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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

EDITORIAL ROLES

Proceedings of The Combustion Institute

Editor, 2025-Present
Associate Editor, 2023-2024

Combustion and Flame

Editorial Board, 2021-Present
Guest Editor, Special Issue on Soot, 2021-2023

Proceedings of the National Academy of Sciences

Nonmember Guest Editor, 2019

Journal of Engineering for Gas Turbines and Power

Associate Editor, 2018-2024

ADVISORY ROLES

Senior Technical Advisor, SharonAI, 2024-Present

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, Fall 2023 (MAE 535)

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 Rheinstei 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. Duvvuri, P.P., Mueller, M.E., Jocher, A., Soot modeling with temperature-based collision efficiency for nucleation and condensation, *Applications in Energy and Combustion Science* (2025) in preparation
2. D'Alessio, G., Ozel, A., Sundaresan, S., Mueller, M.E., Data-driven modeling of added mass force in filtered two-fluid models for densely loaded gas-particle flows, *Physics of Fluids* (2025) submitted
3. 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, *Combustion Theory and Modelling* (2024) submitted
4. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent nonpremixed bluff body flames, *Combustion and Flame* (2024) submitted
5. Maldonado Colmán, H., Mueller, M.E., Rush-to-equilibrium concept for minimizing reactive nitrogen emissions in ammonia combustion, *Combustion and Flame* (2024) in press
6. 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* **265** (2024) 113496
7. 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* **112** (2024) 811-829
8. 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* **146** (2024) 041103
9. Cisneros-Garibay, E., Mueller, M.E., Consistent coupling of manifold-based models and compressibility effects for supersonic turbulent combustion, *AIAA Journal* **62** (2024) 590-601
10. 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* **16** [Featured Article] (2024) 013305

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11. 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
 12. 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
 13. 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
 14. 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
 15. 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
 16. 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
 17. 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
 18. 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
 19. Lee, J., Mueller, M.E., Closure modeling for the conditional pressure gradient in turbulent combustion, *Combustion and Flame* **250** (2023) 112661
 20. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in separated flows, *Physical Review Fluids* **8** (2023) 024606
 21. 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
 22. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, *Journal of Computational Physics* **473** (2023) 111700
 23. 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
 24. 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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25. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, *Physical Review Fluids* **6** (2021) 044606
 26. 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
 27. 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
 28. 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
 29. 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
 30. 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
 31. Klemmer, K.S., Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, *Combustion and Flame* **221** (2020) 288-295
 32. 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
 33. 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
 34. Mueller, M.E., Physically-derived reduced-order manifold-based modeling for multi-modal turbulent combustion, *Combustion and Flame* **214** (2020) 287-305
 35. 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
 36. 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
 37. 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
 38. 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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39. 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
 40. 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
 41. 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
 42. 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
 43. 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
 44. 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
 45. 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
 46. 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
 47. Perry, B.A., Mueller, M.E., Joint Probability Density Function models for multiscale turbulent mixing, *Combustion and Flame* **193** (2018) 344-462
 48. 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
 49. 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
 50. Mueller, M.E., Raman, V., Model form uncertainty quantification in turbulent combustion simulations: Peer models, *Combustion and Flame* **187** (2018) 137-146
 51. 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
 52. 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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53. 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
 54. 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
 55. 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
 56. 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
 57. 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
 58. 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
 59. 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
 60. 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
 61. 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
 62. 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
 63. 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
 64. 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
 65. 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
 66. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, *Physics of Fluids* [Special Issue] **25** (2013) 110812
 67. 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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68. 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
 69. 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
 70. Mueller, M.E., Pitsch, H., LES modeling of sooting turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 2166–2180
 71. 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
 72. Mueller, M.E., Pitsch, H., Large eddy simulation subfilter modeling of soot-turbulence interactions, *Physics of Fluids* **23** (2011) 115104
 73. 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
 74. Mueller, M.E., Blanquart, G., Pitsch, H., Hybrid Method of Moments for modeling soot formation and growth, *Combustion and Flame* **156** (2009) 1143-1155
 75. 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., Burning Fast and Burning Green: Computational Modeling of Turbulent Combustion for Emerging Aerospace Propulsion Applications, AIAA Tennessee Section Monthly Seminar, Virtual, April 23, 2024
2. Mueller, M.E., Environmental Impact and Climate-Smart Modeling [Panel], New Jersey Academic Alliance for Offshore Wind Energy Symposium, Piscataway, NJ, January 12, 2024
3. 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

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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, Penn Institute for Computational Science Colloquium, University of Pennsylvania, October 6, 2023
 5. 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
 6. 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
 7. 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
 8. 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
 9. 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
 10. 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
 11. Mueller, M.E., Can Turbulent Combustion Models be Both Computationally Efficient and Generally Applicable?, Combustion Webinar, Virtual, October 30, 2021
 12. 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
 13. 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
 14. Mueller, M.E., A Computationally Efficient "Turnkey" Approach to Turbulent Combustion Modeling, Computational Science Center, National Renewable Energy Laboratory, Golden, CO, December 4, 2019
 15. 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
 16. 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
 17. Mueller, M.E., Overview of Soot Modeling: Statistics, Sources, and Turbulence, Combustion Research Facility, Sandia National Laboratories, Livermore, CA, November 13, 2019

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18. 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
 19. 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
 20. 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
 21. 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
 22. 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
 23. 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
 24. 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
 25. 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
 26. 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
 27. 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
 28. 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
 29. 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
 30. 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

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31. 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
 32. 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
 33. 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
 34. 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
 35. 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
 36. 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
 37. 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
 38. 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
 39. 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
 40. Mueller, M.E., Large Eddy Simulation of Soot Evolution in a Pratt & Whitney Combustor, United Technologies Research Center, East Hartford, CT, October 5, 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 Engineering, Stanford University, Stanford, CA, April 10, 2012
 42. 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. Boerchers, J.B., Mueller, M.E., Modeling enthalpy variations with mixture fraction in high-speed turbulent combustion, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
2. Bonilla, I.J., Fush, S.T., Mueller, M.E., Computationally efficient simulation of many-stream turbulent combustion, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
3. Eroç, E., Mueller, M.E., Optimal model assumptions in manifold-based modeling of three-stream turbulent nonpremixed combustion, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
4. Fush, S.T., Bonilla, I.J., Mueller, M.E., Optimizing in-situ adaptive neural network-coupled binary trees for complex manifold-based turbulent combustion models, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
5. Rzepka, S.L., VanderKam, K., Mueller, M.E., Quantifying and modeling tangential diffusion effects in manifold modeling for lean ammonia/hydrogen/nitrogen-air laminar premixed flames, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
6. Satterthwaite, P., Mueller, M.E., Inherently multi-phase manifold-based combustion models of liquid fuel combustion, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
7. Schroeder, M.B., Maldonado Colmán, H., Mueller, M.E., Sensitivity analysis for soot surface growth modeling in sooting premixed laminar flames, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025

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8. VanderKam, K., Mueller, M.E., Effect of thermochemical composition on turbulent premixed combustion subject to rapid mixing rates, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
 9. Walker, M.D., VanderKam, K., Law, C.K., Mueller, M.E., Three-dimensional topology and manifold-based modeling of turbulent premixed flame annihilation, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
 10. Yao, M.X., Mueller, M.E., In-Situ Adaptive Manifolds for soot and emissions predictions in turbulent reacting flows, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
 11. Soriano, B.S., Saggese, C., Kim, K., Mueller, M.E., Chen, J.H., Analysis of soot production in laminar counterflow flames from sustainable aviation fuels, 14th U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
 12. Boerchers, J.B., Mueller, M.E., Inherently high-speed manifold-based modeling of supersonic turbulent combustion, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 13. Bonilla, I.J., Lacey, C.E., Mueller, M.E., In-Situ Adaptive Manifolds beyond two-stream, uni-modal turbulent combustion, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 14. Fush, S.T., Bonilla, I.J., Mueller, M.E., Complex manifold-based turbulent combustion models using in-situ adaptive neural network coupled binary trees, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 15. Rzepka, S.L., VanderKam, K.E., Mueller, M.E., Directional considerations of diffusive fluxes in manifold modeling for lean ammonia/hydrogen/nitrogen-air laminar premixed flames, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 16. Satterthwaite, P., Mueller, M.E., Inherently multi-phase manifold-based combustion models of liquid fuel combustion: Redefinition of mixture fraction and interfacial conditions, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 17. VanderKam, K.E., Mueller, M.E., Influence of geometry on interactions between turbulence and premixed flames, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 18. Walker, M.D., VanderKam, K.E., Mueller, M.E., Turbulent premixed flame annihilation and manifold-based models, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 19. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Marine atmospheric boundary layer response to dynamic wave model in Large Eddy Simulation, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
 20. Yao, M.X., Mueller, M.E., In-Situ Adaptive Manifolds for soot and emissions predictions in turbulent reacting flows, 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024

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21. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Influence of ocean waves on the sensitivity of offshore wind farms to atmospheric conditions, NAWEA/WindTech 2024, New Brunswick, NJ, October 30-November 1, 2024
 22. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent nonpremixed bluff body flames, 7th International Workshop on the Measurement and Computation of Reacting Flows with Carbon Nanoparticles, Milan, Italy, July 20-21, 2024
 23. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Examining relative impacts of atmospheric and oceanic factors on offshore wind farms, TORQUE 2024, Florence, Italy, May 29-31, 2024 [Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Examining relative impacts of atmospheric and oceanic factors on offshore wind farms, *Journal of Physics: Conference Series* **2767** (2024) 062001]
 24. Boerchers, J., Sitaraman, H., Mueller, M.E., Manifold-based modeling of supersonic turbulent combustion: Direct inclusion of high-speed effects, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 25. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Generalized progress variable and cross-dissipation rate in turbulent lifted flames using a multi-modal manifold-based combustion model, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 26. Fush, S.T., Bonilla, I.J., Mueller, M.E., Reducing memory requirements of In-Situ Adaptive Manifolds using neural network coupled binary trees, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 27. Rzepka, S.L., VanderKam, K., Maldonado Colmán, H., Mueller, M.E., Evaluation of a manifold model for lean ammonia/hydrogen/nitrogen-air laminar premixed flames, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 28. VanderKam, K., Rzepka, S., Mueller, M.E., Manifold-based modeling for differential diffusion in turbulent premixed lean hydrogen flames, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 29. Maldonado Colmán, H., Mueller, M.E., Manifold modeling for reactive nitrogen emissions in ammonia-hydrogen-nitrogen turbulent nonpremixed flames, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 30. Surapaneni, A., Mira, D., Mueller, M.E., Application of In-Situ Adaptive Manifolds (ISAM) for the study of highly stratified multi-regime flames, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 31. Mueller, M.E., Bonilla, I.J., Fush, S.T., Satterthwaite, P., Toward comprehensive manifold-based combustion modeling of multi-component Sustainable Aviation Fuels in turbulent reacting flows, 19th International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
 32. Boerchers, J.B., Sitaraman, H., Mueller, M.E., Manifold-based modeling of supersonic turbulent combustion: Accounting for compressibility effects, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024

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33. 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 and nonlinear generalized progress variable, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 34. Fush, S.T., Bonilla, I.J., Mueller, M.E., Neural network coupling binary trees for reducing memory requirements of in-situ adaptive manifolds, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 35. Rzepka, S.L., Maldonado Colmán, H., Mueller, M.E., Effect of thermodiffusive instabilities on the formation of N₂O and NO_x in lean partially cracked NH₃-air laminar premixed flames, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 36. VanderKam, K., Mueller, M.E., Large-scale turbulence effects on turbulent premixed planar flames, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 37. Maldonado Colmán, H., Mueller, M.E., Minimizing reactive nitrogen emissions in ammonia combustion: A novel rush-to-equilibrium concept, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 38. Quan Reyes, D.A., Roekaerts, D., Mueller, M.E., van Oijen, J., DNS and manifold-based modeling for argon power cycles, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
 39. Mueller, M.E., Computational Fluid Dynamics modeling of full-scale offshore wind farms, Offshore Wind Technology Conference, Newark, NJ, December 6-7, 2023
 40. 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
 41. 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
 42. Bonilla, I.J., Lacey, C.E., Mueller, M.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
 43. 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
 44. 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
 45. 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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46. 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
 47. 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
 48. 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
 49. 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
 50. 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
 51. 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
 52. 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
 53. 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
 54. 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
 55. 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
 56. 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
 57. 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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58. 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
 59. 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
 60. 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**
 61. 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
 62. 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
 63. 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
 64. 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
 65. 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
 66. 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
 67. 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
 68. 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
 69. 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
 70. 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
71. 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
 72. 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
 73. 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
 74. 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
 75. 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
 76. 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
 77. 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
 78. 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
 79. 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
 80. 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
 81. Taunay, P.-Y.C.R., Quadrature-based moment methods applied to ExB discharges, International Electric Propulsion Conference 2022, Boston, MA, June 19-23, 2022
 82. 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]
83. 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
 84. 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
 85. 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
 86. 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
 87. 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
 88. 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
 89. 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
 90. 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
 91. 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
 92. 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
 93. 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
 94. 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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95. 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
 96. 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
 97. 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
 98. 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
 99. 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
 100. 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
 101. 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
 102. 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
 103. 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
 104. 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
 105. 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
 106. 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
 107. 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
 108. 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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109. 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
 110. 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
 111. 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
 112. 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
 113. 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
 114. 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
 115. 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
 116. 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
 117. 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]
 118. 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
 119. 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
 120. 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
 121. 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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122. 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
 123. 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
 124. 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
 125. 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
 126. 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
 127. 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
 128. 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
 129. 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
 130. 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
 131. 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
 132. 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
 133. 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
 134. 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
 135. 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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136. 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
 137. 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
 138. 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
 139. 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
 140. 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
 141. 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
 142. 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
 143. 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
 144. 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
 145. 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
 146. 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
 147. 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
 148. 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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149. 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
 150. 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
 151. 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
 152. 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
 153. 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
 154. 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
 155. 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
 156. 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
 157. 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
 158. 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
 159. 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
 160. 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
 161. 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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162. 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
 163. 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
 164. 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
 165. 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
 166. 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
 167. 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
 168. 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
 169. 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
 170. 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
 171. 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
 172. 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
 173. 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
 174. 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
 175. 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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176. 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
 177. 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
 178. 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
 179. 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
 180. 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
 181. 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
 182. Mueller, M.E., Generalized turbulent combustion model for multi-modal combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 183. 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
 184. 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
 185. 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
 186. 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
 187. 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
 188. 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
 189. 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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190. 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
 191. 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
 192. 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
 193. 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
 194. 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
 195. 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
 196. 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
 197. 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
 198. 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
 199. 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
 200. 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
 201. 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
 202. 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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203. 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
 204. Mueller, M.E., Raman, V., Physics-derived model form uncertainty in turbulent combustion, SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 5-8, 2016
 205. 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
 206. 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
 207. 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
 208. 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
 209. 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
 210. 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
 211. 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
 212. 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
 213. 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
 214. 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
 215. 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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216. 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
 217. 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
 218. 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
 219. 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
 220. 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
 221. 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
 222. 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
 223. 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
 224. 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
 225. 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
 226. 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
 227. Mueller, M.E., Validation of multi-physics LES against sparse data, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 228. 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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229. 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
 230. 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
 231. 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
 232. 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
 233. 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
 234. 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
 235. 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
 236. 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
 237. 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
 238. 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
 239. 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
 240. 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
 241. 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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242. 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
 243. 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
 244. 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
 245. 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
 246. 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
 247. 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
 248. 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
 249. 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
 250. 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
 251. 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
 252. 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
 253. Mueller, M.E., Pitsch, H., Black magic: Predicting soot in aircraft engines, Directions in Computational Flow Physics, San Diego, CA, October 14, 2012
 254. 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
 255. 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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256. 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
 257. 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
 258. 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
 259. 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
 260. 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
 261. 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
 262. 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
 263. 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
 264. Mueller, M.E., Pitsch, H., LES Model for Sooting Turbulent Nonpremixed Flames, 7th U.S. National Combustion Meeting, Atlanta, GA, March 20-23, 2011
 265. 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
 266. 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
 267. 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
 268. 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
 269. 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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270. 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
 271. 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
 272. 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
 273. 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
 274. 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
 275. 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
 276. 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
 277. 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
 278. 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
 279. 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
 280. Blanquart, G., Mueller, M.E., Pitsch, H., Modeling temperature effects on soot formation, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 281. 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
 282. 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

283. 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

University-Wide

Research Computing Planning Group, 2024-Present
Lab/Campus Collaborative Research Task Force, 2023-2024
Committee on the Graduate School, 2020-2023
 Policy Subcommittee, 2021-2023
 Fellowships Subcommittee, 2020-2021
Committee on Examination and Standing, 2020-2024
Task Force on Graduate Student Mentoring, 2019-2020
Priorities Committee, 2018-2022

School of Engineering and Applied Science

SEAS Anti-Racism Committee, 2020-2021
ES/SEAS Project Classroom Programming Committee, 2018-2019
SEAS Committee on Graduate Programs and Postdoctoral Experiences, 2014-2015
Tau Beta Pi Faculty Advisor, 2013-Present
BSE First-Year Advisor, 2012-2019

Department of Mechanical and Aerospace Engineering

MAE Associate Chair, 2023-Present
MAE Strategic Planning Committee, 2022-2023
MAE Director of Graduate Studies, 2020-2023
MAE Search Officer, 2018-2023
MAE Bridge Program Coordinator, 2018-2020
MAE Climate & Inclusion Committee (co-Chair), 2018-2023
AIAA Student Chapter Faculty Advisor, 2015-Present
MAE Graduate Committee, 2012-2023
MAE Seminar Committee, 2012-2016

Princeton Institute for Computational Science and Engineering

Director, Graduate Certificate in Computational Science and Engineering, 2019-Present
High-Performance Computing Research Center (HPCRC) Steering Committee, 2014-Present

Andlinger Center for Energy and the Environment

Advisory Committee, Princeton E-affiliates, 2019-Present
Program in Sustainable Energy Executive Committee Member, 2013-Present

Other Units

Executive Committee, Center for Digital Humanities, 2024-Present
Academic-Athletic Fellow, Men's Volleyball, 2016-Present
Princeton Energy & Climate Scholars (PECS) Faculty Board, 2014-Present

PROFESSIONAL COMMUNITY SERVICE

The Combustion Institute

Board of Directors, 2024-Present
Co-Organizer, Princeton-Combustion Institute Summer School on Combustion, 2019-Present
Early Career Advisory Committee, 2017-2019

United States Sections of The Combustion Institute

Co-Chair, Publication Committee, 2024-Present
Treasurer, 2024-Present
Executive Board Member, 2023-Present
Early Career and Diversity Development Committee, 2017-2019
Outreach Committee, 2017-2019

Eastern States Section of The Combustion Institute

Chair, 2024-Present
Vice Chair/Chair Elect, 2022-2024
Program Chair, 2020-2022
Treasurer, 2016-2020
Executive Board Member, 2013-Present

International Symposium on Combustion

Colloquium Coordinator (Numerical Combustion), 40th ISOC, 2023-2024
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 39th ISOC, 2021-2022
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 38th ISOC, 2019-2020
Program Advisory Committee, 38th ISOC, 2018-2019
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 37th ISOC, 2017-2018

ISF Workshop for the Measurement and Computation of Reacting Flows with Carbon Nanoparticles

Organizing Committee, 2022-Present
Program Leader (Turbulent Flames), 2015-2022

American Institute for Aeronautics and Astronautics

Secretary/Treasurer, Propellants and Combustion Technical Committee, 2020-Present
Member, AIAA Propellants and Combustion Technical Committee, 2019-Present

North American Wind Energy Academy

Track Lead, 2024 NAWEA/WindTech, 2024

Conference Organizer:

Local Organizing Committee, 2024 NAWA/WindTech, New Brunswick, NJ
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; Wind Energy Science; 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, 2025

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

Matthew X. Yao, 2024-Present
Esteban Cisneros Garibay, 2021-2022
Giuseppe D'Alessio (co-supervised with S. Sundaresan), 2021-2023
Hernando Maldonado Colman, 2021-2024
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

Philip A. Satterthwaite, 2024-Present
Michael B. Schroeder, 2024-Present
Michael D. Walker, 2024-Present

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

Cam Farid, 2025-Present
Emma Smithwick, 2025-Present
Iris Ushizima Sabino, 2024-Present
Laura Thompson, 2024-Present
Maia Abiani, 2024
Efe Ero, 2023-Present
Parker O'Neal, 2023-2024
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
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)