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EXPERIENCE

Princeton University, 2012 – Present

Department of Mechanical and Aerospace Engineering

Acting Chair, 2025 – Present

Donald R. Dixon '69 and Elizabeth W. Dixon Professor, 2025 – Present

Associate Chair, 2023 – 2025

Professor, 2022 – 2025

Director of Graduate Studies, 2020 – 2023

Associate Professor, 2018 – 2022

Assistant Professor, 2012 – 2018

Princeton Institute for Computational Science and Engineering

Interim Director, 2025 – Present

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

SEAS Distinguished Teacher Award, 2025

SEAS Commendation List for Outstanding Teaching, Fall 2023 (MAE 535)

SEAS Commendation List for Outstanding Teaching, Spring 2023 (MAE/ENE 427)

SEAS Commendation List for Outstanding Teaching, Fall 2022 (MAE 557)
SEAS Commendation List for Outstanding Teaching, Spring 2022 (MAE/ENE 427)
SEAS Commendation List for Outstanding Teaching, Spring 2021 (MAE/ENE 427)
SEAS Commendation List for Outstanding Teaching, Spring 2020 (MAE/ENE 427)
SEAS Commendation List for Outstanding Teaching, Fall 2017 (MAE 557)
SEAS Commendation List for Outstanding Teaching, Spring 2017 (MAE/ENE 427)
SEAS Alfred Rheinstein Faculty Award, 2016
SEAS Commendation List for Outstanding Teaching, Spring 2016 (MAE/ENE 427)
SEAS Commendation List for Outstanding Teaching, Spring 2015 (MAE/ENE 427)
Graduate Mentoring Award, 2015
SEAS Commendation List for Outstanding Teaching, Fall 2014 (MAE 539)
SEAS Commendation List for Outstanding Teaching, Fall 2013 (MAE 509)

PEER-REVIEWED PUBLICATIONS

1. VanderKam, K., Mueller, M.E., The impact of intense turbulence on reaction zones of premixed combustion, *Combustion and Flame* (2025) submitted
2. Duvvuri, P.P., Mueller, M.E., Jocher, A., Soot modeling with temperature and size-based collision efficiency for nucleation and condensation, *Applications in Energy and Combustion Science* (2025) submitted
3. Soriano, B.S., Saggese, C., Kim, K., Mueller, M.E., Chen, J.H., Analysis of soot formation from aviation fuels in laminar counterflow flames, *Proceedings of the Combustion Institute* **41** (2025) in press
4. 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* (2025) in press
5. Yao, M.X., Bonilla, I.J., Fush, S.T., Mueller, M.E., In-Situ Adaptive Manifolds for soot evolution in non-adiabatic turbulent reacting flows, *Proceedings of the Combustion Institute* **41** (2025) 105824
6. Rzepka, S.L., VanderKam, K., Mueller, M.E., Tangential diffusion effects in thermodiffusively unstable ammonia/hydrogen/nitrogen-air laminar premixed flames, *Proceedings of the Combustion Institute* **41** (2025) 105804
7. 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* **279** (2025) 114282
8. 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* **37** [Editor's Pick] (2025) 043348
9. Maldonado Colmán, H., Mueller, M.E., Rush-to-equilibrium concept for minimizing reactive nitrogen emissions in ammonia combustion, *Combustion and Flame* **275** (2025) 114049
10. 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

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11. 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
 12. 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
 13. 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
 14. Aiyer, A.K., Deike, L., Mueller, M.E., A dynamic wall modeling approach for Large Eddy Simulation of offshore wind farms in realistic oceanic conditions, *Journal of Renewable and Sustainable Energy* **16** [Featured Article] (2024) 013305
 15. 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
 16. 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
 17. 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
 18. 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
 19. D'Alessio, G., Sunderesan, 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
 20. 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
 21. 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
 22. 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
 23. Lee, J., Mueller, M.E., Closure modeling for the conditional pressure gradient in turbulent combustion, *Combustion and Flame* **250** (2023) 112661

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24. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in separated flows, *Physical Review Fluids* **8** (2023) 024606
 25. 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
 26. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, *Journal of Computational Physics* **473** (2023) 111700
 27. 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
 28. 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
 29. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, *Physical Review Fluids* **6** (2021) 044606
 30. 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
 31. 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
 32. 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
 33. 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
 34. 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
 35. Klemmer, K.S., Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, *Combustion and Flame* **221** (2020) 288-295
 36. 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
 37. 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
 38. Mueller, M.E., Physically-derived reduced-order manifold-based modeling for multi-modal turbulent combustion, *Combustion and Flame* **214** (2020) 287-305

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39. 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
 40. 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
 41. 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
 42. 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
 43. 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
 44. 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
 45. 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
 46. Chong, S.T., Raman, V., Mueller, M.E., Slevraj, 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
 47. 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
 48. 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
 49. 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
 50. 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
 51. Perry, B.A., Mueller, M.E., Joint Probability Density Function models for multiscale turbulent mixing, *Combustion and Flame* **193** (2018) 344-462
 52. 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

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53. 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
 54. Mueller, M.E., Raman, V., Model form uncertainty quantification in turbulent combustion simulations: Peer models, *Combustion and Flame* **187** (2018) 137-146
 55. 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
 56. 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
 57. 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
 58. 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
 59. 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
 60. 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
 61. 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
 62. 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
 63. 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
 64. 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
 65. 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
 66. 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
 67. 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

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68. 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
 69. 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
 70. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, *Physics of Fluids* [Special Issue] **25** (2013) 110812
 71. 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
 72. 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
 73. 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
 74. Mueller, M.E., Pitsch, H., LES modeling of sooting turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 2166–2180
 75. 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
 76. Mueller, M.E., Pitsch, H., Large eddy simulation subfilter modeling of soot-turbulence interactions, *Physics of Fluids* **23** (2011) 115104
 77. 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
 78. Mueller, M.E., Blanquart, G., Pitsch, H., Hybrid Method of Moments for modeling soot formation and growth, *Combustion and Flame* **156** (2009) 1143-1155
 79. 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., Turbulent Combustion Modeling for Everything: A Union of Physical Theory, Computational Algorithms, and Machine Learning Acceleration, Mechanical Engineering Departmental Seminar, University of Minnesota, Minneapolis, MN, December 3, 2025
2. 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
3. Mueller, M.E., Environmental Impact and Climate-Smart Modeling [Panel], New Jersey Academic Alliance for Offshore Wind Energy Symposium, Piscataway, NJ, January 12, 2024
4. 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
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. Mueller, M.E., Can Turbulent Combustion Models be Both Computationally Efficient and Generally Applicable?, Combustion Webinar, Virtual, October 30, 2021
13. 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

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14. 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
 15. Mueller, M.E., A Computationally Efficient “Turnkey” Approach to Turbulent Combustion Modeling, Computational Science Center, National Renewable Energy Laboratory, Golden, CO, December 4, 2019
 16. 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
 17. 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
 18. Mueller, M.E., Overview of Soot Modeling: Statistics, Sources, and Turbulence, Combustion Research Facility, Sandia National Laboratories, Livermore, CA, November 13, 2019
 19. 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
 20. 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
 21. 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
 22. 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
 23. 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
 24. 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
 25. 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
 26. 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

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27. 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
 28. 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
 29. 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
 30. 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
 31. 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
 32. 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
 33. 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
 34. 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
 35. 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
 36. 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
 37. 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
 38. 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
 39. 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

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40. 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
 41. Mueller, M.E., Large Eddy Simulation of Soot Evolution in a Pratt & Whitney Combustor, United Technologies Research Center, East Hartford, CT, October 5, 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 Engineering, Stanford University, Stanford, CA, April 10, 2012
 43. 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., Thompson, L.T., Yao, M.X., Mueller, M.E., A thermodynamically consistent manifold-based combustion model for premixed detonations and deflagrations, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025

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2. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Physics-based dimensionality reduction for data-based models for turbulent premixed combustion, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 3. Eroz, E., Mueller, M.E., Optimal model assumptions for manifold-based modeling of many-stream turbulent nonpremixed combustion, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 4. Fush, S.T., Bonilla, I.J., Mueller, M.E., Error control in neural network-coupled binary trees for complex manifold-based combustion models, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 5. Rzepka, S.L., Mueller, M.E., Flame dynamics and emissions in stratified ammonia/hydrogen/nitrogen-air flames, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 6. Schroeder, M.B., Yao, M.X., Mueller, M.E., Mass-consistent manifold modeling of turbulent sooting flames and the influence of soot subfilter PDF model, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 7. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Subfilter wave drag modeling for LES of offshore wind farms, 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
 8. Boerchers, J.B., Thompson, L.T., Yao, M.X., Mueller, M.E., A thermodynamically consistent manifold model for premixed detonations and deflagrations, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 9. Bonilla, I.J., Fush, S.T., Mueller, M.E., Evaluating pilot modeling assumptions using many-stream manifold-based combustion models, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 10. Fush, S.T., Bonilla, I.J., Mueller, M.E., A posteriori analysis of In-Situ Adaptive neural network-coupled binary trees for manifold-based models in LES of turbulent flames, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 11. Rzepka, S.L., Mueller, M.E., Manifold modeling of tangential diffusion effects in lean ammonia/hydrogen/nitrogen-air premixed flames, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 12. Satterthwaite, P., Mueller, M.E., Manifold-based modeling of Sustainable Aviation Fuel combustion: An inherently multi-phase, multi-component model, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 13. Schroeder, M.E., Yao, M.X., Mueller, M.E., Mass-consistent manifold modeling for Large Eddy Simulation of turbulent sooting flames, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025

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14. Walker, M.D., VanderKam, K., Law, C.K., Mueller, M.E., Topologies of self-interaction in turbulent premixed flames and reduced-order manifold models, International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
 15. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Assessing subfilter scale wave drag models for LES for offshore wind farms, Wind Energy Science Conference, Nantes, France, June 24-27, 2025
 16. Surapaneni, A., Mira, D., Mueller, M.E., Two-dimensional manifold model applied to multi-regime combustion using In-Situ Adaptive Manifolds, 13th Mediterranean Combustion Symposium, Corfu, Greece, June 1-5, 2025
 17. Maldonado Colmán, H., D'Alessio, G., Mueller, M.E., Data-driven model for reduced combustion chemistry via Bayesian Optimization, 12th European Combustion Meeting, Edinburgh, United Kingdom, April 7-10, 2025
 18. 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
 19. 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
 20. 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
 21. 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
 22. 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
 23. 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
 24. 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
 25. 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
 26. 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
 27. 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

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28. 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
 29. 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
 30. 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
 31. 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
 32. 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
 33. 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
 34. 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
 35. 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
 36. 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
 37. 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
 38. 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
 39. 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

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40. 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]
 41. 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
 42. 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
 43. 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
 44. 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
 45. 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
 46. 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
 47. 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
 48. 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
 49. 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
 50. 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
 51. 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

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52. 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
 53. 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
 54. 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
 55. 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
 56. Mueller, M.E., Computational Fluid Dynamics modeling of full-scale offshore wind farms, Offshore Wind Technology Conference, Newark, NJ, December 6-7, 2023
 57. 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
 58. 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
 59. 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
 60. 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
 61. 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
 62. 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
 63. 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
 64. 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

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65. 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
 66. 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
 67. 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
 68. 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
 69. 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
 70. 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
 71. 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
 72. 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
 73. 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
 74. 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
 75. 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
 76. 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
 77. 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**

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78. 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
 79. 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
 80. 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
 81. 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
 82. 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
 83. 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
 84. 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
 85. 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
 86. 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
 87. 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
 88. 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
 89. 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

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90. 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
 91. 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
 92. 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
 93. 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
 94. 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
 95. 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
 96. 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
 97. 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
 98. Taunay, P.-Y.C.R., Quadrature-based moment methods applied to ExB discharges, International Electric Propulsion Conference 2022, Boston, MA, June 19-23, 2022
 99. 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, 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]
 100. 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
 101. 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

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102. 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
 103. 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
 104. 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
 105. 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
 106. 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
 107. 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
 108. 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
 109. 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
 110. 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
 111. 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
 112. 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
 113. 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
 114. 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

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115. 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
 116. 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
 117. 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
 118. 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
 119. 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
 120. 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
 121. 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
 122. 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
 123. 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
 124. 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
 125. 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
 126. 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
 127. 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

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128. 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
 129. 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
 130. 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
 131. 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
 132. 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
 133. 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
 134. 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]
 135. 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
 136. 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
 137. 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
 138. 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
 139. 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
 140. 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

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141. 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
 142. 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
 143. 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
 144. 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
 145. 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
 146. 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
 147. 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
 148. 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
 149. 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
 150. 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
 151. 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
 152. 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
 153. 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
 154. 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

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155. 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
 156. 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
 157. 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
 158. 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
 159. 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
 160. 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
 161. 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
 162. 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
 163. 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
 164. 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
 165. 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
 166. 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

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167. 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
 168. 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
 169. 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
 170. 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
 171. 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
 172. 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
 173. 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
 174. 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
 175. 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
 176. 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
 177. 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
 178. 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
 179. 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

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180. 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
 181. 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
 182. 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
 183. 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
 184. 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
 185. 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
 186. 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
 187. 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
 188. 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
 189. 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
 190. 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
 191. 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
 192. 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
 193. 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
 194. Perry, B.A., Mueller, M.E., Joint scalar probability density function modeling for multiscalar turbulent mixing, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017

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195. 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
 196. 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
 197. 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
 198. 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
 199. Mueller, M.E., Generalized turbulent combustion model for multi-modal combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 200. 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
 201. 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
 202. 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
 203. 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
 204. 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
 205. 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
 206. 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
 207. 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
 208. 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

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209. 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
 210. 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
 211. 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
 212. 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
 213. 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
 214. 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
 215. 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
 216. 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
 217. 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
 218. 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
 219. 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
 220. 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
 221. Mueller, M.E., Raman, V., Physics-derived model form uncertainty in turbulent combustion, SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 5-8, 2016
 222. 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

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223. 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
 224. 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
 225. 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
 226. 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
 227. 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
 228. 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
 229. 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
 230. 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
 231. 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
 232. 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
 233. 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
 234. 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
 235. 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

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236. 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
 237. 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
 238. 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
 239. 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
 240. 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
 241. 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
 242. 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
 243. 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
 244. Mueller, M.E., Validation of multi-physics LES against sparse data, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 245. 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
 246. 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
 247. 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
 248. 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

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249. 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
 250. 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
 251. 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
 252. 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
 253. 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
 254. 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
 255. 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
 256. 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
 257. 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
 258. 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
 259. 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
 260. 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
 261. 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

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262. 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
 263. 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
 264. 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
 265. 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
 266. 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
 267. 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
 268. 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
 269. 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
 270. Mueller, M.E., Pitsch, H., Black magic: Predicting soot in aircraft engines, Directions in Computational Flow Physics, San Diego, CA, October 14, 2012
 271. 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
 272. 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
 273. 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
 274. 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
 275. 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

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276. 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
 277. 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
 278. 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
 279. 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
 280. 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
 281. Mueller, M.E., Pitsch, H., LES Model for Sooting Turbulent Nonpremixed Flames, 7th U.S. National Combustion Meeting, Atlanta, GA, March 20-23, 2011
 282. 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
 283. 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
 284. 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
 285. 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
 286. 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
 287. 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
 288. 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
 289. 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

- 290. 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
- 291. 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
- 292. 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
- 293. 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
- 294. 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
- 295. 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
- 296. 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
- 297. Blanquart, G., Mueller, M.E., Pitsch, H., Modeling temperature effects on soot formation, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
- 298. 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
- 299. 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
- 300. 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, 2024-2025

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
Acting Chair, 2025-Present
Associate Chair, 2023-2025
Strategic Planning Committee, 2022-2023
Director of Graduate Studies, 2020-2023
Search Officer, 2018-2023
Bridge Program Coordinator, 2018-2020
Climate & Inclusion Committee (co-Chair), 2018-2023
AIAA Student Chapter Faculty Advisor, 2015-Present
Graduate Committee, 2012-2023
Seminar Committee, 2012-2016

Princeton Institute for Computational Science and Engineering
Interim Director, 2025-Present
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
Strategic Vision Committee, Statistics and Data Science, AI Lab, 2025
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, 2024-2025

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

Silver Medal Committee, 40th ISOC, 2025Program Advisory Committee, 41st ISOC, 2025-PresentColloquium Coordinator (Numerical Combustion), 40th ISOC, 2023-2024Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 39th ISOC, 2021-2022Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 38th ISOC, 2019-2020Program Advisory Committee, 38th ISOC, 2019-2020Colloquium 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, Fall 2025
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, 2024-2025
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, Ph.D., 2024-Present
Michael B. Schroeder, Ph.D., 2024-Present
Michael D. Walker, Ph.D., 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., 2021-2025
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

Theodore Bell (co-advised with Y. Ju), 2025-Present
Ian Maciver, 2025-Present
Owen Rulyak (co-advised with Y. Ju), 2025-Present
Connor Brown, 2025
Cam Farid, 2025
Emma Smithwick, 2025-Present
Iris Ushizima Sabino, 2024-2025
Laura Thompson, 2024-2025
Maia Abiani, 2024-Present
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)