Vivian Olsiewski Healey

Contact Information

Department of Mathematics
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Research Interests

Probability, analysis, statistical physics, conformally invariant processes, Loewner evolution and SLE, superprocesses, random maps, random matrix theory.

Positions

Texas State University

Assistant Professor, Department of Mathematics (September 2022 - present)
Lecturer, Department of Mathematics (August 2020 - August 2022)

Mathematical Sciences Research Institute (MSRI)

Research Member: The Analysis and Geometry of Random Spaces (Spring 2022)

University of Chicago

L.E. Dickson Instructor, Department of Mathematics (September 2017 - August 2020)

Education

Brown University

Ph.D. Mathematics, May 2017

Thesis: *The Loewner equation with branching and the continuum random tree*
Advisor: Govind Menon

Sc.M. Mathematics, May 2012

University of Notre Dame

B.A. Honors Mathematics, May 2010

Grants Funded

AMS-Simons Research Enhancement Grant for PUI Faculty
July 2023 - June 2025
Award Amount: $10,800

Honors and Awards

Award for Excellence In Research, Texas State Univ. Dept. of Mathematics 2025

Award for Excellence In Teaching, Texas State Univ. Dept. of Mathematics 2021, 2023

National Science Foundation Graduate Research Fellowship, awarded 2011

George Kolettis Award in Mathematics University of Notre Dame, 2010

Glynn Family Honors Program Honors Research Colloquium speaker (recognition for outstanding senior thesis), University of Notre Dame, 2010

Publications

Large deviations of Dyson Brownian motion on the circle and multiradial SLE0+ (with O. Abuzaid and E. Peltola), submitted. https://arxiv.org/abs/2407.13762.

Loewner evolution with branching and the Dyson superprocess (with Govind Menon). *Pacific Journal of Mathematics* 338-1 (2025), 87–137. DOI 10.2140/pjm.2025.338.87

Galois groups and prime divisors in random quadratic sequences (with John R. Doyle, Wade Hindes and Rafe Jones). *Math. Proc. Cambridge Philos. Soc.*, 176 (2024), no.1, 95-122.

N-sided Radial Schramm-Loewner Evolution (with G. Lawler). *Probability Theory and Related Fields* **181**, pages 451-488 (2021). https://doi.org/10.1007/s00440-021-01033-9

Stochastic canonical heights (with Wade Hindes). *Journal of Number Theory*, 201 (2019): 228-256.

Workshop Organizer

Random Explorations: From Random Walks to Random Geometry
Institute for Mathematical and Statistical Innovation (IMSI), Chicago, IL.
July 6 - 10, 2026

Selected Talks

Invited Conference Talks

2025 November	**Dynamics of Multiple Maps** Workshop at the American Institute of Mathematics (AIM) Pasadena, CA
2025 October	**SIAM-CSS 2025 annual meeting**, mini-symposium "Interactions among analysis, optimization and network science" University of Arkansas
2025 July	**Probabilistic methods in quantum field theory**, (seminar at semester program) Hausdorff Research Institute for Mathematics, Bonn, Germany
2024 October	**SIAM-CSS 2024 annual meeting**, mini-symposium "Interactions among analysis, optimization and network science" University of Missouri-Kansas City
2022 October	**SIAM-CSS 2022 annual meeting**, mini-symposium "Interactions among analysis, optimization and network science" Oklahoma State University
2022 January	**Connections Workshop: The Analysis and Geometry of Random Spaces** Mathematical Sciences Research Institute, Berkeley, CA
2019 May	**Southeastern Probability Conference** Duke University
2018 August	**Random Walks in Correlated and Dynamic Environments** Texas A&M University
2018 June	**Random Conformal Geometry and Related Fields** KIAS, Seoul, Korea

Invited Colloquia

2021 January	New Mexico State University
2020 February	Sam Houston State University
2018 September	University of Tennessee, Knoxville

Research Seminars & Other Presentations

2024	September	Trinity University, San Antonio, TX, Math Major Seminar
2024	July	Institute for Mathematical and Statistical Innovation (IMSI) Chicago, IL, *Two-Dimensional Random Geometry*, Poster
2023	February	University of Tennessee-Knoxville, Analysis Seminar
2022	December	Aalto University (Helsinki, Finland), Statistical Physics Seminar
2022	April	Michigan State University, Analysis Seminar
2020	Spring [canceled]	Princeton University, Topics in Probability Seminar
2020	Spring [canceled]	University of Illinois, Probability Seminar
2019	November	University of Virginia, Probability Seminar
2019	September	University of British Columbia, Probability Seminar
2018	September	Purdue University, Probability Seminar
2018	March	Northwestern University, Probability Seminar
2018	February	University of Tennessee, Analysis Seminar
2017	June	University of Chicago, Probability and Statistical Physics Seminar
2016	December	University of Connecticut, Analysis and Probaiblity Seminar
2014	May	Institute for Advanced Study, Women and Mathematics Research Seminar

Teaching

Pedagogical Training

Inclusive Pedagogical Practice Workshops

- Supporting Neurodivergent Students in the Classroom (Texas State University, 2025)
- Step Up Workshop, part of NSF grant "Structuring Equitable Participation in Undergraduate Proof" PI's Kate Melhuish, Bea Ellis, Cody Patterson, Sharon Strickland (Texas State University, 2023)
- Setting Your Intentions: Inclusive Syllabus Design (Texas State University, 2021)
- Supporting First Generation, Low-income, Immigrant (FLI) and Undocumented Students (University of Chicago, 2019)
- Gender Pronouns in the Classroom (University of Chicago, 2019)

Certificate I: Reflective Teaching, Sheridan Center for Teaching and Learning, Brown University, Fall 2012 - Spring 2013

Courses Designed

Introduction to Probability Theory and Models (Math 5376F)
Texas State University

Classes Taught

Mathematical Modeling (Math 5360)
Texas State University – Fall 2024

Introduction to Probability and Statistics (Math 3305)
Texas State University – Spring 2022, Fall 2024, Spring 2025, Fall 2025

Calculus I (Math 2471)
Texas State University – Spring 2023, Spring 2025

Calculus for the Life Sciences (Math 2321)
Texas State University – Fall 2020, Spring 2021, Fall 2021, Fall 2022

Introduction to Advanced Mathematics (Math 3330)
Texas State University – Fall 2020, Spring 2021, Fall 2021, Fall 2022

Set Theory (Math 5281, stacked with 3330)
Texas State University – Fall 2020

Introduction to Mathematical Probability (Stat 25100)
University of Chicago – Spring 2019, 2020

Abstract Linear Algebra(Math 20250)
University of Chicago – Fall 2017, 2018, 2019

Analysis in $\mathbb{R}^n$-2 (Math 20400)
University of Chicago – Winter 2018, Spring 2018

Outreach

(TA) **Girls Get Math @ ICERM 2017**, summer math camp for high school girls, Institute for Computational and Experimental Research in Mathematics

Service

Faculty Advisor, Association for Women in Mathematics - student chapter
Texas State University, Fall 2025 - Present

Proposal Reviewer for NSF

panel 2020, panel 2023, ad hoc 2024, panel 2025

Conferences and Seminars Organized

2020 Midwest Probability Colloquium, Northwestern University

Probability and Statistical Physics Seminar, University of Chicago, Fall 2017 - Spring 2020

AMS Graduate Student Conference, Brown University, February 2015

Committees

Curriculum Committe, Texas State University Department of Mathematics, Fall 2025 - Present

Search Committee for Chair of Departmentof Mathematics, Spring 2025

Awards Committee, Texas State University, Department of Mathematics, Fall 2023 - May 2025

Equity, Diversity, and Inclusion (EDI) Committee, University of Chicago, Department of Mathematics, Winter 2019

AMS Student Chapter, Brown University, Fall 2014 - Spring 2015

Graduate Student Council, Brown University, 2012 - 2014 (five semesters)

Other Mentoring

Texas State: teaching mentor to 3 graduate students and 2 lecturers (2022-present)

Network for Women in Mathematics, Brown University, Spring 2016 - Spring 2017

Rhode Islanders Sponsoring Education (mentoring program for children of incarcerated parents), Fall 2010 - Spring 2015