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EXPERIENCE

Princeton University, 2012 – Present

Department of Mechanical and Aerospace Engineering

Director of Graduate Studies, 2020 – Present

Associate Professor, 2018 – Present

Assistant Professor, 2012 – 2018

Princeton Institute for Computational Science and Engineering

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

Associated Faculty, 2014 – Present

Andlinger Center for Energy and the Environment

Associated Faculty, 2016 – Present

National Renewable Energy Laboratory, 2020 – Present

Computational Science Center

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

Stanford University, 2012

Department of Mechanical Engineering

Postdoctoral Scholar, 2012

EDUCATION

Stanford University

Degree: Ph.D., Mechanical Engineering

Dates: June 2009 – June 2012

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

Advisor: Heinz Pitsch

Stanford University

Degree: M.S., Mechanical Engineering

Dates: June 2007 – June 2009

The University of Texas at Austin

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

AWARDS

Princeton Engineering Commendation List for Outstanding Teaching, Spring 2020 (MAE/ENE 427)
Research Excellence Award, The Combustion Institute, 2020
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2017 (MAE 557)
Young Investigator Program (YIP) Award, Army Research Office, 2017
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2017 (MAE/ENE 427)
Princeton University School of Engineering and Applied Science Alfred Rheinstein Faculty Award, 2016
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2016 (MAE/ENE 427)
Princeton Engineering Commendation List for Outstanding Teaching, Spring 2015 (MAE/ENE 427)
Princeton University Graduate Mentoring Award, 2015
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2014 (MAE 539)
Princeton Engineering Commendation List for Outstanding Teaching, Fall 2013 (MAE 509)
National Science Foundation Graduate Research Fellowship, 2008-2012
National Defense Science and Engineering Graduate Fellowship, 2008-2011

PEER-REVIEWED PUBLICATIONS

1. 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* (2020) in preparation
2. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity constraints and triple-correlations in decaying isotropic turbulence, *Physical Review Fluids* (2020) in preparation
3. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, *Physical Review Fluids* (2020) submitted
4. 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** (2020) in press (available online)
5. 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** (2020) in press (available online)
6. Lee, J., Mueller, M.E., Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion, *Proceedings of the Combustion Institute* **38** (2020) in press (available online)
7. 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** (2020) in press

8. Klemmer, K.S., Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, *Combustion and Flame* **221** (2020) 288-295
9. 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
10. 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
11. Mueller, M.E., Physically-derived reduced-order manifold-based modeling for multi-modal turbulent combustion, *Combustion and Flame* **214** (2020) 287-305
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. 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
19. Chong, S.T., Raman, V., Mueller, M.E., Sivaraj, P., Im, H.G., Effect of quadrature approach and chemical kinetics on soot formation in a model aircraft combustor, *Proceedings of the Combustion Institute* **37** (2019) 1065-1074
20. 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
21. 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

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22. 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
 23. 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
 24. Perry, B.A., Mueller, M.E., Joint Probability Density Function models for multiscale turbulent mixing, *Combustion and Flame* **193** (2018) 344-462
 25. 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
 26. 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
 27. Mueller, M.E., Raman, V., Model form uncertainty quantification in turbulent combustion simulations: Peer models, *Combustion and Flame* **187** (2018) 137-146
 28. 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
 29. 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
 30. 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
 31. 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
 32. 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
 33. 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
 34. 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
 35. 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

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36. 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
 37. 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
 38. 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
 39. 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
 40. 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
 41. 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
 42. 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
 43. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, *Physics of Fluids* **25** (2013) 110812
 44. 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
 45. 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
 46. 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
 47. Mueller, M.E., Pitsch, H., LES modeling of sooting turbulent nonpremixed flames, *Combustion and Flame* **159** (2012) 2166—2180
 48. 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
 49. Mueller, M.E., Pitsch, H., Large eddy simulation subfilter modeling of soot-turbulence interactions, *Physics of Fluids* **23** (2011) 115104
 50. 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

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51. Mueller, M.E., Blanquart, G., Pitsch, H., Hybrid Method of Moments for modeling soot formation and growth, *Combustion and Flame* **156** (2009) 1143-1155
 52. Mueller, M.E., Blanquart, G., Pitsch, H., A joint Volume-Surface model of soot aggregation with the method of moments, *Proceedings of the Combustion Institute* **32** (2009) 785-792

BOOK CHAPTERS

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

INVITED SEMINARS, LECTURES, AND PRESENTATIONS

1. 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
2. Mueller, M.E., A Computationally Efficient “Turnkey” Approach to Turbulent Combustion Modeling, Computational Science Center, National Renewable Energy Laboratory, Golden, CO, December 4, 2019
3. 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
4. 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
5. Mueller, M.E., Overview of Soot Modeling: Statistics, Sources, and Turbulence, Combustion Research Facility, Sandia National Laboratories, Livermore, CA, November 13, 2019
6. 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
7. 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
8. Mueller, M.E., MacArt, J.F., Large Eddy Simulation Subfilter Modeling of Combustion-Affected Turbulence in Turbulent Premixed Combustion, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018

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9. 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
 10. 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
 11. 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
 12. 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
 13. 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
 14. 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
 15. 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
 16. 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
 17. 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
 18. 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
 19. 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
 20. 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

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21. 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
 22. Mueller, M.E., Flamelet Approach for Turbulent Combustion: Has it Reached its Limit?, 12th International Conference on Energy for a Clean Environment, Lisbon, Portugal, July 5-9, 2015
 23. 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
 24. 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
 25. 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
 26. 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
 27. 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
 28. Mueller, M.E., Large Eddy Simulation of Soot Evolution in a Pratt & Whitney Combustor, United Technologies Research Center, East Hartford, CT, October 5, 2012
 29. 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
 30. Mueller, M.E., Soot Evolution in Turbulent Reacting Flows: A Multi-Fidelity Approach to a Multi-Scale, Multi-Physics Problem, Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, February 23, 2012

PANEL SESSIONS AND MINI-SYMPOSIA ORGANIZED

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

RESEARCH BRIEFS

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

CONFERENCE PAPERS, PRESENTATIONS, AND POSTERS

1. Novoselov, A.G., Lacey, C.E., Perry, B.A., Mueller, M.E., Large Eddy Simulation of a turbulent lifted flame using multi-modal manifold-based models: Feasibility and interpretability, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
2. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling computationally efficient simulations of complex turbulent reacting flows, 38th International Symposium on Combustion, Adelaide, Australia, July 24-29, 2021
3. Lee, J., Mueller, M.E., Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
4. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Modeling subfilter soot-turbulence interactions in Large Eddy Simulation: An a priori study, 38th International Symposium on Combustion, Adelaide, Australia, January 24-29, 2021
5. Klemmer, K.S., Mueller, M.E., Influence of Reynolds number and flow configuration on turbulence model form errors, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
6. Lacey, C.E., Mueller, M.E., Leveraging In-Situ Adaptive manifolds for computationally efficient simulations of turbulent combustion with multiple and/or inhomogeneous inlets, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
7. Lee, J., Mueller, M.E., Closure modeling for the conditional momentum equation in turbulent premixed combustion, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Chicago, IL, November 22-24, 2020
8. 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]
9. 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

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10. 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
 11. 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
 12. Lacey, C.E., Novoselov, A.G., Mueller, M.E., In-Situ Adaptive Manifolds: Enabling simulations of complex turbulent reacting flows, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 13. Novoselov, A.G., Lacey, C.E., Mueller, M.E., Large Eddy Simulation of turbulent flames using two-dimensional reduced-order manifold modes, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 14. Lee, J., Mueller, M.E., Conditional Reynolds stress modeling in turbulent premixed flames, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 15. Klemmer, K.S., Mueller, M.E., Implied models approach for turbulence model form physics-based uncertainty quantification, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 16. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Triple-correlations in decaying isotropic turbulence, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, WA, November 23-26, 2019
 17. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity constraints in decaying isotropic turbulence, 11th International Symposium on Turbulence and Shear Flow Phenomena, Southampton, United Kingdom, July 30-August 2, 2019
 18. Mueller, M.E., Perry, B.A., Nunno, A.C., MacArt, J.F., Berger, L., Integrating data-based tools into physics-based model development for turbulent combustion, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 19. Perry, B.A., Novoselov, A.G., Mueller, M.E., Defining a generalized progress variable in the physically-derived reduced-order manifolds modeling formulation, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 20. Novoselov, A.G., Whitmore, M.P., Gredga, T., Perry, B.A., Mueller, M.E., The influence of alignment of mixture fraction and generalized progress variable gradients on multi-modal flame structure, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 21. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019

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22. Yellapantula, S., Henry de Frahan, M.T., King, R., Grout, R., Perry, B.A., Mueller, M.E., A priori and a posteriori analysis of data driven closure models trained from DNS, 17th International Conference on Numerical Combustion, Aachen, Germany, May 6-8, 2019
 23. Lee, J., Mueller, M.E., Heat release effects on the Reynolds stress budgets in turbulent premixed flames, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 24. Perry, B.A., Mueller, M.E., An overview of multi-physics modeling considerations for turbulent jet flames with inhomogeneous inlets, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 25. Nunno, A.C., Mueller, M.E., A comprehensive reduced-order manifold for non-adiabatic multi-modal turbulent combustion, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 26. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Do turbulent nonpremixed cool flames require special treatment?, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 27. Yellapantula, S., Perry, B.A., Frahan, M.H.T., Mueller, M.E., Grout, R., Machine learning based joint PDF shapes for multi-scalar mixing in turbulent flows, 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019
 28. 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
 29. Yang, S., Mueller, M.E., Evaluation of a conditional presumed subfilter PDF model in LES of turbulent nonpremixed sooting flames, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 30. Perry, B.A., Chen, R., Mueller, M.E., Comparison of reduced-order manifold approaches for simulating a turbulent lifted jet flame, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 31. Nunno, A.C., Perry, B.A., MacArt, J.F., Mueller, M.E., A comparison of physics-based and data-based methods of dimension reduction in turbulent combustion, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 32. Novoselov, A.G., Reuter, C.B., Yehia, O.R., Ju, Y., Mueller, M.E., Computational and experimental investigation of turbulent nonpremixed cool flames, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 33. Byers, C.P., MacArt, J.F., Mueller, M.E., Hultmark, M., Similarity in decaying isotropic turbulence: Functional forms, constraints in single- and two-time evolution, and DNS results, 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, November 18-20, 2018
 34. Yang, S., Mueller, M.E., A Multi-Moment Sectional Method (MMSM) for tracking the soot Number Density Function, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 35. MacArt, J.F., Grenga, T., Mueller, M.E., Evolution of flame-conditioned velocity statistics in turbulent premixed jet flames at varying Karlovitz number, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018

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36. Perry, B.A., Mueller, M.E., Effect of multiscale subfilter PDF models in LES of turbulent flames with inhomogeneous inlets, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 37. Nunno, A.C., Mueller, M.E., Manifold assumptions in modeling radiation heat losses in turbulent nonpremixed combustion, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 38. Novoselov, A.G., Law, C.K., Mueller, M.E., Direct Numerical Simulation of turbulent nonpremixed "cool" flames: Applicability of flamelet models, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 39. Chong, S.T., Raman, V., Mueller, M.E., Selvaraj, P., Im, H.G., Effect of quadrature approach and chemical kinetics on soot formation in a model aircraft combustor, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 40. Han, W., Raman, V., Mueller, M.E., Chen, Z., Effects of combustion models on soot formation and evolution in turbulent nonpremixed flames, 37th International Symposium on Combustion, Dublin, Ireland, July 29-August 3, 2018
 41. Perry, B.A., Mueller, M.E., Challenges for Large Eddy Simulation of partially premixed turbulent combustion using reduced-order manifold flame structure models, 14th International Workshop on Measurement and Computation of Turbulent Flames, Dublin, Ireland, July 27-28, 2018
 42. Yang, S., Lew, J.K., Mueller, M.E., Large Eddy Simulation of turbulent nonpremixed sooting flames: Subfilter and transport modeling, 4th International Sooting Flame Workshop, Dublin, Ireland, July 27-28, 2018
 43. 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
 44. 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
 45. 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
 46. 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
 47. 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

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48. 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
 49. 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
 50. 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
 51. 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
 52. 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
 53. Nunno, A.C., Mueller, M.E., Effects of heat loss thermochemistry models in reduced-order manifolds on NO_x pollutant formation, Sixth International Education Forum on Environment and Energy Science, Tenerife, Spain, December 15-19, 2017
 54. Perry, B.A., Mueller, M.E., Multiscalar subfilter PDF modeling for Large Eddy Simulation of turbulent piloted flames with inhomogeneous inlets, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 55. MacArt, J.F., Mueller, M.E., Flame-conditional turbulence modeling for reacting flows, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 56. Novoselov, A.G., Mueller, M.E., Ignition and extinction dynamics in turbulent nonpremixed "cool" flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 57. Lew, J.K., Yang, S., Mueller, M.E., Evaluation of a strain-sensitive transport model in LES of turbulent nonpremixed sooting flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 58. Nunno, A.C., Lew, J.K., Mueller, M.E., Role of unsteady effects in radiation heat losses in turbulent nonpremixed flames, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 59. Griffin, K., Mueller, M.E., Evaluation of model constant sensitivities for subfilter mixture fraction variance using adjoint and sensitivity derivative approaches, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 60. Grenga, T., Mueller, M.E., Effects of scalar alignment on flame structure in multi-modal combustion, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017

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61. Chong, S.T., Raman, V., Han, W., Mueller, M.E., Slevraj, P., Im, H.G., Method of moments comparison for soot population balance modeling in turbulent combustion, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, November 19-21, 2017
 62. Grenga, T., MacArt, J. F., Mueller, M.E., Dynamic Mode Decomposition of a turbulent premixed planar jet flame, 10th Mediterranean Combustion Symposium, Naples, Italy, September 17-21, 2017
 63. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 6th International Workshop on Model Reduction in Reacting Flow, Princeton, NJ, July 11-14, 2017
 64. Mueller, M.E., Physically-derived reduced-order manifolds for multi-modal turbulent combustion, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 65. Mueller, M.E., Hierarchical model form uncertainty quantification for turbulent combustion modeling, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 66. Lew, J.K., Mueller, M.E., Modeling differential diffusion of strain-sensitive gas-phase species in turbulent nonpremixed sooting flows, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 67. Grenga, T., Mueller, M.E., Multi-modal counterflow flame structure under autoignitive conditions, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 68. Perry, B.A., Mueller, M.E., Joint scalar probability density function modeling for multiscale turbulent mixing, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 69. MacArt, J.F., Grenga, T., Mueller, M.E., Karlovitz number effects on velocity and scalar statistics in turbulent premixed combustion, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 70. Nunno, A.C., Grenga, T., Mueller, M.E., Comparative analysis of methods for heat losses in physically-derived reduced-order manifolds, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 71. Novoselov, A.G., Mueller, M.E., Direct Numerical Simulation of a turbulent nonpremixed "cool" flame, 10th U.S. National Combustion Meeting, College Park, MD, April 23-26, 2017
 72. Berger, L., Wick, A., Attili, A., Mueller, M.E., Pitsch, H., Analysis of soot-turbulence interactions for sub-filter modeling in LES, 8th European Combustion Meeting, Dubrovnik, Croatia, April 18-21, 2017
 73. Mueller, M.E., Generalized turbulent combustion model for multi-modal combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 74. Mueller, M.E., Raman, V., Physics-derived model form uncertainty quantification for turbulent combustion, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 75. MacArt, J.F., Grenga, T., Mueller, M.E., Heat release effects on turbulence statistics in premixed and nonpremixed flames, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017

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76. Grenga, T., MacArt, J.F., Mueller, M.E., Dynamic Mode Decomposition of turbulent non-reacting and reacting nonpremixed jets, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 77. Perry, B.A., Mueller, M.E., Mode determination for combustion modeling in partially premixed turbulent flames, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 78. Berger, L., Pitsch, H., Mueller, M.E., Adequate techniques for the practical computation of optimal estimators, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 79. Chong, S.T., Raman, V., Mueller, M.E., Im, H., Comparison of moments-based approaches for modeling soot population in turbulent flows, 16th International Conference on Numerical Combustion, Orlando, FL, April 3-5, 2017
 80. MacArt, J.F., Grenga, T., Mueller, M.E., Conditional budgets of second-order statistics in nonpremixed and premixed turbulent combustion, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 81. Lew, J.K., Mueller, M.E., A priori analysis of a LES subfilter model for soot-turbulence-chemistry interactions, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 82. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of Flamelet Generated Manifolds on turbulent flame structure and pollutant emissions, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 83. Perry, B.A., Mueller, M.E., A flamelet modeling approach for multi-modal combustion with inhomogeneous inlets, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 84. Grenga, T., Mueller, M.E., Three-dimensional dynamic mode decomposition of premixed turbulent jet flames, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 85. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Dynamics of autoignitive DME/air coflow flames in oscillating flows, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, November 20-22, 2016
 86. 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
 87. Perry, B.A., Mueller, M.E., Masri, A.R., A two mixture fraction flamelet model for Large Eddy Simulation of turbulent flames with inhomogeneous inlets, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 88. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Hydrodynamic and chemical effects of hydrogen addition on soot evolution in turbulent nonpremixed bluff body ethylene flames, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016

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89. Deng, S., Zhao, P., Mueller, M.E., Law, C.K., Flame dynamics in oscillating flows under autoignitive conditions, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 90. Nunno, A.C., Grenga, T., Mueller, M.E., Effects of flamelet manifold generation on flame structure and pollutants in diluted turbulent premixed flames, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 91. Lalit, H., Mueller, M.E., Gore, J.P., Quantitative imaging of mid-infrared radiation of turbulent sooting flames: A tool for LES model validation, 36th International Symposium on Combustion, Seoul, South Korea, July 31-August 5, 2016
 92. 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
 93. 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
 94. 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
 95. Mueller, M.E., Raman, V., Physics-derived model form uncertainty in turbulent combustion, SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 5-8, 2016
 96. 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
 97. 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
 98. 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
 99. 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
 100. Nunno, A.C., Grenga, T., Mueller, M.E., Large Eddy Simulation of radiation effects in CO₂ and H₂O diluted turbulent premixed flames, Eastern States Section Combustion Institute Spring Meeting, Princeton, NJ, March 13-16, 2016
 101. 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

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102. 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
 103. 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
 104. 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
 105. 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
 106. Mueller, M.E., Perry, B.A., Masri, A.R., Computational study of the effect of compositionally inhomogeneous fuel streams on turbulent jet flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 107. Bahri, C., Arwatz, G., Hultmark, M., Mueller, M.E., Scaling of co-spectra in grid turbulence with a mean cross-stream temperature gradient, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 108. Deng, S., Mueller, M.E., Chan, Q.N., Qamar, N.H., Dally, B.B., Alwahabi, Z.T., Nathan, G.J., Hydrodynamic and chemical effects of hydrogen dilution on soot evolution in turbulent nonpremixed bluff body ethylene flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 109. Lew, J.K., Mueller, M.E., Mahmoud, S., Alwahabi, Z.T., Dally, B.B., Nathan, G.J., Strain rate effects on soot evolution in turbulent nonpremixed flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 110. MacArt, J.F., Mueller, M.E., Semi-implicit iterative methods for low Mach number turbulent reacting flows, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 111. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of radiation effects on pollutant emissions in diluted turbulent premixed flames, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 112. Perry, B.A., Mueller, M.E., Masri, A.R., A two mixture fraction flamelet model for Large Eddy Simulation of turbulent jet flames with inhomogeneous inlets, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 113. Sowah, S.S., Mueller, M.E., Stone, H.A., Numerical simulations of curvature effects in laminar channel flows, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015
 114. Koo, H., Raman, V., Mueller, M.E., Geigle, K.-P., LES study of intermittency in soot formation in a model aircraft combustor, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, MA, November 22-24, 2015

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115. Perry, B.A., Mueller, M.E., Masri, A.R., Barlow, R.S., Large Eddy Simulation of turbulent partially premixed jet flames with inhomogeneous boundary conditions, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 116. Nunno, A.C., Mueller, M.E., Large Eddy Simulation of the effects of radiation on turbulent premixed flame structure, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 117. Deng, S., Peng, Z., Mueller, M.E., Law, C.K., Stabilization of laminar nonpremixed DME/air coflow flames at elevated temperature and pressure, 9th U.S. National Combustion Meeting, Cincinnati, OH, May 17-20, 2015
 118. Mueller, M.E., Validation of multi-physics LES against sparse data, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 119. Koo, H., Mueller, M.E., Raman, V., Dally, B.B., RANS-based modeling and uncertainty quantification of soot formation in flames, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 120. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Lewis number effects in turbulent nonpremixed sooting flames, 15th International Conference on Numerical Combustion, Avignon, France, April 19-22, 2015
 121. 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
 122. 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
 123. 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
 124. MacArt, J., Mueller, M.E., Analysis of operator splitting errors for DNS of low Mach number turbulent reacting flows, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 125. Bahri, C., Arwatz, G., Mueller, M.E., George, W.K., Hultmark, M., Scaling of spectra in grid turbulence with a mean cross-stream temperature gradient, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 126. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., On the effects of gas-phase species Lewis number in turbulent nonpremixed sooting flames, 67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA, November 23-25, 2014
 127. Bahri, C., Arwatz, G., George, W.K., Mueller, M.E., Hultmark, M., Scaling of spectra in grid turbulence with mean cross-stream temperature gradient, 10th European Fluid Mechanics Conference, Copenhagen, Denmark, September 14-18, 2014

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128. Deng, S., Koch, J.A., Mueller, M.E., Law, C.K., Sooting limits of nonpremixed n-heptane, n-butanol, and methyl butanoate flames: Experimental determination and mechanistic analysis, 35th International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
 129. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 35th International Symposium on Combustion, San Francisco, CA, August 3-8, 2014
 130. Baldwin, R.L., Mueller, M.E., Chan, Q.N., Qamarn, N.H., Dally, B.B., Pitsch, H., Alwahabi, Z.T., Nathan, G.J., Experimental and computational study of soot evolution in turbulent nonpremixed bluff body flames: Fuel effects, 2nd International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014
 131. Kapaku, R.K., Rankin, B.A., Mueller, M.E., Gore, J.P., Quantitative experimental and model-based imaging of mid-infrared radiation from a turbulent sooting flame, 2nd International Sooting Flames Workshop, Pleasanton, CA, August 2-3, 2014
 132. Mueller, M.E., Uncertainty quantification in LES: Chemical kinetics, 12th International Workshop on Measurement and Computation of Turbulent Flames, Pleasanton, CA, July 31-August 2, 2014
 133. Bahri, C., Mueller, M.E., Hultmark, M., Temperature fluctuations in fully-developed turbulent channel flow with heated upper wall, 66th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
 134. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects on soot formation and growth in turbulent nonpremixed flames, 66th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburgh, PA, November 24-26, 2013
 135. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Damköhler number effects in turbulent nonpremixed sooting flames, 8th Mediterranean Combustion Symposium, Çeşme, Turkey, September 8-13, 2013
 136. Attili, A., Bisetti, F., Mueller, M.E., Pitsch, H., Effects of turbulent mixing on soot formation and growth in nonpremixed jet flames, 6th European Combustion Meeting, Lund, Sweden, June 25-28, 2013
 137. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 8th U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
 138. Xuan, Y., Blanquart, G., Mueller, M.E., Impact of mixture fraction field curvature on chemical species transport in diffusion flames, 8th U.S. National Combustion Meeting, Park City, UT, May 19-22, 2013
 139. 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
 140. 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
 141. 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

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142. Mueller, M.E., Validation of an LES model for soot evolution against DNS data in turbulent jet flames, 65th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
 143. Attili, A., Bisetti, B., Mueller, M.E., Pitsch, H., DNS of soot formation in three-dimensional turbulent non-premixed jet flames, 65th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, November 18-20, 2012
 144. Mueller, M.E., Pitsch, H., Black magic: Predicting soot in aircraft engines, Directions in Computational Flow Physics, San Diego, CA, October 14, 2012
 145. Mueller, M.E., Iaccarino, G., Pitsch, H., Chemical kinetic uncertainty quantification for Large Eddy Simulation of turbulent nonpremixed combustion, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
 146. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF based modeling of soot-turbulence interactions in turbulent flames, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
 147. Sharma, A., Mueller, M.E., Pitsch, H., Sensitivity of soot volume fraction predictions to inception species in a range of hydrocarbon flames, 34th International Symposium on Combustion, Warsaw, Poland, July 29-August 3, 2012
 148. Mueller, M.E., Pitsch, H., Large Eddy Simulation of soot evolution in an aircraft combustor, 1st International Sooting Flames Workshop, Warsaw, Poland, July 28-29, 2012
 149. 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
 150. 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
 151. 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
 152. Mueller, M.E., Pitsch, H., Role of large scale mixing in soot evolution in turbulent nonpremixed combustion, 64th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
 153. Donde, P., Raman, V., Mueller, M.E., Pitsch, H., LES/PDF approach for modeling soot formation in turbulent flames, 64th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011
 154. 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

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155. Mueller, M.E., Pitsch, H., LES Model for Sooting Turbulent Nonpremixed Flames, 7th U.S. National Combustion Meeting, Atlanta, GA, March 20-23, 2011
 156. 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
 157. Mueller, M.E., Pitsch, H., LES Subfilter Modeling of Soot-Turbulence Interactions, 63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010
 158. Bisetti, F., Blanquart, G., Mueller, M.E., Pitsch, H., On the formation and early evolution of soot in turbulent nonpremixed flames, 63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010
 159. Mueller, M.E., Blanquart, G., Pitsch, H., Modeling oxidation-induced fragmentation of soot aggregates in laminar flames, 33rd International Symposium on Combustion, Beijing, China, August 1-6, 2010
 160. Bansal, G., Mueller, M.E., Pitsch, H., Direct numerical simulation of soot formation in model gas-turbine combustors, 33rd International Symposium on Combustion, Beijing, China, August 1-6, 2010
 161. 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
 162. 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
 163. 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
 164. Raman, V., Mueller, M.E., Blanquart, G., Pitsch, H., LES/PDF modeling of soot evolution in turbulent flames, 62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics, Minneapolis, MN, November 22-24, 2009
 165. 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
 166. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 6th U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
 167. Bisetti, F., Blanquart, G., Mueller, M.E., Pepiot-Desjardins, P., Pitsch, H., Direct Numerical Simulation of soot formation in turbulent nonpremixed flames, 6th U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009
 168. 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

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169. Mueller, M.E., Blanquart, G., Pitsch, H., Large Eddy Simulation of a sooting jet diffusion flame, 61st Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Antonio, TX, November 23-25, 2008
 170. Mueller, M.E., Blanquart, G., Pitsch, H., A joint Volume-Surface model of soot aggregation with the method of moments, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 171. Blanquart, G., Mueller, M.E., Pitsch, H., Modeling temperature effects on soot formation, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 172. Bisetti, F., Mueller, M.E., Blanquart, G., Pitsch, H., Analysis of aggregates' statistics from a Monte Carlo simulation of soot formation in laminar flames, 32nd International Symposium on Combustion, Montreal, Canada, August 3-8, 2008
 173. 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
 174. Blanquart, G., Pitsch, H., Mueller, M.E., A joint Volume-Surface-Hydrogen multi-variate model for soot formation, Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C., December 4-6, 2007

PRINCETON UNIVERSITY SERVICE

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

PROFESSIONAL COMMUNITY SERVICE

Editorial Board, Combustion and Flame, 2021-2026
Program Chair, Eastern States Section of The Combustion Institute, 2020-Present
Nonmember Guest Editor, Proceedings of the National Academy of Sciences, 2019
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 38th International Symposium on Combustion, 2019-2020
Co-Organizer, Princeton-Combustion Institute Summer School on Combustion, 2019-Present
Topic Coordinator, International Workshop on Near-Limit Flames, 2019-Present
Member, AIAA Propellants and Combustion Technical Committee, 2019-Present
Program Advisory Committee, 38th International Symposium on Combustion, 2018-2019
Associate Editor, Journal of Engineering for Gas Turbines and Power, 2018-Present
Session Organizer, International Workshop on Measurement and Computation of Turbulent Flames, 2018-Present
Colloquium Co-Chair (Soot, Nanomaterials, and Large Molecules), 37th International Symposium on Combustion, 2017-2018
Early Career Advisory Committee, The Combustion Institute, 2017-2019
Early Career and Diversity Development Committee, United States Sections of the Combustion Institute, 2017-Present
Outreach Committee, United States Sections of the Combustion Institute, 2017-Present
Treasurer, Eastern States Section of the Combustion Institute, 2016-2020
Program Leader (Turbulent Flames), International Sooting Flame Workshop, 2015-Present
Executive Board Member, Eastern States Section of the Combustion Institute, 2013-Present
Conference Organizer:
 Site, Facility, and Transportation Committee Chair, 2020 International Symposium on Combustion, New York Bid
 Local Arrangements Co-Chair, 2016 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, Princeton University
Journal Reviewer:
 Combustion and Flame; Proceedings of the Combustion Institute; Progress in Energy and Combustion Science; Applications in Energy and Combustion Science; Journal of Fluid Mechanics; Physical Review Fluids; Physical Review E; Combustion Theory and Modelling; Journal of Computational Physics; Journal of Engineering for Gas Turbines and Power; AIAA Journal; Journal of Propulsion and Power; Computational Science & Discovery; Fuel; Applied Energy; Energy & Fuels; Combustion Science and Technology; Flow, Turbulence and Combustion; Physics of Fluids; Fluids; Journal of Combustion; International Journal of Engine Research; International Journal of Multiphase Flows; Nanoscale and Microscale Thermophysical Engineering; Shock Waves
Conference Reviewer:
 International Symposium on Combustion, ASME Turbo Expo

PRINCETON UNDERGRADUATE TEACHING

MAE/ENE 427, Energy Conversion and the Environment: Transportation Applications
Semesters: Springs 2013-2020

PRINCETON GRADUATE TEACHING

MAE 557, Simulation and Modeling of Fluid Flows

Semesters: Fall 2015, Fall 2017, Fall 2018

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

MAE 509, Numerical Methods for Engineering

Semesters: Fall 2013

POSTDOCTORAL ADVISEES

Aditya K. Aiyer (co-supervised with L. Deike and E. Bou-Zeid), 2020-Present

Pierre-Yves Taunay, 2020-Present

Suo Yang, 2017-2018

Temistocle Grenga, 2015-2018

PRINCETON GRADUATE ADVISEES

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

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

Jinyoung Lee, Ph.D., 2018-Present

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

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

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

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

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

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

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

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

PRINCETON UNDERGRADUATE ADVISEES

James Armstrong, 2020-Present

Daniel Chao, 2018-2019

Michael Whitmore, 2018-2019

Shuyu Ding (exchange with Tsinghua University), 2018-2019

La Lee Lo, 2017-2018

Omkar Shende, 2017-2018

Dominic Saunders, 2017

Kevin Griffin, 2016-2017

Kevin Huang, 2016-2017

Agastya Parikh (co-advised with M. Hultmark), 2016-2017

Silken Jones (co-advised with C.W. Rowley), 2014-2015

Po Moon, 2014-2015

Jimin Hong, 2014-2015

R. Leland Baldwin, 2013-2014

NON-PRINCETON UNDERGRADUATE ADVISEES

Kai Lok Leung, Hong Kong University of Science and Technology, 2019

Ruihong Chen, Hong Kong University of Science and Technology, 2018

Zhenyang Dong, Hong Kong University of Science and Technology, 2017

Chenxi Feng, Hong Kong University of Science and Technology, 2016

VISITING STUDENT RESEARCH COLLABORATORS (VSRC) ADVISEES

Lukas Berger, RWTH Aachen University, 2015

Raymond Langer, RWTH Aachen University, 2014-2015

MEMBERSHIPS

The Combustion Institute

American Physical Society, Division of Fluid Dynamics

American Society of Mechanical Engineers

American Institute of Aeronautics and Astronautics (Senior Member)

Society for Industrial and Applied Mathematics

Tau Beta Pi (Texas Alpha President Emeritus)

Pi Tau Sigma