

# Mohamed Housseem Kasbaoui

Assistant Professor, Arizona State University.

551 E. Tyler Mall, ERC 391

Tempe, AZ 85281, United States

(480) 965-0927 | [housseem.kasbaoui@asu.edu](mailto:housseem.kasbaoui@asu.edu) | <https://kasbaoui.bitbucket.io>

## EDUCATION

### **Cornell University**, Ithaca, NY

Ph.D, Aerospace Engineering *2017*

M.Sc., Aerospace Engineering *2015*

### **Université Paris-Sud**, Paris, France

M.Sc., Theoretical Physics *2014*

B.Sc., Theoretical Physics *2011*

### **Ecole Centrale Paris**, Paris, France

Diplôme d'Ingénieur, Major in Applied Mathematics *2013*

## PROFESSIONAL EXPERIENCE

**Assistant Professor**, Arizona State University *Jan 2019 - present*

Mechanical and Aerospace Engineering,  
School for the Engineering of Matter, Transport and Energy.

**Postdoctoral Fellow**, University of Texas at Austin *Oct 2017 - Nov 2018*

Department of Aerospace Engineering, University of Texas at Austin, Austin, TX.

**Postdoctoral Fellow**, Cornell University *Aug 2017 - Sep 2017*

Department of Mechanical and Aerospace Engineering.

**Graduate Research Assistant**, Cornell University *2012-2017*

Department of Mechanical and Aerospace Engineering.

Advisors: Dr. Donald L. Koch (chair), Dr. Olivier Desjardins & Dr. Paul H. Steen

**Undergraduate Research Assistant**, ONERA, Meudon, France *2011-2012*

Department of Fundamental and Experimental Aerodynamics, Meudon, France

Advisors: Denis Sipp & Laurent Jacquin

## FELLOWSHIPS & AWARDS

**Doctoral New Investigator Award** *2021*

by American Chemical Society Petroleum Research Fund

**Argonne National Lab Extreme Scale Computing Training Fellow** *Summer 2015*

**Cornell University Graduate Fellowship** *Fall 2012*

**French Ministry of Foreign Affairs Excellence Scholarship** *2010-2013*

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Physical Society

American Institute of Aeronautics and Astronautics

American Institute of Chemical Engineers

American Chemical Society

## RESEARCH GRANTS (Total: \$1.293M , Investigator Recognition: \$824k)

5. “Collaborative Research: Understanding the trapping of microplastic particles in riverbeds with synergistic pore resolving simulations and continuum modeling”. **PI:** M. Housseem Kasbaoui (53%). **Co-PI:** Shankar Subramaniam (47%). **Sponsor:** NSF – EAR/HS. **Award #:** 2409164. **Amount:** \$644,887. **Period:** 08/15/2024 to 08/14/2027.
4. “Theoretical and numerical investigation of particle-vortex interaction in semi-dilute dusty flows”. **PI:** M. Housseem Kasbaoui (100%). **Sponsor:** NSF – CBET/PMP. **Award #:** 2148710. **Amount:** \$200,000. **Period:** 09/01/2022 to 08/31/2025.
3. “INTERN DCL - Bridging the Gap in Multiphase Flow Simulations”. **PI:** M. Housseem Kasbaoui (50%). **Co-PI:** Marcus Herrmann (50%). **Sponsor:** NSF – EEC. **Award #:** 2216969. **Amount:** \$38,844. **Period:** 07/01/2022 to 12/31/2022.
2. “Elucidating the impact of finite-size and point particles on the near-wall coherent structures using a high-fidelity computational strategy”. **PI:** M. Housseem Kasbaoui (100%). **Sponsor:** American Chemical Society Petroleum Research Fund (Doctoral New Investigator Award). **Award #:** 62195-DNI9. **Amount:** \$110,000. **Period:** 09/01/2021 to 08/31/2023.
1. “Bridging the gap in multiphase flow simulations”. **PI:** M. Housseem Kasbaoui (50%). **Co-PI:** Marcus Herrmann (50%). **Sponsor:** NSF – CBET/FD. **Award #:** 2028617. **Amount:** \$300,000. **Period:** 09/01/2020 to 08/31/2024.

## IN POPULAR PRESS

3. Clement M. Understanding dust devils with new flow simulations. ASU News. Published October 24, 2022. Accessed October 28, 2022. <https://news.asu.edu/20221021-understanding-dust-devils-new-flow-simulations>
2. Kullman J. Going with the flow. Full Circle. Published December 1, 2021. Accessed February 3, 2022. <https://fullcircle.asu.edu/features/going-with-the-flow/>
1. Albal K. Plotting droplets: New mathematical tools for more robust simulations. Full Circle. Published September 3, 2020. Accessed February 3, 2022. <https://fullcircle.asu.edu/research/plotting-droplets-new-mathematical-tools-for-more-robust-simulations/>

## JOURNAL PAPERS IN PREPARATION

4. **M. Rickard** and M. H. Kasbaoui, Quantification of the wall-slip in volume-filtered DNS.
3. **S. Shuai** and M. H. Kasbaoui, Direct numerical simulation of the erosion of a particle bed by an impinging jet.
2. **J. S. Van Doren** and M. H. Kasbaoui, Particle-Resolved Direct Numerical Simulations of a turbulent channel flow laden with neutrally buoyant particles.
1. **J. S. Van Doren** and M. H. Kasbaoui, Effect of turbulence on sediment resuspension in a vegetated canopy.

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**LEGEND:** (\*) Corresponding author; **Bold font:** ASU PH.D. Student for whom Dr. Kasbaoui is the primary advisor; (#) ASU Undergraduate Student; (~) Presenting author.

## JOURNAL PAPERS UNDER REVIEW

4. **H. Dave**, M. Herrmann, P. Brady, and M. H. Kasbaoui\* and M. Herrmann, Characterization of the forcing and sub-filter scale terms in the volume-filtering immersed boundary method, (*under review at J. Comp. Physics*).
3. M. H. Kasbaoui\* and M. Herrmann, A High-Fidelity Methodology for Particle-Resolved Direct Numerical Simulations, (*under review at Int. J. Multiphase Flow*) arXiv:2404.19030.
2. A. V. S. Nath, A. Roy, and M. H. Kasbaoui\*, Instability of a Dusty Shear Flow, (*under review at J. Fluid Mech.*) arXiv:2405.05539.
1. **J. S. Van Doren** and M. H. Kasbaoui\*, Dynamics of an Oscillatory Boundary Layer over a Sediment Bed, (*under review at J. Fluid Mech.*) arXiv:2404.10945.

## REFEREED JOURNAL PAPERS

13. **J. S. Van Doren** and M. H. Kasbaoui\*, Turbulence Modulation in Dense Liquid-Solid Channel Flow, *Phys. Rev. Fluids* 9, 064306 (2024).
12. **S. Shuai**, A. Roy, and M. H. Kasbaoui\*, The Merger of Co-Rotating Vortices in Dusty Flows, *J. Fluid Mech.* 981, A27 (2024).
11. **H. Dave**, M. Herrmann, and M. H. Kasbaoui\*, The Volume-Filtering Immersed Boundary Method, *Journal of Computational Physics* 487, 112136 (2023).
10. **H. Dave** and M. H. Kasbaoui\*, Mechanisms of Drag Reduction by Semidilute Inertial Particles in Turbulent Channel Flow, *Phys. Rev. Fluids* 8, 084305 (2023).
9. **S. Shuai** and M. H. Kasbaoui\*, Accelerated Decay of a Lamb–Oseen Vortex Tube Laden with Inertial Particles in Eulerian–Lagrangian Simulations, *Journal of Fluid Mechanics* 936, (2022).
8. **S. Shuai**, D. J. Dhas, A. Roy, and M. H. Kasbaoui\*, Instability of a Dusty Vortex, *Journal of Fluid Mechanics* 948, A56 (2022).
7. T. Kulkarni\*, R. Buttay, M. H. Kasbaoui, A. Attili, and F. Bisetti, Reynolds Number Scaling of Burning Rates in Spherical Turbulent Premixed Flames, *Journal of Fluid Mechanics* 906, (2021).
6. M. H. Kasbaoui\*, T. Kulkarni, and F. Bisetti, Direct Numerical Simulations of the Swirling von Kármán Flow Using a Semi-Implicit Moving Immersed Boundary Method, *Computers & Fluids* 230, 105132 (2021).
5. M. H. Kasbaoui\*, Turbulence Modulation by Settling Inertial Aerosols in Eulerian-Eulerian and Eulerian-Lagrangian Simulations of Homogeneously Sheared Turbulence, *Phys. Rev. Fluids* 4, 124308 (2019).
4. M. H. Kasbaoui\*, D. L. Koch, and O. Desjardins, Clustering in Euler–Euler and Euler–Lagrange Simulations of Unbounded Homogeneous Particle-Laden Shear, *Journal of Fluid Mechanics* 859, 174 (2019).
3. M. H. Kasbaoui\*, D. L. Koch, and O. Desjardins, The Rapid Distortion of Two-Way Coupled Particle-Laden Turbulence, *Journal of Fluid Mechanics* 877, 82 (2019).
2. M. H. Kasbaoui\*, R. G. Patel, D. L. Koch, and O. Desjardins, An Algorithm for Solving the Navier–Stokes Equations with Shear-Periodic Boundary Conditions and Its Application to Homogeneously Sheared Turbulence, *Journal of Fluid Mechanics* 833, 687 (2017).

1. M. H. Kasbaoui\*, D. L. Koch, G. Subramanian, and O. Desjardins, Preferential Concentration Driven Instability of Sheared Gas–Solid Suspensions, *Journal of Fluid Mechanics* 770, 85 (2015).

## CONFERENCE PRESENTATIONS & PROCEEDINGS

44. **Dave, H.**<sup>~</sup>, Herrmann, M. and Kasbaoui, M.H. A Novel Approach to Solve PDEs Involving Boundary Conditions on Complex Geometrical Bounding Surfaces Using the Volume-Filtered Immersed Boundary Method. Presented at the 76th Annual Meeting of the APS Division of Fluid Dynamics, 2023.
43. Kasbaoui, M.H.<sup>~</sup> and Herrmann, M. Particle-Resolved DNS of Heavy and Neutrally-Buoyant Particles with the Volume-Filtering Method. Presented at the 76th Annual Meeting of the APS Division of Fluid Dynamics, 2023.
42. **Shuai, S.**<sup>~</sup> and Kasbaoui, M.H. Particle Resuspension by an Impinging Turbulent Jet. Presented at the 76th Annual Meeting of the APS Division of Fluid Dynamics, 2023.
41. **Van Doren, J.**<sup>~</sup> and Kasbaoui, M.H. Particle-Resolved DNS of Flow Modulation Induced by Finite-Size Particles Dispersed in a Turbulent Channel. Presented at the 76th Annual Meeting of the APS Division of Fluid Dynamics, 2023.
40. **Shuai, S.**, Darish, J.D., Anubhab, R. and Kasbaoui, M.H.<sup>~</sup> Vortex Merger in Semi-Dilute Particle-Laden Flow. In Proceedings of the 11th International Conference on Multiphase Flows; Japan, May 2023.
39. Kasbaoui, M.H.<sup>~</sup> and Herrmann, M. A New Strategy for DNS with Fully Resolved Particles Based on Volume-Filtering. In Proceedings of the 11th International Conference on Multiphase Flows; Japan, May 2023.
38. **Dave, H.**<sup>~</sup>, Herrmann, M. and Kasbaoui, M.H. A New Conceptual Approach for Immersed Boundaries Based on Volume-Filtering. Presented at the 75th Annual Meeting of the APS Division of Fluid Dynamics, 2022.
37. **Shuai, S.**<sup>~</sup>, Darish, J.D., Anubhab, R. and Kasbaoui, M.H. Vortex Merger in Semi-Dilute Particle-Laden Flow. Presented at the 75th Annual Meeting of the APS Division of Fluid Dynamics, 2022.
36. Trivedi, P.<sup>#~</sup> and Kasbaoui, M.H. CFD Visualization Using Augmented Reality. Presented at the 75th Annual Meeting of the APS Division of Fluid Dynamics, 2022.
35. **Van Doren, J.**<sup>~</sup> and Kasbaoui, M.H. Dynamics of an Oscillatory Boundary Layer over a Cohesionless Bed of Particles at Increasing Reynolds Number in Eulerian-Lagrangian Simulations. Presented at the 75th Annual Meeting of the APS Division of Fluid Dynamics, 2022.
34. **Van Doren, J.**<sup>~</sup> and Kasbaoui, M.H. Role of Mass Loading on the Onset of Flow Modulation in a Dilute Turbulent Slurry in Eulerian-Lagrangian Simulations. Presented at the AiChE Annual Meeting, USA, 2022.
33. **Dave, H.**<sup>~</sup> and Kasbaoui, M.H. Drag Reduction By Spherical Particles and the Role of Particle Clusters. Presented at the AiChE Annual Meeting, USA, 2022.
32. **Dave, H.**<sup>~</sup> and Kasbaoui, M.H. Skin-Friction Drag Modulation and Riblet-like Clusters in a Semi-Dilute Particle-Laden Turbulent Channel Flow at  $Re_\tau = 180$ . Presented at the 74th Annual Meeting of the APS Division of Fluid Dynamics, USA, 2021.

31. Kasbaoui, **M.H.**, Dave, H. and Herrmann, M. A Novel Mass and Momentum Conserving Immersed Boundary Method Based on Volume-Filtering. Presented at the 74th Annual Meeting of the APS Division of Fluid Dynamics, USA, 2021.
30. **Shuai, S.**, Darish, J.D., Anubhab, R. and Kasbaoui, M.H. Characterization of the Instability of a Rankine Vortex in Semi-Dilute Dusty Flows Using Linear Stability Analysis and Eulerian-Lagrangian Simulations. Presented at the 74th Annual Meeting of the APS Division of Fluid Dynamics, 2021.
29. **Van Doren, J.** and Kasbaoui, M.H. Investigation of Sediment Transport in an Oscillatory Boundary Layer Using Eulerian-Lagrangian Simulations. Presented at the 74th Annual Meeting of the APS Division of Fluid Dynamics, 2021.
28. **Van Doren, J.** and Kasbaoui, M.H. Effect of Particle Size on the Modulation of Near-Wall Turbulent Flow Structures in Particle-Resolved Direct Numerical Simulations and Eulerian-Lagrangian Simulations. Presented at the AiChE Annual Meeting, USA, 2021.
27. **Dave, H.** and Kasbaoui, M.H. Modulation of Skin-Friction Drag By Inertial Particles. In Proceedings of the 25th International Congress of Theoretical and Applied Mechanics; International Union of Theoretical and Applied Mechanics, 2021.
26. **Shuai, S.** and Kasbaoui, M.H. Numerical Investigation of the Stability of a Lamb-Oseen Vortex in Two-Way Coupled Particle-Laden Flows. In Proceedings of the 25th International Congress of Theoretical and Applied Mechanics; International Union of Theoretical and Applied Mechanics, 2021.
25. **Van Doren, J.** and Kasbaoui, M.H. Investigation of the Entrainment of Sediment Grains in an Oscillatory Boundary Layer at Increasing Reynolds Number Using High-Fidelity Eulerian-Lagrangian Simulations. Presented at the ASME 2021 Fluids Engineering Division Summer Meeting, USA, 2021.
24. **Dave, H.** and Kasbaoui, M.H. A Novel Approach to Immersed Boundaries Based on the Volume-Filtering Framework. Presented at the ASME 2021 Fluids Engineering Division Summer Meeting, USA, 2021.
23. **Shuai, S.**, Darish, J.D., Anubhab, R. and Kasbaoui, M.H. Stability Analysis of Vortex Flow With Dispersed Micro Droplets. Presented at the ASME 2021 Fluids Engineering Division Summer Meeting, USA, 2021.
22. **Shuai, S.** and Kasbaoui, M.H. Accelerating the Decay of the Lamb-Oseen Vortex with Disperse Droplets. In Proceedings of the AIAA Aviation 2021 Forum; American Institute of Aeronautics and Astronautics, 2021.
21. **Dave, H.** and Kasbaoui, M.H. Turbulence Modulation by Inertial Particles in Eulerian-Lagrangian Simulations of a Semi-Dilute Particle-Laden Channel Flow. Presented at the 73rd Annual Meeting of the APS Division of Fluid Dynamics, USA, 2020.
20. **Shuai, S.**, Roy, A. and Kasbaoui, M.H. Motion and Instability Properties of Lamb-Oseen Vortex in Particle-Laden Flows. Presented at the 73rd Annual Meeting of the APS Division of Fluid Dynamics, USA, 2020.
19. Darish, J.D., **Shuai, S.**, Kasbaoui, M.H. and Roy, A. Stability of a Particle-Laden Vortex. Presented at the Indian Complex Fluids Symposium 2020, India, 2020.

18. **Dave, H.** and Kasbaoui, M.H. Modulation of Coherent Structures by Inertial Particles in a Turbulent Channel Flow. In Proceedings of the AIAA Scitech 2020 Forum; American Institute of Aeronautics and Astronautics, January 5 2020.
17. **Dave, H.** and Kasbaoui, M.H. Modulation of Coherent Structures by Inertial Particles in a Turbulent Channel Flow. Presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, USA, 2019.
16. Kim, J. and Kasbaoui, M.H. Scale-Dependent Structures of Particle Clusters in Cluster-Induced Turbulence. Presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, USA, 2019.
15. **Shuai, S.** and Kasbaoui, M.H. Stability of a Lamb-Oseen Vortex in Two-Way Coupled Particle-Laden Flows. Presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, USA, 2019.
14. Kasbaoui, M.H. Homogeneously Sheared Particle-Laden Turbulence in Two-Way Coupled Eulerian-Eulerian and Eulerian-Lagrangian Simulations. Presented at the 2019 NETL Multiphase Flow Science Workshop, USA, 2019.
13. Kulkarni, T., Kasbaoui, M.H., Buttay, R., Attili, A. and Bisetti, F. The Scaling of the Surface Area of Turbulent Premixed Spherically Expanding Flames with Reynolds Number. Presented at the 17th International Conference on Numerical Combustion, Germany, 2019.
12. Kasbaoui, M.H. Turbulence Modification by Inertial Aerosols in Two-Way Coupled Eulerian-Eulerian and Eulerian-Lagrangian Simulations. In Proceedings of the 10th International Conference on Multiphase Flows; Brazil, May 2019.
11. Kulkarni, T., Buttay, R., Kasbaoui, M.H., Attili, A. and Bisetti, F. On the Role of Scale Separation in the Enhancement of Burning Rates in Turbulent Premixed Flames. In Proceedings of the 11th U.S. National Combustion Meeting; USA, March 2019.
10. Kasbaoui, M.H. and Bisetti, F. Numerical Characterization of the Von-Kármán Swirling Flow with a Moving Immersed Boundary Method. Presented at the 71st Annual Meeting of the APS Division of Fluid Dynamics, USA, 2018.
9. Kulkarni, T., Kasbaoui, M.H., Buttay, R., Attili, A. and Bisetti, F. On Burning Rate Enhancement in Spherically Expanding Turbulent Flames. Presented at the 71st Annual Meeting of the APS Division of Fluid Dynamics, USA, 2018.
8. Kasbaoui, M.H. and Bisetti, F. Numerical Experiments in the French Laundry Machine. Presented at the 13th Gateway Computing Environments Conference, USA, 2018.
7. Kasbaoui, M.H., Koch, D.L. and Desjardins, O. The Rapid Distortion of Two-Way Coupled Particle-Laden Turbulence. Presented at the 70th Annual Meeting of the APS Division of Fluid Dynamics, USA, 2017.
6. Kasbaoui, M.H., Desjardins, O. and Koch, D.L. Euler-Euler and Euler-Lagrange Simulations of Heavy Particles Clustering in Homogeneously Sheared Gas. Presented at the AiChE Annual Meeting, USA, 2017.
5. Kasbaoui, M.H., Koch, D.L. and Desjardins, O. Role of Preferential Concentration in the Destabilization of Sheared Particle-Laden Flows. In Proceedings of the 10th International Conference on Multiphase Flows; Italy, May 2016.

4. Kasbaoui, M.H.~, Koch, D.L. and Desjardins, O. Numerical Investigation of the Preferential Concentration Instability of Particle Laden Homogeneous Shear. Presented at the 68th Annual Meeting of the APS Division of Fluid Dynamics, USA, 2015.
3. Ireland, P.J.~, Patel, R.G., Capecelatro, J., Fox, R.O., Kasbaoui, M.H. and Desjardins, O. Numerical Simulation of Sheared, Gas-Particle, Cluster-Induced Turbulence. Presented at the AiChE Annual Meeting, USA, 2015.
2. Kasbaoui, M.H.~, Koch, D.L., Subramanian, G. and Desjardins, O. Preferential Concentration Driven Instability of Sheared Gas-Solid Suspension. Presented at the AiChE Annual Meeting, USA, 2014.
1. Kasbaoui, M.H.~, Koch, D., Subramanian, G. and Desjardins, O. Preferential Concentration Driven Instability of Sheared Gas-Solid Suspensions. Presented at the 66th Annual Meeting of the APS Division of Fluid Dynamics, USA, 2013.

## INVITED TALKS

9. “Understanding flow modulation by inertial particles using high-fidelity computational methods”, Los Alamos National Laboratory. (Oct. 2022).
8. “Flow Modulation by Heavy Inertial Particles”, Multiphase Flows - Advances and Future Directions, Complex Systems and Dynamics Group at the Indian Institute of Technology, Madras (Oct. 2021).
7. “High-fidelity computational methods for geophysical particle-laden turbulence”, Department of Aerospace Engineering, Indian Institute of Technology Madras (Sep. 2021).
6. “Theoretical & Computational Modeling of Turbulent Particle-Laden Flows”, Department of Applied Mechanics, Indian Institute of Technology Madras (Oct. 2020).
5. “Clustering of Heavy Inertial Particles in Homogeneously Sheared Gas”. School for Engineering of Matter, Transport & Energy, Arizona State University (Mar. 2018).
4. “Clustering of Heavy Inertial Particles in Homogeneously Sheared Gas”. Department of Mechanical and Aerospace Engineering, University of California San Diego (Jan. 2018).
3. “Clustering of Inertial Aerosols in Homogeneously Sheared Gas”. Institute for Computational Sciences and Engineering, University of Texas at Austin (June 2017).
2. “Clustering of Inertial Aerosols in Homogeneously Sheared Gas”. Center for Turbulence Research Tea Seminar, Stanford University (June 2017).
1. “Preferential Concentration Driven Instability of Sheared Gas-Solid Suspensions”. Ecole Polytechnique de Tunis (Apr. 2015).

## STUDENT SUPERVISION

### PhD students (as chair):

Student	Status	Term	Placement
Morrison Rickard	ongoing	–	–
Jonathan van Doren	ongoing	–	–
Shuai Shuai	graduated	Spring 2024	Postdoc at Cornell University
Himanshu Dave	graduated	Spring 2024	TBD

### Undergraduate students (as Honors or research mentor):

<b>Student</b>	<b>Role</b>	<b>Terms</b>	<b>Awards</b>
James Freeman	Research mentor	S24 – present	–
Parin Trivedi	Research mentor	S21 – F22	FURI Award
Joseph Crespo	Research mentor	F21 – F21	FURI Award
Abdi Awale	Research mentor	S20 – S21	FURI Award
Chase Lee	Honors, co-chair	F20 – S21	–
Parker Olszak	Honors, co-chair	F20 – S21	–
Kevin Heitmann	Honors, co-chair	F20 – S21	–
David Jack Madden	Honors, chair	S20 – S21	FURI Award, NASA/ASU Space grant Award
Diaz Areli	Research mentor	S19 – F19	FURI Award

## TEACHING

### At Arizona State University:

<b>Session</b>	<b>Course number</b>	<b>Course title</b>	<b>Enrollment</b>
Spring 2024	MAE 501	Linear Algebra in Engineering	76
Fall 2023	MAE 574	Multiphase Flow	8
Spring 2023	MAE/MSE 501	Linear Algebra in Engineering	140
Fall 2022	MAE 242	Introduction to Fluid Dynamics	99
Spring 2022	MAE/MSE 501	Linear Algebra in Engineering	145
Fall 2021	MAE/MSE 501	Linear Algebra in Engineering	196
Spring 2021	MAE 242	Introduction to Fluid Dynamics	69
Fall 2020	MAE/MSE 501	Linear Algebra in Engineering	143
Spring 2020	MAE 242	Introduction to Fluid Dynamics	92
Spring 2019	MAE 242	Introduction to Fluid Dynamics	100

### At Cornell University:

MAE 4230: Intermediate Fluid Dynamics with CFD, TA	<i>Spring 2016</i>
MAE 4272: Heat Transfer Laboratory, TA	<i>Fall 2015</i>

## UNIVERSITY SERVICE

### At Arizona State University:

Member of the Governing Board of ASU Research Computing	<i>Fall 2022 – present</i>
Outreach with ASU Open Doors	<i>Fall 2022 – present</i>
Faculty mentor for Fulton Undergraduate Research Initiative	<i>Fall 2019 – present</i>
Faculty mentor for NSF REU Visual Media	<i>Fall 2020 – 2023</i>
Faculty mentor for ASU/NASA Space Grant	<i>Fall 2020 – present</i>
Member of the New Faculty Advisory Committee	<i>Fall 2019 – Spring 2021</i>
Member of MAE Faculty Search Committee	<i>Spring 2020</i>
Lead organizer of the ASU Fluids Seminar	<i>Spring 2019 – Spring 2021</i>

### At Cornell University:

Coordinator for the Cornell Fluid Dynamics Seminar	<i>Spring 2015</i>
Contributor to the CFD e-learning platform SimCafe.org	<i>2014-2015</i>
Outreach with underserved youth with the Cornell Ornithology Lab	<i>Summer 2016</i>



## EXTERNAL SERVICE

### **Proposal Reviewer for**

- National Science Foundation.
- American Chemical Society.

### **Service to the American Physical Society Division of Fluid Dynamics:**

- Member of the local organizing committee of the 2021 annual meeting of APS DFD.
- Session chair at the annual meeting of APS DFD in 2021 & 2023.

### **Journal Reviewer for**

- Journal of Fluid Mechanics, Journal of Computational Physics, AiChE Journal, Computers & Fluids, Proceedings of The Combustion Institute, Progress in Computational Fluid Dynamics, Energy & Fuels, Journal of Non-Equilibrium Thermodynamics.