Vlad C. Vicol

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Appointments

Professor	2020–
Courant Institute for Mathematical Sciences, New York University, NY	
Associate Professor	2018–2020
Courant Institute for Mathematical Sciences, New York University, NY	
Assistant Professor	2012–2018
Princeton University, Princeton, NJ	
L.E. Dickson Instructor	2010–2012
The University of Chicago, Chicago, IL	

Education

Ph.D. in Mathematics	2010
University of Southern California, Los Angeles, CA	
B.Sc. in Mathematics	2005
Jacobs University, Bremen, Germany	

Awards and Honors

- Simons Investigator in Mathematics — 2023
- Fellow of the AMS — 2023
- Clay Research Award — 2019
- MCA Prize, 2nd Mathematical Congress of the Americas (MCA), Montreal, Canada — 2017
- Alfred P. Sloan Research Fellowship in Mathematics — 2015–2018
- Junior Faculty Teaching Award, Mathematics Department, Princeton University — 2016
- CAMS Graduate Student Prize, University of Southern California — 2010
- Dennis Ray Estes Graduate Research Prize, University of Southern California — 2009
- Theodore Edward Harris Graduate Teaching Prize, University of Southern California — 2009

Selected talks

- Plenary Speaker, 9th European Congress of Mathematicians (ECM), Sevilla, Spain — 2024
- Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota — 2024
- Invited speaker, 2022 International Congress of Mathematics (ICM), St. Petersburg/virtual — 2022
- Hadamard Lectures, IHES, Paris, France — 2020
- Plenary speaker, SIAM conference on Analysis of PDEs, Scottsdale, AZ — 2015

Funding

- Simons Foundation, the Simons Investigators program   2024–
- NSF Collaborative Research Grant DMS-2307681   2023–
- NSF CAREER Award DMS-1652134, DMS-1911413   2017–2023
- NSF Research Grant DMS-1514771   2015–2017
- NSF Research Grant DMS-1211828, DMS-1348193   2012–2015
- Institut Henri Poincaré Research in Paris Fellowship   2013
- AMS-Simons Travel Grant   2011–2012

Editorial boards

- **Current**: Annals of PDE (2018–), Archive for Rational Mechanics and Analysis (2020–),
  Ars Inveniendi Analytica (2020–), Communications in Partial Differential Equations (2023–),
  Communications on Pure and Applied Mathematics (2023–), Probability and Mathematical Physics (2019–)
- **Past**: Journal of Functional Analysis (2021–2022), Calculus of Variations and PDEs (2021-2022),
  Advances in Differential Equations (2019–2022), SIAM Journal on Mathematical Analysis (2018–2022),
  Evolution Equations and Control Theory (2013–2022)

PhD advising

- **Current**: Keefer James Rowan (NYU; co-advising with Scott Armstrong), Giorgio Cialdea (NYU)
- **Past**: Rajendra Beekie (NYU, graduated 2022, NSF Postdoc @ Duke University), Isaac Neal (NYU, graduated 2024, NSF Postdoc @ UC Davis)

Postdoctoral mentoring

- **Current**: Benjamin Pineau (Simons Junior Fellowship, NYU, 2024–) Sanchit Chaturvedi (Simons Junior Fellowship, NYU, 2023–), Jiajie Chen (Courant Instructor, NYU, 2022–2025)
- **Past**: William Cooperman (NSF postdoctoral fellow, NYU, 2023–2024), Andre Schenke (Visiting postdoctoral fellow, NYU, 2023–2024), Dallas Albritton (NSF postdoctoral fellow, NYU, 2020–2021), Matthew Novack (Courant Instructor, NYU, 2019–2021), Julien Guillod (Visiting postdoctoral fellow, Princeton, 2016)

Publications

87. S. Armstrong and V. Vicol. *Anomalous diffusion via iterative quantitative homogenization: an overview of the main ideas*. Proceedings of the 9th European Congress of Mathematics. arXiv:2503.11744 [math.AP] Submitted, 2025.

86. I. Neal, S. Shkoller, and V. Vicol. *Gradient catastrophes and an infinite hierarchy of Hölder cusp-singularities for 1D Euler*. arXiv:2412.21040 [math.AP] Submitted, 2024.

85. J. Chen, G. Cialdea, S. Shkoller, and V. Vicol. *Vorticity blowup in 2D compressible Euler equations*. arXiv:2407.06455 [math.AP] Submitted, 2024.

84. S. Shkoller and V. Vicol. *The geometry of maximal development and shock formation for the Euler equations in multiple space dimensions*. Inventiones Mathematicae **237** (2024), no. 3, 871–1252.

83. B. Engquist, P. Souganidis, S.N. Stechmann, and V. Vicol. *In Memory of Andrew J. Majda*. Notices Amer. Math. Soc. **70** (2023), no. 10, 1648–1666.

82. S. Armstrong and V. Vicol. *Anomalous diffusion by fractal homogenization*. Annals of PDE **11** (2025), 2, 145 pp.

81. I. Neal, C. Rickard, S. Shkoller, and V. Vicol. *A new type of stable shock formation in gas dynamics*. Communications on Pure and Applied Analysis **23** (2024), no. 10, 1423–1447.

80. I. Neal, S. Shkoller, and V. Vicol. *A characteristics approach to shock formation in 2D Euler with azimuthal symmetry and entropy*. Communications in Analysis and Mechanics **17** (2025), no. 1, 188–236.

79. **[BOOK]** J. Bedrossian and V. Vicol. *The Mathematical Analysis of the Incompressible Euler and Navier-Stokes Equations: An Introduction*. Graduate Studies in Mathematics **225**. American Mathematical Society, Providence, RI, 2022, xiii+218 pp.

78. T. Buckmaster, T.D. Drivas, S. Shkoller, and V. Vicol. *Formation and development of singularities for the compressible Euler equations.* Proceedings of the International Congress of Mathematicians 2022, vol. 5, 3636–3659. EMS Press, Berlin, 2023.

77. M. Novack and V. Vicol. *An intermittent Onsager theorem.* Inventiones Mathematicae **233** (2023), no. 1, 223–323.

76. I. Kukavica, M. Novack, and V. Vicol. *Exact Boundary Controllability for the Ideal Magneto-hydrodynamic Equations.* J. Differential Equations **318** (2022), 94–112.

75. I. Kukavica, T. Nguyen, V. Vicol, and F. Wang. *On the Euler+Prandtl expansion for the Navier-Stokes equations.* J. Math. Fluid Mech. **24**:47 (2022).

74. T. Buckmaster, T.D. Drivas, S. Shkoller, and V. Vicol. *Simultaneous development of shocks and cusps for 2D Euler with azimuthal symmetry from smooth data.* Annals of PDE **8**, 26 (2022), 199 pp.

73. R. Beekie, S. Friedlander, and V. Vicol. *On Moffatt's magnetic relaxation equations.* Comm. Math. Phys. **390** (2022), 1311–1339.

72. A. Cheskidov, N. Glatt-Holtz, N. Pavlovic, R. Shvydkoy, and V. Vicol. *Susan Friedlander's contributions in mathematical fluid dynamics.* Notices Amer. Math. Soc. **68** (2021), no. 3, 331–343.

71. **[MONOGRAPH]** T. Buckmaster, N. Masmoudi, M. Novack, and V. Vicol. *Intermittent Convex Integration for the 3D Euler Equations.* Annals of Mathematics Studies, vol. **217**. Princeton University Press, Princeton, NJ, 2023, 256 pp.

70. T. Buckmaster and V. Vicol. *Convex integration constructions in hydrodynamics.* Bulletin of the AMS **58** (2021), no. 1, 1–44.

69. T. Buckmaster, S. Shkoller, and V. Vicol. *Shock formation and vorticity creation for 3D Euler.* Comm. Pure Appl. Math. **76** (2023), no. 9, 1965–2072.

68. I. Kukavica, V. Vicol, and F. Wang, *Remarks on the inviscid limit problem for the Navier-Stokes equations.* To the memory of Ciprian Foias. Pure Appl. Funct. Anal. **7** (2022), no. 1, 283–306.

67. T. Buckmaster, S. Shkoller, and V. Vicol. *Formation of point shocks for 3D compressible Euler.* Comm. Pure Appl. Math. **76** (2023), no. 9, 2073–2191.

66. R. Beekie, T. Buckmaster, and V. Vicol. *Weak solutions of ideal MHD which do not conserve magnetic helicity.* Annals of PDE **6** (2020), 1, 40 pp.

65. T. Buckmaster, S. Shkoller, and V. Vicol. *Formation of shocks for 2D isentropic compressible Euler.* Comm. Pure Appl. Math. **75** (2022), no. 9, 2069–2120.

64. S. Iyer and V. Vicol, *Real analytic local well-posedness for the Triple Deck.* Comm. Pure Appl. Math. **74** (2021), no. 8, 1641–1684.

63. I. Kukavica, V. Vicol, and F. Wang, *The inviscid limit for the Navier-Stokes equations with data analytic only near the boundary.* Arch. Ration. Mech. Anal. **237** (2020), no. 2, 779–827.

62. T. Buckmaster and V. Vicol, *A Heuristic Approach to Convex Integration for the Euler Equations.* In: Berselli L.C., Ruzicka M. (eds) Progress in Mathematical Fluid Dynamics. Lecture Notes in Mathematics, vol 2272. Springer, Cham. 2020.

61. P. Constantin, J. La, and V. Vicol, *Remarks on a paper by Gavrilov: Grad-Shafranov equations, steady solutions of the three dimensional incompressible Euler equations with compactly supported velocities, and applications.* Geom. Funct. Anal. **29** (2019), no. 6, 1773–1793.

60. T. Buckmaster and V. Vicol, *Convex integration and phenomenologies in turbulence.* EMS Surv. Math. Sci. **6** (2019), 173–263.

59. G. Camliyurt, I. Kukavica, and V. Vicol, *Analyticity up to the boundary for the Stokes and the Navier-Stokes systems.* Trans. Amer. Math. Soc. **373** (2020), no. 5, 3375–3422.

58. P. Constantin, M. Lopes Filho, H. Nussenzveig Lopes, V. Vicol, *Vorticity measures and the inviscid limit.* Arch. Rational Mech. Anal. **234** (2019), no. 2, 575–593.

57. T. Buckmaster, M. Colombo, V. Vicol, *Wild solutions of the Navier-Stokes equations whose singular sets in time have Hausdorff dimension strictly less than* 1. J. Eur. Math. Soc. **24** (2022), no. 9, 3333–3378.

56. D. Gerard-Varet, N. Masmoudi, and V. Vicol, *Well-posedness of the hydrostatic Navier-Stokes equations*. Analysis & PDE **13** (2020), no. 5, 1417–1455.

55. G. Camliyurt, I. Kukavica, and V. Vicol, *Gevrey regularity of the Navier-Stokes equations in a half-space*. J. Differential Equations **265** (2018), no. 9, 4052–4075.

54. I. Kukavica and V. Vicol, *A direct approach to Gevrey regularity on the half-space*. In volume: Partial Differential Equations in Fluid Mechanics. C.L. Fefferman, J.C. Robinson, and J.L. Rodrigo, eds. London Mathematical Society Lecture Note Series **452** (2018), 268–288.

53. J. Bedrossian, M. Coti Zelati, and V. Vicol, *Vortex axisymmetrization, inviscid damping, and vorticity depletion in the linearized 2D Euler equations*. Annals of PDE **5** (2019), no. 4, 1–192.

52. T. Buckmaster and V. Vicol, *Nonuniqueness of weak solutions to the Navier-Stokes equation*. Ann. of Math. **189** (2019), no. 1, 101–144.

51. P. Constantin, T. Elgindi, H. Nguyen, and V. Vicol, *On singularity formation in a Hele-Shaw model*. Comm. Math. Phys. **363** (2018), no. 1, 139–171.

50. P. Constantin and V. Vicol, *Remarks on high Reynolds numbers hydrodynamics and the inviscid limit*. J. Nonlinear Sci. **28** (2018), no. 2, 711–724.

49. T. Buckmaster, C. De Lellis, L. Székélihidi Jr., and V. Vicol, *Onsager's conjecture for admissible weak solutions*. Comm. Pure Appl. Math. **72** (2019), no. 2, 229–274.

48. T. Buckmaster, S. Shkoller, and V. Vicol, *Nonuniqueness of weak solutions to the SQG equation*. Comm. Pure Appl. Math. **72** (2019), no. 9, 1809–1874.

47. J. Bedrossian, V. Vicol, and F. Wang, *The Sobolev stability threshold for 2D shear flows near Couette*. J. Nonlinear Sci. **28** (2018), no. 6, 2051–2075.

46. I. Kukavica, A. Tuffaha, V. Vicol, and F. Wang, *On the Existence for the Free Interface 2D Euler Equation with a Localized Vorticity Condition*. Appl. Math. Optim. **73** (2016), no. 3, 523–544. To the memory of Professor A.V. Balakrishnan.

45. I. Kukavica, V. Vicol, and F. Wang, *The van Dommelen and Shen singularity in the Prandtl equations*. Adv. Math. **307** (2017), 288–311.

44. P. Constantin, T. Elgindi, M. Ignatova, and V. Vicol, *Remarks on the inviscid limit for the Navier-Stokes equations for uniformly bounded velocity fields*. SIAM J. Math. Anal. **49** (2017), no. 3, 1932–1946.

43. P. Constantin, T. Elgindi, M. Ignatova, and V. Vicol, *On some electroconvection models*. J. Nonlinear Sci. **27** (2017), no. 1, 197–211.

42. I. Kukavica, V. Vicol, and F. Wang, *On the ill-posedness of active scalar equations with odd singular kernels*. New Trends in Differential Equations, Control Theory and Optimization: Proceedings of the Eighth Congress of Romanian Mathematicians (2016), 185–200.

41. P. Constantin, F. Gancedo, R. Shvydkoy, and V. Vicol, *Global regularity for 2D Muskat equations with finite slope*. Ann. Inst. H. Poincaré Anal. Non Linéaire **34** (2017), no. 4, 1041–1074.

40. P. Constantin, M. Coti Zelati, and V. Vicol, *Uniformly attracting limit sets for the critically dissipative SQG equation*. Nonlinearity **29** (2016), no. 2, 298–318.

39. P. Constantin, I. Kukavica, and V. Vicol, *Contrast between Lagrangian and Eulerian analytic regularity properties of Euler equations*. Ann. Inst. H. Poincaré Anal. Non Linéaire **33** (2016), no. 6, 1569–1588.

38. I. Kukavica, A. Tuffaha, and V. Vicol, *On the local existence for the 3D Euler equation with a free interface*. Appl. Math. Optim. **76** (2017), no. 3, 535–563.

37. M. Ignatova and V. Vicol, *Almost global existence for the Prandtl boundary layer equations*. Arch. Rational Mech. Anal. **220** (2016), no. 2, 809–848.

36. M. Coti Zelati and V. Vicol, *On the global regularity for the supercritical SQG equation*. Indiana Univ. Math. J. **65** (2016), no. 2, 535–552.

35. J. Bedrossian, N. Masmoudi, and V. Vicol, *Enhanced dissipation and inviscid damping in the inviscid limit of the Navier-Stokes equations near the 2D Couette flow*. Arch. Rational Mech. Anal. **219** (2016), no. 3, 1087–1159.

34. L. Silvestre and V. Vicol, *On a transport equation with nonlocal drift*. Trans. Amer. Math. Soc. **368** (2016), no. 9, 6159–6188.

33. P. Isett and V. Vicol, *Hölder continuous solutions of active scalar equations*. Annals of PDE **1** (2015), no. 1, 1–77.

32. S. Friedlander, N. Glatt-Holtz, and V. Vicol, *Inviscid limits for a stochastically forced shell model of turbulent flow*. Ann. Inst. Henri Poincaré Probab. Stat. **52** (2016), no. 3, 1217–1237.

31. P. Constantin, V. Vicol, and J. Wu, *Analyticity of Lagrangian trajectories for well-posed inviscid incompressible fluid models*. Adv. Math. **285** (2015), 352–393.

30. P. Constantin, I. Kukavica, and V. Vicol, *On the inviscid limit of the Navier-Stokes equations*. Proc. Amer. Math. Soc. **143** (2015), no. 7, 3075–3090.

29. I. Kukavica, N. Masmoudi, V. Vicol, T.K. Wong, *On the local well-posedness of the Prandtl and the hydrostatic Euler equations with multiple monotonicity regions*. SIAM J. Math. Anal. **46** (2014), no. 6, 3865–3890.

28. N. Glatt-Holtz, I. Kukavica, V. Vicol, and M. Ziane, *Existence and regularity of invariant measures for the three dimensional stochastic primitive equations*. J. Math. Phys. **55** (2014), 051504.

27. N. Glatt-Holtz, V. Šverák, and V. Vicol, *On inviscid limits for the stochastic Navier-Stokes equations and related models*. Arch. Rational Mech. Anal. **217** (2015), no. 2, 619–649.

26. P. Constantin, A. Tarfulea, and V. Vicol, *Long time dynamics of forced critical SQG*. Comm. Math. Phys. **335** (2015), no. 1, 93–141.

25. P. Constantin, A. Tarfulea, and V. Vicol, *Absence of anomalous dissipation of energy in forced two dimensional fluid equations*. Arch. Rational Mech. Anal. **212** (2014), no. 3, 875–903.

24. P. Constantin, N. Glatt-Holtz, and V. Vicol, *Unique ergodicity for fractionally dissipated, stochastically forced 2D Euler equations*. Comm. Math. Phys. **330** (2014), no. 2, 819–857.

23. S. Friedlander, W. Rusin, and V. Vicol, *The magneto-geostrophic equations: a survey*. Proceedings of the St. Petersburg Mathematical Society, Volume XV: Advances in Mathematical Analysis of Partial Differential Equations. (2014) D. Apushkinskaya and A.I. Nazarov, eds., 53–78.

22. I. Kukavica and V. Vicol, *Moments for strong solutions of the 2D stochastic Navier-Stokes equations in a bounded domain*. Asymptotic Analysis **90** (2014), no. 3–4, 189–206.

21. M. Dabkowski, A. Kiselev, L. Silvestre, and V. Vicol, *Global well-posedness of slightly supercritical active scalar equations*. Analysis and PDE **7** (2014), no. 1, 43–72.

20. N. Glatt-Holtz and V. Vicol, *Local and global existence of smooth solutions for the stochastic Euler equations on a bounded domain*. Ann. Probab. **42** (2014), no. 1, 80–145.

19. L. Silvestre, V. Vicol, and A. Zlatoš, *On the loss of continuity for super-critical drift-diffusion equations*. Arch. Rational Mech. Anal. **27** (2013), no. 3, 845–877.

18. I. Kukavica and V. Vicol, *On the local existence of analytic solutions to the Prandtl boundary layer equations*. Communications in Mathematical Sciences **11** (2013), no. 1, 267–290.

17. S. Friedlander, F. Gancedo, W. Sun and V. Vicol, *On a singular incompressible porous media equation*. J. Math. Phys. **53** (2012), no. 11, 115602, 1–20. Special Issue "Incompressible Fluids, Turbulence and Mixing" in honor of Peter Constantin.

16. S. Friedlander, W. Rusin and V. Vicol, *On the fractionally diffusive magneto-geostrophic equations*. Nonlinearity **25** (2012) 3071–3097.

15. P. Constantin and V. Vicol, *Nonlinear maximum principles for dissipative linear nonlocal operators and applications*. Geom. Funct. Anal. **22** (2012), no. 5, 1289–1321.

14. M. Dabkowski, A. Kiselev and V. Vicol, *Global well-posedness for a slightly supercritical surface quasi-geostrophic equation*. Nonlinearity **25** (2012), no. 5, 1525–1535.

13. L. Silvestre and V. Vicol, *Hölder continuity for a drift-diffusion equation with pressure*. Ann. Inst. H. Poincaré Anal. Non Linéaire **29** (2012), no. 4, 637–652.

12. S. Friedlander and V. Vicol, *On the ill/well-posedness and nonlinear instability of the magneto-geostrophic equations*. Nonlinearity **24** (2011), no. 11, 3019–3042.

11. S. Friedlander and V. Vicol, *Higher regularity of Holder continuous solutions of parabolic equations with singular drift velocities*. J. Math. Fluid Mech **14** (2012), no. 2, 255–266.

10. S. Friedlander and V. Vicol, *Global well-posedness for an advection-diffusion equation arising in magneto-geostrophic dynamics*. Ann. Inst. H. Poincaré Anal. Non Linéaire **28** (2011), 283–301.

9. I. Kukavica, R. Temam, V. Vicol, and M. Ziane, *Local existence and uniqueness for the hydrostatic Euler equations on a bounded domain*. J. Differential Equations **250** (2011), no. 3, 1719–1746.

8. I. Kukavica and V. Vicol, *On the analyticity and Gevrey-class regularity up to the boundary for the Euler Equations*. Nonlinearity **24** (2011), no. 3, 765–796.

7. M. Paicu and V. Vicol, *Analyticity and Gevrey-class regularity for the second-grade fluid equations*. J. Math. Fluid Mech. **13** (2011), no. 4, 533–555.

6. I. Kukavica and V. Vicol, *The domain of analyticity of solutions to the three-dimensional Euler equations in a half space*. Discrete Contin. Dyn. Syst. **29** (2011), no. 1, 285–303.

5. I. Kukavica, R. Temam, V. Vicol, and M. Ziane, *Existence and uniqueness of solutions for the hydrostatic Euler equations on a bounded domain with analytic data*. C.R. Acad. Sci. Paris **348** (2010), no. 11–12, 639–645.

4. S. Friedlander, N. Pavlović, and V. Vicol, *Nonlinear instability for the critically dissipative quasi-geostrophic equation*. Comm. Math. Phys. **292** (2009), no. 3, 97–810.

3. I. Kukavica and V. Vicol, *On the radius of analyticity of solutions to the three-dimensional Euler equations*. Proc. Amer. Math. Soc. **137** (2009), no. 2, 669–677.

2. I. Kukavica and V. Vicol, *On local uniqueness of weak solutions to the Navier-Stokes system with BMO^{-1} initial datum*. J. Dynam. Differential Equations **20** (2008), no. 3, 719–732.

1. B. Laubner, D. Schleicher, and V. Vicol, *A combinatorial classification of postsingularly finite complex exponential maps*. Discrete Contin. Dyn. Syst. **22** (2008), no. 3, 663–682.

Talks at Conferences and Workshops

- Rutgers University (*126th Statistical Mechanics Conference*), University of Minnesota (*Rivière-Fabes Symposium on Analysis and PDE*), Karlstad University (Plenary Speaker at *Equadiff 2024*, Sweden), 9th *ECM* (Plenary speaker, Sevilla, Spain), 44th *Dynamics Days Europe* (Plenary Speaker, Bremen, Germany), CIRM Luminy (*Mathematics of fluids in motion: Recent results and trends*) Simons Collaboration of Wave Turbulence (*Annual Meeting*)   2024

- Columbia University (workshop on *Free Boundary Problems: Lecture Series and Recent Advances in Theory and Applications*), The 10th Congress of Romanian Mathematicians (Pitesti, Romania), Imperial College London (summer School and conference on *Stability and dynamics in fluid mechanics and kinetic theory*), Les Houches school of Physics (summer school *200 Years of Navier-Stokes and Turbulences*, France)   2023

- Duke University (summer school on *Recent Trends in Partial Differential Equations*), vICM overlay conference Imperial College London (*Applied Mathematics*, virtual), Simons Center for Geometry and Physics (*Small Scale Dynamics in Fluid Motion*), CRM Montreal (*Unifying Concepts in PDEs with Randomness*), IAS Princeton (*Recent Developments in Incompressible Fluid Dynamics*), Banff (*Stochastic Approaches to Turbulence in Hydrodynamical Equations*, virtual)   2022

- ICMS (*Convex Integration and Nonlinear PDEs*, virtual), MSRI (*Recent Developments In Fluid Dynamics*, virtual), AMS Western Sectional Meeting (*Special Session on Nonlinear PDEs and fluid dynamics*, virtual), MSRI (*Introductory Workshop: Mathematical Problems In Fluid Dynamics*, virtual), NYUAD/SITE (*Long Time Behavior and Singularity Formation in PDEs-II*, virtual)   2021

- Seminar In the Analysis and Methods of PDE (SIAM PDE, virtual), One World PDE Seminar (virtual), AMS Fall Eastern Sectional Meeting (virtual), IHES Paris (*Hadamard Lectures*), EPFL Lausanne (*Winter School: Turbulence in fluids and PDEs*), Joint Mathematics Meeting (*Current Events Bulletin*, Denver, CO)   2020

- Harvard University (CMSA *Fluid turbulence and Singularities of the Euler/ Navier Stokes equations*), Université Paul Sabatier Toulouse (*Winter School on Calculus of Variations and Probability*), EMS School on Applied Mathematics (*Mathematical Aspects of Fluid Flows*, Kacov, Czech Republic) Mathematisches Forschungsinstitut Oberwolfach (*Mathematical Aspects of Hydrodynamics*)   2019

- Wolfgang Pauli Institut Vienna (*Mathematical Amelioration in Fluid Dynamics*), CIRM Luminy (*Non Standard Diffusions in Fluids, Kinetic Equations and Probability*), 14th Franco-Romanian conference on applied mathematics (Bordeaux, France), University of Seville (*Math Fluids*), Tokyo University (Nonlinear Science Seminar)   2018

- SIAM Conference on Analysis of PDEs (Baltimore, MD), Simons Foundation New York (*Discussion group on nonlinear PDEs*), U Pittsburgh (*Workshop on PDEs in Fluid Dynamics*),

Princeton (FRG PDE Conference), AMS Eastern Sectional Meeting (SUNY Buffalo, NY),
2nd Mathematical Congress of the Americas (*Prize lecture*, Montreal, Canada), Universität Basel
(*Irregular transport: analysis and applications*), UC Davis Bodega Marine Laboratory
(*Mathematical Aspects of Water Waves and Related Models*), SIAM Conference on Applications of
Dynamical Systems (Snowbird, UT), IPAM UCLA (*Turbulent Dissipation, Mixing and Predictability*)   2017

- Loyola U Chicago (*78th Midwest PDE Seminar*), Warwick University (EPSRC Symposium: *PDEs in Fluid Mechanics*), Drexel (*Gene Golub SIAM Summer School*), SIAM Annual Meeting (Boston, MA), IHES Bures-sur-Yvette (*Nonlinear Waves*), U Maryland (*Mixing and Mixtures in Geo- and Biophysical Flows*), Vanderbilt U (*International Conference on Evolution Equations in conjunction with the Shanks memorial lecture*), Rice (*Analysis of PDEs of Fluid Mechanics*), l'Institut de mathématiques de Bordeaux (*Boundary Layers and Fluid-Structure interactions*)   2016

- Wolfgang Pauli Institut Vienna (*Euler & Navier-Stokes Equations and Connected Topics*), SIAM conference on Analysis of PDEs (*Plenary Talk*, Phoenix, AZ), Mathemathisches Forschungsinstitut Oberwolfach (*Mathematical Aspects of Hydrodynamics*), EquaDiff 2015 (Lyon, France), 8th Congress of Romanian Mathematicians (Iasi, Romania), AMS Western Sectional Meeting (Las Vegas, NV), AMS Eastern Sectional Meeting (Washington, DC)   2015

- CSCAMM U Maryland (*Multiscale phenomena: modeling, analysis and computation*),

- IPAM UCLA (*Mathematics of Turbulence*), 10th AIMS Conference on Dynamical Systems, Diff. Equations and Applications (Madrid, Spain), Laboratoire de Mathématiques de Besançon (*Journées d'Analyse Non Linéaire*), 4th Workshop on Fluids and PDE (IMPA, Rio de Janeiro, Brazil), AMS Joint Mathematics Meeting (Baltimore, MD)   2014

- AMS Central Sectional Meeting (St. Louis, MI), Oxford University (Clay Institute Workshop *The Navier-Stokes and Related Topics*), University of Sussex (*Recent Trends in Classical and Complex Fluids*), Stanford (Summer School and Workshop *Recent Advances in PDEs and Fluids*), 1st Mathematical Congress of the Americas (Guanajuato, Mexico), Jacobs University Bremen (Summer School *Modern Mathematics*), Joint International Mathematics Meeting AMS-Romania, (Alba Iulia, Romania), ICMAT Madrid (Summer School on *Analysis of Incompressible Fluids*), University of Seville (Workshop *Fluid Mechanics and Singular Integrals*)   2013

- AMS Western Sectional Meeting (Phoenix, AZ), Mathematisches Forschungsinstitut Oberwolfach (*Mathematical Aspects of Hydrodynamics*), Centre de Recherches Mathematiques Montreal (*Geometry and Dynamics of Fluid*), Northwestern (*Evolution Equations*, workshop in honor of Terence Tao), AMS Western Sectional Meeting (Honolulu, HI)   2012

- SIAM conference on Analysis of PDEs (San Diego, CA), Oklahoma State University (*3rd Oklahoma PDE Workshop*), Carnegie Mellon U (*Incompressible Fluids, Turbulence and Mixing*, in honor of Peter Constantin's 60th birthday), Xi'an, China (*PDEs Modeling Fluids and Complex Fluids*, celebrating Peter Constantin's 60th), AMS Western Sectional Meeting (Las Vegas, NV)   2011

- AMS Western Sectional Meeting (Los Angeles, CA)   2010

- AMS Western Sectional Meeting (Riverside, CA), AMS Central Sectional Meeting (Waco, TX), AMS Central Sectional Meeting (Urbana-Champaign, IL), U Georgia (*6th IMACS International Conference on Nonlinear Equations and Waves*)   2009

- AMS Central Sectional Meeting (Bloomington, IN)   2008

Talks at University Colloquia and Seminars

- UT Austin (Colloquium)   2025

- Duke (Applied Math and Analysis Seminar), UC Davis (*Short Course*@PDE&Applied Math Seminar), Stony Brook (Analysis Seminar), SCGP & Stony Brook (Colloquium), UT Austin (Analysis Seminar)   2024

- Princeton (PACM Colloquium), Princeton (Analysis Seminar)   2023

- Temple (Colloquium), Rutgers (Nonlinear Analysis Seminar)   2022

- Shanghai Jiao Tong University (virtual), Jacobs University Bremen (Bremen-Oldenburg dynamics seminar, virtual)   2021

- U Minnesota (Colloquium, virtual), NJIT (Colloquium, virtual), UC Davis (PDE and
  Applied Math Seminar, virtual), IAS Princeton (Analysis - Mathematical Physics Seminar) 2020
- University of Illinois at Chicago (Colloquium), UC Davis (PDE and Applied Math Seminar),
  Carnegie Mellon University (Colloquium), Stanford (Applied Math Seminar),
  USC (CAMS Colloquium), TU München (Fakultätskolloquium) 2019
- MIT (Colloquium), MIT (Analysis Seminar), Iowa State (Colloquium), U Toronto (Colloquium),
  Imperial College London (Applied PDEs Seminar), Rutgers (Nonlinear Analysis Seminar),
  Princeton (Analysis Seminar) 2018
- Courant Institute NYU (Colloquium), Tulane (Colloquium), U Pittsburgh (Analysis Seminar),
  U Penn (Colloquium), UT Austin (Analysis Seminar), U Minnesota (Colloquium), U Maryland
  (PDE-Applied Math Seminar), UCLA (Analysis and PDE Seminar), USC (Colloquium) 2017
- Princeton (PACM and Mathematics Colloquium), Rice (Colloquium), UC San Diego (Colloquium),
  Stanford (Applied Math Seminar), Columbia (Geometric PDE Seminar), UNC Chapel Hill
  (Analysis Seminar), Peking University (PDE Seminar), Capital Normal University Beijing (PDE Seminar),
  Université Paris 13 (Séminaires de l'équipe PM-EDP), Université Claude Bernard Lyon 1
  (Séminaire EDP-Analyse), Duke (Applied Mathematics and Analysis Seminar), Drexel
  (PDE/Applied Math Seminar), UT Austin (Analysis Seminar) 2016
- Brown (PDE Seminar), USC (CAMS Colloquium), Stanford (Applied Math Seminar),
  UC Berkeley (Analysis Seminar), Northwestern (Analysis Seminar) 2015
- UC Davis (PDE seminar), Rice (Colloquium), École Normale Supérieure Paris (Analyse non-linèaire
  et EDP), UCLA (Colloquium, Analysis and PDE Seminar), NJIT (Fluids and Waves Seminar),
  UC San Diego (Analysis Seminar), USC (Colloquium), Rutgers (Math Finance and Probability Seminar,
  Nonlinear Analysis Seminar), Universität Zurich (Seminar in PDE and Mathematical Physics),
  U Maryland (PDE-Applied Math Seminar), Virginia Tech (Colloquium), Penn State (CAM Colloquium),
  MIT (PDE/Analysis Seminar), U Chicago (CAMP Seminar), Stanford (Applied Math Seminar),
  ETH Zürich (Special Colloquium) 2014
- U Pennsylvania (Analysis Seminar), CUNY (Applied Math Seminar), Cambridge (Geometric
  Analysis and PDE Seminar), Princeton (Analysis of Fluids and Related Topics Seminar),
  Courant Institute NYU (Analysis Seminar), Columbia (Geometry and Analysis Seminar),
  Caltech/UCLA joint Analysis Seminar, USC (CAMS Seminar) 2013
- Princeton (Analysis Seminar), Brown (PDE Seminar), Loyola U Chicago (Analysis Seminar),
  U Wisconsin Madison (PDE and Geometric Analysis Seminar), University of Minnesota (PDE Seminar),
  Stanford University (Applied Math Seminar) 2012
- UT Austin (PDE Seminar), Indiana U Bloomington (PDE Seminar), USC (CAMS Seminar) 2011
- U Wisconsin Madison (Analysis Seminar), U Illinois Chicago (Analysis Seminar),
  U Chicago (CAMP Seminar), U Illinois Urbana-Champagne (Harmonic Analysis and PDE Seminar) 2010
- UC Irvine (Nonlinear PDEs Seminar), Indiana U Bloomington (PDE/Applied Math Seminar) 2009
- USC (Analysis Seminar) 2008

Service

- Co-organizer of the Courant Institute of Mathematical Sciences *Analysis Seminar*,
  NYU, New York, NY 2020–
- Member of the Scientific Committee of the Institute for Mathematical and Statistical Innovation (IMSI)
  at the University of Chicago, Chicago, IL 2024–
- Member of the International Scientific Committee for XXIst International Congress of Mathematical
  Physics (ICMP), Strasbourg, France 2024
- Co-organizer of the conference *Recent Advances in Nonlinear Partial Differential Equations*,
  in honor of Vladimir Sverak, University of Minnesota, MN 2024
- Director of Graduate Studies, MS in Mathematics, Courant Institute of Mathematical Sciences,
  NYU, New York, NY 2019–2024

- Co-organizer of the summer school and conference *Recent Advances in Fluid dynamics*, in honor of Peter Constantin, Duke University, Raleigh, NC — 2023
- Co-organizer of the *Andy Majda Memorial Conference*, NYU, New York, NY — 2023
- Co-organizer of the section on *Partial Differential Equations* at the XXst International Congress of Mathematical Physics (ICMP), Geneva, Switzerland — 2021
- Co-organizer of the Courant Institute of Mathematical Sciences *Colloquium*, NYU, New York, NY — 2018–2021
- Co-organizer of the Fields Institute Workshop on *Euler and Navier-Stokes Equations: Regular and Singular Solutions*, Toronto, Canada — 2020
- Co-organizer of the CSCAMM workshop *Formation of small scales in nonlinear PDEs*, University of Maryland, College Park, MD — 2019
- Co-organizer of the special session *Stability and Singularity in Fluid Dynamics*, AMS Spring Western Sectional Meeting, Honolulu, HI — 2019
- Co-organizer of the Princeton University *Analysis of Fluids and Related Topics Seminar*, Princeton, NJ — 2012–2018
- Undergraduate Placement Officer for the Princeton University Department of Mathematics, Princeton, NJ — 2013–2018
- Co-organizer of the Princeton University *Analysis Seminar* — 2015–2017
- Co-organizer of the Princeton-Tokyo Mathematical Fluid Mechanics Workshop, Princeton, NJ — 2017
- Co-organizer of the special session *Incompressible Fluid Dynamics*, Mathematical Congress of the Americas, Montreal, Canada — 2017
- Co-organizer of the special session *Hydrodynamic and Wave Turbulence*, AMS Spring Eastern Sectional Meeting, Hunter College, City University of New York, NY — 2017
- Co-organizer of the ICERM Topical Workshop *Current Developments in Mathematical Fluid Dynamics: Regularity, Instabilities, and Turbulence*, in honor of Susan Friedlander, Providence, RI — 2017
- Co-organizer of the symposium *Analysis of fluid flow*, International Conference on Evolution equations, Vanderbilt University, Nashville, TN — 2016
- Co-organizer of the symposium *Recent developments for Navier-Stokes, Euler, and related models*, SIAM conference Analysis of Partial Differential Equations, Scottsdale, AZ — 2015
- Co-organizer of the MSRI Summer Graduate School *Incompressible Fluid Flows at High Reynolds Number*, Berkeley, CA — 2015
- Co-organizer of the special session *Evolution Problems at the Interface of Waves and Fluids*, AMS Spring Western Sectional Meeting, Las Vegas, NV — 2015
- Co-organizer of the special session *Nonlinear Partial Differential Equations*, AMS Fall Western Sectional Meeting, San Francisco, CA — 2014
- Co-organizer of the special session *Fluid Mechanics: from Turbulence to Free Boundaries*, Mathematical Congress of the Americas, Guanajuato, Mexico — 2013
- Co-organizer of the special session *Nonlinear Partial Differential Equations at the Common Interface of Waves and Fluids*, AMS Spring Western Sectional Meeting, Honolulu, HI — 2012
- Co-organizer of the symposium *Analysis of Partial Differential Equations Arising in Fluid Dynamics*, SIAM conference Analysis of Partial Differential Equations, San Diego, CA — 2011
- Co-organizer of the special session *Interdisciplinary Deterministic and Stochastic Partial Differential Equations*, AMS Fall Central Sectional Meeting, Notre Dame, IN — 2010