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EXPERIENCE

Princeton University, 2012 – Present

Department of Mechanical and Aerospace Engineering

Associate Chair, 2023 – Present

Professor, 2022 – Present

Director of Graduate Studies, 2020 – 2023

Associate Professor, 2018 – 2022

Assistant Professor, 2012 – 2018

Princeton Institute for Computational Science and Engineering

Director, Graduate Certificate in Computational Science and Engineering, 2019 – Present

Associated Faculty, 2014 – Present

Andlinger Center for Energy and the Environment

Associated Faculty, 2016 – Present

National Renewable Energy Laboratory, 2020 – Present

Computational Science Center

Faculty Researcher, High Performance Algorithms and Complex Fluids Group, 2020 – Present

Stanford University, 2012

Department of Mechanical Engineering

Postdoctoral Scholar, 2012

EDUCATION

Stanford University

Degree: Ph.D., Mechanical Engineering

Dates: June 2009 – June 2012

Dissertation: Large Eddy Simulation of Soot Evolution in Turbulent Reacting Flows

Advisor: Heinz Pitsch

Stanford University

Degree: M.S., Mechanical Engineering
Dates: June 2007 – June 2009

The University of Texas at Austin

Degree: B.S., Mechanical Engineering (Highest Honors)
Dates: August 2003 – May 2007

EXTRAMURAL AWARDS

Best Paper, High-Speed Air-Breathing Propulsion, American Institute of Aeronautics and Astronautics, 2023
Fellow, American Society of Mechanical Engineers, 2023
Hiroshi Tsuji Early Career Researcher Award, The Combustion Institute, 2022
Associate Fellow, American Institute of Aeronautics and Astronautics, 2022
Early Career Combustion Investigator Award, United States Sections of The Combustion Institute, 2021
Research Excellence Award, The Combustion Institute, 2020
Young Investigator Program (YIP) Award, Army Research Office, 2017
National Science Foundation Graduate Research Fellowship, 2008-2012
National Defense Science and Engineering Graduate Fellowship, 2008-2011

INTRAMURAL AWARDS

Princeton Engineering Commendation List for Outstanding Teaching, Spring 2023 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2022 (MAE 557)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2022 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2021 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2020 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2017 (MAE 557)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2017 (MAE/ENE 427)
Princeton University School of Engineering and Applied Science Alfred Rheinstein Faculty Award, 2016
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2016 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2015 (MAE/ENE 427)
Princeton University Graduate Mentoring Award, 2015
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2014 (MAE 539)
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2013 (MAE 509)

PEER-REVIEWED PUBLICATIONS

1. Lacey, C.E., D'Alessio, G., Sundaresan, S., Mueller, M.E., A physics-based dimensionality reduction approach for deep learning modeling of multi-physics simulations, *Combustion Theory and Modelling* (2023) in preparation
2. Lee, J., Mueller, M.E., Conditional progress variable dissipation rate modeling via the conditional momentum and PDF transport equations, *Combustion and Flame* (2023) in preparation

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3. D'Alessio, G., Mueller, M.E., Sundaresan, S., A data-based framework for filtered drag modeling in Euler-Euler simulations of fluidized beds, *Journal of Fluid Mechanics* (2023) in preparation
 4. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Large Eddy Simulation of a turbulent lifted flame using a multi-modal manifold-based combustion model: Role of the cross-dissipation rate, *Proceedings of the Combustion Institute* **40** (2023) submitted
 5. VanderKam, K., Mueller, M.E., Influence of progress variable dissipation rate and curvature fluctuations on turbulent premixed hydrogen flames, *Proceedings of the Combustion Institute* **40** (2023) submitted
 6. Maldonado Colmán, H., Mueller, M.E., Rush-to-equilibrium concept for minimizing reactive nitrogen emissions in ammonia combustion, *Proceedings of the Combustion Institute* **40** (2023) submitted
 7. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent nonpremixed bluff body flames, *Proceedings of the Combustion Institute* **40** (2023) submitted
 8. Surapaneni, A., Mira, D., Lacey, C.E., Mueller, M.E., Two-dimensional manifold model applied to multi-regime combustion using In-Situ Adaptive Manifolds, *Proceedings of the Combustion Institute* **40** (2023) submitted
 9. Duvvuri, P.P., Mueller, M.E., Jocher, A., Soot modeling with temperature-based collision efficiencies for nucleation and condensation, *Proceedings of the Combustion Institute* **40** (2023) submitted
 10. Lacey, C.E., Soriano, B.S., Rieth, M., Mueller, M.E., Chen, J.H., Data-based filtered dissipation rate modeling for multi-modal turbulent combustion: Evaluating a priori model generalizability, *Proceedings of the Combustion Institute* **40** (2023) submitted
 11. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent nonpremixed flames using the Bivariate Multi-Moment Sectional Method, *Combustion and Flame* (2023) submitted
 12. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Radical and reaction zone behaviors, *Combustion and Flame* (2023) submitted
 13. Owen, L., Ge, W., Rieth, M., Arienti, M., Esclapez, L., Soriano, B.S., Mueller, M.E., Day, M., Sankaran, R., Chen, J.H., PeleMP: The multiphysics solver for the combustion Pele adaptive mesh refinement code suite, *Journal of Fluids Engineering* (2023) in press
 14. Aiyer, A.K., Deike, L., Mueller, M.E., A dynamic wall modeling approach for Large Eddy Simulation of offshore wind farms in realistic oceanic conditions, *Journal of Renewable and Sustainable Energy* [Featured Article] (2023) in press
 15. Cisneros-Garibay, E., Mueller, M.E., Consistent coupling of manifold-based models and compressibility effects for supersonic turbulent combustion, *AIAA Journal* (2023) in press
 16. Angelilli, L., Ciottoli, P.P., Hernández-Pérez, F.E., Valorani, M., Mueller, M.E., Im, H. G., A Lagrangian analysis of combustion regimes using multi-modal turbulent combustion model, *Flow, Turbulence and Combustion* (2023) in press

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17. Lacey, C.E., VanderKam, K., Sundaresan, S., Mueller, M.E., Data-based instantaneous conditional progress variable dissipation rate modeling for turbulent premixed combustion, *Combustion and Flame* **259** (2024) 113139
 18. Bertagni, M.B., Socolow, R.H., Martinez, J.M.P., Carter, E.A., Greig, C., Ju, Y., Lieuwen, T., Mueller, M.E., Sundaresan, S., Wang, R., Zondlo, M.Z., Porporato, A., Minimizing the impacts of the ammonia economy on the nitrogen cycle and climate, *Proceedings of the National Academy of Science* **120** (2023) e2311728120
 19. Lindstedt, R.P., Michelsen, H.A., Mueller, M.E., Special issue and perspective on the chemistry and physics of carbonaceous particle formation, *Combustion and Flame* [Special Issue] **258** (2023) 113042
 20. Maldonado Colmán, H., Attili, A., Mueller, M.E., Large Eddy Simulation of turbulent nonpremixed sooting flames: Presumed subfilter PDF model for finite-rate oxidation of soot, *Combustion and Flame* [Special Issue] **258** (2023) 112602
 21. D'Alessio, G., Sundaresan, S., Mueller, M.E., Automated and efficient local adaptive regression for Principal Component-based reduced-order modeling of turbulent reacting flows, *Proceedings of the Combustion Institute* **39** (2023) 5249-5258
 22. Duvvuri, P.P., Maldonado Colmán, H., Mueller, M.E., Relative influence of soot oxidation kinetics and subfilter soot-turbulence interactions on soot evolution in turbulent nonpremixed flames, *Proceedings of the Combustion Institute* **39** (2023) 959-967
 23. Maldonado Colmán, H., Duvvuri, P.P., Mueller, M.E., Large Eddy Simulation of soot evolution in turbulent nonpremixed bluff body flames, *Proceedings of the Combustion Institute* **39** (2023) 857-866
 24. Hassanaly, M., Perry, B.A., Mueller, M.E., Yellapantula, S., Uniform-in-phase-space data selection with iterative normalizing flows, *Data-Centric Engineering* **4** (2023) E11
 25. Lee, J., Mueller, M.E., Closure modeling for the conditional pressure gradient in turbulent combustion, *Combustion and Flame* **250** (2023) 112661
 26. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in separated flows, *Physical Review Fluids* **8** (2023) 024606
 27. Aiyer, A., Deike, L., Mueller, M.E., A sea surface-based drag model for Large Eddy Simulation of wind-wave interaction, *Journal of the Atmospheric Sciences* **80** (2023) 49-62
 28. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, *Journal of Computational Physics* **473** (2023) 111700
 29. Huo, Z., Cleary, M.J., Masri, A.R., Mueller, M.E., A coupled MMC-LES and sectional kinetic scheme for soot formation in a turbulent flame, *Combustion and Flame* **241** (2022) 112089
 30. Novoselov, A.G., Perry, B.A., Mueller, M.E., Two-dimensional manifold equations for multi-modal turbulent combustion: Nonpremixed combustion limit and scalar dissipation rates, *Combustion and Flame* **231** (2021) 111475

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31. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, *Physical Review Fluids* **6** (2021) 044606
 32. MacArt, J.F., Mueller, M.E., Damköhler number scaling of active cascade effects in turbulent premixed combustion, *Physics of Fluids* [Special Issue] **33** (2021) 035103
 33. Lee, J., Mueller, M.E., Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion, *Proceedings of the Combustion Institute* **38** (2021) 3031-3038
 34. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Modeling subfilter soot-turbulence interactions in Large Eddy Simulation: An a priori study, *Proceedings of the Combustion Institute* **38** (2021) 2783-2790
 35. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling computationally efficient simulations of complex turbulent reacting flows, *Proceedings of the Combustion Institute* **38** (2021) 2673-2680
 36. Novoselov, A.G., Lacey, C.E., Perry, B.A., Mueller, M.E., Large Eddy Simulation of a turbulent lifted flame using multi-modal manifold-based models: Feasibility and interpretability, *Proceedings of the Combustion Institute* **38** (2021) 2581-2588
 37. Klemmer, K.S., Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, *Combustion and Flame* **221** (2020) 288-295
 38. Yang, S., Lew, J.K., Mueller, M.E., Large Eddy Simulation of soot evolution in turbulent reacting flows: Strain-Sensitive Transport Approach for Polycyclic Aromatic Hydrocarbons, *Combustion and Flame* **220** (2020) 219-234
 39. Lee, J., MacArt, J.F., Mueller, M.E., Heat release effects on the Reynolds stress budgets in turbulent premixed jet flames at low and high Karlovitz numbers, *Combustion and Flame* **216** (2020) 1-8
 40. Mueller, M.E., Physically-derived reduced-order manifold-based modeling for multi-modal turbulent combustion, *Combustion and Flame* **214** (2020) 287-305
 41. Yang, S., Lew, J.K., Mueller, M.E., Large Eddy Simulation of soot evolution in turbulent reacting flows: Presumed subfilter PDF model for soot-turbulence-chemistry interactions, *Combustion and Flame* **209** (2019) 200-213
 42. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Won, S.H., Fu, M.K., Kokmanian, K.A., Hultmark, M., Ju, Y., Mueller, M.E., Turbulent nonpremixed cool flames: Experimental measurements, Direct Numerical Simulation, and manifold-based combustion modeling, *Combustion and Flame* **209** (2019) 144-154
 43. Nunno, A.C., Grenga, T., Mueller, M.E., Comparative analysis of methods for heat losses in turbulent premixed flames using Physically-Derived Reduced-Order Manifolds, *Combustion Theory and Modelling* **23** (2019) 42-66
 44. MacArt, J.F., Grenga, T., Mueller, M.E., Evolution of flame-conditioned velocity statistics in turbulent premixed jet flames at low and high Karlovitz numbers, *Proceedings of the Combustion Institute* **37** (2019) 2503-2510

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45. Perry, B.A., Mueller, M.E., Effect of multiscale subfilter PDF models in LES of turbulent flames with inhomogeneous inlets, *Proceedings of the Combustion Institute* **37** (2019) 2287-2295
 46. Nunno, A.C., Mueller, M.E., Manifold assumptions in modeling radiation heat losses in turbulent nonpremixed combustion, *Proceedings of the Combustion Institute* **37** (2019) 2223-2230
 47. Novoselov, A.G., Law, C.K., Mueller, M.E., Direct Numerical Simulation of turbulent nonpremixed “cool” flames: Applicability of flamelet models, *Proceedings of the Combustion Institute* **37** (2019) 2143-2150
 48. Chong, S.T., Raman, V., Mueller, M.E., Sivaraj, P., Im, H.G., Effect of quadrature approach and chemical kinetics on soot formation in a model aircraft combustor, *Proceedings of the Combustion Institute* **37** (2019) 1065-1074
 49. Yang, S., Mueller, M.E., A Multi-Moment Sectional Method (MMSM) for tracking the soot Number Density Function, *Proceedings of the Combustion Institute* **37** (2019) 1041-1048
 50. Han, W., Raman, V., Mueller, M.E., Chen, Z., Effects of combustion models on soot formation and evolution in turbulent nonpremixed flames, *Proceedings of the Combustion Institute* **37** (2019) 985-992
 51. Grenga, T., MacArt, J.F., Mueller, M.E., Dynamic Mode Decomposition of a Direct Numerical Simulation of a turbulent premixed planar jet flame: Convergence, amplitude, and residuals of the modes, *Combustion Theory and Modelling* **22** (2018) 795-811
 52. Berger, L., Kleinheinz, K., Attili, A., Bisetti, F., Pitsch, H., Mueller, M.E., Numerically accurate computational techniques for optimal estimator analyses of multi-parameter models, *Combustion Theory and Modelling* **22** (2018) 480-504
 53. Perry, B.A., Mueller, M.E., Joint Probability Density Function models for multiscale turbulent mixing, *Combustion and Flame* **193** (2018) 344-462
 54. Chong, S. T., Hassanaly, M., Koo, H., Mueller, M.E., Raman, V., Geigle, K.-P., Large Eddy Simulation of pressure and dilution jet effects on soot formation in a model aircraft swirl combustor, *Combustion and Flame* **192** (2018) 452-472
 55. MacArt, J.F., Grenga, T., Mueller, M.E., Effects of combustion heat release on velocity and scalar statistics in turbulent premixed jet flames at low and high Karlovitz number, *Combustion and Flame* **191** (2018) 468-485
 56. Mueller, M.E., Raman, V., Model form uncertainty quantification in turbulent combustion simulations: Peer models, *Combustion and Flame* **187** (2018) 137-146
 57. Perry, B.A., Mueller, M.E., Masri, A.R., A two mixture fraction flamelet model for Large Eddy Simulation of turbulent flames with inhomogeneous inlets, *Proceedings of the Combustion Institute* **36** (2017) 1767-1775
 58. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Hydrodynamic and chemical effects of hydrogen addition on soot evolution in turbulent nonpremixed bluff body ethylene flames, *Proceedings of the Combustion Institute* **36** (2017) 807-814

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59. Koo, H., Hassanaly, M., Raman, V., Mueller, M.E., Geigle, K.P., Large Eddy Simulation of soot formation in a model gas turbine combustor, *Journal of Engineering for Gas Turbines and Power* **139** (2017) 031503
 60. MacArt, J.F., Mueller, M.E., Semi-implicit iterative methods for low Mach number turbulent reacting flows: Operator splitting versus approximate factorization, *Journal of Computational Physics* **326** (2016) 569-595
 61. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Flame dynamics in oscillating flows under autoignitive conditions, *Combustion and Flame* **168** (2016) 75-82
 62. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Effects of non-unity Lewis number of gas-phase species in turbulent nonpremixed sooting flames, *Combustion and Flame* **166** (2016) 192-202
 63. Davies, G., Hsieh, A.G., Hultmark, M., Mueller, M.E., Steingart, D.A., Utilization of hyper dendritic zinc during high rate discharge in alkaline electrolytes, *Journal of the Electrochemical Society* **163** (2016) A1340-A1347
 64. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Stabilization of laminar nonpremixed DME/air coflow flames at elevated temperatures and pressures, *Combustion and Flame* **162** (2015) 4471-4478
 65. Bahri, C., Arwatz, G., George, W.K, Mueller, M.E., Hultmark, M., Self-similarity of passive scalar flow in grid turbulence with a mean cross-stream gradient, *Journal of Fluids Mechanics* **780** (2015) 215-225
 66. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Autoignition-affected stabilization of laminar nonpremixed DME/air flames, *Combustion and Flame* **162** (2015) 3437-3445
 67. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, *Proceedings of the Combustion Institute* **35** (2015) 1215-1223
 68. Deng, S., Koch, J.A., Mueller, M.E., Law, C.K., Sooting limits of nonpremixed n-heptane, n-butanol, and methyl butanoate flames: Experimental determination and mechanistic analysis, *Fuel* **136** (2014) 122-129
 69. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Formation, growth, and transport of soot in a three-dimensional turbulent non-premixed jet flame, *Combustion and Flame* **161** (2014) 1849—1865
 70. Mueller, M.E., Raman, V., Effects of turbulent combustion modeling errors on soot evolution in turbulent nonpremixed jet flames, *Combustion and Flame* **161** (2014) 1842—1848
 71. Xuan, Y., Blanquart, G., Mueller, M.E., Modeling curvature effects in diffusion flames using a laminar flamelet model, *Combustion and Flame* **161** (2014) 1294—1309
 72. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, *Physics of Fluids* [Special Issue] **25** (2013) 110812
 73. Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Pitsch, H., Alwahabi, Z.T., Nathan, G.J., Experimental and computational study of soot evolution in a turbulent nonpremixed bluff body ethylene flame, *Combustion and Flame* **160** (2013) 1298—1309

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74. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for Large Eddy Simulation of turbulent nonpremixed combustion, *Proceedings of the Combustion Institute* **34** (2013) 1299–1306
 75. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF based modeling of soot-turbulence interactions in turbulent flames, *Proceedings of the Combustion Institute* **34** (2013) 1183–1192
 76. Mueller, M.E., Pitsch, H., LES modeling of sooting turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 2166–2180
 77. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., On the formation and early evolution of soot in turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 317-335
 78. Mueller, M.E., Pitsch, H., Large eddy simulation subfilter modeling of soot-turbulence interactions, *Physics of Fluids* **23** (2011) 115104
 79. Mueller, M.E., Blanquart, G., Pitsch, H., Modeling the oxidation-induced fragmentation of soot aggregates in laminar flames, *Proceedings of the Combustion Institute* **33** (2011) 667-674
 80. Mueller, M.E., Blanquart, G., Pitsch, H., Hybrid Method of Moments for modeling soot formation and growth, *Combustion and Flame* **156** (2009) 1143-1155
 81. Mueller, M.E., Blanquart, G., Pitsch, H., A joint Volume-Surface model of soot aggregation with the method of moments, *Proceedings of the Combustion Institute* **32** (2009) 785-792

BOOK CHAPTERS

1. Grenga, T., Mueller, M.E., Dynamic Mode Decomposition: A tool to extract structures hidden in massive datasets, in Pitsch, H., Attili, A. (eds.), *Data Analysis for Direct Numerical Simulations of Turbulent Combustion*, Springer, 2020, pp. 157-176
2. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Lagrangian analysis of mixing and soot transport in a turbulent jet flame, in Fröhlich, J., Kuerten, H., Geurts, B.J., Armenio, V. (eds.), *Direct and Large-Eddy Simulation IX*, Springer, 2015, pp. 503-509

INVITED SEMINARS, LECTURES, PANELS, AND PRESENTATIONS

1. Mueller, M.E., Environmental Impact and Climate-Smart Modeling [Panel], New Jersey Academic Alliance for Offshore Wind Energy Symposium, Piscataway, NJ, January 12, 2024
2. Mueller, M.E., Generalized and Computationally Efficient Modeling of Turbulent Reacting Flows: A Union of Theory and Machine Learning, Colloquium in Computational Science, Department of Scientific Computing, Florida State University, November 8, 2023
3. Mueller, M.E., Wind, Waves, and Wakes: Large Eddy Simulation of Full-Scale Offshore Wind Farms under Realistic Atmospheric and Oceanic Conditions, Penn Institute for Computational Science Colloquium, University of Pennsylvania, October 6, 2023

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4. Mueller, M.E., Wind, Waves, and Wakes: Large Eddy Simulation of Full-Scale Offshore Wind Farms under Realistic Atmospheric and Oceanic Conditions, National Wind Technology Center, National Renewable Energy Laboratory, July 20, 2023
 5. Mueller, M.E., Physics, Modeling, and Algorithms: Overview of Current Research at Princeton's Computational Turbulent Reacting Flow Laboratory, High Performance Algorithms and Complex Fluids Group, National Renewable Energy Laboratory, July 14, 2023
 6. Mueller, M.E., Sustainable Aviation Fuels: Challenges and Opportunities Predicting Behavior in Aircraft Engines [Panel], AIAA SciTech 2023, National Harbor, MD, January 23-27, 2023
 7. Mueller, M.E., Modeling Soot Evolution in Turbulent Reacting Flows: A Grand Challenge in Soot, Turbulence, and Chemistry Interactions, ANSYS Fluids Seminar Series, Virtual, May 31, 2022
 8. Mueller, M.E., Physics-Based Modeling in the Era of Big Data: Enhancing Physics-Based Models using Data-Based Approaches, KAUST Research Conference on Flow Simulation at the Exascale, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia, March 29, 2022
 9. Mueller, M.E., Generalized Physics-Based Turbulent Combustion Models: Enhancement through Hybridization with Data-Based Modeling Approaches, AIAA SciTech 2022, San Diego, CA, January 3-7, 2022
 10. Mueller, M.E., Can Turbulent Combustion Models be Both Computationally Efficient and Generally Applicable?, Combustion Webinar, Virtual, October 30, 2021
 11. Mueller, M.E., You Can Have Your Cake and Eat It Too: Breaking the Fundamental Trade-Off between Cost and Generality in Turbulent Combustion Modeling, Early Career Investigator Plenary Lecture, 12th U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
 12. Mueller, M.E., Physics-Based Approaches to Model Form Uncertainty Quantification and Applications to Multi-Physics Turbulent Flows, Fluid Mechanics Seminar Series, Stanford University, Stanford, CA, October 20, 2020
 13. Mueller, M.E., A Computationally Efficient "Turnkey" Approach to Turbulent Combustion Modeling, Computational Science Center, National Renewable Energy Laboratory, Golden, CO, December 4, 2019
 14. Mueller, M.E., Computational Multi-Physics Modeling of Soot Evolution in Turbulent Reacting Flows, Energy Systems Division, Argonne National Laboratory, Lemont, IL, November 21, 2019
 15. Mueller, M.E., A Computationally Efficient "Turnkey" Approach to Turbulent Combustion Modeling, Center for Turbulent Research Tea Seminar, Stanford University, Stanford, CA, November 15, 2019
 16. Mueller, M.E., Overview of Soot Modeling: Statistics, Sources, and Turbulence, Combustion Research Facility, Sandia National Laboratories, Livermore, CA, November 13, 2019
 17. Mueller, M.E., Computational Multi-Physics Simulations for Turbulent Reacting Flows: Physics-Based Approaches for Prediction and Uncertainty Quantification, Computational Sciences and Engineering Division, Oak Ridge National Laboratory, Oak Ridge, TN, October 28, 2019

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18. Mueller, M.E., A Computationally Efficient Turnkey Approach to Turbulent Combustion Modeling: From Elusive Fantasy to Impending Reality, AIAA SciTech 2019, San Diego, CA, January 7-11, 2019
 19. Mueller, M.E., MacArt, J.F., Large Eddy Simulation Subfilter Modeling of Combustion-Affected Turbulence in Turbulent Premixed Combustion, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 20. Mueller, M.E., Turbulent Combustion Modeling for Large Eddy Simulation: Finding Simplicity in Complexity, Department of Mechanical Engineering, University of Melbourne, Melbourne, Australia, August 16, 2018
 21. Mueller, M.E., Frontiers of Turbulent Combustion Modeling for Large Eddy Simulation: Multi-Modal Combustion and Soot Emissions, School of Aerospace, Mechanical and Mechatronic Engineering, University of Sydney, Sydney, Australia, August 10, 2018
 22. Mueller, M.E., Computational Modeling of Soot Emissions in Turbulent Combustion: A Truly Multi-Scale, Multi-Physics Challenge, Energy and Environment Seminar Series, Colorado State University, Fort Collins, CO, November 16, 2017
 23. Mueller, M.E., Turbulent Combustion Modeling: A Combustion Perspective and a Turbulence Perspective, Boulder Fluid and Thermal Sciences Seminar Series, University of Colorado, Boulder, CO, November 15, 2017
 24. Mueller, M.E., Turbulent Combustion Modeling: A Combustion Perspective and a Turbulence Perspective, Department of Mechanical Engineering Seminar Series, Stevens Institute of Technology, Hoboken, NJ, September 28, 2017
 25. Mueller, M.E., Turbulent Combustion Modeling for Large Eddy Simulation: Finding Simplicity in Complexity, School of Aerospace Engineering Seminar Series, Georgia Institute of Technology, Atlanta, GA, May 2, 2017
 26. Mueller, M.E., Physics-Based Approaches to Model Form Uncertainty Quantification for Large Eddy Simulation of Turbulent Combustion, Fluid Mechanics and Waves Seminar, New Jersey Institute of Technology, Newark, NJ, May 1, 2017
 27. Mueller, M.E., Physics-Based Approaches to Model Form Uncertainty Quantification for Large Eddy Simulation of Turbulent Combustion, Mechanical and Civil Engineering Seminar, California Institute of Technology, Pasadena, CA, April 20, 2017
 28. Mueller, M.E., Turbulent Combustion Modeling: The Combustion Perspective versus The Turbulence Perspective, Fluid Dynamics Reviews Seminar, University of Maryland, College Park, MD, March 16, 2017
 29. Mueller, M.E., Turbulent Combustion Modeling for Large Eddy Simulation: Beyond Premixed versus Nonpremixed Modes, Fluid Mechanics Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, December 2, 2016
 30. Mueller, M.E., Turbulent Combustion Modeling for Large Eddy Simulation: Beyond Premixed versus Nonpremixed Modes, Thermal-Fluid Sciences Seminar Series, Department of Mechanical, Industrial, and Manufacturing Engineering, Oregon State University, Corvallis, OR, September 30, 2016

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31. Mueller, M.E., Towards Predictive Simulations of Soot Emissions in Practical Combustion Systems: Fuel Effects and Interactions with Turbulence, Division of Mechanical Engineering, Hanyang University, Seoul, South Korea, August 3, 2016
 32. Mueller, M.E., Predictive Computational Modeling of Turbulent Combustion: Inevitable Outcome or Practical Impossibility?, 2016 International Combustion Institute/NSERC CREATE Summer School, University of Toronto, Toronto, CA, June 1, 2016
 33. Mueller, M.E., Flamelet Approach for Turbulent Combustion: Has it Reached its Limit?, 12th International Conference on Energy for a Clean Environment, Lisbon, Portugal, July 5-9, 2015
 34. Mueller, M.E., Physics-Derived Uncertainty Quantification for Large Eddy Simulation of Turbulent Combustion, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, Austin, TX, May 4, 2015
 35. Mueller, M.E., Large Eddy Simulation of “Multi-Physics” Turbulent Nonpremixed Combustion, Clean Combustion Research Center, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia, March 22, 2015
 36. Mueller, M.E., “All About Soot”: UQ, 1+D Flamelets, and Fuel Effects, Institute for Combustion Technology, RWTH Aachen University, Aachen, Germany, June 13, 2014
 37. Mueller, M.E., Large Eddy Simulation of Soot Evolution in Turbulent Reacting Flows, Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY, September 3, 2013
 38. Mueller, M.E., Large Eddy Simulation of Soot Evolution in Turbulent Reacting Flows, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, Austin, TX, November 1, 2012
 39. Mueller, M.E., Large Eddy Simulation of Soot Evolution in a Pratt & Whitney Combustor, United Technologies Research Center, East Hartford, CT, October 5, 2012
 40. Mueller, M.E., Soot Evolution in Turbulent Reacting Flows: A Multi-Fidelity Approach to a Multi-Scale, Multi-Physics Problem, Department of Mechanical Engineering, Stanford University, Stanford, CA, April 10, 2012
 41. Mueller, M.E., Soot Evolution in Turbulent Reacting Flows: A Multi-Fidelity Approach to a Multi-Scale, Multi-Physics Problem, Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, February 23, 2012

PANEL SESSIONS AND MINI-SYMPOSIA ORGANIZED

1. Mueller, M.E., Soot Modeling for Gas Turbine Engines: Recent Developments, Remaining Gaps, and Emerging Needs, ASME 2019 Turbo Expo, Phoenix, AZ, June 17-21, 2019
2. Raman, V., Mueller, M.E., Large Eddy Simulation: Challenges and Opportunities, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015

RESEARCH BRIEFS

1. MacArt, J.F., Mueller, M.E., Scaling and modeling of heat release effects on subfilter turbulence in premixed combustion, Center for Turbulence Research Proceedings of the Summer Program, Stanford University, 2018
2. Attili, A., Bisetti, F., Mueller, M.E., DNS of soot formation and growth in turbulent non-premixed flames: Damköhler number effects and Lagrangian statistics of soot transport, Center for Turbulence Research Proceedings of the Summer Program, Stanford University, 2012
3. Bansal, G., Mueller, M.E., Pitsch, H., Direct numerical simulation of soot formation in jet engine combustors, Center for Turbulence Research Annual Research Briefs, Stanford University, 2009

SOFTWARE

1. PDRs: Physically-Derived Reduced-Order Manifolds, <http://ctrfl.princeton.edu/software>

CONFERENCE PAPERS, PRESENTATIONS, AND POSTERS

1. Mueller, M.E., Computational Fluid Dynamics modeling of full-scale offshore wind farms, Offshore Wind Technology Conference, Newark, NJ, December 6-7, 2023
2. Aiyer, A., Deike, L., Mueller, M.E., Modeling the effects of swell and vertical wave motions in wall-modeled Large Eddy Simulation of offshore wind farms, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
3. Boerchers, J.B., Mueller, M.E., Role of compressibility effects in manifold models for supersonic turbulent combustion, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
4. Bonilla, I.J., Lacey, C.E., In-Situ Adaptive Manifolds for modeling a turbulent piloted jet flame with inhomogeneous inlets, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
5. Fush, S.T., Bonilla, I.J., Mueller, M.E., Hybrid parallelization of In-Situ Adaptive Manifolds for computationally efficient turbulent combustion simulations, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
6. Maldonado Colmán, H., Mueller, M.E., Evolution of the soot particle size distribution in a turbulent nonpremixed bluff body flame, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
7. Rzepka, S., Maldonado Colmán, H., Mueller, M.E., Thermodiffusive instabilities and nitrogen oxides in lean ammonia/hydrogen/nitrogen-air laminar premixed flames, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023

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8. VanderKam, K., Mueller, M.E., Dynamics of differential diffusion effects in turbulent premixed hydrogen flames at varying Karlovitz number, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
 9. Lacey, C.E., Soriano, B.S., Rieth, M., Mueller, M.E., Chen, J.H., Evaluating generalizability of a deep learning model for the instantaneous conditional dissipation rate profiles in multi-modal turbulent combustion, 76th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
 10. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Relative impacts of turbulence and waves on a finite offshore wind farm with atmospheric inflow and oceanic waves, NAWEA/WindTech 2023 Conference, Boulder, CO, October 30-November 1, 2023
 11. Mueller, M.E., Klemmer, K.S., Leveraging model assumptions for model-form uncertainty quantification, 17th U.S. National Congress on Computational Mechanics, Albuquerque, NM, July 23-27, 2023
 12. Aiyer, A., Deike, L., Mueller, M.E., Modeling the effect of a broadband wave spectrum including swell in a wall-modeled Large Eddy Simulation framework, 29th WISE Meeting, Princeton, NJ, May 7-10, 2023
 13. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Examining the impact and relative importance of waves in an offshore wind farm using a computationally efficient modeling framework, 29th WISE Meeting, Princeton, NJ, May 7-10, 2023
 14. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Computational cost improvements for In-Situ Adaptive Manifolds for turbulent combustion modeling, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 15. Lacey, C.E., Rieth, M., Chen, J.H., Mueller, M.E., Deep learning model for the instantaneous dissipation rate profiles in multi-modal turbulent combustion, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 16. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of turbulent nonpremixed sooting flames: Evolution of the soot size distribution using the Bivariate Multi-Moment Sectional Method, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 17. Maldonado Colmán, H., Armstrong, J., Mueller, M.E., Partially non-equilibrium manifolds for turbulent combustion modeling with arbitrary time scales, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 18. Robang, A.S., Lacey, C.E., D'Alessio, G., Mueller, M.E., Deep learning modeling of the filtered generalized progress variable dissipation rate in turbulent premixed combustion, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 19. VanderKam, K., Mueller, M.E., The influence of scalar dissipation rate fluctuations on turbulent premixed flames at varying Karlovitz number, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023

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20. Perry, B.A., Eiden, K., Henry de Frahan, M.T., Yellapantula, S., Esclapez, L., Mueller, M.E., Day, M.S., Simulation of a jet flame with inhomogeneous inlets using tabulated and neural network manifold models, 13th U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
 21. Mueller, M.E., Klemmer, K.S., Leveraging model assumptions for model form uncertainty quantification, SIAM Conference on Computational Science and Engineering, Amsterdam, Netherlands, February 26-March 3, 2023
 22. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for supersonic turbulent combustion, AIAA SciTech 2023, National Harbor, MD, January 23-27, 2023
Awarded: **Best Paper, High-Speed Air-Breathing Propulsion**
 23. Lacey, C.E., D'Alessio, G., Sundaresan, S., Mueller, M.E., Physics-based dimensionality reduction and deep learning modeling for multi-physics simulations, 2nd Energy & Informatics International Forum, Honolulu, HI, December 13-17, 2022
 24. Aiyer, A., Deike, L., Mueller, M.E., Wall-modeled Large Eddy Simulation of offshore wind turbine wake-wave spectrum interactions, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 25. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Performance considerations for In-Situ Adaptive Manifolds for turbulent combustion modeling, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 26. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for supersonic turbulent combustion, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 27. D'Alessio, G., Mueller, M.E., Sundaresan, S., Automated framework for data-based modeling of filtered drag for coarse-grained simulations of fluidized beds, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 28. Lacey, C.E., Rieth, M., Chen, J.H., Mueller, M.E., Data-based modeling of instantaneous dissipation rate profiles in multi-modal turbulent combustion, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 29. Maldonado Colmán, H., Mueller, M.E., Evolution of the soot particle size distribution in turbulent nonpremixed bluff body flames using the Bivariate Multi-Moment Sectional Method, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 30. VanderKam, K., Mueller, M.E., The influence of scalar dissipation rate fluctuations on turbulent premixed flames at varying Karlovitz number, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 31. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Computationally efficient wave-modeled Large Eddy Simulation of finite offshore wind farms, 75th Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
 32. D'Alessio, G., Sundaresan, S., Mueller, M.E., Development of an automated framework for data-based modeling of filtered drag for coarse-grained simulations of fluidized beds based on Artificial Neural

Networks and Bayesian optimization, International Conference on Numerical Methods in Multiphase Flows, Venice, Italy, September 28-30, 2022

33. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Computationally efficient wave-modeled Large Eddy Simulations of finite offshore wind farms and their sensitivity to inflow conditions, NAWEA/WindTech 2022 Conference, Newark, DE, September 20-22, 2022
34. Beckers, D., Henry de Frahan, M.T., Esclapez, L., Brazell, M., Perry, B.A., Mueller, M.E., Day, M.S., Discretization error analysis of convective schemes for Large Eddy Simulation with adaptive mesh refinement, Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, August 9, 2022
35. Pash, G., Hassanaly, M., Yellapantula, S., Mueller, M.E., Towards uncertainty propagation for data-driven turbulence closure models, Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, August 9, 2022
36. D'Alessio, G., Sundaresan, S., Mueller, M.E., Automated and efficient local adaptive regression for Principal Component-based reduced-order modeling of turbulent reacting flows, 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
37. Duvvuri, P.P., Maldonado Colmán, H., Mueller, M.E., Relative influence of soot oxidation kinetics and subfilter soot-turbulence interactions on soot evolution in turbulent nonpremixed flames, 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
38. Lacey, C.E., Sundaresan, S., Mueller, M.E., Data-based instantaneous conditional progress variable dissipation rate modeling for turbulent premixed combustion, 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
39. Maldonado Colmán, H., Duvvuri, P.P., Mueller, M.E., Large Eddy Simulation of soot evolution in turbulent nonpremixed bluff body flames, 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
40. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Radical and reaction zone behaviors, 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
41. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent reacting flows using the Bivariate Multi-Moment Sectional Method, 6th International Sooting Flame (ISF) Workshop, Vancouver, Canada, July 22-23, 2022
42. Perry, B.A., Hassanaly, M., Wimer, N., Henry de Frahan, M.T., Mueller, M.E., Yellapantula, S., Machine learning techniques for manifold-based models, International Workshop on Measurement and Computation of Turbulent Flames/Premixed Turbulent Flames Workshop, Vancouver, Canada, July 22-23, 2022
43. Taunay, P.-Y.C.R., Quadrature-based moment methods applied to ExB discharges, International Electric Propulsion Conference 2022, Boston, MA, June 19-23, 2022
44. Aiyer, A., Deike, L., Mueller, M.E., A wall-modeled approach for wave stress in Large Eddy Simulation of offshore wind farms, TORQUE 2022, Delft, Netherlands, June 1-3, 2022 [Aiyer, A.K., Deike, L., Mueller,

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- M.E., A wall-modeled approach for wave stress in Large Eddy Simulation of offshore wind farms, *Journal of Physics: Conference Series* **2265** (2022) 022013]
45. Mueller, M.E., Fuel-sensitive computational modeling of emissions and turbulent combustion to enable sustainable aviation fuels, 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 46. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for nonpremixed supersonic turbulent combustion, 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 47. D'Alessio, G., Sundaresan, S., Mueller, M.E., Automated and efficient local adaptive regression for principal component-based reduced-order modeling of turbulent reacting flows, 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 48. Lacey, C.E., Sundaresan, S., Mueller, M.E., Physics-based dimensionality reduction and deep learning model for the progress variable dissipation rate in turbulent premixed combustion, 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 49. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent reacting flows using the Bivariate Multi-Moment Sectional Method (BMMSM), 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 50. VanderKam, K., Mueller, M.E., The role of progress variable dissipation rate averaging in conditional statistics for turbulent premixed combustion, 18th International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
 51. Klemmer, K., Wu, W., Mueller, M.E., Turbulence model form errors in complex flow configurations, SIAM Conference on Uncertainty Quantification, Atlanta, GA, April 12-15, 2022
 52. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for supersonic turbulent nonpremixed combustion, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 53. D'Alessio, G., Sundaresan, S., Mueller, M.E., An automated framework for nonlinear regression in Principal Component-based model reduction for reacting flows, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 54. Duvvuri, P.P., Maldonado Colmán, H., Mueller, M.E., Role of soot oxidation kinetics and subfilter models on soot evolution in turbulent nonpremixed flames, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 55. Lacey, C.E., Sundaresan, S., Mueller, M.E., Deep learning model for the instantaneous conditional progress variable dissipation rate in turbulent premixed combustion, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 56. Lee, J., Mueller, M.E., Closure modeling for the conditional progress variable dissipation rate using the PDF transport equation and the influence of the conditional velocity model, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022

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57. Maldonado Colmán, H., Duvvuri, P.P., Mueller, M.E., Large Eddy Simulation of the mechanisms of soot evolution in a turbulent nonpremixed bluff body flame, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 58. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Radical and reaction zone behaviors, Eastern States Section Combustion Institute Spring Meeting, Orlando FL, March 6-9, 2022
 59. Aiyer, A., Deike, L., Mueller, M.E., A sea surface-based drag model for wind-wave interaction in the marine atmospheric boundary layer, Ocean Sciences Meeting, Virtual, February 24-March 4, 2022
 60. Aiyer, A., Deike, L., Mueller, M.E., A sea surface-based drag model for Large Eddy Simulation of wind-wave interaction, AGU Fall Meeting, New Orleans, LA, December 13-17, 2021
 61. Aiyer, A., Deike, L., Mueller, M.E., Wall-modeled Large Eddy Simulation of wave effects in offshore wind farms, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 62. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in a statistically stationary separation bubble, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 63. Lacey, C.E., Sundaresan, S., Mueller, M.E., Data-based progress variable dissipation rate modeling for turbulent premixed combustion, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 64. Lee, J., Mueller, M.E., Conditional momentum equation for modeling heat release effects on turbulence in turbulent premixed combustion, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 65. Maldonado Colman, H., Mueller, M.E., Presumed subfilter PDF model for finite-rate oxidation of soot in turbulent reacting flows, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 66. VanderKam, K., Mueller, M.E., The role of intense reactant-product mixing in distributed turbulent premixed combustion, 74th Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
 67. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, 63rd Annual Meeting of the APS Division of Plasma Physics, Pittsburgh, PA, November 8-12, 2021
 68. Lacey, C.E., Mueller, M.E., Large Eddy Simulations of turbulent flames with multiple and/or inhomogeneous inlets using In-Situ Adaptive Manifolds, 12th U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
 69. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in turbulent premixed jet flames at low and high Karlovitz numbers, 12th U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
 70. Novoselov, A.G., Perry, B.A., Mueller, M.E., Two-dimensional manifold equations for multi-modal turbulent combustion: Defining the generalized progress variable and modeling the scalar dissipation rates, 12th U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021

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71. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Qualitative differences in radical species behavior, 12th U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
 72. Novoselov, A.G., Lacey, C.E., Perry, B.A., Mueller, M.E., Large Eddy Simulation of a turbulent lifted flame using multi-modal manifold-based models: Feasibility and interpretability, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
 73. Lacey, C.E., Novoselov, A.G. Mueller, M.E., In-Situ Adaptive Manifolds: Enabling computationally efficient simulations of complex turbulent reacting flows, 38th International Symposium on Combustion, Adelaide, Australia, July 24-29, 2021
 74. Lee, J., Mueller, M.E., Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
 75. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Modeling subfilter soot-turbulence interactions in Large Eddy Simulation: An a priori study, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
 76. Klemmer, K.S., Mueller, M.E., Influence of Reynolds number and flow configuration on turbulence model form errors, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
 77. Lacey, C.E., Mueller, M.E., Leveraging In-Situ Adaptive manifolds for computationally efficient simulations of turbulent combustion with multiple and/or inhomogeneous inlets, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
 78. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in turbulent premixed combustion, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
 79. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulent model form physics-based uncertainty quantification, SIAM Conference on Uncertainty Quantification, Munich, Germany, March 24-27, 2020 [cancelled]
 80. Novoselov, A.G., Lacey, C.E., Mueller, M.E., Multi-modal manifold-based modeling of turbulent lifted flames, Eastern States Section Combustion Institute Spring Meeting, Columbia, SC, March 8-11, 2020
 81. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling simulations of complex turbulent reacting flows, Eastern States Section Combustion Institute Spring Meeting, Columbia, SC, March 8-11, 2020
 82. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in low Karlovitz number turbulent premixed flames, Eastern States Section Combustion Institute Spring Meeting, Columbia, SC, March 8-11, 2020
 83. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling simulations of complex turbulent reacting flows, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019

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84. Novoselov, A.G., Lacey, C.E., Mueller, M.E., Large Eddy Simulation of turbulent flames using two-dimensional reduced-order manifold modes, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 85. Lee, J., Mueller, M.E., Conditional Reynolds stress modeling in turbulent premixed flames, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 86. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 87. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Triple-correlations in decaying isotropic turbulence, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 88. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity constraints in decaying isotropic turbulence, 11th International Symposium on Turbulence and Shear Flow Phenomena, Southampton, United Kingdom, July 30-August 2, 2019
 89. Mueller, M.E., Perry, B.A., Nunno, A.C., MacArt, J.F., Berger, L., Integrating data-based tools into physics-based model development for turbulent combustion, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 90. Perry, B.A., Novoselov, A.G., Mueller, M.E., Defining a generalized progress variable in the physically-derived reduced-order manifolds modeling formulation, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 91. Novoselov, A.G., Whitmore, M.P., Grenga, T., Perry, B.A., Mueller, M.E., The influence of alignment of mixture fraction and generalized progress variable gradients on multi-modal flame structure, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 92. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 93. Yellapantula, S., Henry de Frahan, M.T., King, R., Grout, R., Perry, B.A., Mueller, M.E., A priori and a posteriori analysis of data driven closure models trained from DNS, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 94. Lee, J., Mueller, M.E., Heat release effects on the Reynolds stress budgets in turbulent premixed flames, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 95. Perry, B.A., Mueller, M.E., An overview of multi-physics modeling considerations for turbulent jet flames with inhomogeneous inlets, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 96. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 97. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Do turbulent nonpremixed cool flames require special treatment?, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019

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98. Yellapantula, S., Perry, B.A., Frahan, M.H.T., Mueller, M.E., Grout, R., Machine learning based joint PDF shapes for multi-scalar mixing in turbulent flows, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 99. Nunno, A.C., Perry, B.A., MacArt, J.F., Mueller, M.E., Data-driven dimension reduction in turbulent combustion: Utility and limitations, AIAA SciTech 2019, San Diego, CA, January 7-11, 2019
 100. Yang, S., Mueller, M.E., Evaluation of a conditional presumed subfilter PDF model in LES of turbulent nonpremixed sooting flames, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 101. Perry, B.A., Chen, R., Mueller, M.E., Comparison of reduced-order manifold approaches for simulating a turbulent lifted jet flame, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 102. Nunno, A.C., Perry, B.A., MacArt, J.F., Mueller, M.E., A comparison of physics-based and data-based methods of dimension reduction in turbulent combustion, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 103. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Computational and experimental investigation of turbulent nonpremixed cool flames, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 104. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity in decaying isotropic turbulence: Functional forms, constraints in single- and two-time evolution, and DNS results, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 105. Yang, S., Mueller, M.E., A Multi-Moment Sectional Method (MMSM) for tracking the soot Number Density Function, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 106. MacArt, J.F., Grenga, T., Mueller, M.E., Evolution of flame-conditioned velocity statistics in turbulent premixed jet flames at varying Karlovitz number, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 107. Perry, B.A., Mueller, M.E., Effect of multiscale subfilter PDF models in LES of turbulent flames with inhomogeneous inlets, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 108. Nunno, A.C., Mueller, M.E., Manifold assumptions in modeling radiation heat losses in turbulent nonpremixed combustion, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 109. Novoselov, A.G., Law, C.K., Mueller, M.E., Direct Numerical Simulation of turbulent nonpremixed “cool” flames: Applicability of flamelet models, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 110. Chong, S.T., Raman, V., Mueller, M.E., Selvaraj, P., Im, H.G., Effect of quadrature approach and chemical kinetics on soot formation in a model aircraft combustor, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018

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111. Han, W., Raman, V., Mueller, M.E., Chen, Z., Effects of combustion models on soot formation and evolution in turbulent nonpremixed flames, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 112. Perry, B.A., Mueller, M.E., Challenges for Large Eddy Simulation of partially premixed turbulent combustion using reduced-order manifold flame structure models, 14th International Workshop on Measurement and Computation of Turbulent Flames, Dublin, Ireland, July 27-28, 2018
 113. Yang, S., Lew, J.K., Mueller, M.E., Large Eddy Simulation of turbulent nonpremixed sooting flames: Subfilter and transport modeling, 4th International Sooting Flame Workshop, Dublin, Ireland, July 27-28, 2018
 114. Chong, S.T., Mueller, M.E., Im, H.G., Raman, V., The role of recirculation zones in soot formation in aircraft combustors, ASME 2018 Turbo Expo, Oslo, Norway, June 11-15, 2018
 115. Yang, S., Lew, J.K., Mueller, M.E., Subfilter and transport modeling for Large Eddy Simulation of turbulent nonpremixed sooting flames, Central States Section Combustion Institute Spring Meeting, Minneapolis, MN, May 20-22, 2018
 116. Mueller, M.E., Physics-derived approaches to multi-physics model form uncertainty quantification: Application to turbulent combustion modeling, SIAM Conference on Uncertainty Quantification, Garden Grove, CA, April 16-19, 2018
 117. Perry, B.A., Mueller, M.E., Challenges for Large Eddy Simulation of partially premixed turbulent combustion using Reduced-Order Manifold flame structure models, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 118. Nunno, A.C., Mueller, M.E., A comprehensive model for non-adiabatic multi-modal combustion using Physically-Derived Reduced-Order Manifolds, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 119. MacArt, J.F., Grenga, T., Mueller, M.E., Budgets of flame-conditioned second-order turbulence statistics in low and high Karlovitz number turbulent premixed jet flames, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 120. Yang, S., Mueller, M.E., A Multi-Moment Sectional Method to predict the soot size distribution, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 121. Yang, S., Lew, J.K., Mueller, M.E., Subfilter transport modeling for Large Eddy Simulation of turbulent nonpremixed sooting flames, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 122. Grenga, T., MacArt, J.F., Mueller, M.E., Multi-modal counterflow flames under autoignitive conditions, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018
 123. Grenga, T., MacArt, J.F., Mueller, M.E., Dynamic Mode Decomposition of turbulent planar reacting and nonreacting jets, Eastern States Section Combustion Institute Spring Meeting, State College, PA, March 4-7, 2018

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124. Nunno, A.C., Mueller, M.E., Effects of heat loss thermochemistry models in reduced-order manifolds on NO_x pollutant formation, Sixth International Education Forum on Environment and Energy Science, Tenerife, Spain, December 15-19, 2017
 125. Perry, B.A., Mueller, M.E., Multiscalar subfilter PDF modeling for Large Eddy Simulation of turbulent piloted flames with inhomogeneous inlets, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 126. MacArt, J.F., Mueller, M.E., Flame-conditional turbulence modeling for reacting flows, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 127. Novoselov, A.G., Mueller, M.E., Ignition and extinction dynamics in turbulent nonpremixed “cool” flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 128. Lew, J.K., Yang, S., Mueller, M.E., Evaluation of a strain-sensitive transport model in LES of turbulent nonpremixed sooting flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 129. Nunno, A.C., Lew, J.K., Mueller, M.E., Role of unsteady effects in radiation heat losses in turbulent nonpremixed flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 130. Griffin, K., Mueller, M.E., Evaluation of model constant sensitivities for subfilter mixture fraction variance using adjoint and sensitivity derivative approaches, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 131. Grenga, T., Mueller, M.E., Effects of scalar alignment on flame structure in multi-modal combustion, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 132. Chong, S.T., Raman, V., Han, W., Mueller, M.E., Selvaraj, P., Im, H.G., Method of moments comparison for soot population balance modeling in turbulent combustion, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 133. Grenga, T., MacArt, J. F., Mueller, M.E., Dynamic Mode Decomposition of a turbulent premixed planar jet flame, 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017
 134. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 6th International Workshop on Model Reduction in Reacting Flow, Princeton, NJ, July 11-14, 2017
 135. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 136. Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 137. Lew, J.K., Mueller, M.E., Modeling differential diffusion of strain-sensitive gas-phase species in turbulent nonpremixed sooting flows, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017

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138. Grenga, T., Mueller, M.E., Multi-modal counterflow flame structure under autoignitive conditions, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 139. Perry, B.A., Mueller, M.E., Joint scalar probability density function modeling for multiscale turbulent mixing, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 140. MacArt, J.F., Grenga, T., Mueller, M.E., Karlovitz number effects on velocity and scalar statistics in turbulent premixed combustion, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 141. Nunno, A.C., Grenga, T., Mueller, M.E., Comparative analysis of methods for heat losses in physically-derived reduced-order manifolds, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 142. Novoselov, A.G., Mueller, M.E., Direct Numerical Simulation of a turbulent nonpremixed “cool” flame, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 143. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Analysis of soot-turbulence interactions for sub-filter modeling in LES, 8th European Combustion Meeting, Dubrovnik, Croatia, April 18-21, 2017
 144. Mueller, M.E., Generalized turbulent combustion model for multi-modal combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 145. Mueller, M.E., Raman, V., Physics-derived model form uncertainty quantification for turbulent combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 146. MacArt, J.F., Grenga, T., Mueller, M.E., Heat release effects on turbulence statistics in premixed and nonpremixed flames, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 147. Grenga, T., MacArt, J.F., Mueller, M.E., Dynamic Mode Decomposition of turbulent non-reacting and reacting nonpremixed jets, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 148. Perry, B.A., Mueller, M.E., Mode determination for combustion modeling in partially premixed turbulent flames, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 149. Berger, L., Pitsch, H., Mueller, M.E., Adequate techniques for the practical computation of optimal estimators, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 150. Chong, S.T., Raman, V., Mueller, M.E., Im, H., Comparison of moments-based approaches for modeling soot population in turbulent flows, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 151. MacArt, J.F., Grenga, T., Mueller, M.E., Conditional budgets of second-order statistics in nonpremixed and premixed turbulent combustion, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016

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152. Lew, J.K., Mueller, M.E., A priori analysis of a LES subfilter model for soot-turbulence-chemistry interactions, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 153. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of Flamelet Generated Manifolds on turbulent flame structure and pollutant emissions, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 154. Perry, B.A., Mueller, M.E., A flamelet modeling approach for multi-modal combustion with inhomogeneous inlets, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 155. Grenga, T., Mueller, M.E., Three-dimensional dynamic mode decomposition of premixed turbulent jet flames, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 156. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Dynamics of autoignitive DME/air coflow flames in oscillating flows, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 157. Langer, R.T., Wick, A., Mueller, M.E., Pitsch, H., Multivariate modeling of soot particles with the Hybrid Method of Moments, European Aerosol Conference 2016, Tours, France, September 5-10, 2016
 158. Perry, B.A., Mueller, M.E., Masri, A.R., A two mixture fraction flamelet model for Large Eddy Simulation of turbulent flames with inhomogeneous inlets, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 159. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Hydrodynamic and chemical effects of hydrogen addition on soot evolution in turbulent nonpremixed bluff body ethylene flames, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 160. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Flame dynamics in oscillating flows under autoignitive conditions, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 161. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of flamelet manifold generation on flame structure and pollutants in diluted turbulent premixed flames, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 162. Lalit, H., Mueller, M.E., Gore, J.P., Quantitative imaging of mid-infrared radiation of turbulent sooting flames: A tool for LES model validation, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 163. Mueller, M.E., Raman, V., Comparisons of uncertainties from turbulence and chemical kinetics models in turbulent combustion simulations, 2016 International Workshop on Measurement and Computation of Turbulent Flames, Seoul, South Korea, July 28-30, 2016
 164. Perry, B.A., Mueller, M.E., Masri, A.R., A new mode-switching approach for modeling turbulent flames with inhomogeneous partially premixed inlets, 2016 International Workshop on Measurement and Computation of Turbulent Flames, Seoul, South Korea, July 28-30, 2016

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165. Koo, H., Hassanaly, M., Raman, V., Mueller, M.E., Geigle, K.-P., Large Eddy Simulation of soot formation in a model gas turbine combustor, ASME 2016 Turbo Expo, Seoul, South Korea, June 13-17, 2016
 166. Mueller, M.E., Raman, V., Physics-derived model form uncertainty in turbulent combustion, SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 5-8, 2016
 167. Mueller, M.E., Raman, V., Model form uncertainty in turbulent combustion simulations, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 168. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Autoignited DME/air coflow flames in oscillating flows, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 169. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Soot evolution in turbulent nonpremixed ethylene/hydrogen bluff body flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 170. MacArt, J.F., Grenga, T., Mueller, M.E., Effects of small-scale heat release on turbulence scaling in premixed and nonpremixed flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 171. Nunno, A.C., Grenga, T., Mueller, M.E., Large Eddy Simulation of radiation effects in CO₂ and H₂O diluted turbulent premixed flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 172. Perry, B.A., Mueller, M.E., Masri, A.R., Large Eddy Simulation of a turbulent jet flame with inhomogeneous inlets using a two mixture fraction flamelet modeling approach, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 173. Lew, J.K., Mueller, M.E., Mahmoud, S., Alwahabi, Z.T., Dally, B.B., Nathan, G.J., Modeling subfilter soot-turbulence interactions in nonpremixed jet flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 174. Koo, H., Raman, V., Mueller, M.E., Geigle, K.-P., LES of a sooting flame in a pressurized swirl combustor, AIAA SciTech 2016, San Diego, CA, January 4-8, 2016
 175. Lalit, H., Kapaku, R., Rankin, B.A., Mueller, M.E., Gore, J.P., Experimental and computational imaging of mid-infrared radiation from a turbulent ethylene flame, AIAA SciTech 2016, San Diego, CA, January 4-8, 2016
 176. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Laminar nonpremixed coflow flame stabilization under autoignitive conditions, Fourth International Education Forum on Environment and Energy Science, Maui, HI, December 6-10, 2015
 177. Mueller, M.E., Perry, B.A., Masri, A.R., Computational study of the effect of compositionally inhomogeneous fuel streams on turbulent jet flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015

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178. Bahri, C., Arwatz, G., Hultmark, M., Mueller, M.E., Scaling of co-spectra in grid turbulence with a mean cross-stream temperature gradient, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 179. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Hydrodynamic and chemical effects of hydrogen dilution on soot evolution in turbulent nonpremixed bluff body ethylene flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 180. Lew, J.K., Mueller, M.E., Mahmoud, S., Alwahabi, Z.T., Dally, B.B., Nathan, G.J., Strain rate effects on soot evolution in turbulent nonpremixed flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 181. MacArt, J.F., Mueller, M.E., Semi-implicit iterative methods for low Mach number turbulent reacting flows, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 182. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of radiation effects on pollutant emissions in diluted turbulent premixed flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 183. Perry, B.A., Mueller, M.E., Masri, A.R., A two mixture fraction flamelet model for Large Eddy Simulation of turbulent jet flames with inhomogeneous inlets, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 184. Sowah, S.S., Mueller, M.E., Stone, H.A., Numerical simulations of curvature effects in laminar channel flows, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 185. Koo, H., Raman, V., Mueller, M.E., Geigle, K.-P., LES study of intermittency in soot formation in a model aircraft combustor, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 186. Perry, B.A., Mueller, M.E., Masri, A.R., Barlow, R.S., Large Eddy Simulation of turbulent partially premixed jet flames with inhomogeneous boundary conditions, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 187. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of the effects of radiation on turbulent premixed flame structure, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 188. Deng, S., Peng, Z., Mueller, M.E., Law, C.K., Stabilization of laminar nonpremixed DME/air coflow flames at elevated temperature and pressure, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 189. Mueller, M.E., Validation of multi-physics LES against sparse data, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 190. Koo, H., Mueller, M.E., Raman, V., Dally, B.B., RANS-based modeling and uncertainty quantification of soot formation in flames, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015

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191. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Lewis number effects in turbulent nonpremixed sooting flames, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 192. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Detailed numerical simulations of the autoignition-affected stabilization of laminar nonpremixed DME/air coflow flames at elevated pressure, High Pressure & High Reynolds Number Combustion Workshop, King Abdullah University of Science and Technology, Saudi Arabia, March 24-26, 2015
 193. Kapaku, R.K., Rankin, B.A., Mueller, M.E., Lalit, H.U., Gore, J.P., Quantitative experimental and model-based imaging of mid-infrared radiation from a turbulent luminous flame, AIAA SciTech 2015, Kissimmee, FL, January 5-9, 2015
 194. Koo, H., Raman, V., Mueller, M.E., Geigle, K.P., Large-eddy simulation of a turbulent sooting flame in a swirling combustor, AIAA SciTech 2015, Kissimmee, FL, January 5-9, 2015
 195. MacArt, J., Mueller, M.E., Analysis of operator splitting errors for DNS of low Mach number turbulent reacting flows, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 196. Bahri, C., Arwatz, G., Mueller, M.E., George, W.K., Hultmark, M., Scaling of spectra in grid turbulence with a mean cross-stream temperature gradient, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 197. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., On the effects of gas-phase species Lewis number in turbulent nonpremixed sooting flames, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 198. Bahri, C., Arwatz, G., George, W.K., Mueller, M.E., Hultmark, M., Scaling of spectra in grid turbulence with mean cross-stream temperature gradient, 10th European Fluid Mechanics Conference, Copenhagen, Denmark, September 14-18, 2014
 199. Deng, S., Koch, J.A., Mueller, M.E., Law, C.K., Sooting limits of nonpremixed n-heptane, n-butanol, and methyl butanoate flames: Experimental determination and mechanistic analysis, 35th International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
 200. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 35th International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
 201. Baldwin, R.L., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Pitsch, H., Alwahabi, Z.T., Nathan, G.J., Experimental and computational study of soot evolution in turbulent nonpremixed bluff body flames: Fuel effects, 2nd International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014
 202. Kapaku, R.K., Rankin, B.A., Mueller, M.E., Gore, J.P., Quantitative experimental and model-based imaging of mid-infrared radiation from a turbulent sooting flame, 2nd International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014
 203. Mueller, M.E., Uncertainty quantification in LES: Chemical kinetics, 12th International Workshop on Measurement and Computation of Turbulent Flames, Pleasanton, CA, July 31-August 2, 2014

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204. Bahri, C., Mueller, M.E., Hultmark, M., Temperature fluctuations in fully-developed turbulent channel flow with heated upper wall, 66th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
 205. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 66th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
 206. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects in turbulent nonpremixed sooting flames, 8th Mediterranean Combustion Symposium, Çeşme, Turkey, September 8-13, 2013
 207. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Effects of turbulent mixing on soot formation and growth in nonpremixed jet flames, 6th European Combustion Meeting, Lund, Sweden, June 25-28, 2013
 208. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 8th U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
 209. Xuan, Y., Blanquart, G., Mueller, M.E., Impact of mixture fraction field curvature on chemical species transport in diffusion flames, 8th U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
 210. Mueller, M.E., Raman, V., Effects of turbulent combustion modeling errors on soot evolution in turbulent nonpremixed jet flames, SIAM International Conference on Numerical Combustion, San Antonio, TX, April 8-10, 2013
 211. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., DNS of soot formation in three-dimensional turbulent non-premixed jet flames, SIAM International Conference on Numerical Combustion, San Antonio, TX, April 8-10, 2013
 212. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Lagrangian analysis of mixing and soot transport in a turbulent jet flame, Direct and Large-Eddy Simulation 9, Dresden, Germany, April 2-5, 2013
 213. Mueller, M.E., Validation of an LES model for soot evolution against DNS data in turbulent jet flames, 65th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
 214. Attili, A., Bisetti, B., Mueller, M.E., Pitsch, H., DNS of soot formation in three-dimensional turbulent non-premixed jet flames, 65th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
 215. Mueller, M.E., Pitsch, H., Black magic: Predicting soot in aircraft engines, Directions in Computational Flow Physics, San Diego, CA, October 14, 2012
 216. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for Large Eddy Simulation of turbulent nonpremixed combustion, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
 217. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF based modeling of soot-turbulence interactions in turbulent flames, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012

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218. Sharma, A., Mueller, M.E., Pitsch, H., Sensitivity of soot volume fraction predictions to inception species in a range of hydrocarbon flames, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
 219. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 1st International Sooting Flames Workshop, Warsaw, Poland, July 28-29, 2012
 220. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for high-fidelity turbulent combustion simulations, SIAM Conference on Uncertainty Quantification, Raleigh, NC, April 2-5, 2012
 221. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, Western States Section Combustion Institute Spring Meeting, Tempe, AZ, March 19-20, 2012
 222. Mueller, M.E., Pitsch, H., Large Eddy Simulation model for soot evolution in turbulent nonpremixed combustion, Partners in Environmental Technology Symposium and Workshop, Washington, D.C., November 29-December 1, 2011
 223. Mueller, M.E., Pitsch, H., Role of large scale mixing in soot evolution in turbulent nonpremixed combustion, 64th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
 224. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF approach for modeling soot formation in turbulent flames, 64th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
 225. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for Large Eddy Simulation of turbulent nonpremixed combustion, Western States Section Combustion Institute Fall Meeting, Riverside, CA, October 16-18, 2011
 226. Mueller, M.E., Pitsch, H., LES Model for Sooting Turbulent Nonpremixed Flames, 7th U.S. National Combustion Meeting, Atlanta, GA, March 20-23, 2011
 227. Bansal, G., Mueller, M.E., Pitsch, H., Three-Dimensional Direct Numerical Simulation of Soot Formation using Principal Component Analysis, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., November 30-December 2, 2010
 228. Mueller, M.E., Pitsch, H., LES Subfilter Modeling of Soot-Turbulence Interactions, 63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010
 229. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., On the formation and early evolution of soot in turbulent nonpremixed flames, 63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010
 230. Mueller, M.E., Blanquart, G., Pitsch, H., Modeling oxidation-induced fragmentation of soot aggregates in laminar flames, 33rd International Symposium on Combustion, Beijing, China, August 1-6, 2010
 231. Bansal, G., Mueller, M.E., Pitsch, H., Direct numerical simulation of soot formation in model gas-turbine combustors, 33rd International Symposium on Combustion, Beijing, China, August 1-6, 2010

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232. Mueller, M.E., Pitsch, H., Large Eddy Simulation modeling for sooting turbulent flames, Western States Section Combustion Institute Spring Meeting, Boulder, CO, March 22-23, 2010
 233. Raman, V., Mueller, M.E., Blanquart, G., Pitsch, H., Transported PDF modeling of soot-turbulence interactions, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., December 1-3, 2009
 234. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., Pepiot-Desjardins, P., Direct Numerical Simulation of soot formation in turbulent nonpremixed flames with finite rate chemistry and detailed soot dynamics, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., December 1-3, 2009
 235. Raman, V., Mueller, M.E., Blanquart, G., Pitsch, H., LES/PDF modeling of soot evolution in turbulent flames, 62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Minneapolis, MN, November 22-24, 2009
 236. Mueller, M.E., Blanquart, G., Pitsch, H., Modeling soot oxidation and fragmentation in laminar premixed flames, Western States Section Combustion Institute Fall Meeting, Irvine, CA, October 26-27, 2009
 237. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 6th U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
 238. Bisetti, F., Blanquart, G., Mueller, M.E., Pepiot-Desjardins, P., Pitsch, H., Direct Numerical Simulation of soot formation in turbulent nonpremixed flames, 6th U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
 239. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., Towards a Direct Numerical Simulation of soot formation in turbulent non-premixed flames, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., December 2-4, 2008
 240. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 61st Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Antonio, TX, November 23-25, 2008
 241. Mueller, M.E., Blanquart, G., Pitsch, H., A joint Volume-Surface model of soot aggregation with the method of moments, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 242. Blanquart, G., Mueller, M.E., Pitsch, H., Modeling temperature effects on soot formation, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 243. Bisetti, F., Mueller, M.E., Blanquart, G., Pitsch, H., Analysis of aggregates' statistics from a Monte Carlo simulation of soot formation in laminar flames, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 244. Mueller, M.E., Blanquart, G., Pitsch, H., Extending the method of moments for bimodal soot particle size distributions, Western States Section Combustion Institute Spring Meeting, Los Angeles, CA, March 17-18, 2008

245. Blanquart, G., Pitsch, H., Mueller, M.E., A joint Volume-Surface-Hydrogen multi-variate model for soot formation, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., December 4-6, 2007

PRINCETON UNIVERSITY SERVICE

Lab/Campus Collaborative Research Task Force, 2023-Present
MAE Associate Chair, 2023-Present
MAE Strategic Planning Committee, 2022-2023
MAE Director of Graduate Studies, 2020-2023
Committee on the Graduate School, 2020-2023
 Policy Subcommittee, 2021-2023
 Fellowships Subcommittee, 2020-2021
Committee on Examination and Standing, 2020-Present
SEAS Anti-Racism Committee, 2020-2021
Task Force on Graduate Student Mentoring, 2019-2020
Advisory Committee, Princeton E-affiliates, 2019-Present
Director, Graduate Certificate in Computational Science and Engineering, 2019-Present
ES/SEAS Project Classroom Programming Committee, 2018-2019
MAE Search Officer, 2018-2023
MAE Bridge Program Coordinator, 2018-2020
Priorities Committee, 2018-2022
MAE Climate & Inclusion Committee (co-Chair), 2018-2023
Academic-Athletic Fellow, Men's Volleyball, 2016-Present
AIAA Student Chapter Faculty Advisor, 2015-Present
Princeton Energy & Climate Scholars (PECS) Faculty Board, 2014-Present
SEAS Committee on Graduate Programs and Postdoctoral Experiences, 2014-2015
High-Performance Computing Research Center (HPCRC) Steering Committee, 2014-Present
Tau Beta Pi Faculty Advisor, 2013-Present
Program in Sustainable Energy Executive Committee Member, 2013-Present
MAE Graduate Committee, 2012-2023
MAE Seminar Committee, 2012-2016
BSE First-Year Advisor, 2012-2019

PROFESSIONAL COMMUNITY SERVICE

Associate Editor, Proceedings of The Combustion Institute, 2023-Present
Colloquium Coordinator (Numerical Combustion), 40th International Symposium on Combustion, 2023-Present
Executive Board Member, United States Section of the Combustion Institute, 2023-Present
Organizing Committee, ISF Workshop for the Measurement and Computational of Reacting Flows with Carbon Nanoparticles, 2022-Present
Vice Chair/Chair Elect, Eastern States Section of The Combustion Institute, 2022-Present
Guest Editor, Special Issue on Soot, Combustion and Flame, 2021-2023
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 39th International Symposium on Combustion, 2021-2022
Editorial Board, Combustion and Flame, 2021-Present
Secretary/Treasurer, AIAA Propellants and Combustion Technical Committee, 2020-Present

Program Chair, Eastern States Section of The Combustion Institute, 2020-2022

Nonmember Guest Editor, Proceedings of the National Academy of Sciences, 2019

Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 38th International Symposium on Combustion, 2019-2020

Co-Organizer, Princeton-Combustion Institute Summer School on Combustion, 2019-Present

Topic Coordinator, International Workshop on Near-Limit Flames, 2019-Present

Member, AIAA Propellants and Combustion Technical Committee, 2019-Present

Program Advisory Committee, 38th International Symposium on Combustion, 2018-2019

Associate Editor, Journal of Engineering for Gas Turbines and Power, 2018-Present

Session Organizer, International Workshop on Measurement and Computation of Turbulent Flames, 2018-Present

Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 37th International Symposium on Combustion, 2017-2018

Early Career Advisory Committee, The Combustion Institute, 2017-2019

Early Career and Diversity Development Committee, United States Sections of the Combustion Institute, 2017-Present

Outreach Committee, United States Sections of the Combustion Institute, 2017-Present

Treasurer, Eastern States Section of the Combustion Institute, 2016-2020

Program Leader (Turbulent Flames), ISF Workshop for the Measurement and Computational of Reacting Flows with Carbon Nanoparticles, 2015-2022

Executive Board Member, Eastern States Section of the Combustion Institute, 2013-Present

Conference Organizer:

Site, Facility, and Transportation Committee Chair, 2020 International Symposium on Combustion, New York Bid

Local Arrangements Co-Chair, 2016 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, Princeton University

Journal Reviewer:

Combustion and Flame; Proceedings of the Combustion Institute; Progress in Energy and Combustion Science; Applications in Energy and Combustion Science; Journal of Fluid Mechanics; Physical Review Fluids; Physical Review E; Combustion Theory and Modelling; Journal of Computational Physics; Proceedings of the Royal Society A; Journal of Engineering for Gas Turbines and Power; AIAA Journal; Journal of Propulsion and Power; Computational Science & Discovery; Journal of Open Source Software; Fuel; Applied Energy; Energy & Fuels; Combustion Science and Technology; Flow, Turbulence and Combustion; Physics of Fluids; Fluids; Journal of Combustion; International Journal of Engine Research; International Journal of Hydrogen Energy; Journal of Aerosol Science; International Journal of Multiphase Flows; International Journal for Numerical Methods in Fluids; Nanoscale and Microscale Thermophysical Engineering; Shock Waves

Conference Reviewer:

International Symposium on Combustion, ASME Turbo Expo

PRINCETON UNDERGRADUATE TEACHING

MAE/ENE 427, Energy Conversion and the Environment: Transportation Applications

Semesters: Springs 2013-2023

PRINCETON GRADUATE TEACHING

MAE 557, Simulation and Modeling of Fluid Flows

Semesters: Fall 2015, Fall 2017, Fall 2018, Fall 2022

MAE 507 (APC 523), Numerical Algorithms for Scientific Computing

Semesters: Spring 2015 (w/ J.M. Stone), Spring 2018

MAE 535, Turbulent Reacting Flows (Formerly: MAE 539, Turbulent Combustion)

Semesters: Fall 2014, Fall 2016, Fall 2020, Fall 2023

MAE 509, Numerical Methods for Engineering

Semesters: Fall 2013

POSTDOCTORAL ADVISEES

Esteban Cisneros Garibay, 2021-2022

Giuseppe D'Alessio (co-supervised with S. Sundaresan), 2021-2023

Hernando Maldonado Colman, 2021-Present

Pavan Prakash Duvvuri, 2021-2022

Aditya K. Aiyer (co-supervised with L. Deike), 2020-2023

Pierre-Yves Taunay, 2020-2022

Suo Yang, 2017-2018

Temistocle Grenga, 2015-2018

PRINCETON GRADUATE ADVISEES

John Boerchers, Ph.D., 2023-Present

S. Trevor Fush, Ph.D., 2023-Present

Sydney Rzepka, Ph.D., 2023-Present

Israel J. Bonilla, Ph.D., 2022-Present

Hannah H. Williams (co-advised with L. Deike), Ph.D., 2022-Present

Kathleen VanderKam, Ph.D., 2021-Present

Cristian E. Lacey, Ph.D., 2019-2023

Kerry S. Klemmer, Ph.D., 2018-2022

Jinyoung Lee, Ph.D., 2018-2022

Alex G. Novoselov, Ph.D., 2016-2020

Jeffry K. Lew, M.S.E., 2015-2018

Bruce A. Perry, Ph.D., 2015-2019

Sandra S. Sowah (co-advised with H.A. Stone), M.S.E., 2015-2019

Jonathan F. MacArt, Ph.D., 2014-2018

A. Cody Nunno, Ph.D., 2014-2019

Sili Deng (co-advised with C.K. Law), Ph.D., 2013-2016

Carla Bahri (co-advised with M. Hultmark), Ph.D., 2012-2016

PRINCETON UNDERGRADUATE ADVISEES

Parker O'Neal, 2023-Present

Efe Erozu, 2023

Delia Batdorff, 2022-2023
Kathryn-Alexa Kennedy, 2022-2023
Vassiliki Mancoridis, 2022-2023
Agnes Robang, 2021-2023
Kenalpha Kipyegon, 2021
Nancy Diallo (co-advised with M. Hultmark), 2021
James Armstrong, 2020-2021
Daniel Chao, 2018-2019
Michael Whitmore, 2018-2019
Shuyu Ding (exchange with Tsinghua University), 2018-2019
La Lee Lo, 2017-2018
Omkar Shende, 2017-2018
Dominic Saunders, 2017
Kevin Griffin, 2016-2017
Kevin Huang, 2016-2017
Agastya Parikh (co-advised with M. Hultmark), 2016-2017
Silken Jones (co-advised with C.W. Rowley), 2014-2015
Po Moon, 2014-2015
Jimin Hong, 2014-2015
R. Leland Baldwin, 2013-2014

NON-PRINCETON UNDERGRADUATE ADVISEES

Kai Lok Leung, Hong Kong University of Science and Technology, 2019
Ruihong Chen, Hong Kong University of Science and Technology, 2018
Zhenyang Dong, Hong Kong University of Science and Technology, 2017
Chenxi Feng, Hong Kong University of Science and Technology, 2016

VISITING STUDENT RESEARCH COLLABORATORS (VSRC) ADVISEES

Diego Quan Reyes, TU Eindhoven, 2024-Present
Anurag Surapaneni, Barcelona Supercomputing Center, 2022-2023
Lukas Berger, RWTH Aachen University, 2015
Raymond Langer, RWTH Aachen University, 2014-2015

PROFESSIONAL MEMBERSHIPS

American Physical Society, Divisions of Fluid Dynamics and Plasma Physics
American Institute of Aeronautics and Astronautics (Associate Fellow)
American Society of Mechanical Engineers (Fellow)
Society for Industrial and Applied Mathematics
The Combustion Institute

HONOR SOCIETY MEMBERSHIPS

Pi Tau Sigma

Tau Beta Pi (Texas Alpha President Emeritus)