

# Ellis Buckminster

Pronouns: they/them  
Email: ellis17@sas.upenn.edu  
ellisbuckminster.neocities.org

## EDUCATION

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| <b>University of Pennsylvania</b><br>Ph.D. Candidate in Mathematics<br>– Thesis advisor: Samuel Taylor | Philadelphia, PA<br>2022–current |
| <b>Swarthmore College</b><br>B.A. in Mathematics, minor in Linguistics                                 | Swarthmore, PA<br>2018–2022      |

## RESEARCH INTERESTS

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Foliations on 3-manifolds, Anosov and pseudo-Anosov flows, endperiodic maps, mapping class groups, and hyperbolic 3-manifolds.

## PAPERS AND PUBLICATIONS

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Research publications and preprints

- *Cannon–Thurston maps for Anosov foliations*. 2026. 38 pages. Available [here](#).
- *Universal circles for Anosov foliations*. Joint with Samuel Taylor. 2025. 40 pages. Available at [arXiv:2512.10107](#).
- *Periodic points of endperiodic maps*. 2025. 16 pages. Available at [arXiv:2409.05963](#). Published online first in *Groups, Geometry, and Dynamics*.
- Appendix to *Littlewood–Richardson rules from quivers for two-step flag varieties*. Joint with L. Chen and E Kalashnikov. 2025. 4 pages. Available at [arXiv:2502.15126](#).
- *Domains of Convergence for Polyhedral Packings*. Joint with N. Ahmed, W. Ball, E. Rivkin, D. Torrance, J. Viscusi, R. Wang, I. Whitehead, and S. Yang. 2021. 26 pages. Available at [arXiv:2109.01289](#).

## FELLOWSHIPS AND AWARDS

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Academic and research

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| • Simons Dissertation Fellowship in Mathematics<br><i>Simons Foundation</i> | 2025–2027 |
| • Benjamin Franklin Fellowship<br><i>University of Pennsylvania</i>         | 2022–2027 |

Teaching and pedagogy

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| • Master TA<br><i>University of Pennsylvania, Mathematics Department</i>                      | 2024–current |
| • Good Teaching Award, Math 5020<br><i>University of Pennsylvania, Mathematics Department</i> | Fall 2023    |

## TEACHING EXPERIENCE

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The University of Pennsylvania	Philadelphia, PA
<b>Teaching Assistant</b>	
<i>Math 1070: Mathematics of Change</i>	Fall 2024
<i>Math 2400: Calculus Part III</i>	Spring 2024
<i>Math 5020: Graduate Algebra</i>	Fall 2023
<b>Grader</b>	
<i>Math 6090: Graduate Analysis</i>	Spring 2025
Swarthmore College	Swarthmore, PA
<b>Mathematics Clinician</b>	Fall 2021
<i>Drop-in help for students in any math course</i>	
<b>Teaching Assistant</b>	Fall 2020
<i>Linguistics 045: Phonetics and Phonology</i>	

## OTHER EXPERIENCE AND SERVICE

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Seminar and conference organization

- **GTA: Philadelphia** at Temple University Fall 2023–Summer 2025  
GTA: Philadelphia 2024, 9th annual Graduate Student Conference in Algebra, Geometry, and Topology  
*co-organizer with A. Clickard, D. Futer, R. Griebenow, J. Lang, A. Smith, M. Stover, and A. Sudarshan*  
GTA: Philadelphia 2025, 10th annual Graduate Student Conference in Algebra, Geometry, and Topology  
*co-organizer with A. Clickard, D. Futer, C. Kondasinghe, J. Lang, S. Liu, A. Pasles, A. Sarma Phukon, A. Smith, and M. Stover*
- **Graduate Geometry/Topology Seminar** at the University of Pennsylvania, Fall 2023–Spring 2024  
*co-organizer with F. Espino*
- **Interactive Mathematics Colloquia** at Swarthmore College Fall 2021–Spring 2022  
*co-founder and co-organizer with N. Ahmed and J. Zhang*

Community building, outreach, and mentorship

- **Directed Reading Program** at the University of Pennsylvania, Fall 2025–current  
*co-organizer with N. Borisov and V. Gonzalez Bosca, and mentor for the following projects:*
  - Sophia Sczcepek, *The Shape of Space* Spring 2024
  - Angela Cai, *A Primer on Mapping Class Groups* Fall 2024
  - Daphne Glatte, *Wallpaper groups* Spring 2025
  - Darren Zheng, *A Primer on Mapping Class Groups* Spring 2025
- **Gender Minorities in Math** at the University of Pennsylvania, Fall 2024–current  
*coordinator with M. Calle and A. Mock*
- **Penn Emerging Scholars Program** *graduate student organizer* Fall 2024–current

## WORKSHOPS

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- **Oberwolfach Workshop** July 2026  
Invited participant in “Low Dimensional Topology” Oberwolfach, Germany
- **CMO Workshop** at the Casa Matemática Oaxaca June 2025

Invited participant in “Blooming Beasts: A Conference on the Geometry, Topology, and Dynamics of Infinite-Type Surfaces”	Oaxaca, Mexico
• <b>Foliations on 3-manifolds</b> Log cabin workshop	January 2025 St George, UT
• <b>Topology Students Workshop</b> at Vanderbilt University	June 2024 Nashville, TN

## TALKS AND PRESENTATIONS

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### Research Conference Talks

AMS Fall Central Sectional Meeting: Topology and Group Actions <i>Universal circles for Anosov foliations</i>	St. Louis, MO October 2025
CMO Workshop: Blooming Beasts <i>Periodic points of endperiodic maps</i>	Oaxaca, Mexico June 2025
Recent Development in Geometric Group Theory <i>Universal circles for Anosov flows</i> (lightning talk)	Knoxville, TN May 2025
AMS Spring Western Sectional Meeting: Huge Groups from a Geometric Viewpoint <i>Periodic points of endperiodic maps</i>	San Luis Obispo, CA May 2025

### Seminar Talks

Temple Geometry and Topology Seminar <i>Universal circles for Anosov foliations</i> <i>Periodic points of endperiodic maps</i>	Philadelphia, PA November 2025 January 2025
Penn Foliations Workshop <i>Universal circles for Anosov foliations</i>	Online October 2025
Temple Junior Groups, Geometry, and Topology Seminar <i>Universal circles for Anosov foliations</i>	Philadelphia, PA September 2025

### Expository Talks

SLMath Graduate Student Seminar <i>TBD</i>	Berkeley, CA May 2026
Binghamton University Math Graduate Student Seminar <i>Flows, foliations, and actions on circles</i>	Online March 2026
From Surface Topology to Fermat’s Last Theorem <i>The Nielsen–Thurston classification of surface homeomorphisms</i>	Philadelphia, PA November 2025
Temple Junior Groups, Geometry, and Topology Seminar <i>Universal circles from pseudo-Anosov flows</i>	Philadelphia, PA February 2025
Foliations on 3-manifolds log cabin workshop <i>Fibered faces of the Thurston norm unit ball</i>	St George, UT January 2025
Penn Graduate Geometry/Topology Seminar <i>Hyperbolic geometry and homeomorphisms of surfaces</i> <i>The Milnor–Schwarz Lemma</i>	Philadelphia, PA March 2024 September 2023
Penn Graduate Pizza Seminar	Philadelphia, PA

*Halloween special: Eldritch horrors in dimensions 0 and 2*  
*A trip to the  $SL_2(\mathbb{Z})$*   
*Mapping class groups*

October 2025  
November 2024  
April 2023

Temple Graduate Pizza Seminar  
*A trip to the  $SL_2(\mathbb{Z})$*

Philadelphia, PA  
December 2024

#### Talks for Undergraduates

Penn Directed Reading Program Mentor Talks  
*A two-sided Möbius band* (short talk)

Philadelphia, PA  
April 2025