Minh-Binh Tran

Curriculum Vitae

General Information

Current Position	Associate Professor at Department of Mathematics, Texas A&M University, USA
Languages	Vietnamese (fluent), English (fluent), French (fluent)
Website	http://minhbinhtran.org/

Positions and Education

2023–	**Associate Professor**, *Texas A&M University, USA*.
2022– 2023	**Assistant Professor**, *Texas A&M University, USA*.
2021– 2022	**Visiting Associate Professor**, *Massachusetts Institute of Technology, USA*, on leave from Southern Methodist University (9 months).
2018– 2022	**Assistant Professor**, *Southern Methodist University, USA*.
2015– 2018	**Van Vleck Assistant Professor**, *University of Wisconsin Madison, USA*. (2015–2016: Visiting Scholar, University of Texas Austin, USA)
2011– 2015	**European Research Council Advanced Grant NUMERIWAVES Postdoctoral Fellow**.
2008-2011	**PhD in Mathematics**, *Université Sorbonne Paris Nord*, France.

Awards, Distinctions Honors and Grants

Awards, Honors and Grants

2025	Springer Nature Editor of Distinction Award
2024	Lumer Distinguished Lectures, European Cooperation in Science and Technology Mathematical Models for Interacting Dynamics on Networks
2024-2027	NSF Grant DMS-2306379 (Role PI)
2021-2026	NSF CAREER Award
2022-2025	NSF Grant DMS - 2204795 (Role co-PI; PI Alain Bensoussan - advised by P.-L. Lions and M. Lauriere)
2021-2024	Alexander von Humboldt Fellow.
2020-2021	Recipient of the "Thank-a-Professor" initiative, for professors who have "had a long lasting impact on your life", by The Center for Teaching Excellence, SMU.
2020	SMU Dedman College Linking Fellow.
2020	SMU University Research Council Grant (Role PI).

2019 SMU Lyle School of Engineering Interdisciplinary Seed Grant (Role PI).

2019-2022 SMU Interdisciplinary Institute Research Cluster Grant (Role PI).

2018 Sam Taylor Fellow of United Methodist-related colleges and universities.

2018-2023 NSF Grants DMS-1814149 & DMS-1854453 & DMS-2305523 (Role PI).

Invited Plenary Lecture at a Meeting of a Professional Society

- Plenary Lecture, SIAM Texas Louisiana Section Annual Meeting, November 4 - November 6, 2022

Editorial Board

Editorial Board Member

2026- Editorial Board Member, Communications in Partial Differential Equations

2026- Editorial Board Member, VNUHCM Journal of Science and Technology Development-An official journal of Viet Nam National University Ho Chi Minh City, Viet Nam since 1997

2026- Editorial Board Member, VNUHCM Journal of Mathematics and Computing Science

2026- Editor, ISQGD Journal of Artificial Intelligence and Data Science in Engineering and Mathematics

2024- Editor, Elsevier Chaos, Solitons & Fractals

2023- Area Editor, Springer Advances in Continuous and Discrete Models: Theory and Modern Applications

2021-2023 Associate Editor, Springer Advances in Continuous and Discrete Models: Theory and Modern Applications

Guest Editor-Special Issue

2024-2026 Guest Editor (Edited with Emmanuel Trelat), Mathematical Control and Related Fields - Special Issue in Honor of Alain Bensoussan

2023 Lead Editor (Edited with Martine Le Berre and Yves Pomeau), "Nonlinear Waves, Kinetic Theory and Related Topics - A tribute to the memory of Jean Ginibre". Authors: Bernard Gaveau and Michel Moreau (Sorbonne), Patrick Gerard (Orsay), Jean Ginibre and Yves Pomeau (École Polytechnique), Martine Le Berre and Yves Pomeau (École Polytechnique), Avy Soffer (Rutgers), Serge Reynaud (École Normale Supérieure Paris), Sergio Rica (PUC), David Ruelle (Institut des Hautes Études Scientifiques), Jean-Claude Saut and Yuexun Wang (Orsay), Walter Strauss (Brown), Nobu Kishimoto and Yoshio Tsutsumi (Kyoto), Giorgio Velo (Bologna), Hans Zessin and Suren Poghosyan (Bielefeld)

Students/Postdocs

1. Postdoc:
   - Christopher Kauffman, supported by NSF DMS-1814149 - Next job: Postdoc at Imperial College London
   - Xiaoxu Wu, supported by NSF DMS-2306379 - Next job: Postdoc at The Australian National University
   - Arijit Das, co-mentoring with Enrique Zuazua - Next job: Assistant Professor at Thapar Institute of Engineering and Technology (TIET), Patiala, Punjab, India

- Youngho Kim, ongoing

2. PhD students:
   - Steven Walton, PhD 2020-2023 - Next job: postdoc at Los Alamos National Laboratory, then promoted to a permanent Staff Scientist 2 in 2025 (similar to Assistant Professor).
   - Minh-Nhat Phung, 2024-
   - Bangjie Wang, 2024-
   - Gia Hien Nguyen, 2026-
   - Tan-Phuc Nguyen, 2026-
3. Master students:
   - Dinh Phan Cao Nguyen, Master 2019
     Research outcomes: Papers 34, 47
   - Sarah A. Vastani, Master 2025
4. Undergraduate students:
   - Nancy Feng, Undergraduate Hamilton Research Scholar 2019
   - Hadja Kone, Undergraduate Research Assistant 2019
   - Thien P.B. Nguyen, Vietnam National University at Hochiminh City, co-supervising with Minh-Quan Nguyen, 2026
     Research outcomes: Papers 62, 69
   - Anh Viet Nguyen, TAMU, 2026
     Research outcome: https://arxiv.org/pdf/2603.14162, submitted to TAMU Undergraduate Research Journal
   - Maximilian Kurbanov, TAMU, 2026
     Research outcomes: Papers 64
   - Khang Nguyen, Vietnam National University at Hochiminh City, ongoing

Publications

PUBLICATIONS The papers marked by * are with students and by ** are with postdocs.

72 * Alain Bensoussan, Minh-Nhat Phung, Minh-Binh Tran. Metric Non-Collapse in Learned World Models for Control: Approximation Theory, Finite-Sample Geometric Guarantees, and Deterministic Planning Transfer Submitted.

71 Thanh Trung Le, Minh-Binh Tran. Spectral Algorithms for 3-Wave Kinetic and C12 Quantum Boltzmann Equations with General Resonance Manifolds in Rd Submitted.

70 * Nguyen Gia Hien, Gigliola Staffilani, Minh-Binh Tran. Global time-analytic strong solutions for a class of 3-wave kinetic equations. Submitted.

69 * Tan-Phuc Nguyen, Minh-Binh Tran, Son Tu. Neural-Spectral and Newton-HUM Methods for Reconstructing Controls of Wave Equations Submitted.

68 * Cong B. Van, Thien P.B. Nguyen, Minh-Binh Tran, Loc H. Nguyen Inverse initial data reconstruction for a memory convection–diffusion equation via Legendre spatial reduction and Tikhonov regularization Submitted.

67 * Nguyen Gia Hien, Avy Soffer, Minh-Binh Tran. A Microlocal Open-Boundary Method for Residual-Based Wave Solvers on Unbounded Domains. Submitted.

66 Gigliola Staffilani, Minh-Binh Tran. Entropy Structures and Long-Time Relaxation for 3-Wave Kinetic Equations. Submitted.

65 Peter S. Madsen, Phan Thanh Nam, Herbert Spohn, and Minh-Binh Tran On the asymptotic behavior at the kinetic time of a weakly interacting fermi gas. Submitted

64 * Maximilian Kurbanov, Minh-Nhat Phung, Minh-Binh Tran. Computational Control of

Nonlinear Partial Differential Equations Using Machine Learning. Submitted

63 * Alain Bensoussan, Thien P.B. Nguyen, Minh-Binh Tran, Son N.T. Tu Operator Splitting, Policy Iteration and Machine Learning for Stochastic Optimal Control. Submitted

62 * Minh-Binh Tran, Bangjie Wang. Analysis of a numerical scheme for 3-wave kinetic equations. Submitted

61 Gigliola Staffilani, Minh-Binh Tran. Finite time energy cascade for mixed 3- and 4-wave kinetic equations. Submitted.

60 Gigliola Staffilani, Minh-Binh Tran. Evolution of finite temperature Bose-Einstein Condensates: Some rigorous studies on condensate growth. Submitted.

59 ** Arijit Das, Minh-Binh Tran. An energy cascade finite volume scheme for a mixed 3- and 4-wave kinetic equation arising from the theory of finite-temperature trapped Bose gases. Submitted.

58 Gigliola Staffilani, Minh-Binh Tran. Formation of condensations for non-radial solutions to 3-wave kinetic equations. Submitted.

57 Amirali Hannani, Matthew Rosenzweig, Gigliola Staffilani, Minh-Binh Tran. On the wave turbulence theory for a stochastic KdV type equation — Generalization for the inhomogeneous kinetic limit . Submitted.

56 Gigliola Staffilani, Minh-Binh Tran. On the wave turbulence theory for a stochastic KdV type equation. Submitted.

55 Ricardo Alonso, Irene M. Gamba, Minh-Binh Tran. The Cauchy problem for the quantum Boltzmann equation for bosons at very low temperature. Submitted.

54 * Alain Bensoussan, Minh-Binh Tran, Bangjie Wang. Control and Optimization for Neural Partial Differential Equations in Supervised Learning. Submitted.

53 * Minh-Nhat Phung, Minh-Binh Tran. Regularized Unbalanced Optimal Transport with Pearson Marginal Penalties Submitted.

52 Alain Bensoussan, Minh-Binh Tran. Machine Learning, Dynamic Optimization, and Control: From Adjoints and Bellman Equations to Reinforcement Learning, Diffusion Models, and Neural Dynamics (336 pages). BOOK, **Volume 107 of Progress in Nonlinear Differential Equations and Their Applications. Birkhäuser, Cham, 2027.** PNLDE Subseries in Control. Foreword by Philippe G. Ciarlet

51 Sarah Strikwerda, Hung Vinh Tran, Minh-Binh Tran. Controlling discrete semilinear wave equations toward flocks. **Physica D: Nonlinear Phenomena**, to appear

50 Thuy T. Le, Minh-Binh Tran, Loc H. Nguyen. A globally convergent Carleman–Picard method for an inverse initial-value problem for a nonlinear diffusive coagulation–fragmentation equation. **Inverse Problems**, 42 (2026) 085014.

49 Gigliola Staffilani, Minh-Binh Tran. Condensation and non-condensation times for 4-wave kinetic equations. **Archive for Rational Mechanics and Analysis**, Volume 250, article number 58 (2026).

48 Gigliola Staffilani, Minh-Binh Tran. On the energy transfer towards large values of wavenumbers for solutions of 4-wave kinetic equations. **SIAM Journal on Mathematical Analysis**, Volume 58, Issue 4, Aug 2026, Pages 3267-4310.

47 ** Young Ho Kim, Yuri V. Lvov, Leslie M. Smith, Minh-Binh Tran. On a wave kinetic equation with resonance broadening in oceanography and atmospheric sciences. **Studies in Applied Mathematics**, 156, no. 4 (2026): e70223.

46 * Thomas Hagstrom, Dinh Phan Cao Nguyen, Avy Soffer, Chris Stucchio, Minh-Binh Tran. A time dependent phase space filter for anisotropic wave equations on unbounded domains.

SIAM Journal on Scientific Computing, 48 (2026), no. 2, A804–A827.

45 * MaryLena Bleile, Minh-Nhat Phung, Minh-Binh Tran. A Relative Ignorability Framework for Decision-Relevant Observability in Control Theory and Reinforcement Learning. **Mathematical Control and Related Fields**, 2026, 19: 166-182.

44 Nicola De Nitti, Minh-Binh Tran. Uncertainty principles for a kinetic equation. **Mathematical Control and Related Fields**, 2026, 19: 1-15.

43 * Amirali Hannani, Minh Nhat Phung, Minh-Binh Tran, Emmanuel Trélat. Internal Control of The Transition Kernel for Stochastic Lattice Dynamics. **Journal of Differential Equations**, Volume 453, Part 1, 5 February 2026, 113798.

42 ** Arijit Das, Minh-Binh Tran. Numerical schemes for a fully nonlinear coagulation-fragmentation model coming from wave kinetic theory. **Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences**, Volume 481, Issue 2316, Article 20250197, June 2025.

41 * Steven Walton, Minh-Binh Tran. A Numerical Scheme for Wave Turbulence: 3-Wave Kinetic Equations. Numerical Schemes for 3-Wave Kinetic Equations: A Complete Treatment of the Collision Operator. **Journal of Computational Physics**, Volume 538, 1 October 2025, 114147.

40 Benno Rumpf, Avy Soffer, Minh-Binh Tran. On the wave turbulence theory: ergodicity for the elastic beam wave equation. **Mathematische Zeitschrift** Volume 310, article number 19, (2025).

39 * Amirali Hannani, Minh- Nhat Phung, Minh-Binh Tran, Emmanuel Trélat. Controlling the Rates of a Chain of Harmonic Oscillators with a Point Langevin Thermostat. **Journal of Differential Equations**, Volume 426, 5 May 2025, Pages 253-316

38 Minh-Binh Tran. An introduction to the numerical simulation of stochastic differential equations book review. **SIAM Review** 66 (2024), no.1, 200-201.

37 * Steven Walton, Minh-Binh Tran, Alain Bensoussan. A deep learning approximation of non-stationary solutions to wave kinetic equations. **Applied Numerical Mathematics** , 199 (2024), 213–226.

36 * Steven Walton, Minh-Binh Tran. A Numerical Scheme for Wave Turbulence: 3-Wave Kinetic Equations. **SIAM Journal on Scientific Computing**, 45 (4), B467-B492, 2023.

35 Avy Soffer, Chris Stucchio, Minh-Binh Tran. Time Dependent Phase Space Filters: A Stable Absorbing Boundary Condition (152 pages) **BOOK Springer Nature Singapore** 2023.

34 Alejandro Aceves, Ricardo Alonso, Minh-Binh Tran. Wave turbulence and collective behavior models for wave equations with short- and long-range interactions. **Communications in Optimization Theory, Special Issue in the memory of Roland Glowinski**, 2022.

33 * Alain Bensoussan, Yiqun Li, Dinh Phan Cao Nguyen, Minh-Binh Tran, Phillip Yam, Xiang Zhou. Machine Learning and Control Theory. **Handbook of Numerical Analysis, Volume 23**, 2022

32 Gheorghe Craciun, Minh-Binh Tran. A toric dynamical system approach to the convergence to equilibrium of quantum Boltzmann equations for Bose gases. **ESAIM: Control, Optimisation and Calculus of Variations - Special Issue in honor of Enrique Zuazua**, 27 83 (2021).

31 Minh-Binh Tran, Yves Pomeau. On a thermal cloud - Bose-Einstein Condensate coupling system. **European Physical Journal Plus** , 136, 502 (2021).

30 Alain Bensoussan, Fatih Gelir, Viswanath Ramakrishna, Minh-Binh Tran. Identification of linear dynamical systems and machine learning **Journal of Convex Analysis - Special Issue in Honor of Umberto Mosco,** 28 No. 2, 311-328 (2021).

29 Avy Soffer, Minh-Binh Tran. On the energy cascade of 3-wave kinetic equations: Beyond Kolmogorov-Zakharov solutions. **Communications in Mathematical Physics**, 376, 2229-2276 (2020).

28 Pierre Germain, Alexandru D. Ionescu, Minh-Binh Tran. Optimal local well-posedness theory for the kinetic wave equation. **Journal of Functional Analysis**, Volume 279, Issue 4, 108570 (2020).

27 Minh-Binh Tran, Gheorghe Craciun, Leslie M. Smith, Stanislav Boldyrev. A reaction network approach to the theory of acoustic wave turbulence. **Journal of Differential Equations**, Volume 269, Issue 5, Pages 4332-4352 (2020).

26 Minh-Binh Tran, Yves Pomeau. Boltzmann-type collision operators for Bogoliubov excitations of Bose-Einstein condensates: A unified framework **Physical Review E**, 101 (3), 032119 (2020).

25 Irene M. Gamba, Leslie M. Smith, Minh-Binh Tran. On the wave turbulence theory for stratified flows in the ocean. **M3AS: Mathematical Models and Methods in Applied Sciences**. Vol. 30, No. 1 105-137 (2020)

24 Yves Pomeau, Minh-Binh Tran. Statistical Physics of Non Equilibrium Quantum (242 pages) Phenomena. Lecture Notes in Physics Volume 967, **BOOK Springer Nature** 2019. Foreword by Linda Reichl.

23 Toan Nguyen, Minh-Binh Tran. Uniform in time lower bound for solutions to a quantum Boltzmann equation of bosons. **Archive for Rational Mechanics and Analysis**, Volume 231, Issue 1, pp 63-89 (2019)

22 Sergey Nazarenko, Avy Soffer, Minh-Binh Tran. On the Wave Turbulence Theory for the Nonlinear Schrodinger Equation with Random Potentials. **Entropy**, 21(9), 823 (2019).

21 Linda Reichl, Minh-Binh Tran. A kinetic equation for ultra-low temperature Bose-Einstein condensates. **Journal of Physics A: Mathematical and Theoretical.** Volume 52, Number 6, 063001 (2019)

20 Yves Pomeau, Minh-Binh Tran. Shock waves from the inhomogeneous Boltzmann equation. **Physical Review E** 100 (6), 062120 (2019).

19 Avy Soffer, Minh-Binh Tran. On the dynamics of finite temperature trapped Bose gases. **Advances in Mathematics**, pp. 533-607, 325C (2018) .

18 Sriramkrishnan Muralikrishnan, Minh-Binh Tran, Tan Bui-Thanh. An Improved Iterative HDG Approach for Partial Differential Equations. **Journal of Computational Physics,** Volume 367, Pages 295-321 (2018)

17 Avy Soffer, Minh-Binh Tran. On coupling kinetic and Schrödinger equations. **Journal of Differential Equations**, 265 (5), 2243-2279 (2018)

16 Shi Jin, Minh-Binh Tran. Quantum hydrodynamic approximations to the finite temperature trapped Bose gases. **Physica D: Nonlinear Phenomena**, Volumes 380-381, Pages 45-57 (2018)

15 Toan Nguyen, Minh-Binh Tran. On the kinetic equation in Zakharov's wave turbulence theory for capillary waves. **SIAM Journal on Mathematical Analysis**, 50, no. 2, 2020-2047 (2018).

14 Sriramkrishnan Muralikrishnan, Minh-Binh Tran, Tan Bui-Thanh. An Iterative HDG Framework for Partial Differential Equations. **SIAM Journal of Scientific Computing**, 39 (2017), no. 5, S782-S808.

13 Erich Foster, Jerome Loheac, Minh-Binh Tran. A Structure Preserving Scheme for the Kolmogorov Fokker Planck Equation. **Journal of Computational Physics**, 330 (2017), 319-339.

12 Miguel Escobedo, Minh-Binh Tran. Convergence to equilibrium of a linearized quantum Boltzmann equation for bosons at very low temperature. **Kinetic and Related Models**, Volume 8, Issue 3, 2015 Pages 493-531.

11 Luca Gerardo-Giorda, Minh-Binh Tran. Parallelizing the Kolmogorov-Fokker-Planck equation. **ESAIM Mathematical Modelling and Numerical Analysis** 49 (2015), no. 2, 395-420.

10 Jose-Antonio Carrillo, Simona Mancini, Minh-Binh Tran. On the exponential convergence rate for a non-gradient Fokker-Planck equation in Computational Neuroscience. **Journal of Elliptic and Parabolic Equations** 1 (2015), 271-279.

9 Minh-Binh Tran. Parallel Schwarz waveform relaxation algorithm for an n-dimensional semilinear heat equation. **ESAIM Mathematical Modelling and Numerical Analysis**, 48 (2014) pp 795-813.

8 Minh-Binh Tran. The behavior of domain decomposition methods when the overlapping length is large. **Central European Journal of Mathematics** October 2014, Volume 12, Issue 10, pp 1602-1614.

7 Minh-Binh Tran. On domain decomposition methods for optimal control problems. **Applications of mathematics - In honor of Karel Segeth** 2013, 207-214, Acad. Sci. Czech Repub. Inst. Math., Prague, 2013.

6 Minh-Binh Tran. Overlapping domain decomposition: convergence proofs. **Domain Decomposition Methods in Science and Engineering XX,** Springer Lecture Notes in Computational Science and Engineering, Volume 91, 2013, pp 493-500.

5 Minh-Binh Tran. Overlapping optimized Schwarz methods for parabolic equations in n-dimensions. **Proceedings of the American Mathematical Society** 141 (2013), 1627-1640.

4 Minh-Binh Tran. Convergence to Equilibrium of Some Kinetic Models. **Journal of Differential Equations**, Volume 255, Issue 3, 1 August 2013, Pages 405-440.

3 Minh-Binh Tran. A parallel four step domain decomposition scheme for coupled forward backward stochastic differential equations. **Journal de Mathématiques Pures et Appliquées** 96 (2011) 377-394.

2 Minh-Binh Tran. Parallel Schwarz waveform relaxation method for a semilinear heat equation in a cylindrical domain. **Comptes Rendus Mathematiques**, 348 (2010) 795–799.

1 Minh-Binh Tran, Duong Minh Duc, Nguyen Duy Thanh. On partially elliptic and coercive boundary problems. **Vietnam Journal of Mathematics**, 37(2-3):255–272, **2009 Undergraduate Thesis**.

REPORTS

3 Gigliola Staffilani, Minh-Binh Tran. Wave turbulence theory for a stochastic KdV type equation. Oberwolfach Report 26/2022.

2 Irene M. Gamba, Leslie Smith, Minh-Binh Tran. A Kinetic Wave Turbulence Model for Stratified Flows. Oberwolfach Report 56/2017.

1 Minh-Binh Tran. Nonlinear approximation theory for the homogeneous Boltzmann equation.

CODEs

1 Minh-Binh Tran. Codes for "A TIME DEPENDENT PHASE SPACE FILTER FOR ANISOTROPIC WAVE EQUATIONS ON UNBOUNDED DOMAINS" 2025 Zenodo. https://doi.org/10.5281/zenodo.15151086.

Invited Talks/Topic Courses/Visits

Talks at Seminars and Colloquia

1. April 2, 2026, Colloquium, Baylor University, USA

2. March 27, 2026, Colloquium, University of North Carolina Charlotte, USA
3. March 25, 2026, Joint Differential Equations-Nonlinear Analysis Seminar and Computational and Applied Mathematics Seminar, North Carolina State University, USA
4. March 20, 2026, Colloquium, University of Tennessee Knoxville, USA
5. February 26, 2025, Math Physics Seminar, Rutgers University, USA
6. March 24, 2025, PDEs Seminar, Indiana University, USA
7. March 11, 2025, Applied Math Seminar, Carnegie Mellon University, USA
8. September 30, 2024, TAMU Graduate Seminar, Texas A&M University, USA
9. January 29, 2024, PDE&GA seminar, University of Wisconsin Madison, USA
10. January 10, 2024, Math Physics Seminar Sapienza University of Rome, Italy
11. November 22, 2023, Math Physics Seminar University of Helsinki, Finland
12. October 11, 2023, Applied Math Seminar, Texas Tech University, USA
13. June 13, 2023, Analysis and Applications Seminar, Technical University of Munich, Germany
14. April 5, 2023, CAMDA Seminar, TAMU, USA
15. October 25, 2022, Joint UCLA-Caltech-USC Seminar, USA
16. April 6, 2022, Random Matrix & Probability Theory Seminar, Harvard University
17. February 15, 2022, PDE and Analysis Seminar, MIT, USA
18. February 13, 2022, PDE & Scientific Computing Seminar, National University of Singapore, Singapore
19. January 28, 2022, Colloquium, University of Texas Dallas, USA
20. January 26, 2022, Applied Math Seminar, Stanford University, USA
21. January 19, 2022, Colloquium, University of Maryland College Park, USA
22. January 6, 2022, Colloquium, University of Illinois Chicago, USA
23. November 22, 2021, Colloquium, Texas A&M University, USA
24. December 20, 2021, Colloquium, Rutgers University, USA
25. December 16, 2021, Online PDE Seminar, Chinese Academy of Sciences, China
26. September 10, 2021, CMAI Colloquium, George Mason University, USA
27. March 31, 2021, OSSUR-PDEs Seminar, Gran Sasso Science Institute, L'Aquila, Italy
28. March 29, 2021, PDE/Applied Math Seminar, Indiana University, USA
29. December 8, 2020, PDE and Analysis Seminar, MIT, USA
30. March 4, 2020, CSCAMM Seminar, University of Maryland College Park, USA
31. July 25, 2019, Colloquium, Ludwig Maximilian University of Munich, Germany
32. May 3, 2019, Scientific Computing Seminar, University of Texas Dallas, USA
33. February 7, 2019, CNA Seminar, Carnegie Mellon University, USA
34. March 29, 2018, Math Physics Seminar, Rutgers University, USA
35. March 22, 2018, Analysis Seminar, Courant Institute of Mathematical Sciences, New York University, USA
36. January 24, 2018, Colloquium, Rutgers University, USA
37. January 19, 2018, Colloquium, University of Houston, USA
38. November 27, 2017, CAM Colloquium, Penn State University, USA
39. September 28, 2017, Fluids Seminar, Princeton University, USA
40. December 27-28 , 2016, Math Seminar, Central China Normal University, China
41. November 21, 2016, PDE - Geometric Analysis Seminar, University of Wisconsin Madison, USA.
42. October 20, 2016, Seminar Computational and Applied Mathematics, Oak Ridge National Laboratory, USA.
43. August 24, 2016, Analysis Seminar, University of Texas at Austin, USA.

44. April 27, 2016, Math Seminar, Southern Methodist University, USA.
45. January 29, 2016, Seminar, Rutgers University, USA.
46. Oct 12, 2015, PDE - Geometric Analysis Seminar, University of Wisconsin Madison, USA.
47. Oct 1, 2015, Applied Math Seminar, Ohio State University, USA.
48. March 12, 2015, Seminar, Laboratoire Jean Kuntzmann, Joseph Fourier University, Grenoble, France.
49. January 30, 2015, PDEs and Numerical Methods Seminar, Penn State University, USA.
50. January 26, 2015, Math Colloquium, University of Wisconsin Madison.
51. January 20, 2015, Center for Nonlinear Analysis Seminar, Carnegie Mellon University, USA.
52. March 25, 2014, GDT Analyse Numérique Paris 11 - Orsay, France.
53. October 24, 2013, Mathematical Physics Seminar, Rutgers University, USA.
54. September 23, 2012, Seminar, Orleans University, France.
55. November 23, 2011, Probability/Stochastics seminar, Brown University, USA.
56. October 26, 2011, PDE seminar, BCAM, Spain.
57. November 23, 2010, seminar at the work group "Boundary Condtions", Département de mathématiques et applications (DMA) de L'École normale supérieure, France.
58. October 15, 2010, nonlinear analysis seminar, University Paris 13, France.
59. September 21, 2010, numerical analysis seminar, University of Geneva, Switzeland.
60. March and April 2009, seminar at the work group MEMD, University Paris 13, France.

Talks at Conferences/Workshops

1. Invited Speaker, Special Session Nonlinear Evolution Equations in Mathematical Physics, AMS Sectional Meeting at University of Alabama at Birmingham in Birmingham, March 20-21, 2027.
2. Invited Speaker, Dynamics across Scales: Bridging Kinetic Theory and Fluid Mechanics, 25-29, 2027, Erwin Schrodinger Institute (ESI) in Vienna, Austria.
3. Invited Speaker, Oberwolfach Workshop Wave-Kinetic Interfaces: Dispersive Dynamics Meets Kinetic Theory, January 17-22, 2027, Oberwolfach Germany.
4. Invited Speaker, ICM Satellite Event New Methods in Evolution Partial Differential Equations, July 20-22, 2026, Princeton University.
5. Invited Speaker, Minisymposium Numerical integration methods via Butcher trees and related algebraic structures, Scientific Computing and Differential Equations SciCADE 2026, Edinburgh, UK, June 29-July 3, 2026
6. Invited Speaker, From Control to Machine Learning: Conference in honour of Enrique Zuazua's 65th birthday, June 8-11, 2026
7. Invited Speaker, Optimization and Data Analytics, International Society in Quantization, Geometry, and Dynamics, May 30-31, 2026
8. Invited Speaker, SIAM Conference on Analysis of Partial Differential Equations (PD25), Minisymposium Many-body Systems and their Effective Equations, November 17–20 , 2025
9. Invited Speaker, Special Celebration Workshop for Professor Alain Bensoussan's 85th Birthday, Shandong University, Qingdao, June 23-26, 2025
10. Invited Speaker, Workshop Kinetic Limits and Probability, Sapienza University in Rome, June 9-13, 2025
11. Plenary Lecture, International Conference Resonances in the Mathematical World, Vietnam National University - Ho Chi Minh City, August 1-4, 2024
12. Invited Speaker, FAU DCN-AvH workshop, June 30, 2023
13. Plenary Lecture, SIAM Texas Louisiana Annual Meeting, November 4 - November 6, 2022
14. Invited Speaker, Research Symposium in Honor of Professor Giles Auchmuty's Research Work

and His Retirement, Texas A&M University, October 2, 2022
15. Invited Speaker, Advances in Nonlinear differential equations : Analysis, Numerics and Applications (Online), Tianjin University, August 13th- August 15, 2022
16. Invited Speaker, Conference Mathematical Results of Many-Body Quantum Systems, Herrsching, Germany, June 6 - June 11, 2022
17. Invited Speaker, Oberwolfach Workshop 2221 - Deterministic Dynamics and Randomness in PDE, Germany, May 22 - May 28, 2022
18. Invited Speaker, Conference PDES and Application, Institute of Applied Mathematics and Faculty of Mathematics and Statistics, UEH University, Hochiminh City, Vietnam, March 17, 2022
19. Invited Speaker, Workshop Generic Behavior of Dispersive Solutions and Wave Turbulence, ICERM Brown University, October 18 - October 22, 2021
20. Invited Speaker, May 21, 2021, Workshop Recent Advances in Analysis and Control (II), Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
21. Invited Speaker, AMS Sectional Meeting Binghamton, New York, Ocbtober 12 - Ocbtober 13, 2019
22. Invited Speaker, Special session on Numerical and Analytical Techniques with Applications in Wave Propagation at The V AMMCS International Conference, Waterloo, Ontario, Canada, August 18 - August 23, 2019
23. Invited Speaker, The Eleventh IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, USA, April 17 - April 19, 2019
24. Invited Speaker, Workshop on Machine Learning and Control Theory, Jindal School of Management, University of Texas at Dallas, December 4, 2018
25. Invited Speaker, Minisymposium Computational Methods for Waves in Complex Media, First SIAM TEX-LA sectional meeting, Louisiana State University, October 5 - October 7, 2018
26. Invited Speaker, Kinetic and related models with applications in the natural sciences, University of Wisconsin Madison, April 29 - May 2, 2018
27. Invited Speaker, Hypocoercivity and Sensitivity Analysis in Kinetic Equations and Uncertainty Quantification, University of Wisconsin Madison, October 2 - October 5, 2017
28. Invited Speaker, Kinetic Equations: Modeling, Analysis and Numerics, A celebration of Irene M. Gamba's impact in modeling, analysis and numerical simulations of kinetic equations, Universtiy of Texas-Austin, September 18 - September 22, 2017
29. Invited Speaker, International Conference on Uncertainty Quantification in Computational Fluid Dynamics , Shanghai Jiaotong University, Shanghai, China, July 24 - July 27, 2017
30. Invited Speaker, Mathematical questions in wave turbulence theory, American Institute of Mathematics, San Jose, California, May 15 - May 19, 2017
31. Invited Speaker, AMS Joint Mathematical Meeting, SIAM Minisymposium on Topics in Analysis and Numerical Methods for Collisional Kinetic Equations, Atlanta, January 4 - January 7, 2017
32. Invited Speaker, BCAM Workshop on Mathematics and its Applications, Bilbao, Spain, May 27, 2015
33. Invited Speaker, 6th International Conference on High Performance Scientific Computing, Hanoi, Vietnam, March 16 - March 20, 2015
34. Invited Speaker, Some Mathematical Problems related to Electromagnetic Waves, VIASM, Hanoi, Vietnam, July 28 - Aug 7, 2014
35. Invited Speaker, Workshop in PDEs, VIASM, Hanoi, Vietnam, July 18, 2014
36. Invited Speaker, Kyushu-Euskadi 2013 Workshop on Applied Mathematics, Fukuoka, Japan,

November 12, 2013

37. Invited Speaker, KI-Net Young researchers workshop: Kinetic and macroscopic models for complex systems Center for Scientific Computation And Mathematical Modeling University of Maryland, College Park, USA, October 14 - October 18, 2013
38. Invited Speaker, Benasque Partial differential equations, optimal design and numerics, Benasque, Spain, August 29 - September 9, 2013
39. Invited Speaker, Congrès commun de la Société mathématique de France (SMF) et de la Société mathématique du Vietnam (VMS), the University of Hue, Vietnam, August 20 - August 24, 2012
40. Invited Speaker, 21st International Conference on Domain Decomposition Methods, INRIA Rennes-Bretagne-Atlantique, France, June 25 - June 29, 2012
41. Invited Speaker, Benasque Partial differential equations, optimal design and numerics, Benasque, Spain, August 22 - September 2, 2011
42. Invited Speaker, 20th International Conference on Domain Decomposition Methods, UC San Diego, California, USA, February 7 - February 11, 2011
43. Invited Speaker, Highly Oscillatory Problems: From Theory to Applications, The Isaac Newton Institute, Cambridge, UK, September 12 - September 17, 2010
44. Invited Speaker, CANUM 2010, Relai Soleil Les Bruyres, France, May 31 - June 4, 2010
45. Invited Speaker, SMAI 2009, La bergerie La Colle sur Loup, France, May 25 - May 29, 2009
46. Invited Speaker, the 7-th Congress of Vietnamese Mathematicians, Quy Nhon, Viet Nam, August 04 - August 08, 2008

Invited Short Topic Courses

1. July 2024, Invited Topic Course "An introduction to the theory of wave and kinetic equations" (jointly teach with Gigliola Staffilani, MIT), Vietnam Institute for Advanced Study in Mathematics, Hanoi, Vietnam.
2. July 2024, Invited Topic Course "An introduction to the theory of kinetic equations", Summer School in PDE and Application 2024, Sponsored by both Vietnam Institute for Advanced Study in Mathematics and Sai Gon University, Hochiminh City, Vietnam

Academic Invited Visits

1. May 2027, Simons Laufer Mathematical Sciences Institute, Berkeley, AxIOM Program Member
2. August 2025, Vietnam Institute for Advanced Studies in Mathematics
3. June - July, 2024, (2 months) Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (Supported by Alexander von Humboldt Foundation).
4. January, 2023, Sapienza University of Rome, Italy
5. November, 2023, University of Helsinki, Finland
6. July, 2023, University of Helsinki, Finland
7. June, 2023, (2 weeks) Technical University of Munich, Germany
8. May, 2023, University of Basque Country, Spain
9. May - July, 2023, (3 months) Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (Supported by Alexander von Humboldt Foundation).
10. January-February, 2023, (1 month) National University of Singapore (NUS), Singapore.
11. September – October, 2022, MIT, USA
12. May - June, 2022, (1 month) Ludwig Maximilian University of Munich, Germany
13. May - July, 2021, (3 months) Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (Supported by Alexander von Humboldt Foundation).
14. December, 2019, National University of Singapore (NUS), Singapore.

15. July - August, 2019, (2 months) Munich Quantum Center, Germany.
16. June - August, 2018, University of Toronto, Canada.
17. September, 2017, Princeton University, USA.
18. July - August, 2017, (1 month) Shanghai Jiaotong University, China.
19. December, 2016, Central China Normal University, China.
20. January - September, 2016, (9 months) University of Texas Austin, USA.
21. January - February, 2015, Penn State University, USA.
22. February, 2015 University of Virginia, USA.
23. July - August, 2014, (1 month) Vietnam Institute for Advanced Studies in Mathematics, Hanoi, Vietnam.
24. March, 2014, Imperial College London, UK.
25. November, 2013, Lyon University, France.
26. October, 2013, Rutgers University, USA.
27. October, 2013, Brown University, USA.
28. October, 2013, Center for Scientific Computation and Mathematical Modeling, University of Maryland College Park, USA.
29. April, 2012, Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany.
30. November, 2011, Brown University, USA.
31. September, 2010, Université de Genève, Switzerland.
32. November, 2011, Rutgers University, USA.

Event Organizers/Committees

1. March 29-31, 2027, Scientific Program Committee, Waves 2027: The Fourteenth International conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, Athens, University of Georgia
2. August 15-16, 2026, Organizer (with PhD students Minh-Nhat Phung, Bangjie Wang and Postdoc Youngho Kim), Workshop on Pure and Applied Analysis 2026, Texas A&M University
3. April 20 - April 24, 2026, Organizer, Frontier Lecture Series by Emmanuel Trélat, Texas A&M University
4. September 26 - 28, 2025, The Annual Meeting of SIAM Texas-Louisiana Section, University of Texas Austin, Minisymposium Co-organizer (with PhD students Minh-Nhat Phung and Bangjie Wang): "Numerical and theoretical solutions of wave and kinetic equations".
5. August 16-17, 2025, Organizer (with PhD students Minh-Nhat Phung and Bangjie Wang), Workshop on Partial Differential Equations, Mathematical Physics and Numerics 2025, Texas A&M University
6. April 14-16, 2025, Scientific Program Committee and Sectional Organizer , Waves 2025: The Thirteenth International conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, Athens, University of Georgia
7. August 17-18, 2024, Organizer (with PhD student Minh-Nhat Phung), Workshop on Partial Differential Equations and Random Media 2024, Texas A&M University
8. June 17 - June 20, 2024, Organizer, Summer School for K-12 Students, Joint Event with Upward Bound Math Science, College Access Programs, Simmons School of Education and Human Development, SMU
9. 2024-, Organizer, Texas A&M University Nonlinear PDE Seminar
   I organized a summer school for K-12 students in the DFW area in 2024.
10. February 9–11, 2024, Co-organizer, Texas Analysis and Mathematical Physics Symposium, Texas

A&M University

11. April 17 - April 20, 2023, Co-organizer, Foias Lecture Series by Gigliola Staffilani, Texas A&M University
12. 30 January - 1 March 2023, Organizing Committee, Program on "Multiscale Analysis and Methods for Quantum and Kinetic Problems", chaired by Weizhu Bao, Peter A. Markowich, Benoît Perthame, Eitan Tadmor, the Institute for Mathematical Sciences (IMS), National University of Singapore (NUS).
13. June 20 - June 23, 2022, Organizer, Summer School for K-12 Students, Joint Event with Upward Bound Math Science, College Access Programs, Simmons School of Education and Human Development, SMU
14. 2019-2022, Dedman College DCII Research Cluster on Machine Learning and Control Theory Organizer
15. July 5 - July 16, 2021, Co-organizer, SMU/RTG Research Experience for Undergraduates Summer School
16. March 30 - April 01, 2022, The Twelfth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, USA, Section Co-organizer, "Advances in the Theory of Dispersive and Hyperbolic Equations"
17. 2018-2020, Math Colloquium Organizer, Southern Methodist University
18. November 1 - November 3, 2020, The 3rd Annual Meeting of SIAM Texas-Louisiana Section Texas A& M University, Minisymposium Co-organizer: "Nonlinear waves and applications".
19. November 1 - November 3, 2019, The 2nd Annual Meeting of SIAM Texas-Louisiana Section, Southern Methodist University, Minisymposium Co-organizer: "Nonlinear waves and applications".

Teaching

2008 - 2009 Colles (weekly oral examination) for classes préparatoires aux grandes écoles (to train undergraduate students for enrollment in one of the grandes écoles), first year and TD (exercises classes) in linear algebra, probability and differential equations for classes préparatoires aux grandes écoles (to train undergraduate students for enrollment in one of the grandes écoles), first year, Université Paris 13, France

2009 - 2010 Colles (weekly oral examination) for classes préparatoires aux grandes écoles (to train undergraduate students for enrollment in one of the grandes écoles), first year and TD (exercises classes) in linear algebra for computer science, economy and mathematics students, first year, Université Paris 13, France.

2010 - 2011 Colles (weekly oral examination) for classes préparatoires aux grandes écoles (to train undergraduate students for enrollment in one of the grandes écoles), second year and TD (exercises classes) in linear algebra for computer science, economy and mathematics students, first year, Université Paris 13, France

2015 Instructor, Fall Semester Math 412 (60 students) The Theory of Single Variable Calculus, University of Wisconsin Madison, USA.

2016 Instructor, Fall Semester Math 319 (180 students) Techniques in Ordinary Differential Equations, University of Wisconsin Madison, USA.

2017 Instructor, Spring Semester Math 412 (35 students) The Theory of Single Variable Calculus, University of Wisconsin Madison, USA.

2018 Instructor, Fall Semester Math 3313 (30 students) Differential Equations, Southern Methodist University, USA.

2019 Instructor, Spring Semester Math 4337 (30 students) Boundary Value Problems (BVPs) and Partial Differential Equations (PDEs), Southern Methodist University, USA.

2019 Instructor, Fall Semester Math 4337 (30 students) Boundary Value Problems (BVPs) and Partial Differential Equations (PDEs) and Fall Semester Math 3313 (30 students) Differential Equations, Southern Methodist University, USA.

2020 Instructor, Spring Semester Math 6337 Graduate Course Real and Functional Analysis, Southern Methodist University, USA.

2020 Instructor, Fall Semester Math 6332 Graduate Course Partial Differential Equations, Southern Methodist University, USA.

2021 Instructor, Spring Semester Math 6336 Graduate Course Fluids Dynamics and Math 4337 (35 students) Boundary Value Problems (BVPs) and Partial Differential Equations (PDEs), Southern Methodist University, USA.

2021 Instructor, Fall Semester Math 3313 (30 students) Differential Equations, and Math 3302 (35 students) Calculus 3, Southern Methodist University, USA. December 2021, Southern Methodist University Putman Competition and MCM/ICM Contest Training Session.

2022 Instructor, Fall Semester Math 308 (130 students) Differential Equations, Texas A&M University.

2023 Instructor, Fall Semester Math 308 (60 students) Honor Differential Equations, Texas A&M University.

2023 Instructor (jointly teach with Alain Bensoussan), Fall Semester Math 6335 (20 students) Graduate Course Control Theory and Machine Learning, University of Texas Dallas.

2024 Instructor, Fall Semester Math 308 (80 students) Differential Equations, Math 611 Graduate Course Introduction to Ordinary and Partial Differential Equations, Texas A&M University.

2025 Instructor, Fall Semester Math 308 (85 students) Differential Equations, Math 611 Graduate Course Introduction to Ordinary and Partial Differential Equations, Texas A&M University.

2026 Instructor, Fall Semester Math 308 (50 students) Differential Equations, Math 664 Graduate Course Machine Learning and Control Theory, Texas A&M University.

Services and Synergistic Activities

- Reviewers for National Science Foundation (NSF Panelists, including several CAREER Panels), Natural Sciences and Engineering Research Council of Canada
- 2026-, Speakers Committee (Representative for the Foias Distinguished Lecture Series) of the Mathematics Department, Texas A&M University
- 2026, Problem Writer, TAMU High School Math contest
- 2025-2026, Promotion and Tenure Committee of the Mathematics Department, Texas A&M University

- 2025, Problem Writer, TAMU High School Math contest
- 2023-2027, Graduate Committee of the Mathematics Department, Texas A&M University
- 2024, Problem Writer, TAMU High School Math contest
- Fall 2024, Postdoc teaching mentoring Yi Sheng Lim, Texas A&M University
- Fall 2023, Postdoc teaching mentoring o Julia Ershova & Xiaoxu Wu, Texas A&M University
- 2020 SMU Machine Learning Course Design Committee
- PhD Thesis Committees: Brian Citty (PhD 2020, Southern Methodist University), Yanlin Cheng (PhD 2021, UT Austin), Siddharth Sabharwal (PhD 2026, Texas A&M University), Try Tran (Texas A&M University), Kaiyu Fu (Texas A&M University). Master Thesis Committees: Sarah A. Vastani (Chair of Master Committee 2025, Texas A&M University)
- December 2021, Southern Methodist University Putman Competition and MCM/ICM Contest Training Session.
- I created a Youtube channel to help students with learning materials.
- I wrote the blog "Mathematical Properties of Boltzmann Equations in Wave Turbulence and Quantum Kinetics", which was a collection of my works on Wave Turbulence and Quantum Kinetics. In the chapters of the blog, I tried to explain clearly the physical meaning of the dynamics of quantum gases, Bose-Einstein Condensates, wave turbulence as well as the philosophy of my mathematical results. These chapters have been combined into my book:
  Yves Pomeau, Minh-Binh Tran. Statistical Physics of Non Equilibrium Quantum Phenomena, Lecture Notes in Physics Volume 967, Springer Nature Switzerland AG 2019.
- Referee for Physical Review Journals and Reviews of Modern Physics, SIAM Journals on Numerical Analysis, SIAM Journal on Scientific Computing, SIAM Journals on Mathematical Analysis, SIAM Journal on Imaging Sciences, SIAM Journal on Control and Optimization, SIAM Review, European Physical Journals, Annales Scientifiques de l'École Normale Supérieure, Journal of the American Mathematical Society, Journal of Computational Physics, Communications in Mathematical Physics, Communications in Pure and Applied Math, Archive for Rational Mechanics and Analysis, Numerische Mathematik, Journal de Mathematiques Pures et Appliquees, Duke Math Journal, Mathematical Reviews, zbMATH, and many others.

Programming Skills

Maple, Matlab, Python and C++