Peter E. Hamlington

Professor and Department Chair
Vogel Faculty Fellow and Woodward-Vogel Leadership Chair
Paul M. Rady Department of Mechanical Engineering
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Education

2004–2009	**Ph.D. Aerospace Science**, *University of Michigan*, Ann Arbor
	Dissertation title: *Physics-Based Turbulence Anisotropy Closure Including Nonlocal and Nonequilibrium Effects in Turbulent Flows.* Advisor: Dr. Werner J.A. Dahm.
2004–2005	**M.S. Aerospace Science**, *University of Michigan*, Ann Arbor
2000–2004	**B.A. Physics**, *University of Chicago*, Chicago, IL, Departmental and General Honors

Professional Experience

2024–Present	**Professor**, *Mechanical Engineering*, University of Colorado, Boulder
2019–2024	**Associate Professor**, *Mechanical Engineering*, University of Colorado, Boulder
2012–2019	**Assistant Professor**, *Mechanical Engineering*, University of Colorado, Boulder
2011–2012	**Assistant Research Professor**, *Aerospace Engineering Sciences*, University of Colorado, Boulder
2009–2011	**National Research Council Postdoctoral Research Associate**, *Laboratories for Computational Physics and Fluid Dynamics*, Naval Research Lab, Washington, DC. Advisor: Dr. Elaine S. Oran
2004–2009	**Graduate Research/Teaching Assistant**, *Laboratory for Turbulence and Combustion, Department of Aerospace Engineering*, University of Michigan, Ann Arbor, MI. Advisor: Dr. Werner J.A. Dahm
2002–2004	**Undergraduate Research Assistant**, *Kavli Institute for Cosmological Physics*, University of Chicago, Chicago, IL. Advisor: Dr. Bruce Winstein

Affiliations, Appointments, and Fellowships

2022–Present	**Woodward-Vogel Leadership Chair**, *Mechanical Engineering*, University of Colorado, Boulder
2022–Present	**Department Chair**, *Mechanical Engineering*, University of Colorado, Boulder
2022–Present	**Affiliate**, *Applied Mathematics*, University of Colorado, Boulder
2020–Present	**Program Faculty**, *Environmental Engineering*, University of Colorado, Boulder
2018–2022	**Associate Chair**, *Mechanical Engineering*, University of Colorado, Boulder
2018–Present	**Joint appointment**, *National Renewable Energy Laboratory*, Golden, CO
2016–Present	**Courtesy appointment**, *Aerospace Engineering Sciences*, University of Colorado, Boulder
2013–Present	**Vogel Faculty Fellow**, *Mechanical Engineering*, University of Colorado, Boulder
2013–Present	**Affiliate**, *Renewable and Sustainable Energy Institute*, University of Colorado, Boulder
2013–Present	**Affiliate**, *Atmospheric and Oceanic Sciences*, University of Colorado, Boulder

Honors

2021	Outstanding Graduate Educator Award, Mechanical Engineering, University of Colorado, Boulder
2019	Outstanding Service Award, Mechanical Engineering, University of Colorado, Boulder
2019	AIAA Aerodynamic Measurement Technology Best Paper from the 2019 AIAA SciTech Forum
2019	National Science Foundation CAREER Award, Combustion and Fire Sciences Program
2017	Woodward Outstanding Faculty Award, Mechanical Engineering, University of Colorado, Boulder
2017	Dean's Fellowship, College of Engineering, University of Colorado, Boulder
2016	Distinguished Paper on Turbulent Flames, 36th International Symposium on Combustion
2013–Present	Herb and Karen Vogel Faculty Fellowship, Mechanical Engineering, University of Colorado, Boulder
2013	Outstanding Graduate Educator Award, Mechanical Engineering, University of Colorado, Boulder
2009	National Research Council Research Associateship, Naval Research Lab, Washington, DC
2009	College of Engineering Distinguished Achievement Award, Aerospace Engineering, Univ. Michigan
2006	Karen and Paul Van Weelden Fellowship, Rackham Graduate School, University of Michigan
2006	Tau Beta Pi Engineering Honor Society, University of Michigan

2000–2004 Dean's List, University of Chicago
2000–2004 University Scholar Award (merit scholarship), University of Chicago
2000 University of Chicago National Merit Scholarship

Faculty Service

2024–Present **Chair, Campus Operations & Resources Committee**, Boulder Faculty Assembly, U. Colorado, Boulder
2023–2024 **Budget & Planning Committee**, Boulder Faculty Assembly, University of Colorado, Boulder
2022–Present **Academic Resource Management Advisory Committee (ARMAC)**, University of Colorado, Boulder
2022–Present **Department Chair**, Mechanical Engineering, University of Colorado, Boulder
2022 **Personnel Committee**, Mechanical Engineering, University of Colorado, Boulder
2021–2022 **Faculty search committee**, Mechanical Engineering, University of Colorado, Boulder
2021–2022 **Scholar in residence search committee**, Mechanical Engineering, University of Colorado, Boulder
2018–2022 **Chair, Graduate program**, Mechanical Engineering, University of Colorado, Boulder
2018–2019 **Faculty search committee**, *Hypersonics*, College of Engineering, University of Colorado, Boulder
2017–2018 **Faculty search committee**, *Thermal-Fluid Sciences*, College of Engineering, U. Colorado, Boulder
2016–2017 **Faculty search committee**, Mechanical Engineering, University of Colorado, Boulder
2016–2018 **Undergraduate committee**, Mechanical Engineering, University of Colorado, Boulder
Summer 2016 **Instructor pathway committee**, Mechanical Engineering, University of Colorado, Boulder
2015–2016 **Faculty search committee**, Mechanical Engineering, University of Colorado, Boulder
2012–2016 **Graduate committee**, Mechanical Engineering, University of Colorado, Boulder

Professional Service

Professional Society and Editorial Service

2024-Present **Member-at-large**, ASME Mechanical Engineering Department Heads and Chairs Executive Committee
2023-Present **Member**, Editorial Board for section "Mathematical Modelling and Numerical Simulation of Combustion and Fire" of the journal *Fire*
2019-Present **Member**, Western States Section of the Combustion Institute Executive Board

Professional Conference and Workshop Organization

2018 **Co-Organizer**, Workshop on Highly Turbulent Combustion (sponsored by AFOSR), 6-7 January 2018, Orlando, FL
2017 **Conference Co-Chair**, 70th Annual Meeting of the APS Division of Fluid Dynamics, 19-21 November 2017, Denver, CO
2017 **Co-Organizer**, Abstract sorting, 70th Annual Meeting of the APS Division of Fluid Dynamics, 8-10 August 2017, Boulder, CO
2017 **Co-Organizer**, Workshop on the Structure and Dynamics of Highly Turbulent Combustion (sponsored by AFOSR), 5-6 June 2017, Ballston, VA
2016 **Organizer**, Rocky Mountain Turbulent Combustion Workshop (sponsored by AFOSR), 9-11 September 2016, Boulder, CO
2016 **Participant**, Abstract sorting, 69th Annual Meeting of the APS Division of Fluid Dynamics, 20-22 November 2016, Portland, OR
2014 **Member of Advisory Panel and Session Chair**, 2nd Symposium on OpenFOAM in Wind Energy, 19-21 May 2014, Boulder, CO

Professional Conference Session Chairing

2023 **Session chair**, *Turbulent Convection*, 76th Annual Meeting, Division of Fluid Dynamics, American Physical Society, 19-21 November 2023, Washington, DC
2022 **Session chair**, *Turbulence: Compressible Flows*, 75th Annual Meeting, Division of Fluid Dynamics, American Physical Society, 20-22 November 2022, Indianapolis, IN
2019 **Session chair**, *Turbulent Flames*, 72nd Annual Meeting, Division of Fluid Dynamics, American Physical Society, 23-26 November 2019, Seattle, WA
2019 **Co-organizer and Co-Chair**, *Mini-Symposium: Progress and Challenges in Predictive Modeling of Fires*, 17th International Conference on Numerical Combustion, 6-8 May 2019, Aachen, Germany

2018	**Co-organizer and Co-Chair**, *Mini-Symposium: Prediction of Highly Turbulent Premixed Combustion in LES Frameworks*, 71st Annual Meeting, Division of Fluid Dynamics, American Physical Society, 18-20 November 2018, Atlanta, GA
2018	**Session chair**, *Detonations and Explosions*, 71st Annual Meeting, Division of Fluid Dynamics, American Physical Society, 18-20 November 2018, Atlanta, GA
2017	**Co-Convener and Co-Chair**, Session: "Wildfire Risks Under Climate Change in Coupled Human and Natural Systems Across Scales I", AGU Fall Meeting, 11-15 December, 2017, New Orleans, LA
2016	**Session chair**, *Reacting Flows: Theory and Analysis*, 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, 20-22 November 2016, Portland, OR
2015	**Session chair**, *Turbulence Modeling I*, 53rd AIAA Aerospace Sciences Meeting, 5-9 January 2015, Kissimmee, FL
2014	**Session chair**, *Stratified and Premixed Flames*, 67th Annual meeting, Division of Fluid Dynamics, American Physical Society, 23-25 November 2014, San Francisco, CA
2014	**Session chair**, *Detonations and Supersonic Combustion*, 44th AIAA Fluid Dynamics Conference, 16-20 June 2014, Atlanta, GA
2012	**Session co-chair**, *Physics and Biogeochemisty of Submesoscale Processes III Posters*, American Geophysical Union Fall Meeting, 3-7 December 2012, San Francisco, CA
2012	**Session chair**, *Vortex IV*, 65th Annual meeting, Division of Fluid Dynamics, American Physical Society, 18-20 November 2012, San Diego, CA

Local Conference and Seminar Organization

2015–2022	**Co-Organizer**, Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO
2014–2015	**Co-Chair**, Graduate Engineering Annual Research and Recruiting Symposium (GEAR^{2}S)
2013–2020	**Organizer and Founder**, *Boulder Fluid and Thermal Sciences Seminar Series*, University of Colorado, Boulder, CO

Workshop and Summer Program Participation

2023–2024	**Participant**, Excellence in Leadership Program, University of Colorado, Boulder
2022	**Participant**, Research Impact Fellows, College of Engineering and Applied Science, U. Colorado, Boulder
2019	**Participant**, Early Career Investigator Workshop, 23-24 March 2019, Pasadena, CA
2018	**Panelist**, Workshop on Turbulent Combustion (sponsored by AFOSR), 29 August 2018, Ballston, VA
2017	**Participant**, Future of Combustion Workshop, 22-23 April 2017, College Park, MD
2014	**Participant**, *Center for Turbulence Research Summer Program*, Stanford University, July 2014

Peer-Review Service

Proposal Reviews

2024	**Review Panel**, NSF Combustion and Fire Sciences Program, 29 May 2024, Virtual
2023	**Review Panel**, DoE INCITE, 20 September 2023, Virtual
2021	**Review Panel**, NSF Combustion and Fire Sciences Program CAREER Panel, 28 September 2021, Virtual
2021	**Review Panel**, DoE INCITE, 22 September 2021, Virtual
2019	**Review Panel**, NSF Combustion and Fire Sciences Program, 27 June 2019, Virtual
2017	**Review Panel**, University of Colorado Innovative Seed Grant Program, 23 March, 2017
2017	**Review Panel**, NSF Combustion and Fire Sciences Program, 9-10 January 2017, Arlington, VA
2016	**Review Panel**, University of Colorado Innovative Seed Grant Program, 12 March, 2016
2012–2018	**Invited Reviewer**, National Science Foundation: Physical Oceanography
2016	**Invited Reviewer**, DoE Office of Science: Advanced Scientific Computing Research

Journal Reviews

Aerospace Science and Technology; *AIAA Journal*; *Combustion and Flame*; *Combustion Science and Technology*; *Combustion Theory and Modelling*; *European Journal of Fluid Mechanics*; *Fire Safety Journal*; *Flow, Turbulence and Combustion*; *Geophysical Research Letters*; *International Journal of Heat and Fluid Flow*; *Journal of Aircraft*; *Journal of Fire Sciences*; *Journal of Computational Physics*; *Journal of Fluid Mechanics*; *Journal of Fluids and Structures*; *Limnology and Oceanography: Methods*; *Ocean Modelling*; *Physica D*; *Physics of Fluids*; *Physical Review E*; *Physical Review Fluids*; *Physical Review Letters*; *Proceedings of the Combustion Institute*; *Proceedings of the National Academy of Sciences*; *Science of the Total Environment*; *Wind Energy*

Publications (Hamlington student or postdoc: *, Corresponding author: †)

Peer-Reviewed Journal Publications

[1] S. Simons-Wellin*†, C. B. Lapointe*, S. Coburn, S. Sheppard, J. A. Farnsworth, G. B. Rieker, and **P. E. Hamlington**. Adaptive mesh large eddy simulations of transitional jet diffusion flames in crossflow. *International Journal of Heat and Mass Transfer*, 236:126307, 2025.

[2] S. Kern*, M. E. McGuinn*, K. M. Smith, N. Pinardi, K. E. Niemeyer, N. S. Lovenduski, and **P. E. Hamlington**. Computationally efficient parameter estimation for high-dimensional ocean biogeochemical models. *Geoscientific Model Development*, 17(2):621–649, 2024.

[3] A. S. Makowiecki, S. Coburn, S. Sheppard, B. Bitterlin, T. Breda, A. Dawlatzai, R. Giannella, A. Jaros, C. Kling, E. Kolb, C. Lapointe*, S. Simons-Wellin*, H. Michelsen, J. W. Daily, M. P. Hannigan, **P. E. Hamlington**, J. A. Farnsworth, and G. B. Rieker†. WindCline: Sloping Wind Tunnel for Characterizing Flame Behavior Under Variable Inclines and Wind Conditions. *Review of Scientific Instruments*, 95:025103, 2024.

[4] M. A. Meehan*†, J. C. Hewson, and **P. E. Hamlington**. High resolution numerical simulations of methane pool fires using adaptive mesh refinement. *Proceedings of the Combustion Institute*, 40:105768, 2024.

[5] M. A. Meehan*† and **P. E. Hamlington**. Richardson and Reynolds number effects on the near-field of buoyant plumes: Flow statistics and fluxes. *Journal of Fluid Mechanics*, 961:A7, 2023.

[6] S. H. R. Whitman*, T. J. Souders*, M. A. Meehan*, J. G. Brasseur, and **P. E. Hamlington**†. Pressure Gradient Tailoring Effects on Vorticity Dynamics in the Near-Wake of Bluff-Body Premixed Flames. *Proceedings of the Combustion Institute*, 39(2):2359–2368, 2023.

[7] A. J. Fillo, **P. E. Hamlington**, and K. E. Niemeyer†. Assessing diffusion model impacts on enstrophy and flame structure in turbulent lean premixed flames. *Combustion Theory and Modelling*, 26:712–727, 2022.

[8] J. F. Glusman*†, C. B. Lapointe*, S. Simons-Wellin*, A. Makowiecki, G. B. Rieker, J. W. Daily, and **P. E. Hamlington**. Validation of Computationally Efficient Simulations of Douglas Fir Pyrolysis and Combustion Using Time-Resolved Frequency Comb Laser Measurements. *Frontiers in Forests and Global Change*, 5:758689, 2022.

[9] M. A. Meehan*, N. T. Wimer, and **P. E. Hamlington**†. Richardson and Reynolds number effects on the near-field of buoyant plumes: Temporal variability and puffing. *Journal of Fluid Mechanics*, 950:A24, 2022.

[10] M. A. Meehan*†, S. Simons-Wellin*, and **P. E. Hamlington**. Efficient Algorithm for Proper Orthogonal Decomposition of Block-Structured Adaptively Refined Numerical Simulations. *Journal of Computational Physics*, 469:111527, 2022.

[11] O. T. Patil*, M. A. Meehan*†, and **P. E. Hamlington**. Puffing frequency of interacting buoyant plumes. *Physical Review Fluids*, 7:L111501, 2022.

[12] J. Quick*, R. N. King†, M.T. Henry de Frahan, S. Ananthan, M.A. Sprague, and **P. E. Hamlington**. Field Sensitivity Analysis of Turbulence Model Parameters for Flow Over a Wing. *International Journal for Uncertainty Quantification*, 12(1):85–106, 2022.

[13] J. Quick*†, R. N. King, G. Barter, and **P. E. Hamlington**. Multifidelity Multiobjective Optimization for Wake Steering Strategies. *Wind Energy Science*, 7:1941–1955, 2022.

[14] J. D. Christopher*, O. A. Doronina*, D. Petrykowski, T. R. S. Hayden, C. Lapointe*, N. T. Wimer*, I. Grooms, G. B. Rieker, and **P. E. Hamlington**†. Flow Parameter Estimation Using Laser Absorption Spectroscopy and Approximate Bayesian Computation. *Experiments in Fluids*, 62:43, 2021.

[15] R. Darragh*, C. A. Z. Towery*, M. A. Meehan*, and **P. E. Hamlington**†. Lagrangian Analysis of Enstrophy Dynamics in a Highly Turbulent Premixed Flame. *Physics of Fluids*, 33:055120, 2021.

[16] R. Darragh*, C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington**†. Particle Pair Dispersion and Eddy Diffusivity in a High-Speed Premixed Flame. *Proceedings of the Combustion Institute*, 38:2845–2852, 2021.

[17] O. A. Doronina*, S. M. Murman, and **P. E. Hamlington**†. Parameter Estimation for RANS Models Using Approximate Bayesian Computation. *AIAA Journal*, 59(11):4703–4718, 2021.

[18] S. A. Isaacs*†, C. Lapointe*, and **P. E. Hamlington**. Development and Application of a Thin Flat Heat Pipe Design Optimization Tool for Small Satellite Systems. *Journal of Electronic Packaging*, 143:011010, 2021.

[19] C. Lapointe*†, N. T. Wimer*, S. Simons-Wellin*, J. F. Glusman*, G. B. Rieker, and **P. E. Hamlington**. Efficient Simulations of Propagating Flames and Fire Suppression Optimization Using Adaptive Mesh Refinement. *Fluids*, 6:323, 2021.

[20] A. S. Makowiecki, D. I. Herman, N. Hoghooghi, E. F. Strong, R. K. Cole, G. G. Ycas, F. R. Giorgetta, C. B. Lapointe*, J. F. Glusman, J. W. Daily, **P. E. Hamlington**, N. R. Newbury, I. R. Coddington, and G. B. Rieker†. Mid-Infrared Dual Frequency Comb Spectroscopy for Combustion Analysis from 2.8 to 5 Microns. *Proceedings of the Combustion Institute*, https://doi.org/10.1016/j.proci.2020.06.195, 2021.

[21] K. M. Smith*, S. Kern*, **P. E. Hamlington**†, M. Zavatarelli, N. Pinardi, E. K. Klee, and K. E. Niemeyer. BFM17 v1.0: a reduced biogeochemical flux model for upper-ocean biophysical simulations. *Geoscientific Model Development*, 14:2419–2442, 2021.

[22] A. M. Steinberg†, **P. E. Hamlington**, and X. Zhao. Structure and dynamics of highly turbulent premixed combustion. *Progress in Energy and Combustion Science*, 85:100900, 2021.

[23] N. T. Wimer*, M. S. Day, C. Lapointe*, M. A. Meehan* A. S. Makowiecki, J. F. Glusman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington**†. Numerical simulations of buoyancy-driven flows using adaptive mesh refinement: structure and dynamics of a large-scale helium plume. *Theoretical and Computational Fluid Dynamics*, 35:61–91, 2021.

[24] T. R. S. Hayden, N. T. Wimer*, C. Lapointe*, J. D. Christopher*, S. P. Nigam*, A. Upadhye, M. A. Strobel, **P. E. Hamlington**, and G. B. Rieker†. Characterization of the buoyant jet above a catalytic combustor using wavelength modulation spectroscopy. *Combustion Science and Technology*, 192(6):997–1014, 2020.

[25] Y. Kozak†, S. S. Dammati, L. G. Bravo, **P. E. Hamlington**, and A. Y. Poludnenko. WENO interpolation for Lagrangian particles in highly compressible flow regimes. *Journal of Computational Physics*, 402:109054, 2020.

[26] C. Lapointe*†, N. T. Wimer*, J. F. Glusman, A. S. Makowiecki, J. W. Daily, G. B. Rieker, and **P. E. Hamlington**. Efficient simulation of turbulent diffusion flames in openfoam using adaptive mesh refinement. *Fire Safety Journal*, 111:102934, 2020.

[27] A. S. Makowiecki, J. E. Steinbrenner, N. T. Wimer*, J. F. Glusman*, C. B. Lapointe*, J. W. Daily, **P. E. Hamlington**, and G. B. Rieker†. Dual Frequency Comb Spectroscopy of Solid Fuel Pyrolysis and Combustion: Quantifying the Influence of Moisture Content in Douglas Fir. *Fire Safety Journal*, 116:103185, 2020.

[28] J. Quick*†, J. King, R. N. King, **P. E. Hamlington**, and K. Dykes. Wake steering optimization under uncertainty. *Wind Energy Science*, 5:413–426, 2020.

[29] C. A. Z. Towery*†, A. Y. Poludnenko, and **P. E. Hamlington**. Detonation initiation by compressible turbulence thermodynamic fluctuations. *Combustion and Flame*, 213:172–183, 2020.

[30] C. A. Z. Towery*†, S. Walters, S. M. Guzik, X. Gao, and **P. E. Hamlington**. A Scaling Law for the Required Transition Zone Depth in Hybrid LES-DNS of Turbulent Premixed Flames. *Journal of Turbulence*, 21(12):722–734, 2020.

[31] N. T. Wimer*†, C. Lapointe*, J. D. Christopher*, S. P. Nigam*, T. R. S. Hayden, A. Upadhye, M. A. Strobel, G. B. Rieker, and **P. E. Hamlington**. Scaling of the puffing strouhal number for buoyant jets and plumes. *Journal of Fluid Mechanics*, 895:A26, 2020.

[32] J. F. Glusman*†, K. E. Niemeyer, A. S. Makowiecki, N. T. Wimer*, C. Lapointe*, G. B. Rieker, **P. E. Hamlington**, and J. W. Daily. Reduced Gas-Phase Kinetic Models for Burning of Douglas Fir. *Frontiers in Mechanical Engineering*, 5:40, 2019.

[33] T. R. S. Hayden, N. Malarich, D. Petrykowski, S. P. Nigam*, J. D. Christopher*, C. Lapointe*, N. T. Wimer*, **P. E. Hamlington**, and G. B. Rieker†. Oh radical measurements in combustion environments using wavelength modulation spectroscopy and dual frequency comb spectroscopy near 1491 nm. *Applied Physics B*, 125:226, 2019.

[34] T. R. S. Hayden, D. J. Petrykowski, A. Sanchez, S. P. Nigam*, C. Lapointe*, J. D. Christopher*, N. T. Wimer*, A. Upadhye, M. Strobel, **P. E. Hamlington**, and G. B. Rieker†. Characterization of OH, H_2O, and temperature profiles in industrial flame treatment systems interacting with polymer films. *Proceedings of the Combustion Institute*, 37(2):1571–1578, 2019.

[35] S. H. R. Whitman*, C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington**†. Scaling and collapse of conditional velocity structure functions in turbulent premixed flames. *Proceedings of the Combustion Institute*, 37(2):2527–2535, 2019.

[36] S. A. Wieland*, **P. E. Hamlington**†, S. J. Reckinger, and D. Livescu. Effects of isothermal stratification strength on vorticity dynamics for single-mode compressible Rayleigh-Taylor instability. *Physical Review Fluids*, 4:093905, 2019.

[37] J. D. Christopher*, C. Lapointe*, N. T. Wimer*, T. R. S. Hayden, I. Grooms, G. B. Rieker, and **P. E. Hamlington**†. Parameter estimation for complex thermal-fluid flows using approximate Bayesian computation. *Physical Review Fluids*, 3:104602, 2018.

[38] J. Kim, M. Bassenne, C. A. Z. Towery*, **P. E. Hamlington**, A. Y. Poludnenko, and J. Urzay†. Spatially localized multi-scale energy transfer in turbulent premixed combustion. *Journal of Fluid Mechanics*, 848:78–116, 2018.

[39] K. M. Smith*, **P. E. Hamlington**†, K. Niemeyer, B. Fox-Kemper, and N. Lovenduski. Effects of Langmuir Turbulence on Upper Ocean Carbonate Chemistry. *Journal of Advances in Modeling Earth Systems*, doi: 10.1029/2018ms001486, 2018.

[40] M. Ghoreyshi†, R. Darragh*, S. Harrison*, A. J. Lofthouse, and **P. E. Hamlington**. Canard-Wing Interference Effects on the Flight Characteristics of a Transonic Passenger Aircraft. *Aerospace Science and Technology*, 69:342–356, 2017.

[41] S. A. Isaacs*†, D. A. Arias, D. Hengeveld, and **P. E. Hamlington**. Experimental development and computational optimization of flat heat pipes for CubeSat applications. *Journal of Electronic Packaging*, 139(2):020910, 2017.

[42] R. N. King*†, K. Dykes, P. Graf, and **P. E. Hamlington**. Optimization of wind plant layouts using an adjoint approach. *Wind Energy Science*, 2:115–131, 2017.

[43] S. A. Mason*, **P. E. Hamlington**†, B. D. Hamlington, W. M. Jolly, and C. M. Hoffman. Effects of Climate Oscillations on Burning Index Variability in the United States. *Geophysical Research Letters*, 44:7002–7010, 2017.

[44] J. O'Brien, C. A. Z. Towery*, **P. E. Hamlington**, M. Ihme, A. Y. Poludnenko, and J. Urzay†. The cross-scale physical-space transfer of kinetic energy in turbulent premixed flames. *Proceedings of the Combustion Institute*, 36(2):1967–1975, 2017.

[45] **P. E. Hamlington**†, R. Darragh*, C. A. Briner*, C. A. Z. Towery*, and A. Y. Poludnenko. Lagrangian analysis of high-speed turbulent premixed reacting flows: thermochemical trajectories in hydrogen-air flames. *Combustion and Flame*, 186:193–207, 2017.

[46] R. N. King*, **P. E. Hamlington**†, and W. J. A. Dahm. Autonomic closure for turbulence simulations. *Physical Review E*, 93:031301(R), 2016.

[47] K. M. Smith*†, **P. E. Hamlington**, and B. Fox-Kemper. Effects of submesoscale turbulence on ocean tracers. *Journal of Geophysical Research: Oceans*, 121(1):908–933, 2016.

[48] N. Suzuki, B. Fox-Kemper, **P. E. Hamlington**, and L. P. Van Roekel. Surface Waves Affect Frontogenesis. *Journal of Geophysical Research: Oceans*, 121(5):3597–3624, 2016.

[49] C. A. Z. Towery*, A. Y. Poludnenko, J. Urzay, J. O'Brien, M. Ihme, and **P. E. Hamlington**†. Spectral kinetic energy transfer in turbulent premixed reacting flows. *Physical Review E*, 93:053115, 2016.

[50] S. R. Alexander* and **P. E. Hamlington**†. Analysis of turbulent bending moments in tidal current boundary layers. *Journal of Renewable and Sustainable Energy*, 7:063118, 2015.

[51] B. D. Hamlington, **P. E. Hamlington**†, S. G. Collins*, S. R. Alexander*, and K.-Y. Kim. Effects of Climate Oscillations on Wind Resource Variability in the United States. *Geophysical Research Letters*, 42(1):145–152, 2015.

[52] K. McCaffrey†, B. Fox-Kemper, **P. E. Hamlington**, and J. Thomson. Characterization of turbulence anisotropy, coherence, and intermittency at a prospective tidal energy site: Observational data analysis. *Renewable Energy*, 76:441–453, 2015.

[53] **P. E. Hamlington**† and M. Ihme. Modeling of Non-Equilibrium Homogeneous Turbulence in Rapidly Compressed Flows. *Flow, Turbulence and Combustion*, 93(1):93–124, 2014.

[54] **P. E. Hamlington**†, L. P. Van Roekel, B. Fox-Kemper, K. Julien, and G. Chini. Langmuir–Submesoscale Interactions: Descriptive Analysis of Multiscale Frontal Spindown Simulations. *Journal of Physical Oceanography*, 44:2249–2272, 2014.

[55] L. P. Van Roekel, B. Fox-Kemper, P. P. Sullivan, **P. E. Hamlington**, and S. R. Haney. The form and orientation of Langmuir cells for misaligned winds and waves. *Journal of Geophysical Research: Oceans*, 117:C05001, 2012.

[56] **P. E. Hamlington**, D. Krasnov, T. Boeck, and J. Schumacher†. Local dissipation scales and energy dissipation statistics in turbulent channel flow. *Journal of Fluid Mechanics*, 701:419–429, 2012.

[57] **P. E. Hamlington**[†], D. Krasnov, T. Boeck, and J. Schumacher. Statistics of the energy dissipation rate and local enstrophy in turbulent channel flow. *Physica D*, 241(3):169–177, 2012.

[58] **P. E. Hamlington**[†], A. Y. Poludnenko, and E. S. Oran. Intermittency in premixed turbulent reacting flows. *Physics of Fluids*, 24:075111, 2012.

[59] **P. E. Hamlington**[†], A. Y. Poludnenko, and E. S. Oran. Interactions between turbulence and flames in premixed reacting flows. *Physics of Fluids*, 23:125111, 2011.

[60] **P. E. Hamlington**[†] and W. J. A. Dahm. Frequency response of periodically sheared homogeneous turbulence. *Physics of Fluids*, 21:055107, 2009.

[61] **P. E. Hamlington**[†] and W. J. A. Dahm. Nonlocal form of the rapid pressure-strain correlation in turbulent flows. *Physical Review E*, 80:046311, 2009.

[62] **P. E. Hamlington**[†] and W. J. A. Dahm. Reynolds stress closure for nonequilibrium effects in turbulent flows. *Physics of Fluids*, 20:115101, 2008.

[63] **P. E. Hamlington**[†], J. Schumacher, and W. J. A. Dahm. Direct assessment of vorticity alignment with local and nonlocal strain rates in turbulent flows. *Physics of Fluids*, 20:111703, 2008.

[64] **P. E. Hamlington**[†], J. Schumacher, and W. J. A. Dahm. Local and nonlocal strain rate fields and vorticity alignment in turbulent flows. *Physical Review E*, 77:026303, 2008.

Conference Proceedings

[65] J. Miklaszewski*, M. Folk, and **P. E. Hamlington**. Combustor Design From a Turbine Perspective to Minimize the Effect of Turbulence. *ASME Turbo Expo 2024*, GT2024-121786, 2024.

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Presentations (Hamlington student or postdoc: *)

Conference Presentations: Abstract Only

[P.1] M. McGuinn*, S. Kern*, K.M. Smith, N.S. Lovenduski, K. Niemeyer, and **P. Hamlington** (2024) Global Analysis of the Interactions Between Small-scale Turbulent Mixing and Carbonate Chemistry in the Upper Ocean. Ocean Sciences Meeting, New Orleans, LA, 18-23 February 2024.

[P.2] K.O. Souders* and **P. E. Hamlington** (2023) Vorticity Dynamics in Bluff Body Stabilized Premixed Flames with External Pressure Gradients and Free-Stream Turbulence. 76th Annual meeting, Division of Fluid Dynamics, American Physical Society, Washington, DC, 19-21 November 2023.

[P.3] **P. E. Hamlington**, M.A. Meehan*, and N.T. Wimer* (2023) Resolution Requirements for Numerical Simulations of Buoyant Plumes. 76th Annual meeting, Division of Fluid Dynamics, American Physical Society, Washington, DC, 19-21 November 2023.

[P.4] L. Shannon, S. Coburn, G. Rieker, **P. E. Hamlington**, and J.A. Farnsworth (2023) Characterization of a Novel Inclinable Wind Tunnel for the Fundamental Study of Wildfire Combustion. 76th Annual meeting, Division of Fluid Dynamics, American Physical Society, Washington, DC, 19-21 November 2023.

[P.5] C. Mathurin, D. A. Long, G. C. Mathews, M. J. Cich, A. T. Heiniger, T. Souders*, A. Frymire, **P. E. Hamlington**, and G. B. Rieker (2023) High-speed velocity measurements with mid-infrared electrooptic modulator dual comb spectroscopy. 13th US National Combustion Meeting, 19-22 March 2023, College Station, TX.

[P.6] T. J. Souders*, S. H. R. Whitman*, M. A. Meehan*, and **P. E. Hamlington** (2023) Effects of turbulence and mean pressure gradients on the recirculation region of a bluff body stabilized flame. 13th US National Combustion Meeting, 19-22 March 2023, College Station, TX.

[P.7] M. McGuinn*, S. Kern*, K. Smith, K. Niemeyer, N. Lovenduski, and **P. E. Hamlington** (2022) Interactions Between Physical Processes and Carbonate Chemistry in the Oceanic Mixed Layer. 75th Annual meeting, Division of Fluid Dynamics, American Physical Society, Indianapolis, IN, 20-22 November 2022.

[P.8] M. Meehan* and **P. E. Hamlington** (2022) A Galerkin-based reduced-order modeling strategy for unsteady plumes. 75th Annual meeting, Division of Fluid Dynamics, American Physical Society, Indianapolis, IN, 20-22 November 2022.

[P.9] J. Miklaszewski*, M. Folk, and **P. E. Hamlington** (2022) Improving gas turbine performance through optimization of combustor turbulence. 75th Annual meeting, Division of Fluid Dynamics, American Physical Society, Indianapolis, IN, 20-22 November 2022.

[P.10] T. Souders*, S. Whitman*, M. Meehan*, and **P. E. Hamlington** (2022) Effects of Mean Pressure Gradient and Free- Stream Turbulence on a Bluff Body Stabilized Premixed Flame. IMECE, American Society of Mechanical Engineers, Columbus, OH, 30 October - 3 November 2022.

[P.11] J. Miklaszewski*, M. Folk, and **P. E. Hamlington** (2022) Pareto-Based Optimization of a Gas Turbine Combustor Design. IMECE, American Society of Mechanical Engineers, Columbus, OH, 30 October - 3 November 2022.

[P.12] **P. E. Hamlington** (2022) What do we get wrong (and right) when we study turbulent premixed flames in a box? Joint Session of the 15th International Workshop on Measurement and Computation of Turbulent Flames and the 17th Premixed Turbulent Flame Workshop, July 22, 2022, Vancouver, Canada.

[P.13] S. Kern*, M. McGuinn*, **P. E. Hamlington**, K. E. Niemeyer, N. S. Lovenduski, N. Pinardi, and K. M. Smith (2022) Multi-Objective Automated Parameter Estimation for Computational Biogeochemical Models. 2022 Ocean Sciences Meeting, Virtual, 24 February - 4 March 2022.

[P.14] S. Simons-Wellin*, C. B. Lapointe*, S. Coburn, S. Sheppard, A. Makowiecki, J. F. Glusman*, J. W. Daily, J. A. Farnsworth, G. B. Rieker, and **P. E. Hamlington** (2022) Effect of momentum ratio on methane jet diffusion flames in crossflow. 2022 Spring Technical Meeting of the Western States Section of the Combustion Institute, Stanford, CA, 21-22 March 2022.

[P.15] **P. E. Hamlington**, C. B. Lapointe*, M. Meehan*, S. Simons-Wellin*, N. T. Wimer*, and J. F. Glusman* (2022) High-Fidelity Numerical Simulations of Fire Using Adaptive Mesh Refinement. APS March Meeting 2022, Chicago, IL, 14-18 March 2022.

[P.16] C. Lapointe and **P. E. Hamlington** (2021) Computationally Efficient Simulations of Fire Spread at the Wildland Urban Interface Using Adaptive Mesh Refinement. AGU Fall Meeting, New Orleans, LA, 13-17 December 2021.

[P.17] M. Meehan* and **P. E. Hamlington** (2021) Reynolds and Richardson Number Dependence of Near-Field Flow Behavior for Axisymmetric Buoyant Jets and Plumes. 74th Annual meeting, Division of Fluid Dynamics, American Physical Society, Phoenix, AZ, 21-23 November 2021.

[P.18] S. Whitman*, J. Brasseur, and **P. E. Hamlington** (2021) Comparison of Shear Layer Dynamics in Reacting and Non-Reacting Bluff Body Flows. 74th Annual meeting, Division of Fluid Dynamics, American Physical Society, Phoenix, AZ, 21-23 November 2021.

[P.19] O. Patil*, M. Meehan*, and **P. E. Hamlington** (2021) Dynamical Collapse of Interacting Two-Dimensional Buoyant Plumes. 74th Annual meeting, Division of Fluid Dynamics, American Physical Society, Phoenix, AZ, 21-23 November 2021.

[P.20] T. Souders*, S. Whitman*, K. Ahmed, **P. E. Hamlington** (2021) Pressure Gradient Tailoring Effects on Simulated Flow Behind a Ballistic Bluff Body. 74th Annual meeting, Division of Fluid Dynamics, American Physical Society, Phoenix, AZ, 21-23 November 2021.

[P.21] **P. E. Hamlington**, C. Towery*, and A. Poludnenko (2021) Detonation initiation by compressible turbulence thermodynamic fluctuations. Fundamentals of Compressible Turbulence: Recent Advances and Open Questions, 20-21 May, 2021.

[P.22] M. Meehan*, N. Wimer*, and **P. E. Hamlington** (2020) Effect of Reynolds Number on the Buoyant Jet Puffing Instability. 73rd Annual meeting, Division of Fluid Dynamics, American Physical Society, 22-24 November 2020.

[P.23] J. Quick*, R. King, M. H. de Frahan, S. Ananthan, M. Sprague, and **P. E. Hamlington** (2020) Field Sensitivity Analysis for Wind Energy Modeling. 73rd Annual meeting, Division of Fluid Dynamics, American Physical Society, 22-24 November 2020.

[P.24] S. Whitman*, J. Brasseur, and **P. E. Hamlington** (2020) Thermal Effects in the Turbulent Wake of a Heated Bluff Body. 73rd Annual meeting, Division of Fluid Dynamics, American Physical Society, 22-24 November 2020.

[P.25] O. Doronina*, S. Murman, and **P. E. Hamlington** (2019) Approximate Bayesian Computation for Parameter Estimation in RANS Turbulence Models. 72nd Annual meeting, Division of Fluid Dynamics, American Physical Society, Seattle, WA, 23-26 November 2019.

[P.26] R. Darragh*, C. Towery, and **P. E. Hamlington** (2019) Particle Pair Dispersion in a Turbulent Premixed Flame. 72nd Annual meeting, Division of Fluid Dynamics, American Physical Society, Seattle, WA, 23-26 November 2019.

[P.27] C. Lapointe*, N. T. Wimer*, M. S. Day, A. S. Makowiecki, J. F. Glusman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2019) The Study of Fire at Small Scales Using Adaptive Mesh Refinement. 17th International Conference on Numerical Combustion, SIAM, 6-8 May 2019, Aachen, Germany.

[P.28] C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington** (2019) Initiation of Spontaneous Detonation in Highly Compressible Turbulence. 17th International Conference on Numerical Combustion, SIAM, 6-8 May 2019, Aachen, Germany.

[P.29] N. T. Wimer*, M. S. Day, A. S. Makowiecki, J. F. Glusman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2019) Low Mach Number AMR Combustion Simulations with PeleLM. SIAM Conference on Computational Science and Engineering, 25 February – 1 March 2019, Spokane, WA.

[P.30] C. Lapointe* N. T. Wimer*, and **P. E. Hamlington** (2018) Progress Towards Efficient Simulation of Large-Scale Fires. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.31] C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington** (2018) Spontaneous Detonation Initiation by Temperature Gradients in Compressible Isotropic Turbulence. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.32] O. Doronina*, C. A. Z. Towery*, and **P. E. Hamlington** (2018) Subgrid-Scale Model Development Using Approximate Bayesian Computation. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.33] N. T. Wimer*, M. Day, A. S. Makowiecki, J. F. Glusman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2018) Progress Towards Direct Numerical Simulations of Plumes and Pool Fires. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.34] **P. E. Hamlington**, C. A. Z. Towery*, and A. Y. Poludnenko (2018) Analysis of Highly-Turbulent Premixed Flames Using a Retrospective Lagrangian Analysis. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.35] Y. Kozak, S. S. Dammati, L. O'Neill, **P. E. Hamlington**, and A. Y. Poludnenko (2018) Novel method for Lagrangian-particle analysis of highly compressible reacting turbulence. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.36] S. S. Dammati, Y. Kozak, L. O'Neill, **P. E. Hamlington**, and A. Y. Poludnenko (2018) Lagrangian Analysis of the Thermochemical Trajectories in High-Speed, Turbulent, Premixed Methane-Air and Jet-Fuel-Air Flames. 71st Annual meeting, Division of Fluid Dynamics, American Physical Society, Atlanta, GA, 18-20 November 2018.

[P.37] C. Towery*, **P. Hamlington**, and A. Poludnenko (2018) Modes of Combustion in Highly Compressible Turbulent Premixed Reacting Flows. 16th Premixed Turbulent Flame Workshop, July 28, 2018, Dublin, Ireland.

[P.38] A. M. Steinberg and **P. E. Hamlington** (2018) Structure and Dynamics of Highly Turbulent Premixed Flames. Joint Session of the 14th International Workshop on Measurement and Computation of Turbulent Flames and the 16th Premixed Turbulent Flame Workshop, July 27, 2018, Dublin, Ireland.

[P.39] C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington** (2018) Direct Numerical Simulations of High Intensity Turbulent Combustion and Fire. World Congress of Computational Mechanics, July 23-27, 2018, New York, NY.

[P.40] **P. E. Hamlington**, C. Lapointe*, N. T. Wimer*, and M. Day (2018) Progress Towards Direct Numerical Simulation of Fire Using Adaptive Mesh Refinement. 10th FM Global Open Source CFD Fire Modeling Workshop, May 30-31, 2018, Norwood, MA.

[P.41] N. T. Wimer*, A. S. Mackowiecki, J. F. Glusman, A. Y. Poludnenko, C. Hoffman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2018) Direct Numerical Simulation of a Turbulent Helium Plume and Methane Pool Fire. The Fire Continuum Conference, 21-24 May 2018, Missoula, MT.

[P.42] N. T. Wimer*, A. S. Mackowiecki, A. Y. Poludnenko, C. Hoffman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2017) Examination of Wildland Fire Spread at Small Scales Using Direct Numerical Simulations and High-Speed Laser Diagnostics. American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans, LA.

[P.43] A. Mackowiecki, N. Wimer*, J. Daily, **P. Hamlington**, G. Rieker, C. Hoffman, and A. Poludnenko (2017) Examination of wildland fire spread at small scales using frequency comb laser diagnostics and direct numerical simulations. 7th International Fire Ecology & Management Congress, 28 November - 2 December, 2017, Orlando, FL.

[P.44] **P. Hamlington**, K. Smith*, K. Niemeyer, B. Fox-Kemper, and N. Lovenduski (2017) Effects of Small-Scale Turbulent Mixing on Upper Ocean Carbonate Chemistry. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.45] L. Pacheco, K. Smith*, **P. Hamlington**, and K. Niemeyer (2017) Assessing uncertainty in the turbulent upper-ocean mixed layer using an unstructured finite-element solver. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.46] R. Darragh*, C. Towery*, A. Poludnenko, and **P. Hamlington** (2017) Lagrangian Enstrophy Dynamics in Highly Turbulent Premixed Flames. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.47] S. H. R. Whitman*, C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington** (2017) A Structure Function Analysis of Intermittency and Universality in Turbulent Premixed Flames. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.48] C. Towery*, R. Darragh*, A. Poludnenko, and **P. Hamlington** (2017) Direct numerical simulations of premixed autoignition in compressible uniformly-sheared turbulence. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.49] S. Wieland*, S. Reckinger, **P. Hamlington**, and D. Livescu (2017) Multimodal Perturbation Evolution in the Compressible Rayleigh-Taylor Instability. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.50] A. Jirasek*, **P. Hamlington**, and A. Lofthouse (2017) Unsteady Computational Tests of a Non-Equilibrium Turbulence Model. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.51] O. Doronina*, J. Christopher*, **P. Hamlington**, and W. Dahm (2017) Autonomic Closure for Turbulent Flows Using Approximate Bayesian Computation. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.52] J. Christopher*, N. Wimer*, C. Lapointe*, T. Hayden, I. Grooms, G. Rieker, and **P. Hamlington** (2017) Parameter Estimation for a Pulsating Turbulent Buoyant Jet Using Approximate Bayesian Computation. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.53] S. P. Nigam*, C. Lapointe*, J. D. Christopher*, N. T. Wimer*, T. R. S. Hayden, G. Rieker, **P. Hamlington** (2017) Flame Structure and Dynamics for an Array of Premixed Methane-Air Jets. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.54] N. Wimer*, A. Mackowiecki, C. Hoffman, A. Poludnenko, J. Daily, G. Rieker, and **P. Hamlington** (2017) Direct Numerical Simulation of Wildland Fires at Small Scales. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.55] C. Lapointe* and **P. E. Hamlington** (2017) Parameter Optimization for Turbulent Reacting Flows Using Adjoints. 70th Annual meeting, Division of Fluid Dynamics, American Physical Society, Denver, CO, 19-21 November 2017.

[P.56] **P. Hamlington** (2017) Structure Functions and Intermittency in Turbulent Premixed Reacting Flows. Frontiers in Turbulence KRS 70 at the Denver Symposium, 17-18 November, 2017, Denver. CO.

[P.57] **P. Hamlington**, A. Jirasek*, and A. Lofthouse (2017) Reynolds Stress Closure for Nonequilibrium Effects in Turbulent Flows. University of Michigan and NASA Workshop on Advances in Turbulence Modeling, 11-13 July 2017, Ann Arbor, MI.

[P.58] **P. Hamlington** and A. Poludnenko (2017) Turbulence-Flame Interactions in High-Speed Premixed Reacting Flows. 16th International Conference on Numerical Combustion, SIAM, 3-5 April 2017, Orlando, FL.

[P.59] **P. E. Hamlington**, K. M. Smith*, L. P. Van Roekel, B. Fox-Kemper, N. Suzuki, and P. Sullivan (2016) Large-Scale Numerical Simulations of Ocean and Tidal Channel Boundary Layers. American Geophysical Union Fall Meeting, 12-16 December 2016, San Francisco, CA.

[P.60] K. M. Smith*, **P. E. Hamlington**, N. Pinardi, and M. Zavatarelli (2016) Reduced-Order Biogeochemical Flux Model for High-Resolution Multi-Scale Biophysical Simulations. American Geophysical Union Fall Meeting, 12-16 December 2016, San Francisco, CA.

[P.61] C. Towery*, R. Darragh*, A. Poludnenko, and **P. Hamlington** (2016) Detailed thermodynamic analyses of high-speed compressible turbulence. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.62] N. Wimer*, C. Lapointe*, T. Hayden, J. Christopher*, G. Rieker, and **P. Hamlington** (2016) Effects of Exit Variability on Near-Field Statistics for Turbulent Buoyant Jets. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.63] R. King* and **P. Hamlington** (2016) Turbulence Model Discovery with Data-Driven Learning and Optimization. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.64] **P. Hamlington**, S. Whitman*, C. Towery*, and A. Poludnenko (2016) Analysis of Turbulent Scales of Motion in Premixed Flames Using Structure Functions. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.65] J. Kim, M. Bassenne, C. Towery*, A. Poludnenko, **P. Hamlington**, M. Ihme, and J. Urzay (2016) Wavelet multi-resolution analysis of energy transfer in turbulent premixed flames. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.66] R. Darragh*, A. Poludnenko, and **P. Hamlington** (2016) Lagrangian analysis of premixed turbulent combustion in hydrogen-air flames. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.67] C. Lapointe*, N. Wimer*, T. Hayden, J. Christopher*, G. Rieker, and **P. Hamlington** (2016) Scaling Analysis of Temperature Variability Between a Rotating Cylinder and a Turbulent Buoyant Jet. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.68] J. Christopher*, N. Wimer*, T. Hayden, C. Lapointe*, I. Grooms, G. Rieker, and **P. Hamlington** (2016) Parameter Estimation for a Turbulent Buoyant Jet Using Approximate Bayesian Computation. 69th Annual meeting, Division of Fluid Dynamics, American Physical Society, Portland, OR, 20-22 November 2016.

[P.69] C. Towery*, A. Poludnenko, and **P. Hamlington** (2016) Small-Scale Resolution Requirements for DNS of Supersonic Turbulence. 11th European Fluid Mechanics Conference, Sevilla, Spain, 12-16 September 2016.

[P.70] K. M. Smith*, **P. E. Hamlington**, and B. Fox-Kemper (2016) Submesoscale Tracer Evolution in the Oceanic Mixed Layer. Submesoscale Processes: Mechanisms, Implications, and New Frontiers, University of Liege, Belgium, 23-27 May 2016.

[P.71] **P. E. Hamlington**, K. M. Smith*, and B. Fox-Kemper (2016) Effects of Submesoscale Eddies and Small-Scale Langmuir Turbulence on Multi-Scale Fluxes, Flow Instabilities, and Spectra in the Oceanic Mixed Layer. 2016 Ocean Sciences Meeting, New Orleans, LA, 21-26 February 2016.

[P.72] C. Towery*, A. Poludnenko, and **P. Hamlington** (2015) Dynamics of Strongly Compressible Turbulence. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.73] **P. Hamlington**, C. Towery*, J. O'Brien, A. Poludnenko, J. Urzay, and M. Ihme (2015) Multiscale Interactions and Backscatter in Premixed Combustion. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.74] R. King*, **P. Hamlington**, and W. J. A. Dahm (2015) Autonomic Closure for Large Eddy Simulation. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.75] C. Briner, **P. Hamlington**, and A. Poludnenko (2015) Lagrangian Analysis of Premixed Turbulent Flames. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.76] K. Smith*, **P. Hamlington**, and B. Fox-Kemper (2015) Characteristics and Evolution of Passive Tracers in the Oceanic Mixed Layer. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.77] E. Haffner, M. Green, **P. Hamlington**, A. Poludnenko, and E. Oran (2015) Coherent structure dynamics during turbulence-flame interaction. 68th Annual meeting, Division of Fluid Dynamics, American Physical Society, Boston, MA, 22-24 November 2015.

[P.78] **P. Hamlington**, and B. Hamlington (2015) Effects of Climate Oscillations on Wind Resource Variability. AWEA Wind Resource Assessment Webinar – Dynamic Winds, 26 August 2015.

[P.79] **P. Hamlington**, K. Smith*, N. Lovenduski, and B. Fox-Kemper (2015) Large Eddy Simulations of Reactive Tracers in the Oceanic Mixed Layer. 13th U.S. National Congress on Computational Mechanics, 27-30 July 2015, San Diego, CA.

[P.80] K. M. Smith*, **P. E. Hamlington**, N. S. Lovenduski, and B. Fox-Kemper (2015) Characteristics and Evolution of Reactive Tracers in the Oceanic Mixed Layer. 20th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 14-19 June 2015, Minneapolis, MN.

[P.81] R. King*, **P. Hamlington**, K. Dykes, and P. Graf (2015) Adjoint Optimization of Wind Turbine Locations for Systems Engineering. North American Wind Energy Academy Symposium, 9-11 June 2015, Blacksburg, VA.

[P.82] K. M. Smith*, S. R. Alexander*, L. P. Van Roekel, B. Fox-Kemper, and **P. E. Hamlington** (2014) Effects of Submesoscale Turbulence on Tracer Evolution in the Oceanic Mixed Layer. 67th Annual meeting, Division of Fluid Dynamics, American Physical Society, San Francisco, CA, 23-25 November 2014.

[P.83] C. A. Z. Towery*, A. Y. Poludnenko, and **P. E. Hamlington** (2014) Spectral Kinetic Energy Transfer Through a Premixed Flame Brush. 67th Annual meeting, Division of Fluid Dynamics, American Physical Society, San Francisco, CA, 23-25 November 2014.

[P.84] N. Wimer*, M. Churchfield, and **P. E. Hamlington** (2014) Effects of Offshore Wind Turbines on Ocean Waves. 67th Annual meeting, Division of Fluid Dynamics, American Physical Society, San Francisco, CA, 23-25 November 2014.

[P.85] R. N. King*, W. J. A. Dahm, and **P. E. Hamlington** (2014) Autonomic Closure for Large Eddy Simulations. 67th Annual meeting, Division of Fluid Dynamics, American Physical Society, San Francisco, CA, 23-25 November 2014.

[P.86] C. Towery*, K. Smith*, M. Van Schoor, and **P. Hamlington** (2014) Examination of Turbulent Flow Effects in Rotating Detonation Engines. 44th AIAA Fluid Dynamics Conference, 16-20 June 2014, Atlanta, GA.

[P.87] S. Alexander* and **P. Hamlington** (2014) Study of Turbulence Statistics in Large-Eddy Simulation of Ocean Current Turbine Environments. 33rd ASME International Conference on Ocean, Offshore, and Arctic Engineering, 8-13 June 2014, San Francisco, CA.

[P.88] C. Towery*, K. Smith*, M. Van Schoor, and **P. Hamlington** (2014) Modeling the Effects of Turbulence in Rotating Detonation Engines. American Phys. Soc. March Meeting, 3-7 Mar. 2014, Denver, CO.

[P.89] R. King* and **P. Hamlington** (2014) Local Dissipation Scales in Homogeneous Sheared Turbulence. American Physical Society March Meeting, 3-7 March 2014, Denver, CO.

[P.90] S. Alexander* and **P. Hamlington** (2014) Study of Turbulence Statistics in Large-Eddy Simulation of Ocean Current Turbine Environments. American Physical Society March Meeting, 3-7 March 2014, Denver, CO.

[P.91] **P. E. Hamlington**, S. R. Alexander*, B. Fox-Kemper, and N. Lovenduski (2014) Distributions and Dynamics of Biogeochemical Reactive Tracers in the Oceanic Mixed Layer. 2014 Ocean Sciences Meeting, 23-28 February 2014, Honolulu, HI.

[P.92] **P. E. Hamlington**, S. Alexander*, and B. Fox-Kemper (2013) Properties and Effects of Langmuir Turbulence in the Upper Ocean. American Geophysical Union Fall Meeting, 9-13 December 2013, San Francisco, CA.

[P.93] K. McCaffrey, B. Fox-Kemper, and **P. E. Hamlington** (2013) Characterizing Turbulent Events at a Tidal Energy Site from Acoustic Doppler Velocity Observations. 66th Annual meeting, Division of Fluid Dynamics, American Physical Society, Pittsburgh, PA, 24-26 November 2013.

[P.94] **P. E. Hamlington** (2013) Local dissipation scales in turbulent shear flows. 66th Annual meeting, Division of Fluid Dynamics, American Physical Society, Pittsburgh, PA, 24-26 November 2013.

[P.95] R. N. King*, J. K. Lundquist, and **P. E. Hamlington** (2013) Development and Application of a Wind Energy Computational Testbed in OpenFOAM. First Symposium on OpenFOAM in Wind Energy, 20-21 March, 2013, Oldenburg, Germany.

[P.96] A. C. Ordonez, B. Fox-Kemper, and **P. E. Hamlington** (2013) Energy Extraction from Ocean Currents and Waves: Mapping the Most Promising Locations. 11th Symposium on the Coastal Environment, American Meteorological Society, 5-10 January, 2013, Austin, TX.

[P.97] **P. E. Hamlington**, B. Fox-Kemper, K. Julien, and L. P. Van Roekel (2012) Descriptive analysis of Langmuir-submesoscale interactions using multiscale simulations of the Craik-Leibovich equations. Frontiers in Computational Physics: Modeling the Earth System, 16-20 December 2012, Boulder, CO.

[P.98] **P. E. Hamlington**, L. P. Van Roekel, B. Fox-Kemper, and K. Julien (2012) Interactions between Langmuir turbulence and submesoscale eddies. American Geophysical Union Fall Meeting, 3-7 December 2012, San Francisco, CA.

[P.99] **P. E. Hamlington**, A. Y. Poludnenko, and E. S. Oran (2012) Vorticity dynamics in variable density flows. 65th Annual meeting, Division of Fluid Dynamics, American Physical Society, San Diego, CA, 18-20 November 2012.

[P.100] L. P. Van Roekel, B. Fox-Kemper, P. P. Sullivan, **P. E. Hamlington**, and Haney, S.R. (2012) The form and orientation of Langmuir cells for misaligned wind and waves. 2012 Ocean Sciences Meeting, 19-24 February 2012, Salt Lake City, UT.

[P.101] B. Fox-Kemper, **P. E. Hamlington**, L. Van Roekel, and P. P. Sullivan (2012) Parameterization of subme-soscale and Langmuir-scale processes and interactions. 2012 Ocean Sciences Meeting, 19-24 February 2012, Salt Lake City, UT.

[P.102] **P. E. Hamlington**, L. Van Roekel, P. P. Sullivan, and B. Fox-Kemper (2012) Langmuir-Submesoscale Interactions: Multiscale Simulations with the Craik-Leibovich Equations. 2012 Ocean Sciences Meeting, 19-24 February 2012, Salt Lake City, UT.

[P.103] M. Green, **P. Hamlington**, A. Poludnenko, and E. Oran (2011) Using LCS to study coherent structures in reacting flows. 64th Annual meeting, Division of Fluid Dynamics, American Physical Society, Baltimore, MD, 20-22 November 2011.

[P.104] **P. E. Hamlington**, A. Y. Poludnenko, and E. S. Oran (2011) Intermittency in Premixed Turbulent Reacting Flows. 64th Annual meeting, Division of Fluid Dynamics, American Physical Society, Baltimore, MD, 20-22 November 2011.

[P.105] J. Schumacher, **P. E. Hamlington**, D. Krasnov, and T. Boeck (2010) Statistics of the energy dissipation rate and local enstrophy in turbulent channel flow. 63rd Annual meeting, Division of Fluid Dynamics, American Physical Society, Long Beach, CA, 21-23 November 2010.

[P.106] **P. E. Hamlington**, A. Y. Poludnenko, and E. S. Oran (2010) Vorticity, strain rate, and scalar gradient dynamics in premixed reacting flows. 63rd Annual meeting, Division of Fluid Dynamics, American Physical Society, Long Beach, CA, 21-23 November 2010.

[P.107] **P. E. Hamlington**, J. Schumacher, and W. J. A. Dahm (2008) Vorticity alignment with local and nonlocal strain rate eigenvectors in turbulent flows. 61st Annual Meeting, Division of Fluid Dynamics, American Physical Society, San Antonio, TX, 23-25 November 2008.

[P.108] **P. E. Hamlington** and W. J. A. Dahm (2005) Scale by scale assessment of the approach to isotropy in a turbulent shear flow. 58th Annual Meeting, Division of Fluid Dynamics, American Physical Society, Chicago, IL, 20-22 November 2005.

Conference Posters

[P.109] **P. E. Hamlington**, J. Daily, J. Farnsworth, M. Hannigan, K. Hiers, C. Hoffman, R. Linn, G. Rieker, N. Skowronski (2024) Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 4 December, 2024.

[P.110] **P. E. Hamlington**, J. Daily, J. Farnsworth, M. Hannigan, K. Hiers, C. Hoffman, R. Linn, G. Rieker, N. Skowronski (2023) Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 30 November 2023.

[P.111] **P. E. Hamlington**, J. Daily, J. Farnsworth, M. Hannigan, K. Hiers, C. Hoffman, R. Linn, G. Rieker, N. Skowronski (2022) Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 29 November – 2 December 2022.

[P.112] T. J. Souders, S. H. R. Whitman, M. A. Meehan, **P. E. Hamlington** (2022) Simulated Bluff Body Flames Subjected to Mean Pressure Gradients and Inlet Turbulence. 39th International Symposium on Combustion, 25 July 2022, Vancouver, Canada.

[P.113] S. J. Kern* M. E. McGuinn*, **P. E. Hamlington**, K. M. Smith, N. Pinardi, K. E. Niemeyer, and N. Lovenduski (2022) Multi-Objective, Multi-Site Automated Parameter Estimation for a Computational Biogeochemical Model. 23rd Conference on Atmospheric and Oceanic Fluid Dynamics, 12-17 June 2022, Breckenridge, CO.

[P.114] M. E. McGuinn*, S. J. Kern*, **P. E. Hamlington**, K. M. Smith, K. E. Niemeyer, N. S. Lovenduski (2022) Interactions Between Upper Ocean Physical Processes and Carbonate Chemistry in the Oceanic Mixed Layer. 23rd Conference on Atmospheric and Oceanic Fluid Dynamics, 12-17 June 2022, Breckenridge, CO.

[P.115] M. Jordan, E. Klee, K. Niemeyer, **P. E. Hamlington**, and N. Lovenduski (2022) Development of Tools for the Reduction and Analysis of Biogeochemical Models. 2022 Ocean Sciences Meeting, Virtual, 24 February - 4 March 2022.

[P.116] M. McGuinn, S. Kern, **P. E. Hamlington**, K. M. Smith, K. Niemeyer, and N. Lovenduski (2022) Effects of Submesoscale Turbulence on Carbonate Chemistry in THe Oceanic Mixed Layer. 2022 Ocean Sciences Meeting, Virtual, 24 February - 4 March 2022.

[P.117] **P. E. Hamlington**, J. Daily, J. Farnsworth, M. Hannigan, K. Hiers, C. Hoffman, R. Linn, G. Rieker, N. Skowronski (2021) Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 29 November – 3 December 2021.

[P.118] **P. E. Hamlington**, J. Daily, J. Farnsworth, M. Hannigan, K. Hiers, C. Hoffman, R. Linn, G. Rieker, N. Skowronski (2020) Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 2 December 2020.

[P.119] J. F. Glusman, A. Makowiecki, N. T. Wimer*, C. Lapointe*, A. Y. Poludnenko, C. M. Hoffman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2018) Examination of Wildfire Spread at Small Scales Using Direct Numerical Simulations and Frequency Comb Laser Diagnostics. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 27 November 2018, Washington, D.C.

[P.120] A. Makowiecki, J. Steinbrenner, J. Glusman, N. Wimer*, J. Daily, **P. Hamlington**, and G. Rieker (2018) Dual Frequency Comb Spectroscopy for the Investigation of Ignition Behaviour of Wildland Fire Fuels. Field Laser Applications in Industry and Research (FLAIR), Assisi, Italy, September 2018.

[P.121] N. T. Wimer*, C. Lapointe*, M. Day, A. Y. Poludnenko, J. F. Glusman, A. S. Makowiecki, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2018) Progress Towards Direct Numerical Simulations of Fire Using Adaptive Mesh Refinement. 37th International Symposium on Combustion, 29 July - 3 August 2018, Dublin, Ireland.

[P.122] A. S. Makowiecki, J. E. Steinbrenner, J. F. Glusman, N. T. Wimer*, J. W. Daily, **P. E. Hamlington**, and G. B. Rieker (2018) Diagnostics Suite for Benchmark Data of Wildland Fire Fuels for Application to Physics-Based Models. 37th International Symposium on Combustion, 29 July - 3 August 2018, Dublin, Ireland.

[P.123] J. F. Glusman, A. S. Makowiecki, N. T. Wimer*, K. E. Niemeyer, G. B. Rieker, **P. E. Hamlington**, and J. W. Daily (2018) Experimental Comparison of Small-Scale Biomass Pyrolysis and Reduced Chemical

Kinetic Models for Direct Numerical Simulations of Wildland Fires. 37th International Symposium on Combustion, 29 July - 3 August 2018, Dublin, Ireland.

[P.124] K. M. Smith*, S. Kern*, **P. E. Hamlington**, N. Pinardi, and M. Zavatarelli (2018) Effects of Submesocale Turbulence on the Evolution of Biogeochemically Tracers. 2018 Ocean Sciences Meeting, New Orleans, LA, 21-26 February 2018.

[P.125] N. T. Wimer*, A. Makowiecki, J. F. Glusman, A. Y. Poludnenko, C. M. Hoffman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2017) Examination of Wildfire Spread at Small Scales Using Direct Numerical Simulations and Frequency Comb Laser Diagnostics. Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium, 28-30 November 2017, Washington, D.C.

[P.126] A. S. Makowiecki, N. Hoghooghi, N. T. Wimer*, J. W. Daily, **P. E. Hamlington**, and G. B. Rieker (2017) Cavity Enhanced Dual Frequency Comb Spectroscopy for Characterization of Biomass Pyrolysis. Gordon Research Conference: Laser Diagnostics in Combustion, 6-11 August 2017, West Dover, VT.

[P.127] K. M. Smith*, **P. E. Hamlington**, K. Niemeyer, B. Fox-Kemper, and N. Lovenduski (2017) Effects of Langmuir Turbulence on Upper Ocean Carbonate Chemistry. AMS 21st Conference on Atmospheric and Oceanic Fluid Dynamics, 26-30 June 2017, Portland, OR.

[P.128] N. T. Wimer*, A. Makowiecki, A. Y. Poludnenko, C. M. Hoffman, J. W. Daily, G. B. Rieker, and **P. E. Hamlington** (2017) Examination of Wildland Fire Spread at Small Scales Using Direct Numerical Simulations and Frequency Comb Laser Diagnostics. 12th International Symposium on Fire Safety Science, 12-16 June 2017, Lund, Sweden.

[P.129] K. M. Smith*, **P. E. Hamlington**, N. Pinardi, and M. Zavatarelli (2017) Reduced-Order Biogeochemical Flux Model for High-Resolution Multi-Scale Biophysical Simulations. European Geophysical Union General Assembly, 23-28 April 2017, Vienna, Austria.

[P.130] S. A. Mason*, **P. E. Hamlington**, B. D. Hamlington, W. M. Jolly, and C. M. Hoffman (2016) Effects of Climate Oscillations on Burning Index Variability in the Continental United States. American Geophysical Union Fall Meeting, 12-16 December 2016, San Francisco, CA.

[P.131] J. Kim, M. Bassenne, A. Y. Poludnenko, **P. E. Hamlington**, M. Ihme, and J. Urzay (2016) Wavelet multi-resolution analysis of kinetic-energy transfer in turbulent premixed flames. 36th International Symposium on Combustion, Seoul, Korea, 31 July - 5 August, 2016.

[P.132] R. N. King*, **P. E. Hamlington**, and W. J. A. Dahm (2016) Autonomic Machine Learning Closure for Turbulence Simulations. Physics Informed Machine Learning, Center for Nonlinear Studies, Los Alamos National Laboratory, 2016.

[P.133] N. Suzuki, B. Fox-Kemper, **P. Hamlington**, and L. Van Roekel (2016) Submesoscale Fronts Are Torqued and Energized by Surface Gravity Waves, Turbulence, Larger Scales, and Time Evolution. 2016 Ocean Sciences Meeting, New Orleans, LA, 21-26 February 2016.

[P.134] J. Zhu, B. Fox-Kemper, S. Bachman, L. Van Roekel, **P. Hamlington**, J. Taylor, and L. Thomas (2016) Parameterization for Submesoscale-Permitting Simulations: From Ideal to Traditional to Novel Including Symmetric Instabilities. 2016 Ocean Sciences Meeting, New Orleans, LA, 21-26 February 2016.

[P.135] K. Smith*, **P. Hamlington**, and B. Fox-Kemper (2015) Effects of Submesoscale Turbulence on Oceanic Air-Sea Flux Tracers. 13th U.S. National Congress on Computational Mechanics, 27-30 July 2015, San Diego, CA.

[P.136] K. McCaffrey, B. Fox-Kemper, S. Alexander*, and **P. E. Hamlington** (2015) Coherence, Anisotropy, and Intermittency Measurements from Observational and Model Data at a Prospective Tidal Energy Site. 3rd International Conference on Energy and Meteorology, 22-26 June 2015, Boulder, CO.

[P.137] **P. E. Hamlington**, and S. R. Alexander* (2015) Analysis of turbulent bending moments in tidal current boundary layers. 20th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 14-19 June 2015, Minneapolis, MN.

[P.138] S. R. Alexander*, **P. E. Hamlington**, and K. McCaffrey (2013) Large-Eddy Simulation of Ocean Current Turbines in the Presence of Realistic Ocean Turbulence. 19th Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, 17-21 June 2013, Newport, RI.

[P.139] K. McCaffrey, **P. Hamlington**, and B. Fox-Kemper (2013) Characterizing Turbulent Events at a Tidal Energy Site from ADCP Data. 19th Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, 17-21 June 2013, Newport, RI.

[P.140] **P. E. Hamlington**, S. R. Alexander*, and B. Fox-Kemper (2013) Properties of Small-Scale Langmuir Turbulence in the Presence of Submesoscale Eddies. 19th Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, 17-21 June 2013, Newport, RI.

[P.141] S. R. Alexander*, **P. E. Hamlington**, and K. McCaffrey (2013) Simulation of Realistic Ocean Turbulence in Large-Eddy Simulations of Ocean Current Turbines. 33rd Los Alamos Center for Nonlinear Studies (CNLS) Annual Conference: Ocean Turbulence, 3-7 June 2013, Santa Fe, NM.

[P.142] **P. E. Hamlington**, S. R. Alexander*, and B. Fox-Kemper (2013) Interactions Between Small-Scale Langmuir Turbulence and Submesoscale Eddies. 33rd Los Alamos Center for Nonlinear Studies (CNLS) Annual Conference: Ocean Turbulence, 3-7 June 2013, Santa Fe, NM.

[P.143] A. Ordonez, **P. Hamlington**, and B. Fox-Kemper (2012) Energy extraction from ocean currents and waves: Mapping the most promising locations. American Geophysical Union Fall Meeting, 3-7 December 2012, San Francisco, CA.

[P.144] A. Ordonez, B. Fox-Kemper, and **P. Hamlington** (2012) Energy extraction from ocean currents and waves: Mapping the most promising locations. Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Conference, 10-14 October 2012, Seattle, WA.

Invited Seminars and Panels

[P.145] "Advanced diagnostics and adaptive mesh simulations for fine-scale studies of biomass combustion." MACCCR Annual Energy, Fuel and Combustion Research Review, Atlanta, GA, September 12, 2024.

[P.146] "Progress and Challenges in High-Fidelity Numerical Simulations of Combustion and Fire." Argonne National Laboratory, December 18, 2023.

[P.147] "World on Fire: 'Burning' Time on Supercomputers to Tame Combustion and Its Effects." Department of Mechanical Engineering, University of Colorado, Boulder, CO, November 16, 2023.

[P.148] "Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire." Department Seminar, Mechanical Engineering, Colorado School of Mines, Golden, CO, September 27, 2023.

[P.149] "The Structure and Dynamics of Puffing Plumes." Departmental Colloquium, Applied Mathematics, University of Colorado, Boulder, October 21, 2022.

[P.150] "Topics of Interest: Engineering Relevance & Community-Wide Code Development." Panelist, Joint Session of the 15th International Workshop on Measurement and Computation of Turbulent Flames and the 17th Premixed Turbulent Flame Workshop, July 22, 2022, Vancouver, Canada.

[P.151] "Structure and Dynamics of Buoyant Jets and Plumes." Departmental Seminar, Aerospace Engineering Sciences, University of Colorado, Boulder, October 29, 2021.

[P.152] "Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire." Environmental Engineering Program, University of Colorado, Boulder, November 6, 2020.

[P.153] "Effects of Langmuir Turbulence on Upper Ocean Carbonate Chemistry." University of Bologna, Italy, December 5, 2019.

[P.154] "Progress and Challenges in High-Fidelity Numerical Simulations of Combustion and Fire." Department of Mechanical and Aerospace Engineering Seminar, University of California, San Diego, CA, October 28, 2019.

[P.155] "Progress Towards Direct Numerical Simulations of Fire Using Adaptive Mesh Refinement." Department of Mechanical and Aerospace Engineering Seminar, University of Colorado, Colorado State, September 19, 2019.

[P.156] "Improving Simulation Accuracy Using Approximate Bayesian Computation." 3M Company, St. Paul, MN, July 15, 2019.

[P.157] "Progress Towards Direct Numerical Simulations of Fire Using Adaptive Mesh Refinement." Mechanical and Aerospace Engineering Seminar, Arizona State University, Tempe, AZ, Nov. 9, 2018.

[P.158] "Outer Loops: A New Lease on Life for Reynolds-Averaged Navier-Stokes Modeling" Department of Aerospace Engineering, Texas A&M University, College Station, TX, November 6, 2018.

[P.159] "Progress and Challenges in High-Fidelity Numerical Simulations of Combustion and Fire." Oregon State University, Corvallis, OR, October 26, 2018.

[P.160] "High-Fidelity Numerical Simulations of Combustion and Fire: A Hot Topic in a Warming World." Department of Mechanical Engineering, University of Colorado, Boulder, CO, October 19, 2018.

[P.161] "A Bridge Between Communities: The Study of Wildland Fires Using Techniques from Combustion." Colorado State University, Ft. Collins, CO, October 18, 2018.

[P.162] "Insights Obtained from Direct Numerical Simulations of Highly Turbulent Combustion." Pennsylvania State University, State College, PA, October 11, 2018.

[P.163] "Direct Numerical Simulations of Combustion and Fire." University of Wyoming, Laramie, WY, October 4, 2018.

[P.164] "From Turbines to Trees: Direct Numerical Simulations of Combustion and Fire." National Renewable Energy Laboratory, Golden, CO, July 9, 2018.

[P.165] "Structure and Dynamics of Highly Turbulent Premixed Combustion." Department of Aerospace Engineering, Texas A&M University, College Station, TX, March 26, 2018.

[P.166] "Structure and Dynamics of Highly Turbulent Premixed Combustion." Mechanical and Aerospace Engineering Seminar, Arizona State University, Tempe, AZ, October 13, 2017.

[P.167] "Turbulence-Flame Interactions in Premixed Combustion." Departmental Seminar, Mechanical Engineering, University of New Mexico, January 27, 2017.

[P.168] "Turbulence-Flame Interactions in Premixed Combustion." Los Alamos National Laboratory, January 26, 2017.

[P.169] "Turbulence-Flame Interactions in Premixed Combustion." Departmental Seminar, Aerospace Engineering Sciences, University of Colorado, Boulder, November 9, 2016.

[P.170] "The Future of Computational Fluid Dynamics: Optimization and Machine Learning Techniques for Reacting and Compressible Flows." 3M Tech Forum Simulations Chapter, November 3, 2016.

[P.171] "Large Scale Numerical Simulations of Ocean and Tidal Channel Boundary Layers." University of Bologna, Italy, October 27, 2016.

[P.172] "Oceans and Life; The Discovery of Submesoscales and Their Interaction with Productivity." University of Bologna, Italy, October 26, 2016.

[P.173] "Effects of Climate Oscillations on Wind Resource Variability." Boulder Fluid and Thermal Sciences Seminar, University of Colorado, Boulder, October 2015.

[P.174] "Turbulent Flow Simulations and the Evolution of Tracers in the Oceanic Mixed Layer." Mechanical Engineering Seminar, Colorado School of Mines, Golden, CO, March 17, 2015.

[P.175] "Interactions Between Turbulence and Flames in Premixed Combustion." Mechanical and Aerospace Engineering Seminar, Arizona State University, Tempe, AZ, February 13, 2015.

[P.176] "Effects of Submesoscale Turbulence on Tracer Evolution in the Oceanic Mixed Layer." Hydrology and Water Resources Seminar for CVEN 6393, Department of Civil, Environmental, and Architectural Engineering, University of Colorado, Boulder, CO, October 2014.

[P.177] "Vorticity dynamics in variable density flows." Dynamical Systems Seminar, Department of Applied Mathematics, University of Colorado, Boulder, December 2013.

[P.178] "Langmuir Turbulence in the Oceanic Mixed Layer." Oceanography Seminar, Department of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, October 2013.

[P.179] "Numerical Modeling of Pulsed and Rotating Detonation Engines." Boulder Fluid Dynamics Seminar, University of Colorado, Boulder, October 2013.

[P.180] "Vorticity Dynamics in Variable Density Flows." Center for Turbulence Research (CTR) Tea Seminar, Stanford University, August 2013.

[P.181] "The Non-Normality of Nature: Intermittency in Turbulent Flows." Seminar for CVEN 6393, Department of Civil, Environmental, and Architectural Engineering, University of Colorado, Boulder, CO, January 2013.

[P.182] "Langmuir-Submesoscale Interactions: Multiscale Simulations with the Craik-Leibovich Equations." NCAR IMAGe Theme of the Year Conference, University of Colorado, Boulder, CO, May 2012.

[P.183] "Anisotropy modeling for computational simulations of turbulent flows." Guest colloquium, Ilmenau University of Technology, Ilmenau, Germany, October 2010.

[P.184] "Local and nonlocal strain rate fields and vorticity dynamics in turbulent flows." Fluid Dynamics Review Seminar of the Burgers Program, University of Maryland, College Park, April 2010.

[P.185] "Reynolds stress closure for nonlocal and nonequilibrium effects in turbulent flows." Seminar, Ilmenau University of Technology, Ilmenau, Germany, June 2009.

[P.186] "Reynolds stress closure for nonequilibrium effects in turbulent flows." Computational Aero Sciences Seminar, University of Michigan, Ann Arbor, MI, October 2008.

[P.187] "Vorticity-strain dynamics in turbulent flows and nonequilibrium turbulence anisotropy." Seminar for Geophysical Turbulence group, National Center for Atmospheric Research (NCAR), Boulder, CO, September 2008.

[P.188] "Vorticity-strain dynamics in turbulent flows." Seminar, Ilmenau University of Technology, Ilmenau, Germany, March 2008.

Invited Educational Seminars and Panels

[P.189] "A Professor's Perspective on Teaching Assistants." Teaching Assistant Lunch, Department of Mechanical Engineering, University of Colorado, Boulder, October 5, 2016.

[P.190] "Introduction to Engineering Faculty Panel." University of Colorado, Boulder, August 31, 2016.

[P.191] "The Use of Computational Fluid Dynamics for Engineering Design, Analysis, Discovery, and Forecasting." Seminar for Senior Design Course, Department of Mechanical Engineering, University of Colorado, Boulder, November 2015.

[P.192] "Teaching the Unsolvable: Fluid Mechanics Education at the Undergraduate and Graduate Levels." Workshop for the Graduate Teaching Program, University of Colorado, Boulder, CO, Feb. 3, 2015.

[P.193] "Turbulent Flow Simulations and the Evolution of Tracers in the Oceanic Mixed Layer." Seminar for MCEN 5027, Department of Mechanical Engineering, University of Colorado, Boulder, Nov. 2014.

[P.194] "Numerical Modeling of Rotating and Pulsed Detonation Engines." Seminar for MCEN 5027, Department of Mechanical Engineering, University of Colorado, Boulder, CO, January 2014.

[P.195] "The Fluid Dynamics of Sports." Seminar for MCEN 5027, Department of Mechanical Engineering, University of Colorado, Boulder, CO, September 2013.

[P.196] "Beyond Curve Fitting: Turbulence Physics and Parameterization." Seminar for MCEN 5027, Department of Mechanical Engineering, University of Colorado, Boulder, CO, August 2012.

[P.197] "Nonlinear eddy viscosity models and nonequilibrium turbulence." Guest Lecture for graduate course in Turbulent Flows (Aero 525), University of Michigan, Ann Arbor, MI, April 2007.

Research Grants

As Principal Investigator (PI): Ongoing

2020–Present **Strategic Environmental Research and Development Program**, *Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire*, Resource Conservation and Climate Change Program, Co-PIs: J. Daily (CU), J. Farnsworth (CU), M. Hannigan (CU), K. Hiers (TTRS), R. Linn (LANL), C. Hoffman (CSU), G. Rieker (CU), and N. Skowronski (USFS), Total: $2,088,770; Hamlington share: $329,074

2019–Present **National Science Foundation**, *CAREER: Structure and Dynamics of Highly Turbulent Premixed Combustion*, Combustion & Fire Systems Program, Total: $500,645; Hamlington share: $500,645

As Principal Investigator (PI): Completed

2022–2024 **3M Company**, *Cutting Edge Process Optimization Using Highly Accurate Validated Simulations*, Co-PI: G. Rieker (CU), Total: $325,000; Hamlington share: $221,142

2019–2024 **National Science Foundation**, *Collaborative Research: Submesoscale-Resolving Large Eddy Simulations Using Reduced Biogeochemical Models*, Chemical and Physical Oceanography Programs, Co-PIs: N. Lovenduski (CU), K. Niemeyer (Oregon State University), Total: $284,658; Hamlington share: $245,728

2020–2022 **3M Company**, *Development of Novel Automated Optimization and Diagnostic Tools for Particle-Laden and Multiphase Material Processing Systems*, Co-PI: Greg Rieker (CU), Total: $270,000; Hamlington share: $150,000

2016–2021 **Strategic Environmental Research and Development Program**, *Examination of Wildland Fire Spread at Small Scales Using Direct Numerical Simulations and Frequency Comb Laser Diagnostics*, Resource Conservation and Climate Change Program, Co-PIs: J. Daily (CU), G. Rieker (CU), C. Hoffman (CSU), and A. Poludnenko (Texas A&M), Total: $1,123,971; Hamlington share: $396,742

2017–2021 **Air Force Office of Scientific Research**, *Analysis and Modeling of Turbulence-Flame Interactions in Premixed Reacting Flows*, Energy Conversion and Combustion Sciences Program, Total to CU: $377,994; Hamlington share: $377,994

2017–2021	**National Renewable Energy Laboratory**, *Uncertainty Quantification and Optimization Under Uncertainty for Wind Plant Modeling*, Alliance Partner University Program, Total to CU: $263,475; Hamlington share: $263,475

2016–2020	**National Aeronautics and Space Administration**, *Spatio-Temporally Adaptive Variable Fidelity Approach to Modeling and Simulation of Complex Turbulent Flows*, Co-PI: Y. Hussaini (FSU). Total to CU: $447,390; Hamlington share: $447,390

Grant was originally awarded to O. Vasilyev (total $750,540) and transferred to Hamlington in September 2016. Hamlington share includes subcontract to Y. Hussaini at FSU ($284,572).

2016–2018	**U.S. Air Force Academy**, *Physics-Based Turbulence Modeling for Numerical Simulations of High Angle of Attack Unsteady Aerodynamics*, Total to CU: $318,402; Hamlington share: $318,402

2016–2017	**Los Alamos National Laboratory**, *Adaptive Wavelet-Based Direct Numerical Simulation of Compressible Rayleigh-Taylor Instability*, Total to CU: $119,208; Hamlington Share: $119,208

Grant was originally awarded to O. Vasilyev (total $234,339) and transferred to Hamlington in September 2016.

2012–2018	**National Science Foundation**, *Collaborative Research: Reacting Tracers in a Turbulent Mixed Layer*, Physical Oceanography Program, Co-PIs: N. Lovenduski (CU), B. Fox-Kemper (Brown University), Total to CU: $401,386; Hamlington share: $281,391

2014–2016	**Air Force Office of Scientific Research**, *Analysis and Modeling of Multi-Scale Interactions in High-Speed Turbulent Reacting Flows*, Energy Conversion and Combustion Sciences Program, Total to CU: $159,740; Hamlington share: $159,740

2014–2016	**National Renewable Energy Laboratory**, *Wind Energy Systems Engineering, Wake Flow Modeling and Resource Assessment*, Alliance Partner University Program, Total to CU: $175,688; Hamlington share: $175,688

2015	**U.S. Air Force Academy**, *Numerical Simulations of Unsteady Aerodynamics Using HPC Resources*, Co-PIs: K. Jansen (CU), J. Farnsworth (CU), Total to CU: $48,332; Hamlington share: $24,166

2012–2014	**National Renewable Energy Laboratory**, *Wind Turbine Recycling and Systems Engineering*, Alliance Partner University Program, Total to CU: $171,432; Hamlington share: $171,432

As Co-PI or Subcontractor: Completed

2017–2022	**Air Force Office of Scientific Research**, *ARMADA- Adaptively Refined Mesh and Algorithm with Data Assimilation*, Energy Conversion and Combustion Sciences Program, Total to CU: $192,886; Hamlington share: $192,886

Subcontract from X. Gao at CSU; Hamlington is CU PI.

2015–2021	**3M Company**, *Research and Development of Optimized Polymer Film Flame Treatments*, Co-PI: Greg Rieker (CU), Total: $480,000; Hamlington share: $240,000

Gift from 3M Company, Hamlington is equal Co-PI with G. Rieker at CU.

2015–2018	**High Performance Computing Modernization Program**, *Dynamics and Properties of High-Speed Turbulent Reacting Flows: From a Jet Engine to an Exploding Star*, PI: A. Poludnenko (Texas A&M), Total: $397,611; Hamlington share: $397,611

Frontier Project from DoD HPCMP, PI: A. Poludnenko at Texas A&M University; Hamlington was CU PI.

2013–2014	**Defense Advanced Research Projects Agency**, *Modeling and Optimizing Turbines for Unsteady Flow*, Small Business Technology Transfer Phase I, Industry partner: Midé Technology, Total to CU: $40,000; Hamlington share: $40,000

DARPA STTR Phase I led by Midé Technology; subaward to CU with Hamlington as CU PI.

Internal Funding As Principal Investigator (PI): Completed

2015–2016	**Innovative Seed Grant**, *High Fidelity Simulations of Wildland Fire Combustion*, University of Colorado, Boulder, Hamlington share: $50,000

Internal funding from the University of Colorado, Boulder.

Computer Time Grants

2012	**National Center for Atmospheric Research**, *Special Assessment of Frontogenesis, Advanced Computing Resources for CMG: Multiscale Modeling of the Coupling between Langmuir Turbulence and Submesoscale Variability in the Oceanic Mixed Layer*, Accelerated Scientific Discovery for Yellowstone, Co-PIs: B. Fox-Kemper, J. McWilliams, P. P. Sullivan Hamlington, and L. Van Roekel, Total hours: 16,000,000

2013–2016	**Research Computing, University of Colorado**, *Reactive Tracers in a Turbulent Mixed Layer*, Janus supercomputer, Total computer hours: 2,300,000

2013–2016 **National Center for Atmospheric Research**, *Reacting Tracers in a Turbulent Mixed Layer*, Computational & Information Systems Laboratory, Yellowstone supercomputer, Total hours: 2,500,000

2014–2018 **Department of Defense High Performance Computing Modernization Program**, *Dynamics and Properties of High-Speed Turbulent Reacting Flows: From a Jet Engine to an Exploding Star*, PETTT Special Project, PI: Alexei Poludnenko (Texas A&M), Co-PI: Peter Hamlington (CU), Total hours: 750,000,000

2017–2018 **National Center for Atmospheric Research**, *Reacting Tracers in a Turbulent Mixed Layer*, Computational & Information Systems Laboratory, Cheyenne supercomputer, Total hours: 2,350,000

2020–Present **Texas Advanced Computing Center**, *Structure and Dynamics of Highly Turbulent Premixed Combustion*, Frontera Pathways, Total hours: 664,700 node hours

Research Supervision

Principal Advisor: Postdoctoral Researchers

2024–Present **Colin Towery**, Mechanical Engineering, University of Colorado, Boulder

2022–2023 **Michael Meehan**, Mechanical Engineering, University of Colorado, Boulder

2022 **Samuel Whitman**, Mechanical Engineering, University of Colorado, Boulder

2020–2022 **Caelan Lapointe**, Mechanical Engineering, University of Colorado, Boulder

2018–2020 **Colin Towery**, Mechanical Engineering, University of Colorado, Boulder

2016–2018 **Adam Jirasek**, Mechanical Engineering, University of Colorado, Boulder
Present position: Senior Researcher at the U.S. Air Force Academy, Colorado Springs, CO

Principal Advisor: Ph.D. Completed

2020–2025 **Jennifer Miklaszewski**, *Machine Learning Driven Optimization of Complex Turbulent Flows*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: September 2024, Defense: January 7, 2025
Present position: Rolls Royce

2017–2023 **Skyler Kern**, *The Development and Application of an Efficient Parameter Estimation Methodology for a High-dimensional Coupled Biophysical Model*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: August 2022, Defense: June 30, 2023
Present position: Assistant Professor, University of Alaska, Anchorage

2017–2022 **Michael Meehan**, *The near-field dynamics of buoyant helium plumes*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: October 2021, Defense: May 4, 2022
Present position: Postdoctoral Researcher, Sandia National Laboratory

2017–2022 **Jeff Glusman**, *Development of Reduced Chemical Models for Simulations of Biomass Pyrolysis and Combustion*, Mechanical Engineering, University of Colorado, Boulder
Co-Advised with John Daily, Comprehensive Exam: June 2021, Defense: April 1, 2022
Present position: Assistant Teaching Professor in Aerospace Engineering Sciences, University of Colorado, Boulder

2016–2022 **Samuel Whitman**, *Scale Sensitive Simulation and Analysis of Combustion and Thermal Effects in Turbulent Flows*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: January 2021, Defense: January 7, 2022
Present position: Postdoctoral Researcher at Argonne National Laboratory

2017–2021 **Julian Quick**, *Outer-Loop Applications of Computational Fluid Dynamics for Wind Energy Systems*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: April 2021, Defense: December 17, 2021
Present position: Postdoctoral Researcher at Technical University of Denmark

2016–2020 **Caelan Lapointe**, *Efficient Simulation of Complex Fire Phenomena in OpenFOAM using Adaptive Mesh Refinement*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: September 2019, Defense: October 22, 2020

2016–2020 **Olga Doronina**, *Turbulence Model Development Using Approximate Bayesian Computation*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: November 2019, Defense: August 20, 2020
Present position: Postdoctoral Researcher at the National Renewable Energy Laboratory, Golden, CO

2015–2020 **Ryan Darragh**, *Lagrangian Analysis of Turbulence-Flame Interactions in High-Speed Turbulent Premixed Flames*, Aerospace Engineering Sciences, University of Colorado, Boulder
Comprehensive Exam: August 2019, Defense: August 20, 2020
Present position: Computational Physicist at the Johns Hopkins University Applied Physics Laboratory, Laurel, MD

2015–2020 **Steven Isaacs**, *Computational Modeling and Optimization of Flat and Small-Scale Vapor Chambers*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: May 2017, Defense: January 10, 2020
Present position: Senior Systems Engineer at Redwire Space, Longmont, CO

2013–2019 **Nicholas Wimer**, *High-Resolution Numerical Simulations of Buoyancy-Driven Flows*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: May 2017, Defense: May 2, 2019
Present position: Computational Scientist at the National Renewable Energy Lab, Golden, CO

2015–2018 **Jason Christopher**, *Approximate Bayesian Computation for Parameter Estimation in Complex Thermal Fluid Systems*, Mechanical Engineering, University of Colorado, Boulder
Co-Advised with Greg Rieker, Comprehensive Exam: December 2017, Defense: July 19, 2018
Present position: Assistant Professor at the U.S. Air Force Academy

2012–2018 **Colin Towery**, *Multi-Physics and Multi-Scale Interactions in High-Speed Turbulent Premixed Reacting Flows*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: December 2016, Defense: January 4, 2018
Present position: Guest Scientist, Los Alamos National Laboratory, Los Alamos, NM

2016–2017 **Scott Wieland**, *Direct Numerical Simulations of the Compressible Low Atwood Rayleigh-Taylor Instability*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: March 2017, Defense: December 6, 2017, Requirements Completed: December 2018
Present position: Senior HPC Engineer, Rescale

2013–2017 **Katherine Smith**, *Effects of Submesoscale Turbulence on Reactive Tracers in the Upper Ocean*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: December 2016, Defense: August 17, 2017
Present position: Staff Scientist at Los Alamos National Lab, Los Alamos, NM

2012–2016 **Ryan King**, *Learning and Optimization for Turbulent Flows*, Mechanical Engineering, University of Colorado, Boulder
Comprehensive Exam: December 2015, Defense: August 16, 2016
Present position: Senior Scientist at the National Renewable Energy Lab, Golden, CO

Principal Advisor: Ph.D. Ongoing

2020–Present **Sam Simons-Wellin**, Mechanical Engineering, University of Colorado, Boulder
2020–Present **Mary McGuinn**, Mechanical Engineering, University of Colorado, Boulder
2021–Present **Kelsea Souders**, Mechanical Engineering, University of Colorado, Boulder
2023–Present **Anna Pauls**, Civil Engineering, University of Colorado, Boulder
2024–Present **Peter Bevington**, Mechanical Engineering, University of Colorado, Boulder

Principal Advisor: M.S. Thesis

2022–Present **Pablo Botin**, Mechanical Engineering, University of Colorado, Boulder

2022–2023 **Nick Riccobono**, Mechanical Engineering, University of Colorado, Boulder
Thesis Defense: April 2023

2019–2020 **Duncan McGough**, Aerospace Engineering Sciences, University of Colorado, Boulder
Thesis Defense: April 2020

2016–2018 **Siddharth Nigam**, Mechanical Engineering, University of Colorado, Boulder
Thesis Defense: May 2018

2013–2014 **Spencer Alexander**, Mechanical Engineering, University of Colorado, Boulder
Thesis Defense: August 2014

Principal Advisor: M.S.

2021–2022 **Kelly Kepler**, Mechanical Engineering, University of Colorado, Boulder
2021–2022 **Nathan Albu**, Mechanical Engineering, University of Colorado, Boulder
2019–2020 **Prakriti Sardana**, Mechanical Engineering, University of Colorado, Boulder
2014–2016 **Clarissa Briner**, Physics, University of Colorado, Boulder

2014–2015 **Davis Benz**, Mechanical Engineering, University of Colorado, Boulder
Co-Advised with Wei Tan

2014–2015 **Michelle Burns**, Mechanical Engineering, University of Colorado, Boulder

2012–2014 **Prateek Shrestha**, Mechanical Engineering, University of Colorado, Boulder

2012–2013 **Joel Berger**, Mechanical Engineering, University of Colorado, Boulder

Principal Advisor: Undergraduate

2023–Present **Emilie Feve**, Mechanical Engineering, University of Colorado, Boulder

2021–2022 **Omkar Patil**, Physics, University of Colorado, Boulder

2020–2021 **Derrick Choi**, Aerospace Engineering Sciences, University of Colorado, Boulder

2017–2019 **Owen Brown**, Mechanical Engineering, University of Colorado, Boulder

2015–2017 **Shelby Mason**, Mechanical Engineering, University of Colorado, Boulder

2014–2017 **Allison Leonard**, Mechanical Engineering, University of Colorado, Boulder

2015–2016 **Sean Harrison**, Mechanical Engineering, University of Colorado, Boulder

2015 **Trevor Roberts**, Mechanical Engineering, University of Colorado, Boulder

2014–2015 **Christine Martini**, Mechanical Engineering, University of Colorado, Boulder

2013–2014 **Sean Collins**, Mechanical Engineering, University of Colorado, Boulder

Student Fellowships and Awards

2022 **Kelsea Souders**, National Science Foundation Graduate Research Fellowship

2018 **Skyler Kern**, National Science Foundation Graduate Research Fellowship

2018 **Michael Meehan**, National Science Foundation Graduate Research Fellowship

2018 **Samuel Whitman**, Blue Waters Graduate Research Fellowship

2017 **Caelan Lapointe**, National Science Foundation Graduate Research Fellowship

2017 **Caelan Lapointe**, National Defense Science and Engineering Graduate Fellowship
Declined in order to accept NSF GRF instead.

2017 **Colin Towery**, Thomas & Brenda Geers Fellowship, Mechanical Engineering, U. Colorado, Boulder

2016 **Ryan Darragh**, National Defense Science and Engineering Graduate Fellowship

2016 **Katherine Smith**, Achievement Rewards for College Scientists (ARCS) Scholarship, U. Colorado, Boulder

Graduate Teaching

Graduate Lecture-Based Courses

Spring 2023 **MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6037: Turbulent Flows)
23 students

Fall 2021 **MCEN 5020: Mathematical Methods**, Professor, Mechanical Engineering, CU Boulder
89 students

Spring 2021 **MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6037: Turbulent Flows)
18 students

Fall 2020 **MCEN 5020: Mathematical Methods**, Professor, Mechanical Engineering, CU Boulder
70 students

Spring 2020 **MCEN 6001: Reacting Flows**, Professor, Mechanical Engineering, CU Boulder
10 students

Spring 2019 **MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 5037: Turbulent Flows)
25 students, FCQ Course Overall: 5.1, FCQ Instructor Overall: 5.6

Spring 2018 **MCEN 6001: Reacting Flows**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6519: Reacting Flows)
19 students, FCQ Course Overall: 5.4, FCQ Instructor Overall: 5.9

Fall 2017 **MCEN 5021: Introduction to Fluid Dynamics**, Professor, Mechanical Engineering, CU Boulder
31 students, FCQ Course Overall: 5.3, FCQ Instructor Overall: 5.5

Spring 2017	**MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 5037: Turbulent Flows)
	24 students, FCQ Course Overall: 5.4, FCQ Instructor Overall: 5.7
Spring 2016	**MCEN 6001: Reacting Flows**, Professor, Mechanical Engineering, CU Boulder
	15 students, FCQ Course Overall: 5.6, FCQ Instructor Overall: 5.8
Spring 2015	**MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6037: Turbulent Flows)
	19 students, FCQ Course Overall: 4.7, FCQ Instructor Overall: 5.4
Fall 2014	**MCEN 5041: Advanced Fluid Mechanics I**, Professor, Mechanical Engineering, CU Boulder
	29 students, FCQ Course Overall: 4.8, FCQ Instructor Overall: 5.4
Spring 2014	**MCEN 5228: Fluid Dynamics of Renewable Energy Systems**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 5519: Fluid Dynamics of Renewable Energy Systems)
	20 students, FCQ Course Overall: 4.4, FCQ Instructor Overall: 5.2
Fall 2013	**MCEN 6228: Reacting Flows**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6519: Reacting Flows)
	17 students, FCQ Course Overall: 5.4, FCQ Instructor Overall: 5.8
Spring 2013	**MCEN 7221: Turbulence**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 6037: Turbulent Flows)
	26 students, FCQ Course Overall: 5.3, FCQ Instructor Overall: 5.6
Fall 2012	**MCEN 5021: Introduction to Fluid Dynamics**, Professor, Mechanical Engineering, CU Boulder (cross-listed with ASEN 5051: Fluid Mechanics)
	55 students, FCQ Course Overall: 5.0, FCQ Instructor Overall: 5.5

Graduate Seminar Courses

Fall 2020	**MCEN 5208: Intro. to Research**, Professor, Mechanical Engineering, CU Boulder
	35 students
Fall 2019	**MCEN 5208: Intro. to Research**, Professor, Mechanical Engineering, CU Boulder
	59 students, FCQ Course Overall: 4.2, FCQ Instructor Overall: 4.9
Fall 2013	**MCEN 5027: Graduate Seminar**, Professor, Mechanical Engineering, CU Boulder
	85 students, FCQ Course Overall: 4.6, FCQ Instructor Overall: 5.4
Spring 2013	**MCEN 5027: Graduate Seminar**, Professor, Mechanical Engineering, CU Boulder
	78 students, FCQ Course Overall: 4.5, FCQ Instructor Overall: 5.1

Combined Graduate/Undergraduate Lecture-Based Courses

Spring 2016	**MCEN 4228/5228: Optimization with Application to Wind Plant Design**, Professor, Mechanical Engineering, CU Boulder
	10 students, FCQ Course Overall: 4.5, FCQ Instructor Overall: 5.0

Graduate Independent Study Supervision

Fall 2022	**Sam Simons-Wellin**, *Computational Transport Phenomena in Particle-Laden Flow*, MCEN 6898: Independent Study, Mechanical Engineering, CU Boulder
Spring 2022	**Sam Simons-Wellin**, *Numerical Combustion*, MCEN 6898: Independent Study, Mechanical Engineering, CU Boulder
Fall 2019	**Olga Doronina**, *Turbulence Modeling*, MCEN 5898: Independent Study, Mechanical Engineering, CU Boulder
Spring 2018	**Owen Brown**, *Computational Fluid Dynamics*, MCEN 5898: Independent Study, Mechanical Engineering, CU Boulder
Fall 2017	**Ryan Darragh**, *Turbulent Combustion*, ASEN 6849: Independent Study, Aerospace Engineering Sciences, CU Boulder
Fall 2016	**Katherine Smith**, *Ocean Turbulence*, MCEN 6898: Independent Study, Mechanical Engineering, CU Boulder
Spring 2014	**Michelle Burns**, *Experimental Fluid Mechanics*, MCEN 5898: Independent Study, Mechanical Engineering, CU Boulder
Summer 2013	**Joel Berger**, *Introduction to Turbulent Combustion*, MCEN 5898: Independent Study, Mechanical Engineering, CU Boulder

Spring 2013 **Mark Hinaman**, *Introduction to Reservoir Engineering*, MCEN 5898: Independent Study, Mechanical Engineering, CU Boulder

Undergraduate Teaching

Undergraduate Lecture-Based Courses

Fall 2024 **MCEN 3030: Computational Methods**, Professor, Mechanical Engineering, CU Boulder
79 students

Fall 2024 **COEN 1830: Freshman Seminar**, Professor, Mechanical Engineering, CU Boulder
22 students

Fall 2016 **MCEN 3021: Fluid Mechanics**, Professor, Mechanical Engineering, CU Boulder
142 students, FCQ Course Overall: 4.5, FCQ Instructor Overall: 5.0

Fall 2014 **MCEN 3021: Fluid Mechanics**, Professor, Mechanical Engineering, CU Boulder
82 students, FCQ Course Overall: 4.6, FCQ Instructor Overall: 4.9

Undergraduate Independent Study Supervision

Fall 2022 **Omkar Patil**, *Buoyancy Driven Flows*, Independent Study, Physics, CU Boulder

Spring 2022 **Omkar Patil**, *Buoyancy Driven Flows*, Independent Study, Physics, CU Boulder

Fall 2018 **Sam Simons-Wellin**, *Computational Fluid Dynamics*, MCEN 4848: Independent Study, Mechanical Engineering, CU Boulder

Spring 2017 **Phillip Velasquez**, *Computational Fluid Dynamics*, MCEN 4848: Independent Study, Mechanical Engineering, CU Boulder

Spring 2016 **Lillian Herrick-Reynolds**, *Combustion*, MCEN 4848: Independent Study, Mechanical Engineering, CU Boulder

Teaching Grants

2016 **Center for Research and Education in Wind**, *Optimization with Application to Wind Plant Design*, Short Course, 7 students, Co-PI: Katherine Dykes (NREL), Total: $2,000 (Hamlington share: $2,000)

Dissertation Committee Service

Ph.D. Committee: Completed

2012 **Reckinger, S.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Oleg Vasilyev, Defense: November 2012

2013 **Westfall, J.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kurt Maute, Defense: August 2013

2013 **Soltys, M.**, Ph.D. Committee, Civil, Environmental and Architectural Engineering, CU Boulder
Advisor: John Crimaldi, Defense: November 2013

2014 **McCaffrey, K.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Baylor Fox-Kemper, Defense: May 2014

2014 **Guan, Q.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: John Daily, Defense: July 2014

2015 **Haney, S.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Baylor Fox-Kemper, Comprehensive Exam: August 2012, Defense: January 2015

2015 **Shoaei, F.**, Ph.D. Committee, Civil, Environmental and Architectural Engineering, CU Boulder
Advisor: John Crimaldi, Comprehensive Exam: December 2013, Defense: April 2015

2015 **Vanderwende, B.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Defense: April 2015

2015 **Turner, M.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Daven Henze, Comprehensive Exam: January 2014, Defense: July 2015

2015 **Boyle, L.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Mike Hannigan, Comprehensive Exam: April 2014, Defense: July 2015

2016 **Kasimov, N.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Oleg Vasilyev, Comprehensive Exam: May 2014, Defense: January 2016

2016 **Brown-Dymkoski, E.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Oleg Vasilyev, Comprehensive Exam: November 2014, Defense: April 2016

2016 **Purser, M.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kenneth Jansen, Comprehensive Exam: November 2014, Defense: April 2016

2016 **Woolwine, K.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kenneth Jansen, Comprehensive Exam: April 2015, Defense: April 2016

2016 **Villanueva, C.H.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Kurt Maute, Comprehensive Exam: January 2015, Defense: May 2016

2016 **Walter, S.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Ryan Starkey, Comprehensive Exam: November 2014, Defense: May 2016

2016 **Pratt, K.**, Ph.D. Committee, Civil, Environmental and Architectural Engineering, CU Boulder
Advisor: John Crimaldi, Comprehensive Exam: December 2014, Defense: October 2016

2016 **Guerrette, J.J.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Daven Henze, Defense: November 2016

2017 **Elliott, W.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Wei Tan, Comprehensive Exam: January 2016, Defense: January 2017

2017 **St. Martin, C.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Comprehensive Exam: May 2015, Defense: January 2017

2017 **Schroeder, P.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: May 2016, Defense: May 2017

2017 **Laurence, R.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Brian Argrow, Comprehensive Exam: December 2015, Defense: July 2017

2017 **Coley, C.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Evans, Comprehensive Exam: December 2016, Defense: July 2017

2017 **Worsnop, R.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Comprehensive Exam: August 2015, Defense: December 2017

2018 **Lee, J.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Comprehensive Exam: November 2015, Defense: January 2018

2018 **Engvall, L.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: John Evans, Comprehensive Exam: April 2017, Defense: April 2018

2018 **Culler, E.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Farnsworth, Comprehensive Exam: April 2017, Defense: May 2018

2018 **Hayden, T.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: August 2017, Defense: May 2018

2018 **Plumley, M.**, Ph.D. Committee, Applied Math, CU Boulder
Advisor: Keith Julien, Comprehensive Exam: November 2016, Defense: February 2018

2018 **Nsanzineza, R.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Jana Milford, Comprehensive Exam: October 2017, Defense: October 2018

2019 **Mazzaro, L.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Comprehensive Exam: November 2016, Defense: January 2019

2019 **Campbell, N.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Brian Argrow, Comprehensive Exam: May 2017, Defense: April 2019

2019 **Makowiecki, A.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: February 2019, Defense: December 2019

2020 **Tomaszewski, J.**, Ph.D. Committee, Atmospheric and Oceanic Sciences, CU Boulder
Advisor: Julie Lundquist, Comprehensive Exam: April 2017, Defense: May 2020

2020 **Skinner, R.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kenneth Jansen, Comprehensive Exam: January 2018, Defense: July 2020

2020 **Balin, R.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kenneth Jansen, Comprehensive Exam: December 2018, Defense: November 2020

2020 **Connor, E.**, Ph.D. Committee, Civil, Environmental and Architectural Engineering, CU Boulder
Advisor: John Crimaldi, Comprehensive Exam: December 2018, Defense: November 2020

2021 **Wetterer-Nelson, C.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: John Evans, Comprehensive Exam: May 2020, Defense: January 2021

2021 **Straccia, J.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Farnsworth, Comprehensive Exam: March 2019, Defense: May 2021

2021 **Rybchuk, A.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: February 2021, Defense: December 2021

2021 **Strong, L.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: May 2021, Defense: December 2021

2022 **Lockwood, K.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Nicole Labbe, Comprehensive Exam: July 2021, Defense: March 2022

2022 **Roseman, C.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Brian Argrow, Comprehensive Exam: February 2021, May 2022

2022 **Abbas, N.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Lucy Pao, Comprehensive Exam: September 2021, Defense: July 2022

2022 **Faulkner, C.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Wangda Zuo, Comprehensive Exam: March 2022, Defense: December 2022

2023 **Trujillo, C.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Karl Linden, Comprehensive Exam: August 2021, Defense: January 2023

2023 **Gloutak, D.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Farnsworth, Comprehensive Exam: November 2021, Defense: April 2023

2023 **Gomez, M.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Evans, Comprehensive Exam: May 2021, Defense: May 2023

2023 **Castellini, J.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Wangda Zuo, Comprehensive Exam: October 2022, Defense: May 2023

2023 **Rundel, J.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Hope Michelsen, Comprehensive Exam: January 2023, Defense: June 2023

2023 **Prakash, A.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Evans, Comprehensive Exam: September 2021, Defense: July 2023

2023 **Parmar, B.**, Ph.D. Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: John Evans, Comprehensive Exam: September 2021, Defense: July 2023

2023 **Yun, D.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: September 2022, Defense: September 2023

2024 **Teeraratkul, C.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Debanjan Mukherjee, Comprehensive Exam: January 2024, Defense: July 2024

2024 **Callahan, C.**, Ph.D. Committee, Mechanical Engineering, CU Boulder
Advisor: Greg Rieker, Comprehensive Exam: May 2024, Defense: November 2024

Ph.D. Committee: Ongoing

2023 **Horing, J.**, Ph.D. Committee, Aerospace Engineering, CU Boulder
Advisor: Iain Boyd, Comprehensive Exam: September 2023

2023 **Sheppard, S.**, Ph.D. Committee, Aerospace Engineering, CU Boulder
Advisor: John Farnsworth, Comprehensive Exam: November 2023

2024 **Braga, M.**, Ph.D. Committee, Aerospace Engineering, CU Boulder
Advisor: Robyn MacDonald, Comprehensive Exam: May 2024

Ph.D. Committee: External

2018 **Antonini, E.**, External Thesis Reviewer, Mechanical and Industrial Engineering, University of Toronto
Advisor: Cristina Amon, Defense: September 2018

2018 **Paes, P.**, Ph.D. Committee, Mechanical Engineering, Pennsylvania State University
Advisor: Yuan Xuan, Defense: December 2018

2019 **Kshitij, A.**, Ph.D. Committee, Aerospace and Mechanical Engineering, Arizona State University
Advisor: Werner Dahm, Preliminary Exam: March 2017, Comprehensive Exam: October 2018

2020 **Stallcup, E.**, Ph.D. Committee, Aerospace and Mechanical Engineering, Arizona State University
Advisor: Werner Dahm, Preliminary Exam: November 2018

2021 **Torres, E.**, Ph.D. Committee, Aerospace and Mechanical Engineering, Arizona State University
Advisor: Werner Dahm, Preliminary Exam: April 2019

M.S. Committee: Completed

2013 **Masson, N.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Mike Hannigan, Defense: November 2013

2014 **Mati, N.**, M.S. Thesis Committee, Aerospace Engineering Sciences, CU Boulder
Advisor: Kenneth Jansen, Defense: July 2014

2015 **Shervanitabar, N.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Oleg Vasilyev, Defense: December 2015

2017 **Farr, M.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Alireza Doostan, Defense: January 2017

2017 **Cameron, D.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: John Daily, Defense: November 2017

2019 **Hanley, M.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Shalom Ruben, Defense: May 2019

2020 **Tong, G.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: John Evans, Defense: April 2020

2021 **Pullutasig, B.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Debanjan Mukherjee, Defense: April 2021

2021 **Wilson, J.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Debanjan Mukherjee, Defense: August 2021

2021 **Sahni, A.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Debanjan Mukherjee, Defense: November 2021

2021 **Pagliuca, G.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Kris Karnauskas, Defense: November 2021

2022 **Botero, A.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Nicole Labbe, Defense: May 2022

2022 **Ghole, C.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Hope Michelsen, Defense: November 2022

2024 **Thondiraj, J.**, M.S. Thesis Committee, Mechanical Engineering, CU Boulder
Advisor: Alireza Doostan, Defense: November 2024

Outreach

2023 **Faculty Advisor**, *Summer Multicultural Access to Research Training (SMART) Program*, University of Colorado, Boulder, Student: Favio Espejo

2022 **Mentor**, *Balsells International Mobility Program*, University of Colorado, Boulder, Student: Pablo Botin

2020–2021 **Mentor**, *Discovery Learning Apprenticeship (DLA) Program*, University of Colorado, Boulder, Student: Derrick Choi

2017 **Public lecture**, *Wind Energy in a Turbulent World*, CU on the Weekend, Boulder, CO, December 9, 2017

2016 **Mentor**, *Summer Multicultural Access to Research Training (SMART) Program*, University of Colorado, Boulder, Student: Skyler Kern

2016 **Public lecture**, *The Most Important Unsolved Problem of Classical Physics*, Café Scientifique, Denver, CO, March 22, 2016

2015–2016 **Mentor**, *Discovery Learning Apprenticeship (DLA) Program*, University of Colorado, Boulder, Student: Shelby Mason

2015 **Mentor**, *Undergraduate Research Opportunities Program (UROP)*, University of Colorado, Boulder, Student: Trevor Roberts

2015 **Mentor**, *Summer Multicultural Access to Research Training (SMART) Program*, University of Colorado, Boulder, Student: Monique McClain

2015   **Mentor**, *Balsells International Mobility Program*, University of Colorado, Boulder, Student: David Iglesias

2013–2014   **Mentor**, *Discovery Learning Apprenticeship (DLA) Program*, University of Colorado, Boulder, Student: Sean Collins

2012   **Mentor**, *UCAR Significant Opportunities in Atmospheric Research and Science (SOARS) program*, Student: Ana Ordonez

2012   **Co-Instructor**, *Climate Science Education for Under-represented Students Through Collaboration with CABPES (Colorado Association of Black Professional Engineers and Scientists)*, NASA ROSES proposal educational supplement, PI: Robert Leben