

Hindy Drillick

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Education	Columbia University PhD student in Mathematics Advisor: Ivan Corwin	New York, NY September 2019–Present
	Stony Brook University B.S. in Mathematics	Stony Brook, NY May 2019
Research Interests	Interacting Particle Systems, Stochastic Partial Differential Equations, KPZ Universality, Integrable Probability.	
Preprints	1) The stochastic six-vertex model speed process. H. Drillick and L. Haunschmid-Sibitz (2024). URL https://arxiv.org/abs/2408.10186 2) SWIF convergence of smocked metric spaces. E. Dinowitz, H. Drillick, M. Farahzad, C. Sormani, and A. Yamin (2021). URL https://arxiv.org/abs/2105.00138	
Publications	1) Extreme diffusion measures statistical fluctuations of the environment. J. Hass, H. Drillick, I. Corwin, and E. Corwin. <i>Phys. Rev. Lett.</i> (2024+). To appear. URL https://arxiv.org/abs/2406.17733 2) KPZ equation limit of random walks in random environments. S. Das, H. Drillick, and S. Parekh. <i>Probab. Theory Related Fields</i> (2024+). To appear. URL https://arxiv.org/abs/2311.09151 3) KPZ equation limit of sticky Brownian motion. S. Das, H. Drillick, and S. Parekh. <i>J. Funct. Anal.</i> , 287(10):Paper No. 110609 (2024). URL http://dx.doi.org/10.1016/j.jfa.2024.110609 4) Hydrodynamics of the t -PNG model via a colored t -PNG model. H. Drillick and Y. Lin. <i>Ann. Inst. Henri Poincaré Probab. Stat.</i> , 60(2):1215–1245 (2024). URL http://dx.doi.org/10.1214/22-aihp1343 5) Strong law of large numbers for the stochastic six vertex model. H. Drillick and Y. Lin. <i>Electron. J. Probab.</i> , 28:Paper No. 148, 21 (2023). URL http://dx.doi.org/10.1214/23-ejp1041 6) Non-rigid rank-one infinite measures on the circle. H. Drillick, A. Espinosa-Dominguez, J. N. Jones-Baro, J. Leng, Y. Mandelshtam, and C. E. Silva. <i>Dyn. Syst.</i> , 38(2):275–300 (2023). URL http://dx.doi.org/10.1080/14689367.2023.2174412 7) Falconer’s (K, d) distance set conjecture can fail for strictly convex sets K in R^d . C. J. Bishop, H. Drillick, and D. Ntalampekos. <i>Rev. Mat. Iberoam.</i> , 37(5):1953–1968 (2021). URL http://dx.doi.org/10.4171/rmi/1254	

8) Every planar set has a conformally removable subset with the same Hausdorff dimension. H. Drillick. *Proc. Amer. Math. Soc.*, 149(2):787–791 (2021). URL <http://dx.doi.org/10.1090/proc/15243>

9) Smocked metric spaces and their tangent cones. C. Sormani, D. Kazaras, D. Afrifa, V. Antonetti, M. Dinowitz, H. Drillick, M. Farahzad, S. George, A. L. Hepburn, L. T. Huynh, et al. *Missouri Journal of Mathematical Sciences*, 33(1):27–99 (2021). URL <https://doi.org/10.35834/2021/3301027>

Honors and Awards	• Stephen Della Pietra Program Associate Fellowship, MSRI	2021
	• NSF Graduate Research Fellowship	2019–Present
	• Stony Brook Foundation Award for Excellence in Mathematics	2019
	• Junior Award, Stony Brook Mathematics Department	2018
	• W. M. Lowell Putnam Award, Brooklyn College Mathematics Department	2017
• Grace Hopper Celebration Scholar, Anita Borg Institute	2017	
Teaching	• Linear Algebra, Teaching Assistant	Fall 2024
	• Linear Algebra, Teaching Assistant	Fall 2023
	• Undergraduate Seminars: Markov Chains, Section Leader	Spring 2023
	• Calculus 2, Instructor	Fall 2022
	• Undergraduate Seminars: Random Walks and the Heat Equation, Section Leader	Spring 2022
	• Calculus 1, Teaching Assistant	Fall 2020
	• Columbia Math Help Room, Teaching Assistant	Fall 2019–Spring 2020
Seminars Organized	• Columbia Student Probability Seminar	Spring 2021
	• Michael Zhao Memorial Student Colloquium	Spring 2020–Fall 2020
Outreach	• Sonia Kovalevsky Day, Teaching Assistant	Fall 2023
	• Columbia Directed Reading Program, Mentor	Spring 2023
	• Columbia REU, Teaching Assistant	Summer 2021
	• The Mathematical Contest in Modeling (MCM), Team Mentor	Spring 2020
	• Women in Science at Columbia Undergraduate Mentorship Program, Mentor	Fall 2020
	• Stony Brook Math Club, Vice President	2018–2019
Invited Talks	• <i>The stochastic six-vertex model speed process</i> , Oberwolfach Mini-Workshop: Mixing Times in the Kardar-Parisi-Zhang Universality Class, Nov 2024.	
	• <i>The stochastic six-vertex model speed process</i> , University of Maryland Probability Seminar, Nov 2024.	
	• <i>The stochastic six-vertex model speed process</i> , University of Toronto Probability Seminar, Oct 2024.	
	• <i>The KPZ equation limit of random walks in random environments</i> , Seminário de Probabilidade e Mecânica Estatística, IMPA (online), Apr 2024.	
	• <i>The KPZ equation limit of random walks in random environments and sticky Brownian motion</i> , UC Berkeley Probability Seminar, Nov 2023.	

- *The KPZ equation limit of sticky Brownian motion*, Simons Center Workshop: The Asymmetric Simple Exclusion Process, Oct 2023.
- *Using colored models to prove strong laws of large numbers for the t -PNG and stochastic six vertex models*, MIT Probability Seminar, May 2023.
- *Using colored models to prove strong laws of large numbers for the t -PNG and stochastic six vertex models*, University of Utah Probability Seminar, March 2023.
- *Using colored models to prove strong laws of large numbers for the t -PNG and stochastic six vertex models*, University of Virginia Probability Seminar, March 2023.
- *Using colored models to prove strong laws of large numbers for the t -PNG and stochastic six vertex models*, CUNY Probability Seminar, March 2023.
- *Using colored models to prove strong laws of large numbers for the t -PNG and stochastic six vertex models*, Columbia Probability Seminar, Feb 2023.
- *The t -PNG model*, Northeast Probability Seminar, Nov 2022.
- *A law of large numbers for the t -PNG model*, Graduate Student Probability Conference in Madison, Sep 2022.
- *A law of large numbers for the t -PNG model*, Saint-Flour Summer School, July 2022.
- *A law of large numbers for the t -PNG model*, PIMS Summer School, June 2022.
- *Positivity of Solutions to the Stochastic Heat Equation*, Columbia Probability Seminar, Sep 2020.
- *Models on the Unit Square of the Chacon, Pascal, and other Cutting and Stacking Transformations* (with J. N. Jones-Baro), Joint Mathematics Meetings, Jan 2019.
- *Rank-One Transformations for Irrationals with Certain Diophantine Properties* (with A. Espinosa-Dominguez), Young Mathematicians Conference, Ohio State University, Aug 2018.

Posters

- *The KPZ equation limit of sticky Brownian motion*, 43rd Conference on Stochastic Processes and their Applications (SPA), July 2023.
- *The KPZ equation limit of sticky Brownian motion*, 24th Midrasha Mathematicae on Random Schrödinger Operators and Random Matrices, May 2023.
- *Non-Rigid Rank-One Infinite Measures on the Circle*, H. Drillick, A. Espinosa-Dominguez, J. N. Jones-Baro, J. Leng, Y. Mandelshtam, and C. E. Silva, Joint Mathematics Meetings, Jan 2019.
- *Developing a Virtual Environment for Studying Spatial Orientation in Rotating Visual Environments*, E. Dorokhin, H. Drillick, L. Goetz, and T. Raphan, Annual meeting of the Society for Neuroscience, Nov 2017.
- *Implementation of Graphics Card Based Frequency Spectrometer for the Baryon Mapping Experiment*, H. Drillick and A. Slosar, Brookhaven National Laboratory, Aug 2017.

Summer Schools and Workshops

- Oberwolfach Mini-Workshop: Mixing Times in the Kardar-Parisi-Zhang Universality Class Fall 2024
- Simons Center Workshop: The Asymmetric Simple Exclusion Process Fall 2023
- 24th Midrasha Mathematicae on Random Schrödinger Operators and Random Matrices, IIAS, Hebrew University Spring 2023
- Saint-Flour Summer School in Probability Summer 2022

- PIMS-CRM Summer School in Probability Summer 2022
- Universality and Integrability in Random Matrix Theory and Interacting Particle Systems, MSRI, Berkeley Fall 2021
- PIMS-CRM Summer School in Probability (online) Summer 2020
- Houston Summer School in Dynamical Systems Summer 2019
- IAS Women and Mathematics: Topics in Geometric Analysis, Princeton Summer 2019