Kunihiko Taira

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Research Interests

- Computational Fluid Dynamics
- Active Flow Control
- Stability/Modal Analysis
- Data Science
- Unsteady Aerodynamics
- Vortex Dynamics
- Network Science
- High Performance Computing

Education

California Institute of Technology

- Ph.D., Mechanical Engineering (minor: Aeronautics), 2003-2008
  Thesis: The immersed boundary projection method and its application to simulation and control of flows around low-aspect-ratio wings (advisor: Tim Colonius)
- M.S., Mechanical Engineering, 2002-2003

University of Tennessee, Knoxville

- B.S., Aerospace Engineering & Mathematics (double major), 1998-2002

Appointments

University of California, Los Angeles, CA, USA

- Professor, 2021-present
- Vice Chair of Industry Relations, 2026-present
- Associate Professor, 2018-2021

  Department of Mechanical and Aerospace Engineering

Tokyo University of Science, Tokyo, Japan

- Visiting Professor/Global Lecturer, 2021
- Visiting Associate Professor, 2019

  Graduate School of Engineering

Florida State University, Tallahassee, FL, USA

- Associate Professor, 2017-2018
- Assistant Professor, 2011-2017

  Department of Mechanical Engineering, FAMU-FSU College of Engineering

  Florida Center for Advanced Aero-Propulsion (FCAAP)

U.S. Air Force Research Laboratory, Wright–Patterson Air Force Base, OH, USA

- Visiting Professor, 2012, 2013

  Aerospace Systems Directorate (Air Vehicles Directorate)

Honda R&D Co., Ltd., Wako, Saitama, Japan

- Engineer (Level H-3), 2010-2011

  Fundamental Technology Research Center (Department of Dynamic Modeling and Simulation & Department of Structural and Fluid Dynamics)

Princeton University, Princeton, NJ, USA

- Postdoctoral Research Associate, 2008-2010

  Advisor: Prof. Clancy Rowley; Department of Mechanical and Aerospace Engineering

Princeton Plasma Physics Laboratory, US Department of Energy, Princeton, NJ, USA

- Postdoctoral Research Associate (through Princeton Univ), 2008-2010

  Advisors: Prof. Clancy Rowley & Dr. David Gates

  Advanced Scenarios and Control, National Spherical Torus Experiment

California Institute of Technology, Pasadena, CA, USA

- Postdoctoral Research Scholar, 2008; Graduate Research Assistant, 2002-2008

  Advisor: Prof. Tim Colonius; Option of Mechanical Engineering

Oak Ridge National Laboratory, US Department of Energy, Oak Ridge, TN, USA

- Research Intern (ORISE), 2001-2002

  Center for Thermal Sciences

University of Tennessee, Knoxville, TN, USA

- Undergraduate Research Assistant, 2000-2002

  Advisor: Prof. Jay Frankel; Department of Mechanical, Aerospace, and Biomedical Eng
- Undergraduate Research Assistant, 2000

  Advisor: Prof. Ke Nguyen; Department of Mechanical, Aerospace, and Biomedical Eng

Honors and Awards

- **American Physical Society, Fellow (DFD), 2024**
- AFRL/AFOSR Chief Scientist Distinguished Lecture, 2023
- **Vannevar Bush Faculty Fellowship (DoD), 2022**
- Visiting Professor/Global Lecturer (Tokyo Univ of Science), 2021
- Outstanding Teaching Award (UCLA/MAE), 2019-20
- Invited Keynote Lecturer (*Network Science for Fluid Dynamics*), Montestigliano Spring School, (ERCOFTAC), 2019
- Visiting Associate Professor (Tokyo Univ of Science), 2019
- Developing Scholar Award (FSU), 2018
- University Undergraduate Teaching Award (FSU), 2017
- **American Institute of Aeronautics and Astronautics, Associate Fellow, 2017**
- **ONR Young Investigator Award, 2016**
- Teaching Excellence Award (ASME FAMU/FSU chapter), 2016
- National Academy of Engineering, Frontiers of Engineering Education 2014
- **AFOSR Young Investigator Award, 2013**
- AFRL Summer Research Faculty Fellowship (UTC, ASEE), 2012, 2013
- Research Excellence Award (College of Engineering, FAMU-FSU), 2013
- First Year Assistant Professor Award (FSU), 2012
- Richard Bruce Chapman Memorial Award, *distinction for research in hydrodynamics* (Caltech), 2008
- Ross M. Brown Foundation Travel Grant (Caltech), 2007
- Special Institute Fellowship (Caltech), 2002-2003
- Engineering and Applied Science Fellowship (Caltech), 2002-2003
- Mechanical, Aerospace Engineering and Engineering Science Scholarship (UT), 2001-2002

- Engineering Academic Achievement Scholarship (UT), 1999-2002
- Dean's List, Summa Cum Laude (UT), 1998-2002
- John M. Allen Mathematics Prize, 1st place, *math competition for freshmen* (UT), 1999
- Engineering Scholarships and Fellowships (UT), 1998-1999
- US President's Award for Educational Excellence (DoEd), 1998

Teaching

UCLA

- Spring 2027, Mechanical and Aerospace Eng 252E: Data Science for Fluid Dynamics (G)
- Spring 2026, Mechanical and Aerospace Eng 150B: Aerodynamics (U)
- Winter 2026, Mechanical and Aerospace Eng 250A: Foundations of Fluid Dynamics (G)
- Spring 2025, Mechanical and Aerospace Eng 250H: CFD for Incompressible Flows (G)
- Winter 2025, Mechanical and Aerospace Eng 250A: Foundations of Fluid Dynamics (G)
- Spring 2024, Mechanical and Aerospace Eng 252E: Data Science for Fluid Dynamics (G)
- Winter 2024, Mechanical and Aerospace Eng 150A: Intermediate Fluid Mechanics (U)
- Spring 2023, Mechanical and Aerospace Eng 250H: CFD for Incompressible Flows (G)
- Winter 2023, Mechanical and Aerospace Eng 150A: Intermediate Fluid Mechanics (U)
- Spring 2022, Mechanical and Aerospace Eng 252E: Data Science for Fluid Dynamics (G)
- Winter 2022, Mechanical and Aerospace Eng 250A: Foundations of Fluid Dynamics (G)
- Fall 2021, Mechanical and Aerospace Eng 150A: Intermediate Fluid Mechanics (U)
- Spring 2021, Mechanical and Aerospace Eng 250H: Num Meth for Incomp Flows (G)
- Winter 2021, Mechanical and Aerospace Eng 250A: Foundations of Fluid Dynamics (G)
- Fall 2020, Mechanical and Aerospace Eng 150A: Intermediate Fluid Mechanics (U)
- Spring 2020, Mechanical and Aerospace Eng 259A: Data Science for Fluid Dynamics* (G)
- Winter 2020, Mechanical and Aerospace Eng 250A: Foundations of Fluid Dynamics (G)
- Fall 2019, Mechanical and Aerospace Eng 150A: Intermediate Fluid Mechanics (U)

  Notes: $*$ = new course; blue = planned; U/G = undergraduate/graduate courses

European Research Community On Flow, Turbulence and Combustion (ERCOFTAC)

- April 2019, Invited Keynote Lecturer

  Montestigliano Spring School: *Network Science for Fluid Dynamics*

Florida State University

- Fall 2018, Mechanical Engineering 5930: CFD for Incompressible Flows (G)
- Fall 2017, Mechanical Engineering 4930/5930: Network Analysis (U/G)
- Spring 2017, Mechanical Engineering 4930: Numerical Methods for Engineers (U)
- Fall 2016, Mechanical Engineering 5930: CFD for Incompressible Flows (G)
- Spring 2016, Mechanical Engineering 4930: Numerical Methods for Engineers (U)
- Fall 2015, Mechanical Engineering 4930/5930: Network Analysis* (U/G)

- Spring 2015, Mechanical Engineering 4930: Numerical Methods for Engineers (U)
- Fall 2014, Mechanical Engineering 5930: CFD for Incompressible Flows (G)
- Spring 2014, Mechanical Engineering 4930: Numerical Methods for Engineers* (U)
- Fall 2013, Mechanical Engineering 5709: Fluid Mechanics (G)
- Spring 2013, Mechanical Engineering 5930: CFD for Incompressible Flows (G)
- Fall 2012, Mechanical Engineering 5709: Fluid Mechanics (G)
- Spring 2012, Mechanical Engineering 5930: CFD for Incompressible Flows* (G)
- Fall 2011, Mechanical Engineering 5709: Fluid Mechanics (G)

  Note: $*$ new course; U/G = undergraduate/graduate courses

American Institute of Aeronautics and Astronautics (AIAA)

- Co-organizer/instructor (with D. Williams and D. Miller), Jan 2013

  Professional Development Course: *Flow Control for Specialists*

  (2 chapters on fluid flow modeling) at 2013 AIAA Aerospace Sciences Meeting

California Institute of Technology

- Graduate Teaching Assistant, 2004 - 2005

  Aeronautics/App Comp Math 232abc: Computational Fluid Dynamics

University of Tennessee, Knoxville

- Substitute Lecturer, 2002

  Mechanical Engineering 391, Engineering Analysis
- Tutor, 1999-2001

  Mathematics Tutorial Center, Department of Mathematics

Publications

Books

1. T. Kajishima and K. Taira, "Computational Fluid Dynamics: Incompressible Turbulent Flows," Springer, 2017.
2. K. Duraisamy, S. L. Brunton, and K. Taira, "Chapter 1: Introduction to Turbulence & Learning from Data" in K. Duraisamy (ed) "Data Driven Analysis and Modeling of Turbulent Flows," Academic Press, 2025.

Journal Papers

In Review

127. Y. Iwatani, K. Taira, and S. Kawai, "Forcing-Informed Resolvent Analysis: Identification of Input-Output Relations in Self-Sustained Flows," *Journal of Fluid Mechanics*, in review, 2026.

126. S. Ahnert, E. Lagemann, H. J. Bae, K. Taira, R. Vinuesa, C. Lagemann, and S. L. Brunton, "Weak Dominant Balance for Robust Identification of Dynamically Consistent Fluid Flow Structure," *Nature Computational Science*, in review, 2026.

125. Y. Kim, K. Yawata, H. Nakao, and K. Taira, "Data-Driven Oscillator Model for Multi-Frequency Turbulent Flows," *Physical Review Fluids*, in review, 2026.

124. V. Godavarthi, Y. Kawamura, L. S. Ukeiley, L. N. Cattafesta, and K. Taira, "Phase-Based Analysis and Control of Supersonic Turbulent Cavity Flows," *Journal of Fluid Mechanics*, in review, 2025.

2027

123. K. Taira, M. Amitay, and V. Theofilis, "Three-Dimensional Massively Separated Flows over Wings," *Annual Review of Fluid Mechanics*, accepted, 2026.

2026

122. H. Odaka, L. Smith, and K. Taira, "Extreme Vortex Gust Encounters by a Square Wing," *Journal of Fluid Mechanics*, 1037, A67, 2026.

121. B. Lopez-Doriga, A. R. M. Jones, and K. Taira, "On the Effect of Airfoil Geometry on Extreme Vortex-Gust Encounters," *Journal of Fluid Mechanics*, 1037, A61, 2026.

120. Y. Zhong, L. V. Rolandi, B. An, M. Nohmi, and K. Taira, "Biglobal Resolvent Analysis of Off-Design Turbulent Flow Inside a Centrifugal Pump," *Journal of Fluids Engineering*, 148(7), 071205, 2026.

119. H. Odaka, B. Lopez-Doriga, and K. Taira, "Vortical Similarities Across Laminar and Turbulent Extreme Gust Encounters," *Journal of Fluid Mechanics*, 1031, R3, 2026.

118. K. Taira, "Reducing Complex Physics to its Phase Dynamics," *Journal of Fluid Mechanics*, 1028, F1 (invited), 2026.

117. J. Tran, C.-A. Yeh, and K. Taira, "Using Optimal Transport Aligned Latent Embeddings for Separated Flow Analysis," *Journal of Fluid Mechanics*, 1027, A24, 2026.

116. K. Taira, "Extreme Aerodynamics: A Data-Driven Perspective," *Physical Review Fluids*, 11, 014702 (invited), 2026.

2025

115. K. Yawata, R. Sakuma, K. Fukami, K. Taira, and H. Nakao, "Phase Autoencoder for Rapid Data-Driven Synchronization of Rhythmic Spatiotemporal Patterns," *Physical Review E*, 112, 064211, 2025.

114. A. J. Linot, H. Hang, E. Kanso, and K. Taira, "Hierarchical Equivariant Graph Neural Networks for Forecasting Collective Motion in Vortex Clusters and Microswimmers," *Communications Physics*, 8, 515, 2025.

113. L. V. Rolandi, L. Smith, M. Amitay, V. Theofilis, and K. Taira, "Biglobal Resolvent Analysis of Separated Flow over a NACA0012 Airfoil," *Journal of Fluid Mechanics*, 1021, A53, 2025.

112. K. Taira, G. Rigas, and K. Fukami, "Machine Learning in Fluid Dynamics: A Critical Assessment," *Physical Review Fluids*, 10, 090701 (invited), 2025.

111. K. Fukami, K. Fukagata, and K. Taira, "Super-Resolution Analysis of Turbulence with Machine Learning," *Nagare-Journal of Japan Society of Fluid Mechanics*, 44(3), 216-221 (invited, in Japanese), 2025.

110. K. Fukami, L. Smith, and K. Taira, "Extreme Vortex-Gust Airfoil Interactions at Reynolds Number 5,000," *Physical Review Fluids*, 10, 084703, 2025.

109. A. J. Linot, B. Lopez-Doriga, Y. Zhong, and K. Taira, "Extracting Dominant Dynamics about Unsteady Base Flows," *Fluid Dynamics Research*, 57(3), 031401 (invited), 2025.

108. K. Fukami and K. Taira, "Observable-Augmented Manifold Learning for Multi-Source Turbulent Flow Data," *Journal of Fluid Mechanics*, 1010, R4, 2025.

107. V. Godavarthi, K. Krishna, S. L. Brunton, and K. Taira, "Leveraging Three-Dimensionality for Navigation in Bluff-Body Wakes," *Flow*, 5, E8, 2025.

106. Y. Zhong, A. Amiri-Margavi, H. Babaee, and K. Taira, "Optimally Time-Dependent Modes of Vortex Gust-Airfoil Interactions," *Journal of Fluid Mechanics*, 1006, A18, 2025.

2024

105. K. Fukami and K. Taira, "Single-Snapshot Machine Learning for Super-Resolution of Turbulence," *Journal of Fluid Mechanics*, 1001, A32, 2024.

104. Y. Kim, V. Godavarthi, L. V. Rolandi, J. T. Klamo, and K. Taira, "Influence of Three-Dimensionality on Wake Synchronization of Oscillatory Cylinder," *Journal of Fluid Mechanics*, 1001, A24, 2024.

103. J. Tran, K. Fukami, K. Inada, D. Umehara, Y. Ono, K. Ogawa, and K. Taira, "Aerodynamics-Guided Machine Learning for Design Optimization of Electric Vehicles," *Communications Engineering*, 3, 174, 2024.

102. A. J. Linot, P. J. Schmid, and K. Taira, "On the Laminar Solutions and Stability of Accelerating and Decelerating Channel Flows," *Journal of Fluid Mechanics*, 999, A43, 2024.

101. L. Smith and K. Taira, "The Effect of Reynolds Number on the Separated Flow over a Low-Aspect-Ratio Wing," *Journal of Fluid Mechanics*, 992, R2, 2024.

100. L. V. Rolandi, J. H. M. Ribeiro, C.-A., Yeh, and K. Taira, "An Invitation to Resolvent Analysis," *Theoretical and Computational Fluid Dynamics*, 38, 603-639 (invited), 2024.

99. K. Fukami, H. Nakao, and K. Taira, "Data-Driven Transient Lift Attenuation for Extreme Vortex Gust-Airfoil Interactions," *Journal of Fluid Mechanics*, 992, A17, 2024.

98. J. H. M. Ribeiro and K. Taira, "Triglobal Resolvent-Analysis-Based Control of Separated Flows around Low-Aspect-Ratio Wings," *Journal of Fluid Mechanics*, 995, A13, 2024.

97. K. Yawata, K. Fukami, K. Taira, and H. Nakao, "Phase Autoencoder for Limit-Cycle Oscillators," *Chaos*, 34, 063111, 2024.

96. K. Fukami, S. Goto, and K. Taira, "Data-Driven Nonlinear Turbulent Flow Scaling with Buckingham Pi Variables," *Journal of Fluid Mechanics*, 984, R4, 2024.

95. S. Peitz, J. Stenner, V. Chidananda, O. Wallscheid, S. L. Brunton, and K. Taira, "Distributed Control of Partial Differential Equations Using Convolutional Reinforcement Learning," *Physica D: Nonlinear Phenomena*, 461, 134096, 2024.

94. L. Smith, K. Fukami, G. Sedky, A. Jones, K. Taira, "A Cyclic Perspective on Transient Gust Encounters Through the Lens of Persistent Homology," *Journal of Fluid Mechanics*, 980, A180, 2024.

93. D. Chen, F. Kaiser, J. Hu, D. E. Rival, K. Fukami, and K. Taira, "Estimating Aerodynamic Loads in Gusty Environments: A Machine Learning Approach with Sparse Pressure Data," *AIAA Journal*, 62(1). 275-290, 2024.

2023

92. V. Godavarthi, Y. Kawamura, and K. Taira, "Optimal Waveform for Fast Entrainment of Airfoil Wakes," *Journal of Fluid Mechanics*, 976, R1, 2023.
91. J. H. M. Ribeiro, J. Neal, A. Burtsev, M. Amitay, V. Theofilis, and K. Taira, "Laminar Post-Stall Wakes of Tapered Swept Wings," *Journal of Fluid Mechanics*, 976, A6, 2023.
90. K. Fukami and K. Taira, "Grasping Extreme Aerodynamics on a Low-Dimensional Manifold," *Nature Communications*, 14, 6480, 2023.
89. K. Fukami, K. Fukagata, and K. Taira, "Super-Resolution Analysis via Machine Learning: A Survey for Fluid Flows," *Theoretical and Computational Fluid Dynamics*, 37, 421-444 (invited), 2023.
88. Y. Zhong, K. Fukami, B. An, and K. Taira, "Sparse Sensor Reconstruction of Vortex-Impinged Airfoil Wake with Machine Learning," *Theoretical and Computational Fluid Dynamics*, 37, 269-289, 2023.
87. Y. Iwatani, H. Asada, C.-A. Yeh, K. Taira, and S. Kawai, "Identifying the Self-Sustained Mechanisms of Transonic Airfoil Buffet with Resolvent Analysis," *AIAA Journal*, 61(6), 2400-2411, 2023.
86. V. Anantharaman, J. Feldkamp, K. Fukami, and K. Taira, "Image and Video Compression of Fluid Flow Data," *Theoretical and Computational Fluid Dynamics*, 37, 61-82, 2023.
85. Y. Kojima, C. S. Skene, C.-A. Yeh, K. Taira, and M. Kameda, "On the Origin of Quadrupole Sound from a Two-Dimensional Aerofoil Trailing Edge," *Journal of Fluid Mechanics*, 958, A3, 2023.
84. A. Towne, S. T. M. Dawson, G. A. Brès, A. Lozano-Durán, T. Saxton-Fox, A. Parthasarthy, A. R. Jones, H. Biler, C.-A. Yeh, H. D. Patel, and K. Taira, "A Database for Reduced-Complexity Modeling of Fluid Flows," *AIAA Journal*, 61(7), 2867-2892, 2023.
83. J. H. M. Ribeiro, C.-A. Yeh, and K. Taira, "Triglobal Resolvent Analysis of Swept-Wing Wakes," *Journal of Fluid Mechanics*, 954, A42, 2023.

2022

82. Y. Kawamura, V. Godavarthi, and K. Taira, "Adjoint-Based Phase Reduction Analysis of Incompressible Periodic Flows," *Physical Review Fluids*, 7, 104401, 2022.
81. K. Fukami, B. An, M. Nohmi, M. Obuchi, and K. Taira, "Machine-Learning-Based Reconstruction of Turbulent Vortices from Sparse Pressure Sensors in a Pump Sump," *Journal of Fluids Engineering*, 144(12), 121501, 2022.
80. J. H. M. Ribeiro, C.-A. Yeh, K. Zhang, and K. Taira, "Wing Sweep Effect on Laminar Separated Flows," *Journal of Fluid Mechanics*, 950, A23, 2022.
79. C. S. Skene, C.-A. Yeh, P. J. Schmid and K. Taira, "Sparsifying the Resolvent Forcing Mode via Gradient-Based Optimisation," *Journal of Fluid Mechanics*, 944, A52, 2022.
78. A. Burtsev, W. He, S. Hayostek, K. Zhang, V. Theofilis, K. Taira, and M. Amitay, "Linear Modal Instabilities around Post-Stall Swept Finite Aspect Ratio Wings at Low Reynolds Numbers," *Journal of Fluid Mechanics*, 944, A6, 2022.
77. K. Taira and A. G. Nair, "Network-Based Analysis of Fluid Flows: Progress and Outlook," *Progress in Aerospace Sciences*, 131, 100823, 2022.

76. T. R. Ricciardi, W. R. Wolf, and K. Taira, "Transition, Intermittency and Phase Interference Effects in Airfoil Secondary Tones and Acoustic Feedback Loop," *Journal of Fluid Mechanics*, 937, A23, 2022.

75. K. Zhang and K. Taira, "Laminar Vortex Dynamics around Forward-Swept Wings," *Physical Review Fluids*, 7, 024704, 2022.

74. S. Singh, L. Ukeiley, Y. Zhang, L. Cattafesta, and K. Taira, "Supersonic Cavity Flow Control using a Spanwise Array of Leading-Edge Tabs," *Journal of Aircraft*, 59(3), 788-798, 2022.

73. C. S. Skene and K. Taira, "Phase Reduction Analysis of Periodic Thermoacoustic Oscillations in a Rijke Tube," *Journal of Fluid Mechanics*, 933, A35, 2022.

72. R. Richardson, B. Eckert, Y. Zhang, L. N. Cattafesta, A. Edstrand, Y. Sun, P. Schmid, and K. Taira, "Experimental Attenuation of a Trailing Vortex Inspired by Stability Analysis," Proceedings of IUTAM Transition 2019, Springer, 313-323, 2022.

2021

71. K. Ishimoto, A. Inasawa, R. Onishi, S. Kawai, G. Kikugawa, T. Kouchi, S. Komurasaki, M. Sakai, N. Sugimoto, H. Suzuki, K. Taira, S. Tamano, and Y. Hasegawa, "Vision 'Fluid Mechanics 2030'," *Nagare-Journal of Japan Society of Fluid Mechanics*, 40, 434-448, 2021.

70. A. G. Nair, K. Taira, B. W. Brunton, and S. L. Brunton, "Phase-Based Control of Periodic Fluid Flows," *Journal of Fluid Mechanics*, 927, A30, 2021.

69. K. Fukami, R. Maulik, N. Ramachandra, K. Fukagata, and K. Taira, "Global Field Reconstruction from Sparse Sensors with Voronoi Tessellation-Assisted Deep Learning," *Nature Machine Intelligence*, 3, 945-951, 2021.

68. Q. Liu, Y. Sun, C.-A. Yeh, L. S. Ukeiley, L. N. Cattafesta, and K. Taira, "Unsteady Control of Supersonic Turbulent Cavity Flow Based on Resolvent Analysis," *Journal of Fluid Mechanics*, 925, A5, 2021.

67. K. Taira, "Machine Learning for Fluid Flow Analysis," Special Issue on 'Machine Learning x Thermal-Fluids Engineering,' *JSME Magazine* (invited, in Japanese), 124(1232), 6-9, 2021.

66. S. Andalib, K. Taira, and H. P. Kavehpour, "Data-Driven Time-Dependent State Estimation for Interfacial Fluid Mechanics in Evaporating Droplets," *Scientific Reports*, 11, 13579, 2021.

65. M. A. Khodkar, J. T. Klamo, and K. Taira, "Phase-Locking of Laminar Wake to Periodic Vibrations of a Circular Cylinder," *Physical Review Fluids*, 6, 034401, 2021.

64. M. Gopalakrishnan Meena and K. Taira, "Identifying Vortical Network Connectors for Turbulent Flow Modification," *Journal of Fluid Mechanics*, 915, A10, 2021.

63. C.-A. Yeh, M. Gopalakrishnan Meena, and K. Taira, "Network Broadcast Mode Analysis and Control of Turbulent Flows," *Journal of Fluid Mechanics*, 910, A15, 2021.

62. K. Fukami, K. Fukagata, and K. Taira, "Machine Learning Based Spatio-Temporal Super Resolution Reconstruction of Turbulent Flows," *Journal of Fluid Mechanics*, 909, A9, 2021.

61. B. An, M. Nohmi, M. Obuchi, Q. Liu, and K. Taira, "A Research Outlook on Turbulent Vortex Control in Pump Sump," *Hydraulics and Pneumatics*, 1, 2021.

2020

60. R. Maulik, K. Fukami, N. Ramachandra, K. Fukagata, and K. Taira, "Probabilistic Neural Networks for Fluid Flow Model-Order Reduction and Data Recovery," *Physical Review Fluids*, 5, 104401, 2020.

59. K. Zhang, S. Hayostek, M. Amitay, A. Burtsev, V. Theofilis, and K. Taira, "Laminar Separated Flows over Finite-Aspect-Ratio Swept Wings," *Journal of Fluid Mechanics*, 905, R1, 2020.

58. M. A. Khodkar and K. Taira, "Phase-Synchronization Properties of Laminar Cylinder Wake for Periodic External Forcings," *Journal of Fluid Mechanics*, 904, R1, 2020.

57. C.-A. Yeh, S. I. Benton, K. Taira, and D. J. Garmann, "Resolvent Analysis of an Airfoil Laminar Separation Bubble at Re = 500,000," *Physical Review Fluids*, 5, 083906, 2020.

56. S. L. Brunton, M. S. Hemati, and K. Taira, "Special Issue on Machine Learning and Data-Driven Methods in Fluid Dynamics," *Theoretical and Computational Fluid Dynamics*, 34, 333-337 (invited), 2020.

55. K. Fukami, K. Fukagata, and K. Taira, "Assessments of Supervised Machine Learning for Fluid Flows," *Theoretical and Computational Fluid Dynamics*, 34, 497-519 (invited), 2020.

54. K. Zhang, S. Hayostek, M. Amitay, W. He, V. Theofilis, and K. Taira, "On the Formation of Three-Dimensional Flows over Wings under Tip Effects," *Journal of Fluid Mechanics*, 895, A9, 2020.

53. Q. Liu, B. An, M. Nohmi, M. Obuchi, and K. Taira, "Active Flow Control of a Pump-Induced Wall-Normal Vortex with Steady Blowing," *Journal of Fluids Engineering*, 142(8), 081202, 2020.

52. J. H. M. Ribeiro, C.-A. Yeh, and K. Taira, "Randomized Resolvent Analysis," *Physical Review Fluids*, 5, 033902, 2020.

51. K. Taira, M. S. Hemati, and L. S. Ukeiley, "Modal Analysis of Fluid Flows: Introduction to the Virtual Collection," *AIAA Journal*, 58(3), 991-993 (invited), 2020.

50. K. Taira, M. S. Hemati, S. L. Brunton, Y. Sun, K. Duraisamy, S. Bagheri, S. T. M. Dawson, and C.-A. Yeh, "Modal Analysis of Fluid Flows: Applications and Outlook," *AIAA Journal*, 58(3), 998-1022 (invited), 2020.

49. Y. Sun, Q. Liu, L. N. Cattafesta, L. S. Ukeiley, and K. Taira, "Resolvent Analysis of Compressible Laminar and Turbulent Cavity Flows," *AIAA Journal*, 58(3) 1046-1055 (invited), 2020.

48. Y. Kojima, C.-A. Yeh, K. Taira, and M. Kameda, "Resolvent Analysis on the Origin of Two-Dimensional Transonic Buffet," *Journal of Fluid Mechanics*, 885, R1, 2020.

2019

47. K. Fukami, K. Fukagata, and K. Taira, "Applications of a Machine-learned Super-Resolution Algorithm to Two-Dimensional Flow Fields," *Nagare-Journal of Japan Society of Fluid Mechanics*, 38(6), 395-398 (invited), 2019.

46. Z. Bai, N. B. Erichson, M. Gopalakrishnan Meena, K. Taira, and S. L. Brunton, "Randomized Methods to Characterize Large-Scale Vortical Flow Networks: A Scalable Framework for Low-Rank Approximation," *PLOS One*, 14(11), e0225265, 2019.

45. A. G. Nair, C.-A. Yeh, E. Kaiser, B. R. Noack, S. L. Brunton, and K. Taira, "Cluster-Based Feedback Control of Turbulent Post-Stall Separated Flows," *Journal of Fluid Mechanics*, 875, 345-375, 2019.

44. B. L. O. Ramos, W. R. Wolf, C.-A. Yeh, and K. Taira, "Active Flow Control for Drag Reduction of a Plunging Airfoil under Deep Dynamic Stall," *Physical Review Fluids*, 4, 074603, 2019.

43. K. Taira, "Revealing Essential Dynamics from High-Dimensional Fluid Flow Data and Operators," *Nagare-Journal of Japan Society of Fluid Mechanics* (invited), 38, 52-61, 2019.

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84. A. Linot and K. Taira, "Transient Growth in Unsteady Gust-Airfoil Encounters," *14th International Symposium on Turbulence and Shear Flow Phenomena (TSFP14)*, Heidelberg, Germany, July 28-31, 2026.
83. Y. Iwatani, K. Taira, and S. Kawai, "Data-Driven Forcing-Informed Resolvent Analysis," *14th International Symposium on Turbulence and Shear Flow Phenomena (TSFP14)*, Heidelberg, Germany, July 28-31, 2026.
82. Y. Kim, K. Yawata, H. Nakao, and K. Taira, "Autoencoder-Based Oscillator Extraction from Multifrequency Flows," *AIAA Aviation*, San Diego, CA, June 8-12, 2026.
81. B. Lopez-Doriga and K. Taira, "Deep-Learning Based Airfoil Shape Optimization for Extreme Vortex Gusts," *AIAA Aviation*, San Diego, CA, June 8-12, 2026.
80. H. Odaka and K. Taira, "Large-Scale Vortical Similarities Between Laminar and Turbulent Extreme Aerodynamics," *Fifth Colloquium on Vortex Dominated Flows (DisCoVor)*, Edinburgh, UK, June 8-11, 2026.

79. Z. Liu, K. Taira, and J. Eldredge, "Characterization of Vortical Gust Encounters of a Delta Wing," *Fifth Colloquium on Vortex Dominated Flows (DisCoVor)*, Edinburgh, UK, June 8-11, 2026.

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78. H. Odaka, K. Fukami, and K. Taira, "Plunging Airfoil Wakes in Low-Order Latent Space Coordinates," *AIAA Aviation*, Las Vegas, NV, Jul. 21-25, 2025.
77. B. Lopez-Doriga and K. Taira, "The Effect of Airfoil Geometry on Low-Order Representations of Extreme Unsteady Aerodynamics," *Fourth Colloquium on Vortex Dominated Flows (DisCoVor)*, Boseman, MT, June 3-6, 2025.
76. H. Omichi, A. J. Linot, K. Fukagata, and K. Taira, "Reinforcement Learning with Symmetry Reduction for Rotating Cylinder Wakes: Finding Unstable Low-Drag Fixed Points," *AIAA SciTech*, Orlando, FL, Jan. 6-10, 2025.
75. L. V. Rolandi, L. Smith, and K. Taira, "Triglobal Resolvent Analysis of Finite Wing Wakes," *AIAA SciTech*, Orlando, FL, Jan. 6-10, 2025.

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74. K. Fukami and K. Taira, "Data-Driven Modeling, Sensing, and Control of Extreme Vortex-Airfoil Interactions," *AIAA Aviation*, Las Vegas, NV, July 29-Aug 2, 2024.
73. Y. Zhong, A. Amiri-Margavi, H. Babaee, and K. Taira "Transient Perturbation Dynamics of Vortex-Airfoil Interaction," *AIAA Aviation*, Las Vegas, NV, July 29-Aug 2, 2024.
72. V. Godavarthi, K. Taira, L. Cattafesta, and L. Ukeiley, "Windowed Resolvent Analysis-Based Control of Supersonic Turbulent Cavity Flow," *AIAA Aviation*, Las Vegas, NV, July 29-Aug 2, 2024.
71. K. Fukami, K. Taira, "Extreme Aerodynamics of Vortex Impingement: Machine-Learning-Based Compression and Situational Awareness," *13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13)*, Montreal, Canada, Jun. 25-28, 2024.
70. L. V. Rolandi, L. Smith and K. Taira, "Resolvent Analysis of Separated Flows over NACA0012 Wings: Reynolds Number Effects," *13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13)*, Montreal, Canada, Jun. 25-28, 2024.
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66. V. Godavarthi, Y. Kawamura, and K. Taira, "Optimal Waveform for Fast Synchronization of Periodic Airfoil Wakes," *Second Colloquium on Vortex Dominated Flows (DisCoVor)*, Breckenridge, CO, May 16-19, 2023.
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60. Y. Zhong, K. Fukami, B. An, and K. Taira, "Machine-Learning-Based Reconstruction of Transient Vortex-Airfoil Wake Interaction," *AIAA Aviation*, Chicago/hybrid, June 27-July 1, 2022.

59. D. House, C. Skene, J. H. M. Ribeiro, C.-A. Yeh, and K. Taira, "Sketch-Based Resolvent Analysis," *AIAA Aviation*, Chicago/hybrid, June 27-July 1, 2022.

58. J. H. M. Ribeiro, C.-A. Yeh, K. Zhang, and K. Taira, "From Biglobal to Triglobal Resolvent Analysis: Laminar Separated Flows over Swept Wings," *AIAA SciTech*, San Diego/hybrid, Jan. 3-7, 2022.

57. V. Godavarthi, K. Taira, Y. Nakamura, and K. Ambo, "Cluster-Based Analysis of an SUV Wake," *AIAA SciTech*, San Diego/hybrid, Jan. 3-7, 2022.

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38. P. C. Woerner, A. G. Nair, K. Taira, and W. S. Oates, "Network Theoretic Approach to Atomistic Material Modeling Using Spectral Sparsification," *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Snowbird, September 18-20, 2017 (SMASIS2017-3917).

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30. Y. Sun, Y. Zhang, K. Taira, L. Cattafesta, B. George, and L. Ukeiley, "Width and Sidewall Effects on High Speed Cavity Flows," *54th AIAA Aerospace Sciences Meeting*, Jan. 4-8, 2016 (AIAA 2016-1343).

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28. Y. Zhang, N. Arora, Y. Sun, L. Cattafeta, K. Taira, and L. Ukeiley, "Suppression of Cavity Oscillations via Three-Dimensional Steady Blowing," *45th AIAA Fluid Dynamics Conference*, June 22-26 2015 (AIAA 2015-3219).

27. C.-A. Yeh, P. M. Munday, K. Taira, and M. J. Munson, "Drag Reduction Control for Flow over a Hump with Surface-Mounted Thermoacoustic Actuator," *53rd AIAA Aerospace Sciences Meeting*, Kissimmee, FL, Jan. 5-9, 2015 (AIAA 2015-0826).

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22. E. Fernandez, K. Taira, and Y. Yamaguchi, "Drag Reduction on Flat-Back Gound Vehicle with Active Flow Control: Part I. Simulation," *First International Conference in Numerical and Experimental Aerodynamics of Road Vehicles and Trains (Aerovehicles 1)*, Bordeaux, June 23-25, 2014.

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20. R. Jantzen, K. Taira, K. Granlund, and M. Ol, "On The Influence of Pitching and Acceleration on Vortex Dynamics Around a Low-Aspect-Ratio Rectangular Wing," *51st AIAA Aerospace Sciences Meeting and Exhibit*, Grapevine, TX, Jan. 2013 (AIAA 2013-0833).

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13. C. W. Rowley, S. Ahuja, K. Taira, and T. Colonius, "Closed-Loop Control of Leading Edge Vorticity on a 3D Wing: Simulations and Low-Dimensional Models," *5th AIAA Theoretical Fluid Mechanics Conference*, Seattle, WA, June 23-36, 2008 (AIAA 2008-3981).

12. G. Tadmor, D. Bissex, B. R. Noack, M. Morzyński, T. Colonius, and K. Taira, "Temporal-Harmonic Specific POD Mode Extraction," *4th AIAA Flow Control Conference/38th Fluid Dynamics Conference and Exhibit*, Seattle, WA, June 23-26, 2008 (AIAA 2008-4190).

11. G. Tadmor, D. Bissex, B. R. Noack, M. Morzyński, T. Colonius, and K. Taira, "Fast Approximate POD for a Flat Plate benchmark with a Time Varying Angle of Attack," *4th AIAA Flow Control Conference/38th Fluid Dynamics Conference and Exhibit*, Seattle, WA, June 23-26, 2008 (AIAA 2008-4191).

10. W. T. Joe, K. Taira, T. Colonius, D. G. MacMynowski, and G. Tadmor, "Closed-Loop Control of Vortex Shedding on a Two-Dimensional Flat-Plate Airfoil at a Low Reynolds Number," *46th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 7-10, 2008 (AIAA 2008-0634).
9. S. Brunton, C. Rowley, K. Taira, T. Colonius, J. Collins, and D. Williams, "Unsteady Aerodynamic Forces on Small-Scale Wings: Experiments, Simulations, and Models," *46th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 7-10, 2008 (AIAA 2008-0520).
8. K. Taira and T. Colonius, "Three-Dimensional Simulation of Flow around a Rectangular Flat Plate," *5th Conference on Bluff Body Wakes and Vortex-Induced Vibrations*, Costa do Sauípe, Bahia, Brazil, Dec. 12-15, 2007.
7. K. Taira, W. Dickson, T. Colonius, M. Dickinson, and C. W. Rowley, "Unsteadiness in Flow over a Flat Plate at Angle-of-Attack at Low Reynolds Numbers," *45th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 8-11, 2007 (AIAA 2007-710).
6. T. Colonius, C. W. Rowley, G. Tadmor, D. R. Williams, K. Taira, W. B. Dickson, M. Gharib, and M. Dickinson, "Closed-Loop Control of Leading-Edge and Tip Vortices for Small UAV," *Conference on Active Flow Control, DFG*, Berlin, Sep. 27-29, 2006.
5. J. I. Frankel, M. Keyhani, and K. Taira, "Error Estimation in Experimental Data and Optimal Functional Representations," *6th ASME-JSME Thermal Engineering Joint Conference*, Kohala Coast, HI, Mar. 16-20, 2003 (TED-AJ03-622).
4. J. I. Frankel, and K. Taira, "The Use of Parameter Identification in Error Estimation," *22nd IASTED International Conference on Modeling, Identification and Control* (MIC 2003), Innsbruck, Austria, Feb. 10-13, 2003 (ISBN: 0-88986-343-1, pp. 90-95, ACTA Press).
3. J. I. Frankel, M. Keyhani, and K. Taira, "In-Phase Error Estimation of Experimental Data and Optimal First Derivatives," *41st AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 6-9, 2003 (AIAA-2003-516).
2. J. I. Frankel, M. Keyhani, and K. Taira, " A Modified Discrete Least-Squares Method for Optimal Solutions in Inverse Problems," *40th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 14-17, 2002 (AIAA 2002-0657).
1. K. Taira, J. I. Frankel and M. Keyhani, "Metric Analysis for the Modified Discrete Least-Squares Method," *40th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, Jan. 14-17, 2002 (AIAA 2002-0658).

Technical Reports

1. Taira, K., Contributions to Chapters 4, 7, and 9, in "NATO AVT 347 Final Report (Large-Amplitude Gust Mitigation Strategies for Rigid Wings)," A. R. M. Jones and O. Cetiner (Eds.), NATO STO, 2024.
2. B. An, Q. Liu, K. Taira, M. Nohmi, and M. Obuchi, "A Research Outlook on Turbulent Vortex Control in Pump Sump," *Ebara Engineering Review*, 255, 33-39, 2018.

Patents

1. K. Taira, J. Tran, K. Fukami, D. Umehara, K. Inada, M. Ono, K. Ogawa, Aerodynamics-Informed Design Optimization of Vehicles with Machine Learning, USPTO, provisional filing, 2024.

2. K. Taira, K. Fukami, B. An, M. Obuchi, and Nohmi, System and Method for Machine-Learning Based Flow Estimation in Fluid Systems, USPTO, provisional filing, 2022.
3. K. Taira, Q. Liu, B. An, M. Nohmi, and M. Obuchi, No. 62/583,538, Systems and Methods for Actively Controlling a Vortex in a Fluid, USPTO, 2017.
4. K. Taira, P. M. Munday, and F. S. Alvi, No. 61/947,164, Swirling Jet Actuator for Control of Separated and Mixing Flows, USPTO, 2015.

Grants and Contracts

Bolded: active grants/contracts

U.S. Department of Defense

- **Extreme Aerodynamics: Grasping the Unknown Skies**
(2022 Vannevar Bush Faculty Fellowship)

  PI, 2022/09-2027/08, $3,400,000

U.S. Air Force Office of Scientific Research

- **Tailored Flow Control: Exploiting Triangular Porous Texturing Elements and Architected Materials for Enhanced Air Vehicle Performance (NSP)**

  co-PI with I. Choutapalli (PI), R. Kumar, S. Unnikrishnan, K. Martirosyan, and J. Li, 2023/10-2026/09, $2,249,992

- Flow Physics and Optimized Suppression of High-Speed Cavity Flow

  co-PI with L. Ukeiley (PI) and L. Cattafesta, 2021/11-2026/05, $971,833

- Data-Driven Control of Unsteady Flows

  PI with S. Brunton, 2021/04-2025/10, $1,049,958

- Flow Physics and Control of 3-D Separation on Finite Span, Tapered and Swept Wings

  co-PI with M. Amitay (PI) and V. Theofilis, 2021/04-2025/04, $1,112,989

- 3rd Data-Driven Fluid Dynamics Workshop

  PI, 2025/01-2025/08, $10,000 (AOARD)

- US-Japan Workshop on Data-Driven Fluid Dynamics

  PI, 2020/02-2023/02, $6,000 (AOARD)

- Flow Physics and Control of 3-D Separation on 3-D Swept Wings

  co-PI with M. Amitay (PI) and V. Theofilis, 2017/09-2021/09, $885,728

- Uncovering Flow Physics for High-Speed Cavity Flow Control

  co-PI with L. Ukeiley (PI) and L. Cattafesta, 2017/09-2021/06, $778,286

- Network-Based Feedback Control of Fluid Flows

  PI with S. Brunton, 2016/09-2020/09, $762,390

- Characterization of Perturbation Dynamics in Unsteady Flows

  PI with L. Cattafesta and K. Shoele, 2017/12-2019/11, $444,475

- US-Japan Workshop on Bridging Fluid Mechanics and Data Science

  PI, 2018/03-2018/10, $6,700

- Understanding The Fundamental Roles of Momentum and Vorticity Injections in Flow Control (2013 Young Investigator Award)

  PI, 2013/05-2016/05, $362,550

- Three Dimensional Control of High Speed Cavity Flows

  co-PI with L. Ukeiley (PI) and L. Cattafesta, 2013/03-2016/02, $561,192

U.S. Army Research Office

- **Stochastic Analysis of Extreme Aerodynamics Disturbances**

  PI, 2026/04-2026/12, $60,000

- The 3rd Data-Driven Fluid Dynamics Workshop

  PI, 2024/10-2025/05, $10,000

- Low-Rank Compression of Resolvent Operators for High-Re Flows

  PI, 2021/01-2025/10, $699,485

- US-Japan Workshop on Data-Driven Fluid Dynamics

  PI, 2020/06-2022/09, $6,000

- Characterization, Modeling, and Control of Turbulence from a Network-Theoretic Perspective

  PI with S. Brunton, 2017/04-2020/10, $463,210

- Turbulent Flow Modification with Thermoacoustic Waves for Separation Control

  PI, 2014/06-2017/05, $355,368

- Active Flow Control Technologies – Tools, Applications and Transition (Workshop)

  co-PI with R. Kumar (PI), 2015/05-2015/10, $6,000

- Network-Theoretic Modeling of Fluid Flow

  PI, 2014/08-2015/04, $49,954

- Simulation of Fluid-Structure Interaction for High-Reynolds-Number Compressible Flow

  PI with W. Oates, 2013/05-2016/04, $444,200

- Active Flow Control with Thermoacoustic Actuators

  PI, 2013/04-2013/12, $49,525

U.S. Office of Naval Research

- Interaction of Active Flow Control and Global Instability (2016 Young Investigator Award)
  PI, 2016/06-2021/05, $507,418
- Instability-Based Control of a Developing Trailing Vortex
  co-PI with L. Cattafesta (PI), 2015/06-2018/05, $369,724
- Active Flow Control Technologies – Tools, Applications and Transition (Workshop)
  co-PI with R. Kumar (PI), 2015/05-2015/10, $6,000

National Science Foundation

- Collaborative Research: Theoretical Prediction of Wake Lock-In for Fluid-Structure Interactions with Phase-Reduction Analysis
  co-PI with J. Klamo (PI), 2021/08-2024/07, $548,582
- EAGER: Network Resilience Analysis of Complex Vortex Interactions
  PI, 2016/05-2017/04 (NCE to 2018/04), $101,330
- EAGER: Network Sparsification for Atomistic to Continuum Scale Solid Mechanics
  co-PI with W. Oates (PI), 2016/08-2018/01, $99,914

Ebara Corporation

- **Analysis and Control of Unsteady Flows in Turbomachinery: An Extension**
  PI, 2026/06-2027/03, $152,875
- Analysis and Control of Unsteady Flows in Turbomachineries
  PI, 2023/06-2026/03, $415,226
- Data-Driven Analysis and Control of Wake-Body Interaction
  PI, 2020/04-2023/03, $415,732
- Characterization and Control of Unsteadiness in Pump-Induced Subsurface Vortex
  PI, 2017/03-2020/03, $278,432

Honda Motor Co., Ltd.

- Algorithmic Developments for Automotive Aerodynamic Design Optimization
  PI, 2025/05-2026/03, $167,114
- Applied Machine Learning for Automotive Aerodynamics Design Optimization
  PI, 2024/04-2025/03, $167,900
- Applied Machine Learning for Automotive Aerodynamics and Heat Transfer, Part 2
  PI, 2023/10-2024/02, $69,979

- Applied Machine Learning for Automotive Aerodynamics and Heat Transfer
  PI, 2023/06 -2023/09, $54,275
- Exploratory Study on Machine Learning Technology for Automotive CFD
  PI, 2022/11-2023/03, $54,000

Honda R&D Co., Ltd.

- Advanced Modal Analysis for Flow Modification around an Automobile
  PI, 2021/05-2021/10, $34,780
- Modal Analysis for Flow Modification around an Automobile
  PI, 2020/05-2021/03, $90,035
- Drag Reduction Using Active Flow Control
  PI with F. Alvi and R. Kumar, 2013/02-2014/04, $340,394

Honda Research Institute USA., Inc.

- **Aerodynamic Modeling and Performance Analysis for Honda's eVTOL Development**
  PI, 2026/01-2026/12, $163,711

University of California, Los Angeles

- Vascularization of Brain Organoids for Neural Repair and Disease Modeling
  (Broad Stem Cell Research Center (BSCRC) and California NanoSystems Institute (CNSI) Stem Cell Nano-Medicine Initiative Planning Award)
  co-PI with L. Iruela-Arispe (PI) and B. Novitch, 2019/01-2019/12, $150,000

Cummins Inc.

- The Study of Shear Driven Atomization for Variable Momentum Single Phase Injection
  co-PI with W. Oates (PI) and F. Alvi, 2015/07-2016/01, $100,115

U.S. Air Force Research Laboratory

- Summer Research Fellowships (via UTC and ASEE)
  Visiting Professor (Aerospace Systems Directorate), 2012 and 2013

Florida State University

- Development of Bio-Inspired Flow Control Actuator (FYAP)
  PI, 2012/05-2012/08, $17,000

Workshop Support

- The 3rd Data-Driven Fluid Dynamics Workshop
  2025/03, Nagoya, Japan
  Sponsors: AFOSR, ARO, Ebara, Hitachi, Honda, Sumitomo Rubber
- US-Japan Workshop on Data-Driven Fluid Dynamics
  2022/09, Kobe, Japan
  Sponsors: AFOSR, ARO, Ebara, Hitachi, Honda, Intelligent Light, MathWorks
- US-Japan Workshop on Bridging Fluid Mechanics and Data Science
  2018/03, Tokyo, Japan
  Sponsors: AFOSR, Intelligent Light, Florida State Univ, Tokyo Univ of Science
- Active Flow Control Technologies – Tools, Applications and Transition
  2015/10, Tallahassee, FL
  Sponsors: AFOSR, ARO, ONR, Boeing, Florida State Univ

Invited Talks

Bolded: plenary/keynote/special presentations

119. (Upcoming) University of Notre Dame (Aerospace and Mechanical Engineering), April, 2027.
118. (Upcoming) Syracuse University (Mechanical and Aerospace Engineering), Nov, 2026.
117. (Upcoming) University of Delaware (Mechanical and Biomedical Engineering), Fall, 2026.
116. (Upcoming) US Air Force Research Laboratory (Wright–Patterson AFB), July, 2026.
115. Purdue University (Mechanical Engineering), April 17, 2026.
114. 2026 Workshop on Fluid Metamaterial Interaction (Dayton, OH), April 14-16, 2026.
113. Florida International University (Mechanical and Materials Engineering; virtual), Jan 27, 2026.
112. AIAA SciTech (Reduced-Complexity Modeling of Transient Flow Dynamics), Jan 12, 2026.
111. **Physical Review Fluids (Journal Club), Nov 4, 2025.**
110. University of Southampton (Mechanical Engineering), Oct 28, 2025.
109. US Air Force Research Laboratory (Wright–Patterson AFB), July 10, 2025.
108. Tohoku University (Aerospace Engineering), June 24, 2025.
107. Nagoya University (Aerospace Engineering), June 18, 2025.
106. University of Washington (NSF AI Institute Webinar), June 6, 2025.
105. Lawrence Livermore National Laboratory (Data-Driven Physical Simulation Webinar), Mar 28, 2025.
104. Johns Hopkins University (Center for Environmental and Applied Fluid Mechanics), Sep 13, 2024.

103. 26th International Congress of Theoretical and Applied Mechanics (Thematic session), Daegu, South Korea, Aug 26-30, 2024.
102. ONR Workshop on Hybrid Machine Learning Methods for Cavitation Erosion Measurements & Predictions, Aug 14-15, 2024.
101. Stanford University (Fluid Mechanics Seminar Series), May 28, 2024.
100. California Institute of Technology (Mechanical and Civil Engineering), Feb 22, 2024.
99. University of Texas, El Paso (S. Scott Collis Advanced Modeling and Simulations Seminar Series), Feb 16, 2024.
98. Pennsylvania State University (Fluid Dynamics Research Consortium), Jan 18, 2024.
97. Carnegie Mellon University (Civil and Environmental Engineering), Nov 10, 2023.
96. **AFRL/AFOSR - Chief Scientist Distinguished Lecture Series (virtual), Oct 12, 2023.**
95. Illinois Institute of Technology (Mechanical, Materials, and Aerospace Engineering), Sep 25, 2023.
94. **28th National Computational Fluid Dynamics Conference (Taipei, Taiwan), Aug 18, 2023.**
93. Osaka University (Engineering Science), June 22, 2023.
92. **Machine Learning and Turbulence Seminar, AdvanceSoft Corporation (Japan, virtual), June 22, 2023.**
91. The Mathematical and Statistical Foundation of Future Data-Driven Engineering (Deep Dive in Fluids), Issac Newton Institute (Cambridge, UK), May 18, 2023.
90. San Diego State University (Aerospace Engineering), April 28, 2023.
89. AIAA SciTech (Reduced-Complexity Modeling and Analysis of Fluid Flows Discussion Group), Jan 23, 2023.
88. Honda Motor Company, Japan, Dec 14, 2022.
87. École Polytechnique Fédérale de Lausanne (Mechanical Engineering), Dec 6, 2022.
86. University of California, Santa Barbara (Mechanical Engineering), Oct 10, 2022.
85. **NATO Applied Vehicle Technology Panel (AVT-347, Large-Amplitude Gust Mitigation Strategies for Rigid Wings; Varna, Bulgaria), Sep 27-28, 2022.**
84. **Society of Automotive Engineers of Japan (Forum on the Evolution of Model Based Designs in the Era of Carbon Neutrality; Japan, virtual), July 13, 2022.**
83. **Turbomachinery Society of Japan, Annual Meeting (virtual), May 13, 2022.**
82. **Causality in Turbulence and Transition Conference, Madrid, May 3, 2022.**
81. Wall-Bounded Turbulence: Beyond Current Boundaries, Isaac Newton Institute (Cambridge, UK), March 28, 2022.
80. Imperial College London (Aeronautics; virtual), Feb 23, 2022.
79. **Society of Automotive Engineers of Japan (Workshop on Developments of Measurement and CFD Technologies in the Era of AI; Japan, virtual), Jan 18, 2022.**
78. ONERA (Aerodynamics, Meudon), Dec 15, 2021.
77. Sorbonne Université (Institut Jean le Rond d'Alembert), Dec 14, 2021.
76. Université de Toulouse/ISAE-SUPAERO, Dec 13, 2021.

75. **CAE Forum Kansai (Japan, virtual), Nov 19, 2021.**
74. Remote Colloquium on Vortex Dominated Flows (ReCoVor) Seminar Series (virtual; Supervised Machine Learning), Nov 12, 2021.
73. Remote Colloquium on Vortex Dominated Flows (ReCoVor) Seminar Series (virtual; Unsupervised Machine Learning), Oct 29, 2021.
72. Sikorsky Aircraft (CFD Users Group; virtual), Oct 21, 2021.
71. University of Maryland (Aerospace Engineering), Oct 15, 2021.
70. **NATO Applied Vehicle Technology Panel (AVT-347, Large-Amplitude Gust Mitigation Strategies for Rigid Wings; virtual), Oct 13, 2021.**
69. University of Pittsburgh (Mechanical Engineering and Materials Science), Sep 21, 2021.
68. Sikorsky Aircraft/Lockheed Martin (Lunch and Learn; virtual), Sep 15, 2021.
67. **25th International Congress of Theoretical and Applied Mechanics (Minisymposium Keynote; virtual), Milan, Aug 22-27, 2021.**
66. Tokyo University of Science (Information and Computer Technology/Data Science Center; virtual), July 7, 8, 13, & 19, 2021.
65. California Institute of Technology (Aeronautics, GALCIT; virtual), May 21, 2021.
64. University of Pennsylvania (Penn Institute for Computational Science; virtual), April 23, 2021.
63. Rensselaer Polytechnic Institute (Mechanical, Aerospace, and Nuclear Engineering; virtual), April 14, 2021.
62. New Mexico State University (Mechanical and Aerospace Engineering; virtual), Mar 26, 2021.
61. **Machine Learning $\times$ Thermal/Fluids Engineering Workshop, Japan Society of Mechanical Engineering (Japan; virtual), Mar 10, 2021.**
60. Aix-Marseille University/Universität Rostock (Biolocomotion Seminar Series; virtual), Jan 27, 2021.
59. **Machine Learning and Fluid Mechanics Seminar, AdvanceSoft Corporation (Japan; virtual), Nov 13, 2020.**
58. Florida State University (Scientific Computing; virtual), Oct 14, 2020.
57. University of Illinois at Urbana-Champaign (Mechanical Science and Engineering; virtual), Oct 9, 2020.
56. AIAA Fluid Dynamics Technical Committee (Reduced Complexity and Modeling Discussion Group), Jan 6, 2020.
55. Tohoku University (Aerospace Engineering), Nov 15, 2019
54. Virginia Polytechnic Institute and State University (Mathematics), Oct 25, 2019
53. University of Southern California (Aerospace and Mechanical Engineering), Sep 18, 2019
52. Osaka University (Mechanical Engineering), July 2, 2019
51. Tokyo University of Science (Information and Computer Technology), May 9, 2019
50. Tokyo University of Science (Information and Computer Technology), May 8, 2019

49. University of Minnesota (Aerospace Engineering and Mechanics), April 12, 2019
48. University of California, San Diego (Mechanical and Aerospace Engineering), April 1, 2019
47. University of California, Davis (Mechanical and Aerospace Engineering), Feb 28, 2019
46. **32nd Computational Fluid Dynamics Symposium (Plenary), Japan Society of Fluid Mechanics, Tokyo, Dec 12, 2018**
45. Tokyo University of Agriculture and Technology (Mechanical Systems Engineering), June 7, 2018
44. University of Liverpool (Aerospace Engineering), May 9, 2018
43. North Carolina State University (Mechanical and Aerospace Engineering), April 13, 2018
42. University of California, Los Angeles (Mechanical and Aerospace Engineering), Feb 20, 2018
41. University of Washington (Mechanical Engineering), Feb 12, 2018
40. Laboratoire d'informatique pour la mécanique et les sciences de l'ingénieur (LIMSI), Paris, France, June 19, 2017
39. Ebara Corporation, Japan (Head Office), March 30, 2017
38. Tokyo University of Science (Information and Computer Technology), March 29, 2017
37. University of Washington (Mechanical Engineering), Nov 08, 2016
36. University of Maryland (Aerospace Engineering), Oct 20, 2016
35. Ebara Corporation, Japan (Fujisawa District), Sep 29, 2016
34. Keio University, Japan (Mechanical Engineering), June 1, 2016
33. Florida State University (Mathematics), Feb 12, 2016
32. University of Michigan (Mechanical Engineering), Dec 01, 2015
31. Tohoku University, Japan (Aerospace Engineering), June 15, 2015
30. Rensselaer Polytechnic Institute (Mechanical, Aerospace, and Nuclear Engineering), May 6, 2015
29. Honda R&D Co., Ltd (Fundamental Technology Research Center), Dec 3, 2014
28. NASA Langley Research Center, Nov 06, 2014
27. Royal Institute of Technology, KTH, Sweden (Linné Flow Centre), Oct 16, 2014
26. Cascade Technologies, Inc., May 6, 2014
25. Syracuse University (Mechanical and Aerospace Engineering), Feb 28, 2014
24. University at Buffalo (Mechanical and Aerospace Engineering), Feb 27, 2014
23. Lehigh University (Mechanical Engineering and Mechanics), Dec 06, 2013
22. Technische Universität Berlin (Institute of Fluid Dynamics and Technical Acoustics), Germany, Nov 21, 2013
21. Japan Aerospace Exploration Agency, Chofu, Tokyo, June 21, 2013
20. U.S. Asian Office of Aerospace Research and Development, Tokyo, June 20, 2013
19. Florida A&M/Florida State University (Electrical and Computer Engineering), April 16, 2013
18. Florida A&M/Florida State University (Chemical and Biomedical Engineering), Oct 19, 2012

17. Wright State University (Flow Simulation Research Group), Aug 2, 2012
16. National Cheng Kung University, Taiwan (Engineering Science), Mar 8, 2012
15. National Taiwan University (Institute of Applied Mechanics), Mar 6, 2012
14. National Taiwan University (Mechanical Engineering), Mar 5, 2012
13. U.S. Air Force Research Laboratory (Wright-Patterson), Feb 27, 2012
12. Florida A&M/Florida State University (Mechanical Engineering), Nov 29, 2011
11. Florida A&M/Florida State University (Mechanical Engineering), Mar 4, 2010
10. Rensselaer Polytechnic Institute (Mechanical, Aerospace, and Nuclear Engineering), Feb 24, 2010
9. General Electric (Global Research Center), Sep 03, 2009
8. Royal Institute of Technology, KTH, Sweden (Linné Flow Centre), May 12, 2009
7. Northeastern University (Mechanical and Industrial Engineering), Mar 13, 2009
6. Illinois Institute of Technology (Mechanical, Materials, and Aerospace Engineering), Mar 10, 2009
5. University of California, Los Angeles (Mechanical and Aerospace Engineering), Jan 16, 2009
4. University of Southern California (Aerospace and Mechanical Engineering), Jan 14, 2009
3. National Defense Academy of Japan (System Engineering), July 14, 2008
2. University of Texas, Austin (Aerospace Engineering and Engineering Mechanics), May 06, 2008
1. University of Maryland, College Park (Aerospace Engineering), Sep 10, 2007

Memberships

- American Institute of Aeronautics and Astronautics (Associate Fellow)
- American Physical Society (Fellow)
- ΣΓΤ, Aerospace Honor Society (Member)
- Japan Society of Fluid Mechanics (Member)
- Society of Industrial and Applied Mathematics (Member)

Services (Professional)

Physical Review Fluids

- Associate Editor (2025-2028)

AIAA Journal

- Associate Editor (2019-2025)
- Guest Editor with M. Hemati and L. Ukeiley (2018-19)

  Special invited section on “Modal Analysis of Fluid Flows”

Theoretical and Computational Fluid Dynamics

- Associate Editor (2022-2024)
- Guest Editor with S. Brunton and M. Hemati (2019-20)

  Special issue on "Machine Learning and Data-Driven Methods in Fluid Mechanics"

arXiv.org

- Moderator, Fluid Dynamics [physics.flu-dyn] (2017-2018)

American Institute of Aeronautics and Astronautics

- Associate Fellow (2017-), Senior Member (2013-2016), Member (1999-2013)
- Member, Fluid Dynamics Technical Committee/Fundamentals of Flow Phenomena Subcommittee (2014-2019)
- Liaison for AIAA-JSASS (Japan Society for Aeronautical and Space Sciences) (2018-2019)
- Co-chair (with D. Smith 2015-2017; with M. Hemati 2017-2018) of Discussion Group "Modal Decomposition of Aerodynamic Flows" (2015-2018)
- Member, Best Paper Award Committee (2014-16)
- Associate Organizer, AIAA Aerospace Sciences Meeting (Jan 2015), AIAA Aviation Meeting (June 2017)
- Co-organizer/instructor (with D. Williams and D. Miller) of professional development course *Flow Control for Specialists* (2 chapters on fluid flow modeling) at AIAA Aerospace Sciences Meeting (Jan 2013).

American Physical Society

- Fellow (2024-), Member (2003-)
- Chair (2026), Vice Chair (2025), External Affairs Committee (DFD)
- Organizer, Minisymposium "Fluids Next: The Fluid Dynamics of Wildfire" at APS DFD 2026, Orlando, FL, Nov. 22-24, 2026.
- Co-organizer (with J. Eldredge), Minisymposium "Machine Learning in Fluid Mechanics: A Physical Review Fluids Event" at APS DFD 2019, Seattle, WA, Nov. 23-26, 2019.
- Co-organizer (with M. Luhar and M. Hemati), Minisymposium "Tutorial: Modal Analysis Methods for Fluid Flows" and Focus Session on "Modal Analysis Methods for Fluid Flows" at APS DFD 2017, Denver, CO, Nov. 19-21, 2017.

Japan Society of Fluid Mechanics

- Member, Fluid Mechanics 2030 Working Group (2019-2021)

NATO Science and Technology Organization

- Activity Member, Applied Vehicle Technology RTG-426 & ET-247 (Three-Dimensional Aspects of Unsteady Flow Interactions with Rigid Wings), 2024-present.
- Co-Chair, Applied Vehicle Technology - RSM-442 (Measurement, Modeling, and Control of Three-Dimensional Unsteady Flows about Rigid Wings), 2027.

- Activity Member, Applied Vehicle Technology RTG-347 (Large-Amplitude Gust Mitigation Strategies for Rigid Wings), 2022-23.

Turbulence and Shear Flow Phenomena

- Advisory Committee Member, 14th International Symposium on Turbulence and Shear Flow Phenomena (TSFP14), Heidelberg, Germany, July 28-31, 2026.
- Advisory Committee Member, 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montréal, Canada, June 25-28, 2024.
- Advisory Committee Member, 12th International Symposium on Turbulence and Shear Flow Phenomena (TSFP12), Osaka, Japan, July 19-22, 2022.

Workshop Organizations

- Chair, "3rd Workshop on Data-Driven Fluid Dynamics," Nagoya, Japan, March 2025.
- Co-chair (with J. Eldredge and C. Rowley), "Symposium in Honor of Professor Tim Colonius," Pasadena, CA, Dec 2024.
- Co-organizer (with D. Israel, D. Livescu, T. Schneider, D. Gayme, Y. Hwang, S. Poroseva and G.S. Sidharth), "Coherent Structures and Turbulence Modeling Workshop," Santa Fe, NM, Nov 20-21, 2024.
- Co-chair (with R. I. Sujith, A. G. Nair, M. Gopalakrishnan Meena, G. Chopra, and S. Tandon), "Workshop on Complex Networks and Application to Fluid Dynamics", virtual, Feb 19-21, 2024.
- Chair, "2nd US-Japan Workshop on Data-Driven Fluid Dynamics," Kobe, Japan, Sep 5-7 2022.
- Co-chair (with R. I. Sujith and V. R. Unni), "Workshop on the Application of Complex Networks to Fluid Mechanics," virtual, Aug 15-16, 2022.
- Co-chair (with A. G. Nair and M. Gopalakrishnan Meena), "Network Science for Fluid Mechanics" virtual seminar series, Nov, 2020-present.
- Co-chair (with M. Munson), "Network Science for Fluid Dynamics," virtual workshop, June 24-25, 2020.
- Chair, "US-Japan Workshop on Bridging Fluid Mechanics and Data Science," Tokyo, Japan, March 26-28, 2018.
- Co-organizer (with R. Kumar) "Active Flow Control Technologies – Tools, Applications and Transition (Workshop)," Tallahassee, FL, Oct. 26-27, 2015.

Referee (Papers)

- Acta Mechanica
- Aerospace Science and Technology
- AIAA Journal
- AIAA Conference Papers
- Chaos
- Computers and Fluids
- European Journal of Mechanics/B Fluids

- Experiments in Fluids
- Flow, Turbulence and Combustion
- International Journal of Heat and Fluid Flow
- International Journal of Heat and Mass Transfer
- Inverse Problems in Science & Engineering
- Journal of the Acoustical Society of America
- Journal of Aircraft
- Journal of Computational Physics
- Journal of Fluid Mechanics
- Journal of Fluids Engineering
- Journal of Ship Research
- Journal of Thermophysics and Heat Transfer
- JSME Mechanical Engineering Journal
- Nature Communications
- Physica A
- Physical Review E
- Physical Review Fluids
- Physics of Fluids
- PLOS ONE
- Proceedings of the National Academy of Sciences
- Proceedings of the Royal Society A
- Science Advances
- Scientific Reports
- Theoretical and Computational Fluid Dynamics
- Transactions of the Japan Society for Aeronautical and Space Sciences
- Transactions of the Japan Society for Industrial and Applied Mathematics

Referee (Proposals)

- Air Force Office of Scientific Research
- Army Research Office
- Österreichische Forschungsförderungsgesellschaft (FFG, Austrian Research Promotion Agency)
- Department of Energy
- Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)
- National Science Foundation
- Office of Naval Research
- Swiss Data Science Center
- Swiss National Science Foundation
- Swiss National Supercomputing Centre

Services (UCLA)

- Vice Chair of Industry Relations, Dept of Mech. and Aerospace Eng (2026-)
- UCLA Admission Reader, Samueli School of Engineering (2024-)
- Member, GPU Ad Hoc Committee, Samueli School of Engineering (2024-)
- Member, Industrial Relations Committee, Dept of Mech. and Aerospace Eng (2024-26)
- Member, Merit Increase Committee, Dept of Mech. and Aerospace Eng (2019-20, 23-24, 25-26)
- Chair, Adjunct Faculty Recruitment Committee, Dept of Mech. and Aerospace Eng (2025)
- Member, Faculty Recruitment Committee, Dept of Mech. and Aerospace Eng (2024-25)
- Member, Awards and Honors Committee, Dept of Mech. and Aerospace Eng (2023-24)
- Member, Grade Dispute Committee, Samueli School of Engineering (2023)
- Chair, Faculty Recruitment Committee, Dept of Mech. and Aerospace Engineering (2022-23)
- Chair, Fluid Mechanics Field, Dept of Mechanical and Aerospace Engineering (2021-23)
- Member, Faculty Executive Committee, School of Eng. and App. Science (2019-23)
- Member, Graduate Affairs Committee, Dept of Mech. and Aerospace Eng. (2018-22)
- Member, Selection Committee, UCLA Society of Hellman Fellows (2021)
- Member, Strategic Planning Committee, Dept of Mech. and Aerospace Engineering (2019-21)

Services (FSU)

- Coordinator, High-Performance Computing, College of Engineering (2017-18)
- Member, Graduate Curriculum Committee, Department of Mech. Engineering (2016-18)
- Postdoctoral Coordinator, Department of Mechanical Engineering (2017-18)
- Department Representative for First-Year Engineering Students (2017-18)
- Member, Faculty Search Committee, Florida Ctr for Advanced Aero-Propulsion (2017-18)
- Member, Faculty Search Committee, Department of Mechanical Engineering (2016-2018)
- Undergraduate Curriculum Committee, Department of Mechanical Engineering (2014-17)
- Secretary, Department of Mechanical Engineering (2014-17)
- Seminar Coordinator, Department of Mechanical Engineering (2011-14)

Services (Ph.D/M.S. Committee)

Thesis Committee (*: chair, †: work defended)

- Ph.D. degree:

  Yueshan Yang* (Mechanical Engineering), UCLA

  Adam Schroeder* (Aerospace Engineering), UCLA

  Jonathan Tran* (Aerospace Engineering), UCLA

  Youngjae Kim* (Mechanical Engineering), UCLA

  Hiroto Odaka* (Aerospace Engineering), UCLA

  Evan Mahns (Aeronautical Engineering), Rensselaer Polytechnic Institute

Junchi Chen (Mechanical Engineering), UCLA
Zhecheng Liu (Mechanical Engineering), UCLA
Yung-Tien Lin (Aerospace Engineering), UCLA
Tarcísio Déda (Mechanical Engineering), University of Campinas
Hanieh Mousavi (Mechanical Engineering), UCLA
Zihao Zhou (Aerospace Engineering), UCLA
Alejandro Quiros (Mech, Acoustic, Electronic & Robotic Sci), Sorbonne University
Naarendharan Meenakashi Sundaram (Mechanical Engineering), UCLA
2026 Jayesh Manohar Dhadphale[†] (Aerospace Engineering), Indian Inst of Tech, Madras
2026 Yuta Iwatani[†] (Aerospace Engineering), Tohoku University
2025 Atindra Krishnan[†] (Mechanical Engineering), UCLA
2025 **Yonghong Zhong**[†*] (Mechanical Engineering), UCLA
2025 Arin Hayrapetyan[†] (Aerospace Engineering), UCLA
2025 Kieran Wolk[†] (Mechanical Engineering), UCLA
2025 Anand Rama Varma[†] (Mechanical Engineering), UCLA
2024 Graeme Sabiston[†] (Aerospace Engineering), UCLA
2024 **Vedasri Godavarthi**[†*] (Mechanical Engineering), UCLA
2024 McKenna Davis Breddan[†] (Aerospace Engineering), UCLA
2024 Vasudevan Chandramouli[†] (Mechanical Engineering), UCLA
2024 **Kai Fukami**[†*] (Mechanical Engineering), UCLA
2023 Isabelle Sanders[†] (Aerospace Engineering), UCLA
2023 Jacob Neal[†] (Aeronautical Engineering), Rensselaer Polytechnic Institute
2023 Diederick Beckers[†] (Mechanical Engineering), UCLA
2023 Henry Huh[†] (Mechanical Engineering), UCLA
2023 **Jean Helder Marques Ribeiro**[†*] (Aerospace Engineering), UCLA
2023 Da Wei David Ren[†] (Mechanical Engineering), UCLA
2023 Alex Tsolovikos[†] (Aerospace Engineering), Univ of Texas, Austin
2022 Peter Wright[†] (Aerospace Engineering), UCLA
2022 Serena Costanzo[†] (Mech, Acoustic, Electronic & Robotic Sci), Sorbonne Univ
2022 Ning Yu[†] (Mechanical Engineering), UCLA
2022 Mathieu Le Provost[†] (Mechanical Engineering), UCLA
2021 Laura Victoria Rolandi[†] (Aerodynamics), Univ Toulouse/ISAE-SUPAERO
2021 Alan Marquez-Razon[†] (Mechanical Engineering), UCLA
2021 Tulio Rodarte Ricciardi[†] (Mechanical Engineering), University of Campinas
2021 Sahar Andalib[†] (Mechanical Engineering), UCLA
2021 Shelby Hayostek[†] (Aeronautical Engineering), Rensselaer Polytechnic Institute

2021 Paolo Olivucci† (Mechanical Engineering), University of Sheffield

2020 Moritz Sieber† (Fluid Dynamics), TU Berlin

2020 Fernando Zigunov† (Mechanical Engineering), Florida State University

2020 **Muralikrishnan Gopalakrishnan Meena**†* (Mechanical Engineering), UCLA

2019 Daniel Canuto† (Mechanical and Aerospace Engineering), UCLA

2018 Brian Mastracci† (Mechanical Engineering), Florida State University

2018 **Aditya Nair**†* (Mechanical Engineering), Florida State University

2018 Jonathan McNally† (Mechanical Engineering), Florida State University

2018 **Chi-An Yeh**†* (Mechanical Engineering), Florida State University

2018 Eric Deem† (Mechanical Engineering), Florida State University

2018 Laurent Dalla Longa† (Mechanical Engineering), Imperial College London

2017 **Yiyang Sun**†* (Mechanical Engineering), Florida State University

2017 Timothy Davis† (Mechanical Engineering), Florida State University

2017 Yang Zhang† (Mechanical Engineering), Florida State University

2017 Paul Miles† (Mechanical Engineering), Florida State University

2017 Jian Gao† (Mechanical Engineering), Florida State University

2017 **Phillip Munday**†* (Mechanical Engineering), Florida State University

2016 Adam Edstrand† (Mechanical Engineering), Florida State University

2016 Robert Reger† (Mechanical Engineering), Florida State University

2016 Ram Dhuley† (Mechanical Engineering), Florida State University

2016 Julian Osorio† (Mechanical Engineering), Florida State University

2014 Erik Fernandez† (Mechanical Engineering), Florida State University

2013 Stefan Vey† (Fluid Dynamics), TU Berlin

2012 Liang Cheng† (Mechanical Engineering), Florida State University

- M.S. degree:

  Henry Jones (Aerospace Engineering), UCLA

  2026 John E. Boranian† (Aerospace Engineering), UCLA

  2025 **Christopher McCormick**† (Aerospace Engineering), UCLA

  2025 Zachary W. Cowger† (Mechanical Engineering), UCLA

  2024 Ryan Plickys† (Systems Engineering), Naval Postgraduate School

  2023 Jacob Barberio† (Systems Engineering), Naval Postgraduate School

  2022 Christopher Carter† (Mechanical Engineering), UCLA

  2022 **Dylan House**†* (Aerospace Engineering), UCLA

  2021 Sarina Kiani† (Aerospace Engineering), UCLA

  2021 Yvonne Thoy† (Aerospace Engineering), UCLA

  2014 Jordan Taligoski† (Mechanical Engineering), Florida State University

2014 **Ryan Jantzen**†∗ (Mechanical Engineering), Florida State University

2012 Garrett Strickland† (Mechanical Engineering), Florida State University

2012 James Dickson† (Mechanical Engineering), Florida State University

2012 William Thornson† (Mechanical Engineering), Florida State University

Group Members

Current Members

- 2024- Barbara Lopez-Doriga, Ph.D., postdoctoral research associate
- 2025- Charles Klewicki, Ph.D., postdoctoral research associate
- 2022- Youngjae Kim, graduate research assistant (Ph.D. student)
- 2022- Hiroto Odaka, graduate research assistant (Ph.D. student)
- 2025- Adam Schroeder, graduate research assistant (Ph.D. student)
- 2025- Yueshan Yang, graduate research assistant (Ph.D. student)

Past members

Postdoctoral research associates

- 2023-25 Laura Victoria Rolandi, Ph.D., postdoctoral research associate (UCLA)
- 2023-25 Alec Linot, Ph.D., postdoctoral research associate (UCLA)
- 2024 Kai Fukami, Ph.D., postdoctoral research associate (UCLA)
- 2022-24 Luke Smith, Ph.D., postdoctoral research associate (UCLA)
- 2018-21 Chi-An Yeh, Ph.D., postdoctoral research associate (UCLA)
- 2019-20 Calum Skene, Ph.D., postdoctoral research associate (UCLA)
- 2019-20 Amin Khodkar, Ph.D., postdoctoral research associate (UCLA)
- 2017-20 Kai Zhang, Ph.D., postdoctoral research associate (UCLA/FSU)
- 2016-20 Qiong Liu, Ph.D., postdoctoral research associate (UCLA/FSU)
- 2017-18 Yiyang Sun, Ph.D., postdoctoral research associate (FSU)
- 2014-16 Matthew Jemison, Ph.D., postdoctoral research associate (FSU)
- 2014-15 Alejandro Rivera-Alvarez, Ph.D., postdoctoral research associate (FSU)

Doctoral students

- 2020-25 Yonghong Zhong, graduate research assistant (UCLA)
- 2019-24 Vedasri Godavarthi, Ph.D., graduate research assistant (UCLA)
- 2020-24 Kai Fukami, Ph.D., graduate research assistant (UCLA)
- 2018-23 Jean Hélder Marques Ribeiro, Ph.D., graduate research assistant (UCLA)
- 2015-20 Muralikrishnan Gopalakrishnan Meena, Ph.D., graduate research assistant (FSU/UCLA)
- 2013-18 Aditya Nair, Ph.D., graduate research assistant (FSU)
- 2013-18 Chi-An Yeh, Ph.D., graduate research assistant (FSU)
- 2012-17 Yiyang Sun, Ph.D., graduate research assistant (FSU)
- 2011-17 Phillip Munday, Ph.D., graduate research assistant (FSU)

Masters students

- 2025 Christopher McCormick, M.S., graduate research assistant (UCLA)
- 2020-21 Dylan House, M.S, graduate research assistant (UCLA)
- 2012-14 Ryan Jantzen, M.S, graduate research assistant (FSU)

Visitors ($>$ 1 month)

- 2023-24 Hiroshi Omichi, visiting graduate student (Keio Univ)
- 2024 Gabrielle Claus, visiting graduate student (Univ of New Hampshire)
- 2023 Masato Imai, visiting graduate student (Tokyo Univ of Agriculture and Tech)
- 2022 Samadhan A. Pawar, visiting scholar (IIT Madras)
- 2019-20 Tulio Rodarte Ricciardi, visiting graduate student (University of Campinas)
- 2019, 2020 Yoimi Kojima, visiting graduate student (Tokyo Univ of Agriculture and Tech)
- 2018, 2020 Byungjin An, Ph.D., visiting scholar (Ebara Corporation)
- 2018-19 Kai Fukami, visiting graduate student (Keio University)
- 2019 Guy Yoslan Cornejo Maceda, visiting graduate student (Université Paris-Sud)
- 2018 Brener d'Lélis Oliveira Ramos, visiting graduate student (University of Campinas)

Other students

- 2021-26 Jonathan Tran, graduate/undergraduate research assistant (B.S., UCLA)
- 2024-25 Gabrielle Claus, graduate research assistant (UCLA)
- 2023-24 Christopher McCormick, undergraduate research assistant (B.S., UCLA)
- 2021-22 Vishal Anantharaman, undergraduate research assistant (B.S., UCLA)
- 2022 Cheryl Lee, graduate research assistant (M.S., UCLA)
- 2021-22 Paul Hawkins, undergraduate research assistant (B.S., UCLA)
- 2020-21 Jason Feldkamp, undergraduate research assistant (B.S., UCLA)
- 2019-20 Dylan House, undergraduate research assistant (B.S., UCLA)
- 2019-20 Anna Zhong, undergraduate research assistant (B.S., UCLA)
- 2017-19 Orion Yeung, undergraduate research assistant (B.S., FSU)
- 2018 Caroline Walker, undergraduate research assistant (B.S., FSU)
- 2017 Tyler Pilet, NSF-REU student
- 2017 Swagnik Guhathakurta, graduate research assistant
- 2016 Asiegbu Kanu-Asiegbu, NSF-REU student (from Univ Nebraska Omaha)
- 2014-15 Peter Van Brussel, undergraduate/graduate research assistant (B.S.-M.S., FSU)
- 2014-15 Brandon Gusto, undergraduate research assistant (B.S., FSU)
- 2014 Matthew Boebinger, NSF-REU student (B.S., FSU)
- 2014 John-Paul Milton, NSF-REU student (from Pennsylvania State Univ)
- 2013-14 Daniel Canuto, undergrad. research assist./NSF-REU student (B.S., FSU)
- 2012 Bereket Abraham, NSF-REU student (from Princeton Univ)
- 2012 Casey Brown, undergraduate research assistant (B.S., FSU)
- 2012-2013 Colby Borchetta, undergrad research assistant/NSF-REU student (B.S., FSU)