

CHRISTY HAZEL

CONTACT INFORMATION

Grinnell College
Department of Mathematics
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EMPLOYMENT

Grinnell College, Grinnell, IA

Clare Boothe Luce Assistant Professor of Mathematics & Statistics, Aug 2023–Present

electronic Computational Homotopy Theory (eCHT) Research Training Group (RTG)

National Science Foundation RTG Postdoctoral Fellow, Sept 2022–July 2023

University of California–Los Angeles, Los Angeles, CA

Hedrick Assistant Adjunct Professor, July 2020–July 2023

EDUCATION

University of Oregon, Eugene, OR, 2014–2020

Ph.D. Mathematics

Thesis: *The $RO(C_2)$ -graded cohomology of C_2 -surfaces and equivariant fundamental classes*

Thesis Advisor: Daniel Dugger

DePaul University, Honors Program, Chicago, IL, 2010–2014

B.S. Mathematics

RESEARCH INTERESTS

Algebraic topology, equivariant homotopy theory, $RO(G)$ -graded Bredon cohomology

PAPERS

Publications

Transfer systems for rank two elementary abelian groups: characteristic functions and matchstick games. Joint with L. Bao, T. Karkos, A. Kessler, A. Nicolas, K. Ormsby, J. Park, C. Schleff, and S. Tilton. To appear in *Tunisian Journal of Mathematics*. Preprint available at <https://arxiv.org/abs/2310.13835> (2023).

Equivariant \mathbb{Z}/ℓ -modules for the cyclic group C_2 . Joint with D. Dugger and C. May. *J. Pure Appl. Algebra* **228** (2024), no. 3, Paper No. 107473.

The cohomology of C_2 -surfaces with constant \mathbb{Z} -coefficients. *J. Homotopy Relat. Struct.* **18** (2023), no. 1, 71–114.

Genuine-commutative ring structure on rational equivariant K -theory for finite abelian groups. Joint with A.M. Bohmann, J. Ishak, M. Kędziorek, and C. May. *Bull. London Math. Soc.* **54** (2022), 1082–1103.

Naive-commutative structure on rational equivariant K-theory for abelian groups. Joint with A.M. Bohmann, J. Ishak, M. Kędziorek, and C. May. *Topology Appl.* **316** (2022), Paper No. 108100, 18 pp.

Equivariant fundamental classes in $RO(C_2)$ -graded cohomology with $\mathbb{Z}/2$ -coefficients. *Algebr. Geom. Topol.* **21** (2021), 2799–2856.

The $RO(C_2)$ -graded cohomology of C_2 -surfaces in $\mathbb{Z}/2$ -coefficients. *Math. Z.* **297** (2021), 961–996.

Preprints

$RO(G)$ -graded Bredon cohomology of Euclidean configuration spaces. Joint with D. Dugger. Preprint available at <https://arxiv.org/abs/2401.04826> (2024).

TALKS AND PRESENTATIONS

Conference Presentations

MAA Math Fest, Special Session on Advances in Algebraic Topology, Indianapolis, IN, August 2024

JMM, AIM Special Session on Equivariant Techniques in Stable Homotopy Theory, San Francisco, CA, January 2024

South Central Topology Conference III, New Mexico State University, Las Cruces, New Mexico, October 2023

JMM, AMS Special Session on Homotopy Theory: Applications and Connections, Boston, MA, January 2023

Graduate Student Topology and Geometry Conference at Georgia Tech, Young Faculty Speaker, Atlanta, GA, April 2022

JMM, AMS Special Session on Categorical and Computational Methods in Homotopy Theory, Denver, CO, January 2020

AMS Spring Sectional Meeting, Special Session on Homotopy Theory, University of Hawaii, March 2019

Young Topologists Meeting, University of Copenhagen, July 2018

Invited Seminar Talks

University of Iowa, Geometry and Topology Seminar, Iowa City, IA, April 2024

University of Washington, Topology Seminar, Seattle, WA, May 2023

Vanderbilt University, Topology Seminar, Nashville, TN, April 2023

University of Kentucky, Topology Seminar and Math Club, Lexington, KY, April 2022

University of California–San Diego, Online Topology Seminar, February 2022

University of Virginia, Online Topology Seminar, March 2021

University of British Columbia, Online Topology Seminar, March 2021

electronic Computational Homotopy Theory (eCHT) Online Research Seminar, February 2021

EPFL, Online Topology Seminar, June 2020
University of Chicago, Topology Seminar, Chicago, IL, December 2019
Northwestern University, Topology Seminar, Evanston, IL, December 2019
University of Rochester, Topology Seminar, Rochester, NY, November 2019
Johns Hopkins, Topology Seminar, Baltimore, MD, October 2019
Wayne State University, Topology Seminar, Detroit, MI, September 2019
University of California–Los Angeles, Topology Seminar, Los Angeles, CA, November 2018

TEACHING EXPERIENCE

CBL Assistant Professor at Grinnell College

Math 321–Foundations of Abstract Algebra, Spring 2024 and Fall 2024
Math 218–Elementary Number Theory, Fall 2023
Math 133–Calculus II, Fall 2024 (2 sections)
Math 131–Calculus I, Fall 2023 and Spring 2024

eCHT RTG Postdoctoral Fellow

Topological K -Theory, Online Graduate Course, Winter 2023

Hedrick Assistant Adjunct Professor at UCLA

Math 110BH–Honors Abstract Algebra II, Winter 2023
Math 33A–Linear Algebra and Applications, Fall 2022
Math 111–Theory of Numbers, Spring 2022
Math 61–Discrete Mathematics, Winter 2022 (2 sections)
Math 227A–Graduate Algebraic Topology, Fall 2021
Math 115A–Linear Algebra, Fall 2020 (2 sections), Winter 2021, and Spring 2021

Graduate Employee at the University of Oregon

Instructor of Record (18 courses):

Math 342–Linear Algebra II, Summer 2018
Math 341–Linear Algebra I, Winter 2019
Math 252–Calculus II, Winter 2018, Spring 2018, Winter 2020, and Spring 2020
Math 251–Calculus I, Spring 2017, Fall 2017, and Fall 2018
Math 231–Discrete Mathematics I, Winter 2017
Math 112–Elementary Functions, Spring 2016 and Fall 2016
Math 111–College Algebra, Fall 2014, Winter 2015, Spring 2015, and Fall 2015
Math 106–University Math II, Summer 2015 and Summer 2016

Teaching Assistant (2 courses):

Math 243–Introduction to Probability and Statistics, Winter 2016 and Fall 2019

Mentored Undergraduate Reading Projects through [UO Directed Reading Program](#) or [UO AWM Undergraduate Reading Program](#):

“The Banach-Tarski Paradox” with Azaad Burn, 2020

“The Fundamental Group” with Leonie Way, 2019

“Exploring Great Theorems” with Hailey Mowell, 2018

“Classification of Surfaces” with Veronica Blackwell, 2017

Other Teaching Experience:

Co-leader of Math Boot Camp for Incoming Graduate Students at UO, Summer 2018

SELECTED CONFERENCES AND WORKSHOPS ATTENDED

Research Conferences and Workshops

Joint Math Meetings, San Francisco, January 2024

South Central Topology Conference III, New Mexico State University, Las Cruces, New Mexico, October 2023

Joint Math Meetings, Boston, MA, January 2023

AMS Fall Western Sectional Meeting, Online, October 2021

Equivariant Stable Homotopy and p -adic Hodge Theory, Banff International Research Station, March 2020

Joint Math Meetings, Denver, CO, January 2020

Women in Topology III, Hausdorff Institute, Bonn, Germany, August 2019

Equivariant Topology & Derived Algebra Conference, NTNU, Trondheim, Norway, July 2019

AMS Spring Sectional Meeting, University of Hawaii–Manoa, March 2019

Young Topologists Meeting, University of Copenhagen, July 2018

Chromatic Homotopy Theory: Journey to the Frontier, Colorado University, May 2018

Homotopy Theory in the Ecliptic, Reed College, August 2017

Homotopy Theory: Tools and Applications, University of Illinois Urbana–Champaign, July 2017

Teaching/Mentoring Conferences and Workshops

Teaching for Equity, Inclusion, and Retention in the Sciences, Grinnell College CTLA Summer Workshop, August 2024

MAA OPEN Math Course “Critical Approaches to Equity–Focused Departmental Transformation through Data–Informed Decision Making”, Online, June 2024

UCLA Center for Education Innovation and Learning in the Sciences (CEILS) [Summer Institute: Foundations of Equitable Course Design](#), UCLA, August 2022

[Project NExT \(New Experiences in Teaching\)](#) Sessions, MAA Math Fest, Philadelphia, Pennsylvania, August 2022

UCLA CEILS Annual Faculty Workshop on Best Equitable Practices in Teaching, UCLA, September 2021

Directed Reading Program Workshop, MIT, May 2018

Professional Development Conferences and Workshops

Clare Boothe Luce Program Women in STEM Conference, Chicago, IL, July 2024

AWARDS AND HONORS

Jack and Peggy Borsting Award for Scholastic Excellence. Awarded by the UOregon Department of Mathematics to a finishing graduate student based on outstanding academic work, June 2020.

Anderson Distinguished Graduate Teaching Award. Awarded by the UOregon Department of Mathematics to graduate students with outstanding teaching records, May 2019.

Graduate Teaching Excellence Award. Awarded by the UOregon Graduate School to graduate employees to recognize outstanding teaching performance and a commitment to developing instructional skills, April 2018.

Harrison Memorial Award. Awarded by the UOregon Department of Mathematics to outstanding students in mathematics, June 2016.

Mathematics Student of the Year Award. Awarded by the DePaul University Mathematics Department to an outstanding graduating senior, June 2014.

SERVICE AND MEMBERSHIPS

Journal Referee for Proceedings of the American Mathematical Society, Pure and Applied Mathematics Quarterly, and New York Journal of Mathematics

Co-organizer of the Grinnell Math and Statistics Student Seminar (MASSS), Aug 2023–present

Co-organizer of the [AMS Special Session on Topics in Equivariant Algebra](#) at the Joint Math Meetings in San Francisco, Jan 2024

Member of [MAA Project NExT](#) Red '22 Cohort

Co-organizer of the [eCHT Employment Network](#), Nov 2022

Co-organizer of the [Midwest Topology Seminar Networking Event](#), Nov 2021

Co-organizer of the [Special Session on Equivariant and Motivic Homotopy Theory](#) at the AMS Western Sectional, Oct 2021

Co-organizer of the [electronic Algebraic Topology Employment Network](#), Oct 2020

Co-organizer of UCLA Algebraic Topology Seminar, Sept 2020–June 2023

Co-founder and co-organizer of the [Junior Mathematician Research Archive](#), Sept 2020–Jan 2023

Organizer of UOregon graduate student seminar, Homotopy Seminar, Sept 2018–March 2020

Member of [UOregon Association for Women in Mathematics \(AWM\) Student Chapter](#), 2016–2020

Vice President of UOregon AWM Student Chapter, June 2019–May 2020

President of UOregon AWM Student Chapter, June 2018–May 2019

Co-founder and co-organizer of the [UOregon Directed Reading Program](#), July 2018–June 2020

Mentor in the UOregon Directed Reading Program, Jan 2019–May 2019, Jan 2020–May 2020

Mentor in the [UOregon AWM Undergraduate Reading Program](#), Jan 2017–May 2017, Jan 2018–May 2018

Co-chair of UOregon AWM Undergraduate Reading Program, June 2017–May 2018