

# Timothy Chumley

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## Education

Washington University in St. Louis

Ph.D. in Mathematics, 2013

Marquette University

M.S. in Mathematics, 2007

B.S. in Computer Science, Mathematics, 2005

## Employment

Mount Holyoke College, Department of Mathematics & Statistics

Associate Professor on the John Stewart Kennedy Foundation, 2023 – present

Associate Professor, 2022 – present

Assistant Professor, 2016 – 2022

Iowa State University, Department of Mathematics

NSF Alliance for Building Faculty Diversity Postdoctoral Fellow, 2013 – 2016

Washington University in St. Louis, Department of Mathematics

Graduate Teaching Assistant and Instructor, 2008 – 2013

## Teaching

### *Mount Holyoke College*

Math 339SP/Stat 344, Stochastic Processes, Spring 2024.

Math 342, Probability (2 sections), Spring 2024.

Math 203, Calculus III, Spring 2023.

Math 301, Real Analysis, Spring 2023.

Math 102, Calculus II, Fall 2022.

Math 203, Calculus III, Fall 2022.

Math 241, Dynamical Systems, Spring 2022.

Math 339SP/Stat 344, Stochastic Processes, Spring 2022.

Math 102, Calculus II, Fall 2021.

Math 301, Real Analysis, Fall 2021.

Math 342, Probability (2 sections), Spring 2021.

Math 395, Independent study in Billiards and Thermodynamics (1 student), Spring 2021.

Math 301, Real Analysis (2 sections), Fall 2020.  
 Math 101, Calculus I, Spring 2019.  
 Math 339SP/Stat 344, Stochastic Processes, Spring 2019.  
 Math 395, Independent study in Random Billiards (1 student), Spring 2019.  
 Math 232, Discrete Math, Fall 2018.  
 Math 342, Probability, Fall 2018.  
 Math 395, Independent study in Random Billiards (1 student), Fall 2018.  
 Math 339SP/Stat 344, Stochastic Processes, Spring 2018.  
 Math 333, Differential Equations, Spring 2018.  
 Math 342, Probability (2 sections), Fall 2017.  
 Stat 395, Independent study in Statistical Analysis of Networks (3 students), Fall 2017.  
 Student Research (2 students), Summer 2017.  
 Math 211, Linear Algebra, Spring 2017.  
 Math 339SP/Stat 344, Stochastic Processes, Spring 2017.  
 Math 102, Calculus II, Fall 2016.  
 Math 342, Probability, Fall 2016.

### *Iowa State University*

Math 166, Calculus II, Fall 2015.  
 Math 501, Introduction to Real Analysis, Fall 2014.  
 Math 317, Theory of Linear Algebra, Spring 2014.  
 Math 166, Calculus II, Fall 2013.

### *Washington University*

Math 309, Matrix Algebra, Summer 2012.  
 Math 1011, Introduction to Statistics, Summer 2010.  
 Math 1011, Introduction to Statistics, Summer 2009.  
 Math 155, Calculus I, Summer 2008.

## Research Articles

1. T. Chumley, M. Covey, C. Cox, and R. Feres. Chaotic lensed billiards. *Discrete Contin. Dyn. Syst.*, 45(9):3345–3374, 2025.
2. T. Chumley, R. Feres, L. A. Garcia German, and G. Yablonsky. Revisiting maxwell-smoluchowski theory: low surface roughness in straight channels. *Chem. Eng. Sci.*, 284:119477, 2024.
3. J. Ahmed, T. Chumley, S. Cook, C. Cox, H. Grant, N. Petela, B. Rothrock, and R. Xhafaj. Dynamics of the no-slip galton board. *arXiv preprint*, 2022.
4. T. Chumley, R. Feres, and L. A. Garcia German. Knudsen diffusivity in random billiards: spectrum, geometry, and computation. *SIAM J. Appl. Dyn. Syst.*, 20(3):1655–1682, 2021.
5. T. Chumley, R. Feres, and M. Wallace. Exact discretization of harmonic tensors. *Potential Anal.*, 56(3):409–421, 2022.

6. T. Chumley and R. Feres. Entropy production in random billiards. *Discrete Contin. Dyn. Syst.*, 41(3):1319–1346, 2021.
7. T. Chumley, S. Cook, C. Cox, and R. Feres. Rolling and no-slip bouncing in cylinders. *J. Geom. Mech.*, 12(1):53–84, 2020.
8. O. Aydogmus, T. Chumley, A. Matzavinos, and A. Roitershtein. Moran-type bounds for the fixation probability in a frequency-dependent Wright-Fisher model. *J. Math. Biol.*, 76(1):1–35, 2018.
9. T. Chumley, R. Feres, and H.-K. Zhang. Diffusivity in multiple scattering systems. *Trans. Amer. Math. Soc.*, 368(1):109–148, 2016.
10. T. Chumley, S. Cook, and R. Feres. From billiards to thermodynamics. *Comput. Math. Appl.*, 65(10):1596–1613, 2013.
11. T. Chumley. *Limit Theorems for Random Billiard Models*. PhD thesis, 2013.

## Presentations

### Invited

Joint Mathematics meetings, AIM Special Session on Little School Dynamics: Cool Dynamics Research by Researchers at PUIs, January 2023

AMS Eastern Sectional Meeting, Special Session on Connections Between Theoretical and Applied Dynamical Systems: A Session in Honor of the 60th Birthdays of Renato Feres and Boris Hasselblatt, October 2022

Tarleton State University, Colloquium, September 2019

SIAM Conference on Applications of Dynamical systems, Minisymposium on Thermodynamic Laws from Nonequilibrium Dynamics, May 2019

AMS Eastern Sectional Meeting, Special Session on Billiard Dynamics: Standard and Alternative Collision Models, September 2018

Joint Mathematics Meetings, Special session on Research by Postdocs of the Alliance for Diversity in Mathematics, January 2018

AIMS Conference on Dynamical Systems, Differential Equations and Applications, Special Session on Dynamical systems and their applications, July 2016

Washington University, Geometry seminar, April 2016

Mount Holyoke College, Colloquium, February 2016

Joint Mathematics Meetings, Special session on Research by Postdocs of the Alliance for Diversity in Mathematics, January 2016

### Contributed

International Congress of Mathematicians, Probability session, August 2018

Seminar on Stochastic Processes, University of Virginia, March 2017

## Professional Service

Panelist for Pure Math program, Division of Mathematical Sciences, NSF, 2024

Member, Lathisms Scholarship Selection Committee, 2024

Member, Steering Committee for the Hudson River Undergraduate Mathematics Conference, 2023

Member, Prize Committee for MAA Halmos-Ford Prize, 2023-2026

Co-organizer for Special Session at AMS Fall Eastern Sectional Meeting, 2022  
 Panelist for Applied Math program, Division of Mathematical Sciences, NSF, 2022  
 Co-organizer, BIRS Oaxaca workshop on Frontiers in Billiard Dynamics, June 2021  
 Co-organizer, SIAM Conference on Applications of Dynamical systems mini-symposium, May 2019  
 Co-organizer for Special Session at AMS Fall Eastern Sectional Meeting, September 2018  
 Judge for MAA Undergraduate Poster Session at JMM, January 2017  
 Co-organizer for Special Session at 11th AIMS Conference on Dynamical Systems Differential Equations and Applications, Orlando, July 2016  
 Co-organizer for AIM SQuaRE on Stochastic thermodynamics and random billiards, 2015 – 2017  
 Co-organizer, Iowa State University probability seminar, 2014 – 2016  
 Co-organizer for AMS Special session on Statistical Aspects of Dynamical Systems, October 2013  
 Referee for Chaos: An Interdisciplinary Journal of Nonlinear Science, Discrete and Continuous Dynamical Systems, Journal of Mathematical Physics

## Awards, Grants, and Other Honors

Interviewed for AMS Mathematical Moments, 2022  
 Featured in Latinxs and Hispanics in the Mathematical Sciences AMS poster, 2022  
 Featured in MAA Focus article on Latinxs and Hispanics in the Mathematical Sciences, 2020  
 Latinxs and Hispanics in the Mathematical Sciences (Lathisms) honoree, 2020  
 AMS-NSF International Congress of Mathematicians travel award, 2014, 2018, 2022  
 AMS Project NExT Fellow, 2016 – 2017  
 American Institute of Mathematics SQuaRE grant, 2015 – 2017  
 NSF Alliance for Diversity in Mathematical Sciences Postdoctoral Fellowship, 2013 – 2016  
 Dissertation Fellowship, Washington University, 2012 – 2013  
 University Fellowship, Washington University, 2007 – 2008, 2010  
 Phi Beta Kappa, 2005

## Selected Conference Participation

Joint Mathematics Meetings, Boston, January 2023.  
 AMS Eastern Sectional Meeting, Amherst, October 2022.  
 Northeast Conference on Dynamical Systems, University of Massachusetts Amherst, November 2019.  
 Illustrating Probability and Dynamics workshop, ICERM, November 2019.  
 SIAM Conference on Applications of Dynamical systems, Snowbird, May 2019.  
 AMS Eastern Sectional Meeting, Newark, September 2018.  
 International Congress of Mathematicians, Rio de Janeiro, August 2018.  
 Seminar on Stochastic Processes, Brown University, May 2018.  
 Joint Mathematics Meetings, San Diego, January 2018.  
 Mathfest, Chicago, August 2017.

AIM SQuaRE on Stochastic thermodynamics and random billiards, June 2017

Seminar on Stochastic Processes, University of Virginia, March 2017.

Joint Mathematics Meetings, Atlanta, January 2017.

Mathfest, Columbus, August 2016.

The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, July 2016.

## Service at Mount Holyoke College

Ad-hoc Committee on the Status and Future of Lecturer and Senior Lecturer Positions, 2024

High Performance Computing Cluster Committee, 2023 – present

Faculty Conference Committee, 2023 – 2026

Academic Administrative Board member, 2020 – 2023

Math/Stat liaison for STEMPOC student group, 2018 – 2020

Subcommittee on the Goldwater Fellowship, 2017 – 2020

Math/Stat TAs and graders co-organizer, 2017 – 2018

Data science curriculum committee, 2016 – 2017

Problem solving club co-advisor, 2016 – 2017

Math/Stat LITS liaison, 2016 – 2017

## Professional Memberships

Member, American Mathematical Society, 2007 – Present.

Member, Mathematical Association of America, 2016 – Present.

Last updated: May 8, 2025