Ying Hu

Email: yinghu@unomaha.edu
https://yinghu-math.github.io

(updated 12/2018)

Personal Information

- Chinese citizen
- U.S. permanent resident

Academic Appointment

2018/08 - present	Assistant professor (Tenure-track) University of Nebraska Omaha
2015/08 - 2017/12	CIRGET postdoctoral fellow Université du Québec à Montréal/McGill University, Montréal, Canada Mentor: Steven Boyer

Visiting Position

2018 Spring	Department of Mathematics, University of Georgia, Athens, GA

Education

08/2015	Ph.D. in Mathematics, Louisiana State University, U.S. Thesis Adviser: Oliver Dasbach Thesis: Left-orderability, Cyclic Branched Covers and Representations of the Knot Group
05/2010	M.S. in Mathematics, Louisiana State University, U.S.
06/2008	B.S. in Math & Applied Math, Beijing Normal University, Beijing, China

Awards/Honor

2014-2015	VIGRE Traineeship, Louisiana State University
01/2014	Distinguished Graduate Student Talk in Knots in Washington XXXVII
2008-2012	Graduate School Enhancement Award, Louisiana State University
2008-2012	Graduate School Supplement Award, Louisiana State University

RESEARCH

Research Interests

Low-dimensional Topology, including topics:

- Foliations and contact structures on 3-manifolds
- Left-orderability of groups and group actions on a 1-manifold
- Representation of 3-manifold groups
- Quantum knot invariants, colored Jones polynomials

Publication and preprint

- (with S. Boyer) *Taut foliations in branched cyclic covers and left-orderable groups*, 40 pages, 2017. submitted, arXiv:1711.04578, 2017,

- *Left-orderability and cyclic branched coverings,* Algebr. Geom. Topol. 15 (2015), no. 1, 399-413.

Invited Talks

- Groups Semigroups and Topology Seminar, University of Nebraska, Lincoln, October 2018
- Conference "Perspectives on bordered Heegaard Floer theory", Montreal, Canada, May 2018
- Topology Seminar University of Texas at Austin, TX, April 2018
- Topology Seminar at University of Georgia joint with Georgia Tech, Athens, GA, February, 2018
- American Mathematical Society Joint Meeting, San Diego, January 2018
- Canadian Mathematical Society Winter Meeting, University of Waterloo, December 2017
- Geometric Group Theory Seminar, McGill University, November 2017
- CIRGET Geometry and Topology Seminar, UQAM, November 2017
- Mathématical Congress of the Americas, Montreal, July 2017
- Canadian Mathematics Society Winter Meeting, Niagara Falls, December 2016
- Geometry and Topology Seminar University of Georgia, February 2016
- Canadian Mathematics Society Winter Meeting, Montreal, December 2015
- Geometric Group Theory Seminar, McGill University, November 2015
- Diffeomorphism Groups: algebra, topology, homology, UC Berkeley, June 2015
- Graduate Student Conference in Algebra, Geometry and Topology, Temple University, May 2015
- Geometry and Topology Seminar, Tulane University, March 2015
- Central Spring Sectional Meeting, Michigan State University, East Lansing, MI, March 2015
- Spring Eastern Sectional Meeting Georgetown University, Washington, DC, March 2015
- Conference on Knot Theory and Its Applications to Physics and Quantum Computing: 60th birthday of Józef H Przytycki, University of Texas at Dallas, Jan 2015
- Topology Students Workshop, Georgia Institute of Technology, June 2014
- Distinguished graduate student talk at Knots in Washington XXXVII, January 2014
- AMS Sectional Meeting, University of South Florida, March 2011

Expository Talks

- *On the AJ conjecture*, VIR Seminar on Knot theory, LSU, Fall 2013.
- *Examples of 3-dimensional manifolds*, G.E.A.U.X. Program, LSU, August 2013.
- *Volume of hyperbolic alternating link complements*, VIR Seminar on Algorithms and computations in Knot Theory, LSU, Spring 2013.
- *The A-polynomial and its computation*, Alpha-Math Workshop, LSU, May 2012.
- *Twisted Alexander polynomials and the Reidemeister torsion*, Junior topology seminar, LSU, Spring 2012.
- *Topology of Surfaces*, G.E.A.U.X. Program, LSU, August 2009.

Conferences and Workshops

- *Contact Structures, Laminations and Foliations*, LMU in Munich, Germany, September 5 - 9, 2016.
- *Advanced School on Geometric Group Theory and Low-Dimensional Topology*, ICTP, Trieste, Italy, May 23 - June 3, 2016.
- *Representations of 3-manifold groups, geometric structures and exact computations*, Institute de Mathématique de Jussieu, June 22 - 26, 2015.
- *Moab topology conference*, Utah State University, May 18 - 21, 2015.
- *52nd Texas geometry and topology conference*, UT Austin, November 14- 16, 2014.
- *Orderable groups*, Cajón del Maipo, Chile, September 1 - 5, 2014.
- *Wasatch topology conference*, Park City, Utah, August 22 - 24, 2014.
- *Geometric Structures and Discrete Groups*, UT Austin, May 2 - 4, 2014.

- *AMS Joint Meetings* & Six crash courses on Mapping Class Groups, Baltimore, January 14-18, 2014.
- *Geometric topology in Cortona*, Tuscany, Italy, June 3 - 7, 2013.
- *Cube complexes and 3-Manifolds*, University of Illinois at Chicago, May 20 - 30, 2013.
- *3-Manifolds: Heegaard splittings, the curve complex, and hyperbolic geometry*, Rice University, Houston, April 19 - 21, 2013.
- *Moab topology conference*, Utah State University, May 30 - June 1, 2012.
- *Faces of geometry: 3-manifolds, groups* & *singularities*, Columbia University, New York, June 6 -10, 2011.
- *Examples of geometries*, Ohio State University, Columbus, May 23 - 29, 2011.
- *AMS Joint Meetings*, New Orleans, January 6 - 9, 2011.
- *Knot in Poland III*, Stefan Banach Mathematical Center, Warsaw/Bedlewo, Poland, July 18 - August 04, 2010.
- *First National Forum of Young Topologists*, Tulane University, New Orleans, November 13 -15, 2009.

TEACHING AND MENTORING

Teaching Experience

University of Nebraska Omaha

- Instructor of Calculus I (Fall 2018)

  This is a 5 credit hours calculus course. Class consists of 16 students with various backgrounds. Inquiry-based learning strategies were introduced in lectures of this course.

McGill University

- Instructor of Calculus I (Fall 2015, Fall 2016, Fall 2017)

  This is a 3 credit hours calculus course. Class consists of over 300 students with various backgrounds from all over the world. I was responsible for delivering lectures in a large auditorium.

Louisiana State University

- Instructor of Calculus I (Summer 2013)

  This is a 5 credit hours calculus course. Class consists of 40 students in science. I was fully in charge of all aspects of the course.
- Co-instructor of Calculus recitations (Fall 2012, Fall 2013)

  This is part of a 5 credit hours calculus course. Class consists of 40 students. I was in charge of teaching, grading and leading discussion sections.
- Instructor of Pre-Calculus (Fall 2011)

  This is a pre-calculus course designed to prepare students for calculus classes. A section consists of 40 students. I was responsible for lecturing and tutoring multiple sections.
- Instructor of Trigonometry (Spring 2010, Spring 2014)

  This is a 3 credit hours Trigonometric course with 40 students in each section. The class is a part of FIPSE-funded Roadmap to Redesign (R2R) program developed by the National Center for Academic Transformation. I was responsible for lecturing and tutoring multiple sections.
- Instructor of Collage Algebra (Fall 2010)

  This is 3 credit hours College Algebra course with 40 students in each section. It is also a part of R2R program. I was responsible for lecturing and tutoring multiple sections in one semester.

Undergraduate Mentoring

Vertically Integrated Research (VIR) on Topology at LSU (2008-2015)

Mentored groups of senior undergraduate students on course projects, guided them in the learning of the material, assisted them in solving problems and preparing presentations.

Teachers' Workshops and conferences

- *National Council of Teachers of Mathematics Regional Conference and Exposition*, Kansas City, November 2018
- *Teaching Techniques for Instructors Workshop*, McGill University, September 2017.
- *Learning to Teach Day*, McGill University, November 2016.

PROFESSIONAL ACTIVITIES

Academic Services

- Co-organizer of "Geometric group theory and topology in low dimensions" special session at Canadian Mathematics Society Winter Meeting, Niagara Falls, 2016.
- Co-organizer of "CIRGET working group in Low dimensional topology," Spring 2016, Fall 2017
- Referee:
  Journal of the London Mathematical Society,
  Journal of knot theory and its ramification.

Synergistic Activities

(1) *Treasurer of Association for Women in Mathematics LSU Student Chapter (2014-2015)*

Helped organize (under)graduate student breakfast events with successful women mathematicians, assisted in planning workshops and panel discussions to provide guidance for undergraduate students on career development and graduate school applications.

(2) *G.E.A.U.X Program (2009, 2013)*

Served as a committee member of this orientation program for incoming mathematics graduate students, participated in panel discussion on aspects of graduate study, gave and organized topology presentations.

(3) *High School Math Contest at LSU (2013)*

Volunteered to help run a high school math contest held at LSU, engaged with high school students, supervised the competition.

Departmental Services

- Memeber of the Upper Colloquium Committee

Helped to develop department's upper division colloquium, create concentrations for math majors, and organize activities that will benefit undergraduate math majors.

OTHER SKILLS

Computational Software

Python, Mathematica, SnapPy, Sage, MATLAB, Singular, Gap

Languages

Proficient in Chinese and English; Working knowledge in French