

Matthew T. Hogancamp

Curriculum Vitae

Northeastern University
Department of Mathematics
360 Huntington Ave, Boston, MA 02115

email: m.hogancamp@northeastern.edu
office: Lake 447

POSITIONS HELD:

- **Northeastern University**
Assistant Professor of Mathematics (September 2019 - present)
- **University of Southern California**
Assistant Professor (non-tenure-track) (July 2016-July 2018)
Buseman Assistant Professor (non-tenure track) (August 2018 to July 2019)
Mentor: Aaron Lauda
- **Indiana University, Bloomington**
Zorn Post-Doctoral Fellow (August 2013-May 2016)
Mentor: Vladimir Turaev

EDUCATION:

- **University of Virginia**, Ph.D. Math (August 2013)
Advisor: Vyacheslav Krushkal
Thesis: “Local and quasi-local $\mathfrak{sl}_2$ link homology”
- **University of Notre Dame**, B.S. Physics and Honors Mathematics (May 2006)

AWARDS AND GRANTS:

- NSF grant DMS 1702274 “Categorical Diagonalization, Representation Theory, and Link Homology” (July 1, 2017- June 30 2020)
- UVA Graduate School of Arts and Sciences Dissertation Year Fellowship (2012-2013)
- Government Assistance in Areas of National Need (GAANN) Fellowship (2007-2012)

RESEARCH INTERESTS:

- Low dimensional topology, quantum topology, categorification, representation theory

PEER-REVIEWED JOURNAL PUBLICATIONS:

- (1) **On unification of colored annular $\mathfrak{sl}(2)$ knot homology**
Advances in Mathematics, Volume 468, Article 110206 (2025)
Coauthors: A. Beliakova, K. Putyra, S. Wehrli
Links: ([arxiv:2305.02977](https://arxiv.org/abs/2305.02977)) ([DOI=10.1016/j.aim.2025.110206](https://doi.org/10.1016/j.aim.2025.110206))
- (2) **A Kirby Color for Khovanov homology**
Journal of the European Mathematical Society, published online first, volume information n/a (2025)
Coauthors: D. Rose and P. Wedrich
Links: ([arxiv:2210.05640](https://arxiv.org/abs/2210.05640)) ([DOI=10.4171/JEMS/1589](https://doi.org/10.4171/JEMS/1589))

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- (3) **Link splitting deformation of colored Khovanov–Rozansky homology**
 Proceedings of the London Mathematical Society, Volume 129 (3), pages n/a (2024)
 Coauthors: D. Rose and P. Wedrich
 Links: ([arxiv:2107.09590](#)) ([DOI=10.1112/plms.12620](#))
 - (4) **Tautological classes and symmetry in Khovanov-Rozansky homology**
 Duke Mathematical Journal, Volume 173(13), pages 2481-2561 (2024)
 Coauthors: E. Gorsky, A. Mellit
 Links: ([arxiv:2103.01212](#)) ([DOI=10.1215/00127094-2023-0063](#))
 - (5) **On the functoriality of $\mathfrak{sl}(2)$ tangle homology**
 Algebraic and Geometric Topology, 23:3 (2023) pages 1303-1361
 Coauthors: A. Beliakova, K. Putyra, S. Wehrli
 Links: ([arxiv:1903.12194](#)) ([DOI: 10.2140/agt.2023.23.1303](#))
 - (6) **Derived traces of Soergel categories**
 International Mathematical Research Notices, Volume 2022, Issue 15, pages 11304-11400 (2022)
 Coauthors: E. Gorsky and P. Wedrich
 Links: ([arxiv:2002.06110](#)) ([DOI:10.1093/imrn/rnab019](#))
 - (7) **Hilbert schemes and y -ification of Khovanov-Rozansky homology**
 Geometry and Topology 26, pages 587-678 (2022)
 Coauthor: E. Gorsky
 Links: ([arxiv:1712.03938](#)) ([DOI:10.2140/gt.2022.26.587](#))
 - (8) **The Fukaya category of the pillowcase, traceless character varieties, and Khovanov cohomology**
 Transactions of the American Mathematical Society 373(12) pp 8391-8437 (2020)
 Coauthors: M. Hedden, C. M. Herald, and P. Kirk
 Links: ([arxiv:1808.06957](#)) ([AMS website](#))
 - (9) **Morphisms between categorified spin networks,**
 Journal of Knot Theory and Ramifications, Volume 29, No. 11, 2050045 (2020)
 Links: ([arxiv:1209.2732](#)) ([DOI:10.1142/S0218216520500455](#))
 - (10) **Serre duality for Khovanov-Rozansky homology**
 Selecta Mathematica, Volume 25, article 79 (2019)
 Coauthors: E. Gorsky, A. Mellit, K. Nagane
 Links: ([arxiv:1902.08281](#)) ([DOI:10.1007/s00029-019-0524-5](#))
 - (11) **A polynomial action on colored $\mathfrak{sl}_2$ link homology**
 Quantum Topology 10, no. 1, pages 1-75 (2019)
 Links: ([arxiv:1405.2574](#)) ([DOI:10.4171/QT/122](#))
 - (12) **On the computation of torus link homology**
 Compositio Mathematica 155(1), pages 164-205 (2019)
 Coauthor: B. Elias
 Links: ([arxiv:1603.00407](#)) ([DOI:10.1112/S0010437X18007571](#))

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- (13) **A DG-extension of symmetric functions arising from higher representation theory**
 Journal of Combinatorial Algebra, Volume 2, No. 2, pages 169-214 (2018)
 Coauthors: A. Appel, I. Egilmez, and A. Lauda
 Links: ([arxiv:1704.00713](https://arxiv.org/abs/1704.00713)) ([DOI:10.4171/JCA/2-2-3](https://doi.org/10.4171/JCA/2-2-3))
 - (14) **Categorified Young symmetrizers and stable homology of torus links**
 Geometry and Topology 22, pages 2943-3002 (2018)
 Links: ([arxiv:1505.08148](https://arxiv.org/abs/1505.08148)) ([DOI:10.2140/gt.2018.22.2943](https://doi.org/10.2140/gt.2018.22.2943))
 - (15) **Categorified Young symmetrizers and stable homology of torus links II**
 Selecta Mathematica, Volume 23, pages 1739-1801 (2017)
 Coauthor: M. Abel
 Links: ([arxiv:1510.05330](https://arxiv.org/abs/1510.05330)) ([DOI:10.1007/s00029-017-0336-4](https://doi.org/10.1007/s00029-017-0336-4))
 - (16) **An exceptional collection for Khovanov homology**
 Algebraic and Geometric Topology 15, pages 2659-2706 (2015)
 Coauthor: B. Cooper
 Links: ([arxiv:1209.1002](https://arxiv.org/abs/1209.1002)) ([DOI:10.2140/agt.2015.15.2659](https://doi.org/10.2140/agt.2015.15.2659))
 - (17) **SO(3) Homology of Graphs and Links** Algebraic and Geometric Topology 11, pages 2137-2166 (2011)
 Coauthors: V. Krushkal and B. Cooper
 Links: ([arxiv:1012.3672](https://arxiv.org/abs/1012.3672)) ([DOI:10.2140/agt.2011.11.2137](https://doi.org/10.2140/agt.2011.11.2137))

PAPERS ACCEPTED FOR PUBLICATION:

- (1) **Categorical diagonalization of full twists**, with B. Elias,
 Duke Mathematical Journal (peer-reviewed, accepted in 2024)
 Link: ([arxiv:1801.00191](https://arxiv.org/abs/1801.00191))

PREPRINTS:

- (1) **Stable deformed $\mathfrak{gl}_N$ homology of torus knots**, with W. Ballinger, E. Gorsky, J. Wang, (2025) ([arxiv:2507.00175](https://arxiv.org/abs/2507.00175))
- (2) **Envelopes and the bar complex**, (2024) ([arxiv:2501.00122](https://arxiv.org/abs/2501.00122))
- (3) **Drinfeld centralizers and Rouquier complexes**, with B. Elias, 2024, ([arXiv:2412.20633](https://arxiv.org/abs/2412.20633))
- (4) **Khovanov–Rozansky homology of Coxeter knots and Schröder polynomials for paths under any line**, with C. Caprau, N. Gonazalez, and M. Mazin (2024) ([arxiv:2407.18123](https://arxiv.org/abs/2407.18123))
- (5) **Bordered invariants from Khovanov homology**, with D. Rose and P. Wedrich (2024) ([arxiv:2404.06301](https://arxiv.org/abs/2404.06301))
- (6) **A skein relation for singular Soergel bimodules**, with D. Rose and P. Wedrich, (2021) ([arxiv:2107.08117](https://arxiv.org/abs/2107.08117))
- (7) **Constructing categorical idempotents**, (2019) ([arxiv:2002.08905](https://arxiv.org/abs/2002.08905))
- (8) **Homological perturbation theory with curvature**, 2019 ([arxiv:1912.03843](https://arxiv.org/abs/1912.03843))

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- (9) **Torus link homology**, with A. Mellit, (2019) ([arxiv:1909.00418](#))
 - (10) **Ext-enhanced monoidal Koszul duality for $GL(2)$** , with S. Makisumi (2019) ([arxiv:1903.00461](#))
 - (11) **An involutive upsilon invariant**, with C. Livingston, (2017) ([arxiv:1710.08360](#))
 - (12) **Categorical diagonalization**, with B. Elias, (2017) ([arxiv:1707.04349](#))
 - (13) **Khovanov-Rozansky homology and higher Catalan sequences**, (2017) ([arxiv:1704.01562](#))
 - (14) **Idempotents in triangulated monoidal categories** (2017) ([arxiv:1703.01001](#))

INVITED TALKS:

- Conference “Modern tools in low-dimensional topology” ICTP, Trieste, Italy
Categorification of the Turaev–Viro TQFT ([link](#)) June 2025
- University of Hamburg seminar on Quantum Topology and Categorification
Towards a categorification of the Turaev-Viro TQFT ([link](#)) June 2024
- Simons Semester on “Knots, Homologies, and Physics”, Warsaw
4 part lecture series *Link homology and how to compute it* ([link](#)) June 2024
- Representation theory and related topics seminar, NEU
Towards a categorification of the Turaev-Viro TQFT March 2024
- Conference on “Geometric and categorical representation theory”, Besse-et-Saint-Anastaise, France
4 lecture minicourse *DG trace and center of Hecke categories* ([link](#)) October 2023
- Columbia University SGGT seminar
Khovanov homology and handleslides September 2023
- Dartmouth Topology Seminar
Khovanov homology and handleslides ([link](#)) October 2023
- University of Hamburg seminar Quantum Topology and Categorification
Handleslides and representation of fiber functors ([link](#)) June 2023
- Berkeley Combinatorics Seminar
How to compute some superpolynomials ([link](#)) May 2023
- Berkeley Representation Theory Seminar
The nilpotent cone for sl_2 and annular link homology ([link](#)) May 2023
- Maurice Auslander Distinguished Lectures
Constructions in homological algebra via graphical calculus April 2023
- Special session “Algebraic Structures in Knot Theory”, AMS meeting, Fresno
The annular Bar-Natan category and handle slides ([link](#)) May 2023
- NEAT MAPS conference, Northeastern University
Link homology operations ([link](#)) April 2023
- Harvard Gauge Theory and Topology Seminar
The annular Bar-Natan category and handle-slides ([link](#)) March 2023

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- MIT Topology Seminar
Khovanov homology and handle-slides December 2022
 - UNC Geometric Methods in Representation Theory Seminar
The dotted Temperley-Lieb category and handle-slides ([link](#)) November 2022
 - Fourth Canada-Mexico-USA Conference in Representation Theory *etc*, Northeastern University
Cell theory and categorical idempotents in tensor categories ([link](#)) June 2022
 - Stanford topology seminar
A Kirby color for Khovanov homology ([link](#)) May 2022
 - Georgia Topology conference
A Kirby color for Khovanov homology ([link](#)) May 2022
 - TRAC seminar (virtual)
Idempotent (co)algebras and generalizations of Hochschild cohomology ([link](#)) February 2022
 - Workshop “Braids in Representation Theory and Algebraic Combinatorics”, ICERM,
Higher structure and symmetry in Khovanov–Rozansky homology ([link](#)), February 2022
 - University of Virginia Algebra Seminar ,
Higher algebraic structure in link homology ([link](#)) December 2021
 - University of Virginia Colloquium,
Categorifying linear algebra ([link](#)) December 2021
 - Conference ”Monoidal and 2-categories in representation theory and categorification”,
held virtually at the Hausdorff Institute for Mathematics,
Soergel bimodules and the Carlsson-Mellit algebra December 2020
 - QUACKS conference (QUAntum groups, Categorification, Knot invariants, and Soergel bimodules),
held virtually at University of Oregon
Curved Hecke categories August 2020
 - Nearly Carbon Neutral Geometric Topology conference
Khovanov-Rozansky homology of torus links (and beyond) May 2020
 - Topology Seminar, Stanford University
Deformed Khovanov-Rozansky homology and the isospectral Hilbert scheme March 2020
 - Worskhop ”Soergel Bimodules and Categorification of the Braid Group”
Cocenter of the Soergel category March 2020
 - Topology Seminar, SUNY Albany
Hecke Algebras, Symmetric Functions, and Their Categorification February 2020
 - Topology Seminar, Boston College
Derived annular link homology November 2019

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- Algebra Seminar, UCLA
Trace of the Hecke category October 2019
 - GPRT Seminar, Northeastern University,
Trace of the Hecke category September 2019
 - Workshop “Hilbert schemes, categorification and combinatorics”, UC Davis
Derived traces of the type A Hecke category June 2019
 - Topology seminar, UNC Chapell Hill
Serre duality for Khovanov-Rozansky homology March 2019
 - Workshop “Catégorification en topologie et théorie des représentations”, University of Caen
Khovanov-Rozansky homology and Hilbert schemes of points (2 lectures) February 2019
 - Workshop “Representation theory connections to (q,t)-combinatorics”, BIRS, Banff, CA
How to compute superpolynomials, January 2019
 - Workshop “Categorification in quantum topology and beyond”, ESI, Vienna
Curved Soergel bimodules and Khovanov-Rozansky homology (2 lectures) January 2019
 - Geometric representation theory seminar, MIT
The curved Hecke category and the isospectral Hilbert scheme October 2018
 - Berkeley string math seminar, UC Berkeley
Monodromic deformation of Khovanov-Rozansky homology and Hilbert schemes October 2018
 - Workshop “Categorified Hecke algebras, link homology, and Hilbert schemes”, AIM
Soergel bimodules and Khovanov-Rozansky homology October 2018
 - Conference “Categorification and higher representation theory”, Mittag-Leffler Institute
Soergel bimodules, polygraphs, and Hilbert schemes July 2018
 - Mathematical physics seminar, Perimeter Institute
Curved complexes, deformation of Khovanov-Rozansky homology, and Hilbert schemes May 2018
 - Algebra and geometry seminar, Caltech
Curved complexes, Khovanov-Rozansky homology, and Hilbert schemes, April 2018
 - Conference “Categorification in mathematical physics”, Simons Center for Geometry and Physics
Curved complexes, Khovanov-Rozansky homology, and Hilbert schemes April 2018
 - Conference “Quantum knot homology and supersymmetric gauge theories”, Aspen Center for Physics
Curved complexes, Khovanov-Rozansky homology, and Hilbert schemes, March 2018

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- Lie group and representation theory seminar, University of Maryland
Categorification of Young idempotents February 2018
 - Topology seminar, UCLA
Curved complexes, Khovanov-Rozansky homology, and Hilbert schemes January 2018
 - Conference “Algebraic structures in geometry and topology,” Riederalp, Switzerland
Link splitting and y-ification of Khovanov-Rozansky homology January 2018
 - Special Session “Quantum Link Invariants, Khovanov Homology, and Low-dimensional Manifolds,” JMM
Link splitting and y-ification of Khovanov-Rozansky homology January 2018
 - Special session “Rational Cherednik algebras and categorification,” AMS meeting, UC Riverside
Curved complexes, Soergel bimodules, and the isospectral Hilbert scheme November 2017
 - Special session “Combinatorial representation theory,” AMS meeting, UC Riverside
Torus links and Catalan combinatorics November 2017
 - Special session “Combinatorial aspects of the polynomial ring,” AMS meeting, UC Riverside
Braids, symmetric functions, and shuffle conjectures November 2017
 - Special session “Symmetry in algebra, topology, and physics”, Math. Cong. of the Americas, McGill,
Categorical Diagonalization July 2017
 - Conference “Representation Theory and Combinatorics of Torus Links,” UMass Amherst
How to compute some link homologies July 2017
 - Workshop “Quantum topology and categorified representation theory,” INI, Cambridge, UK
Categorical diagonalization June 2017
 - Conference “Equivariant combinatorics,” CRM, University de Montreal,
Khovanov-Rozansky homology and the higher q, t Catalan sequences. June 2017
 - Isaac Newton Institute HTL seminar, University of Cambridge,
How to compute torus link homology June 2017
 - Workshop “Physics and knot homologies,” INI, University of Cambridge
Khovanov-Rozansky homology and q, t Catalan numbers April 2017
 - Topology seminar, Claremont College
Torus knots and combinatorics February 2017
 - Workshop “Categorification, derived geometry and quantum cohomology,” Paris 7
Categorified Young symmetrizers and torus link homology, with connections to Hilbert schemes (two lectures) January 2017
 - Joint LA Topology seminar at UCLA
Categorical diagonalization and link homology November 2016

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- UCSD Combinatorics seminar
Knot homology and the q, t Catalan September 2016
 - WARTHOG “Knot homologies, Hilbert schemes, and Cherednik algebras”, University of Oregon
Categorical diagonalization (two lectures) July 2016
 - Conference “Advances in Quantum and Low-Dimensional Topology”, U. of Iowa
Categorical diagonalization of the full twist March 2016
 - Topology seminar, Michigan State University
Stability phenomena in link homology April 2016
 - Special session “Topological representation theory,” Joint Mathematics Meetings, Seattle
Diagonalization of the full twist January 2016
 - MIT special seminar
Categorical diagonalization of the full twist November 2015
 - Columbia University SGGTC seminar
Categorical diagonalization of the full twist November 2015
 - Algebra seminar, UC Davis
Categorical diagonalization of the full twist October 2015
 - Topology seminar, Duke University
Categorical diagonalization of the full twist October 2015
 - Special session “Geometric perspectives in knot theory,” AMS sectional meeting, Loyola University
Stable homology of torus links, and a conjecture of Gorsky-Rasmussen October 2015
 - Felix Klein seminar, University of Notre Dame
On categorified Young symmetrizers April 2015
 - University of Virginia geometry seminar
The stable Khovanov-Rozansky homology of torus knots December 2014
 - Joint IU/Vanderbilt operator algebras seminar, Vanderbilt University
Singular Soergel bimodules and planar algebras November 2014
 - Columbia SGGT seminar, Columbia University
The stable Khovanov-Rozansky homology of torus knots October 2014
 - WARTHOG “Kazhdan-Lusztig Theory and Soergel Bimodules,” University of Oregon
Rouquier complexes Aug 2014
 - International conference “Quantum topology,” Chelyabinsk, Russia
A quasi-local approach to link homology July 2014
 - Special session “Categorification in Representation Theory,” AMS sectional meeting, UC Riverside
A quasi-local approach to link homology November 2013

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- Joint LA topology seminar, University of Southern California
A quasi-local approach to link homology November 2013
 - UNC/Duke topology seminar, UNC
A quasi-local approach to link homology October 2013
 - Topology seminar, George Washington University
SO(3) Kauffman Homology April 2012
 - Conference “Knots in Washington XXXIV,” George Washington University
Categorification of Generalized Jones-Wenzl Projectors March 2012
 - Conference “Homological Knot Invariants in Low-Dimensional Topology,” SUNY
 Stony Brook
Properties of categorified spin networks June 2011
 - “Graduate Student Topology and Geometry Conference,” Michigan State University
A Category for the chromatic polynomial April 2011
 - Conference “Knots in Washington XXXI,” George Washington University
SO(3) Kauffman Homology for graphs and links December 2010
 - Symplectic geometry and gauge theory seminar, Columbia University
SO(3) Kauffman Homology of graphs and links November 2010

TALKS GIVEN AT NORTHEASTERN UNIVERSITY SEMINARS:

TEACHING EXPERIENCE:

Northeastern University

Math 2321: Calculus 3	Fall 2024
Math 7734: Readings in Representation Theory (Khovanov Homology)	Fall 2024
Math 2321: Calculus 3	Spring 2024
Math 2321: Calculus 3	Fall 2023
Math 2321: Honors Calculus 3	Fall 2023
Math 2321: Calculus 3	Spring 2023
Math 2331: Linear algebra	Fall 2022
Math 7721: Readings in Topology (Quantum Invariants)	Spring 2022
Math 2331: Linear algebra	Spring 2022
Math 2331: Linear algebra	Fall 2021
Math 1342: Calculus 2	Fall 2021
Math 2331: Linear algebra	Spring 2021
Math 2331: Linear algebra	Fall 2020
Math 2331: Linear algebra	Spring 2020
Math 1365: Introduction to mathematical reasoning	Fall 2019

University of Southern California

Math 125: Calculus I (two sections)	Fall 2018
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Math 126: Calculus II	Spring 2018
Math 425: Complex analysis	Spring 2018
Math 126: Calculus II	Fall 2017
Math 225: Linear algebra and differential equations	Spring 2017
Math 117: Precalculus for Business and Economics (two sections)	Fall 2016

Indiana University

Math M624: Quantum Invariants (topics course)	Spring 2016
Math M311: Calculus III (two sections)	Fall 2015
Math S343: Honors Ordinary Differential Equations I	Spring 2016
Math M343: Ordinary Differential Equations I	Fall 2015
Math M118: Finite Mathematics	Spring 2014
Math M212: Calculus II	Spring 2014
Math M211: Calculus I (two sections)	Fall 2013

University of Virginia

Math 1310: Calculus I	Fall 2012
Math 1310: Calculus I	Fall 2010
Math 1220: Applied Calculus II	Spring 2010
Math 1220: Applied Calculus II	Fall 2009
Math 122: Applied Calculus II	Spring 2009
Math 121: Applied Calculus I	Fall 2008
Math 325: Differential Equations (TA)	Spring 2008
Math 325: Differential Equations (TA)	Fall 2007

ORGANIZATIONAL ACTIVITIES:

- Co-organizer of Braids Reunion Conference, ICERM, July 15-19, 2024 ([website](#))
- Co-organizer of AIM workshop “Algebra, geometry, and combinatorics of link homology”, July 30-August 4, 2023 ([website](#))
- Co-organizer of AIM research community in link homology, Fall 2021 to Fall 2022 ([website](#))
- Co-organizer of a special session at the Mathematical Congress of the Americas, virtual Argentina, Summer 2021 ([website](#))
- Co-organizer of summer school and conference in Categorification of Quantum Invariants ([website](#))
- Organizer of and primary speaker in learning seminar on categorical diagonalization at USC, Fall 2017

PROGRAMS / SPECIAL SEMESTERS PARTICIPATED IN:

- Participant in Simons semester “Knots, homologies, and physics” in Warsaw, June 2024 ([website](#))
- Participant in semester program in “Braids” at ICERM, Spring 2022 ([website](#))
- Participant in semester program “Homology theories in low-dimensional topology” at the Isaac Newton Institute, Cambridge England, May 2017-June 2017 ([website](#))
- Participant in the “Semester on 4-manifolds and their combinatorial invariants” at the Max Planck Institute, Bonn Germany, January 2013 - June 2013 ([website](#))

DISSERTATION COMMITTEES SERVED ON:

- Ph.D. committee member for Hongqin Zou, NEU, 2025
- Ph.D. committee member for Xiaochen (Tony) Xiao, NEU, 2024
- Ph.D. committee member for Vitor Emanuel Gulisz, NEU, 2024
- Chair of Ph.D. committee for Mohamed Elbehiry, Spring 2022
- Ph.D. committee member for Dmytro Matvieievskyi, NEU, 2022
- Ph.D. committee member for Alex Sorokin, NEU, 2022
- Ph.D. committee member for Aleksei Pakharev, NEU, 2021.

GRADUATE STUDENT RESEARCH AND MENTORSHIP:

- Ph.D. advisor to Ali Cataltepe at NEU (since summer 2025)
- Ph.D. advisor to Connor Gallagher at NEU (since summer 2025)
- Reading course on Knot Floer homology with NEU graduate student Connor Gallagher, (Spring 2025)
- Reading course on Categorification of Heisenberg algebras NEU graduate student Ali Cataltepe, (Spring 2025)
- Ph.D. advisor to Mohamed Elbehiry at NEU (2020-2022)
- Mentor to USC graduate student Nicolle Sandoval Gonzalez in aspects of professional development, mathematics research, and her Ph.D. thesis, (2017 - 2019)

UNDERGRADUATE RESEARCH AND MENTORSHIP:

- Mentor to NEU undergraduate Luca Miniati in an independent study on Topology, (Fall 2024)
- Mentor to Daniel Abadjiev in a project on Knot Theory (as part of course Math 4020) (Fall 2023)
- Mentor to Matthew Stevens in a project on Hecke algebras and Link Polynomials, Matthew Stevens (as part of course Math 4020) (Fall 2021)
- Mentor to USC undergraduate Kelley Yang in independent study in group theory (Math 490, 2 credit hours) Fall 2018
- Mentor in a research project with USC undergraduate Lewis Wang in Catalan Combinatorics, (Fall 2017)

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- IU STARS (Science, Technology, and Research Scholars) mentor to an IU undergraduate, (Fall 2014-Spring 2015)
Description: independent study and research with an IU undergraduate in knot theory.

SERVICE ACTIVITIES AT NORTHEASTERN:

- Co-organizer of Putnam Club at Northeastern (Fall 2024)
- Member of ZPF (Zelevinsky Postdoctoral Fellowship) committee (AY 2020-2025)
- Member of Graduate Committee (AY 2019-2024)
- Member of Colloquium committee (AY 2023-2025)
- Math department liason to the Northeastern library (AY 2020-2025)
- Member of RTG group (AY 2019-2022)

OTHER SERVICE AND PROFESSIONAL ACTIVITIES:

- Reviewer for AMS Math Reviews June 2018 - present.
- Geometry/Topology qualifying exam committee member at USC. Spring 2018
- Co-organizer of USC Categorification Seminar 2016-2019
- Oral exam committee member for IU graduate student Josh Edge. Spring 2016
- Faculty co-mentor of the IU math club (with Keenan Kidwell) Fall 2015-Spring 2016
- Co-organizer of IU Quantum Topology seminar (with Noah Snyder) Spring 2015-Spring 2016
- Referee for Quantum Topology, Geometry and Topology, Algebraic and Geometric Topology, Compositio Math., Indiana Journal of Math., Topology Proceedings, JCTA