

Dr. Yue (Stanley) Ling

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RESEARCH INTEREST	Multiphase flows; atomization and sprays; microfluidics, particle-laden flows, shock/detonation waves, high-performance computing
EDUCATION	Ph.D., Mechanical Engineering University of Florida December 2010 Gainesville, Florida, USA B.S., Engineering Mechanics Beihang University (Beijing University of Aeronautics & Astronautics) July 2004 Beijing, China
ACADEMIC EXPERIENCE	Assistant Professor Baylor University February 2017 to present Waco, Texas, USA Postdoctoral Researcher Sorbonne Université (Université Pierre et Marie Curie, University of Paris VI) July 2013 to January 2017 Paris, France Postdoc Associate/Research Assistant Scientist University of Florida January 2011 to June 2013 Gainesville, Florida, USA
AWARDS	<ul style="list-style-type: none">• NSF CAREER Award, 2020• “Most Quantitatively Descriptive Flow Visualization Award” in the 3rd Flow Visualization Showcase in <i>AIAA Aviation Forum 2019</i>, Dallas, Texas, USA, 2019• Baylor University 2018-2019 Rising Stars• The second runner-up in the Tanasawa Award competition in the <i>13th Triennial International Conference on Liquid Atomization and Spray Systems</i>, Tainan, Taiwan, 2015• Outstanding International Student Award, University of Florida, 2010• John Hauck Foundation Scholarship, University of Florida, 2010

FUNDED
RESEARCH
PROPOSALS

1. "Direct numerical simulation of the atomization of a planar liquid jet assisted by co-flowing turbulent gas streams" , **Y. Ling** (PI), G. Tryggvason, Frontera Pathway Program, 2021-2022, 180,000.0 node-hours (estimated value \$46,728).
2. Baylor University Postdoctoral Hiring Program, 2021-2024, one postdoc position for three years.
3. "Direct numerical simulation of airblast atomization with a turbulent gas inlet," (Renewal) **Y. Ling** (PI), The Extreme Science and Engineering Discovery Environment (XSEDE), 2020-2021, 116,000 node-hours (estimated value \$30,113.60).
4. "CAREER: Impact of Inlet Conditions on Interfacial Instability and Spray Formation: High-Fidelity Simulation, Characterization, and Sub-Grid Modeling," **Y. Ling** (PI), National Science Foundation (#1942324), 2020-2025, \$507,045.
5. "EAGER: Establishment of a High-Fidelity Simulation Infrastructure for Fuel Injection and Combustion in Supersonic Flows," **Y. Ling** (PI), National Science Foundation (#1853193), 2019-2020, \$120,173.
6. "Direct numerical simulation of airblast atomization with a turbulent gas inlet," **Y. Ling** (PI), The Extreme Science and Engineering Discovery Environment (XSEDE), 2019-2020, 113,603 node-hours (estimated value \$29,491.34).
7. "Direct numerical simulation of gas-liquid mixing layer," **Y. Ling** (PI), Texas Advanced Computing Center (TACC) at The University of Texas at Austin, 2018-2019, 80,000 node-hours.
8. "Direct numerical simulation of a mixing layer between two parallel immiscible streams," **Y. Ling** (PI) and G. Tryggvason (Co-PI), Oak Ridge National Laboratory (# CFD104), 2017-2018, 3 million core-hours.
9. "Workshop on Environment and Extreme Multiphase Flows," S. Balachandar (PI) and **Y. Ling** (Co-PI), National Science Foundation (#1217409), 2012, \$20,672.00.

JOURNAL
PAPERS

(* corresponding author)

1. J. Sakakeeny, C. Deshpande, S. Deb, J. L. Alvarado, **Y. Ling***, "Predicting oscillation frequency for liquid drops pinned on a vertical planar surface", under review.
2. B. Zhang, **Y. Ling***, "Direct numerical simulation of compressible interfacial multiphase flows using a mass-momentum-energy consistent volume-of-fluid method", under review.
3. D. Jiang and **Y. Ling***, "Impact of inlet gas turbulence on the formation, development, and breakup of interfacial waves in a two-phase mixing layer", *Journal of Fluid Mechanics*, in print (2021).

4. J. Sakakeeny, **Y. Ling***, “Numerical study of natural oscillations of supported drops with free and pinned contact lines”, *Physics of Fluids*, **33**, 062109 (2021).
5. W. Aniszewski, T. Arrufat, M. Cialesi-Esposito, S. Dabiri, D. Fuster, **Y. Ling**, J. Lu, L. Malan, S. Pal, R. Scardovelli, G. Tryggvason, P. Yecko, S. Zaleski, “PARallel, Robust, Interface Simulator (PARIS)”, *Computer Physics Communications* **263**, 107849 (2021).
6. J. Sakakeeny, **Y. Ling***, “Natural oscillations of a sessile drop on flat surfaces with mobile contact lines”, *Physical Review Fluids*, **5**, 123604 (2020).
7. T. Arrufat, M. Cialesi-Esposito, D. Fuster, **Y. Ling**, L. Malan, S. Pal, R. Scardovelli, G. Tryggvason, and S. Zaleski*, “A mass-momentum consistent, Volume-of-Fluid method for incompressible flow on staggered grids”, *Computers and Fluids* **215**, 104785 (2020).
8. B. Zhang, S. Popinet, **Y. Ling***, “Modeling and detailed numerical simulation of the primary breakup of a gasoline surrogate jet under non-evaporative operating conditions”, *International Journal of Multiphase Flow* **130**, 103362 (2020).
9. J. Y. Lichtenberg, **Y. Ling**, S. Kim*, “Numerical analysis of a trapezoidal microchannel for hydrodynamic detachment of cells”, *International Journal of Engineering and Advanced Technology* **9**, 1473–1477 (2020).
10. D. Jiang and **Y. Ling***, “Destabilization of a planar liquid stream by a co-flowing turbulent gas stream”, *International Journal of Multiphase Flow* **122**, 103121 (2020).
11. B. Zhang, **Y. Ling***, P.-H. Tsai, A.-B. Wang, S. Popinet, and S. Zaleski, “Falling dynamics of a dripping drop: shape oscillation and transient flow development”, *Physical Review Fluids* **4**, 123604 (2019).
12. J. Y. Lichtenberg, **Y. Ling**, S. Kim, “Non-specific adsorption reduction methods in biosensing”, *Sensors* **19**, 2488 (2019). (The paper was selected by the editors as the cover of the issue.)
13. L. C. Malan, **Y. Ling**, R. Scardovelli, A. Llor and S. Zaleski*, “Direct Numerical Simulations of pore competition in idealized micro-spall using the VOF method”, *Computers and Fluids* **189**, 60-72 (2019).
14. **Y. Ling***, D. Fuster, G. Tryggvason, and S. Zaleski, “A two-phase mixing layer between parallel gas and liquid streams: multiphase turbulence statistics and influence of interfacial instability”, *Journal of Fluid Mechanics* **859**, 268–307 (2019).
15. **Y. Ling***, S. Balachandar, “Asymptotic scaling laws and semi-similarity solutions for a finite-source spherical blast wave”, *Journal of Fluid Mechanics* **850**, 674–707 (2018).

16. **Y. Ling***, S. Balachandar, “Simulation and scaling analysis of a spherical particle-laden blast wave,” *Shock Waves* **28**, 545–558 (2018).
17. **Y. Ling***, D. Fuster, G. Tryggvason, and S. Zaleski, Spray formation in a quasi-planar gas-liquid mixing layer at moderate density ratios: a numerical closeup, *Physical Review Fluids* **2**, 014005 (2017).
18. **Y. Ling***, J.-M. Fullana, S. Popinet, and C. Josserand, “Droplet migration in a Hele–Shaw microchannel: Effect of the lubrication film on the droplet dynamics,” *Physics of Fluids* **28**, 062001 (2016).
19. **Y. Ling***, S. Balachandar, and M. Parmar, “Inter-phase heat transfer and energy coupling in turbulent dispersed multiphase flows,” *Physics of Fluids* **28**, 033304 (2016).
20. **Y. Ling***, S. Zaleski, and R. Scardovelli, “Multiscale simulation of atomization with small drops represented by a Lagrangian point-particle model,” *International Journal of Multiphase Flow* **76**, 122-143 (2015).
21. S. Annamalai, M. Parmar, **Y. Ling**, and S. Balachandar*, “Nonlinear Rayleigh-Taylor instability of a cylindrical interface in explosion flows,” *Journal of Fluids Engineering-Transactions of ASME* **136**, 060910 (2014).
22. **Y. Ling***, M. Parmar, and S. Balachandar, “A scaling analysis of added-mass and history forces and their coupling in dispersed multiphase flows,” *International Journal of Multiphase Flow* **57**, 102-114 (2013).
23. **Y. Ling***, A. Haselbacher, S. Balachandar, F. M. Najjar, and D. S. Stewart, “Shock interaction with a deformable particle: Direct numerical simulation and point-particle modeling,” *Journal of Applied Physics* **113**, 013504 (2013).
24. **Y. Ling***, J. L. Wagner, S. J. Beresh, S. P. Kearney, and S. Balachandar, “Interaction of a planar shock wave with a dense particle curtain: Modeling and experiments,” *Physics of Fluids* **24**, 113301 (2012).
25. **Y. Ling**, A. Haselbacher, and S. Balachandar*, “Importance of unsteady contributions to force and heating for particles in compressible flows. Part 2: Application to particle dispersal by blast wave,” *International Journal of Multiphase Flow* **37**, 1013–1025 (2011).
26. **Y. Ling**, A. Haselbacher, and S. Balachandar*, “Importance of unsteady contributions to force and heating for particles in compressible flows. Part 1: Modeling and analysis for shock-particle interaction,” *International Journal of Multiphase Flow* **37**, 1026–1044 (2011).
27. **Y. Ling**, A. Haselbacher, and S. Balachandar*, “A numerical source of small-scale number-density fluctuations in Eulerian-Lagrangian simulations of multiphase flows,” *Journal of Computational Physics* **229**, 1828–1851 (2010).

28. **Y. Ling**, A. Haselbacher, and S. Balachandar*, “Transient phenomena in one-dimensional compressible gas-particle flows,” *Shock Waves* **19**, 67–81 (2009).
29. C. Wan, **Y. Ling**, Z. Shen*, and S. Ma, “Numerical simulation of supersonic flow structure in opposed jet mill,” *China Powder Science and Technology* **13**, 23–25 (2007).
30. X. Zhao, M. Wang, **Y. Ling**, Z. Shen* and Y. Xing, “Experimental investigation on improving the AO-resistant characteristics of epoxy resin of spacecraft filled with Nano-SiO₂,” *The Chinese Journal of Process Engineering* **4**, 160–166 (2004).

CONFERENCE
PAPERS &
PRESENTATIONS

1. Y. Ling and B. Zhang, “High-fidelity simulation of primary breakup of a “Spray G” gasoline jet with an adaptive mesh refinement and volume-of-fluid method,” SAE Technical Paper 2020-01-0826, 2020.
2. J. Sakakeeny, **Y. Ling**, “Resonance oscillation frequency of sessile drops on hydrophobic surfaces,” *ASME ICNMM-SHTC-FEDSM Joint Meeting 2020* (Virtual, 2020).
3. B. Zhang, **Y. Ling**, “Impact of the injection angle on the primary breakup of a gasoline jet and the spray statistics,” *ASME ICNMM-SHTC-FEDSM Joint Meeting 2020* (Virtual, 2020).
4. D. Jiang, **Y. Ling**, D. Fuster, S. Zaleski, G. Tryggvasson, “Manipulating gas-assisted atomization by inlet gas turbulence,” *American Physical Society 72nd Annual Meeting of the Division of Fluid Dynamics* (Seattle, Washington, 2019).
5. B. Zhang, **Y. Ling**, “Asymmetric primary breakup of a round liquid jet with non-zero injection angle,” *American Physical Society 72nd Annual Meeting of the Division of Fluid Dynamics* (Seattle, Washington, 2019).
6. S. Zaleski, **Y. Ling**, D. Fuster, G. Tryggvasson, “Analysis of the statistics of droplet sizes in atomization,” *American Physical Society 72nd Annual Meeting of the Division of Fluid Dynamics* (Seattle, Washington, 2019).
7. **Y. Ling**, W. Shang, and J. Chen, “Detailed numerical simulation of two impinging jets with moderate injection velocities,” *ASME - JSME - KSME Joint Fluids Engineering Conference 2019* (San Francisco, CA, 2019).
8. D. Jiang, L. Jiang, and **Y. Ling**, “Numerical investigation of internal flow in flow-blurring atomizers,” *ASME - JSME - KSME Joint Fluids Engineering Conference 2019* (San Francisco, CA, 2019).
9. D. Jiang, S. Zaleski, G. Tryggvason, **Y. Ling**, “Impact of Inlet Gas Turbulent Intensity on the Characteristics of Droplets Generated in Airblast Atomization,” AIAA Paper 2019-3721, *AIAA Aviation 2019* (Dallas, Texas, USA, 2019). (We won the “Most Quantitatively Descriptive Flow Visualization Award” in the 3rd Flow Visualization Showcase.)

10. J. Sakakeeny, S. McClain, **Y. Ling**, “Simulations of Thin Film Dynamics on a Flat Plate and an Airfoil,” SAE Technical Paper 2019-01-1938, 2019.
11. D. Jiang, L. Jiang, **Y. Ling**, “Numerical investigation of air bubbles formation and internal flows in flow-blurring atomizers and its impact on liquid breakup,” *ILASS-Americas 30th Annual Conference on Liquid Atomization and Spray Systems*, (Tempe, Arizona, USA, 2019).
12. **Y. Ling**, J. Sakakeeny, X. Li, S. Popinet, and J. Alvarado, “Oscillation of a Sessile Drop on Hydrophobic/Superhydrophobic Surfaces,” *ILASS-Americas 30th Annual Conference on Liquid Atomization and Spray Systems*, (Tempe, Arizona, USA, 2019).
13. B. Zhang, **Y. Ling**, “High-Fidelity Modeling and Simulation of Primary Breakup of a Gasoline Surrogate Jet,” *ILASS-Americas 30th Annual Conference on Liquid Atomization and Spray Systems*, (Tempe, Arizona, USA, 2019).
14. D. Jiang, S. Zaleski, G. Tryggvasson, **Y. Ling**, “Destabilization and breakup of a planar liquid stream assisted by a co-flowing turbulent gas stream,” *American Physical Society 71st Annual Meeting of the Division of Fluid Dynamics* (Atlanta, Georgia, 2018).
15. **Y. Ling**, S. Balachandar, X. Jian, “Asymptotic scaling laws for spherical and cylindrical finite-source blast waves,” *American Physical Society 71st Annual Meeting of the Division of Fluid Dynamics* (Atlanta, Georgia, 2018).
16. B. Zhang, **Y. Ling**, P.-H. Tsai, A.-B. Wang, S. Zaleski, S. Popinet, “Vortex dynamics in an oscillating falling drop dripped from a faucet,” *American Physical Society 71st Annual Meeting of the Division of Fluid Dynamics* (Atlanta, Georgia, 2018).
17. S. Zaleski, **Y. Ling**, D. Fuster, G. Tryggvasson, “A momentum-conserving, consistent, Volume-of-Fluid method for incompressible flow on staggered grids,” *American Physical Society 71st Annual Meeting of the Division of Fluid Dynamics* (Atlanta, Georgia, 2018).
18. D. Jiang, S. Zaleski, G. Tryggvason, **Y. Ling**, “Airblast atomization of a planar water jet assisted by a coflowing turbulent air stream,” *Gallery of Atomization and Sprays, 14th Triennial International Conference on Liquid Atomization and Spray Systems*, (Chicago, Illinois, USA, 2018).
19. D. Jiang, S. Zaleski, G. Tryggvason, **Y. Ling**, “Effect of inlet gas turbulence on air-blast atomization,” *Proceeding of 14th Triennial International Conference on Liquid Atomization and Spray Systems*, (Chicago, Illinois, USA, 2018). (D. Jiang won the student travel award with this paper.)
20. B. Zhang, G. Legros, S. Popinet, S. Zaleski, **Y. Ling**, “Effect of fuel viscosity on the atomization of diesel and biodiesel fuels from a single-hole pressure atomizer,” *Proceeding of 14th Triennial International Conference on Liquid Atomization and Spray Systems*, (Chicago, Illinois, USA, 2018).

21. J. Sakakeeny, S. McClain, **Y. Ling**, “Direct Numerical Simulation of a Thin Film Over a NACA 0012 Airfoil,” AIAA Paper 2018–2857, *AIAA Aviation 2018* (Atlanta, Georgia, USA, 2018).
22. D. Jiang, **Y. Ling**, “On the effect of inlet gas turbulence on air-blast atomization,” *The Bluebonnet Symposium on Thermal-Fluid Sciences 2018* (Dallas, Texas, 2018).
23. B. Zhang, **Y. Ling**, “Oscillations of a falling drop dripped from a faucet,” *The Bluebonnet Symposium on Thermal-Fluid Sciences 2018* (Dallas, Texas, 2018).
24. **Y. Ling**, D. Fuster, S. Zaleski, G. Tryggvasson, “Impact of Interfacial Instability on the Multiphase Turbulence Statistics in a Two-Phase Mixing Layer,” *American Physical Society 70th Annual Meeting of the Division of Fluid Dynamics* (Denver, Colorado, 2017).
25. **Y. Ling**, “DNS of an Atomizing Biodiesel Jet with Basilisk,” *Basilisk/Gerris Users’ Meeting 2017* (Princeton, New Jersey, 2017).
26. **Y. Ling**, G. Legros, S. Popinet, and S. Zaleski, “Direct numerical simulation of an atomizing biodiesel jet: Impact of fuel properties on atomization characteristics,” *Proceeding of ILASS-Europe 2017, 28th Annual Conference on Liquid Atomization and Spray Systems* (València, Spain, 2017).
27. **Y. Ling**, “A Multiscale Strategy for Atomization Simulation: Combining Volume-of-Fluid Method and Lagrangian Point-Particle Model,” *ASME 2017 Fluids Engineering Division Summer Meeting* (Waikoloa, Hawaii, 2017).
28. **Y. Ling**, D. Fuster, G. Tryggvasson, R. Scardovelli, S. Zaleski, “3D DNS of spray formation in gas-assisted atomization,” *Proceeding of 24th International Congress of Theoretical and Applied Mechanics* (Montréal, Canada, 2016).
29. J.-M. Fullana, **Y. Ling**, S. Popinet, C. Josserand, “Effect of the Lubrication Film Dynamics on the Droplet Motion in a Hele-Shaw Microchannel,” *9th International Conference on Multiphase Flow* (Firenze, Italy, 2016).
30. **Y. Ling**, S. Zaleski, D. Fuster, G. Tryggvasson, R. Scardovelli, “A Numerical Close-up on Spray Formation in a Gas-Liquid Mixing Layer,” *9th International Conference on Multiphase Flow* (Firenze, Italy, 2016).
31. **Y. Ling**, S. Zaleski, G. Tryggvasson, D. Fuster, R. Scardovelli, M. Cenni and T. Arrufat, “DNS of coflowing planar jet atomization: can one reach convergence?,” *American Physical Society 68th Annual Meeting of the Division of Fluid Dynamics* (Boston, Massachusetts, 2015).
32. **Y. Ling**, D. Fuster, G. Tryggvasson, R. Scardovelli and S. Zaleski, “Primary breakup of planar coflowing gas and liquid sheets,” *Gallery of Fluid Motion V0051, American Physical Society 68th Annual Meeting of the Division of Fluid Dynamics* (Boston, Massachusetts, 2015).

33. **Y. Ling**, J-M. Fullana, S. Popinet and C. Josserand, “Three-dimensional simulation of droplet migration in a Hele-Shaw microchannel,” *American Physical Society 68th Annual Meeting of the Division of Fluid Dynamics* (Boston, Massachusetts, 2015).
34. S. Zaleski, D. Fuster, T. Arrufat, **Y. Ling**, M. Cenni, R. Scardovelli and G. Tryggvasson, “Realistic simulations of coaxial atomisation,” *American Physical Society 68th Annual Meeting of the Division of Fluid Dynamics* (Boston, Massachusetts, 2015).
35. **Y. Ling**, T. Arrufat, D. Fuster, S. Zaleski, G. Tryggvasson, R. Scardovelli, “Turbulent Multiphase Flow Characteristics in Gas Assisted Atomization,” *Proceeding of 13th Triennial International Conference on Liquid Atomization and Spray Systems*, (Tainan, Taiwan, 2015). (Our paper is the second runner-up in the Tanasawa Award competition.)
36. J-M. Fullana, **Y. Ling**, S. Popinet and C. Josserand, “Droplet in microchannels: a numerical approach using an adaptive two phase solver,” *1st Pan American Congress on Computational Mechanics - PANACM 2015* (Buenos Aires, Argentina, 2015).
37. **Y. Ling** and S. Zaleski, “Multi-scale simulation of primary breakup in gas-assisted atomization,” AIAA Paper 2015-0420, *AIAA SciTech 2015: 53rd AIAA Aerospace Sciences Meeting* (Kissimmee, Florida, USA, 2015).
38. **Y. Ling** and S. Zaleski, “Multi-scale simulation of atomization with small drops represented by Lagrangian Point-Particle Model,” *American Physical Society 67th Annual Meeting of the Division of Fluid Dynamics* (San Francisco, California, 2014).
39. **Y. Ling** and S. Zaleski, “Numerical investigation of spray formation and evolution in gas-assisted atomization,” Proceeding of ILASS-Europe 2014, 26th Annual Conference on Liquid Atomization and Spray Systems (Bremen, Germany, 2014).
40. **Y. Ling** and S. Zaleski, “Atomization simulations by the Volume-of-Fluid method coupled with a Lagrangian point-particle model,” 2nd International Conference on Numerical Methods in Multiphase Flows (Darmstadt, Germany, 2014).
41. **Y. Ling**, M. Parmar, and S. Balachandar, “Point-particle approach for compressible particle-laden flows with shock waves,” *EUROMECH Colloquium n 555* (Bordeaux, France, 2013).
42. **Y. Ling**, M. Parmar, A. Haselbacher, and S. Balachandar, “Shock interaction with dilute and dense particle distributions: Theory, modeling, and validation,” in *Proceeding of 8th International Conference on Multiphase Flow* (Jeju, Korea, 2013).
43. **Y. Ling**, M. Parmar, S. Annamalai, S. Balachandar, and D. L. Frost, “Towards rigorous modeling of extreme compressible multiphase flows,”

Minisymposium Session of High-Speed, High-Energy, and Multi-Material Flows, *American Physical Society 65th Annual Meeting of the Division of Fluid Dynamics* (San Diego, California, 2012).

44. B. Lieberthal, D.S. Stewart, J.B. Bdzil, F.M. Najjar, S. Balachandar, and **Y. Ling**, “Simulation of deformation, momentum and energy coupling particles deformed by intense shocks,” *American Physical Society 64th Annual Meeting of the Division of Fluid Dynamics* (Baltimore, Maryland, 2011).
45. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Importance of unsteady force and heating to particle dispersal by shock/detonation waves,” in *Proceeding of 17th Biennial International Conference of the APS Topical Group on Shock Compression of Condensed Matter* (Chicago, Illinois, 2011).
46. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Particle dispersal in rapid expanding gas flow: Importance of unsteady force and heat transfer,” *American Physical Society 63th Annual Meeting of the Division of Fluid Dynamics* (Long Beach, California, 2010).
47. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Compressibility and unsteady effects on particles in explosions,” in *Proceeding of 7th International Conference on Multiphase Flow* (Tampa, Florida, USA, 2010).
48. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Numerical investigation of particle dispersal in multiphase explosions,” AIAA Paper 2010-768, *48th AIAA Aerospace Sciences Meeting* (Orlando, Florida, USA, 2010).
49. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Modeling and simulation of explosive dispersal of particles in a multiphase explosion,” AIAA Paper 2009-1532, *47th AIAA Aerospace Sciences Meeting* (Orlando, Florida, USA, 2009).
50. **Y. Ling**, A. Haselbacher, and S. Balachandar, “Simulation of explosive dispersion from compressed particle-gas suspension,” *American Physical Society 61st Annual Meeting of the Division of Fluid Dynamics* (St Antonio, Texas, 2008).
51. A. Haselbacher, F.M. Najjar, S. Balachandar and **Y. Ling**, “Lagrangian simulations of shock-wave diffraction at a right-angled corner in a particle-laden gas,” in *Proceeding of 7th International Conference on Multiphase Flow* (Leipzig, Germany, 2007).

INVITED TALKS

1. “Direct Numerical Simulation of Gas-Liquid and Liquid-Liquid Flows with Sharp Interfaces,” ExxonMobil Upstream Research Company, Spring, Texas, November 2018.
2. “Direct Numerical Simulation of Atomizing Gas-Liquid Flows: Mechanisms, Statistics, and Modeling,” Center of Thermo-Fluid Mechanics, University of Houston, Houston, Texas, November 2017.

3. “Computational Multiphase Thermo-Fluids Research at Baylor,” Mayborn Museum Complex, Baylor University, Waco, Texas, August 2017.

TEACHING
EXPERIENCE

Baylor University

Waco, Texas, USA

Undergraduate courses

- Advanced Thermodynamics
- Fluid Mechanics

Graduate courses

- Advanced numerical methods for multiphase flows
- Introduction to turbulent flows

Graduate Student Supervision

- | | | |
|-----------------------|-----------------------|-----------------|
| • Taofiqhasan Mahmood | Doctoral student | 2019 to present |
| • Jordan Sakakeeny | Doctoral student | 2017 to present |
| • Bo Zhang | Doctoral student | 2017 to present |
| • Delin (Dale) Jiang | Doctoral student | 2017 to present |
| • Armand Shams | Master student intern | 2017 Summer |

Undergraduate Student Supervision

- | | | |
|--|----------------|-----------------|
| • Chris Helms | Senior student | 2018 to present |
| • Bradley Nelson | Senior student | 2018 to present |
| • Xinxiao (Amy) Li | | 2018 to present |
| • Xiangzhou (Arthur) Jian | | 2018 to present |
| • Thomas Kava | | 2017 to 2018 |
| (Currently graduate student at University of Colorado Boulder, Boulder, Colorado, USA) | | |
| • Patrick Jaeckle | | 2017 to 2018 |

Université Pierre et Marie Curie (Paris VI)

Paris, France

Courses

- Introduction to Hydrodynamic Instability
(conducted with Prof. Stéphane Zaleski)

Student supervision

- | | | |
|--------------------|----------------|--------------|
| • Alexandre Mansur | Master student | 2015 to 2016 |
| • Subin Thomas | Master student | 2015 to 2016 |

University of Florida

Gainesville, Florida, USA

Teaching Assistant

- Principles of Engineering Analysis I (EGM6321)

- Statics (EGM2511)
- Thermodynamics (EML3100)

PROFESSIONAL
SERVICES

Profession Affiliation:

- American Society of Mechanical Engineers (ASME), Member
- American Institute of Aeronautics and Astronautics (AIAA), Senior Member
- American Physical Society (APS), Member

Program Committee/Organizer:

- Technical committee of *ICLASS 2018–14th International Conference on Liquid Atomization and Spray Systems* (Chicago, Illinois, USA, 2018)
- Multiphase flow technical committee in ASME Fluids Engineering Division
- Local organizing committee member for *Workshop on Environmental and Extreme Multiphase Flows* (Gainesville, Florida, USA, 2012)

Referee for Journals:

- *AIAA Journal*
- *AIChE Journal*
- *ASME Journal of Fluids Engineering*
- *Atomization and Sprays*
- *Computers and Fluids*
- *Flow, Turbulence and Combustion*
- *Fluid Dynamics Research*
- *International Journal of Multiphase Flow*
- *Journal of Computational and Nonlinear Dynamics*
- *Journal of Computational Physics*
- *Journal of Fluid Mechanics*
- *Physics of Fluids*
- *Shock Wave*
- *Theoretical and Computational Fluid Dynamics*

Referee for Funding Agencies:

- *Natural Sciences and Engineering Research Council of Canada*
- *American Chemical Society Petroleum Research Fund*
- *Dutch Research Council*
- *Partnership for Advanced Computing in Europe*

Referee for Book Proposals:

- *Cambridge University Press*