

EMILY SHINKLE

Department of Mathematics
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EDUCATION

University of Illinois at Urbana-Champaign

Ph.D., Mathematics, expected 2023, advisor: Chris Leininger
M.S., Mathematics, 2018

Cedarville University

B.A., Mathematics, 2016
B.A., Integrated Mathematics Education, 2016
Degrees conferred with highest honor

RESEARCH INTERESTS

Geometric topology and geometric group theory, specifically mapping class groups and related objects

AWARDS & FELLOWSHIPS

2021 Image of Research Semifinalist

University of Illinois at Urbana-Champaign
Submission title: *Map of Divisions of a Sphere into Four Triangles*

Dr. Lois M. Lackner Mathematics Fellowship

University of Illinois at Urbana-Champaign, Spring 2021

Graduate Assistance in Areas of National Need (GAANN) Fellowship

University of Illinois at Urbana-Champaign, Fall 2018

Faculty Scholarship Award

Cedarville University, 2016
Awarded to students graduating with 4.0 GPA

Heyd Math Award

Cedarville University, 2015
Awarded to one outstanding sophomore or junior mathematics major

PUBLICATIONS

Finite Rigid Sets in Flip Graphs

To appear in Transactions of the American Mathematical Society
arXiv:2010.05363

Finite Rigid Sets in Arc Complexes

In: Algebraic & Geometric Topology 20.6 (2020), pp. 3127–3145
arXiv:1909.08762

INVITED TALKS

2022 Joint Mathematical Meetings

Special Session on “Geometric Group Theory”

Seattle, Washington

Finite Rigid Sets in Combinatorial Complexes Associated to Surfaces, January 2022

Geometry & Topology Seminar

Yale University

Finite Rigid Sets in Combinatorial Complexes Associated to Surfaces, May 4, 2021

2021 Spring Southeastern Sectional Meeting of the AMS

Special Session on “Groups, Geometry, and Topology”

Finite Rigid Sets in Simplicial Complexes Associated to Surfaces, March 2021

Bristol Junior Geometry Seminar

University of Bristol

The Flip Graph, December 8, 2020

2020 Fall Southeastern Sectional Meeting of the AMS

Special Session on “Interactions between algebra, geometry and topology in low dimensions”

University of Tennessee at Chattanooga

Finite Rigid Sets in Simplicial Complexes Associated to Surfaces, October 2020

Geometry Seminar

University of Virginia

Finite Rigid Sets in Simplicial Complexes Associated to Surfaces, October 6, 2020

OTHER TALKS

2021 Summer Research Virtual Presentations

NSF Mathematical Sciences Graduate Internship (MSGI) program

Understanding Discrete Fracture Networks through Spectral Graph Theory, August 12, 2021

Science Café

Los Alamos National Laboratory

Understanding Discrete Fracture Networks through Spectral Graph Theory, August 5, 2021

Tech Topology Conference

Georgia Institute of Technology

Finite Rigid Sets in Flip Graphs, December 2020

Topology Seminar

Rice University

Finite Rigid Sets in Simplicial Complexes Associated to Surfaces, October 19, 2020

Topology Students Workshop

Georgia Institute of Technology

Finite Rigid Sets in Simplicial Complexes Associated to Surfaces, July 2020

Graduate Student Topology and Geometry Conference 2020

Indiana University Bloomington

April 2020, *cancelled*

2020 Eastern Illinois Integrated Conference in Geometry, Dynamics, and Topology

Eastern Illinois University

March 2020, *cancelled*

AWM Mini-Symposium

University of Illinois at Urbana-Champaign

Rigidity and the Arc Complex, February 2020

Tech Topology Conference

Georgia Institute of Technology

Finite Rigid Sets in the Arc Complex, December 2019

GEAR Seminar

University of Illinois at Urbana-Champaign

Finite Rigid Sets in Arc Complexes, September 26, 2019

RESEARCH EXPERIENCES & PROGRAMS

Los Alamos National Laboratory

Graduate Student Intern through NSF Mathematical Sciences Graduate Internship (MSGI) program

Computational Earth Science Group

Summer 2021

Simons Center for Geometry and Physics, Stony Brook University

Participant

Program: *Graduate school on Geometry of Teichmuller spaces*

April 2019

Program for Interdisciplinary and Industrial Internships at Illinois

Researcher

Topic: *Machine Learning: Algorithms and Representations*

Summer 2017

TEACHING EXPERIENCES

University of Illinois at Urbana-Champaign

Teaching Assistant, Calculus, Fall 2021

Head Teaching Assistant, Applied Linear Algebra, Fall 2020*

Head Teaching Assistant, Applied Linear Algebra, Spring 2020*

Teaching Assistant, Preparation for Calculus, Fall 2019*†

Teaching Assistant, Calculus II, Fall 2018*

Head Teaching Assistant, Calculus II, Spring 2018*

Teaching Assistant, Calculus II, Fall 2017*

Teaching Assistant, Calculus III, Spring 2017*

Teaching Assistant, Calculus II, Fall 2016*

*On the *List of Teachers Ranked as Excellent by their Students*

†Part of Merit Program for Emerging Scholars

Summer Illinois Mathematics Camp

University of Illinois at Urbana-Champaign

Course Developer and Instructor, Maximize Your Winnings (Game Theory), Summer 2018

Northwestern High School

Springfield, Ohio

Student Teacher, Algebra I, Advanced Geometry, Spring 2016

The COVE, Academic Enrichment Center

Cedarville University, Cedarville, Ohio

Tutoring Lab Worker, Fall 2013—Fall 2015

Cedarville University

Cedarville, Ohio

Grading Assistant, Fall 2014—Spring 2016

Math Circle Instructor, Fall 2014

Kosovo Leadership Academy

Mitrovica, Kosovo

Volunteer Teacher, Newton and Physics, May 2015

MENTORING/ADVISING EXPERIENCES

Illinois Geometry Lab

Graduate Student Mentor for undergraduate research project

Topic: *Travelling along straight lines on an infinite surface with finite area*

Fall 2020

Mathematics Undergraduate Advising Office, University of Illinois at Urbana-Champaign

Orientation leader and advisor to incoming mathematics majors

Summer 2019, Summer 2020

CERTIFICATES

Graduate Teacher Certificate

Center for Innovation in Teaching and Learning, University of Illinois at Urbana-Champaign

April 2018

LEADERSHIP & OUTREACH

Department of Mathematics

University of Illinois at Urbana-Champaign

Panelist, Teaching for the Department of Mathematics, TA Training, Fall 2021

Practice Teaching Facilitator, TA Training, Fall 2021

Undergraduate Advisory Committee

Department of Mathematics, University of Illinois at Urbana-Champaign

Member, Fall 2020—Spring 2021

Illinois Graduate Student Chapter of the Association for Women in Mathematics

University of Illinois at Urbana-Champaign

President, Summer 2018—Spring 2020

Secretary, Summer 2017—Spring 2018

Volunteer, Sonia Math Day, Fall 2017, Fall 2018, Spring 2019

Volunteer, Getting Engaged in Math and Science (GEMS) Workshop, Spring 2018, Spring 2019

Illinois Geometry Lab

University of Illinois at Urbana-Champaign

Volunteer, Gathering for Gardner Math Carnival, January 2017

Volunteer, Science at the Market, Fall 2016

Center for Innovation in Teaching and Learning

University of Illinois at Urbana-Champaign

Microteaching Facilitator, Graduate Academy for College Teaching, August 2018

Small Group Session Instructor, Graduate Academy for College Teaching, August 2019

GROW Conference

University of Illinois at Urbana-Champaign

AWM Student Chapter Co-organizer, October 2019