Hao Shen

Mathematics Department, University of Wisconsin-Madison

Email Address: pkushenhao@gmail.com

Academic Positions

2025 -	Professor, University of Wisconsin - Madison
2023.8 - 2025	Associate Professor, University of Wisconsin - Madison
2018.8 - 2023.7	Assistant Professor, University of Wisconsin - Madison
2015.8 - 2018.7	Ritt Assistant Professor and Minerva Fellow, Columbia University, Mentor: Ivan Corwin
2014.8 - 2015.7	Research Associate, University of Warwick, Mentor: Martin Hairer
2013.8 - 2014.7	Research Associate, Princeton University, Mentor: Weinan E

Education

- May 2013 PhD. Princeton University.
- June 2008 BSc. and MSc. Peking University.

Research Interests

Stochastic PDE, probability, stochastic analysis, mathematical physics, quantum field theory, gauge theories, statistical mechanics, interacting particle systems.

Full List of Publications and Preprints

1. H. Shen, S. Smith and R. Zhu, Makeenko-Migdal equations for 2D Yang-Mills: from lattice to continuum. *arXiv:2412.15422*.
2. H. Shen, R. Zhu and X. Zhu, Global well-posedness for 2D generalized parabolic Anderson model via paracontrolled calculus. *arXiv:2402.19137*. *Stochastics and PDEs: Analysis and Computations.*
3. H. Shen, R. Zhu and X. Zhu, Langevin dynamics of lattice Yang-Mills-Higgs and applications. *arXiv:2401.13299*.
4. H. Shen, R. Zhu and X. Zhu, Large N limit and $1/N$ expansion of invariant observables in $O(N)$ linear σ-model via SPDE. *arXiv:2306.05166*. *Probability Theory and Related Fields.*
5. I. Chevyrev and H. Shen, Invariant measure and universality of the 2D Yang–Mills Langevin dynamic. *arXiv:2302.12160* (157 pages).
6. H. Shen, R. Zhu and X. Zhu, A stochastic analysis approach to lattice Yang-Mills at strong coupling. *Comm. Math. Phys.* 400, 805-851 (2023).
7. H. Shen. A stochastic PDE approach to large N problems in quantum field theory: a survey. *J. Math. Phys.* (2022), 63(8): 081103.
8. H. Shen, S. Smith and R. Zhu, A new derivation of the finite N master loop equation for lattice Yang-Mills, *Electronic Journal of Probability*, 2024, 29: 1-18
9. A. Chandra, I. Chevyrev, M. Hairer and H. Shen, Stochastic quantisation of Yang–Mills–Higgs in 3D. *Inventiones mathematicae* (2024): 1-156
10. H. Shen, R. Zhu and X. Zhu, An SPDE approach to perturbation theory of Φ^4_2: asymptoticity and short distance behavior, *Ann. App. Probab.* 33(4) (2023): 2600-2642.
11. H. Shen, R. Zhu and X. Zhu, Large N limit of the $O(N)$ linear sigma model in 3D, *Comm. Math. Phys.* **394**, 953-1009 (2022)
12. A. Chandra, I. Chevyrev, M. Hairer and H. Shen, Langevin dynamic for the 2D Yang-Mills measure, *Publ. Math. IHÉS.* (2022), 1-147.

13. H. Shen, S. Smith, R. Zhu and X. Zhu, Large N limit of the linear sigma model via stochastic quantization, *Ann. Probab.* (2022), 50(1): 131-202.
14. H. Shen, J. Song, R. Sun and L. Xu, Scaling limit of a directed polymer among a Poisson field of independent walks, *J. Funct. Anal.* (2021), 281(5): 109066.
15. J. Dubédat and H. Shen, Stochastic Ricci flow on compact surfaces, *Int. Math. Res. Not.* (2022), 63(8): 081103.
16. I. Corwin and H. Shen, Some recent progress in singular stochastic partial differential equations, *Bulletin of the American Mathematical Society* 57.3 (2020): 409-454.
17. A. Chandra, D. Erhard and H. Shen, Local solution to the multi-layer KPZ equation, *J. Stat. Phys.* **175** *(2019), no. 6, 1080-1106.*
18. A. Chandra, M. Hairer and H. Shen, The dynamical sine-Gordon model in the full subcritical regime, arXiv:1808.02594.
19. H. Shen and L.-C. Tsai, Stochastic Telegraph equation limit for the stochastic six vertex model, *Proc. Amer. Math. Soc.* 147 (2019), 2685-2705
20. I. Corwin, P. Ghosal, H. Shen and L.-C. Tsai, Stochastic PDE limit of the six vertex model, *Comm. Math. Phys.* (2020): 1-94.
21. H. Shen, Stochastic quantization of an Abelian gauge theory, *Comm. Math. Phys.* (2021) 384(3), 1445-1512
22. I. Corwin and H. Shen, Open ASEP in the weakly asymmetric regime, *Comm. Pure Appl. Math.* 71, no. 10 (2018): 2065-2128.
23. H. Shen and H. Weber, Glauber dynamics of 2D Kac-Blume-Capel model and their stochastic PDE limits, *J. Funct. Anal. Vol 275, Issue 6, (2018), 1321-1367*
24. A. Chandra and H. Shen, Moment bounds for SPDEs with non-Gaussian fields and application to the Wong–Zakai problem, *Electron. J. Probab. Vol 22 (2017), paper no. 68.*
25. I. Corwin, H. Shen and L-C. Tsai, ASEP(q,j) converges to the KPZ equation, *Ann. Inst. Henri Poincaré (B) Probab. Stat. (2018),* **54***, No. 2, 995-1012.*
26. H. Shen and W. Xu, Weak universality of dynamical Φ^4_3: non-Gaussian noise, *Stoch PDE: Anal Comp (2017).*
27. M. Hairer and H. Shen, A central limit theorem for the KPZ equation, *Ann. Probab.* **45** *(2017), no. 6B, 4167-4221.*
28. M. Hairer and H. Shen, The dynamical sine-Gordon model, *Comm. Math. Phys.* **341** *(2016), no. 3, 933-989*
29. I. Corwin, T. Seppäläinen and H. Shen, The strict-weak lattice polymer, *J. Stat. Phys.* **160** *(2015), no. 4, 1027-1053*
30. W. E and H. Shen, Exact renormalization group analysis of turbulent transport by the shear flow, *J. Stat. Phys.* **153** *(2013), no. 4, 553-571*
31. W. E and H. Shen, Mean field limit of a dynamical model of polymer systems, *Sci. China Math.* **56** *(2013), no. 12, 2591-2598*
32. H. Shen, A renormalization group method by harmonic extensions and the classical dipole gas, *Ann. Henri Poincaré* **17** *(2016), no. 4, 861-911*
33. W. E, A. Jentzen and H. Shen, Renormalized powers of Ornstein-Uhlenbeck processes and well-posedness of stochastic Ginzburg-Landau equations, *Nonlinear Anal.* **142** *(2016), 152-193*

Grants, Awards, Honors

- Frontiers of Science Award at International Congress of Basic Science in Beijing (2025);
- Vilas Associate Award (2025) at Wisconsin-Madison;
- Simons Fellow in Mathematics (2024);
- NSF CAREER, DMS-2044415 (2021-2026);
- NSF DMS-1954091 (2020-2023);
- UW-Madison Fall competition award (2019; withdrawn upon receiving NSF)
- "Editors' pick from the Annals of Probability", 2018 IMS Annual Meeting at Vilnius;
- NSF DMS-1804339 (Conference Grant, Co-PI, 2018-2019);
- NSF DMS-1712684 (2017-2020, changed to DMS-1909525 when PI moved to Madison);
- Axioms Travel Awards (2017);
- AMS Simons Travel Grant (2016 - 2018);
- Columbia University Minerva Foundation Fellowship (2015 - 2019);
- Princeton University Centennial Fellowship (2008 - 2012).

Editorial services

- Annals of Probability: Associate Editor
- Stochastics and Partial Differential Equations: Analysis and Computations: Associate Editor
- Annales de l'Institut Henri Poincaré (B): Associate Editor

Lecture Notes, Workshop Reports

1. Lecture notes for topics course "Topics in Stochastic PDE" taught at Columbia University and University of Wisconsin-Madison (in progress).
2. Lecture notes for Cornell Probability Summer School "Stochastic PDEs and quantum field theory".
3. Oberwolfach reports:
   • *SPDEs with three types of multiplicative noises* for Workshop "Rough Paths, Regularity Structures and Related Topics" (2016), no. 24. • *A dynamical approach to lattice Yang–Mills* for Workshop "Universality: Random Matrices, Random Geometry and SPDEs" (2022). • *Intrinsic uniqueness of gauge-covariant Yang–Mills dynamic* for Workshop "Statistical Physics and Random Surfaces" (2024).

Theses

- *PhD Thesis: Renormalization Theory in Statistical Physics and Stochastic Analysis*

  Committee: Michael Aizenman & Weinan E (Supervisor) & Thomas Spencer

  Description: This thesis consists of: (1) a rigorous renormalization group method based on harmonic extensions; (2) well-posedness of a class of stochastic Ginzburg-Landau equations; (3) rigorous renormalization group study of turbulent transport by the shear flow.

Teaching Experience (including upcoming courses)

Wisconsin - Madison:

Spring	2024	An Introduction to Brownian Motion and Stochastic Calculus (Math 635)
Fall	2023	Theory of Probability I (Math 733),
Spring	2023	**Topics on SPDE** (Math 833),
Fall	2022	Stochastic Analysis (Math 735),
Spring	2022	An Introduction to Brownian Motion and Stochastic Calculus (Math 635)
Fall	2021	Calculus and Analytic Geometry II (Math 222, two sections)
Spring	2021	Introduction to the Theory of Probability (Math 431),
Fall	2020	Stochastic Analysis (Math 735),
Spring	2020	**Topics on SPDE** (Math 833),
Spring	2020	An Introduction to Brownian Motion and Stochastic Calculus (Math 635),
Spring	2019	Introduction to the Theory of Probability (Math 431),
Fall	2018	Stochastic Analysis (Math 735),

Math 990 Reading and Research (Independent Study) Fall 2019-2020, Fall 2020-2021
Math 699 Directed Study (Independent Study) Summer 2020

Columbia University:

Spring	2018	Calculus IV (Two sections),
Fall	2017	Calculus IV,
Spring	2017	**Topics in Stochastic PDE**,
Fall	2016	Calculus IV (Two sections),
Summer	2016	Ordinary Differential Equations (temporary instructor),
Spring	2016	Calculus IV,
Fall	2015	Calculus I (Two sections).

Summer school lectures

- 2016: 7/25-8/05, Peking Univ., 2-week summer course on stochastic PDEs and regularity structures
- 2020: 8/3-8/7, Chinese Academy of Sciences - Beijing Institute of Technology joint online SPDE summer school, One-week summer course *"Quantum field theory and stochastic PDE"*.
- 2024: 7/1-7/12, MSRI/SLMath Summer Graduate School Lectures: *"Stochastic Quantisation"*.
- 2024: 7/22-8/2, Cornell Summer school lectures: *"Stochastic PDEs and quantum field theory"*.

Other mini-courses and lectures

- 2018: Chinese Academy of Sciences: Supplementary lectures for M.Hairer's course on the theory of regularity structures (7/16-7/20); Mini-lectures on Stochastic PDE in "The International Program on Regularity Structures and Stochastic Systems" (7/30-8/03).
- 2020 Dec, Shandong University, Online lectures on *"Quantum field theory and stochastic PDE"*.
- 2022: 6/21-6/23, Imperial College, 3 lectures on *"A dynamical approach to lattice Yang–Mills"*.
- 2024: 7/22-28, lecture series on *Stochastic quantization of Yang–Mills* at Bernoulli Center program "New developments and challenges in Stochastic Partial Differential Equations", EPFL, Switzerland.
- 2024: Nov 4-8, One week mini-course "Stochastic aspects of Yang-Mills theory" (joint with I.Chevyrev), in Program "Random paths to QFT: New probabilistic approaches to field theory" at Simons Center for Geometry and Physics, Stony Brook.

- 2024: Nov-Dec, One month mini-course on "Topics on global solutions to singular SPDEs", EPFL, Switzerland.

Short-term visiting activities

1. Trimester Program "Randomness, PDEs and Nonlinear Fluctuations", Hausdorff Research Institute for Mathematics, Bonn, Germany. September-December 2019
2. EPFL, Switzerland. Fall 2024.
3. Trimester Program "Probabilistic methods in quantum field theory", Hausdorff Research Institute for Mathematics, Bonn, Germany. May-August 2025

Conference and Workshop Talks

1. BIRS Workshop "Emerging Synergies between Stochastic Analysis and Statistical Mechanics", Banff, Canada. 10/26-10/31/2025
2. Workshop "Stochastic Analysis in Mathematics and Natural Sciences: Theory and Applications", Institute of Applied and Computational Mathematics, Crete, Greece. 6/5-6/2025
3. NYU Shanghai-Peking-Westlake probability conference. 4/10-4/13/2025
4. **Plenary speaker**, Conference on Stochastic Analysis and PDE, Tulane University. 2/11-14/2025
5. **Plenary lecture**, Northeast Probability Seminar, Columbia University. 11/21-11/22/2024
6. BIRS Workshop "Stochastics and Geometry", Banff, Canada. 9/8-9/13/2024
7. BIRS-IASM workshop "Partial Differential Equations: Deterministic and Probabilistic", Hangzhou, China. **Tutorial (2 lectures).** 8/18-8/23/2024
8. "Stochastic PDEs in Seoul 2024", KIAS, South Korea. 8/12-8/16/2024
9. "Quantum Fields and Probability II", Institut Mittag-Leffler, Djursholm, Sweden. 7/15-7/19/2024
10. Pacific Rim Conference in Mathematics, Darwin, Australia. 6/17-6/21/2024
11. Oberwolfach Workshop "Statistical Physics and Random Surfaces", Germany. 5/12-5/17/2024
12. Conference "Frontiers of Stochastic Analysis", Chicago. **Tutorial (2 lectures).** 8/9–8/11/2023
13. PKU Mathematics Forum, Beijing. 8/2–8/5/2023
14. "Stochastic analysis meets QFT - critical theory", Muenster, Germany. 6/12–6/14/2023
15. 13th AIMS Conference on Dynamical Systems, Differential Equations and Applications. Wilmington, North Carolina. 5/31-6/4/2023
16. BIRS Workshop "Random Growth Models and KPZ Universality", Banff, Canada. 5/28-6/2/2023
17. BIRS Workshop "New Trends in Stochastic Analysis", Casa Matematica, Mexico. 5/21-5/26/2023
18. Stochastic PDEs and Related Topics, Brin Center, Maryland. 11/14-11/16/2022
19. Oberwolfach Workshop "Universality: Random Matrices, Random Geometry and SPDEs", Oberwolfach, Germany. 5/29-6/4/2022
20. Random Matrix EurAsia, Singapore. 4/18-5/13/2022
21. International Conference for Chinese Young Probability Scholars, Xiangtan. 10/2021
22. 10^{th} International Conference: Stochastic Analysis and its Applications (ICSAA), Kyoto. 9/2021
23. Bath Mathematical Symposium on "PDE and Randomness", UK. 9.1–9.10/2021
24. 20^{th} International Congress on Mathematical Physics (ICMP), Session "Nonequilibrium Statistical Mechanics", Geneva, Switzerland. 8.2-8.7/2021
25. 10^{th} World Congress in Probability and Statistics, Session "Stochastic Partial Differential Equations" organized by L.Mytnik, Seoul, Korea. 7.19-23/2021
26. Webinar series on Analysis and PDEs (4): "Probabilistic and stochastic PDEs". 4/24/2021

27. AIM Workshop "Criticality and stochasticity in quasilinear fluid systems", San Jose. 4/5-4/9/2021
28. Two mini-lectures on *"Stochastic Quantization"* for "Quantization Days". 11/5-11/6/2020
29. Online talk for Integrable Probability FRG meeting. 4/3/2020
30. Symposium on Probability and Statistics, Chinese Academy of Sciences. 12/15/2019
31. "SPDE day–recent progress on quasilinear equations", Hausdorff Institute, Bonn. 10.18/2019
32. AMS Sectional Meeting, Session "Stochastic Partial Differential Equations and Related Fields", Madison. 9/15/2019
33. IMS-China 2019, Dalian, Invited session "KPZ equations and related models". 7/9/2019
34. IMS-China 2019, Dalian, Invited session "Rough path and SPDE". 7/8/2019
35. Conference "Paths between Probability, PDEs, and Physics", Imperial College London. 7/5/2019
36. Conference "Probability and quantum field theory: discrete models, CFT, SLE and constructive aspects", Porquerolles, France. 6/10-6/21/2019
37. AMS Sectional Meeting, Session "Advances in Mathematical Fluid Mechanics", Hawaii. 3/23/2019
38. Workshop "Scaling limits & SPDEs: recent developments and future directions", Isaac Newton Institute, Cambridge, UK. 12/13/2018
39. AMS Sectional Meeting "Special Session on Probability, Combinatorics, and Statistical Mechanics", University of Delaware. 9/29/2018
40. Workshop on Statistical Physics and Probability, Peking University. 7/22/2018
41. Workshop in International Program on Regularity Structures and Stochastic Systems, Chinese Academy of Sciences, Beijing. 7/13/2018
42. 2018 IMS Annual Meeting and the 12^{th} International Vilnius Conference, invited talk in Session "Editors' pick from the Annals of Probability", Lithuania. 7/5/2018
43. Integrable Probability FRG Conference, MIT, Boston. 5/18/2018
44. Workshop "Recent developments in Constructive Field Theory", New York. 3/14/2018
45. UBC Summer School in Probability, Vancouver. 6/13/2017
46. Warwick EPSRC Symposium "Stochastic PDEs: Analysis and Computation", UK. 3/29/2017
47. 9^{th} World Congress on Probability and Statistics, Toronto, Invited talk in session "SPDEs and the work of Martin Hairer". 7/13/2016
48. Workshop "Random Structures in High Dimensions", Oaxaca, Mexico. 6/28/2016
49. Workshop on Stochastic PDE, Simons Center for Geometry and Physics, Stony Brook. 5/20/2016
50. Oberwolfach workshop: rough paths, regularity structures and related topics, Germany. 5/5/2016
51. Columbia–Princeton Probability Day, New York. 4/8/2016
52. Meeting "Paths to, from and in renormalization: At the confluence of rough paths, algebra, analysis and geometry", Potsdam, Germany. 2/10/2016
53. Current Topics in Mathematical Physics and Probability, Sanya, China. 12/28/2015
54. Pittsburgh workshop on Stochastic PDEs. 12/4/2015
55. International Congress on Industrial and Applied Mathematics (ICIAM), Beijing. 8/11/2015
56. 38^{th} Conference on Stochastic Processes and their Applications (SPA), Oxford, UK. 7/14/2015
57. Peking University Youth Probability Forum, Beijing. 7/7/2015
58. Clay Mathematics Institute workshop "Random Polymers and Algebraic Combinatorics", Oxford, UK. 5/25/2015
59. MASDOC summer school "Topics in renormalisation group and regularity structures". University of Warwick. 5/11/2015

60. 3rd Annual ERC Berlin–Oxford Young Researchers Meeting on Applied Stochastic Analysis. Weierstrass Institute, Berlin. 1/27/2015
61. 13th Northeast Probability Seminar, Columbia University. 11/21/2014
62. Special Seminar on KPZ, Berkeley. *Talk title: Strict-weak polymers and KPZ universality.* 7/10/2014
63. Workshop on Harmonic Analysis and the Renormalization Group, U. of Virginia. *Talk title: Renormalization group by harmonic extensions.* 4/21/2014
64. Workshop on Stochastic Analysis and Related Topics, Chinese Academy of Sciences. 8/6/2013

Seminar and Colloquium Talks

1. Peking University Probability Seminar. (3/3/2025)
2. University of Chicago Calderón–Zygmund Analysis Seminar. (2/24/2025)
3. Maryland Probability Seminar. (2/5/2025)
4. Chinese Academy of Sciences: L.K.Hua Youth Math Forum. (8/29/2024)
5. University of Nebraska–Lincoln, Continuum Mechanics Seminar. (4/18/2024)
6. Lehigh University Colloquium. (3/27/2024)
7. Wisconsin-Madison Geometry and Topology seminar. (3/1/2024)
8. University of South California, CAMS colloquium. (11/20/2023)
9. MIT probability seminar. (10/23/2023)
10. One World Probability Seminar. (10/19/2023).
11. Penn and Temple Probability Seminar. (9/6/2023)
12. MIT Probability Seminar. (10/24/2022)
13. Texas Tech "Probability, Differential Geometry, and Math Physics" Seminar, online. (10/19/2022)
14. Utah Stochastics Seminar, online. (10/7/2022)
15. University of Cambridge Seminar. (6/7/2022)
16. University of Illinois Chicago, Analysis Seminar. (3/14/2022)
17. Purdue Probability Seminar, online. (3/2/2022)
18. University of Chicago Probability Seminar. (10/29/2021)
19. Wuhan University Stochastic analysis lecture series, online. (6/7/2021)
20. Random Geometry and Statistical Physics seminar, online. (4/20/2021)
21. University of Kansas Probability Seminar. (4/14/2021)
22. Stochastic Webinar, organized by Chinese Academy of Sciences. (3/9/2021)
23. UCSD Probability Seminar, online. (2/25/2021)
24. Probability and the City Seminar, organized jointly by Columbia and Courant, online. (2/12/2021)
25. Berkeley Probability Seminar, online. (10/14/2020)
26. Beijing Institute of Technology. (12/23/2019)
27. University of Bonn Oberseminar Stochastik. (11/21/2019)
28. Warwick Probability Seminar. (10/16/2019)
29. Princeton Probability Seminar. (4/17/2019)
30. Rochester "Probability, Ergodic Theory, Mathematical Physics" Seminar. (3/29/2019)
31. Rutgers Mathematical Physics Seminar. (3/14/2019)
32. UCLA Probability Seminar. (11/01/2018)

33. Columbia Probability Seminar. (10/05/2018)
34. Wisconsin-Madison Probability Seminar. (9/20/2018)
35. Carnegie Mellon University: talk in "SPDE working group"; colloquium talk in Center for Nonlinear Analysis. (4/17/2018)
36. Cornell Probability Seminar. (4/10/2018)
37. Duke Probability Seminar. (3/1/2018)
38. U. Connecticut "Discrete Math and Statistical Mechanics" Seminar. (2/22/2018)
39. Imperial College London Probability Seminar. (11/21/2017)
40. Penn and Temple Probability Seminar. (12/6/2016)
41. Wisconsin-Madison Probability Seminar. (12/1/2016)
42. University of Toronto Probability Seminar. (10/21/2016)
43. Rutgers University Seminar on Mathematical Finance, Probability and PDEs. (10/4/2016)
44. Chinese Academy of Sciences. (8/5/2016)
45. U. Chicago Probability Seminar. (4/15/2016)
46. Brown University Dynamical System Seminar. (3/14/2016)
47. Harvard University Random Matrix and Probability Seminar. (3/11/2016)
48. City University of New York Probability Seminar. (3/1/2016)
49. Institute for Advanced Study Analysis Seminar. (2/23/2016)
50. Duke University Probability seminar. (10/29/2015)
51. U. of Macau Probability Seminar. (8/20/2015)
52. Oxford Stochastic Analysis Seminar. (6/15/2015)
53. Max Planck Institute at Leipzig, Analysis Seminar. (1/12/2015)
54. Cambridge Probability Seminar. (10/21/2014)
55. Loughborough Probability Seminar. (10/16/2014)
56. Warwick Statistical Mechanics Seminar. (10/9/2014)
57. University of Virginia Mathematical Physics Seminar, *Renormalization group by conditional expectations and dipole gas revisited* (12/4/2013)
58. Princeton University Ergodic Theory and Statistical Mechanics Seminar, *Renormalization group and stochastic PDEs* (11/21/2013)
59. Chinese Academy of Sciences, *Rigorous Renormalization Group and Applications* (9/2011)

Organizer

- 2025/Fall, MSRI/SLMath semester program "Recent Trends in Stochastic Partial Differential Equations", Berkeley.
- 2024, 10/10–10/12, Midwest Probability Colloquium, Chicago.
- 2024, 9/1–9/2, Graduate Student Probability Conference, Madison.
  (Supervise organizers, the conference is supported by my NSF CAREER grant DMS-2044415).
- 2024/Summer, MSRI/SLMath summer graduate school on "Stochastic Quantisation".
- 2023, 12/17–12/22, Oberwolfach Arbeitsgemeinschaft: QFT and Stochastic PDEs, (Co-organizer).
- 2022, 9/10–9/11, Graduate Student Probability Conference, Madison.
  (Supervise organizers, the conference is supported by my NSF CAREER grant DMS-2044415).
- 2022, 7/25–7/30, "SPDE and Related Fields" online summer School, (Co-organizer).

- 2022, 6/27–6/30, IMS Annual Meeting, London.
  Invited session on "Quantum field theory and stochastic analysis".
- 2022, 6/27–7/1, 42nd conference on Stochastic Processes and their Applications (SPA), Wuhan.
  Contributed session "KPZ equation".
- 2021: 7/26–7/31, SPDE online summer school, (Co-organizer).
- 2020: 8/3–8/8, SPDE online summer school, (Co-organizer).
- 2019: Co-organized Summer School "New Frontiers in Singular SPDEs and Scaling Limits" (9/23–9/27) and Workshop "Singular SPDEs and Related Topics" (10/21–10/25), at Hausdorff Institute for Mathematics, Bonn.
- 2019, 9/14–9/15, AMS Fall Central Sectional Meeting, Special Session on "Large Scale Properties of Interacting Stochastic Systems", Madison, (Co-organized with Seppalainen and Valko)
- 2019, 7/6–7/10, Invited session on "KPZ equations and related models", IMS-China 2019, Dalian
- 2018, 5/1–5/3, Meeting on "Transport and localization in random media: theory and applications" at Columbia University, partially supported by NSF DMS-1804339 (Co-PI)
  (Co-organized with Ivan Corwin, Alexis Drouot and Michael Weinstein)
- 2016, 2/5, Semi-annual Columbia-Courant joint probability seminar, with theme on Stochastic PDEs, at Columbia University
- Co-organized Columbia Probability Seminar (2015-2018), Madison Probability Seminar (2018-now), Madison Student Reading Seminar (2021-now).

Other Services

- Committee services at Wisconsin-Madison:
  Awards Committee, Graduate Admission, Graduate Advising, Graduate Program, Hiring Committee, VISP(Visiting International Student Program)/MA, and Conference/Special Lectures.
- Served on NSF panel for several times.
- Journal referee for 50+ papers.