

Curriculum Vitae

Appointments

- 2025– **Assistant Professor**, Johns Hopkins University, Baltimore, MD
2024–2025 **Member**, Institute for Advanced Study, Princeton, NJ
2022–2024 **L.E. Dickson Instructor**, University of Chicago, Chicago, IL
2017 **Visiting Scholar**, Georgia Institute of Technology, Atlanta, GA

Education

- 2017–2022 **Ph.D. in Mathematics**, The University of Texas at Austin, Austin, TX
Advisor: Luis Caffarelli and Alexis Vasseur
2013–2017 **B.Sc. in Mathematics and Applied Mathematics** (Honors Program), Xi'an Jiaotong University, China
2011–2013 **Special Class for the Gifted Young**, Xi'an Jiaotong University, China

Research Interests

- APDE **Analysis and Partial Differential Equations**, *dynamical systems, fluid dynamics, kinetic theory*
Euler equation, Navier–Stokes equation, Boltzmann equation, Fokker–Planck equation.
MSOR **Management Science and Operation Research**, *distributionally robust optimization, optimal mass transportation, risk measure*
Inventory problem, risk management, portfolio optimization.

Publications and Preprints

- [1] Matei P. Coiculescu and Jincheng Yang. Conditional Liouville theorems for the Navier–Stokes equations. *Calculus of Variations and Partial Differential Equations*, 65(1):22, 2026. [arXiv:2506.14533](https://arxiv.org/abs/2506.14533), doi:10.1007/s00526-025-03196-y.
- [2] Jincheng Yang, Vincent R. Martinez, Anna L. Mazzucato, and Alexis F. Vasseur. Energy dissipation near the outflow boundary in the vanishing viscosity limit. *Indiana University Mathematics Journal*, 2025. Forthcoming. [arXiv:2410.13127](https://arxiv.org/abs/2410.13127).
- [3] Fei Cao and Jincheng Yang. Quantitative convergence guarantees for the mean-field dispersion process. *Discrete and Continuous Dynamical Systems*, 47:487–518, 2026. [arXiv:2406.05043](https://arxiv.org/abs/2406.05043), doi:10.3934/dcds.2025126.
- [4] Jincheng Yang. Vorticity interior trace estimates and higher derivative estimates via blow-up method. *Journal of Differential Equations*, 442:113486, 2025. [arXiv:2308.09350](https://arxiv.org/abs/2308.09350), doi:10.1016/j.jde.2025.113486.

- [5] Luhao Zhang, Jincheng Yang, and Rui Gao. A short and general duality proof for wasserstein distributionally robust optimization. *Operations Research*, 73(4):2146–2155, 2025. [arXiv:2205.00362](https://arxiv.org/abs/2205.00362), doi:10.1287/opre.2023.0135.
- [6] Alexis F. Vasseur and Jincheng Yang. Layer separation of the 3D incompressible Navier–Stokes equation in a bounded domain. *Communications in Partial Differential Equations*, 49(4):381–409, 2024. [arXiv:2303.05236](https://arxiv.org/abs/2303.05236), doi:10.1080/03605302.2024.2346146.
- [7] Luhao Zhang, Jincheng Yang, and Rui Gao. Optimal robust policy for feature-based newsvendor. *Management Science*, 70(4):2315–2329, 2024. OptOnline:18579. doi:10.1287/mnsc.2023.4810.
- [8] Alexis F. Vasseur and Jincheng Yang. Boundary vorticity estimates for Navier–Stokes and application to the inviscid limit. *SIAM Journal on Mathematical Analysis*, 55(4):3081–3107, 2023. [arXiv:2110.02426](https://arxiv.org/abs/2110.02426), doi:10.1137/22m1503567.
- [9] Jincheng Yang, Luhao Zhang, Ningyuan Chen, Rui Gao, and Ming Hu. Decision-making with side information: a causal transport robust approach. *OptOnline e-prints*, 2022. OptOnline:20639.
- [10] Jincheng Yang. Construction of maximal functions associated with skewed cylinders generated by incompressible flows and applications. *Annales de l'Institut Henri Poincaré C. Analyse Non Linéaire*, 39(4):793–818, 2022. [arXiv:2008.05588](https://arxiv.org/abs/2008.05588), doi:10.4171/aihpc/20.
- [11] Alexis F. Vasseur and Jincheng Yang. Second derivatives estimate of suitable solutions to the 3D Navier-Stokes equations. *Archive for Rational Mechanics and Analysis*, 241(2):683–727, 2021. [arXiv:2009.14291](https://arxiv.org/abs/2009.14291), doi:10.1007/s00205-021-01661-4.
- [12] Zhiwu Lin, Jincheng Yang, and Hao Zhu. Barotropic instability of shear flows. *Studies in Applied Mathematics*, 144(3):289–326, 2020. [arXiv:1801.00950](https://arxiv.org/abs/1801.00950), doi:10.1111/sapm.12297.
- [13] Jincheng Yang and Zhiwu Lin. Linear inviscid damping for Couette flow in stratified fluid. *Journal of Mathematical Fluid Mechanics*, 20(2):445–472, 2018. [arXiv:1610.08924](https://arxiv.org/abs/1610.08924), doi:10.1007/s00021-017-0328-3.

Honors and Awards

- May 2022 Frank Gerth III Outstanding Dissertation Award, *UT Austin*
- Mar 2021 University Graduate Continuing Fellowship, *UT Austin*
- Apr 2019 Senate of College Council's TA of the Year, *UT Austin*

Invited Talks

- Oct 2025 AMS Fall Southeastern Sectional Meeting, *Tulane University*
- Sep 2025 Applied Mathematics and Statistics Seminar, *Johns Hopkins University*
- Aug 2025 AMS Fall Western Sectional Meeting, *University of Denver*
- Jul 2025 ICCOPT 2025, *University of Southern California*
- May 2025 2025 AWM Research Symposium, *University of Wisconsin, Madison*

- May 2025 SIAM Conference on Applications of Dynamical Systems (DS25), *Denver*
 Apr 2025 PDE and Analysis Seminar, *University of California, Los Angeles*
 Apr 2025 Analysis Seminar, *The University of Texas at Austin*
 Mar 2025 Analysis of Fluids and Related Topics, *Princeton University*
 Nov 2024 Analysis and Mathematical Physics, *Institute for Advanced Study*
 Nov 2024 Harmonic Analysis & PDE Seminar, *CUNY Graduate Center*
 Oct 2024 Informs Annual Meeting 2024, *Seattle*
 Oct 2024 PDE Seminar, *Brown University*
 Oct 2024 Short Talks by Postdoctoral Members, *Institute for Advanced Study*
 Aug 2024 Probability Seminar, *University of Illinois Urbana-Champaign*
 Jun 2024 EquaDiff 2024, *Karlstad University*
 May 2024 Recent Advances in Nonlinear Partial Differential Equations, *University of Minnesota*
 May 2024 SITE Research Center Talk Series, *New York University Abu Dhabi (zoom talk)*
 Mar 2024 AMS Spring Southeastern Sectional Meeting, *Florida State University*
 Feb 2024 Simons Turbulence Seminar, *Johns Hopkins University (zoom talk)*
 Nov 2023 Calderón-Zygmund Analysis Seminar, *University of Chicago*
 Nov 2023 PDE Seminar, *Purdue University*
 Oct 2023 Applied Mathematics and Statistics Seminar, *Johns Hopkins University*
 Oct 2023 8th Annual Meeting of the SIAM Central States Section, *University of Nebraska-Lincoln*
 Aug 2023 10th International Congress on Industrial and Applied Mathematics, *Waseda University (zoom talk)*
 Jul 2023 PDE and Applications Seminar, *Chinese Academy of Sciences*
 May 2023 Midwest PDE Seminar, *University of Notre Dame*
 Jan 2023 Calderón-Zygmund Analysis Seminar, *University of Chicago*
 Dec 2022 PDE and Applications Seminar, *Chinese Academy of Sciences (zoom talk)*
 Nov 2022 Analysis of Fluids and Related Topics, *Princeton University*
 Oct 2022 Informs Annual Meeting 2022, *Indianapolis*
 May 2021 AMS Spring Western Sectional Meeting, *San Francisco State University (zoom talk)*
 Mar 2021 AMS Spring Eastern Sectional Meeting, *Brown University (zoom talk)*

Service

Seminar Organizing

- 2023–2024 **Calderón–Zygmund Analysis Seminar**, *University of Chicago*
 2019 **Harmonic Analysis Reading Seminar**, *University of Texas at Austin*

Journal Refereeing

- SIAM Journal on Mathematical Analysis
 Journal of Differential Equations
 Mathematical Programming
 Nonlinearity

Teaching Experience

Instructor

- Fall 2025 EN.553.798 – Partial Differential Equations for Applied Mathematicians
Fall 2025 EN.553.101 – Freshman Experience in Applied Mathematics & Statistics
Spring 2024 Math 18500 – Mathematical Methods in the Physical Sciences III
Winter 2024 Math 27300 – Basic Theory of Ordinary Differential Equations
Spring 2023 Math 18500 – Mathematical Methods in the Physical Sciences III
Winter 2023 Math 20400 – Analysis in \mathbb{R}^n II
Fall 2022 Math 18500 – Mathematical Methods in the Physical Sciences III

Teaching Assistant

- Spring 2021 M383D – Methods of Applied Mathematics II
2019-2020 M427J – Differential Equations with Linear Algebra
Fall 2018 M427L – Advanced Calculus for Applications II
Spring 2018 M408D – Sequences, Series, and Multivariable Calculus
Fall 2017 M408K – Differential Calculus

Mentoring Undergraduate Students

Research Experience for Undergraduates

- Summer 2024 Minh Pham, *on the topic of Nonlinear Integral Equations*
Summer 2024 Michael Lee, *on the topic of Partial Regularity Theory of Navier-Stokes Equations*
Summer 2024 Zichen Lu, *on the topic of Inviscid Damping of Euler Equations*

Reading Course

- Spring 2024 Dante Strollo and Jakob Wellington, *on the topic of Fourier Analysis*
Directed Reading Program
Summer 2024 Ariana Qin, *on the topic of Stochastic Calculus and Stochastic Control*
Spring 2024 Ariana Qin, *on the topic of Optimal Control Theory*
Fall 2021 Kyle Alkire, *on the topic of Schauder Theory in Elliptic Equations*
Spring 2020 Yongqi Pang, *on the topic of Statistics and Data Analysis*
Spring 2019 Trey Minor, *on the topic of Differential Equations and Dynamical Systems*
Spring 2018 Yan Cheng, *on the topic of Probability and Martingales*