

# Eliot Bongiovanni

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## ACADEMIC APPOINTMENTS

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### University of Michigan

Postdoctoral Assistant Professor, Department of Mathematics

August 2025–Present

## EDUCATION

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### Rice University

Ph.D., Department of Mathematics

Advisor: Christopher Leininger

Research area: Low-dimensional topology / geometric group theory

2025

Certificate in Teaching and Learning, Center for Teaching Excellence

2025

M.A., Department of Mathematics

2021

### Michigan State University

B.S., Advanced Mathematics and Statistics (dual major)

Minors: Actuarial Science, German

Honors thesis: Least-area tiles of space, advised by Ben Schmidt

2018

## PAPERS

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**Characterizing hierarchically hyperbolic free by cyclic groups.** 2025. Submitted. [arxiv:2508.15738](https://arxiv.org/abs/2508.15738)  
with Pritam Ghosh, Funda Gültepe, and Mark Hagen

**Extensions of finitely generated Veech groups.** 2024. To appear in *Algebraic & Geometric Topology*.  
[arxiv:2406.11090](https://arxiv.org/abs/2406.11090)

**The least-area tetrahedral tile of space.** *Geometriae Dedicata* 205(1) (2019), 51–93.

DOI: [10.1007/s10711-019-00465-x](https://doi.org/10.1007/s10711-019-00465-x) (Full text: [rdcu.be/bJILV](https://rdcu.be/bJILV))

with Alejandro Diaz, Arjun Kakkar, and Nat Sothanaphan

**Isoperimetry in surfaces of revolution with density.** *Missouri J. Math. Sci.* 30(2) (2018), 150–165.

DOI: [10.35834/mjms/1544151692](https://doi.org/10.35834/mjms/1544151692)

with Alejandro Diaz, Arjun Kakkar, and Nat Sothanaphan

**Double bubbles on the real line with log-convex density.** *Anal. Geom. Metr. Spaces* 6 (2018), 64–88.

DOI: [10.1515/agms-2018-0004](https://doi.org/10.1515/agms-2018-0004)

with Leonardo Di Giosia, Alejandro Diaz, Jahangir Habib, Arjun Kakkar, Lea Kenigsberg,  
Dylanger Pittman, Nat Sothanaphan, and Weitao Zhu

**The convex body isoperimetric conjecture in  $R^2$ .** *Rose-Hulman Undergraduate Mathematics Journal* 18(2) (2017).

[scholar.rose-hulman.edu/rhumj/vol18/iss2/2](https://scholar.rose-hulman.edu/rhumj/vol18/iss2/2)

with John Berry, Wyatt Boyer, Bryan Brown, Matthew Dannenberg, Paul Gallagher, David Hu, Jason Liang, Alyssa Loving, Zane Martin, Maggie Miller, Byron Perpetua, Sarah Tammen, and Yingyi Zeng

## GRANTS AND AWARDS

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Graduate Student Award for Outstanding Research, Rice University Department of Mathematics	2025
Charles D. Fargason Jr. Graduate Fellowship, Rice University	Spring 2025
NSF Graduate Research Fellowship ( <a href="https://www.nsfgrfp.org">nsfgrfp.org</a> )	2018 – 2024
Finalist for Graduate Teaching Award for Independent Instruction, Rice University	2024, 2022
WiNS Travel Award, Rice University	2024, 2022
Young Researcher, 8th Heidelberg Laureate Forum ( <a href="https://www.heidelberg-laureate-forum.org">heidelberg-laureate-forum.org</a> )	2021
Alumni Distinguished Scholarship, Michigan State University ( <a href="https://admissions.msu.edu">admissions.msu.edu</a> ) <i>Full tuition, room and board for eight semesters of undergraduate study</i>	2014 – 2018
Phi Beta Kappa, Michigan State University	2018
Herbert T. Graham Scholarship, Michigan State University	2018
William M. and Mary King Conner Scholarship, Michigan State University	2016, 2017
Professorial Assistantship, Michigan State University ( <a href="https://honorscollege.msu.edu">honorscollege.msu.edu</a> )	2014 – 2016
Harold and Helen Tolles Mathematics Scholarship, Michigan State University	2015

## PRESENTATIONS

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Geometry Seminar, University of Michigan	Oct 2025
Junior Colloquium, Sam Houston State University	Apr 2025
Geometry Seminar, University of Virginia	Mar 2025
Geometry Seminar, George Mason University	Mar 2025
Center for Teaching Excellence Practicum, Rice University <i>Introduction to hyperbolic geometry</i>	Jan 2025
<i>What is a tangent plane?</i>	Feb 2025
<i>Conceptualizing derivatives</i>	Apr 2025
Topology Reading Seminar, Rice University <i>A coarse overview of hierarchical hyperbolicity</i>	Feb 2025
Seminar on Group Actions and Dynamics, University of Wisconsin-Madison	Sep 2024
Special Session on Geometric Group Theory and Low-Dimensional Topology, AMS Central Sectional	Sep 2024
Buckeye Geometry, Ohio State University	Aug 2024
Spectra Survey of Mathematics Conference, Ohio State University	Jul 2024
Workshop on Advances in Hierarchical Hyperbolicity, Banff International Research Station	May 2024
Graduate Student Topology and Geometry Conference, Michigan State University	Apr 2024
Texas Geometry and Topology Conference, Rice University	Nov 2023
Group Actions and Low-Dimensional Topology, El Barco de Avila, Spain	Jul 2023
Graduate Seminar on Current Mathematics, Rice University	Mar 2021, Apr 2023
RTG Graduate Seminar on Topology, Rice University	Oct 2021, Oct 2022
Graduate Seminar on Geometry and Analysis, Rice University	Aug 2022

Lecture on group rings, course on rational points on varieties	Oct 2021
8th Heidelberg Laureate Forum Poster Session, Heidelberg, Germany (virtual)	Sep 2021
AMS Contributed Paper Session on Lattices and Geometries, Joint Mathematics Meetings	Jan 2018
Undergraduate Poster Session, Joint Mathematics Meetings <i>Double bubbles on the real line with log-convex density</i> (as presenter) MAA Outstanding Poster recipient	Jan 2018
Undergraduate Poster Session, Joint Mathematics Meetings <i>The least-area tetrahedral tile of space</i> (as coauthor) MAA Outstanding Poster recipient	Jan 2018
Seminar on Graph Theory and Combinatorics, Michigan State University	Nov 2017
MAA Student Paper Sessions, MAA MathFest	Jul 2017

## TEACHING

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### University of Michigan

Instructor: Multivariable and vector calculus Fall 2025

### Rice University

Developer and instructor: Mathematics discussion Fall 2024

Instructor: Multivariable calculus Summer 2021, Fall 2023

Teaching assistant: Introduction to analysis Fall 2022

Grader: Linear algebra Spring 2025

Grader: Computational complex analysis Spring 2024

Grader: Geometry of surfaces Spring 2023

### Michigan State University

Teaching assistant: Honors multivariable calculus Fall 2016

Grader: Honors linear algebra Fall 2018

Grader: Analysis I Spring 2017, Spring 2018

Tutor: Mathematics Learning Center, Honors room Fall 2016

### Private tutoring

*Paid and volunteer tutoring for students with learning disabilities and/or socio-economic disadvantage. Academic years (AY) listed for high school students.*

Precalculus Fall 2024, AY 2020-21

Business mathematics and statistics Fall 2023

AP Calculus AB AY 2022-23

AP Calculus BC AY 2021-22

## SERVICE AND ORGANIZING

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### Chapter of Spectra at Rice University, Spectra ([lgbtmath.org](http://lgbtmath.org))

Board member

Spring 2024 – current

Founding team

Fall 2023

### Hatch Youth Program, The Montrose Center

Tutoring Coordinator and Lead Tutor

Fall 2019 – Spring 2020

Tutor

Spring 2019

## OTHER SKILLS

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**Languages:** English (first language), German (spoken at home / functionally proficient)

**Programming:**  $\LaTeX$ , R, Java, SQL, C++, Mathematica, Javascript (all basically proficient)