

# Michael E. Mueller

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## EXPERIENCE

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### Princeton University, 2012 – Present

#### Department of Mechanical and Aerospace Engineering

Acting Chair, 2025 – 2026

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 – 2026

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 Laboratory of the Rockies, 2020 – Present

#### Computational Science Center

Faculty Researcher, Scalable Algorithms, Modeling, and Simulation Group, 2020 – Present

### Stanford University, 2012

#### Department of Mechanical Engineering

Postdoctoral Scholar, 2012

## EDUCATION

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### 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**

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## 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**

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Senior Technical Advisor, SharonAI, 2024-2025

**EXTRAMURAL AWARDS**

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Fellow, The Combustion Institute, 2026

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**

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Engineering Council Excellence in Teaching Award, Spring 2026 (MAE/ENE 427)

SEAS Commendation List for Outstanding Teaching, Fall 2025 (MAE/CSE 557)

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)

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## PEER-REVIEWED PUBLICATIONS

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1. Fush, S.T., Bonilla, I.J., Schroeder, M.B., Yao, M.X., Mueller, M.E., Neural-ISAM: A hybrid in-situ machine learning approach for complex manifold-based combustion models in LES of turbulent reacting flows, *Combustion Theory and Modelling* (2026) in preparation
2. Bonilla, I.J., Fush, S.T., Lacey, C.E., Mueller, M.E., Many-stream manifold modeling of pilot effects in turbulent nonpremixed combustion, *Combustion and Flame* (2026) in preparation
3. Boerchers, J.B., Thompson, L.T., Yao, M.X., Mueller, M.E., A thermodynamically consistent manifold model for premixed deflagrations and detonations, *Combustion and Flame* (2026) submitted
4. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Sea surface roughness dependence on ocean wave parameters through Large Eddy Simulation with local subfilter wave drag, *Journal of Atmospheric Sciences* (2026) submitted
5. Surapaneni, A., Mira, D., Mueller, M.E., Two-dimensional manifold model applied to multi-regime combustion using In-Situ Adaptive Manifolds, *Flow, Turbulence and Combustion* (2026) submitted
6. VanderKam, K., Mueller, M.E., The impact of intense turbulence on reaction zones of premixed combustion, *Combustion and Flame* (2025) submitted
7. Fush, S.T., Bonilla, I.J., Mueller, M.E., Error control of uncertainty-aware neural network-coupled binary trees for manifold-based combustion models, *Proceedings of the Combustion Institute* **42** (2026) in press
8. Satterthwaite, P.A., Mueller, M.E., An inherently multi-phase manifold model for spherically symmetric droplet combustion, *Proceedings of the Combustion Institute* **42** (2026) in press
9. Schroeder, M.B., Yao, M.X., Mueller, M.E., Mass-consistent manifold modeling for Large Eddy Simulation of turbulent sooting flames, *Proceedings of the Combustion Institute* **42** (2026) in press

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10. Walker, M.D., VanderKam, K., Mueller, M.E., Manifold modeling of flame-flame interactions in turbulent premixed combustion, *Proceedings of the Combustion Institute* **42** (2026) 106064
  11. Walker, M.D., Rzepka, S.L., Law, C.K., Mueller, M.E., Propagation and corner dynamics of colliding and annihilating premixed flames, *Proceedings of the Combustion Institute* **42** (2026) 106306
  12. 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* **30** (2026) 116-134
  13. 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* **24** (2025) 100407
  14. 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) 105905
  15. 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
  16. 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
  17. 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
  18. 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
  19. Maldonado Colmán, H., Mueller, M.E., Rush-to-equilibrium concept for minimizing reactive nitrogen emissions in ammonia combustion, *Combustion and Flame* **275** (2025) 114049
  20. 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
  21. 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
  22. 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
  23. 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

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24. 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
  25. 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
  26. 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
  27. 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
  28. 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
  29. D'Alessio, G., Sundaresan, S., Mueller, M.E., Automated and efficient local adaptive regression for Principal Component-based reduced-order modeling of turbulent reacting flows, *Proceedings of the Combustion Institute* **39** (2023) 5249-5258
  30. 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
  31. 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
  32. 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
  33. Lee, J., Mueller, M.E., Closure modeling for the conditional pressure gradient in turbulent combustion, *Combustion and Flame* **250** (2023) 112661
  34. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in separated flows, *Physical Review Fluids* **8** (2023) 024606
  35. 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
  36. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, *Journal of Computational Physics* **473** (2023) 111700
  37. 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

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38. 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
  39. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, *Physical Review Fluids* **6** (2021) 044606
  40. 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
  41. 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
  42. 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
  43. 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
  44. 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
  45. Klemmer, K.S., Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, *Combustion and Flame* **221** (2020) 288-295
  46. 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
  47. 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
  48. Mueller, M.E., Physically-derived reduced-order manifold-based modeling for multi-modal turbulent combustion, *Combustion and Flame* **214** (2020) 287-305
  49. 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
  50. 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
  51. 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

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52. 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
  53. 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
  54. 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
  55. 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
  56. Chong, S.T., Raman, V., Mueller, M.E., Slevraj, P., Im, H.G., Effect of soot model, moment method, and chemical kinetics on soot formation in a model aircraft combustor, *Proceedings of the Combustion Institute* **37** (2019) 1065-1074
  57. 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
  58. 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
  59. 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
  60. 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
  61. Perry, B.A., Mueller, M.E., Joint Probability Density Function models for multiscale turbulent mixing, *Combustion and Flame* **193** (2018) 344-462
  62. 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
  63. 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
  64. Mueller, M.E., Raman, V., Model form uncertainty quantification in turbulent combustion simulations: Peer models, *Combustion and Flame* **187** (2018) 137-146
  65. 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

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66. 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
  67. 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
  68. 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
  69. 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
  70. 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
  71. 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
  72. 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
  73. 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
  74. 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
  75. 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
  76. 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
  77. 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
  78. 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
  79. 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
  80. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, *Physics of Fluids* [Special Issue] **25** (2013) 110812

81. 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
82. 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
83. 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
84. Mueller, M.E., Pitsch, H., LES model for sooting turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 2166—2180
85. 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
86. Mueller, M.E., Pitsch, H., Large eddy simulation subfilter modeling of soot-turbulence interactions, *Physics of Fluids* **23** (2011) 115104
87. 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
88. Mueller, M.E., Blanquart, G., Pitsch, H., Hybrid Method of Moments for modeling soot formation and growth, *Combustion and Flame* **156** (2009) 1143-1155
89. 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

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#### 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

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#### INVITED SEMINARS, LECTURES, PANELS, AND PRESENTATIONS

1. Mueller, M.E., Topological Effects in Turbulent Premixed Flames, Geometry of Flows Meeting, New York University, New York, NY, June 15-16, 2026
2. Mueller, M.E., Leveraging Machine Learning for Simulations of Turbulent Multi-Physics Flows: Computational Acceleration, Physics Generalization, and Model Hybridization, Distinguished Seminar in

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Computational Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, March 5, 2026

3. Mueller, M.E., Generalized Manifold-Based Turbulent Combustion Modeling and Deployment for Zero-Carbon Combustion Concepts, GE Vernova, Virtual, January 13, 2026
4. 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
5. Mueller, M.E., Multi-Scale Modeling for Turbulent Reacting Flows, Princeton University-Institute for Advanced Study Multi-Scale Modeling Initiative, Princeton, NJ, November 24, 2025
6. 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
7. Mueller, M.E., Environmental Impact and Climate-Smart Modeling [Panel], New Jersey Academic Alliance for Offshore Wind Energy Symposium, Piscataway, NJ, January 12, 2024
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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
14. 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
15. 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

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16. Mueller, M.E., Can Turbulent Combustion Models be Both Computationally Efficient and Generally Applicable?, Combustion Webinar, Virtual, October 30, 2021
  17. 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, 12<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
  18. 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
  19. Mueller, M.E., A Computationally Efficient “Turnkey” Approach to Turbulent Combustion Modeling, Computational Science Center, National Renewable Energy Laboratory, Golden, CO, December 4, 2019
  20. 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
  21. 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
  22. Mueller, M.E., Overview of Soot Modeling: Statistics, Sources, and Turbulence, Combustion Research Facility, Sandia National Laboratories, Livermore, CA, November 13, 2019
  23. 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
  24. 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
  25. Mueller, M.E., MacArt, J.F., Large Eddy Simulation Subfilter Modeling of Combustion-Affected Turbulence in Turbulent Premixed Combustion, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  26. 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
  27. 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
  28. 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
  29. 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

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30. 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
  31. 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
  32. 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
  33. 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
  34. 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
  35. 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
  36. 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
  37. 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
  38. 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
  39. Mueller, M.E., Flamelet Approach for Turbulent Combustion: Has it Reached its Limit?, 12<sup>th</sup> International Conference on Energy for a Clean Environment, Lisbon, Portugal, July 5-9, 2015
  40. 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
  41. 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
  42. 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

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43. 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
  44. 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
  45. Mueller, M.E., Large Eddy Simulation of Soot Evolution in a Pratt & Whitney Combustor, United Technologies Research Center, East Hartford, CT, October 5, 2012
  46. 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
  47. 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

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#### **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, 15<sup>th</sup> International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015

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#### **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

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#### **SOFTWARE**

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

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**CONFERENCE PAPERS, PRESENTATIONS, AND POSTERS**

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1. Ayala, R., Yang, R., Mueller, M.E., Deike, L., Multilayer simulation of nonlinear surface wave dynamics in complex seas, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
2. Boerchers, J.B., Mueller, M.E., A general subfilter flame structure model for turbulent compressible reacting flows with detonations, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
3. Fush, S.T., Mueller, M.E., Neural network types for thermochemical state mapping in manifold-based combustion models, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
4. Ponte, E., Mueller, M.E., Deike, L., OD cloud microphysics model for droplet population evolution, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
5. Rzepka, S.L., Mueller, M.E., Effects of turbulence and stratification on emissions in ammonia/hydrogen/nitrogen-air premixed flames, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
6. Satterthwaite, P.A., Mueller, M.E., Large Eddy Simulation of turbulent spray flames using a droplet combustion manifold model via In-Situ Adaptive Manifolds, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
7. Walker, M.D., Satterthwaite, P.A., Mueller, M.E., Evaluating dissipation rate and curvature closure models for the premixed manifold equations, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
8. Patel, M., Mueller, M.E., Modeling of particle dynamics during Stratospheric Aerosol Injection, 79<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Orlando, FL, November 22-24, 2026
9. Ponte, E., Pokrifka, G., Koblensky, S., Deike, L., Mueller, M.E., A cloud droplet population model for warm rain initiation, 2026 American Meteorological Society Madison Summit: 17<sup>th</sup> Conference on Cloud Physics, Madison, WI, August 3-7, 2026
10. Bonilla, I.J., Fush, S.T., Lacey, C.E., Mueller, M.E., Many-stream manifold modeling of pilot effects in turbulent nonpremixed combustion, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
11. Fush, S.T., Bonilla, I.J., Mueller, M.E., Error control of uncertainty-aware neural network-coupled binary trees for manifold-based combustion models, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
12. Satterthwaite, P.A., Mueller, M.E., An inherently multi-phase manifold model for spherically symmetric droplet combustion, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026

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13. Schroeder, M.B., Yao, M.X., Mueller, M.E., Mass-consistent manifold modeling for Large Eddy Simulation of turbulent sooting flames, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
  14. Walker, M.D., VanderKam, K., Mueller, M.E., Manifold modeling of flame-flame interactions in turbulent premixed combustion, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
  15. Walker, M.D., Rzepka, S.L., Law, C.K., Mueller, M.E., Propagation and corner dynamics of colliding and annihilating premixed flames, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
  16. Boerchers, J.B., Mueller, M.E., Implementation and validation of a thermodynamically consistent manifold-based model for LES of premixed compressible reacting flows, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
  17. Rzepka, S.L., Mueller, M.E., Flame dynamics and emissions in stratified ammonia/hydrogen/nitrogen-air laminar premixed flames, 41<sup>st</sup> International Symposium on Combustion, Kyoto, Japan, July 26-31, 2026
  18. Schroeder, M.B., Mueller, M.E., Investigating the impact of resonantly stabilized radical surface growth in turbulent nonpremixed flames, 8<sup>th</sup> ISF Workshop on the Measurement and Computation of Reacting Flows with Carbon Nanoparticles, Kyoto, Japan, July 25-26, 2026
  19. Qiu, J., Tian, L., Spencer, A., Mueller, M.E., Gärtner, J., Liu, W., Kronenburg, A., LES-MMC-BMMSM modelling of iron oxide formation in flame spray pyrolysis, 8<sup>th</sup> ISF Workshop on the Measurement and Computation of Reacting Flows with Carbon Nanoparticles, Kyoto, Japan, July 25-26, 2026
  20. Mueller, M.E., Intense turbulence and vanishing reaction zones, Premixed Turbulent Flames Workshop (PTF), Kyoto, Japan, July 25-26, 2026
  21. Mueller, M.E., Neural-ISAM: AI embedding for computational acceleration and manifold model generalization, Joint Session of International Workshop on Measurement and Computation of Turbulent Flames (TNF)/Premixed Turbulent Flames Workshop (PTF), Kyoto, Japan, July 25-26, 2026
  22. Walker, M.D., Fush, S.T., Mueller, M.E., A physics-informed neural network for compressible Rayleigh-Taylor mixing, 19<sup>th</sup> International Workshop on the Physics of Compressible Turbulent Mixing, Ann Arbor, MI, July 18-24, 2026
  23. Yao, M.X., Schroeder, M.B., Boerchers, J.B., Mueller, M.E., Recent advances in In-Situ Adaptive Manifold modeling, Combustion Institute—Canadian Section Spring Technical Meeting, Montreal, Canada, May 11-14, 2026
  24. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Physics-based dimensionality reduction for data-based turbulent combustion modeling, Eastern States Section Combustion Institute Spring Meeting, Raleigh, NC, March 15-18, 2026
  25. Fush, S.T., Bonilla, I.J., Mueller, M.E., Error control methods in neural networks for manifold-based combustion models, Eastern States Section Combustion Institute Spring Meeting, Raleigh, NC, March 15-18, 2026

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26. Rzepka, S.L., Mueller, M.E., Flame dynamics and emissions in stratified ammonia/hydrogen/nitrogen-air flames, Eastern States Section Combustion Institute Spring Meeting, Raleigh, NC, March 15-18, 2026
  27. Satterthwaite, P.A., Mueller, M.E., Preferential vaporization effects in manifold modeling of spherically symmetric multicomponent droplets, Eastern States Section Combustion Institute Spring Meeting, Raleigh, NC, March 15-18, 2026
  28. Walker, M.D., Satterthwaite, P.A., Mueller, M.E., General transport equation for curvature in premixed reacting flows, Eastern States Section Combustion Institute Spring Meeting, Raleigh, NC, March 15-18, 2026
  29. Boerchers, J.B., Thompson, L.T., Yao, M.X., Mueller, M.E., A thermodynamically consistent manifold-based combustion model for premixed detonations and deflagrations, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  30. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Physics-based dimensionality reduction for data-based models for turbulent premixed combustion, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  31. Eroz, E., Mueller, M.E., Optimal model assumptions for manifold-based modeling of many-stream turbulent nonpremixed combustion, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  32. Fush, S.T., Bonilla, I.J., Mueller, M.E., Error control in neural network-coupled binary trees for complex manifold-based combustion models, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  33. Rzepka, S.L., Mueller, M.E., Flame dynamics and emissions in stratified ammonia/hydrogen/nitrogen-air flames, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  34. 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, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  35. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Subfilter wave drag modeling for LES of offshore wind farms, 78<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Houston, TX, November 23-25, 2025
  36. Boerchers, J.B., Thompson, L.T., Yao, M.X., Mueller, M.E., A thermodynamically consistent manifold model for premixed detonations and deflagrations, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  37. Bonilla, I.J., Fush, S.T., Mueller, M.E., Evaluating pilot modeling assumptions using many-stream manifold-based combustion models, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025

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38. 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, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  39. Rzepka, S.L., Mueller, M.E., Manifold modeling of tangential diffusion effects in lean ammonia/hydrogen/nitrogen-air premixed flames, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  40. Satterthwaite, P., Mueller, M.E., Manifold-based modeling of Sustainable Aviation Fuel combustion: An inherently multi-phase, multi-component model, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  41. Schroeder, M.E., Yao, M.X., Mueller, M.E., Mass-consistent manifold modeling for Large Eddy Simulation of turbulent sooting flames, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  42. Walker, M.D., VanderKam, K., Law, C.K., Mueller, M.E., Topologies of self-interaction in turbulent premixed flames and reduced-order manifold models, 20<sup>th</sup> International Conference on Numerical Combustion, Rome, Italy, October 14-17, 2025
  43. 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
  44. Surapaneni, A., Mira, D., Mueller, M.E., Two-dimensional manifold model applied to multi-regime combustion using In-Situ Adaptive Manifolds, 13<sup>th</sup> Mediterranean Combustion Symposium, Corfu, Greece, June 1-5, 2025
  45. Maldonado Colmán, H., D'Alessio, G., Mueller, M.E., Data-driven model for reduced combustion chemistry via Bayesian Optimization, 12<sup>th</sup> European Combustion Meeting, Edinburgh, United Kingdom, April 7-10, 2025
  46. Boerchers, J.B., Mueller, M.E., Modeling enthalpy variations with mixture fraction in high-speed turbulent combustion, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  47. Bonilla, I.J., Fush, S.T., Mueller, M.E., Computationally efficient simulation of many-stream turbulent combustion, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  48. Eroç, E., Mueller, M.E., Optimal model assumptions in manifold-based modeling of three-stream turbulent nonpremixed combustion, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  49. 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, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  50. 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, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025

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51. Satterthwaite, P., Mueller, M.E., Inherently multi-phase manifold-based combustion models of liquid fuel combustion, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  52. Schroeder, M.B., Maldonado Colmán, H., Mueller, M.E., Sensitivity analysis for soot surface growth modeling in sooting premixed laminar flames, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  53. VanderKam, K., Mueller, M.E., Effect of thermochemical composition on turbulent premixed combustion subject to rapid mixing rates, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  54. Walker, M.D., VanderKam, K., Law, C.K., Mueller, M.E., Three-dimensional topology and manifold-based modeling of turbulent premixed flame annihilation, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  55. Yao, M.X., Mueller, M.E., In-Situ Adaptive Manifolds for soot and emissions predictions in turbulent reacting flows, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  56. 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, 14<sup>th</sup> U.S. National Combustion Meeting, Boston, MA, March 16-19, 2025
  57. Boerchers, J.B., Mueller, M.E., Inherently high-speed manifold-based modeling of supersonic turbulent combustion, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  58. Bonilla, I.J., Lacey, C.E., Mueller, M.E., In-Situ Adaptive Manifolds beyond two-stream, uni-modal turbulent combustion, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  59. Fush, S.T., Bonilla, I.J., Mueller, M.E., Complex manifold-based turbulent combustion models using in-situ adaptive neural network coupled binary trees, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  60. 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, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  61. Satterthwaite, P., Mueller, M.E., Inherently multi-phase manifold-based combustion models of liquid fuel combustion: Redefinition of mixture fraction and interfacial conditions, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  62. VanderKam, K.E., Mueller, M.E., Influence of geometry on interactions between turbulence and premixed flames, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  63. Walker, M.D., VanderKam, K.E., Mueller, M.E., Turbulent premixed flame annihilation and manifold-based models, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024

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64. Williams, H.H., Aiyer, A.K., Deike, L., Mueller, M.E., Marine atmospheric boundary layer response to dynamic wave model in Large Eddy Simulation, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  65. Yao, M.X., Mueller, M.E., In-Situ Adaptive Manifolds for soot and emissions predictions in turbulent reacting flows, 77<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT, November 24-26, 2024
  66. 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
  67. Maldonado Colmán, H., Mueller, M.E., Large Eddy Simulation of the evolution of the soot size distribution in turbulent nonpremixed bluff body flames, 7<sup>th</sup> ISF Workshop on the Measurement and Computation of Reacting Flows with Carbon Nanoparticles, Milan, Italy, July 20-21, 2024
  68. 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]
  69. Boerchers, J., Sitaraman, H., Mueller, M.E., Manifold-based modeling of supersonic turbulent combustion: Direct inclusion of high-speed effects, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  70. 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, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  71. Fush, S.T., Bonilla, I.J., Mueller, M.E., Reducing memory requirements of In-Situ Adaptive Manifolds using neural network coupled binary trees, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  72. 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, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  73. VanderKam, K., Rzepka, S., Mueller, M.E., Manifold-based modeling for differential diffusion in turbulent premixed lean hydrogen flames, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  74. Maldonado Colmán, H., Mueller, M.E., Manifold modeling for reactive nitrogen emissions in ammonia-hydrogen-nitrogen turbulent nonpremixed flames, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  75. Surapaneni, A., Mira, D., Mueller, M.E., Application of In-Situ Adaptive Manifolds (ISAM) for the study of highly stratified multi-regime flames, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024

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76. 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, 19<sup>th</sup> International Conference on Numerical Combustion, Kyoto, Japan, May 7-10, 2024
  77. 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
  78. 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
  79. Fush, S.T., Bonilla, I.J., Mueller, M.E., Neural network coupled binary trees for reducing memory requirements of In-Situ Adaptive Manifolds, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
  80. Rzepka, S.L., Maldonado Colmán, H., Mueller, M.E., Effect of thermodiffusive instabilities on the formation of N<sub>2</sub>O and NO<sub>x</sub> in lean partially cracked NH<sub>3</sub>-air laminar premixed flames, Eastern States Section Combustion Institute Spring Meeting, Athens, GA, March 10-13, 2024
  81. 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
  82. 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
  83. 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
  84. Mueller, M.E., Computational Fluid Dynamics modeling of full-scale offshore wind farms, Offshore Wind Technology Conference, Newark, NJ, December 6-7, 2023
  85. 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, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  86. Boerchers, J.B., Mueller, M.E., Role of compressibility effects in manifold models for supersonic turbulent combustion, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  87. Bonilla, I.J., Lacey, C.E., Mueller, M.E., In-Situ Adaptive Manifolds for modeling a turbulent piloted jet flame with inhomogeneous inlets, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  88. Fush, S.T., Bonilla, I.J., Mueller, M.E., Hybrid parallelization of In-Situ Adaptive Manifolds for computationally efficient turbulent combustion simulations, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023

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89. Maldonado Colmán, H., Mueller, M.E., Evolution of the soot particle size distribution in a turbulent nonpremixed bluff body flame, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  90. Rzepka, S., Maldonado Colmán, H., Mueller, M.E., Thermodiffusive instabilities and nitrogen oxides in lean ammonia/hydrogen/nitrogen-air laminar premixed flames, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  91. VanderKam, K., Mueller, M.E., Dynamics of differential diffusion effects in turbulent premixed hydrogen flames at varying Karlovitz number, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  92. 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, 76<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Washington, DC, November 19-21, 2023
  93. 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
  94. Mueller, M.E., Klemmer, K.S., Leveraging model assumptions for model-form uncertainty quantification, 17<sup>th</sup> U.S. National Congress on Computational Mechanics, Albuquerque, NM, July 23-27, 2023
  95. 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, 29<sup>th</sup> WISE Meeting, Princeton, NJ, May 7-10, 2023
  96. 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, 29<sup>th</sup> WISE Meeting, Princeton, NJ, May 7-10, 2023
  97. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Computational cost improvements for In-Situ Adaptive Manifolds for turbulent combustion modeling, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  98. 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, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  99. 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, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  100. Maldonado Colmán, H., Armstrong, J., Mueller, M.E., Partially non-equilibrium manifolds for turbulent combustion modeling with arbitrary time scales, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023

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101. 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, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  102. VanderKam, K., Mueller, M.E., The influence of scalar dissipation rate fluctuations on turbulent premixed flames at varying Karlovitz number, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  103. 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, 13<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, March 19-22, 2023
  104. 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
  105. 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**
  106. Lacey, C.E., D'Alessio, G., Sundaresan, S., Mueller, M.E., Physics-based dimensionality reduction and deep learning modeling for multi-physics simulations, 2<sup>nd</sup> Energy & Informatics International Forum, Honolulu, HI, December 13-17, 2022
  107. Aiyer, A., Deike, L., Mueller, M.E., Wall-modeled Large Eddy Simulation of offshore wind turbine wake-wave spectrum interactions, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  108. Bonilla, I.J., Lacey, C.E., Mueller, M.E., Performance considerations for In-Situ Adaptive Manifolds for turbulent combustion modeling, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  109. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for supersonic turbulent combustion, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  110. D'Alessio, G., Mueller, M.E., Sundaresan, S., Automated framework for data-based modeling of filtered drag for coarse-grained simulations of fluidized beds, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  111. Lacey, C.E., Rieth, M., Chen, J.H., Mueller, M.E., Data-based modeling of instantaneous dissipation rate profiles in multi-modal turbulent combustion, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  112. 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, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022

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113. VanderKam, K., Mueller, M.E., The influence of scalar dissipation rate fluctuations on turbulent premixed flames at varying Karlovitz number, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  114. Williams, H.H., Aiyer, A., Deike, L., Mueller, M.E., Computationally efficient wave-modeled Large Eddy Simulation of finite offshore wind farms, 75<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Indianapolis, IN, November 20-22, 2022
  115. 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
  116. 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
  117. 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
  118. 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
  119. 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, 39<sup>th</sup> International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
  120. 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, 39<sup>th</sup> International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
  121. Lacey, C.E., Sundaresan, S., Mueller, M.E., Data-based instantaneous conditional progress variable dissipation rate modeling for turbulent premixed combustion, 39<sup>th</sup> International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
  122. Maldonado Colmán, H., Duvvuri, P.P., Mueller, M.E., Large Eddy Simulation of soot evolution in turbulent nonpremixed bluff body flames, 39<sup>th</sup> International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
  123. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Radical and reaction zone behaviors, 39<sup>th</sup> International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022
  124. 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, 6<sup>th</sup> International Sooting Flame (ISF) Workshop, Vancouver, Canada, July 22-23, 2022

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125. 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
  126. Taunay, P.-Y.C.R., Quadrature-based moment methods applied to ExB discharges, International Electric Propulsion Conference 2022, Boston, MA, June 19-23, 2022
  127. 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]
  128. Mueller, M.E., Fuel-sensitive computational modeling of emissions and turbulent combustion to enable sustainable aviation fuels, 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  129. Cisneros Garibay, E., Mueller, M.E., Manifold-based modeling for nonpremixed supersonic turbulent combustion, 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  130. 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, 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  131. 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, 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  132. 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), 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  133. VanderKam, K., Mueller, M.E., The role of progress variable dissipation rate averaging in conditional statistics for turbulent premixed combustion, 18<sup>th</sup> International Conference on Numerical Combustion, San Diego, CA, May 8-11, 2022
  134. 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
  135. 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
  136. 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
  137. 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

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138. 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
  139. 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
  140. 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
  141. 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
  142. 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
  143. 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
  144. Aiyer, A., Deike, L., Mueller, M.E., Wall-modeled Large Eddy Simulation of wave effects in offshore wind farms, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  145. Klemmer, K.S., Wu, W., Mueller, M.E., Turbulence model form errors in a statistically stationary separation bubble, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  146. Lacey, C.E., Sundaresan, S., Mueller, M.E., Data-based progress variable dissipation rate modeling for turbulent premixed combustion, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  147. Lee, J., Mueller, M.E., Conditional momentum equation for modeling heat release effects on turbulence in turbulent premixed combustion, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  148. Maldonado Colmán, H., Mueller, M.E., Presumed subfilter PDF model for finite-rate oxidation of soot in turbulent reacting flows, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  149. VanderKam, K., Mueller, M.E., The role of intense reactant-product mixing in distributed turbulent premixed combustion, 74<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Phoenix, AZ, November 21-23, 2021
  150. Taunay, P.-Y.C.R., Mueller, M.E., Quadrature-based moment methods for kinetic plasma simulations, 63<sup>rd</sup> Annual Meeting of the APS Division of Plasma Physics, Pittsburgh, PA, November 8-12, 2021
  151. Lacey, C.E., Mueller, M.E., Large Eddy Simulations of turbulent flames with multiple and/or inhomogeneous inlets using In-Situ Adaptive Manifolds, 12<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021

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152. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in turbulent premixed jet flames at low and high Karlovitz numbers, 12<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
  153. 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, 12<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
  154. VanderKam, K., Mueller, M.E., Distributed turbulent premixed combustion: Qualitative differences in radical species behavior, 12<sup>th</sup> U.S. National Combustion Meeting, College Station, TX, May 24-26, 2021
  155. 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, 38<sup>th</sup> International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
  156. Lacey, C.E., Novoselov, A.G. Mueller, M.E., In-Situ Adaptive Manifolds: Enabling computationally efficient simulations of complex turbulent reacting flows, 38<sup>th</sup> International Symposium on Combustion, Adelaide, Australia, July 24-29, 2021
  157. Lee, J., Mueller, M.E., Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion, 38<sup>th</sup> International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
  158. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Modeling subfilter soot-turbulence interactions in Large Eddy Simulation: An a priori study, 38<sup>th</sup> International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
  159. Klemmer, K.S., Mueller, M.E., Influence of Reynolds number and flow configuration on turbulence model form errors, 73<sup>rd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
  160. Lacey, C.E., Mueller, M.E., Leveraging In-Situ Adaptive manifolds for computationally efficient simulations of turbulent combustion with multiple and/or inhomogeneous inlets, 73<sup>rd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
  161. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in turbulent premixed combustion, 73<sup>rd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
  162. 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]
  163. 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
  164. 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

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165. 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
  166. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling simulations of complex turbulent reacting flows, 72<sup>nd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
  167. Novoselov, A.G., Lacey, C.E., Mueller, M.E., Large Eddy Simulation of turbulent flames using two-dimensional reduced-order manifold modes, 72<sup>nd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
  168. Lee, J., Mueller, M.E., Conditional Reynolds stress modeling in turbulent premixed flames, 72<sup>nd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
  169. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, 72<sup>nd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
  170. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Triple-correlations in decaying isotropic turbulence, 72<sup>nd</sup> Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
  171. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity constraints in decaying isotropic turbulence, 11<sup>th</sup> International Symposium on Turbulence and Shear Flow Phenomena, Southampton, United Kingdom, July 30-August 2, 2019
  172. 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, 17<sup>th</sup> International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
  173. Perry, B.A., Novoselov, A.G., Mueller, M.E., Defining a generalized progress variable in the physically-derived reduced-order manifolds modeling formulation, 17<sup>th</sup> International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
  174. 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, 17<sup>th</sup> International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
  175. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 17<sup>th</sup> International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
  176. 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, 17<sup>th</sup> International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
  177. Lee, J., Mueller, M.E., Heat release effects on the Reynolds stress budgets in turbulent premixed flames, 11<sup>th</sup> U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019

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178. Perry, B.A., Mueller, M.E., An overview of multi-physics modeling considerations for turbulent jet flames with inhomogeneous inlets, 11<sup>th</sup> U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
  179. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 11<sup>th</sup> U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
  180. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Do turbulent nonpremixed cool flames require special treatment?, 11<sup>th</sup> U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
  181. 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, 11<sup>th</sup> U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
  182. 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
  183. Yang, S., Mueller, M.E., Evaluation of a conditional presumed subfilter PDF model in LES of turbulent nonpremixed sooting flames, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  184. Perry, B.A., Chen, R., Mueller, M.E., Comparison of reduced-order manifold approaches for simulating a turbulent lifted jet flame, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  185. 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, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  186. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Computational and experimental investigation of turbulent nonpremixed cool flames, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  187. 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, 71<sup>st</sup> Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
  188. Yang, S., Mueller, M.E., A Multi-Moment Sectional Method (MMSM) for tracking the soot Number Density Function, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  189. MacArt, J.F., Grenga, T., Mueller, M.E., Evolution of flame-conditioned velocity statistics in turbulent premixed jet flames at varying Karlovitz number, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  190. Perry, B.A., Mueller, M.E., Effect of multiscale subfilter PDF models in LES of turbulent flames with inhomogeneous inlets, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018

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191. Nunno, A.C., Mueller, M.E., Manifold assumptions in modeling radiation heat losses in turbulent nonpremixed combustion, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  192. Novoselov, A.G., Law, C.K., Mueller, M.E., Direct Numerical Simulation of turbulent nonpremixed “cool” flames: Applicability of flamelet models, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  193. 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, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  194. Han, W., Raman, V., Mueller, M.E., Chen, Z., Effects of combustion models on soot formation and evolution in turbulent nonpremixed flames, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
  195. Perry, B.A., Mueller, M.E., Challenges for Large Eddy Simulation of partially premixed turbulent combustion using reduced-order manifold flame structure models, 14<sup>th</sup> International Workshop on Measurement and Computation of Turbulent Flames, Dublin, Ireland, July 27-28, 2018
  196. Yang, S., Lew, J.K., Mueller, M.E., Large Eddy Simulation of turbulent nonpremixed sooting flames: Subfilter and transport modeling, 4<sup>th</sup> International Sooting Flame Workshop, Dublin, Ireland, July 27-28, 2018
  197. 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
  198. 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
  199. 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
  200. 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
  201. 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
  202. 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
  203. 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

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204. 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
  205. 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
  206. 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
  207. Nunno, A.C., Mueller, M.E., Effects of heat loss thermochemistry models in reduced-order manifolds on NO<sub>x</sub> pollutant formation, Sixth International Education Forum on Environment and Energy Science, Tenerife, Spain, December 15-19, 2017
  208. Perry, B.A., Mueller, M.E., Multiscalar subfilter PDF modeling for Large Eddy Simulation of turbulent piloted flames with inhomogeneous inlets, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  209. MacArt, J.F., Mueller, M.E., Flame-conditional turbulence modeling for reacting flows, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  210. Novoselov, A.G., Mueller, M.E., Ignition and extinction dynamics in turbulent nonpremixed “cool” flames, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  211. Lew, J.K., Yang, S., Mueller, M.E., Evaluation of a strain-sensitive transport model in LES of turbulent nonpremixed sooting flames, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  212. Nunno, A.C., Lew, J.K., Mueller, M.E., Role of unsteady effects in radiation heat losses in turbulent nonpremixed flames, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  213. Griffin, K., Mueller, M.E., Evaluation of model constant sensitivities for subfilter mixture fraction variance using adjoint and sensitivity derivative approaches, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  214. Grenga, T., Mueller, M.E., Effects of scalar alignment on flame structure in multi-modal combustion, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  215. 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, 70<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
  216. Grenga, T., MacArt, J. F., Mueller, M.E., Dynamic Mode Decomposition of a turbulent premixed planar jet flame, 10<sup>th</sup> Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017
  217. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 6<sup>th</sup> International Workshop on Model Reduction in Reacting Flow, Princeton, NJ, July 11-14, 2017

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218. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  219. Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  220. Lew, J.K., Mueller, M.E., Modeling differential diffusion of strain-sensitive gas-phase species in turbulent nonpremixed sooting flows, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  221. Grenga, T., Mueller, M.E., Multi-modal counterflow flame structure under autoignitive conditions, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  222. Perry, B.A., Mueller, M.E., Joint scalar probability density function modeling for multiscale turbulent mixing, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  223. MacArt, J.F., Grenga, T., Mueller, M.E., Karlovitz number effects on velocity and scalar statistics in turbulent premixed combustion, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  224. Nunno, A.C., Grenga, T., Mueller, M.E., Comparative analysis of methods for heat losses in physically-derived reduced-order manifolds, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  225. Novoselov, A.G., Mueller, M.E., Direct Numerical Simulation of a turbulent nonpremixed “cool” flame, 10<sup>th</sup> U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
  226. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Analysis of soot-turbulence interactions for sub-filter modeling in LES, 8<sup>th</sup> European Combustion Meeting, Dubrovnik, Croatia, April 18-21, 2017
  227. Mueller, M.E., Generalized turbulent combustion model for multi-modal combustion, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  228. Mueller, M.E., Raman, V., Physics-derived model form uncertainty quantification for turbulent combustion, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  229. MacArt, J.F., Grenga, T., Mueller, M.E., Heat release effects on turbulence statistics in premixed and nonpremixed flames, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  230. Grenga, T., MacArt, J.F., Mueller, M.E., Dynamic Mode Decomposition of turbulent non-reacting and reacting nonpremixed jets, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  231. Perry, B.A., Mueller, M.E., Mode determination for combustion modeling in partially premixed turbulent flames, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  232. Berger, L., Pitsch, H., Mueller, M.E., Adequate techniques for the practical computation of optimal estimators, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017

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233. Chong, S.T., Raman, V., Mueller, M.E., Im, H., Comparison of moments-based approaches for modeling soot population in turbulent flows, 16<sup>th</sup> International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
  234. MacArt, J.F., Grenga, T., Mueller, M.E., Conditional budgets of second-order statistics in nonpremixed and premixed turbulent combustion, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  235. Lew, J.K., Mueller, M.E., A priori analysis of a LES subfilter model for soot-turbulence-chemistry interactions, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  236. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of Flamelet Generated Manifolds on turbulent flame structure and pollutant emissions, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  237. Perry, B.A., Mueller, M.E., A flamelet modeling approach for multi-modal combustion with inhomogeneous inlets, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  238. Grenga, T., Mueller, M.E., Three-dimensional dynamic mode decomposition of premixed turbulent jet flames, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  239. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Dynamics of autoignitive DME/air coflow flames in oscillating flows, 69<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
  240. 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
  241. 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, 36<sup>th</sup> International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
  242. 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, 36<sup>th</sup> International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
  243. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Flame dynamics in oscillating flows under autoignitive conditions, 36<sup>th</sup> International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
  244. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of flamelet manifold generation on flame structure and pollutants in diluted turbulent premixed flames, 36<sup>th</sup> International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
  245. Lalit, H., Mueller, M.E., Gore, J.P., Quantitative imaging of mid-infrared radiation of turbulent sooting flames: A tool for LES model validation, 36<sup>th</sup> International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016

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246. 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
  247. 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
  248. 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
  249. Mueller, M.E., Raman, V., Physics-derived model form uncertainty in turbulent combustion, SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 5-8, 2016
  250. 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
  251. 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
  252. 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
  253. 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
  254. Nunno, A.C., Grenga, T., Mueller, M.E., Large Eddy Simulation of radiation effects in CO<sub>2</sub> and H<sub>2</sub>O diluted turbulent premixed flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
  255. 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
  256. 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
  257. 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
  258. 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

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259. 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
  260. Mueller, M.E., Perry, B.A., Masri, A.R., Computational study of the effect of compositionally inhomogeneous fuel streams on turbulent jet flames, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  261. Bahri, C., Arwatz, G., Hultmark, M., Mueller, M.E., Scaling of co-spectra in grid turbulence with a mean cross-stream temperature gradient, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  262. 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, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  263. 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, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  264. MacArt, J.F., Mueller, M.E., Semi-implicit iterative methods for low Mach number turbulent reacting flows, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  265. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of radiation effects on pollutant emissions in diluted turbulent premixed flames, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  266. 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, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  267. Sowah, S.S., Mueller, M.E., Stone, H.A., Numerical simulations of curvature effects in laminar channel flows, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  268. Koo, H., Raman, V., Mueller, M.E., Geigle, K.-P., LES study of intermittency in soot formation in a model aircraft combustor, 68<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
  269. 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, 9<sup>th</sup> U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
  270. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of the effects of radiation on turbulent premixed flame structure, 9<sup>th</sup> U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
  271. Deng, S., Peng, Z., Mueller, M.E., Law, C.K., Stabilization of laminar nonpremixed DME/air coflow flames at elevated temperature and pressure, 9<sup>th</sup> U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015

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272. Mueller, M.E., Validation of multi-physics LES against sparse data, 15<sup>th</sup> International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
  273. Koo, H., Mueller, M.E., Raman, V., Dally, B.B., RANS-based modeling and uncertainty quantification of soot formation in flames, 15<sup>th</sup> International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
  274. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Lewis number effects in turbulent nonpremixed sooting flames, 15<sup>th</sup> International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
  275. 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
  276. 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
  277. 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
  278. MacArt, J., Mueller, M.E., Analysis of operator splitting errors for DNS of low Mach number turbulent reacting flows, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
  279. 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, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
  280. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., On the effects of gas-phase species Lewis number in turbulent nonpremixed sooting flames, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
  281. Bahri, C., Arwatz, G., George, W.K., Mueller, M.E., Hultmark, M., Scaling of spectra in grid turbulence with mean cross-stream temperature gradient, 10<sup>th</sup> European Fluid Mechanics Conference, Copenhagen, Denmark, September 14-18, 2014
  282. 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, 35<sup>th</sup> International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
  283. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 35<sup>th</sup> International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
  284. 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, 2<sup>nd</sup> International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014

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285. 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, 2<sup>nd</sup> International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014
  286. Mueller, M.E., Uncertainty quantification in LES: Chemical kinetics, 12<sup>th</sup> International Workshop on Measurement and Computation of Turbulent Flames, Pleasanton, CA, July 31-August 2, 2014
  287. Bahri, C., Mueller, M.E., Hultmark, M., Temperature fluctuations in fully-developed turbulent channel flow with heated upper wall, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
  288. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
  289. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects in turbulent nonpremixed sooting flames, 8<sup>th</sup> Mediterranean Combustion Symposium, Çeşme, Turkey, September 8-13, 2013
  290. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Effects of turbulent mixing on soot formation and growth in nonpremixed jet flames, 6<sup>th</sup> European Combustion Meeting, Lund, Sweden, June 25-28, 2013
  291. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 8<sup>th</sup> U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
  292. Xuan, Y., Blanquart, G., Mueller, M.E., Impact of mixture fraction field curvature on chemical species transport in diffusion flames, 8<sup>th</sup> U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
  293. 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
  294. 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
  295. 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
  296. Mueller, M.E., Validation of an LES model for soot evolution against DNS data in turbulent jet flames, 65<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
  297. Attili, A., Bisetti, B., Mueller, M.E., Pitsch, H., DNS of soot formation in three-dimensional turbulent non-premixed jet flames, 65<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
  298. Mueller, M.E., Pitsch, H., Black magic: Predicting soot in aircraft engines, Directions in Computational Flow Physics, San Diego, CA, October 14, 2012

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299. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for Large Eddy Simulation of turbulent nonpremixed combustion, 34<sup>th</sup> International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
  300. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF based modeling of soot-turbulence interactions in turbulent flames, 34<sup>th</sup> International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
  301. Sharma, A., Mueller, M.E., Pitsch, H., Sensitivity of soot volume fraction predictions to inception species in a range of hydrocarbon flames, 34<sup>th</sup> International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
  302. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 1<sup>st</sup> International Sooting Flames Workshop, Warsaw, Poland, July 28-29, 2012
  303. 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
  304. 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
  305. 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
  306. Mueller, M.E., Pitsch, H., Role of large scale mixing in soot evolution in turbulent nonpremixed combustion, 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
  307. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF approach for modeling soot formation in turbulent flames, 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
  308. 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
  309. Mueller, M.E., Pitsch, H., LES Model for Sooting Turbulent Nonpremixed Flames, 7<sup>th</sup> U.S. National Combustion Meeting, Atlanta, GA, March 20-23, 2011
  310. 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
  311. Mueller, M.E., Pitsch, H., LES Subfilter Modeling of Soot-Turbulence Interactions, 63<sup>rd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010

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312. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., On the formation and early evolution of soot in turbulent nonpremixed flames, 63<sup>rd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010
  313. Mueller, M.E., Blanquart, G., Pitsch, H., Modeling oxidation-induced fragmentation of soot aggregates in laminar flames, 33<sup>rd</sup> International Symposium on Combustion, Beijing, China, August 1-6, 2010
  314. Bansal, G., Mueller, M.E., Pitsch, H., Direct numerical simulation of soot formation in model gas-turbine combustors, 33<sup>rd</sup> International Symposium on Combustion, Beijing, China, August 1-6, 2010
  315. 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
  316. 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
  317. 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
  318. Raman, V., Mueller, M.E., Blanquart, G., Pitsch, H., LES/PDF modeling of soot evolution in turbulent flames, 62<sup>nd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Minneapolis, MN, November 22-24, 2009
  319. 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
  320. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 6<sup>th</sup> U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
  321. Bisetti, F., Blanquart, G., Mueller, M.E., Pepiot-Desjardins, P., Pitsch, H., Direct Numerical Simulation of soot formation in turbulent nonpremixed flames, 6<sup>th</sup> U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
  322. 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
  323. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 61<sup>st</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Antonio, TX, November 23-25, 2008
  324. Mueller, M.E., Blanquart, G., Pitsch, H., A joint Volume-Surface model of soot aggregation with the method of moments, 32<sup>nd</sup> International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
  325. Blanquart, G., Mueller, M.E., Pitsch, H., Modeling temperature effects on soot formation, 32<sup>nd</sup> International Symposium on Combustion, Montreal, Canada, August 3-8, 2008

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326. Bisetti, F., Mueller, M.E., Blanquart, G., Pitsch, H., Analysis of aggregates' statistics from a Monte Carlo simulation of soot formation in laminar flames, 32<sup>nd</sup> International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
  327. 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
  328. 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

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## PRINCETON UNIVERSITY SERVICE

### University-Wide

Computing for Research Steering Committee, 2026-Present  
Co-Chair, Computing for Research Education and Engagement Advisory Committee, 2026-Present  
Interfolio Faculty Advisory Committee, 2024-Present  
Computing for Research 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, 2025-2026  
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, 2025-2026

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Director, Graduate Certificate in Computational Science and Engineering, 2019-Present  
High-Performance Computing Research Center (HPCRC) Steering Committee, 2014-2025

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

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**PROFESSIONAL COMMUNITY SERVICE**

The Combustion Institute

Finance Committee, 2026-Present  
Board of Directors Nominating Committee, 2026  
Publication Committee, 2024-Present  
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

Past Chair, 2026-Present  
Chair, 2024-2026  
Vice Chair/Chair Elect, 2022-2024  
Program Chair, 2020-2022  
Treasurer, 2016-2020  
Executive Board Member, 2013-Present

International Symposium on Combustion

Program Advisory Committee, 42<sup>nd</sup> ISOC, 2026-Present  
Silver Medal Committee, 40<sup>th</sup> ISOC, 2025-2026  
Program Advisory Committee, 41<sup>st</sup> ISOC, 2025-2026  
Colloquium Coordinator (Numerical Combustion), 40<sup>th</sup> ISOC, 2023-2024  
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 39<sup>th</sup> ISOC, 2021-2022  
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 38<sup>th</sup> ISOC, 2019-2020  
Program Advisory Committee, 38<sup>th</sup> ISOC, 2019-2020  
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 37<sup>th</sup> 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, 2020-2026

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

**National Aeronautics and Space Administration**

Physical Sciences Informatics Combustion Analysis Working Group, 2025-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; Computer Physics Communications; Chemical Engineering and Processing; Nanoscale and Microscale Thermophysical Engineering; Shock Waves*

**Conference Reviewer:***International Symposium on Combustion, ASME Turbo Expo, AIAA SciTech, NAWEA/WindTech*

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**PRINCETON UNDERGRADUATE TEACHING**

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

Semesters: Springs 2013-2023, 2025

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**PRINCETON GRADUATE TEACHING**

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**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

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## **POSTDOCTORAL ADVISEES**

Meet Patel, 2025-Present

Matthew X. Yao, 2024-2025

Esteban Cisneros Garibay, 2021-2022

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

Hernando Maldonado Colmán, 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

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## **PRINCETON GRADUATE ADVISEES**

Reyna Ayala (co-advised with L. Deike), Ph.D., 2026-Present

Elisa Ponte (co-advised with L. Deike), Ph.D., 2026-Present

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., 2022-2026

Hannah H. Williams (co-advised with L. Deike), Ph.D., 2022-2026

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

Jeffrey 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

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**PRINCETON UNDERGRADUATE ADVISEES**

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Anabel Guerreiro, 2026-Present  
Emmanuel Ishola, 2026-Present  
Simon Kupchik, 2026-Present  
Abigail Zhang, 2026-Present  
Nikita Shevyakov, 2026  
Theodore Bell, 2025-2026  
Ian Maciver, 2025-2026  
Owen Rulyak, 2025-2026  
Connor Brown, 2025  
Cam Farid, 2025  
Emma Smithwick, 2025-2026  
Iris Ushizima Sabino, 2024-2025  
Laura Thompson, 2024-2025  
Maia Abiani, 2024-2026  
Efe Ero, 2023-2026  
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

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**NON-PRINCETON UNDERGRADUATE ADVISEES**

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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

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#### **VISITING STUDENT RESEARCH COLLABORATORS (VSRC) ADVISEES**

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Khadiza Akter Keya, Prairie View A&M University, 2026  
Mst Sumaiya Akter Snigdha, Prairie View A&M University, 2026  
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

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#### **PROFESSIONAL MEMBERSHIPS**

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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 (Fellow)

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#### **HONOR SOCIETY MEMBERSHIPS**

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Pi Tau Sigma  
Tau Beta Pi (Texas Alpha President Emeritus)