter | 2013 | math 153 | Calculus III                              |
| Fall   | 2012 | math 152 | Calculus II                               |
| Spring | 2012 | math 112 | Studies in mathematics                    |
| Winter | 2012 | math 106 | Precalculus II                            |
| Fall   | 2011 | math 105 | Precalculus I                             |

### University of Chicago, College Fellow

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|--------|------|----------|---|
| Spring | 2011 | math 256 | Basic Algebra III (mentor: Liang Xiao)      |
| Winter | 2011 | math 255 | Basic Algebra II (mentor: Rina Anno)        |
| Fall   | 2010 | math 254 | Basic Algebra I (mentor: David Constantine) |

## TALKS

### Mini courses and lecture series

- Equivariant homotopy theory in context program, Isaac Newton Institute, Cambridge, UK, January 2025
- Algebraic K-theory of spaces, Regensburg, Germany, July 2023
- Scissors Congruence, Algebraic K-Theory, and Trace Methods, June 2023
- Algebraic structures in topology, San Juan, Puerto Rico, May 2022

### Conference and Colloquium Talks

- Mathematical Congress of the Americas, Institute of the Mathematical Sciences of the Americas, Miami, July 2025 (upcoming)
- Workshop on Homotopy Theory, Field Institute, Toronto, July 2025 (upcoming)
- Abel Symposium, Trondheim, Norway, July 2025 (upcoming)
- New Horizons for Equivariance in Homotopy Theory, Isaac Newton Institute, Cambridge, UK, May 2025 (upcoming)
- International Workshop on Algebraic Topology (Peter May's 85th Birthday Conference), SUSTech, Shenzhen, China, March 2025
- The interplay of geometric group theory and  $K$ -theory, Southampton, UK, June 2024
- Real algebraic K-theory and trace methods, Université Paris 13, May 2024
- Case Western University Colloquium, Cleveland, February 2024
- AMS special session on Homotopy Theory, Joint Math Meetings, San Francisco, January 2024
- Homotopy Theory, Oberwolfach, Germany, August 2023
- Homotopy: fruit of the fertile furrow, Isaac Newton Institute, Cambridge, UK, June

2023

- Higher Invariants in Equivariant and Geometric Topology, IMSA, Miami, May 2023
- Midwest Topology Conference, Purdue, Lafayette, April 2023
- Spring Topology and Dynamics Conference, semi plenary talk, March 2023 (online)
- Floer homotopical methods in low dimensional and symplectic topology, MSRI, Berkeley, November 2022
- Equivariant Techniques in Stable Homotopy Theory, AIM, San Jose, October 2022
- AMS Sectional Meeting, Special session on algebraic K-theory, Utah, October 2022
- Connections Workshop: Floer Homotopy Theory, MSRI, Berkeley, September 2022
- Follow-up Workshop to Junior Trimester Program “Topology,” Hausdorff Institute for Mathematics, Bonn, Germany, September 2022
- Algebraic Topology and Topological Data Analysis: A Conference in Honor of Gunnar Carlsson, IMA, Minneapolis, August 2022
- Algebra and Number Theory Day, Johns Hopkins, September 2021
- $(\infty, n)$ -categories, factorization homology, and algebraic K-theory, MSRI, Berkeley, March 2020 (moved online)
- Equivariant stable homotopy theory and  $p$ -adic Hodge theory, Banff International Research Station, Canada, March 2020
- Colloquium, Bryn Mawr, November, 2019
- Mid-Atlantic Topology Conference, University of Virginia, Charlottesville, October 2019
- International Workshop on Algebraic Topology, Shanghai Center for Mathematical Sciences, Fudan University, China, August 2019
- Four manifolds: Confluence of high and low dimensions, Fields Institute, Toronto, Canada, July 2019
- Graduate Student Conference in Algebra, Geometry, and Topology (Keynote speaker), Temple University, June 2019
- Cornell Topology Festival, Ithaca, May 2019
- AMS Sectional Meeting, Special Session on Equivariant Homotopy and Trace Methods, University of Hawaii, March 2019
- Equivariant and Motivic Homotopy Conference (Homotopy Harnessing Higher Structures Program), Isaac Newton Institute, Cambridge, UK, August 2018
- Topologie, Oberwolfach, Germany, July 2018
- Equivariant Homotopy Theory and K-theory, FU Berlin, Germany, June 2018
- AMS Sectional Meeting, Special Session on Homotopy Theory, Vanderbilt University, Nashville, April 2018
- Tetrahedral Geometry and Topology Seminar, Lancaster, April 2018
- AMS Sectional Meeting, Special Session on Homotopy Theory, Ohio State University, Columbus, March 2108
- Midwest Topology Seminar, Northwestern, Evanston, March 2018
- Colloquium, Florida State University, December 2017
- Colloquium, University of Pennsylvania, December 2017
- Colloquium, Notre Dame University, December 2017
- Colloquium, University of Melbourne, November 2017
- Lloyd Roeling Conference, University of Louisiana, Lafayette, November 2017
- AMS Sectional Meeting, Algebraic Topology Special Session, Buffalo, September 2017
- Cascade Topology Conference, University of British Columbia, Vancouver, Canada, May 2017
- Colloquium, Reed, Portland, November 2016
- Operations in Highly Structured Homology Theories, Banff, Canada, May 2016
- Equivariant Derived Algebraic Geometry, Banff, Canada, February 2016
- Trace Methods Summer School, Regensburg, Germany, August 2015
- Equivariant and Motivic Homotopy Theory, Reed, Portland, May 2015
- AMW Workshop at AMS Joint Meetings, San Antonio, January 2015

- Young Topologists Meeting, Copenhagen, Denmark, June 2014 (contributed talk)
- MSRI Connections for Women Workshop, MSRI, Berkeley, January 2014
- AMS Joint Meetings, Special Session on Homotopy Theory, Baltimore, January 2014
- AMS Special Session Homotopy Theory and Algebraic K-theory, Riverside, November 2013
- Graduate Student Topology Conference, Notre Dame, April 2013 (contributed talk)
- AMS Joint meetings, Washington DC, January 2009 (contributed talk)
- AMS Joint meetings, San Diego, January 2008 (contributed talk)
- AMS Joint meetings, New Orleans, January 2007 (contributed talk)

### **Seminar Talks**

- Princeton topology seminar, December 2024
- Brown topology seminar, April 2024
- George Mason University topology seminar, November 2023
- UC Santa Cruz algebra and number theory seminar, May 2023
- University of Chicago topology seminar, May 2023
- Northeastern topology seminar, January 2023
- UCLA topology seminar, December 2022
- University of Washington topology seminar, November 2022
- UC Berkeley topology seminar, October 2022
- UCSD topology seminar, October 2022
- Lehmann College topology seminar, September 2022
- FRG Scissors congruence K-theory seminar, September 2022
- electronic Computational Homotopy Theory seminar, September 2022
- Columbia topology seminar, May 2022
- Bard College Seminar, online, April 2021
- University of Aberdeen Topology Seminar, online, March 2021
- University of Kentucky Topology seminar, online, March 2021
- CORONA Geometry Seminar, online, October 2020
- UCLA Topology Seminar, online, May 2020
- Temple Topology Seminar, September 2019
- Michigan State University Topology Seminar, April 2019
- Princeton Topology Seminar, March 2019
- MIT Topology Seminar, March 2019
- University of Pennsylvania Topology Seminar, February 2019
- Johns Hopkins Topology Seminar, February 2019
- University of Münster Topology Seminar, November 2018
- University of Wuppertal Topology Seminar, November 2018
- École Polytechnique Federale de Lausanne Topology Seminar, October 2018
- University of Bochum Topology Seminar, October 2018
- University of Copenhagen Topology Seminar, September 2018
- University of Regensburg Topology Seminar, July 2018
- Penn State Altoona Topology Seminar, October 2017
- Notre Dame Topology Seminar, March 2017
- Maryland University Topology Seminar, January 2017
- Wayne State Topology Seminar, November 2016
- Rochester Topology Seminar, October 2016
- Hausdorff Institute for Mathematics Seminar, Bonn, September 2016
- University of Virginia Topology Seminar, October 2015
- UIUC Topology Seminar, May 2015
- UCSD Number Theory/Topology Seminar, March 2015
- Johns Hopkins Topology Seminar, March 2015

- MIT Topology Seminar, December 2014
- Penn State Altoona Topology Seminar, May 2014
- Northwestern Topology Seminar, December 2013
- UIUC Topology Seminar, February 2013

### Talks for undergraduates

- Kitao lecture, Swarthmore, October 2023
- University of Chicago summer REU, July 2022 (online)
- University of Chicago summer REU, July 2021 (online)
- Penn Undergraduate Mathematics Society, September 2020 (online)
- University of Chicago summer REU, June 2020 (online)
- University of Chicago summer REU, July 2016
- Undergraduate Conference on Geometry and Topology (faculty talk), University of Texas, Austin, February 2016

### General audience talks

- Social choice and topology, Prison Teaching Initiative Faculty Lecture Series, Ft. Dix Prison, April 2025
- Taking STEM to the incarcerated, Community-Engaged STEM seminar, University of Pennsylvania, March 2024

### SERVICE

Prison Teaching Initiative, volunteer teacher for accredited college math classes, spring 2021-present

Co-organizer (with Andrew Blumberg, Mike Hill, Michael Mandell, Kate Ponto), Scissors congruence and algebraic  $K$ -theory conference, University of Pennsylvania, July 2025

Member of the AMS Eastern Section Program Committee, 2025-27

Member of the ICM Outreach Committee, 2024-26

Associate Editor on the Bulletin of the AMS Editorial Board for Book Reviews, 2024-2028

Grant reviewer: NSF Topology Panel (3 times), NSF CAREER panel, and NWO Dutch Research Council

Co-organizer (with Angela Gibney, Julia Hartmann, and Yumeng Ou), UP GRADe workshop for underrepresented groups in mathematics, Spring 2024

Team Leader (with Julia Semikina), Collaborative workshop on scissors congruence and algebraic  $K$ -theory, 2023-24

Scientific committee (with Andrew Blumberg, Anna Marie Bohmann, Teena Gerhardt, Mike Hill, Cary Malkiewich, Michael Mandell, Kate Ponto, Inna Zakharevich), Collaborative workshop on scissors congruence and algebraic  $K$ -theory, Vanderbilt University, July 2024

Co-organizer (with Julia Hartmann, Angela Gibney, Yumeng Ou), FEW (Fund to

Encourage Women) event, April 2023

Co-organizer (with Cary Malkiewich, Jeremy Miller, and Jenny Wilson), Scissors congruence, algebraic K-theory and Steinberg modules, American Institute for Mathematics, June 2024

Co-organizer (with Manuel Rivera and Jeremy Miller), Algebraic Structures in Topology Conference, San Juan, Puerto Rico, 2024

Scientific committee (with Andrew Blumberg, Anna Marie Bohmann, Teena Gerhardt, Mike Hill, Cary Malkiewich, Michael Mandell, Kate Ponto, Inna Zakharevich), Scissors Congruence, Algebraic K-Theory, and Trace Methods, Indiana University, June 2023

Co-organizer (with Alexander Kupers, Thomas Goodwillie, Manuel Krannich), Spaces of manifolds: algebraic and geometric approaches, Banff International Research Station, 2023

Co-organizer (with Jonathan Block, Rob Ghrist, Ben Knudsen, Tony Pantev, Maximilien Peroux and Ningchuan Zhang), Mid-Atlantic Topology Conference, April 2023 (postponed from 2020 due to COVID)

Co-organizer (with Maxine Calle, Angela Gibney, Julia Hartmann, Marielle Ong and Ellen Urheim), UP GRADe workshop for underrepresented groups in mathematics, Fall 2021

Co-organizer (with Jonathan Block), Summer Bridge Workshop in Algebraic Topology, University of Pennsylvania, Summer 2021

Co-organizer (with Herman Gluck and Davi Maximo), Geometry-Topology Seminar, University of Pennsylvania, Spring 2019-present

Co-organizer (with Herman Gluck and Davi Maximo), PATCH at Penn, University of Pennsylvania, Spring 2019-present

Co-organizer (with Herman Gluck), Summer Bridge Workshop in Algebraic Topology, University of Pennsylvania, Summer 2020

Co-organizer (with Andrew Blumberg, Anna Marie Bohmann, Akhil Mathew, Emily Riehl, and Dylan Wilson), Midwest Topology Seminar/ May Day 2019, University of Chicago, October 2019

Co-organizer (with Julia Hartmann), Workshop on Math Advice and Networking at the University of Pennsylvania (WOMAN UP), September 2019

Team Leader (with Carmen Rovi) for the Women in Topology III Workshop (proposed a research project and collaborated on a resulting publication with our group), 2019-20

Co-organizer (with Thomas Brazelton), Directed Reading Program, PILOT University of Pennsylvania chapter, fall 2019

Organizer, Directed Reading Program, PILOT Johns Hopkins chapter, 2017-2018

Future Scholars Program (wrote yearly exam and selected the Baltimore high schoolers for math classes at JHU), Johns Hopkins, 2016&2017

Volunteer, John Rurah Middle School Math Lab, Baltimore, Spring 2017

Co-organizer (with Nitu Kitchloo, Jack Morava, Emily Riehl, and Steve Wilson), Second Mid-Atlantic Topology Conference, Johns Hopkins, March 2016

Organizer, Johns Hopkins Algebraic Topology Seminar, Johns Hopkins, 2015-2018

Co-organizer (with Carl McTague), Johns Hopkins Algebraic Topology Seminar, Johns Hopkins, 2014-2015

Author and co-editor in *The User's Guide Project: Giving Experiential Context to Research Papers*

Committee member and mentor for the Directed Reading Program, University of Chicago, 2012-2014

Co-organizer (with Evangelia Gazaki, Chris Skalit, and Preston Wake), Algebraic K-theory Student Seminar, University of Chicago, spring 2013

PROFESSIONAL DEVELOPMENT Whistling Vivaldi Discussion on Inclusion and Belonging fall 2022  
*Undergraduate Council Discussion, breakout room facilitator*

Getting Students into the Philadelphia Community spring 2022  
*CTL Faculty Conversation*

Inclusive Teaching Seminar 2019-20  
*CTL yearlong monthly seminar*

DEPARTMENT SERVICE Major advisor 2023-  
Directed Reading Program Faculty Mentor 2019-  
Graduate Admissions Committee 2018-19, 2019-20, 2020-21, 2021-22, 2022-23  
Prize Committee 2018-19, 2023  
Prize Committee, Chair 2019-20, 2020-21, 2021-22, 2023-24

SERVICE TO THE UNIVERSITY Penn Chapter of the Prison Teaching Initiative Collaboration 2021-

Committee on Undergraduate Education 2024-25

HHMI Project Leadership Team 2024-25

Faculty Advisory Committee  
Graduate Certificate in Community-Engaged STEM 2023-

Interim Faculty Director, Fisher-Hassenfeld House 2023-

Faculty House Fellow, Fisher-Hassenfeld House spring 2023

SAS Teaching Awards Selection Committee spring 2024

Faculty House Fellow, Harrison House 2020-2022

Faculty Advisory Board  
Netter Center for Community Partnerships 2022-

