# Marcel F. Nutz

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## Employment and Education

- *Professor*, Department of Statistics, Columbia University.
  (Assistant Prof. 2014, Associate Prof. 2016, tenured 2017, Full Prof. 2020; parental leave, 01–06/2023.)
  Also affiliated with the Department of Mathematics and the Data Science Institute.
  Faculty Director of the *Mathematics of Finance* Master program, 2020–.
- *J. F. Ritt Assistant Professor*, Department of Mathematics, Columbia University, 2011–2014.
- *Postdoctoral Research Fellow* (with H. M. Soner), ETH Zurich, 2010–2011.
- *Ph.D. in Mathematics*, ETH Zurich, 2010.
- *Diploma in Mathematics* with distinction, ETH Zurich, 2007.

## Select Awards and Honors

- *IMS Medallion Award*, 2024.
- *IMS Fellow*, 2023.
- *Columbia–Polytechnique Alliance Professor,* 2020–2021.
- *Alfred P. Sloan Research Fellow,* 2016–2018.
- *Minerva Foundation Fellow,* 2011–2014.
- *Medal of ETH*, 2007.
- Select keynote/plenary lectures:
  - 45th Stochastic Processes and their Applications (Medallion Lecture), Ithaca, 2026.
  - 3rd Vienna Congress on Mathematical Finance, 2025.
  - 8th Eastern Conference on Mathematical Finance, Toronto, 2024.
  - 9th SIAM FME Conference, Philadelphia, 2023.
  - 10th General AMAMEF Conference, Padova, 2021.
  - 13th German Probability and Stochastic Days, Freiburg, 2018.
  - 6th Asian Quantitative Finance Conference, Guangzhou, 2018.
  - 6th IMS FIPS Workshop, Edmonton, 2016.

## Grants

- NSF Funding:
  - NSF Grant DMS-2407074, 2024–2027 (sole PI).
  - NSF Grant DMS-2106056, 2021–2025 (sole PI).
  - NSF Grant DMS-1812661, 2018–2022 (sole PI).

## Publications and Preprints

67. S. Campbell, P. Bergault, J. Milionis, M. Nutz.  Optimal fees for liquidity provision in automated market makers.
Preprint arXiv:2508.08152, 2025.

66. S. Sheng, B. Wu, A. González-Sanz, M. Nutz.  Stability of mean-field variational inference.
Preprint arXiv:2506.07856, 2025.

65. A. González-Sanz, S. Eckstein, M. Nutz.  Sparse regularized optimal transport without curse of dimensionality.
Preprint arXiv:2505.04721, 2025.

64. S. Campbell, M. Nutz:  Randomization in optimal execution games.
Preprint arXiv:2503.08833, 2025.

63. S. Campbell, M. Nutz:  Optimal execution among $N$ traders with transient price impact.
Preprint arXiv:2501.09638, 2025.

62. A. González-Sanz, M. Nutz.  Sparsity of quadratically regularized optimal transport: Scalar case.
Preprint arXiv:2410.03353, 2024.

61. A. González-Sanz, M. Nutz, A. Riveros Valdevenito.  Monotonicity in quadratically regularized linear programs.
*SIAM Journal on Optimization,* Vol. 35, No. 2, pp. 1419–1437, 2025.

60. A. González-Sanz, M. Nutz.  Quantitative convergence of quadratically regularized linear programs.
*Applied Mathematics & Optimization,* Vol. 91, No. 3, Paper No. 68, 2025.

59. M. Nutz.  Quadratically regularized optimal transport: Existence and multiplicity of potentials.
*SIAM Journal on Mathematical Analysis,* Vol. 57, No. 3, pp. 2622–2649, 2025.

58. M. Nutz and J. Wiesel.  On the martingale Schrödinger bridge between two distributions.
Preprint arXiv:2401.05209, 2024.

57. M. Nutz, K. Webster and L. Zhao.  Unwinding stochastic order flow: when to warehouse trades.
Preprint arXiv:2310.14144, 2023.

56. M. Nutz and A. Riveros Valdevenito.  On the Guyon–Lekeufack volatility model.
*Finance & Stochastics,* Vol. 28, No. 4, pp. 1203–1223, 2024.

55. Y. Yang, S. Eckstein, M. Nutz and S. Mandt.  Estimating the rate–distortion function by Wasserstein gradient descent.
*37th Conference on Neural Information Processing Systems (NeurIPS), 2023.*

54. P. Ghosal and M. Nutz.  On the convergence rate of Sinkhorn's algorithm.
*Mathematics of Operations Research,* forthcoming.

53. M. Nutz, R. Wang and Z. Zhang.  Martingale transports and Monge maps.
*Annals of Applied Probability,* Vol. 34, No. 6, pp. 5556–5577, 2024.

52. S. Eckstein and M. Nutz.  Convergence rates for regularized optimal transport via quantization.
*Mathematics of Operations Research,* Vol. 49, No. 2, pp. 1223–1240, 2024.

51. M. Nutz, J. Wiesel and L. Zhao.  Martingale Schrödinger bridges and optimal semistatic portfolios.
*Finance & Stochastics,* Vol. 27, No. 1, pp. 233–254, 2023.

50. M. Nutz, J. Wiesel and L. Zhao.  Limits of semistatic trading strategies.
*Mathematical Finance,* Vol. 33, No. 1, pp. 185–205, 2023.

49. M. Nutz and J. Wiesel.  Stability of Schrödinger potentials and convergence of Sinkhorn's algorithm.
*Annals of Probability,* Vol. 51, No. 2, pp. 699–722, 2023.

48. M. Nutz and Y. Zhang.  Mean field contest with singularity.
*Mathematics of Operations Research,* Vol. 48, No. 2, pp. 1095–1118, 2023.

47. S. Eckstein and M. Nutz.  Quantitative stability of regularized optimal transport and convergence of Sinkhorn's algorithm.
*SIAM Journal on Mathematical Analysis,* Vol. 54, No. 6, pp. 5922–5948, 2022.

46. P. Ghosal, M. Nutz and E. Bernton.  Stability of entropic optimal transport and Schrödinger bridges.
*Journal of Functional Analysis,* Vol. 283, No. 9, Paper No. 109622, 2022.

45. M. Nutz and J. Wiesel.  Entropic optimal transport: convergence of potentials.
*Probability Theory and Related Fields,* Vol. 184, pp. 401–424, 2022.

44. E. Bernton, P. Ghosal and M. Nutz.  Entropic optimal transport: geometry and large deviations.
*Duke Mathematical Journal,* Vol. 171, No. 16, pp. 3363–3400, 2022.

43. M. Nutz and F. Stebegg.  Climate change adaptation under heterogeneous beliefs.
*Mathematics and Financial Economics,* Vol. 16, No. 3, pp. 481–508, 2022.

42. M. Nutz and Y. Zhang.  Reward design in risk-taking contests.
*SIAM Journal on Financial Mathematics,* Vol. 13, No. 1, pp. 129–146, 2022.

41. M. Nutz and R. Wang.  The directional optimal transport.
*Annals of Applied Probability,* Vol. 32, No. 2, pp. 1400–1420, 2022.

40. M. Beiglböck, M. Nutz and F. Stebegg.  Fine properties of the optimal Skorokhod embedding problem.
*Journal of the European Mathematical Society (JEMS),* Vol. 24, No. 4, pp. 1389–1429, 2022.

39. M. Nutz.  Introduction to Entropic Optimal Transport.
*Lecture Notes,* 2021.

38. J. Muhle-Karbe, M. Nutz and X. Tan.  Asset pricing with heterogeneous beliefs and illiquidity.
*Mathematical Finance,* Vol. 30, No. 4, pp. 1392–1421, 2020.

37. M. Nutz and Y. Zhang.  Conditional optimal stopping: A time-inconsistent optimization.
*Annals of Applied Probability,* Vol. 30, No. 4, pp. 1669–1692, 2020.

36. M. Nutz and J. A. Scheinkman. Shorting in speculative markets.
*Journal of Finance,* Vol. 75, No. 2, pp. 995–1036, 2020.

35. M. Nutz, J. San Martin and X. Tan. Convergence to the mean field game limit: a case study.
*Annals of Applied Probability,* Vol. 30, No. 1, pp. 259–286, 2020.

34. M. Nutz, F. Stebegg and X. Tan. Multiperiod martingale transport.
*Stochastic Processes and their Applications,* Vol. 130, No. 3, pp. 1568–1615, 2020.

33. M. Nutz and Y. Zhang. A mean field competition.
*Mathematics of Operations Research,* Vol. 44, No. 4, pp. 1145–1509, 2019.

32. M. Nutz and F. Stebegg. Canonical supermartingale couplings.
*Annals of Probability,* Vol. 46, No. 6, pp. 3351–3398, 2018.

31. J. Muhle-Karbe and M. Nutz. A risk-neutral equilibrium leading to uncertain volatility pricing.
*Finance & Stochastics,* Vol. 22, No. 2, pp. 281–295, 2018.

30. M. Nutz. A mean field game of optimal stopping.
*SIAM Journal on Control and Optimization,* Vol. 56, No. 2, pp. 1206–1221, 2018.

29. A. Neufeld and M. Nutz. Robust utility maximization with Lévy processes.
*Mathematical Finance,* Vol. 28, No. 1, pp. 82–105, 2018.

28. J. Guyon, R. Menegaux and M. Nutz. Bounds for VIX futures given S&P 500 smiles.
*Finance & Stochastics,* Vol. 21, No. 3, pp. 593–630, 2017.

27. M. Beiglböck, M. Nutz and N. Touzi. Complete duality for martingale optimal transport on the line.
*Annals of Probability,* Vol. 45, No. 5, pp. 3038–3074, 2017.

26. S. Biagini, B. Bouchard, C. Kardaras and M. Nutz. Robust fundamental theorem for continuous processes.
*Mathematical Finance,* Vol. 27, No. 4, pp. 963–987, 2017.

25. A. Neufeld and M. Nutz. Nonlinear Lévy processes and their characteristics.
*Transactions of the American Mathematical Society,* Vol. 369, No. 1, pp. 69–95, 2017.

24. B. Bouchard and M. Nutz. Consistent price systems under model uncertainty.
*Finance & Stochastics,* Vol. 20, No. 1, pp. 83–98, 2016.

23. B. Bouchard and M. Nutz. Stochastic target games and dynamic programming via regularized viscosity solutions.
*Mathematics of Operations Research,* Vol. 41, No. 1, pp. 109–124, 2016.

22. M. Nutz. Utility maximization under model uncertainty in discrete time.
*Mathematical Finance,* Vol. 26, No. 2, pp. 252–268, 2016.

21. M. Nutz. Robust superhedging with jumps and diffusion.
*Stochastic Processes and their Applications,* Vol. 125, No. 12, pp. 4543–4555, 2015.

20. B. Bouchard and M. Nutz. Arbitrage and duality in nondominated discrete-time models.
*Annals of Applied Probability,* Vol. 25, No. 2, pp. 823–859, 2015.

19. M. Nutz and J. Zhang. Optimal stopping under adverse nonlinear expectation and related games.
*Annals of Applied Probability,* Vol. 25, No. 5, pp. 2503–2534, 2015.

18. M. Beiglböck and M. Nutz. Martingale inequalities and deterministic counterparts.
    *Electronic Journal of Probability,* Vol. 19, No. 95, pp. 1–15, 2014.

17. A. Neufeld and M. Nutz. Measurability of semimartingale characteristics with respect to the probability law.
    *Stochastic Processes and their Applications,* Vol. 124, No. 11, pp. 3819–3845, 2014.

16. M. Nutz. Superreplication under model uncertainty in discrete time.
    *Finance & Stochastics*, Vol. 18, No. 4, pp. 791–803, 2014.

15. B. Bouchard, L. Moreau and M. Nutz. Stochastic target games with controlled loss.
    *Annals of Applied Probability*, Vol. 24, No. 3, pp. 899–934, 2014.

14. A. Neufeld and M. Nutz. Superreplication under volatility uncertainty for measurable claims.
    *Electronic Journal of Probability*, Vol. 18, No. 48, pp. 1–14, 2013.

13. M. Nutz and R. van Handel. Constructing sublinear expectations on path space.
    *Stochastic Processes and their Applications*, Vol. 123, No. 8, pp. 3100–3121, 2013.

12. M. Nutz. Random $G$-expectations.
    *Annals of Applied Probability*, Vol. 23, No. 5, pp. 1755–1777, 2013.

11. M. Nutz. Pathwise construction of stochastic integrals.
    *Electronic Communications in Probability*, Vol. 17, No. 24, pp. 1–7, 2012.

10. M. Nutz. A quasi-sure approach to the control of non-Markovian stochastic differential equations.
    *Electronic Journal of Probability*, Vol. 17, No. 23, pp. 1–23, 2012.

 9. B. Bouchard and M. Nutz. Weak dynamic programming for generalized state constraints.
    *SIAM Journal on Control and Optimization*, Vol. 50, No. 6, pp. 3344–3373, 2012.

 8. Y. Dolinsky, M. Nutz and H. M. Soner. Weak approximation of $G$-expectations.
    *Stochastic Processes and their Applications*, Vol. 122, No. 2, pp. 664–675, 2012.

 7. M. Nutz and H. M. Soner. Superhedging and dynamic risk measures under volatility uncertainty.
    *SIAM Journal on Control and Optimization*, Vol. 50, No. 4, pp. 2065–2089, 2012.

 6. M. Nutz. Risk aversion asymptotics for power utility maximization.
    *Probability Theory and Related Fields*, Vol. 152, No. 3–4, pp. 703–749, 2012.

 5. M. Nutz. Power utility maximization in constrained exponential Lévy models.
    *Mathematical Finance*, Vol. 22, No. 4, pp. 690–709, 2012.

 4. M. Nutz. The Bellman equation for power utility maximization with semimartingales.
    *Annals of Applied Probability*, Vol. 22, No. 1, pp. 363–406, 2012.

 3. J. Muhle-Karbe and M. Nutz. Small-time asymptotics of option prices and first absolute moments.
    *Journal of Applied Probability*, Vol. 48, No. 4, pp. 1003–1020, 2011.

 2. M. Nutz. The opportunity process for optimal consumption and investment with power utility.
    *Mathematics and Financial Economics*, Vol. 3, No. 3, pp. 139–159, 2010.

 1. M. Nutz. Optimal consumption and investment with power utility.
    *Dissertation ETH Zurich,* No. 19272, 2010. Advisor: M. Schweizer. Co-examiners: H. Pham, H. M. Soner, N. Touzi.

 0. M. Nutz. Quadratic PDE and backward SDE.
    *Diploma Thesis ETH Zurich,* 2007. Advisor: F. Delbaen.

# Advising

*Postdoc Mentor for*

- Alberto González-Sanz, 2023–.
- Steven Campbell, 2023–.
- Graeme Baker, 2023–.
- Johannes Wiesel, 2020–2023. *First job:* Carnegie Mellon University, Assistant Prof. (Tenure-Track).
- Carsten Chong, 2020–2023. Hong Kong University of Science and Technology, Assistant Prof. (TT).
- Gökçe Dayanikli, 2022–2023. UI Urbana Champaign, Assistant Prof. (TT).
- Xiaofei Shi, 2020–2022. University of Toronto, Assistant Prof. (TT).
- Ruimeng Hu, 2018–2020. University of California, Santa Barbara, Assistant Prof. (TT).
- Yuchong Zhang, 2015–2018. University of Toronto, Assistant Prof. (TT).

*Ph.D. Students*

- Shunan Sheng, in progress.
- Andrés Riveros Valdevenito, in progress.
- Long Zhao, defended 4/2023. *First job:* undisclosed trading firm.
- Florian Stebegg, defended 6/2019. Two Sigma.
- Xiaowei Tan, defended 5/2019. Morgan Stanley.
- Ariel Neufeld, defended 5/2015. Postdoc at ETH Zurich, then Assistant Prof. (TT) at NTU.

*Dissertation Committee Member/Secondary Advisor/Referee for*

Armand Ley (Université de Haute-Alsace), 2025; Abhishek Tilva (Statistics), 2025; Richard Groenewald (Statistics), 2025; Zhen Huang (Statistics), 2024; Agathe Soret (IEOR), 2022; Luc Le Flem (IEOR), 2022; Alejandra Quintos Lima (Statistics), 2012; Johannes Wiesel (Oxford), 2020; Zhi Li (Mathematics), 2020; Donghan Kim (Mathematics), 2020; Minghan Yan (Mathematics), 2017; Léo Neufcourt (Statistics), 2017; Lisha Qiu (Statistics), 2017; Yinghui Wang (Mathematics), 2016; Cameron Bruggeman (Mathematics), 2016; Sébastien Choukroun (Paris 7), 2015; Subhankar Sadhukhan (Statistics), 2012.

# Service to Community

- Associate Editor for
  - *Annals of Applied Probability,* 2025–.
  - *SIAM Journal on Control and Optimization,* 2024–.
  - *Mathematical Finance,* 2020–.
  - *Mathematics of Operations Research,* 2019–.
  - *SIAM Journal on Financial Mathematics,* 2018–.
  - *Frontiers of Mathematical Finance,* 2021–2025.
  - *Stochastic Processes and their Applications,* 2018–2024.

- Co-Chair, IMS Standing Committee on Finance, Insurance, Probability and Statistics (FIPS), 2016–2023.
- ArXiv moderator, 2014–.
- Co-organizer of the following research meetings:
  - SLMath (formerly MSRI) Summer Graduate School *Statistical Optimal Transport*, Berkeley, 2025.
  - *Lars T. Nielsen Memorial Conference,* New York, 2025.
  - *Statistics and Optimal Transport,* New York, 2025.
  - *Workshop on Regularized Optimal Transport,* Granada, 2024.
  - *Stochastic Optimal Control in Economics, Finance, and Learning Theory,* Zurich, 2023.
  - *Optimal Transport and Finance,* minisymposium at SIAM FME, Philadelphia, 2023.
  - *Market Impact and Transaction Costs,* invited session at 11th AMaMeF Conference, Bielefeld, 2023.
  - *Optimal Transport and Finance,* invited session at 11th AMaMeF Conference, Bielefeld, 2023.
  - *4th Berkeley–Columbia Meeting in Engineering and Statistics,* New York, 2023.
  - *Applied Optimal Transport,* IMSI, Chicago, 2022.
  - *Machine Learning and Optimal Transport,* IMSI, Chicago, 2021.
  - *10th IMS FIPS Workshop*, Seoul, 2020 (canceled due to Covid-19).
  - *Optimal Transport: Regularization and Applications*, New York (virtual), 2020.
  - *3rd Berkeley–Columbia Meeting in Engineering and Statistics,* Berkeley, 2020.
  - *MAFIA—Conference in Honor of Philip E. Protter*, New York, 2019.
  - *9th IMS FIPS Workshop*, Shanghai, 2019.
  - *Mean Field Games,* minisymposium at SIAM Conference, Toronto, 2019.
  - *Symposium in Honor of Mark Brown*, New York, 2019.
  - *8th IMS FIPS Workshop,* London, 2018.
  - *METE—Mathematics and Economics: Trends and Explorations,* Zurich, 2018.
  - *2nd Berkeley–Columbia Meeting in Engineering and Statistics,* New York, 2018.
  - *7th IMS FIPS Workshop*, Baltimore, 2017.
  - *Theoretical Insight through Experimentation*, ICERM Workshop, Providence, 2017.
  - *Thera Stochastics—A Mathematics Conference in Honor of Ioannis Karatzas,* Santorini, 2017.
  - *Berkeley–Columbia Meeting in Engineering and Statistics,* Berkeley, 2016.
  - *World Congress of the Bachelier Finance Society,* New York, 2016 (local organizer).
  - *11th Columbia–JAFEE Conference*, New York, 2015.
  - *Optimal Transport and Stochastic Calculus*, invited Session at SPA conference, Oxford, 2015.
  - *Conference on Stochastic Portfolio Theory and Related Topics*, New York, 2015.
  - *Symposium on Systemic Risk*, New York, 2015.
  - *Probability, Control and Finance—A Conference in Honor of the 60th Birthday of Ioannis Karatzas*, New York, 2012.
- Reviewer for domestic and international grant-making agencies
- Referee for numerous research publications

## Service to University

- Arts and Sciences Faculty Budget Committee, 2025–.
- Statistics Department Faculty Director for *Mathematics of Finance* MA program, 2020–. Member of the steering committee, 2014–.
- Academic Review Committee (ARC), Faculty of Arts and Sciences, Fall 2019.
- Financial and Business Analytics Center Committee, Data Science Institute, 2019–.
- Mentor for Statistics MA students, 2014–.
- Departmental committees for
  - Vision, 2023/24, 2022/23
  - Diversity, Equity and Inclusion, 2020–21.
  - Hiring, 2024/25 (chair), 2023/24, 2021/22 (chair), 2019/20 (chair), 2018/19, 2017/18, 2014/15.
  - Space, 2021/22, 2022/23
  - PhD admission, 2020/19, 2017/18, 2016/17, 2015/16.
  - PhD curriculum, 2017–.
  - Probability qualifying exam, 2023, 2022 (chair), 2021, 2020 (chair), 2019, 2018, 2017 (chair), 2016 (chair).
  - Core Competency exam, 2019, 2018.
- Co-organizer of
  - Mathematical Finance Seminar, Departments of Mathematics and Statistics, 2012–.
  - Probability Seminar, Departments of Mathematics and Statistics, 2011–.

## Teaching Experience

### Columbia University

- *Probability Theory I* (GR6301), Fall 2022, Fall 2019, Fall 2016, Fall 2015.
- *Probability Theory II* (GR6302), Spring 2024, Spring 2022, Spring 2020.
- *Probability Theory III* (GR6303), Fall 2020 (new course: Optimal Transport and Entropic Regularization), Fall 2017 (new course: Stochastic Optimal Control), Fall 2016.
- *Stochastic Control and Applications in Finance* (GR5266), Fall 2017, Fall 2014 (new course).
- *Topics in Advanced Probability: Robust Finance, Optimal Transport and Skorokhod Embeddings* (G8243), Spring 2015 (new course).
- *Probability Theory* (W4155), Spring 2015, Spring 2014, Spring 2013, Spring 2012.
- *Calculus III* (V1201), Fall 2013 (two sections), Spring 2013, Spring 2012.

### Others

- At Ecole Polytechnique Paris: *Introduction to Entropic Optimal Transport,* 2021.
- At ETH Zurich: *G-Expectations and Nonlinear Martingales,* 2011.
- At Bielefeld University: minicourse *Topics in Nonlinear Expectations*, 2011.

## Invited Talks

- 2025: BIRS Workshop "Bridging Theory and Practice in Finance," Institute for Advanced Study in Mathematics, Hangzhou (China); Hong Kong University of Science and Technology; Chinese University of Hong Kong; Hong Kong Polytechnic University; University of Copenhagen; 3rd Vienna Congress on Mathematical Finance (VCMF 2025), Vienna; Workshop "Optimal Transport for Complex Data," Vienna; Workshop "Decentralized Finance and Market Microstructure," Fields Institute, Toronto; CANSSI Ontario Statistics Seminar, Waterloo, Canada; University of Miami, Mathematics Colloquium.

- 2024: Workshop "Nonlinear Stochastic Analysis and Financial Applications," Shanghai; Workshop "Research in Options: RiO 2024," Rio de Janeiro; Carnegie Mellon University, Pittsburgh; 8th Eastern Conference on Mathematical Finance, Fields Institute, Toronto; Stevens Institute of Technology, Hoboken, New Jersey; Bachelier World Congress, Rio de Janeiro; Byrne Conference on Stochastic Analysis in Finance and Insurance, Ann Arbor; B. de Finetti Seminar, Milano Lectures on the Mathematical Theory of Economics and Finance, Milan, Italy; XXV Workshop on Quantitative Finance (QFW2024), Bologna, Italy; "Workshop on Market Microstructure," London; Purdue Quantitative Methods Seminar; Stony Brook Information Geometry and Machine Learning Webinar; Workshop "Decision Making and Uncertainty," IMSI, University of Chicago; Bachelier Finance Society One World Seminar, virtual.

- 2023: One World Probability Seminar, virtual; 43rd Conference on Stochastic Processes and their Applications (SPA), Lisbon; Workshop "Optimal Transport and Econometrics," University of Washington, Seattle; SIAM Conference on Financial Mathematics and Engineering, Philadelphia; Chicago Conference on Stochastic Analysis and Financial Mathematics, Chicago; Workshop "Optimal Transport in Data Science," ICERM, Providence; Workshop "Applications of Stochastic Control to Finance and Economics," BIRS, Banff (Canada); ORFE Colloquium, Princeton; Universidad National Autonoma, CDMX, Mexico.

- 2022: ETH Zurich; International Symposium on BSDEs and Mean Field Systems, Annecy (France); Workshop "Stochastic Mass Transports," BIRS, Banff (Canada); Mathematics Colloquium, Universidad de los Andes, Bogota; ~~Financial Mathematics Global Seminar, Vega Institute Foundation, Moscow~~.

- 2021: Hong Kong–Singapore joint Seminar in Financial Mathematics/Engineering; Illinois Institute of Technology; Workshop "Distributed Solutions to Complex Societal Problems–Applications to Financial Engineering," IMSI, University of Chicago; Séminaire Bachelier, Paris; Tutorial on Optimal Transport, TU Dresden/King's College, London; Conference "Optimal Transport with Applications to Economics & Statistics," Paris; CIRM Workshop "Advances in Stochastic Analysis for Handling Risks in Finance and Insurance," Marseille; Tutorial on Optimal Transport, IMSI, University of Chicago; Mathematics and Computation of Financial Engineering, Erice (Italy); Bernoulli World Congress, Seoul; 10th General AMAMEF Conference, Padova, Italy; FM21 SIAM Financial Mathematics conference, Philadelphia; Stochastics Seminar, University of Münster, Germany; Optimal Transport seminar MOKAPLAN, Paris Dauphine and INRIA; Uncertainty and Risk—A Workshop Commemorating the Centenary of Publication of Frank H. Knight's "Risk, Uncertainty, and Profit" [. . . ], Chicago; SIAM FME Virtual Talk Series; Sidney Stochastics and Finance Seminar.

- 2020: ~~Workshop "New Challenges in the Interplay between Finance and Insurance," Oberwolfach; 10th Bernoulli–IMS World Congress in Probability and Statistics, Seoul; 8th Asian Quantitative Finance Conference, Taipei; 9th International Colloquium on BSDEs and Mean Field Systems, Annecy (France); Workshop "Mathematics and Computation of Financial Engineering," EMFCSC, Erice (Italy); Workshop "Stochastic Analysis, Mathematical Finance and Economics," BIRS, Banff (Canada); Conference on Frictions in Finance, London; Workshop "Stochastic Mass Transfers," BIRS, Banff (Canada)~~; Conference on Mean-Field Games, University of Chicago.

· 2019: ETH Zurich; Eastern Conference in Mathematical Finance, Boston; CIRM Workshop "Advances in Stochastic Analysis for Risks in Finance and Insurance," Marseille; Vienna Congress on Mathematical Finance; International Congress on Industrial and Applied Mathematics (ICIAM), Valencia; Workshop "Contemporary Optimal Transport Problems," Strasbourg; Séminaire Bachelier, Paris; SIAM Financial Mathematics and Engineering, Toronto; Recent Developments in Mean-Field Game, Machine Learning and Quantitative Finance, Tuan Chau (Vietnam); University of Southern California, Los Angeles; University of Colorado, Boulder; Fields Institute Workshop "Economics Meets the Mathematical Sciences," Toronto; University of Waterloo; ICMS Workshop "Mean-Field Games and Energy Systems," Edinburgh.

· 2018: 6th Asian Quantitative Finance Conference, Guangzhou (China); Osaka University; Hong Kong Polytechnic University; Chinese University of Hong Kong; Carnegie Mellon University; Illinois Institute of Technology; Columbia (Business School); JAFEE International Conference on Financial Engineering, Tokyo; Conference on Robust Techniques in Quantitative Finance, Oxford; Symposium on Optimal Stopping in Memory of Larry Shepp, Houston; International Workshop on Applied Probability, Budapest; BIRS/CMO Workshop "Stochastic Analysis and its Applications," Oaxaca (Mexico); Workshop on Stochastic Analysis Applied to Economics, Finance and Insurance, Santiago (Chile); University of Chile, Santiago (Chile); 13th German Probability and Stochastic Days, Freiburg (Germany); Carnegie Mellon University.

· 2017: Koç University, Istanbul; CIRM Workshop "Advances in Stochastic Analysis for Risk Modeling," Marseille; First Gran Sasso Workshop on Mathematical Finance, Italy; LUISS Guido Carli, Rome; Workshop "Theoretical Insight through Experimentation", ICERM, Providence; Colloquium, TU Vienna; "Thera Stochastics—A Mathematics Conference in Honor of Ioannis Karatzas," Santorini (Greece); Shanghai Advanced Institute of Finance, Shanghai Jiao Tong University; Joint University Symposium on Financial Risk Management, Chinese University of Hong Kong; Hong Kong Polytechnic University; Conference "PDE and Probability Methods for Interactions," Inria Sophia Antipolis (France); Workshop "Mean Field Games," Nice (France); Workshop "Pricing-Hedging Duality," Zurich; University of California, Berkeley; Conference "Advances in Financial Mathematics," Paris.

· 2016: University of Texas at Austin; University of California, Santa Barbara; Sixth IMS–FIPS Workshop, Edmonton; University of Vienna; Second International Congress on Actuarial Science and Quantitative Finance, Cartagena (Colombia); Byrne Workshop on Stochastic Analysis in Finance and Insurance, University of Michigan, Ann Arbor; BIRS/CMO Workshop "Stochastic Analysis and Mathematical Finance," Oaxaca (Mexico); Workshop on Optimal Transportation, Equilibrium, and Applications to Economics, NYU, New York; Brown University, Providence; Conference "Mathematical Finance Without Probability," Wolfgang Pauli Institute, Vienna; University of Southern California, Los Angeles.

· 2015: University of Oxford; International Conference on Stochastic Analysis and Applications, Hammamet (Tunisia); Midwest Probability Colloquium, Northwestern; 11th Columbia–Jafee Conference, New York; Conference "Mathematical Finance Beyond Classical Models," Institute for Theoretical Studies, Zurich; SPA Conference, Oxford; Bloomberg Quant Seminar, New York; Séminaire Bachelier, Paris; ETH Zurich; Conference "Mathematical Finance and Partial Differential Equations," Rutgers; Fields Institute, Toronto; University of Michigan, Ann Arbor; Workshop "Optimal Transport and Stochastics," Hausdorff Research Institute for Mathematics, Bonn.

· 2014: Princeton University; SIAM Financial Mathematics & Engineering, Chicago; 7th International Symposium on Backward Stochastic Differential Equations, Weihai (China); Thematic Cycle on Robust Management in Finance, Paris; Workshop "Mathematical Finance: Arbitrage and Portfolio Optimization," BIRS, Banff (Canada); Workshop "Stochastic Analysis in Finance and Insurance," Oberwolfach (Germany); ETH Zurich; Conference "Advances in Financial Mathematics," Paris.

· 2013: University of California, Santa Barbara; University of Southern California, Los Angeles; Workshop on Mathematical Finance, Fields Institute, Toronto; Sixth European Summer School in Financial Mathematics, Vienna; Workshop "New Developments in Stochastic Analysis: Probability and PDE," Beijing; Workshop "Knightian Uncertainty and Backward Stochastic Differential Equations," NUS, Singapore; Séminaire Bachelier, Paris; Columbia–Princeton Probability Day, Princeton; ETH Zurich; University of Vienna; CUNY, New York.

· 2012: Workshop "Games, Model Uncertainty and Related Fields," Jinan (China); Rutgers University; University of Texas at Austin; SIAM Annual Meeting, Minneapolis; SIAM Financial Mathematics & Engineering, Minneapolis; Université du Maine (France); Université d'Evry (France); Séminaire Bachelier, Paris; ETH Zurich; University of Oxford; Columbia University (Risk Seminar), New York.

· 2011: Princeton University; University of Michigan, Ann Arbor; University of Southern California, Los Angeles; Columbia University (Statistics), New York; Bielefeld University (Germany); Shandong University, Jinan (China); Workshop on Nonlinear Expectations, Beijing; Western Conference on Mathematical Finance, Los Angeles; Columbia University, New York; Workshop "Stochastic Analysis in Finance and Insurance," Oberwolfach (Germany); Séminaire Bachelier, Paris.

· 2010: London School of Economics; Conference "New advances in backward SDEs for financial engineering applications," Tamerza (Tunisia); AMAMEF Workshop, Berlin; Université Paris 6/7; University of Vienna.

· 2009: TU & HU Berlin; Workshop "Finance and Insurance," Jena (Germany); TU & LMU Munich.

Last updated: August 14, 2025