CATHERINE WOLFRAM

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EMPLOYMENT

Yale University, New Haven, CT — July 2024 - Present
NSF Postdoctoral Fellow and Gibbs Assistant Professor (on leave July 2025-July 2026)

ETH Zurich, Zurich, Switzerland — July 2025-July 2026
Research postdoc

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA — August 2019 - May 2024
PhD in Mathematics
Advisor: Scott Sheffield
Thesis title: *Random geometry in two and three dimensions*

University of Chicago, Chicago, IL — September 2015 - June 2019
B.A. in Mathematics with Honors
Dean's list, 2015-2019

Stanford University Online High School — September 2011 - June 2015

ARTICLES

Large deviations for the 3D dimer model, with Nishant Chandgotia and Scott Sheffield. ArXiv preprint 2304.08468.

Circle homeomorphisms with square summable diamond shears, with Dragomir Šarić and Yilin Wang. **Int. Math. Res. Not.** (IMRN) Vol. 2024, 17 (2024).

AWARDS

NSF Postdoctoral Fellowship — Fall 2024-Spring 2028

Baddoo Community Buidling Award — May 2024
MIT math department award

Phyllis Ruby Block Fellowship — Spring 2024
MIT math department fellowship

TEACHING

Recitation Instructor at MIT for four terms:

- Probability and random variables (18.600) — Fall 2021, Spring 2022, Fall 2023
  Instructor: Jonathan Kelner (2021), Scott Sheffield (2022, 2023)

- Multivariable calculus (18.02A) — January 2023
  Instructor: Bill Minicozzi

TA for Cornell Probability Summer School — August 2022
Teaching assistant for course "Loewner energy and Large Deviations of SLEs" taught by Yilin Wang.

Manager of the Math Learning Center (MLC)   August 2020 - May 2021
Ran the math department's peer-tutoring center, managing 10-12 undergraduate tutors.

Grader at the University of Chicago:

- Grader for one quarter of Honors Calculus (Math 162)   January 2019 - March 2019

- Course assistant (VCA) for full year of Calculus (Math 151-152-153) September 2016 - June 2017

SERVICE AND MENTORSHIP

Referee for journal articles   Periodic
Annals of Probability, Transactions of the American Mathematical Society

Defense committee member for graduate students
Raphael de Marreiros (PhD Jaunary 2025)

Co-organizer of the Friday Morning Seminar at Yale   September 2024 - Present
Informal weekly seminar with some invited speakers and some informal discussions on topics in geometry, probability, combinatorics, dynamics, etc.

Member of the Yale math department climate committee   September 2024 - Present
Department committee for organizing community events and outreach in the Yale math department.

Co-organizer of the MIT Directed Reading Program (DRP)   October 2022 - May 2024
This program pairs undergraduate students at MIT with graduate students and postdocs to do a reading project over IAP for about 100 students per year. Organizational responsibilities include evaluating applications, pairing undergraduate students with mentors, and arranging events during IAP.

Mentor for the MIT Directed Reading Program (DRP)   2020, 2023, 2024

Co-organizer of PuMaGraSS at MIT   September 2020 - May 2021
Weekly, casual seminar for MIT math graduate students to give talks to their peers, name stands for "Pure Math Graduate Student Seminar."

Mentor for Research Science Institute (RSI) hosted by MIT   Summer 2020
Supervised two advanced high school students on summer research projects.

TALKS

Past and upcoming talks as of now, listed in reverse chronological order.

1. University of Michigan probability semianr   February 2025

2. Princeton probability seminar   November 2024

3. Columbia probability seminar   October 2024

4. AdS geometry reading group (two expository talks)   October 2024

5. Northwestern probability seminar   September 2024

6. 11th World Congress on Probability and Statistics, Bochum, Germany   August 2024

7. Workshop on Probabilistic Field Theories, Aalto University   June 2024

8. Statistical physics and random surfaces, Oberwolfach   May 2024

9. IPAM workshop "Statistical Mechanics Beyond 2D"   May 2024

10. Seed seminar of Mathematics and Physics (online)   April 2024

11. PuMaGraSS seminar at MIT (expository talk)   March 2024
    SLE curves, large deviations, and geometry

12. KPZ meets KPZ workshop   March 2024

13. University of Edinburgh probability seminar (online)   January 2024

14. MIT probability seminar   November 2023

15. University of Chicago probability and statistical physics seminar   November 2023

16. Brown combinatorics seminar   November 2023

17. Informal seminar: dynamics, geometry, and moduli spaces at Harvard   November 2023

18. Probability and geometry in, on and of non-Euclidean spaces at CIRM   October 2023
    (lightning talk)

19. ICERM workshop "Asymptotic Limits of Discrete Random Structures"   September 2023

20. Harvard CMSA probability seminar   September 2023

21. MIT integrable probability seminar   September 2023

22. dimers2023 conference, Sorbonne Universite   July 2023

23. Percolation today (online)   June 2023

24. LA probability forum (joint between Caltech, UCLA, and USC)   May 2023

25. Informal analysis and probability seminar at IHES   April 2023

26. Courant probability and mathematical physics seminar   March 2023

27. Rutgers geometry/topology seminar (online)   March 2023

28. Informal seminar: dynamics, geometry, and moduli spaces at Harvard   February 2023

29. CUNY Hyperbolic geometry seminar   February 2023

30. Random Geometry and Statistical Physics Workshop, University of Pennsylvania   October 2022

31. Probability and Mathematical Physics conference in Helsinki, Finland   July 2022

32. PuMaGraSS seminar at MIT (expository talk)   April 2022
    Gluing polygons, Wick's formula, and moduli spaces

33. Reading group on the dimer model at MIT (expository talk)   March 2022
    Kasteleyn theory on the torus

34. PuMaGraSS seminar at MIT (expository talk)   April 2021
    The dimer model in 2D and 3D, local moves, and topology

35. AWM Women in Math Symposium, University of Chicago   February 2017
    Recursive derivation of 2n-gon topologies.

ACADEMIC VISITS

Institute for Advanced Study, Princeton, NJ   September 2022 - December 2022
Visiting graduate student while my advisor was there as a visiting professor.

Institut des Hautes Études Scientifiques, Bures sur Yvette, France April - May 2023; June 2024
Invited researcher visiting Prof. Yilin Wang.

CONFERENCES AND SUMMER SCHOOLS

A more complete list of conferences, summer schools, and workshops I've attended or plan to attend as of now, in reverse chronological order.

Northeast Probability Seminar, New York, NY	November 2024
11th World Congress on Probability and Statistics, Bochum, Germany	August 2024
Workshop on Probabilistic Field Theories, Aalto University, Espoo, Finland	June 2024
Statistical physics and random surfaces, Oberwolfach, Germany	May 2024
Statistical mechanics beyond 2D, IPAM, Los Angeles, CA	May 2024
KPZ meets KPZ workshop, Fields Institute, Toronto, Canada	March 2024
Probability and geometry in, on and of non-Euclidean spaces, CIRM, Marseille, France	October 2023
Asymptotic limits of discrete random structures, ICERM, Providence, RI	September 2023
dimers2023 conference, Sorbonne Universite, Paris, France	July 2023
Three facets of gravity workshop, Humboldt University, Berlin, Germany	May 2023

Random Geometry and Statistical Physics Workshop, University of Pennsylvania, Philadelphia, PA
October 2022

Cornell Probability Summer School (as a TA), Cornell University, Ithaca, NY	August 2022
Probability and Mathematical Physics conference, Helsinki, Finland	July 2022

The Analysis and Geometry of Random Spaces, MSRI, Berkeley, CA   March 2022
Program associate for two weeks of the semester program (including the one week workshop)

Random Geometry conference, CIRM, Marseille, France	January 2022
Random Conformal Geometry Summer School, MSRI, Berkeley, CA (virtual)	July 2021

OTHER

Citizenships: United States, United Kingdom