Theodore Dimitrios Drivas

Contact

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Position

Associate Professor, Department of Mathematics, Stony Brook University

Education

University of Chicago 2007 – 2011
B.S., Mathematics & Physics with Honors
Advisor: Robert M. Wald

Johns Hopkins University 2011 – 2017
Ph.D., Applied Mathematics & Statistics
Advisor: Gregory L. Eyink

Positions

Stony Brook University
Associate Professor 2025 –
Assistant Professor 2021 – 2025

Princeton University
Assistant Professor 2020 – 2021
NSF Postdoctoral Fellow (Sponsor: P. Constantin) 2017 – 2020

Visiting Positions

Sorbonne Université
Campus of Jussieu - Faculty of Science & Engineering, Paris, France 06–07/2026

Institute for Advanced Study
Member, School of Mathematics, Princeton, NJ, USA 2022

Professional

SchoolNova, https://schoolnova.org 2022 –
Teacher: 6th grade Mathematics on Sundays

Johns Hopkins Applied Physics Laboratory (JHU APL) 2013 – 2016
Oceanic, Atmospheric and Remote Sensing Sciences Group

Awards & Grants

- Emerging Leaders Cohort, Stony Brook University 2024–2025
- Stony Brook Trustees Faculty Award ($20,000) 2024
- Mercator Fellowship, German National Science Foundation (DFG) 2024
- Alfred P. Sloan Research Fellowship in Mathematics ($75,000) 2024 – 2026
- NSF CAREER Award, #2235395 ($500,000) 2023 – 2028
- NSF Research Grant, #2106233 ($239,995) 2021 – 2024
- Charles Simonyi Endowment, Institute for Advanced Study 2022
- NSF Postdoctoral Research Fellowship, #1703997 ($150,000) 2017 – 2020

Editorial

- **Nonlinearity** (Associate Editor) 2022 –
- **Physica D** (Early Career Editorial Board) 2022 –

PhD Students

Daniil Glukhovskiy (Stony Brook University) 2021 –
Jonathan Li (Johns Hopkins University) 2023 –
Woohyu Jeon (Stony Brook University) 2024 –

Selected Recent Publications

- Theodore D. Drivas, Tarek M. Elgindi, and In-Jee Jeong. *Twisting in Hamiltonian flows and perfect fluids*. **Inventiones mathematicae**, 238, 331–370 (2024)
- Theodore D. Drivas and Tarek M. Elgindi. *Singularity formation in the incompressible Euler equation in finite and infinite time*. **EMS Surveys in Mathematical Sciences** 10.1 (2023): 1-100.
- Peter Constantin, Theodore D. Drivas, and Daniel Ginsberg. *Flexibility and rigidity in steady fluid motion*. **Communications in Mathematical Physics** 385 (2021): 521-563.
- Theodore D. Drivas, Tarek M. Elgindi, Gautam Iyer, and In-Jee Jeong. *Anomalous dissipation in passive scalar transport*. **Archive for Rational Mechanics and Analysis** (2022): 1-30.
- Theodore D. Drivas, *Turbulent cascade direction and Lagrangian time-asymmetry*. **Journal of Nonlinear Science** 29.1 (2019): 65-88.

Preprints **Funding**

60. T.D. Drivas — Sloan Fellowship, NSF #2235395
Mathematical Theorems on Turbulence,
submitted, (2025)
arXiv:2601.09619

59. T.D. Drivas, L. Galeati, and U. Pappalettera — Sloan Fellowship, NSF #2235395, NSF #2106233
Anomalous Dissipation and Regularization in isotropic Gaussian turbulence,
submitted, (2025)
arXiv:2509.10211

58. T.D. Drivas and M. Retakh — Sloan Fellowship, NSF #2235395
How doth the random triangle,
submitted, (2025)
arXiv:2508.18414

57. T.D. Drivas, D. Ginsberg and M. Nualart — Sloan Fellowship, NSF #2235395, NSF #2106233
On the fragility of laminar flow,
submitted, (2025)
arXiv:2505.17817

56. L. De Rosa, T.D. Drivas, M. Inversi and P. Isett — Sloan Fellowship, NSF #2235395, NSF #2106233
Intermittency and dissipation regularity in turbulence,
submitted, (2025)
arXiv:2502.10032

55. T.D. Drivas and M. Nualart, — Sloan Fellowship, NSF #2235395, NSF #2106233
A geometric characterization of steady laminar flow,
submitted, (2024)
arXiv:2410.18946

54. G.L. Eyink and T.D. Drivas,
Quantum Spontaneous Stochasticity,
preprint, (2017)
arXiv:1509.04941

Journal Publications **Funding**

53. T.D. Drivas, T.M. Elgindi, D. Ginsberg — Sloan Fellowship, NSF #2235395
On the existence of fibered three-dimensional perfect fluid equilibria without continuous Euclidean symmetry,
Pure and Applied Functional Analysis, accepted (2026)
arXiv:2510.02955

52. T.D. Drivas and J. La — Sloan Fellowship, NSF #2235395
Lagrangian aspects of Yudovich theory for 2D Euler,
Pure and Applied Functional Analysis, accepted (2026)
arXiv:2509.21121

51. T.D. Drivas, D. Glukhovskiy, and B. Khesin, — Sloan Fellowship, NSF #2235395, NSF #2106233
Pensive billiards, point vortices, and pucks,
Forum of Mathematics, Sigma, (2025)
DOI:10.1017/fms.2025.10119 arXiv:2408.03279

50. K. Iyer, T.D. Drivas, G. Eyink, K. Sreenivasan, — Sloan Fellowship, NSF #2235395, NSF #2106233
Turbulence without walls: Whither the zeroth law of turbulence?
Physical Review Letters, Phys. Rev. Lett. 135, 134001, 2025
DOI:10.1103/xpwj-txlp arXiv:2504.13298
• PRL Editors' Suggestion

49. T.D. Drivas, T. Elgindi, I-J Jeong, Sloan Fellowship
Twisting in Hamiltonian Flows and Perfect Fluids, NSF #2235395
Inventiones mathematicae, 238, 331–370 (2024) NSF #2106233
DOI:10.1007/s00222-024-01285-x arXiv:2305.09582

48. L. De Rosa, T.D. Drivas, and M. Inversi,
On the support of anomalous dissipation measures,
Journal of Mathematical Fluid Mechanics, 26, 56 (2024) NSF #2235395
DOI:10.1007/s00021-024-00894-z arXiv:2301.09603 NSF #2106233

47. T.D. Drivas, D. Glukhovskiy, and B. Khesin, Sloan Fellowship
Singular vortex pairs follow magnetic geodesics, NSF #2235395
International Mathematics Research Notices, (14), 10880–10894 (2024) NSF #2106233
DOI:10.1093/imrn/rnae106 arXiv:2401.08512

46. T.D. Drivas, S. Iyer, T.T. Nguyen,
The Feynman–Lagerstrom criterion for boundary layers, NSF #2235395
Archive for Rational Mechanics and Analysis, 248, 55 (2024) NSF #2106233
DOI:10.1007/s00205-024-01991-z arXiv:2308.15447

45. T.D. Drivas, D. Ginsberg,
Islands in stable fluid equilibria, NSF #2235395
Proceedings of the American Mathematical Society, 152, 4855–4863 (2024) NSF #2106233
DOI:10.1090/proc/16951 arXiv:2305.11150

44. M. Coti Zelati, T.D. Drivas, R. Gvalani
Statistically self-similar mixing by Gaussian random fields, NSF #2235395
Journal of Statistical Physics, 191, 61 (2024) NSF #2106233
DOI:10.1007/s10955-024-03277-w arXiv:2309.15744

43. T. Buckmaster, T.D. Drivas, S. Shkoller, and V. Vicol
Formation and development of singularities for the compressible Euler equations,
Proc. Int. Cong. Math. 2022, Vol. 5, pp. 3636–3659. EMS Press, Berlin, 2023, NSF #2106233
DOI:10.4171/icm2022/87

42. S. Ananda, M. Bertagni, T.D. Drivas, and A. Porporato,
Self-Similarity and Vanishing Diffusion Limit in Fluvial Landscapes, NSF #2235395
Proceedings of the National Academy of Sciences, (2023) NSF #2106233
DOI:10.1073/pnas.2302401120 arXiv:2401.04113

41. T.D. Drivas, A.A. Mailybaev, and A. Raibekas,
Statistical determinism in non-Lipschitz dynamical systems,
Ergodic Theory and Dynamical Systems, 1-29. (2023) NSF #2235395
DOI:10.1017/etds.2023.74 arXiv:2004.03075 NSF #2106233

40. T.D. Drivas, D. Ginsberg, and H. Grayer II,
On the distribution of heat in fibered magnetic fields,
Communications in Mathematical Physics, 405, 57 (2024) NSF #2235395
DOI:10.1007/s00220-023-04886-4 arXiv:2210.09968 NSF #2106233

39. T.D. Drivas, A. Dunlap, C. Graham, J. La, and L. Ryzhik,
Invariant measures for stochastic conservation laws on the line,
Nonlinearity 36 4553, (2023) Charles Simonyi Endowment
DOI:10.1088/1361-6544/acdb3a arXiv:2201.12641 NSF #2106233

38. T.D. Drivas, T.M. Elgindi, and J. La
Propagation of singularities by Osgood vector fields and for 2D inviscid incompressible fluids,
Mathematische Annalen, (2022) Charles Simonyi Endowment
DOI:10.1007/s00208-022-02498-2 arXiv:2203.15554 NSF #2106233

37. M. Dolce and T.D. Drivas
On maximally mixed equilibria of two-dimensional perfect fluids,
Archive for Rational Mechanics and Analysis, 246, 735–770 (2022). Charles Simonyi Endowment
DOI:10.1007/s00205-022-01825-w arXiv:2204.03587 NSF #2106233

36. T.D. Drivas and T.M. Elgindi,
Singularity formation in the incompressible Euler equation in finite and infinite time,
EMS Surveys in Mathematical Sciences, 10 (2023), no. 1, pp. 1–100 Charles Simonyi Endowment
DOI:10.4171/EMSS/66 arXiv:2203.17221 NSF #2106233

35. T. Buckmaster, T.D. Drivas, S. Shkoller, and V. Vicol
Simultaneous development of shocks and cusps for 2D Euler with azimuthal symmetry,
Annals of PDE, 8:26 (2022) (2022)
DOI:10.1007/s40818-022-00141-6 arXiv:2106.02143 NSF #2106233

34. P. Constantin, T.D. Drivas, and D. Ginsberg,
Flexibility and rigidity of free boundary MHD equilibria,
Nonlinearity, 35 2363 (2022)
DOI:10.1088/1361-6544/ac5d6a arXiv:2108.05977 NSF #2106233

33. T.D. Drivas,
Self–Regularization in turbulence from the Kolmogorov 4/5th Law and Alignment,
Philosophical Transactions of the Royal Society A, 380: 20210033 (2022)
DOI:10.1098/rsta.2021.0033 arXiv:2111.03493 NSF #2106233

32. L. Bentkamp, T.D. Drivas, C.C. Lalescu, and M. Wilczek,
The statistical geometry of material loops in turbulence,
Nature Communications, 13, 2088 (2022). Charles Simonyi Endowment
DOI:10.1038/s41467-022-29422-1 arXiv:2106.11622 NSF #2106233
• MPI-DS press release.

31. T.D. Drivas, H.Q. Nguyen, and C. Nobili,
Bounds on heat flux for Rayleigh-Bénard convection between Navier-slip fixed-temperature boundaries,
Philosophical Transactions of the Royal Society A, (2021)
DOI:10.1098/rsta.2021.0025 arXiv:2109.13205 NSF #2106233

30. T.D. Drivas, T.M. Elgindi, G. Iyer, and I–J. Jeong,
Anomalous Dissipation in Passive Scalar Transport,
Archive for Rational Mechanics and Analysis, 243, 1151-1180 (2022)
DOI:10.1007/s00205-021-01736-2 arXiv:1911.03271 NSF #1703997

29. T.D. Drivas and J. La,
Boundary conditions and polymeric drag reduction for the Navier-Stokes equations,
Archive for Rational Mechanics and Analysis, 242(1), 485-526 (2021)
DOI:10.1007/s00205-021-01689-6 arXiv:1904.08481 NSF #1703997

28. T.D. Drivas, G. Misiołek, B. Shi, and T. Yoneda,
Conjugate and cut points in ideal fluid motion,
Annales Mathématiques du Québec, A. Shnirelman's 75th birthday issue, (2021).
DOI:10.1007/s40316-021-00176-4 arXiv:2105.11869 NSF #1703997

27. P. Constantin, T.D. Drivas, and D. Ginsberg,
Flexibility and rigidity in steady fluid motion,
Communications in Mathematical Physics, 385.1, 521-563 (2021)
DOI:10.1007/s00220-021-04048-4 arXiv:2007.09103 NSF #1703997

26. P. Constantin, T.D. Drivas, and D. Ginsberg,
On quasisymmetric plasma equilibria sustained by small force,
Journal of Plasma Physics, 87.1 (2021)
DOI:10.1017/S0022377820001610 arXiv:2009.08860 NSF #1703997
• Princeton University press release

25. D.C. Saunders, G. Frederick, T.D. Drivas, and S. Wunsch,
Self-similar decay of the drag wake of a dimpled sphere,
Physical Review Fluids, 5, 124607, (2020) NSF #1703997
DOI:10.1103/PhysRevFluids.5.124607

24. T.D. Drivas and A.A. Mailybaev,
"Life after death" in ordinary differential equations with a non-Lipschitz singularity,
Nonlinearity, 34 2296, (2021)
DOI:10.1088/1361-6544/abbe60 arXiv:1806.09001 NSF #1703997

23. P. Constantin, T.D. Drivas and R. Shvydkoy,
Entropy Hierarchies for equations of compressible fluids and self-organized dynamics,
SIAM Journal Mathematical Analysis, 52 (3), 3073-3092 (2020)
DOI:10.1137/19M1278983 arXiv:1908.01784 NSF #1703997

22. P. Constantin, T.D. Drivas and T.M. Elgindi,
Inviscid limit of vorticity distributions in Yudovich class,
Communications on Pure and Applied Mathematics, (2020)
DOI:10.1002/cpa.21940 arXiv:1909.04651 NSF #1703997

21. M. Coti Zelati and. T.D. Drivas,
A stochastic approach to enhanced diffusion,
Annali della Scuola Normale Superiore di Pisa, Classe di Scienze, (2020)
DOI:10.2422/2036-2145.201911_013 arXiv:1911.09995 NSF #1703997

20. T.D. Drivas, D.D Holm, and J−M. Leahy,
Lagrangian averaged stochastic advection by Lie transport for fluids,
Journal of Statistical Physics, 1-39 (2020)
DOI:10.1007/s10955-020-02493-4 arXiv:1908.11481 NSF #1703997

19. T.D. Drivas and D.D. Holm,
Energy and Circulation Theorem Preserving Stochastic Fluids,
Proceedings of the Royal Society of Edinburgh: Section A Mathematics, 1-39, (2019)
DOI:10.1017/prm.2019.43 arXiv:1808.05308 NSF #1703997

18. T.D. Drivas and G.L. Eyink,
An Onsager Singularity Theorem for Leray Solutions of the Navier-Stokes Equations,
Nonlinearity, 32.11, 4465, (2019)
DOI:10.1088/1361-6544/ab2f42 arXiv:1710.05205 NSF #1703997

17. P. Constantin, T.D. Drivas, H.Q. Nguyen and F. Pasqualotto,
Compressible Fluids and Active Potentials,
Annales de l'Institut Henri Poincaré C, Analyse Non Linéaire, (2019)
DOI:10.1016/j.anihpc.2019.04.001 arXiv:1803.04492 NSF #1703997

16. T.D. Drivas,
Turbulent Cascade Direction and Lagrangian Time-Asymmetry,
Journal of Nonlinear Science, 29: 65, (2019)
DOI:10.1007/s00332-018-9476-8 arXiv:1802.02289 NSF #1703997
- Experimental support: Cheminet et al., Physical Review Letters (2022)

15. T.D. Drivas and H.Q. Nguyen,
Remarks on the emergence of weak Euler solutions in the vanishing viscosity limit,
Journal of Nonlinear Science, 1-13, (2018)
DOI:10.1007/s00332-018-9500-z arXiv:1808.01014 NSF #1703997

14. T.D. Drivas and H.Q. Nguyen,
Onsager's conjecture and anomalous dissipation on domains with boundary,
SIAM Journal Mathematical Analysis, 50(5), 4785–4811 (2018)
DOI:10.1137/18M1178864 arXiv:1803.05416 NSF #1703997

13. T.D. Drivas and G.L. Eyink,
An Onsager Singularity Theorem for Turbulent Solutions of Compressible Euler Equations,
Communications in Mathematical Physics, 359: 733, (2018)
DOI:10.1007/s00220-017-3078-4 arXiv:1704.03409 NSF #1703997

12. G.L. Eyink and T.D. Drivas,
Cascades and Dissipative Anomalies in Compressible Fluid Turbulence,
Physical Review X, 8, 011022, (2018)
DOI:10.1103/PhysRevX.8.011022 arXiv:1704.03532

11. G.L. Eyink and T.D. Drivas,
Cascades and Dissipative Anomalies in Relativistic Fluid Turbulence,
Physical Review X, 8, 011023, (2018)
DOI:10.1103/PhysRevX.8.011023 arXiv:1704.03541

10. T.D. Drivas, P.L. Johnson, C.C. Lalescu and M. Wilczek,
On the large-scale sweeping of small-scale eddies in turbulence – A filtering approach.
Physical Review Fluids, 2, 104603, (2017)
DOI:10.1103/PhysRevFluids.2.104603 arXiv:2307.11195

9. G.L. Eyink and T.D. Drivas,
A Lagrangian fluctuation-dissipation relation for scalar turbulence, III. Rayleigh-Bénard convection,
Journal of Fluid Mechanics, 836, 560-598, (2017)
DOI:10.1017/jfm.2017.788 arXiv:1703.09604

8. T.D. Drivas and G.L. Eyink,
A Lagrangian fluctuation-dissipation relation for scalar turbulence, II. Wall–bounded flows,
Journal of Fluid Mechanics, 829, 236-279 (2017)
DOI:10.1017/jfm.2017.571 arXiv:1703.08133

7. T.D. Drivas and G.L. Eyink,
A Lagrangian fluctuation-dissipation relation for scalar turbulence, I. Flows with no bounding walls,
Journal of Fluid Mechanics, 829, 153-189 (2017)
DOI:10.1017/jfm.2017.567 arXiv:1606.00729

6. T.D. Drivas and S.E. Wunsch,
Triad Resonance between Gravity and Vorticity Waves in Vertical Shear,
Ocean Modelling, 103 87-97 (2016)
DOI:10.1016/j.ocemod.2015.10.002

5. C.C. Lalescu, Y–K. Shi, G.L. Eyink, T.D. Drivas, E. Vishniac and A. Lazarian,
Inertial-Range Reconnection in Magnetohydrodynamic Turbulence and in the Solar Wind,
Physical Review Letters, 115, 025001 (2015)
DOI:10.1103/PhysRevLett.115.025001 arXiv:1503.00509

4. G.L. Eyink and T.D. Drivas,
Spontaneous Stochasticity and Anomalous Dissipation in Burgers Equation,
Journal of Statistical Physics, 158, Issue 2, 386–432 (2014).
DOI:10.1007/s10955-014-1135-3 arXiv:1401.5541

3. D. Benveniste and T.D. Drivas,
Asymptotic results for backwards two-particle dispersion in a turbulent flow,
Physical Review E, 89, 041003(R) (2014).
DOI:10.1103/PhysRevE.89.041003 arXiv:1401.0521

2. A.I. Harte and T.D. Drivas,
Caustics and wave propagation in curved spacetimes,
Physical Review D, 85, 124039 (2012).
DOI:10.1103/PhysRevD.85.124039 arXiv:1202.0540

1. T.D. Drivas and S.E. Gralla,
Dependence of Self-Force on Central Object,
Classical and Quantum Gravity, 28, 145025 (2011).
DOI:10.1088/0264-9381/28/14/145025 arXiv:1009.0504

Conference Proceedings **Funding**

2. T.D. Drivas,
Wall Bounded Turbulence and Polymer Drag Reduction,
Oberwolfach Science Reports, (2019). NSF #1703997
url: https://publications.mfo.de/bitstream/handle/mfo/3786/OWR_2019_38.pdf?sequence=1&isAllowed=y

1. S.E. Wunsch and T.D. Drivas,
Internal tide energy transfer by nonlinear refraction,
VIIIth International Symposium on Stratified Flows, Vol. 1. No. 1. (2016).
url: https://escholarship.org/uc/item/3kt4t3dr

Theses

3. *Anomalous Dissipation, Spontaneous Stochasticity & Onsager's Conjecture*.
Ph.D. Dissertation, Johns Hopkins University Press, 2017.
url: https://jscholarship.library.jhu.edu/handle/1774.2/44694

2. *Stochastic Representations of Solutions to the Viscous Hamilton-Jacobi Equations*.
Masters Dissertation, Johns Hopkins University Press, 2013.

1. *Scalar Wave Propagation on Plane Wave Spacetimes*.
S.B. Honors Thesis, University of Chicago, 2011.

Invited Research Visits

13.	*Max Planck Institute for Mathematics in the Sciences*, Leipzig Germany Host: Laszlo Szekelyhidi	05/2024 1 weeks
12.	*Isaac Newton Institute for Mathematical Sciences*, Cambridge, England (virtual) Program: Mathematical aspects of turbulence: where do we stand?	01/2021 3 weeks
11.	*Korean Institute for Advanced Study (KIAS)*, Seoul, South Korea Host: In-Jee Jeong	09/2019 2 weeks
10.	*Max-Planck-Institut für Dynamik und Selbstorganisation*, Göttingen, Germany Host: Michael Wilczek	08/2019 2 weeks
9.	*Department of Mathematics, University of Pisa*, Italy Host: Marco Romito	06/2019 3 weeks
8.	*Department of Mathematics, Imperial College*, London, UK Host: Michele Coti Zelati	06/2019 1 week
7.	*Instituto de Matemática Pura e Aplicada (IMPA)*, Rio de Janeiro, Brazil Host: Alexei Mailybaev	01/2019 1 month
6.	*Department of Mathematics, Imperial College*, London, UK Host: Darryl Holm	06/2018 1 week
5.	*Department of Mathematics, UC San Diego*, California, USA Host: Tarek Elgindi	05/2018 1 week
4.	*Instituto de Matemática Pura e Aplicada (IMPA)*, Rio de Janeiro, Brazil Host: Alexei Mailybaev	08/2017 2 weeks
3.	*Hausdorff Center for Mathematics (HCM)* University of Bonn, Germany Host: Mircea Petrache	05/2017 1 week
2.	*Max-Planck-Institut für Dynamik und Selbstorganisation*, Göttingen, Germany Host: Michael Wilczek	05/2015 3 weeks
1.	*Institute for Pure and Applied Mathematics (IPAM)*, UCLA, Los Angeles, CA Visiting Graduate Researcher	09/2014 3 months

Seminar & Colloquium Talks

82.	Analysis Seminar, University of Pisa, Pisa Italy	04/2025
81.	Analysis & PDE Seminar, Gran Sasso Science Institute, L'Aquila Italy	04/2025
80.	Colloquium, Tulane University, New Orleans, LA	03/2025
79.	Analysis Seminar, Duke University, Durham NC	02/2025
78.	Colloquium, Florida State University, Tallahassee FL	02/2025
77.	Analysis Seminar, University of Pittsburg, Pittsburg PA	02/2025
76.	Analysis Seminar, Princeton University Mathematics Department, Princeton, NJ	01/2025
75.	Computational and Applied Mathematics Colloquium, Penn State, State College PA	11/2024
74.	Colloquium, Max Planck Institute for Mathematics in the Sciences, Leipzig Germany	05/2024
73.	PDE Seminar, Brown University, Providence RI	04/2024
72.	Colloquium, Georgetown University, Washington DC	04/2024
72.	Mathematical Physics Seminar, Johns Hopkins University, Maryland	04/2024
71.	Analysis of Fluids and Related Topics Seminar, Princeton, New Jersey	10/2023
70.	PDE seminar, Purdue University, IL	09/2023
69.	JHU/Lyon Working Seminar, Online	09/2023
68.	Analysis and PDE Seminar, Berkeley, CA	03/2023
67.	JHU/Lyon Working Seminar, Online	02/2023
66.	Analysis Seminar, Texas Tech University	02/2023
65.	Hyperbolic & Dispersive PDE Seminar, Rutgers University	11/2022
64.	Department of Physics Colloquium, Michigan Tech University	10/2022
63.	Analysis Seminar, Seoul National University (SNU), South Korea	10/2022

62. Non-linear analysis/differential equations seminar, North Carolina State 10/2022
61. Chair for Dynamics, Control and Numerics, Friedrich-Alexander-Universität, Germany 10/2022
60. Analysis & PDE seminar, Stanford University 05/2022
59. Analysis Seminar, Institute for Advanced Study 05/2022
    https://www.youtube.com/watch?v=Z2CkJxBFyZI
58. Analysis Seminar, University of Maryland 05/2022
57. Applied Mathematics Colloquium, Penn State, Pennsylvania 02/2022
56. London PDE Seminar (Online), London, UK 02/2022
55. Analysis Seminar, Duke University, NC 02/2022
54. Short talk, Institute for Advanced Study, Princeton, NJ 02/2022
    https://www.youtube.com/watch?v=1aE399e9PVo
53. Transport, Fluids and Mixing, Centro De Giorgi - Pisa, Italy 01/2022
52. JHU/Lyon Working Seminar, Online 12/2021
51. Hamiltonian Systems Seminar, University of Toronto 11/2021
50. CAMS colloquium, USC, Los Angeles, CA. 11/2021
    https://www.youtube.com/watch?v=x4HB3aog0wA
49. Seminar In the Analysis and Methods of PDE (SIAM PDE) webinar 11/2021
    https://www.youtube.com/watch?v=mWO3wUqk8ek
48. Analysis of Fluids and Related Topics Seminar, Princeton, New Jersey 10/2021
47. Stony Brook Mathematics Colloquium, Stony Brook, NY 09/2021
46. Analysis Seminar, Seoul National University, Online 07/2021
45. Wave Turbulence Seminar, Online 06/2021
    https://www.youtube.com/watch?v=XB-svY2s4jc
44. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 05/2021
43. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 05/2021
42. Open PDE & Analysis Seminar, Online 04/2021
41. Nonlinear PDE seminar, Texas A & M University 04/2021
40. JHU/Lyon Working Seminar, Online 03/2021
39. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 02/2021
38. Mathematics Seminar, Duke University, NC 02/2021
37. Colloquium, University of Nebraska, NE 02/2021
36. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 02/2021
35. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 12/2020
34. Analysis Seminar, Princeton, New Jersey 11/2020
33. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 11/2020
32. Analysis and PDE Seminar, ShanghaiTech, Shanghai, China 05/2020
31. CUNY Einstein Chair Mathematics Seminar, CUNY, NYC 03/2020
30. Courant Institute Analysis Seminar, NYU, New York City 02/2020
29. Departmental Colloquium, University of Maryland, MD 01/2020
28. Probability Seminar, Penn State, Pennsylvania 01/2020
27. PDE Seminar, Vanderbilt University, Nashville,TN 12/2019
26. Departmental Colloquium, SUNY Stony Brook, NY 11/2019
25. Center for Nonlinear Analysis Seminar, Carnegie Mellon, PA 11/2019
24. PDE and Analysis Seminar, University of Pittsburgh, PA 11/2019
23. Analysis Seminar, Duke University, NC 11/2019
22. PDE/Applied Math seminar, UC Davis, CA 11/2019
21. Analysis Seminar, Korean Institute for Advanced Study (KIAS), Seoul, South Korea 09/2019
20. Seminar, Max-Planck-Institut für Dynamik und Selbstorganisation, Göttingen 08/2019
19. Analysis and Probability Seminar, University of Pisa 06/2019
18. Analysis and Applied Mathematics Seminar, University of Illinois Chicago 05/2019
17. Center for Environmental & Applied Fluid Mechanics Seminar (CEAFM), JHU 05/2019
16. Departmental Colloquium, SUNY Stony Brook, NY 11/2018
15. Common Room Math Gathering, SUNY Stony Brook, NY 06/2018
14. Fluid Dynamics Seminar, NYU Tandon School of Engineering, Brooklyn, NY 05/2018
13. Analysis Seminar, UCSD, San Diego, CA 05/2018
12. Applied Math Seminar, Tulane, New Orleans, LA 04/2018

11. Courant Institute Analysis Seminar, NYU, New York City 04/2018
10. CAMS colloquium, USC, Los Angeles, CA. 02/2018
9. Astrophysics SFIR/MHD group meeting, Princeton, New Jersey 11/2017
8. Ergodic Theory and Statistical Mechanics Seminar, Princeton, New Jersey 10/2017
7. New Faculty Talks, Princeton, New Jersey 10/2017
6. Analysis of Fluids and Related Topics Seminar, Princeton, New Jersey 10/2016
5. Harmonic Analysis & PDEs Seminar, University of Virginia, Virginia 05/2016
4. PDE-Applied Math Seminar, University of Maryland, Maryland 04/2016
3. Lecture on Turbulence, Part II: 2D, University of Maryland, Maryland 12/2016
2. Lecture on Turbulence, Part I: 3D, University of Maryland, Maryland 12/2016
1. Colloquium, Max-Planck-Institut für Dynamik und Selbstorganisation, Göttingen 05/2015

Conference & Workshop Talks

53. Infinite Dimensional Geometry and Fluids, BIRS Workshop, Banff Canada 10/2023
https://www.birs.ca/events/2023/5-day-workshops/23w5020/videos/watch/202311071101-Drivas.html
52. Nonlinear PDEs in Fluids and Waves, AMS Sectional, SUNY Buffalo 09/2023
51. Recent Advances in Mathematical Fluid Dynamics, Duke University 05/2023
50. Spring Lecture Series, University of Arkansas 04/2023
https://video.uark.edu/media/UofA+Spring+Lecture+Series/1_hht37l10
49. AMS Special Session on Turbulence and Mixing in Fluid Dynamics, III 03/2023
48. Problems at the Interface of Mathematics and Physics, ICTS Bengaluru 01/2023
https://www.youtube.com/watch?v=YjRr9wiwIz4
47. David Ebin's 80th birthday conference, Stony Brook University 01/2023
46. Modelling and analysis of turbulent transport, mixing and scaling. INI, Cambridge 03/2022
https://www.newton.ac.uk/seminar/35273
45. Hydrodynamical Equations: New Challenges at the Math-Physics Interface, BIRS 02/2022
http://www.birs.ca/events/2022/5-day-workshops/22w5015/videos/watch/202202281602-Drivas.html
44. New Mechanisms for Regularity, Singularity, and Long Time Dynamics in Fluid Equations, BIRS 07/2021
43. New Developments in Mathematical Fluid Dynamics, MCA, Buenos Aires, Argentina 07/2021
42. SIAM Conference on Dynamical Systems 05/2021
41. Workshop – Fundamentals of compressible turbulence, Online 05/2021
40. Many Faces of Renormalization workshop, Simons Center, Stony Brook, NY 03/2021
39. Transport and Mixing in Complex and Turbulent Flows, IPAM, CA, 01/2021
https://www.youtube.com/watch?v=BFndTgqeI9I&t=1191s
38. AMS Special Session: PDEs, data, and inverse problems, University of Utah, Utah 10/2020
37. AMS Fall Eastern Sectional I Meeting, Penn State, PA 10/2020
36. Advances in High and Infinite Dimensional Stochastic Analysis, AMS Sect., Charlottesville, VA 03/2020
35. Inviscid Fluid Dynamics, SIAM APDE, La Quinta, CA 12/2019
34. AMS Special Session #10A , Binghamton, NY 10/2019
33. **Invited Plenary Address**, Formation of small scales in nonlinear PDEs, CSCAMM, University of Maryland, MD 09/2019
32. Mathematical Aspects of Hydrodynamics, Oberwolfach Workshop ID 1934, Germany 08/2019
31. Essence of $(u \cdot \nabla)u$: Reflections on Mathematical Fluid Dynamics, UVA, VA 3/2019
30. Ki-Net/CSCAMM Mathematical Aspects of Collective Dynamics: Kinetic Description and Fractional Diffusion, UMaryland, MD 3/2019
29. Workshop on New Ideas and Tools for Turbulence, IAS Princeton 3/2019
28. Recent Developments on Fluid Turbulence, AMS Sect. Meeting, Fayetteville, AR 11/2018
27. Recent Advances in Mathematical Fluid Mechanics, AMS Sect. Meeting, Fayetteville, AR 11/2018
26. **Invited Plenary Address**, 3rd Annual NEAM (Northeastern Analysis Meeting), State University of New York (SUNY) New Paltz, NY 10/2018
25. Transport and Mixing in Fluids, SIAM Annual Meeting, Portland, OR 07/2018
24. James Simons' 80th birthday conference; "Fluids (in dimension at most three), and Complex Manifolds (in dimension at least three) – A Discussion of two "All Time" problems", The Simons Foundation and CUNY Graduate Center, Manhattan, NY 04/2018
23. Nonlinear and Stochastic PDE and Applications, AMS Meeting #1139, Boston MA 04/2018
22. 15th Japanese-German International Workshop on Mathematical Fluid Dynamics 01/2018
21. Regularity and long-time behavior of fluid flows, SIAM APDE, Baltimore MD 12/2017
20. Frontiers in Turbulence — KRS70 (honoring Katepalli R. Sreenivasan), Denver CO 11/2017

19. American Physical Society, Division of Fluid Dynamics 70th Meeting, Denver CO 11/2017
18. Princeton-Tokyo Fluid Mechanics Workshop, Princeton NJ 11/2017
17. Current trends in kinetic theory, KI-Net, University of Maryland, Princeton NJ 10/2017
16. Workshop on Conservation Laws and Applications, IMPA, Rio de Janeiro, Brazil 08/2017
    https://www.youtube.com/watch?v=Crr7314ILkM&t=1s
15. Equations of Fluid Mechanics: Analysis, MCA 2017, Montreal, Canada 07/2017
14. Hydrodynamic and Wave Turbulence, AMS Sectional, Hunter College, NY 05/2017
13. 2017 Shanks Workshop on Mathematical Aspects of Fluid Dynamics, Vanderbilt 04/2017
12. Fluid flows: from graphene to planet atmosphere, Simons Center, Stony Brook 03/2017
11. Turbulent Dissipation, Mixing and Predictability, IPAM, UCLA, Los Angeles 01/2017
10. American Physical Society 69th DFD Meeting, Nov 23 - 25, 2016, Portland, OR 04/2016
9. Special Session on Equations of Fluid Motion, JMM, Seattle 01/2016
8. Session B50: Driven and Dissipative Atomic Systems, APS, Baltimore 03/2016
7. Mathematical Fluid Dynamics and Turbulence, III, AMS Meeting #1107, D.C 03/2015
6. Institute for Pure & Applied Mathematics (IPAM), Lake Arrowhead Conference 12/2014
5. American Physical Society 67th DFD Meeting, Nov 23 - 25, 2014, SF, CA 11/2014
4. Institute for Pure & Applied Mathematics (IPAM), UCLA, Los Angeles, CA 09/2014
3. 14th CAPRA, University of Southampton, Southampton, England 07/2011
2. 13th CAPRA, Perimeter Institute for Theoretical Physics, Waterloo, Canada 06/2010
1. Midwest Relativity Meeting, University of Michigan, Ann Arbor 10/2009

Outreach Talks

4. First and Second year Graduate student seminar, Stony Brook 04/2021
3. Waters Seminar Lunch Talk, Princeton, New Jersey 11/2019
2. Research Talks for Undergraduates, Princeton, New Jersey 11/2018
1. Undergraduate Math Club Colloquium, Princeton, New Jersey 11/2017

University Service

- **Student Experience Project**, Faculty Member, Stony Brook University 2025–
- **Faculty advisory committee, Center for Hellenic Studies**, Stony Brook University 2024–
- **At-Large Senator, University Senate**, Stony Brook University 2024–

Department Service

- **Chair Search Committee**, Stony Brook University 2025
- **Hiring Committee**, Stony Brook University 2023, 2025
- **Hiring bylaws Committee**, Stony Brook University 2021–2023
- **Graduate Admissions Committee:** Stony Brook University 2020–

  Seminar Organization: Colloquium, Analysis seminar 2020–

Academic Service

- **Reviewer:** Acta, Annals of Mathematics, Memoirs of the AMS, Advances in Mathematics, Transactions of the American Mathematical Society, Journal of the European Mathematical Society, Mathematische Annalen, Comm. on Pure and Applied Mathematics, Comm. in Mathematical Physics, Communications in Mathematical Sciences, Journal of Mathematical Physics, Discrete and Continuous Dynamical Systems, Annals of PDE, Archive for Rational Mechanics and Analysis, Analysis & PDE, SIAM J. Mathematical Analysis, J Nonlinear Sci, Indiana University Math. J., Nonlinearity, J Mathematical Fluid Mech, J Fluid Mech, Physica D, Phys Rev E, J Nonlinear Analysis - A, Nature Comm. Physics, Physical Review X, Physical Review Letters, Proceedings of the Royal Society of London A, J. London Math. Soc., Multiscale Modeling and Simulation, Journal of Physics A, Chaos, Solitons & Fractals, American Mathematical Society's Notices, Proc. Amer. Math. Soc., Nonlinear Analysis, Journal of Functional Analysis, Journal of Geometry and Physics, The Annals of Probability, Vietnam Journal of Mathematics, Mathematische Nachrichten, Zeitschrift fuer Angewandte Mathematik und Physik, J. Functional Analysis, MathSciNet and zbMATH (Zentralblatt MATH)

  – Outstanding Reviewer award for Nonlinearity (2020)

  Grant: Natural Science Foundation (NSF), European Research Council (ERC), Swiss National Science Foundation (SNSF), Israel Science Foundation (ISF), Icelandic Research Fund (IRF), National Natural Science Foundation of China (NSFC)

- **Program Organization:**
  - Simons Center Program: *Physics and math of turbulence in different media* Fall 2026
    Co-organizers: G. Falkovich (Weizmann) , V. Rosenhaus (CUNY), V. Vicol (NYU)
    website: https://scgp.stonybrook.edu/archives/45945
  - 3rd Simons Math Summer Workshop: PDE of Classical Physics 07/2025
    Co-organizers: J. Anderson (Stony Brook), M. Dafermos (Princeton), J. Luk (Stanford)
    website: https://scgp.stonybrook.edu/archives/43877
  - Simons Center Program: *Singularity and Prediction in Fluids*, Stony Brook, NY 06/2022
    Co-organizer: D. Sullivan (CUNY GC & Stony Brook)
    website: http://scgp.stonybrook.edu/archives/32842
- **Workshop Organization:**
  - Blurring the lines between pure and applied through mixing, Sabhal Mòr Ostaig, 06/2025
    Co-organizers: M. Coti Zelati (Imperial), Camilla Nobili (Surrey), K. Widmayer (Zurich)
    website: https://www.icms.org.uk/ThroughMixing
  - BIRS Workshop on *New Trends in Fluids and Collective Behaviors*, Banff, Canada 07/2023
    Co-organizers: R. Shvydkoy (UIC), N. Rodriguez (Colorado), E. Tadmor (UMD)
  - *Workshop on the Geometry and Analysis of Fluid Flows* in celebration of David Ebin's 80th birthday, Stony Brook University, NY 01/2023
    Co-organizers: G. Misiolek (Notre Dame), M. Disconzi (Vanderbilt), S. Preston (CUNY)
  - Simons Center Workshop on *Small scale dynamics in fluid motion*, Stony Brook, NY 06/2022
    Co-organizers: T. Elgindi (Duke), D. Sullivan (CUNY GC & Stony Brook)
    website: http://scgp.stonybrook.edu/archives/33694
  - Simons Workshop on *Singularities in Fluids and Plasmas*, Princeton, NJ 03/2020
- **Special Session Organization:**
  - AMS SS: *Recent advances in fluids and related models*, JMM, Seattle, WA 01/2022
    Co-organizers: Hussain Ibdah(UMD), H.Q. Nguyen (UMD)
  - AMS SS: *Analysis of PDE in Fluid Dynamics: Theory and Numerics*, Purdue, IN 04/2020
    Co-organizers: M. Jolly (Indiana U.), H.Q. Nguyen (Brown)
  - SIAM PDE MS49: *Regularity, Singularity and Turbulence in Fluids*, La Quinta, CA 12/2019
    Co-organizers: V. Martinez (Hunter College), H.Q. Nguyen (Brown)

Mini-courses

EMS School, Kácov, Czech Republic
Mathematical Aspects of Fluid Flows May 2026
co-instructors: Dallas Albritton, Javier Gomez Serrano, and Ewelina Zatorska
website: https://ems-maff.cuni.cz/

SPP2410 Summer School, Söllerhaus, Kleinwalsertal, Austria
Mathematical Fluid Dynamics - Hyperbolic Balance Laws across the Scales Sep 2025
co-instructors: M. Disconzi, Tai-Ping Liu, S. Markfelder, H. Mizerová, S–H Yu
website: www.mathematik.uni-konstanz.de/summerschool-hyperbolic-balance-laws-across-the-scales

Scuola Normale Superiore, Pisa, Italy
Turbulence on the Banks of the Arno April 2025
co-instructor: Alexei Mailybaev
website: https://indico.sns.it/event/62

Mathematisches Forschungsinstitut Oberwolfach
Oberwolfach Seminar: Long-Time Behavior in Fluids May 2024
co-instructors: Peter Constantin, Tarek M. Elgindi, Mihaela Ignatova
website: https://www.mfo.de/occasion/2421b/www_view

Imperial College London

Mathematics of Turbulence
Stability and dynamics in fluid mechanics and kinetic theory Summer School — July 2023

website: https://sites.google.com/view/icl-stable-chaos/home?authuser=0

Instituto Nacional de Matemática Pura e Aplicada – IMPA

Introduction to Stochastic Differential Equations with Applications to Fluid Dynamics
Brazilian summer school short course, co-taught with Simon Thalabard — Winter 2019

course website: http://fluid.impa.br/SDE2019

Simons Center for Geometry and Physics, Stony Brook

Mini-course: "*Boundary and Singularity in Fluid Mechanics* " — 01/2025
co-instructors: Daniel Ginsberg, Sameer Iyer
funded by the National Science Foundation through a CAREER & RTG grant

website: https://scgp.stonybrook.edu/archives/44203

Mini-course: "*New Trends in Mathematical Fluid Dynamics*" — 04/2022
co-instructors: Sam Punshon-Smith, Francisco Torres de Lizaur
funded by the National Science Foundation through an RTG grant

website: http://scgp.stonybrook.edu/archives/35785

Mini-course: "*Mathematical Aspects of Turbulence*" — 01/2021
Part of Simons Center program "Renormalization and universality in Conformal Geometry, Dynamics, Random Processes, and Field Theory".

recordings: http://scgp.stonybrook.edu/video/results.php?profile_id=2422
Part I: https://www.youtube.com/watch?v=kWyJQh1Z6rk&t=3s
Part II: https://www.youtube.com/watch?v=uaj97zZaTQ0&t=3s
Part III: https://www.youtube.com/watch?v=s51QJ-iuO1Y&t=2s
Part IV: https://www.youtube.com/watch?v=ZqKlTUViNuc&t=4809s

University Teaching

Stony Brook University

MAT 307: Multivariable calculus with Linear Algebra	Fall 2024
MAT 649: Geometric, Topological and Dynamical Methods for Fluid Motion	Spring 2024
MAT 402: PDEs and Fluids (undergraduate REU prep course)	Spring 2024
MAT 203: Calculus III	Fall 2023
MAT 125: Calculus A	Fall 2021, Fall 2023, Spring 2023
MAT 633: Topics in Differential Equations: Mathematics Aspects of Fluid Dynamics	Fall 2021

Princeton University

MAT202, Linear Algebra with Applications, *Course Head*	Summer 2020
MAT204, Advanced Linear Algebra with Applications, *Course Head*	Spring 2020
MAT201, Multivariable Calculus, *Course Head*	Fall 2018, 2020, Spring 2019
MAT203, Advanced Multivariable Calculus	Fall 2020

The Johns Hopkins University

Recipient of the *Professor Joel Dean Award for Excellence in Teaching*, 2016

EN.550.386, Scientific Computing: Differential Equations — Spring 2016

Mentoring

- **PhD students**:

Daniil Glukhovskiy (Stony Brook University)	2021 –
Jonathan Li (Johns Hopkins University)	2023 –
Woohyu Jeon (Stony Brook University)	2024 –

- **Undergraduate students** :

Isabella Basso (SBU), Stabilization of inverted pendula	2025-2026
James Cross (SBU), Self-similar singularity formation in 2D inextensible loop	2024-2026
Leslie Yan (SBU), Instabilities of the inextensible thread	2024-2025
Derek Zhank (SBU), Collapse and continuation of point vortices	2024-2025
Valeriya Khanikaeva (SBU), Collapse and continuation of point vortices	2024-2025
Ruofan Peng (SBU), A counterintuitive phenomenon in rigid body motion	2024-2025
Max Luft (SBU), A counterintuitive phenomenon in rigid body motion	2024-2025

- **High school advising**:

Michael Retakh (Ward Melvile)	2024–2025
David Vaysman (Bronx High School of Science)	2023–2025
Jenny Zheng (Garden City High School, now at Yale)	2020–2022

- **External member of thesis defense committee**:

Antoine Barlet (IMPA & University Paris Saclay)	2025
Julia Domingues Lemos (IMPA)	2022
Umberto Pappalettera (Scuola Normale Superiore di Pisa)	2022