

CONSTANCE LEIDY

May 2016

EDUCATION

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|-----------|--|-----------------|
| 1998-2004 | Rice University | Houston, TX |
| | <ul style="list-style-type: none">• Doctor of Philosophy, Mathematics, May 2004.• Thesis advisor: Tim Cochran | |
| 1994-1998 | Tulane University | New Orleans, LA |
| | <ul style="list-style-type: none">• Bachelor of Science, Mathematics and Philosophy, May 1998, Magna Cum Laude. | |

EMPLOYMENT

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|--------------|--|------------------|
| 2013-present | Wesleyan University | Middletown, CT |
| | <ul style="list-style-type: none">• Associate Professor. | |
| 2007-2013 | Wesleyan University | Middletown, CT |
| | <ul style="list-style-type: none">• Assistant Professor. | |
| 2004-2007 | University of Pennsylvania | Philadelphia, PA |
| | <ul style="list-style-type: none">• Rademacher Instructor. | |

GRANTS

Research Grants

- National Science Foundation Grant (Principal Investigator), Noncommutative Techniques in Knot Theory, DMS-1105776, 2011-2015.
- National Science Foundation Grant (Principal Investigator), Noncommutative Low-Dimensional Topology, DMS-0805867, 2008-2012.

Workshop Grant

- National Science Foundation Grant (Principal Investigator), Workshop in Knot Concordance and Homology Cobordism, DMS-1042053, 2010-2011.

PUBLISHED PAPERS

1. T. Cochran, S. Harvey, and C. Leidy, 2-torsion in the n -solvable filtration of the knot concordance group, *Proceedings of the London Mathematical Society*, 102 (2011), 257-290, doi: 10.1112/plms/pdq020.
2. T. Cochran, S. Harvey, and C. Leidy, Primary decomposition and the fractal nature of knot concordance, *Mathematische Annalen*, 351 (2011), 443-508, doi: 10.1007/s00208-010-0604-5.
3. T. Cochran, S. Harvey, and C. Leidy, Derivatives of knots and second-order signatures, *Algebraic & Geometric Topology*, 10 (2010), 739-787, doi: 10.2140/agt.2010.10.739.
4. S. Friedl, C. Leidy, and L. Maxim, L^2 -Betti numbers of plane algebraic curves, *Michigan Mathematical Journal*, 58 (2009), 411-421, doi:10.1307/mmj/1250169069.
5. T. Cochran, S. Harvey, and C. Leidy, Knot concordance and higher-order Blanchfield duality, *Geometry & Topology*, 13 (2009), 1419-1482, doi: 10.2140/gt.2009.13.1419.
6. T. Cochran, S. Harvey, and C. Leidy, Link concordance and generalized doubling operators, *Algebraic & Geometric Topology*, 8 (2008), 1593-1646, doi: 10.2140/agt.2008.8.1593.
7. C. Leidy and L. Maxim, Obstructions on fundamental groups of plane curve complements, *Real and Complex Singularities, Contemporary Mathematics*, 459 (2008), 117-130, doi: 10.1090/conm/459.
8. C. Leidy and L. Maxim, Higher-order Alexander invariants of plane algebraic curves, *International Mathematics Research Notices*, article ID 12976 (2006), 23 pages, doi: 10.1155/IMRN/2006/12976.
9. C. Leidy, Higher-order linking forms for knots, *Commentarii Mathematici Helvetici* 81 (2006), 755-781, doi: 10.4171/CMH/72.

PREPRINTS (SUBMITTED FOR PUBLICATION)

10. S. Friedl, C. Leidy, M. Nagel, and M. Powell, Twisted Blanchfield pairings and decompositions of 3-manifolds, submitted for publication, arXiv: 1602.00140.

WORK IN PROGRESS

T. Cochran, S. Harvey, P. Horn, and C. Leidy, Noncommutative knot Floer homology, in preparation.

RESEARCH SUPERVISION

Ph.D. thesis advisor for James Kreinbuhl, Spring 2013-present.
 Ph.D. thesis advisor for John Burke, Spring 2008-Spring 2011, Thesis title: *On infection by string links and new structure in the knot concordance group*, submitted for publication.
 Co-supervisor of Nathan Fieldsteel's undergraduate research project, Fall 2008-Spring 2010, Thesis title: *A discussion of higher-order Alexander modules*.
 Co-supervisor of Erik Holum's undergraduate research project, Fall 2008-Spring 2010, Thesis title: *Calculating the degree of higher order Alexander polynomials*.
 Supervisor of Lauren Alpert's undergraduate research project, Spring 2008, Honors presentation title: *A Legendrian unknotting move*.

CONFERENCES/MEETINGS ORGANIZED

Organizer for *Knot Concordance and Homology Cobordism Workshop*, Wesleyan University, July 2010 (partially funded by DMS-1042053).
 Co-organizer of the *Low-dimensional Topology* Special Session at the Spring Topology and Dynamics Conference, March 2013.
 Co-organizer of the *Low-dimensional Topology* Special Session at AMS sectional meeting, March 2012.
 Co-organizer of the *Low-dimensional Topology* Special Session at AMS sectional meeting, October 2008.
 Co-organizer of *Geometry Festival* conference, University of Pennsylvania, Spring 2006.

INVITED ADDRESSES AT CONFERENCES

The Doubling Operad, Topology in dimension 3.5: A conference in memory of Tim Cochran, Rice University, June 2016.
Searching for structure in the knot concordance group, Stratified spaces in geometric and computational topology and physics, University of Wisconsin-Madison, April 2015.
Knots and the fourth dimension, Sectional MAA Conference at Southern Connecticut State University, November 2014.
The fractal nature of knot concordance, Sectional AMS Conference at University of Nevada, Las Vegas, April 2011.
Calculating non-commutative topological invariants of line arrangements, Sectional AMS Conference at College of the Holy Cross, April 2011.
Knot Concordance and Higher-Order Blanchfield Duality, Mathematical Sciences Research Institute, Low Dimensional Topology Workshop, August 2008.
Second-order signatures, Knot Theory: Fifty Years Since Fox and Milnor, Brandeis University, June 2008.
Higher-order degrees and obstructions on the fundamental group of algebraic curve complements, Singularities in Geometry and Topology Conference at Courant, March 2008.
Calculating the higher-order degrees, National AMS Conference at New Orleans, January 2007.
Higher-Order Linking Forms, Knots and Their Manifold Stories Conference at Banff, May 2004.
New Linking Form Invariants of 3-Manifolds, National AMS Conference at Phoenix, January 2004.
Higher-Order Linking Forms for 3-Manifolds and Knots, Borders in 3-Dim Topology Conference at Ohio State University, December 2003.
Generalized Blanchfield Forms for Knots and 3-Manifolds, Lehigh Geometry and Topology Conference, June 2003.
Generalized Blanchfield Forms for Knots and 3-Manifolds, Sectional AMS Conference at Louisiana State University, March 2003.

COLLOQUIA AND SEMINAR TALKS

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- Knot Concordance, Fractals, and Operads*, University of Georgia, Topology Seminar, March 2012.
- Operads in knot theory*, Rice University, Topology Seminar, March 2011.
- The complexity of the structure of the knot concordance group*, Dartmouth College, Geometry & Topology Seminar, October 2009.
- The complexity of the structure of the knot concordance group*, University of Pennsylvania, Geometry-Topology seminar, January 2009.
- The complexity of the structure of the knot concordance group*, University of Massachusetts Amherst, Valley Geometry Seminar, November 2008.
- The complexity of the structure of the knot concordance group*, The Graduate Center, City University of New York, Topology seminar, October 2008.
- Knot concordance and Blanchfield duality*, Boston College, Geometry and Topology Seminar, March 2008.
- Higher-order degrees and obstructions on the fundamental group of algebraic curve complements*, Rice University, Topology Seminar, March 2008.
- Higher-order degrees and obstructions on the fundamental group of algebraic curve complements*, Columbia University, Geometric Topology Seminar, April 2007.
- Knots and the fourth dimension*, Bryn Mawr Colloquium, January 2007.
- Higher-order Alexander invariants of knots, 3-manifolds, and plane algebraic curves*, University of California at Davis, Geometry/Topology Seminar, February 2006.
- Higher-order Alexander invariants of plane algebraic curves*, Georgia Institute of Technology, Topology Seminar, February 2006.
- Knot Diagram Moves*, Haverford College Colloquium, November 2005.
- Algebraic Invariants of Knots (Oops! – Knots): Why non-commutativity is a good thing*, Swarthmore College Colloquium, November 2005.
- Higher-order Alexander invariants of plane algebraic curves*, University of Illinois at Chicago, Algebraic Geometry Seminar, October 2005.
- Higher-order Alexander invariants of plane algebraic curves*, Rice University Topology Seminar, August 2005.
- Higher-Order Linking Forms: Theorem and Conjecture*, Indiana University Topology Seminar, July 2005.
- Algebraic Invariants of Knots (Oops! – Knots): Why non-commutativity is a good thing*, Lafayette-Lehigh Geometry/Topology Seminar, April 2005.
- Algebraic Invariants of Knots (Oops! – Knots): Why non-commutativity is a good thing*, Claremont Topology-Geometry Seminar, March 2005.
- Algebraic Invariants of Knots*, Bryn Mawr Colloquium, September 2004.

RESEARCH TALKS FOR UNDERGRADUATES

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- Knots and the fourth dimension*, Wesleyan University, Math Club Talk, September 2014.
- Knots and the fourth dimension*, Wesleyan University, Math Club Talk, October 2011.
- Knots and the fourth dimension*, University of Connecticut, Math Club Talk, September 2009.
- Knots and the fourth dimension*, Smith College, Math Lunch Talk, March 2009.
- Algebraic Invariants of Knots (Oops! – Knots): Why non-commutativity is a good thing*, University of Pennsylvania Undergraduate Colloquium, November 2005.

ADDITIONAL RESEARCH TALKS

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- Non-commutative filtrations*, Wesleyan University, Topology et al seminar, September 2011.
- Knots and operads*, Wesleyan University, Topology et al seminar, September 2010.
- Commutator series and the derived series localized at P*, Wesleyan University, Algebra seminar, September 2009.
- Torsion in the knot concordance group*, Wesleyan University, Topology et al seminar, September 2009.
- The complexity of the structure of the knot concordance group*, Wesleyan University, Topology et al seminar, October 2008.
- Finding an algorithm to study a problem in the intersection of algebraic geometry, low-dimensional topology, and non-commutative algebra*, Wesleyan University, Topology et al seminar, February 2008.
- New examples of non-slice knots*, Wesleyan University, Topology et al seminar, September 2007.

New examples of non-slice knots and links, University of Pennsylvania Geometry and Topology Seminar, January 2007.

Higher-order invariants of knots, 3-manifolds, and plane algebraic curves, Wesleyan University, February 2006.

Higher Order Alexander invariants of plane algebraic curves, University of Pennsylvania Geometry and Topology Seminar, October 2005.

Higher-Order Linking Forms, University of Pennsylvania Geometry and Topology Seminar, September 2004.

New Linking Form Invariants of 3-Manifolds, Topology Seminar, Rice University, September 2003.

Generalized Blanchfield Linking Forms and Genetic Infection, Topology Seminar, Rice University, September 2003.

An Upper Bound for the Rate of Growth of the Number of Knots with n Crossings, Tulane University, Spring 1998.

An Upper Bound for the Rate of Growth of the Number of Knots with n Crossings, University of Tennessee, Knoxville, Summer 1997.

PROFESSIONAL SERVICE

Referee for *Algebraic & Geometric Topology Proceedings of the AMS* and *International Mathematics Research Notices* journals.

Panel member for the NSF Topology and Geometric Analysis review panel.

Mentor for Association for Women in Mathematics workshop, January 2012.

Co-organizer of Women in Math event at the Georgia International Topology Conference, May 2009.

Panel member for the Institute for Advanced Study's Women and Mathematics program, May 2006, May 2008 and May 2010.

Panel member for *How to get a job: A panel discussion directed toward graduate students*, Eastern Pennsylvania and Delaware Section of the MAA, November 2004.

COURSES TAUGHT AT WESLEYAN

Math 117: Introductory Calculus, Fall 2008, Fall 2013, Spring 2014 (CPE).

Math 121: Calculus I, Part I, Fall 2007.

Math 122: Calculus I, Part II, Spring 2008, Spring 2009, Spring 2011, Fall 2013, Fall 2014.

Math 222: Multivariable Calculus, Fall 2009, Fall 2010, Fall 2011, Spring 2013.

Math 242: Knot Theory, Fall 2008.

Math 244: Point-Set Topology, Spring 2010, Spring 2014, Spring 2016.

Math 252: Differential Forms, Spring 2011.

Math 523: Topology I, Part I, Fall 2007, Fall 2011.

Math 524: Topology I, Part II, Spring 2009, Spring 2010, Spring 2014.

Math 525/526: Topology II, Spring 2008, Fall 2009, Fall 2010, Spring 2013, Fall 2014, Spring 2016.

UNDERGRADUATE TUTORIALS

Jae Cha, Spring 2011.

Erik Holum, Fall 2008; senior thesis tutorial, Fall 2009, Spring 2010.

Nathan Fieldsteel, Fall 2008.

David Wilkinson, teaching assistantship, Fall 2008.

Lauren Alpert, Spring 2008.

GRADUATE TUTORIALS

James Kreinbuhl, Spring 2013-Spring 2016.

John Burke, Fall 2007-Spring 2011.

Megan Heenchan, Spring 2011.

Brett Smith, Spring 2011.

Charlie McIntosh, Spring 2008-Spring 2009.

Weiwei Pan, Fall 2008, Spring 2009.

SERVICE TO MATHEMATICS AND COMPUTER SCIENCE DEPARTMENT

Member of hiring committee, Spring 2014, Spring 2015.

Member of Graduate Education Committee, Fall 2010-Fall 2011, Fall 2013-Fall 2014, Spring 2016.
Member of Departmental Advisory Committee, 2007-2008, Spring 2013.
Member of Curriculum Committee, Fall 2011, Spring 2013, Spring 2016.
Member of DOTCOM, 2009-2010.
Departmental Colloquium coordinator, Fall 2009.
Co-supervisor for Megan Heenehan's preliminary exam special project, Fall 2009.
Faculty advisor of Math Club, 2008-2009.
Member of CAPCOM, 2008-2009.
Committee member for Daniel Bravo-Vivallo's Ph.D. defense, Spring 2011.
Committee member for Weiwei Pan's Ph.D. defense, Spring 2009.
Committee member for Charlie McIntosh's, Mehdi Khorami's and David White's special preliminary exams.
Committee member for Per Stinchcombe's honors presentation.

SERVICE TO WESLEYAN OUTSIDE DEPARTMENT

Member of Ad-Hoc Advising Workgroup, Fall 2014.
Member of Ad-Hoc Space Committee, Fall 2014.
Faculty advisor to the Graduate Judicial Board, Fall 2013-Spring 2014.
Member of steering committee for the Women's Faculty Caucus, Spring 2014.
Chair of Graduate Council Stipend Committee, Fall 2011.
Member of Ad-Hoc Committee on Educational Programs, 2010-2011.
Member of the Wesleyan Summer Experience Grant Selection Committee, Spring 2010, Spring 2011.

COMMUNITY OUTREACH

Instructor for the Center for Prison Education, Introductory Calculus, Spring 2014.
Instructor for Rice University Mathematical Institute for Young Women, Summer 2008.
Instructor for Expanding Your Horizons math and science program for middle school girls, Spring 2006 and Spring 2008.