

Noelle Sawyer

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Employment **Southwestern University**, Georgetown, TX
Assistant Professor of Mathematics August 2020 - Present
Genevieve & Thatcher Atkin Junior Professor August 2023 - June 2026

Education **Wesleyan University**, Middletown, CT
Ph.D. in Mathematics May 2020
Advisor: David Constantine
Thesis: Partial marked length spectrum rigidity of negatively curved surfaces
Vassar College, Poughkeepsie, NY
B.A. in Mathematics and History May 2014

Research Interests My research interests are in dynamics, geometry and topology. I am particularly interested in thermodynamic formalism, Riemannian geometry, and marked length spectrum rigidity.

Papers **Local product structure for equilibrium states of geodesic flows and applications.**
With Benjamin Call, David Constantine, Alena Erchenko, and Grace Work
Preprint. Posted to arXiv March 2024.
Unique equilibrium states for geodesic flows on flat surfaces with singularities.
With Benjamin Call, David Constantine, Alena Erchenko, and Grace Work
International Mathematics Research Notices, September 2022.
Phase transitions for the geodesic flow of a rank one surface with nonpositive curvature.
With Keith Burns, Jérôme Buzzi, and Todd Fisher
Dynamical Systems, June 2021.

Math Community **Big Ideas in Dynamics** Spring 2023 - Present
An AIM Research Community.
Co-organized with Benjamin Call.
Infinite Possibilities Conference April 2025
Plenary Speaker.
Math for All: Austin April 2025
Plenary Speaker.
Big Ideas in Dynamics and Geometry September 2024
A hybrid conference at UIC.
Co-organized with Benjamin Call and Laura Schaposnik.
Mid-Atlantic Regional Math Alliance Conference April 2024
Keynote Speaker.

A Word Problem	September 2023
A special session at Science Writers, co-organized with Sam Hansen, Kenna Hughes-Castleberry, and Sadie Witkowski.	
Underrepresented Students in Topology and Algebra Research Symposium (USTARS)	March 2023
Keynote Speaker.	
Math Equity Forum	October 2022
University of Toronto.	
Austin Math Teachers' Circle	March 2022
University of Texas at Austin.	
Hidden Norms Webinar	February 2022
Semi-Norm Speaker (Breaking Norms)	
Black in Math Week	November 2020
Co-organized with Marissa Loving, Candice Price, Dwight Williams II, Michole Enjoli, and more.	
Midwest Dynamical Systems Early Career Conference	November 2020
Co-organized with Ben Call, Ivan Chio, and Kitty Yang	

Media

Focus on Diversity	August 2024
<i>A Conversation with Noelle Sawyer and Andrés Vindas Meleéndez</i>	
An MAA Focus Article by Alicia Prieto-Langarica.	
A Black Mathematical History	March 2024
A film review in <i>Nature</i> .	
Mathematically Gifted and Black Honoree	February 2024
A profile for Black History Month.	
Meet a Mathematician	December 2023
A video interview.	
A Call to Defend Bodily Autonomy in the Math Community	March 2023
Letter to the Editor in the AMS Notices.	
Modern Mathematics Confronts its White, Patriarchal Past	August 2021
An article in <i>Scientific American</i> .	
Written By Rachel Crowell.	
Who Will Celebrate You?	June 2021
A blog post on the AMS inclusion/exclusion blog.	
The First Black in Math Twitter Event	December 2020
Appeared in MAA Math Values Blog and the NAM newsletter	
Authored with Omayra Ortega.	
#BlackInMathWeek	November 2020
An episode of the podcast Relatively Prime.	
Hosted with Michole Enjoli.	

Mentoring

EDGE	June 2025
Real Analysis Instructor.	
Roots of Unity	June 2024
Geometry/Topology Mentor.	
Honors Thesis Supervision	Fall 2022 - Spring 2023
<i>Orbits on Translation Surfaces: Introducing Barriers and Game-Building</i>	
with Rowan Via.	
Independent Study	Spring 2022
<i>Math Communication</i>	
with Emily Thompson.	

Mentor at Topology Students Workshop July 2020
 Georgia Institute of Technology
Directed Reading Program, Wesleyan University
 Discrete Geometry Spring 2019
 Hyperbolic Geometry Fall 2018

Invited Talks

Rice University Math Colloquium September 2025
Modern Mathematics Workshop at SACNAS October 2024
 AIM invited speaker.
University of Texas at Austin Topology Seminar April 2024
University of Wisconsin Madison Dynamics Seminar Feb 2024
University of Illinois Chicago Dynamics Seminar Feb 2024
South Central Topology Conference October 2023
Columbia University Geometry Seminar April 2023
Columbia University Undergraduate Colloquium April 2023
University of Houston Dynamics Seminar March 2023
A Dynamical Weekend at Wesleyan March 2023
 Wesleyan University.
George Mason University Geometry Seminar November 2022
Women in Groups, Geometry, and Dynamics June 2022
Special Session. AWM Research Symposium.
 University of Minnesota.
Smith College Brown Bag Series April 2022.
The College of New Jersey Colloquium March 2022
OURFA²M² Our Stories December 2021
Wake Forest University Colloquium November 2021
Rice University Topology Seminar April 2021
Indiana University Geometry Seminar March 2021
Bryn Mawr Distressing Math Collective March 2021
University of Washington Rainwater Seminar February 2021
Cal State East Bay Colloquium January 2021
Women of Color in Topology and Algebra January 2021
AMS-AWM Special Session. Joint Math Meetings.
Boston College Dynamics Seminar October 2020
Graduate Student Online Anything Topology Seminar April 2020
University of Virginia Geometry Seminar February 2020
Fractal Geometry, Dynamics, and Applications January 2020
AMS Special Session. Joint Math Meetings. Denver.
Ohio State University Topology Seminar November 2019
Yale University Geometry and Topology Seminar September 2019
Midwest Dynamical Systems Early Career Conference May 2019
 Ohio State University.
University of Hartford Undergraduate Colloquium April 2019
Statistical and Geometrical Properties of Dynamical Systems October 2018
AMS Special Session San Francisco State University.

Contributed Talks

Talk Math with Your Friends July 2020
Poster Presentations by Women Graduate Students January 2020
AWM Workshop. Joint Math Meetings. Denver.
Graduate Student Conference in Algebra, Geometry and Topology June 2019
 Temple University. Area and partial length spectrum data.

Graduate Student Topology and Geometry Conference UIUC. Area and partial length spectrum data.	March 2019
Graduate Student Seminar Wesleyan University.	
- Ends of groups.	November 2019
- Building ε -dense closed geodesics.	March 2019
- Fun with discrete geometry and polygonal curvature.	September 2018
- Geodesic currents and the boundary at infinity.	April 2018
- It's Chaotic: an introduction to topological entropy.	October 2017
- Hadamard's Theorem.	March 2017
- Power indices and the upcoming election.	February 2016
Special Preliminary Examination. Wesleyan University. The specification property and closed orbit measures.	October 2017

Teaching

Southwestern University Modern Calculus I Topology Introduction to Statistics Real Analysis New Experiences in Research Design Algebraic Structures First Year Seminar: If Board Games Could Talk EQUIP 2022 and 2023	
Instructor, Wesleyan University Elements of Calculus Part I Elements of Calculus Part II Introductory Calculus II	Fall 2019 Spring 2018 Spring 2017
Graduate Teaching Assistant, Wesleyan University Discrete Math Differential Equations Math Workshop Vectors and Matrices Combinatorics Calculus I, Part II Calculus I, Part II Multivariable Calculus	Spring 2020 Spring 2019 Fall 2018 and Spring 2016 Fall 2017 Fall 2016 Fall 2015 Spring 2015 Fall 2014
Teaching Assistant, Wesleyan Center for Prison Education Intermediate Algebra	Fall 2016
Summer School Instructor, St. John's College, New Providence, The Bahamas. Seventh Grade Math	June 2014, 2013, 2011, and 2010
Head Supplemental Instruction Leader, Quantitative Reasoning Center, Vassar College. Single Variable Calculus II Single Variable Calculus I	Spring 2014 Fall 2013
Supplemental Instruction Leader, Quantitative Reasoning Center, Vassar College Single Variable Calculus II	Spring 2013

Other Service	2025 Mathematical Congress of the Americas	Sept 2024 - August 2025	
	Travel Grants Selection Committee American Mathematical Society		
	Human Resources Board American Institute of Mathematics.	October 2023 - Present	
	Faculty Diversity, Equity, Inclusion and Belonging Southwestern University.	Fall 2021- Present	
	Publicity and Publication Committee National Association of Mathematicians.	August 2019 - August 2021	
	Directed Reading Program Committee Wesleyan University.	September 2018 - May 2020	
	Co-founder and Vice President AWM Grad Student Chapter, Wesleyan University.	September 2018 - May 2020	
	Co-organizer Graduate Student Seminar, Wesleyan University.	January 2019 - December 2019	
	Vice President AMS Grad Student Chapter, Wesleyan University.	September 2017 - July 2019	
	Career Panel <i>Beyond the Binary</i> conference, University of Hartford.	April 2019	
	Editorial Board MAD Pages, National Association of Mathematicians.	June 2018 - January 2019	
	Graduate Life After Vassar Panel LAVA and AWM, Vassar College.	September 2018	
	Graduate School Panel Physics and Math Club, Montclair State University.	February 2018	
	Graduate School Panel McNair Program, Wesleyan University.	October 2017	
	Graduate Student Working Group Wesleyan University.	July 2016 - June 2017	
	Treasurer Graduate Student Association, Wesleyan University.	July 2015 - June 2016	
	Speaker <i>Life After Vassar</i> by LAVA and AWM, Vassar College.	February 2016	
	Co-Chair Relay for Life Committee, Vassar College.	Spring 2014	
	Other Conferences & Workshops Attended	MAA Mathfest	August 2022
		Flexibility and rigidity in dynamical systems Simons Center for Geometry and Physics. Stony Brook, New York.	March 2022
MAA Mathfest		August 2021	
Joint Math Meetings		January 2021	
Paradigms: Diversity in Graduate Mathematical Sciences		November 2020	
Mastery Grading Conference		June 2020	
Joint Math Meetings Denver, Colorado.		January 2020	
Workshop in Dynamical Systems and Related Topics Pennsylvania State University.		Sept 2019, Oct 2018	
Women in Mathematics in New England Smith College.		September 2017-2019	
AIM Workshop on Equilibrium States of Dynamical		July 2019	

Systems Arising from Geometry. American Institute of Mathematics.	
Graduate Student Conference in Algebra, Geometry and Topology. Temple University.	June 2017, 2019
Midwest Dynamical Systems Early Career Conference Ohio State University.	May 2019
Graduate Student Topology and Geometry Conference University of Illinois at Urbana Champagne.	March 2019
Midwest/McGehee Dynamical Systems Conference University of Minnesota.	November 2018
AMS Fall Western Sectional Meeting San Francisco State University.	October 2018
Northeast Analysis Network Conference University at Albany SUNY.	September 2018
Topology Students Workshop Georgia Institute of Technology.	June 2018
Séminaire de Mathématiques Supérieures 2017 Contemporary Dynamical Systems. Université de Montréal.	July 2017
Graduate Student Topology and Geometry Conference Michigan State University.	April 2017