ALLISON H. MOORE

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RESEARCH INTERESTS

Knot theory, low-dimensional topology and geometry, Heegaard Floer and Khovanov homology.

Applications of knot theory to DNA topology and molecular biology.

EDUCATION

Ph.D. in Mathematics (2013) — University of Texas
Advisor: Cameron McA. Gordon
Dissertation: *Behavior of Knot Floer Homology Under Conway and Genus Two Mutation*

B.S. in Mathematics, *with High Honors* (2006) — University of Texas
B.A. in Plan II, *with High Honors* (2006)

Undergraduate Study, *Math In Moscow* (2004) — Independent University of Moscow, Russia

APPOINTMENTS

Associate Professor of Mathematics, Virginia Commonwealth University, — July 2024 – current

Assistant Professor of Mathematics, Virginia Commonwealth University, — August 2019 — June 2024

Krener Assistant Professor of Mathematics, University of California, Davis — July 2016 — June 2019
and postdoctoral appointment (Dept. of Microbiology and Molecular Genetics) — July 2017 — June 2019

RTG Lovett Instructor of Mathematics, Rice University — Fall 2013 — June 2016

Instructor of Record, University of Texas — Fall 2012

Research / Teaching Assistant, University of Texas — Fall 2006 — Spring 2013

Coordinator of the Saturday Morning Math Group — Spring 2011 – Spring 2012

GRANTS AND HONORS

Grants and awards as faculty:

National Science Foundation DMS–2204148, $294,584 (Sole PI) — 08/01/2022–07/31/2025
Explorations in Entanglement and Knotting in Low-Dimensional Topology

National Science Foundation DMS–2349810, $26,430 (Co-PI) — 05/01/2024–10/31/2025
Conference: Richmond Geometry Meeting: Geometric Topology and Moduli

National Science Foundation DMS–2240741, $31,108 (Co-PI) — 05/15/2023–02/29/2024
Conference: Richmond Geometry Meeting: Knots, Moduli, and Strings

VCU Breakthroughs Fund Award, $200,000 (Co-PI) — 07/30/2022–07/30/2024
Symmetry, Surfaces, and Knots: Empowering Middle School Students through Experiential Activities in Geometry

VCU Quest Fund Award, $47,794 (Co-PI) — 07/01/2022–12/31/2023
Quantum Fields and Knots: An Integrative Approach

Jeffress Trust Awards Program in Interdisciplinary Research, $100,000 (Sole PI) — 07/31/2021–04/30/2023
Advancing theory and exploring applications of unknotting to molecular biology

AIM SQuaRE (Co-PI), Travel support — 2019; 2022-2023
Unknotting spatial graphs

Teaching awards:

G. Thomas Sallee Mathematics Teaching Award, University of California, Davis — 2018

Frank Gerth III Teaching Excellence Award, University of Texas — 2009

Postdoc funding and graduate awards:

NSF DMS–1716987, $290,000 — July 18, 2017 – June 30, 2019

The Dynamic Genome: Studying the Interplay between Local Strand-Passage and Reconnection
Role: I co-designed the specific aims of the grant and co-wrote the proposal with the PI (M. Vazquez).
Support: Provided 50% of my postdoctoral funding for two years, travel and equipment.

NSF DMS–1148609 (Postdoctoral support only; no role in proposal preparation)	Fall 2013–Spring 2016
NSF DMS–1148609 (Graduate student support only; no role in proposal preparation)	Fall 2010, Summer 2011
Professional Development Award (Travel Grant), University of Texas	Spring 2013
Math Department Summer Fellowship, University of Texas	Summer 2009, Summer 2007
Vigre NSF Research Grant for Undergraduates, University of Texas	Spring 2006
AMS/NSF Scholarship Grant, *Math In Moscow*	2004
Plan II Research and Travel Grant, University of Texas	2004

PUBLICATIONS

Refereed publications *(Authorship is alphabetical.)*

1. Artem Kotelskiy, Tye Lidman, Allison H. Moore, Liam Watson, and Claudius Zibrowius. Cosmetic operations and Khovanov multicurves. arXiv:2109.14049 [math.GT], To appear in *Mathematische Annalen*, (2023). 20 pages.
2. Tye Lidman, Allison H. Moore and Claudius Zibrowius. L-space knots have no essential Conway spheres. *Geometry & Topology*, 26:2065–2102, (2022).
3. Eugene Gorsky, Beibei Liu, Tye Lidman and Allison H. Moore. Triple Linking Numbers and Heegaard Floer Homology. *International Mathematical Research Notices*, rnab368, (2022).
4. Stanislav Jabuka, Beibei Liu, and Allison H. Moore. Knot graphs and Gromov hyperbolicity. *Mathematische Zeitschrift*, 301(1):811–834, (2022).
5. Christopher Flippen, Allison H. Moore, and Essak Seddiq. Quotients of the Gordian and H(2)-Gordian Graphs. *Journal of Knot Theory and Its Ramifications*, 30(05):2150037, (2021).
6. Eugene Gorsky, Beibei Liu, and Allison H. Moore. Surgery on links of linking number zero and the Heegaard Floer d-invariant. *Quantum Topology*, 11(2):323–378, (2020).
7. Allison H. Moore and Mariel Vazquez. A note on band surgery and the signature of a knot. *Bulletin of the London Mathematical Society*, 52(6):1191–1208, (2020).
8. Tye Lidman, Allison H. Moore and Mariel Vazquez. Distance one lens space fillings and band surgeries on the trefoil knot. *Algebraic & Geometric Topology*; 19(5):2439–2484, (2019).
9. Allison H. Moore and Mariel Vazquez. The non-coherent band surgery model for site-specific recombination. In *Topology and geometry of biopolymers*, volume 746 of *Contemporary Mathematics*, pages 101–125. Amer. Math. Soc., Providence, RI, (2020).
10. Kenneth Baker and Allison H. Moore. Montesinos knots, Hopf plumbings, and L-space surgeries. *Journal of the Mathematical Society of Japan*, 70(1):95–110, (2018).
11. Tye Lidman and Allison H. Moore. Cosmetic surgery in L-spaces and nugatory crossings. *Transactions of the American Mathematical Society*, 369(5):3639–3654, (2017).
12. Tye Lidman and Allison H. Moore. Pretzel knots with L-space surgeries. *Michigan Mathematical Journal*, 65(1):105–130, (2016).
13. Allison H. Moore. Symmetric unions without cosmetic crossing changes. In Gail Letzter et al., editors, *Advances in the Mathematical Sciences*: Research from the 2015 Association for Women in Mathematics Symposium, volume 6, pages 103–116. Springer International Publishing, Cham, (2016).
14. Allison H. Moore and Laura Starkston. Genus-two mutant knots with the same dimension in knot Floer and Khovanov homologies. *Algebraic & Geometric Topology*, 15(1):43–63, (2015).

Preprints

15. Allison H. Moore and Nicola Tarasca. Higher rank series and root puzzles for plumbed 3-manifolds. arXiv:2405.14972 [math.GT], 2024, Submitted, (2024). 38 pages.
16. Kenneth L. Baker, Allison H. Moore, Danielle O'Donnol, Scott Taylor. Signature, slicing foams, and crossing changes of Klein graphs. arXiv:2405.15044 [math.GT], Submitted, (2024). 23 pages.
17. Tye Lidman and Allison H. Moore. Adjacency in three-manifolds and Brunnian links. arXiv:2308.06211 [math.GT], Submitted, (2023). 9 pages.
18. Kenneth Baker, Dorothy Buck, Allison H. Moore, Danielle O'Donnol, and Scott Taylor. Primality of theta-curves with proper rational tangle unknotting number one. arXiv:2201.08213 [math.GT], Submitted, (2022). 16 pages.

19. Matthew Elpers, Rayan Ibrahim, and Allison H. Moore. Determinants of simple theta curves and symmetric graphs. arXiv:2211.00626 [math.GT], Submitted, (2022). 12 pages.

Software / Other

20. M. Nasrollahi, S. Witte and A. H. Moore. *BraidGenerator*: Software to generate random braid representatives of a fixed knot type via Markov chain. Open-source software, 2019. Publicly available on Github and PyPi.org.

Thesis

21. Allison H. Moore. *Behavior of Knot Floer Homology Under Conway and Genus Two Mutation*. PhD Thesis, Department of Mathematics, University of Texas at Austin, 2013.

CONFERENCE, COLLOQUIA AND SEMINAR PRESENTATIONS

Conferences and Workshops:

CMS Summer Meeting. Applied Topology: DNA topology, Material Science, Topological Data Analysis. Saskatoon, Canada	Jun. 2024
CMS Summer Meeting. Applied Topology: DNA Topology. (Mini Course) Saskatoon, Canada	May 2024.
BIRS Workshop: The Crossroads of Topology, Combinatorics and Biosciences	Mar. 2024
AMS Special Session on Mathematical Modeling of Nucleic Acid Structures. Joint Mathematics Meetings, San Francisco, CA	Jan. 2024
AMS Special Session on Recent Advances in Low-dimensional and Quantum Topology, Mobile, AL	Oct. 2023
Tangled in Knot Theory, ICERM, Brown University	May 2023
Low Dimensional Topology and Circle-Valued Morse Functions, IMSA, University of Miami	Feb. 2023
8th Annual Applied Geometry and Topology Workshops in Mexico (Online)	Nov. 2022
AMS Special Session on Topology and Geometry of Multi-Stranded Nucleic Acids, Salt Lake City, UT	Oct. 2022
Flash Talk, 4-variétés: à travers les dimensions, CIRM, Marseille, France	Sep. 2022
Canadian Mathematical Society Winter Meeting (Online)	Dec. 2021
Knots in Washington 49.5, George Washington University, Washington D.C.	Dec. 2021
Boston Graduate Topology Seminar, MIT, Boston MA	Nov. 2021
Workshop in Geometry Topology (Online), Texas Christian University	Jun. 2021
Lightning Talk (Online), 4D Topology ARC, American Institute of Mathematics	Mar. 2021
AMS Special Session on Geometry and Topology in Dimensions 3 and 4, Joint Meetings of the AMS/MAA	Jan. 2021
AMS Special Session on Applied Knot Theory, Fall Southeastern Sectional Meeting (Online)	Oct. 2020
Mini Symposium: Knot Theory on Okinawa, Okinawa Institute of Science and Technology, Okinawa, Japan	Feb. 2020
AMS Special Session on Applications and Computations in Knot Theory, Joint Meetings, Denver, CO	Jan. 2020
AMS Special Section on Floer homology, University of Wisconsin-Madison, Madison, WI	Sep. 2019
The Topology of Nucleic Acids, Banff International Research Center, Banff, Canada	Mar. 2019
Winter Meeting of the Canadian Mathematical Society, Session on Topology, Vancouver, BC, Canada	Dec. 2018
AMS Sectional on Mathematical Methods for Biopolymers, SFSU, San Francisco, CA	Nov. 2018
Topology in Dimensions 3, 3.5 and 4, University of California, Berkeley, CA	May. 2018
Eastern IL Integrated Conference in Geometry, Dynamics, and Topology, Charleston, IL	Apr. 2018
Summer School on Modern Knot Theory. University of Freiburg, Freiburg, Germany.	Jun. 2017
Joint Meetings of the AMS/MAA, Seattle, WA	Jan. 2016
Tech Topology Conference, Georgia Tech, Atlanta, GA	Dec. 2015
AMS Special Session on Knots, Links and 3-Manifolds, Rutgers, NJ	Nov. 2015
Workshop in Geometric Topology, TCU, Fort Worth, TX	Jun. 2015
Moab Topology Conference, Moab, UT	May 2015
AWM Research Symposium, University of Maryland, Baltimore, MD	Apr. 2015
AMS Sectional on Knot Theory and Floer-Type Invariants, East Lansing, MI	Mar. 2015
AMS Special Session on Knot Theory, Joint Meetings of the AMS/MAA, San Antonio, TX	Jan. 2015
AMS Sectional on Interactions between Knots and Manifolds, San Francisco, CA	Oct. 2014
AMS Sectional on Invariants in Low-Dimensional Topology, Baltimore, MD	Mar. 2014
AMS Sectional on Geometric Topology of Knots and 3-Manifolds, Philadelphia, PA	Oct. 2013
Rolfsenfest, Centre International de Rencontres Mathématiques, Marseille, France	Jul. 2013
Joint Meetings of the AMS/MAA, San Diego, CA	Jan. 2013
Topology Students Workshop, Georgia Tech, Atlanta, GA	Jun. 2012

Joint Meetings of the AMS/MAA, Boston, MA	Jan. 2012
Graduate Student Topology and Geometry Conference, Michigan State University	Apr. 2011

Colloquia:

Colloquium, University of Richmond, Richmond, VA	Oct. 2023
Colloquium, Virginia Commonwealth University, Richmond, VA	Dec. 2018
Colloquium, Western Washington University, Bellingham, WA	Nov. 2018
Colloquium, University of Nevada at Reno, Reno, NV	Oct. 2018
Colloquium, Texas State University, San Marcos, TX	Jan. 2018
Colloquium, Towson University, Towson, MD	Dec. 2017
Colloquium, University of Alabama, Tuscaloosa, AL	Feb. 2016
Colloquium, Sam Houston State University, Huntsville, TX	Oct. 2014
Colloquium, Rice University, Houston, TX	Sep. 2013
Colloquium, University of Nevada at Reno, Reno, NV	May 2013

Seminars:

Seminar GEOTOP-A (Online)	Nov. 2023
Topology and Geometry Seminar, MIT, Boston, MA	Nov. 2022
Geometry and Topology Seminar, Le Centre de recherche en géométrie et topologie (CIRGET), Université du Québec à Montréal (Online)	Apr. 2022
Geometry Seminar, University of Virginia, Charlottesville, VA	Nov. 2021
Topology Seminar, Boston College, Boston, MA	Nov. 2021
Topology Seminar, Oklahoma State University (Online)	Nov. 2021
Topology Seminar, University of Texas (Online)	Nov. 2020
Topology Seminar, Stanford (Online)	Sep. 2020
Topology Seminar, Brandeis (Online)	Sep. 2020
Topology Seminar, Georgia Tech (Online)	Aug. 2020
The Ohio State University, Seminar on Classical Knots + Virtual Knots (Online)	Aug. 2020
University of British Columbia/PIMS CRG Seminar (Online)	May 2020
Intro to Khovanov Homology (Parts 1, 2, 3), VCU Topology and Geometry (Online)	Apr. 2020
Topology Seminar, Boston College, Boston, MA	Oct. 2019
ALPS Seminar, Virginia Commonwealth University, Richmond, VA	Sep. 2019
Topology Seminar, Indiana University, IN	Jun. 2019
Topology Seminar, University of Oregon, Eugene, OR	May 2019
Geometry Seminar, University of Virginia, Charlottesville, VA	Apr. 2019
LA Joint Topology Seminar, UCLA, Los Angeles, CA	Apr. 2018
Topology Seminar(s), University of California, Berkeley, CA	Apr. 2017
Geometry and Topology Seminar(s), University of California, Davis, CA	Sep. 2016
Student Geometry and Topology Seminar, University of California, Davis, CA	Sep. 2016
Geometry and Topology Seminar, MSU, East Lansing, MI	Nov. 2015
Topology Seminar, University of Texas, Austin, TX	Sep. 2015
Topology Seminar, Rice, Houston, TX	Sep. 2015
Seminar in Symplectic Geometry, Gauge Theory and Categorification, Columbia University, NY	May 2015
Geometry and Topology Seminar, Caltech, Pasadena, CA	Nov. 2013
Geometry and Physics Seminar, University of Miami, Miami, FL	Nov. 2013
Topology Seminar, Rice University, Houston, TX	Sep. 2013
Topology Seminar (Thesis Defense), University of Texas, Austin, TX	Apr. 2013
Majors' Seminar, Trinity University, San Antonio	Mar. 2011

SELECTED OTHER WORKSHOPS AND INVITED ACADEMIC VISITS (2010 – current)

Member, SLMath/MSRI, Berkeley, CA; Summer Research in Mathematics	Jun. 2024
Visitor, UC Davis/Berkeley, CA; Hosts: M. Vazquez, T. Lidman	Oct. 2022
Invited participant, 4-Manifolds: From Above and Below Centre International de Rencontres Mathématiques, Luminy, Marseille, France.	Sep. 2022
Visitor, UC Davis, Davis, CA; Host: M. Vazquez	Jun. 2022

Invited participant, Braids in Low-Dimensional Topology Workshop, ICERM, Providence RI.	Apr. 2022
Visitor, Washington University, MO; Host: T. Lidman	Mar. 2022
Visiting researcher, *AIM Square Program*, held at University of Miami, FL	Feb. 2022
Visitor, NC State, Rayleigh, NC; Host: T. Lidman	Oct. 2021
Visitor, Georgia Institute of Technology, Atlanta, GA; Host: M. Kuzbary	Aug. 2021
Invited participant *American Institute of Mathematics*. ARC in 4-Dimensional Topology (Online)	Spring 2021
Invited participant Interactions of Gauge Theory with Contact and Symplectic Topology in dimensions 3 and 4, *Banff International Research Center* (Online)	Jun. 2020
Group Co-Leader, Women in Symplectic and Contact Geometry and Topology Workshop, ICERM	Jul. 2019
Visiting researcher, *American Institute of Mathematics* (AIM Square Program), San Jose, CA	Feb. 2019
Tutor, Summer School on Modern Knot Theory, Freiburg, Germany	Jun. 2017
Invited participant Synchronizing Smooth and Topological 4-Manifolds *Banff International Research Station*, Canada	Feb. 2016
Guest visitor, *Institute for Advanced Study*, Visitor host: T. Lidman, Princeton, NJ	Oct. 2015
Combinatorial Link Homology Theories, Braids, and Contact Geometry, ICERM, Providence, RI	Aug. 2014
Low Dimensional Topology After Floer, CRM, University of Montréal, Montréal, Canada	Jul. 2013
Low Dimensional Topology, *The Simons Center for Geometry and Physics*, Stonybrook, NY	May 2013
Holomorphic Curves and Low Dimensional Topology, Stanford University, CA	Aug. 2012
Invited participant AMS MRC in Computational and Applied Topology, Snowbird, UT	Jun. 2011
Categorification and Low Dimensional Topology, Stony Brook University, NY	Jun. 2010
Introductory Workshop: Homology Theories of Knots and Links, MSRI, CA	Jan. 2010

TEACHING EXPERIENCE

Virginia Commonwealth University:	
Math 697, Directed Research	F21 – S23
Math 602, Graduate Abstract Algebra II	S22
Math 502, Graduate Abstract Algebra I	F21
Math 492, Independent Study	Sum 21
Math 490, Mathematical Expositions	S23, F23
Math 411, Excursions in Geometry	F23
Math 409, General Topology	F22
Math 401, Abstract Algebra	F20
Math 356, Graphs and Algorithms	S24
Math 310, Linear Algebra	F19, F20, S21, S22
Math 307, Multivariate Calculus	S21, S24
Math 200, Calculus with Analytic Geometry	S20
University of California, Davis:	
Mat 141, Euclidean and Non-Euclidean Geometry	Winter 2017
Mat 22A, Linear Algebra	S17, F17, F18
Mat 116A, Short Calculus	Fall 2016
Rice University:	
Math 699, Topology Seminar	S16, F15, S15, F14
Math 591, Graduate Teaching Seminar	S16, F15, S15, F14
Math 540/445, Graduate Algebraic Topology	Spring 2015
Math 499, Undergraduate Research Seminar	S16, F15, S15, F14
Math 368, Topics in Combinatorics (Graph Theory and Combinatorics)	F13, F14
Math 306, Elements of Abstract Algebra	Spring 2016
Math 112, Calculus and its Applications (Integral Calculus)	Spring 2014
Math 111, Fundamental Theorem of Calculus (Differential Calculus)	Fall 2015
University of Texas at Austin:	
M408K, Differential Calculus	Fall 2012
University of Texas at Austin – as a Teaching Assistant:	
M382C, Graduate Algebraic Topology	Fall 2009
M346, Applied Linear Algebra	Fall 2009
M408M, Vector Calculus	Fall 2008, Spring 2009
M408L, Integral Calculus	Spring 2008, Summer 2008
M408K, Differential calculus	Fall 2007
M408C, Sequence, Series, and Multivariable Calculus	Fall 2006, Spring 2007

SPONSORSHIP OF UNDERGRADUATE AND GRADUATE RESEARCH

Graduate Advising. (AY 2021-2024) Co-advisor of Ph.D. candidate Rayan Ibrahim, Virginia Commonwealth University.

Spatial graphs and applications. (AY 2022-2023) Advised 3 undergrads and 1 grad in projects on knots, spatial graphs, and applications to molecular biology. Funded by Jeffress Trust, VCU Quest, & NSF-DMS 2204148.

Invariants of theta-curves. (AY 2021-2022) Advised 1 grad student and 2 undergrads in projects on invariants of theta-curves and KnotInfo. Funding from Jeffress Trust.

Quotients of the Gordian graph. (Summer 2020) Co-authored research article with 2 undergrads on hyperbolicity of quotients of the Gordian graph with funding from HSURP, VCU.

Braid representatives and knot polynomials. (Spring 2019) Advised 1 undergrad and 1 grad student in development of Markov-chain based software to study braid, resulting in open-source software *BraidGenerator*. Advised another undergraduate on project in knot theory. UC Davis.

Knot invariants and neural knots. (Summer 2018) Supervised 1 undergrad in the construction of a feed-forward neural network to predict knot invariants. UC Davis.

Topological data analysis. (Fall 2014) Seven students were involved in a project to learn basic techniques in data analysis and newer topological methods like persistent homology. Rice University.

Combinatorial knot theory. (Spring 2015, Fall 2015) Directed projects on the Kauffman state sum formulation of the Alexander polynomial and fibered knots, Fox colorings and symmetric unions of knots. Rice University.

Topics in homology. (Spring 2016) Seven students pursued various projects including persistent homology and the study of symmetric unions via the singular homology of branched double covers. Rice University.

SERVICE TO THE PROFESSION

Referee work:

- *Algebraic & Geometric Topology*
- *American Mathematical Monthly*
- *Cambridge Philosophical Society*
- *Canadian Journal of Mathematics*
- *Compositio Mathematica*
- *Geometriae Dedicata*
- *Geometry & Topology Monographs*
- *Involve: A Journal of Mathematics*
- *Math. Proc. Cambridge Philosophical Society*
- *Mathematical Research Letters*
- *Michigan Mathematical Journal*
- *Pacific Journal of Mathematics*
- *Proceedings of the American Mathematical Society*
- *Proceedings of the Edinburgh Mathematical Society*
- *Proceedings of the London Mathematical Society*
- *Quantum Topology*
- *Springer Conference Proceedings*

Conference Co-organizer:

- *Richmond Geometry Meeting IV*, VCU (In-Person) to be held Aug 12-14, 2024. NSF DMS–2349810..
- *Richmond Geometry Meeting III*, VCU (In-Person) June 2-4, 2023. NSF DMS–2240741.
- *Richmond Geometry Festival II*, VCU (Online) May 27-2, 2022.
- *Richmond Geometry Festival I*, VCU (Online) June 10-11, 2021.
- *AMS Special Session on Developments in Spatial Graphs* Joint Meetings of the AMS (Online), January 6, 2021
- *Topology in Dimension 3.5: A conference in memory of Tim Cochran*, Rice University, Houston, June 1-4, 2016
- *AMS Special Session on Geometric Perspectives in Knot Theory*,
  AMS Sectional Meeting, Loyola University, Chicago, IL, October 2015.

NSF Review Panels: Division of Mathematical Sciences, 2020, 2023, 2024.

KnotInfo: With C. Livingston, I maintain and develop KnotInfo, an online database of knot invariants at `knotinfo.org`.

Virtual Low-Dimensional Topology: Co-organizer of Virtual Low-Dimensional Topology, an online community resource for topologists during Covid-19 at `https://sites.google.com/bc.edu/virtualtopology/home`.

Seminar Co-organizer: *Colloquium* VCU, AY 2021-2022. *Geometry and Topology Seminar* VCU, 2019-2024. *ALPS* VCU, AY 2020-2021, 2022-2023. *Topology Seminar* and *Working Topology Seminar* Rice, F2014 – S2016. *Heegaard Floer 'Computationar'* Rice, F2014 – S2015. *Teaching Seminar*: teaching strategies for graduate students, Rice, F2014 – S2016. *RTG Writing Seminar*: technical writing skills for graduate students, Rice, F2014. *Junior Topology Seminar*, University of Texas, 2010. *Python Learning Seminar*: code writing seminar for grad students, University of Texas, Summer 2012

Committee Member: *CHS Awards & Grants Committee*, VCU 23-24 *Graduate Affairs Committee*, VCU 22-24. *Undergrad Research Committee*, VCU 22-24. *Analysis Coordinator*, VCU 22-23. *Website Committee*, VCU 21-22.

Undergraduate Curriculum Committee, VCU, 20-22. *Covid-19 Prep Team*, VCU, 2020. *Rice University Colloquium Committee*, Rice University, F13 – S14. *Distinguished Women in Mathematics Committee*, University of Texas, F10 - S13

Group Co-Leader, (with J. Hom). *Women in Symplectic and Contact Geometry and Topology Workshop*, ICERM, Providence RI. July 2019.

Conference Tutor, *Summer School on Modern Knot Theory*: Aspects in Algebra, Analysis, Biology, and Physics. University of Freiburg, Freiburg, Germany, June 2017.

Co-organizer, *TA Training Workshop*: focus on student-centered calculus discussions, University of Texas, Summer 2012

SERVICE TO THE COMMUNITY

REU and Math Camps:

- *Geometry Summer Camp*, June 12-16, 2023. Co-organizer & teacher. (VCU Breakthroughs Project) `https://math.vcu.edu/events/event-items/geometry-summer-camp-june-12---16-2023.html`
- *VCU Knots and Graphs*, May 2015 – Co-organizer of an informal REU at VCU.
- Sam Houston State University, July 2015 – Research talk and activities on knots and knot invariants.
- Texas State University, July 2018 – Math Camp Colloquium Speaker.

Activity Leader: *Math Circle*, VCU, April 2022 (One Cut Theorem) and December 2022 (Knotty Knots).

Panelist & Co-rganizer:
Panelist in Career Panel at the Richmond Geometry Meeting III, June 2023.
Panelist in Career Panel at the SCMB Symposium in Math-Bio, 2021.
Sonya Kovalevsky Day, University of Texas, Spring 2013, Spring 2014.
Panelist at the Nebraska Conference for Undergraduate Women, Jan 2012.

Outreach volunteer
M-PACT middle school outreach, April 2018.
STEM for Girls Workshop, UC Davis, April 2017
Picnic Day, UC Davis, April 2017
Girls Exploring Math and Science, Houston Museum of Natural Science, February 2014;

Coordinator & Speaker, *Saturday Morning Math Group & Sunday Math Circle*, 2010 – 2012
Coordinator and speaker at University of Texas's 'math circle' for middle and high school students. Program info at `https://www.ma.utexas.edu/users/smmg/`.

Faculty sponsor and member, *Local AWM Chapter*, Rice University, 2013 – 2016

Mentoring
Research mentor/advisor of 1 Ph.D. graduate student, VCU, 2021-2024
Research mentor of 1 Masters student, VCU 2023-2024
Career mentor of 2 Ph.D. graduate students, VCU, 2019–2022.
Mentor (expositional writing projects): 2 master students, VCU 2020–2021.
Research mentoring: 9 undergraduates, VCU 2019–current.
Research mentoring: 3 undergraduates and 1 graduate in research projects, UC Davis, 2018-2019.
Research mentoring: numerous undergraduates, Rice University, 2016-2019.
Mentor of one undergrad in the *RTG Directed Reading Program*, University of Texas, Spring 2013

Sponsor, *AMC and AIME Exams*, University of Texas, Fall 2011- Fall 2012
Coordinated and proctored math competitions for Austin area grade school students.

Public lecturer, *Austin Science and Engineering Festival*, Austin Convention Center, October 2010
Gave the public lecture "How Do You Group It?" for adults and children.

SKILLS AND PROFESSIONAL AFFILIATIONS

Computer skills: Python, Matlab, Mathematica, R, SnapPy, LaTeX, HTML/CSS, Website design

Professional affiliations: American Mathematical Society (current), Association for Women in Mathematics (past)

Miscellaneous skills: "Published" musician