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EDUCATION:

University of Akron	Applied Mathematics (minor Computer Science)	B. S.	1989
Oklahoma State University	Applied Mathematics	M. S.	1991
<i>The van der Pol Equation: A Study of Qualitative Behavior of Solutions to Nonlinear Differential Equations</i>			
University of Notre Dame	Aerospace and Mechanical Engineering	M. S.	1993
<i>The Acoustic Directivity from Airfoils in Subsonic Nonuniform Flows</i>			
University of Notre Dame	Aerospace and Mechanical Engineering	Ph.D.	1995
<i>An Inverse Problem for a Nonuniform Subsonic Flow Interacting with a Body and Radiating Sound</i>			

RESEARCH INTERESTS:

- Computational unsteady aerodynamics and aeroacoustics.
 - Modeling of turbofan broadband noise.
 - Modeling and design of multirotor vehicles for both improved control and quieter operation.
- Computational prediction of cavitation with application to rain interaction with hypersonic vehicles

APPOINTMENTS & PROFESSIONAL POSITIONS:

Associate Professor	(Aerospace and) Mechanical Eng.	Boston Univ.	2001-
Aeroacoustics Consultant		Greensight, Triton	2020-2023
Visiting faculty	Center for Eng. Educ. and Outreach	Tufts Univ.	2014-2015
Assistant Professor	Aerospace and Mechanical Eng.	Boston Univ.	1995-2001
Derek Brewer visiting faculty fellow	Emmanuel College	Cambridge Univ.	2004
ASEE Summer faculty fellow	David Taylor Model Basin	ONR	2002
Graduate Council Member	The University of Notre Dame		1998-2001
Computer Programmer	Phillips Petroleum	Bartlesville, OK	1990

PUBLICATIONS:

Journal articles: (h-index = 17, i10-index 26, 2026)

- 1 "Flow structures near a tall urban air mobility vertiport: a large-eddy simulation study," Emmanuel Akinlabi, Alireza Maleki, Vladimir Golubev, Sheryl Grace, Dan Li, [resubmitting to](#), Feb, 2026.
- 2 "High-fidelity simulations of noise induced by time-harmonic gust interaction with eVTOL rotor," Vadim Voropayev, Michael Marques, Alireza Maleki, Tasos Lyrantzis, Reda Mankbadi, Sheryl Grace, Vladimir Golubev, [International Journal of Aeroacoustics](#), Feb. 2026, <https://doi.org/10.1177/1475472X261419081>
- 3 "Effect of FEGV Placement on Fan Broadband Interaction Noise," Nuo Li, Julian Winkler, Craig Aaron Reimann, Dmytro Voytovych, Jeffrey M. Mendoza, Sheryl M. Grace, [International Journal of Aeroacoustics](#), Feb., 2026. <https://doi.org/10.1177/1475472X261419080>
- 4 "Influence of Inflow Turbulence on Wake Dynamics of a Square Cylinder," Alireza Maleki, Sheryl Grace, Reda Mankbadi and Vladimir Golubev, [Journal of Fluid Mechanics](#), Feb., 2026. <https://doi.org/10.1017/jfm.2026.11123>.
- 5 "Investigation of Noise Prediction for a Five-Bladed Propeller on an Urban Air Mobility Vehicle under Edgewise Flow Using Permeable Ffowcs-Williams and Hawkings Surfaces," Jie Hua, Sheryl Grace, Vladimir Golubev and Reda Mankbadi, [Physics of Fluids](#), Oct, 2025. <https://doi.org/10.1063/5.0284165>

- 6 "Machine Learning Aided Low-Order Predictions of Fan Stage Broadband Interaction Noise", *Nuo Li, Yifan Zhang, Julian Winkler, C. Aaron Reimann, Dmytro Voytovych, Jeff Mendoza, and Sheryl M. Grace*, *AIAA Journal*, Feb., 2024. <https://doi.org/10.2514/1.J063148>
- 7 "Validation of Variable Rotor Speed Trim Using Computational Fluid Dynamics," Austin Thai, Beatrice Roget, Jay Sitaraman, Nikolas Zawodny and Sheryl Grace, *Journal of the American Helicopter Society*, 69(1):1-12. Jan, 2024. <https://doi.org/10.4050/JAHS.69.012008>.
- 8 "An Assessment of Shock-Droplet Interaction Modeling Including Cavitation," R. W. Forehand, K. C. Nguyen, C. J. Anderson, R. Shannon, M. P. Kinzel, and S. M. Grace, *Physics of Fluids*, 35(2), Jan, 2023. <https://doi.org/10.1063/5.0136536>.
- 9 "Effect of Turbulence Modeling Selection Within Helios for Small Quadrotor Aerodynamics," Austin Thai, Rohit Jain and Sheryl Grace, *Journal of Aircraft*, 59(4):1-19, Jan., 2022. <https://doi.org/10.2514/1.C036410>.
- 10 "Experimental and Computational Aeroacoustic Investigation of Small Rotor Interactions in Hover," Austin Thai, Elisa De Paola, Alessandro Di Marco, Luana Georiana Soica, Roberto Camussi, Roberto Tron, Sheryl Grace, *Applied Sciences*, 11(21):1-27, <https://doi.org/10.3390/app112110016>, Oct., 2021.
- 11 "Assessment of cavitation models in the prediction of cavitation in nozzle flow," Dorien O. Villafranco, Ankush Gupta, Emily M. Ryan, R. Glynn Holt, Sheryl M. Grace, *Journal of Fluids Engineering*, 143(1): 011403-418, 2021. <https://doi.org/10.1115/FEDSM2018-83223>
- 12 "Comparison of Surface Tension Generation Methods in Smoothed Particle Hydrodynamics for Dynamic Systems," Erin Arai, Alexandre Tartakovsky, R. Glynn Holt, Sheryl Grace, and Emily Ryan, *Computers and Fluids*, 203(15):104540, 2020. <https://doi.org/10.1016/j.compfluid.2020.104540>
- 13 "Simulating Bubble Dynamics in a Buoyant System," Erin Arai, Dorien Villafranco, Emily Ryan, Sheryl Grace, *International Journal of Numerical Methods in Fluids*, 92(3): 169-188, March, 2020. <https://doi.org/10.1002/fld.4778>Digital Object Identifier (DOI)
- 14 "Analysis of fan-stage gap-flow data to inform simulation of fan broadband noise," Sheryl Grace, Ignacio Gonzalez-Martino, Damiano Casalino, *Philosophical Transactions of the Royal Society A*, 377(2159):80-98, 2019. <https://doi.org/10.1098/rsta.2019.0080>
- 15 "Approximating Ocean Acoustic Fields with Finite Series of Basis Functions for Autonomous Vehicle Applications," Caitlin Bogdan, Sheryl Grace and J. Greg McDaniel, *Journal of Theoretical and Computational Acoustics*, online-ready, Oct. 2019. <https://doi.org/10.1142/S2591728519500026>.
- 16 "Comparison of two low-order models for the prediction of fan broadband noise," Sheryl Grace and Michaela Logue, *Journal of Sound and Vibration*, 431(29):304-327, 2018.
- 17 "Influence of Model Parameters and the Vane Response Method on a Low-Order Prediction of Fan Broadband Noise," Sheryl Grace, *International Journal of Aeroacoustics*, 15(1-2):131-143, 2016.
- 18 "Fan Broadband Interaction Noise Modeling Using a Low-Order Method," Sheryl Grace, *Journal of Sound and Vibration*, 346:402-423, 2015.
- 19 "Characteristics of Turbulence in a Turbofan Stage," Jeremy Maunus, Sheryl Grace, Doug Sondak, and Victor Yakhot, *Journal of Turbomachinery*, 135(2):021024-1-10 March, 2013.
- 20 "Effect of Rotor Wake Structure on Fan Interaction Noise," Jeremy Maunus, Sheryl Grace, and Doug Sondak, *AIAA Journal* 50(4):818-831, Apr., 2012.
- 21 "Simulation of the binaural environmental transfer function for gerbils using a boundary element method," S. M. Grace, E. Quaranta, B. Shinn-Cunningham and H. F. Voigt, *Acta Acustica United with Acustica* 94:310-320, 2008.
- 22 "Experimental Investigation of the Flow Characteristics Within a Shallow Wall Cavity for Both Laminar and Turbulent Upstream Boundary Layers," S. M. Grace, D. E. Wroblewski, and W. G. Dewar, *Experiments in Fluids*, 36:791-804, 2004.

- 23 "Numerical Simulation of the Forced Wave Equation as an Acoustic Post-processing Technique for CFD," Sheryl M. Grace, *Aerotecnica Missili E Spazio, Journal of the Associazione Italiana di Aeronautica e Astronautica*, 79:3-4, 75-80, July-December, 2000.
- 24 "Prediction of Low-frequency Tones Produced by Flow Through a Duct with a Gap," Sheryl M. Grace, *Journal of Sound and Vibration*, 229(4):859-878, Jan. 2000.
- 25 "Inverse Aeroacoustic Problem for a Rectangular Wing in a Gust", Trevor H. Wood and Sheryl M Grace, *AIAA Journal*, 38(2):203-210, February, 2000.
- 26 "Stability of High Reynolds Number Flow Past a Circular Aperture," Sheryl M. Grace, Trevor H. Wood, and Michael S. Howe, *Proceedings of the Royal Society of London*, 455:2055-2066, June, 1999.
- 27 "The Influence of Shape on The Rayleigh Conductivity of a Wall Aperture in The Presence of Grazing Flow," Sheryl M. Grace, Kelly P. Horan and Michael S. Howe, *Journal of Fluids and Structures*, 12(3):335-351, April, 1998.
- 28 "Direct Computations of Unsteady Flows About Thin Airfoils," Sheryl M. Grace, S. I. Hariharan, and Hafiz M. Atassi, *Journal of Computational Acoustics*, 6(3):337-355, 1998.
- 29 "Modeling the Dynamics of Spring-Driven, Oscillating-Foil Propulsion," Karen A. Harper, Matthew D. Berkemeier and Sheryl M. Grace, *Journal of Oceanic Engineering*, 23(3):285-296, July, 1998.
- 30 "Inverse Aeroacoustic Problem For A Streamlined Body. Part I: Basic Formulation," Sheryl M. Patrick Grace, Hafiz M. Atassi and William K. Blake, *AIAA Journal*, 34(11):2233-2240, November, 1996.
- 31 "Inverse Aeroacoustic Problem For A Streamlined Body. Part II: Accuracy of Solutions," Sheryl M. Patrick Grace, Hafiz M. Atassi and William K. Blake, *AIAA Journal*, 34(11):2241-2246, November, 1996.
- 32 "Direct Calculation of Sound Radiated From Bodies in Nonuniform Flows," Hafiz M. Atassi, Jiseng Fang and Sheryl M. Patrick, *Journal of Fluids Engineering*, 115:573-579, December 1993.

Refereed conference articles:

- 1 "High-Fidelity Simulations of eVTOL Rotor Turbulence Ingestion Noise," Vadim Voropayev, Alireza Maleki, Stanley Ossyra, Jordan Mills, Jie Hua, Michael Marques, Sheryl Grace, Anastasios S. Lyrantzis, Reda R. Mankbadi, Vladimir V. Golubev, *AIAA Paper No. 2026-3599*, July 2026. 10.2514/6.2026-3599
- 2 "On the Use of a Low-Order Model for Rig- and Full-Scale Turbofan Broadband Noise Predictions," Nuo Li, Julian Winkler, C. Aaron Reimann, Jeff Mendoza, Sheryl M. Grace, *AIAA Paper No. 2026-3611*, July 2026. 10.2514/6.2026-3611.
- 3 "An Application of Amiet's Model for Turbulence Ingestion to eVTOL Propellers," Adam Rozman, Andrea Piccolo and Sheryl Grace, *AIAA Paper No. 2026-3600*, 2026. 10.2514/6.2026-3600.
- 4 "Numerical Simulation of Vortex Formation and Convecting of Pitching Airfoils Undergoing Dynamic Stall," Seyyed Salehian, Nuo Li and Sheryl Grace, *AIAA Paper No. 2026-0524*, Jan 2026. <https://doi.org/10.2514/6.2026-0524>
- 5 "Prediction of Performance and Noise of a Small Quadrotor Using CHARM," Adam Rozman and Elliot Macrae-Sadek and Mei Cable and David Gard and Sheryl Grace, *AIAA Paper No. 2026-1479*, Jan 2026. <https://doi.org/10.2514/6.2026-1479>
- 6 "Comparative Analysis of High and Mid-Fidelity Methods for Predicting Performance and Acoustics for UAM Applications," Vadim Voropayev, Stanley Ossyra, Tasos Lyrantzis, Reda Mankbadi, Sheryl Grace, Vladimir Golubev, *AIAA Paper No. 2026-2078*, <https://doi.org/10.2514/6.2026-2078>.

- 7 "Water Droplet Breakup Experiments using Acoustic Levitator at Upper Atmospheric Conditions in a Shock Tube," Anthony J. Aguilera, Sydney M. Briggs, Mikayla Lindsay, Bryan Suarez, Subith Vasu, Michael Kinzel, Sheryl M. Grace and Phillip Anderson, *AIAA Paper No. 2026-0001*, <https://doi.org/10.2514/6.2026-0001>
- 8 "Water Droplet Breakup in a Hypersonic Shock Environment," Mikayla Lindsay, Sydney M. Briggs, Anthony J. Aguilera, Subith Vasu, Michael Kinzel, Sheryl Grace and Phillip Anderson, *AIAA Paper No. 2026-1736*, <https://doi.org/10.2514/6.2026-1736>
- 9 "Novel Methods for Evaluating Shock-Droplet Interactions," Brendon Cavainolo, Khanh Nguyen, Reed Forehand, Rebecca Shannon, Michael Kinzel and Sheryl Grace, *AIAA Paper No. 2026-1733*, <https://doi.org/10.2514/6.2026-1733>
- 10 "Low-Order, Data-Driven Method for Analysis of Impact of Fan Design on Fan Stage Broadband Interaction Noise," Nuo Li, Sheryl M. Grace, *AIAA Paper No. 2025-3650*, July 2025. <https://doi.org/10.2514/6.2025-3650>.
- 11 "Evaluation of Urban-Flow-Informed Gusts on eVTOL Vertiport Approach Acoustics," Adam Rozman and Sheryl Grace, *AIAA Paper No. 2025-3003*, July 2025. <https://doi.org/10.2514/6.2025-3003>.
- 12 "High-Fidelity Simulations of Vertiport Gust Effects on eVTOL Rotor Noise," Vadim Voropayev, Michael Marques, Alireza Maleki, Sheryl Grace, Anastasios Lyrintzis, Reda Mankbadi, and Vladimir Golubev, *AIAA Paper No. 2025-3001*, July 2025. 10.2514/6.2025-3001.
- 13 "A Spectral Proper Orthogonal Decomposition Analysis of Turbulent Flow Around a High-Rise Building," Alireza Maleki, Reda Mankbadi, Vladimir Golubev and Sheryl Grace, *AIAA Paper No. 2025-3487*, July 2025. 10.2514/6.2025-3487.
- 14 "Investigation of Water Droplet Breakup in a Shock Environment With High-Speed Imaging," Sydney M. Briggs, Nicolas Berube, Anthony Aguilera, Michael P. Kinzel, Subith Vasu, Sheryl Grace and Phillip Anderson, *AIAA Paper No. 2025-2057*, Jan 2025. 10.2514/6.2025-2057
- 15 "Effect of Straight and Swept FEGV Placement on Fan Broadband Interaction Noise", *Nuo Li*, Julian Winkler, C. Aaron Reimann, Dmytro Voytovych, Jeff Mendoza, and Sheryl M. Grace, *AIAA Paper No. 2024-3161*, June 2024. 10.2514/6.2024-3161
- 16 "Evaluating the Permeable Surface Approach for Wing-Propeller Aeroacoustics using High-Fidelity CFD," *A Rozman, H.J. Zhongqi, S. Tran, and S. Grace*, *VFS, TVF paper*, Feb, 2024.
- 17 "Investigation of Cavitation in Water Droplet Breakup from Shock Waves," *S. Briggs, N. Berube, D. Dyson, A. Aguilera, R. Forehand, M. Kinzel, S. Vasu, S. Grace, and P. Anderson*, *AIAA Paper No. 2024-2191*, Jan 2024. 10.2514/6.2024-2191
- 18 "A Numerical Investigation of the Effect of Cavitation on Hypersonic Shock-Raindrop Interaction and Breakup," *R. Forehand, K. Nguyen, S. Briggs, N. Berube, S. Vasu, M. Kinzel, S. Vasu, S. Grace*, *AIAA Paper No. 2024-2192*, Jan 2024. 10.2514/6.2024-2192
- 19 "Influence of Bubble Dynamics on Kelvin Helmholtz Type Interface Instability," *R. Shannon, S. Grace, M. Kinzel, R. G. Holt*, *AIAA Paper No. 2024-2194*, Jan 2024. <https://doi.org/10.2514/6.2024-2194>
- 20 "Onto Modeling of Cavitation Inside a Cylindrical Water Column Exposed to High-Speed Shocks," *K. Nguyen, R. Forehand, S. Briggs, N. Berube, S. Vasu, M. Kinzel, S. Vasu, S. Grace*, *AIAA Paper No. 2024-2195*, Jan 2024. 10.2514/6.2024-2195
- 21 "Machine Learning Aided Fan Broadband Interaction Noise Prediction for Leaned and Swept Fans", *Nuo Li, Yifan Zhang*, Julian Winkler, C. Aaron Reimann, Dmytro Voytovych, Jeff Mendoza, and Sheryl M. Grace, *AIAA Paper No. 2023-0523*, June 2023.
- 22 "Experiments on Water Droplet Breakup in a Detonation Medium," Sydney Briggs, Nicolas Berube, Daniel Dyson, Reed Forehand, Michael Kinzel, Subith S. Vasu, Sheryl Grace, and Phillip Anderson, *AIAA Paper No. 2023-2257*, Jan. 2023. <https://doi.org/10.2514/6.2023-2257>.

- 23 "Multi-Scale Modeling of Shock-Droplet Interaction Within a Shock Tube," Reed W. Forehand, Khanh C. Nguyen, Caroline J. Anderson, Sydney Briggs, Nicolas Berube, Subith S. Vasu, Michael P. Kinzel and Sheryl Grace, *AIAA Paper No. 2023-2304*, Jan. 2023. <https://doi.org/10.2514/6.2023-2304>.
- 24 "Fan-stage broadband interaction noise trends based on fan geometry," Nuo Li, Berkely Watchmann, Tyler Ramsarran, Julian Winkler, Dymtro Voytovych, Jeff Mendoza, Sheryl Grace, *AIAA Paper No. 2022-2884*, June, 2022.
- 25 "Fan Wake Prediction Via Machine Learning," Zijie Huang, Austin Thai, Berkely Watchmann, Tyler Ramsarran, Julia Winkler, Michael Joly, Jeff Mendoza, Sheryl Grace, *AIAA Paper No. 2022-2883*, June, 2022.
- 26 "Multirotor Trim using Loose Aerodynamic Coupling," Austin Thai, Beatrice Roget, Jay Sitaraman, and Sheryl Grace, *VFS Aeromechanics for Advanced Vertical Flight Technical Meeting*, Jan. 2020.
- 27 "CFD Validation of Small Quadrotor Performance using CREATE-AV Helios," Austin Thai, Rohit Jain, and Sheryl Grace, *VFS 75th Annual Forum*, May, 2019.
- 28 "Analysis of fan-stage gap flow data generated using an LBM/VLES method," Sheryl Grace, Ignacio Gonzalez-Martino and Damiano Casalino, *AIAA Paper No. 2019-2668*, May, 2019
- 29 "Assessment of cavitation models in the prediction of cavitation in nozzle flow," Dorien O. Villafranco, Huy K. Do, Sheryl M. Grace, Emily M. Ryan, R. Glynn Holt, *ASME Joint US-European Fluids Engineering Summer Conference, FEDSM2018-83223*, July 2018.
- 30 "Statistics and structure of turbulence in fan/OGV interstage and their aeroacoustic implications," Sheryl M. Grace, Ignacio Gonzalez-Martino and Damiano Casalino, *AIAA Paper No. 2018-4186*, June 2018.
- 31 "Acoustic emission from one-dimensional vibrating porous panels in a single-sided flow," Rozhin Hajian, Justin Jaworski, and Sheryl Grace, *AIAA Paper No. 2018-2962*, June 2018.
- 32 "Inclusion of geometry in a gust-cascade interaction prediction via a BVI method," Dorien Villafranco and Sheryl M. Grace, *AIAA Paper No. 2017-3717*, June 2017.
- 33 "Experimental Study of Quadcopter Acoustics and Performance at Static Thrust Conditions," Nanyaporn Intaratap, W. Nathan Alexander, William J. Devenport, Sheryl M. Grace, and Amanda Dropkin, *AIAA Paper No. 2016-2873*, June 2016.
- 34 "Comparison of methods for adding vane geometry in a low-order fan broadband noise prediction," Sheryl Grace, Dorien Villafranco, and Andrew Wixom, *AIAA Paper No. 2016-2946*, June 2016.
- 35 "Further Investigations Into a Low-Order Model of Fan Broadband Noise," Sheryl M Grace *AIAA Paper No. 2015-3282*, June 2015.
- 36 "Analysis of Mean Loading Effects in Fan Broadband Noise Simulations," Sheryl Grace and Lorna Ayton, *AIAA Paper No. 2014-2944*, June, 2014.
- 37 "Prediction of broadband fan exit guide vane response," Sheryl M Grace and Gilbert Forsyth, *AIAA Paper No. 2013-2153*, June 2013.
- 38 "Fan Broadband Interaction Noise Modeling," Sheryl Grace, Andy Wixom, Doug Sondak, Michaela Logue, and Julian Winkler, *AIAA Paper No. 2012-2269*. June 2012.
- 39 "Investigation of Calculated Turbulence Parameters for use in Hybrid Broadband Fan Noise Calculations," Jeremy Maunus, Sheryl Grace, Doug Sondak, and Victor Yakhot *GT2010-45906, presentation June 2011*.
- 40 "Effect of CFD Wake Prediction in a Hybrid Simulation of Fan Broadband Interaction Noise," Jeremy Maunus, Sheryl Grace, and Douglas Sondak *AIAA Paper No. 2011-2875*, 2011.
- 41 "Effect of Rotor Wake Structure on Fan Interaction Noise," Jeremy Maunus, Sheryl Grace, and Doug Sondak, *AIAA Paper No. 2010-3746*, 2010.

- 42 "Hybrid prediction of fan tonal noise," Sheryl M. Grace, Douglas L. Sondak, Daniel J. Dorney, and Michael Cannamela, *AIAA Paper No. 2008-2992*, 2008.
- 43 "CFD Computation of Fan Interaction Noise," *Sheryl M. Grace*, Douglas L. Sondak, Daniel J. Dorney, and Michaela Logue, *IMECE2007-43779, Proceedings of the IMECE 07*, ASME, Seattle, WA, Nov. 2007.
- 44 "Wing Geometry Effect on Blade-Vortex Interaction Response Using BEM," *Trevor H. Wood* and Sheryl M. Grace, *Proceedings of the 2001 ASME IMECE, NCAD*, Nov. 2001.
- 45 "Unsteady Blade Response: The BVI Model vs. The Gust Model," Sheryl M. Grace, *AIAA Paper No. 2001-2209*, 2001.
- 46 "An Overview of Computational Aeroacoustic Techniques Applied to Cavity Noise Prediction," Sheryl M. Grace, *AIAA Paper No. 2001-0510*, 2001.
- 47 "Time-Dependent Calculation of Acoustic Radiation from Finite Wings Using BEM," *Trevor H. Wood* and Sheryl M. Grace, *Proceedings for the 2000 ASME IMECE, NCAD*, Nov. 2000.
- 48 "Free-wake Analysis for Calculating The Aeroacoustics of A Wing-flap Configuration", Trevor. H. Wood, and *Sheryl M. Grace*, *AIAA Paper No. 2000-0607* January, 2000.
- 49 "Acoustic Computations Using Incompressible Inviscid CFD Results as Input", Sheryl M. Grace, Caroline K. Curtis, and *Allan D. Pierce*, *Proceedings of the ASME Noise Control and Acoustics Division, ASME IMECE*, Nashville, TN, November 1999.
- 50 "Aeroacoustic Predictions of A Wing-Flap Configuration In Three Dimensions," Trevor H. Wood and Sheryl M. Grace, *AIAA Paper No. 99-1892*, 1999.
- 51 "Acoustic Energy Absorption by a Shear Layer," Sheryl M. Grace, *AIAA Paper No. 98-2304*, 1998.
- 52 "Inverse Aeroacoustic Problem for a Rectangular Wing in a Gust," Trevor H. Wood and Sheryl M. Grace, *AIAA Paper No. 98-2229*, 1998.
- 53 "Decreasing the Energy Costs of Swimming Robots through Passive Elastic Elements," *Karen A. Harper*, Matthew D. Berkemeier and Sheryl M. Grace, *Proceedings of the 1997 IEEE International Conference on Robotics and Automation*.
- 54 "The Influence of Grazing Flow on the Rayleigh Conductivity of an Aperture of Arbitrary Shape," Sheryl M. Grace, Michael S. Howe, and Kelly P. Horan, *AIAA Paper No. 97-1672*, 1997.
- 55 "Predicting Unsteady Aerodynamic Parameters From Airfoil Surface Pressure Measurements," *Sheryl M. Patrick Grace*, NCA-Vol 22, *Proceedings of the ASME Noise Control and Acoustics Division*, November 1996, pp. 93-98.
- 56 "Inverse Aeroacoustic Problem For A Rectangular Wing Interacting With A Gust," Sheryl M. Patrick and Hafiz M. Atassi, *AIAA Paper No. 96-1790*, 1996.
- 57 "Predicting The Unsteady Pressure on A Streamlined Body From Its Acoustic Signal," Sheryl M. Patrick, Hafiz M. Atassi and William K. Blake, *CEAS/AIAA Paper No. 95-162*, 1995
- 58 "Inverse Problems in Unsteady Aerodynamics and Aeroacoustics," *Sheryl M. Patrick*, Hafiz M. Atassi and William K. Blake, *Active Control of Vibration and Noise, ASME DE-Vol. 75*, November 1994, pp. 309-319.
- 59 "Acoustic Radiation from a Lifting Airfoil in Nonuniform Subsonic Flow," *Sheryl M. Patrick*, Hafiz M. Atassi and Catherine M. Davis, *Computational Aero- and Hydro Acoustics, ASME FED*, 175:117-122, June 1993.

Other Conference Papers, Posters, and Technical Reports: (presenter in italics if applicable)

- C-1 "Numerical Modeling of Cavitation During Shock Interface Interaction," Contributors: *Khanh C. Nguyen*, Reed W. Forehand, Rebecca W. Shannon, Michael Kinzel, Sheryl M. Grace. Poster. International Conference on Numerical Methods in Multiphase Flows, June 26-28, 2024
- C-2 "The role of bubble dynamics on the development of instabilities on a cylindrical droplet", *Rebecca Shannon*, Khanh Nguyen, Michael Kinzel and Sheryl Grace. 12th International Cavitation Symposium (CAV2024), June 2-5, 2024, Chania, Greece.
- C-3 "Experiments on Water Droplet Breakup in a Detonation Medium", ILASS-Americas 33rd Annual Conference on Liquid Atomization and Spray Systems," *Sydney Briggs*, Nicolas Berube, Daniel Dyson, Reed Forehand, Michael Kinzel, Subith Vasu, Sheryl Grace, and Philip Anderson, ILASS meeting May 14-17, 2023.
- C-4 "The effect of tapered entrance in nozzle flow cavitation," *Grace McDonough*, Jennifer Moreira, Ankush Gupta, Emily Ryan, Sheryl Grace, and R. Glynn Holt. Poster. The Journal of the Acoustical Society of America 145 (3), 1926-1926, 2019
- C-5 "Systematic Applications of PySPH to Bubble Dynamics," *Erin Arai*, Emily Ryan and Sheryl Grace, Poster for SciPy 2017, July 2017.
- C-6 "Wave-Based Analysis of Distributed Acoustic Sensor Networks," *Caitlin Bogdan*, J. Gregory McDaniel, Sean Andersson, Sheryl Grace, Kenric Nelson, Poster for Naval Engineering Education Consortium Meeting, May 2017.
- C-7 "BU Women in Networks: Progress and Lessons Learned," Deborah Belle, Lauren Groves, and Sheryl Grace. *Poster for the AWIS/NSF ADVANCE Conf, October, 2009.*
- C-8 Editor of "Proceedings of the Noise Control and Acoustics Division 2003", (IMECE, ASME).
- C-9 "Implications of Recent BVI Calculations on Prediction Methods for Noise from Turbulence Ingestion," Sheryl Grace, ASEE Summer Faculty Project Report for NSWC Carderock Division, August, 2000.
- C-10 "Reduction of the Complexity of the Intrinsically Nonlinear Problem of Aerodynamic Sound Generation in an Unbounded Domain," *Sheryl M. Grace* and Allan D. Pierce, *Proceedings of the IUTAM Symposium on Computational Methods for Unbounded Domains*, July, 1997.
- C-11 "Unsteady Aerodynamic Analysis for a Flat-plate Airfoil in Subsonic Mean Flow," Sheryl M. Grace, Boston University Tech. Rep. AM-97-004, January, 1997.
- C-12 "An Inverse Problem in the Presence of a Mean Flow," Sheryl M. Grace, Boston University Tech. Rep. AM-96-017, August 1996.
- C-13 "The Pressure Field of a Gust Interacting with a Flat Plate," *Sheryl M. Patrick* and Hafiz M. Atassi, ICASE/LaRC Workshop on Benchmark Problems in Computational Aeroacoustics, *NASA Conference Publication 3300*, May 1995, pp.291-296.

Wind turbine noise health impact reports:

- W-1 "Understanding the Evidence: Wind Turbine Noise," Ottawa (ON): The Expert Panel on Wind Turbine Noise and Human Health, Council of Canadian Academies. 2015.
- W-2 "Wind Turbine Health Impact Study: Report of Independent Expert Panel," Jeffrey M. Ellenbogen, Sheryl Grace, Wendy J Heiger-Bernays, James F. Manwell, Dora Anne Mills, Kimberly A. Sullivan, and Marc G. Weisskopf. January 2012.

Workshop and Conference Presentations (no proceedings):

1. "Characterizing Urban Flow Disturbances for Safe Urban Air Mobility (UAM) Operations using Large-Eddy Simulation," Dan Li, Emmanuelli Akinlabi, Sheryl Grace 2024 PALM Model Conference in Offenbach, Germany, Sept. 2024.

2. "A Numerical Investigation into Scaling Effects of Hypersonic Shock-Droplet Interaction and Breakup", Reed Forehand, Khanh Nguyen, Sheryl Grace, and Michael Kinzel, 12th International Cavitation Symposium (CAV2024), June 2-5, 2024, Chania, Greece.
3. "Characterizing Urban Flow Disturbances for Safe Urban Air Mobility (UAM) Operations using Large-Eddy Simulation", Emmanuel Akinlabi, Alireza Maleki, Sheryl Grace, Dan Li, Engineering Mechanics Institute and Probabilistic Mechanics & Reliability Conference, Chicago, Illinois, May 2024.
4. "Numerical Modeling of Compression Waves for Hypersonic Shock-Cylinder Interaction with Cavitation," Khanh Nguyen, Reed Forehand, Michael Kinzel, and Sheryl Grace. Bulletin of the American Physical Society, Nov. 2023.
5. "A Numerical Assessment of Hypersonic Raindrop Interaction: Understanding Cavitation-Induced Fragmentation," Reed Forehand, Khanh Nguyen, and Michael Kinzel. Bulletin of the American Physical Society, Nov. 2023.
6. "Low-order model prediction of fan broadband interaction noise for a BLI engine," Nuo Li and Sheryl Grace, Canadian Society of Mechanical Engineers, Fluids Div., Sherbrooke, May 2023.
7. "Multi-Scale Modeling of a Shock Tube to Examine Shock-Droplet Interaction." Forehand, Reed, Khanh Nguyen, Sydney Briggs, Nicolas Berube, Caroline Anderson, Michael Kinzel, Subith Vasu, and Sheryl Grace. Bulletin of the American Physical Society, Nov. 2022.
8. "Simulation of Cavitation during Shock-Droplet Interaction." Nguyen, Khanh, Reed Forehand, Michael Kinzel, and Sheryl Grace. Bulletin of the American Physical Society, Nov 2022.
9. "The effects of wind turbine wake turbulence on bat lungs," *Dorien Villafranco*, Sheryl Grace and R Glynn Holt, ASA Conference, JASA 141(5):3544, June, 2017.
10. "Low-order modeling of fan broadband interaction noise," *Dorien Villafranco*, Sheryl Grace , ASA Conference, JASA 141(5):3968, June, 2017.
11. "Cavitation detection in a nozzle flow," *Huy Do*, Purity Dele-Oni, Tony Tang, Daniel Poe, James Bird, Sheryl Grace, Emily Ryan, and R. Glynn Holt, ASA Conference, JASA 141(5):3738, June, 2017.
12. "Predicting Cavitation in Fuel Injectors using Smoothed Particle Hydrodynamics," Emily Ryan, *Sheryl Grace*, and Erin Arai, SIAM Conference on Computational Science and Engineering, March 2017.
13. "Development of experimental facility for testing human response to ILFN from wind turbines," Aleks Zosuls, R Kelley, David Mountain, and *Sheryl Grace*, *POMA 2013-NS1581379-12-18395*; ASA, June 2013.
14. "Simulation of turbofan interaction noise," ASME IMECE, Boston, MA 2008 (with collaborators Doug Sondak and Dan Dorney).
15. "Tutorial: Computational Methods for Aeroacoustics," ASME IMECE, Anaheim, CA, November 2004.
16. "Application of a New Post-processing method for predicting acoustic radiation when using incompressible, viscous, computational fluid dynamics," ASA, Columbus OH, November 1999. (with collaborators Caroline Curtis and Allan Pierce).
17. "Prediction of Sound from a High-lift Wing System Using a Coupled Panel Method and Acoustic Propagator," ASME IMECE, November, 1998. (with collaborator Trevor Wood).
18. "Resonant Frequencies for Thick Wall Apertures in Grazing Mean Flow," 13th U.S. National Congress of Applied Mechanics, June 1998, Gainesville, FL.
19. "Aerodynamic Sound Generation by Two Parallel Vortices Interpretted as Resulting from Interaction of Acoustic, Vorticity, and Entropy Fields", ASME IMECE, November 16-21, 1997, Dallas, TX. (with collaborator Allan D. Pierce).
20. "The 3D Inverse Aeroacoustic Problem," ASME IMECE, November 16-21, 1997, Dallas, TX. (presentation by collaborator Trevor Wood).

21. "The Influence of Shape on the Rayleigh Conductivity of a Wall Aperture in the Presence of Grazing Flow," ASME IMECE, November 16-21, 1997, Dallas, TX. (presentation by collaborator Kelly Horan).
22. "Nonlinear interactions of acoustic, vorticity, and entropy modes, with applications to computational aero- and hydro-acoustic," 133rd Meeting of the Acoustical Society of America, Penn State University, State College, PA, June 1997 (with collaborator Allan D. Pierce).
23. "The influence of aperture shape on Rayleigh conductivity for one-sided grazing flow," 133rd Meeting of the Acoustical Society of America, Penn State University, State College, PA, June 1997 (presentation by collaborator Trevor Wood).
24. "Two- and three-dimensional inverse aeroacoustic problems," Current and Future Direction in Applied Mathematics Symposium, The University of Notre Dame, Notre Dame, IN, April 1996.
25. "An Inverse Acoustic Problem in the Presence of a Mean Flow," 130th Meeting of the Acoustical Society of America, St. Louis, MO, November 1995 (with collaborator Hafiz M. Atassi).
26. "An Inverse Acoustic Problem in the Presence of a Mean Flow," ASME IMECE, San Francisco, CA, November 1995 (with collaborator Hafiz M. Atassi).
27. "The Flapping Airfoil and Comparison with Experiments," Navy Workshop on Airfoils in Nonuniform Flows, ND Report NO. 93-09, September 1993 (with collaborator Hafiz M. Atassi).
28. "Predicting a Vortical Disturbance from the Sound Radiated as It Interacts with a Flat Plate," Institute for Mathematics and Its Applications: Inverse Problems in Wave Propagation, University of Minnesota, March, 1995.

INVITED LECTURES: (International, US Universities, Other)

- 2025** "Safe, Low-Noise Operation of UAM in Urban Canyons" For NASA Technical Working Group, Oct - cancelled due to government shutdown.
- 2025** "Modeling of Multirotor Vehicle Performance and Noise," Mech. Eng. Dept. Illinois Institute of Technology, Nov. 20.
- 2025** "The Role of Cavitation in Shock-Drop Interaction" Aero and Mech. Eng. Dept. Notre Dame, Nov. 18.
- 2025** "Predicting cavitation in shock-drop interactions" Mech. Eng. Dept. WPI, Mar 26.
- 2024** "Predicting Turbofan Fan-Stage Broadband Noise," Aero & Ocean Engineering Dept., Virginia Tech., Sept 30.
- 2024** "A Few of My Favorite Things: Modeling, Aerospace, Higher Ed., Advocating," Aero Eng. Dept, Embry Riddle Aeronautical University, Mar., 18.
- 2024** "The Road to Acoustic Prediction of UAM in Real Urban Environments," NE Vertical Flight Society & NE AIAA, Mar. 20.
- 2023** "The Prediction of Turbofan Fan-Stage Interaction Broadband Noise," AME Dept. University of Central Florida, April 14; AE Dept Embry Riddle, Nov. 13.
- 2023** "Overview of new NASA ULI," US Congress staffer briefing, DC, July 18.
- 2023** "Overview of turbofan fan-stage noise and multirotor vehicle noise research at Boston University," Army Advanced Development Division, Moffet Field, CA, August 18.
- 2023** "PowerFLOW use in support of turbofan fan-stage interaction broadband noise prediction," 3Ds Simulia America Users Conferece, Novi, MI, May 4.
- 2022** "Performance and Noise Prediction of Multirotor Vehicles," NASA Acoustic Technical Working Group, April 20.

- 2021** "The Art of Being a Female Engineer," Universidad Autonoma de San Luis Potosi, featured presenter for the College's National Engineer's Day Celebration, July 1.
- 2018** "Simulation method for use in design of quieter multi-rotor UAS," National Academy of Engineers, TQA workshop: UAS and UAV (Drone): Noise Emissions and Noise Control Engineering Technology organized by INCE foundation together with NASA and FAA, hosted by NAE, Dec, 14.
- 2017** "Predicting Turbofan Fan-Stage Broadband Noise," ME Dept, Wentworth Institute of Technology, July, 11.
- 2016 (3)** "Modeling of Fan-Stage Broadband Noise," l'Institut Supérieur de l'Aéronautique et de l'Espace, May 27; Osney Thermo-Fluids Laboratory, Oxford University, June 3, Rolls-Royce UK, June 6.
- 2015** "More Findings from Analysis of Mean Loading Effects in Fan Broadband Noise Simulations," Ohio Aerospace Institute, October, 22.
- 2015 (2)** "Predicting Turbofan Fan-Stage Noise," ME Dept. Case University, Feb. 23; ICTAS/Create/Aero. and Ocean Eng. Virginia Tech., March 24.
- 2014 (2)** "Predicting Turbofan Fan-Stage Noise," ME Dept. Tufts University, October 30; ME Dept. Arizona State University, December 5.
- 2014** "Update on Fan Broadband Modeling," Honeywell Corp., AZ, December, 4.
- 2014** "Year-End Research Review of Fan Broadband Noise Simulations," Ohio Aerospace Institute, November 6.
- 2013** "Analysis of Mean Loading Effects in Fan Broadband Noise Simulations," Ohio Aerospace Institute, November 4.
- 2012 (2)** "Predicting Turbofan Fan-Stage Noise," Northeastern University, October, 5; University of Akron, December, 7.
- 2012** "Progress on Broadband Turbofan Simulations." Honeywell Corp., AZ, April, 26.
- 2012 (2)** "Fan Stage Broadband Interaction Noise Modeling for Turbofan Engines," McGill University, Feb. 17., Sherbrooke University, Feb. 20.
- 2012** "Wind Turbine Health Impact Study Findings," Panel presentation at Mass. Wind Working Group mtg., Feb. 1.
- 2010** "CFD Simulation of an Acoustic Igniter", Center for Computational Sciences, BU, Dec. 19.
- 2010** "Prediction of Turbofan Noise," Mechanical Engineering, University of Massachusettes, Lowell, Oct. 27.
- 2010** "Effect of Rotor Wake Structure on Fan Interaction Noise," Institute for Sound and Vibration Research, University of Southampton, UK, June 14.
- 2010** "Fan Nose Simulation Research," Pratt and Whitney/UTRC, January 22.
- 2009** "Using CFD to Guide Rotor Wake Formulation for FanBroadband Nose Simulations," Ohio Aerospace Institute. Aeroacoustics Research Consortium Meeting, December 3.
- 2009** "Fan Research Etc.," GE Global Research Center, May 26.
- 2009** "Work/Life Balance Panel," Association of Women in Science (AWIS) MA Chapter, April 22.
- 2004** "Tutorial: Computational Methods in Aeroacoustics," *ASME IMECE*, November 17.
- 2004** "Fundamentals of Aeroacoustics," part of the von Karman Institute for Fluid Dynanmics Lecture series 2003-04, *Advances in Aeroacoustics and Applications*, March 15-17.
- 2004 (2)** "Exterior Acoustic Modeling: Wings and Gerbils," Institute for Vibration and Sound, Southampton University, UK, Feb., Combustion and Acoustics Group, Mechanical Engineering, Cambridge University, Feb.

- 2004 "Acoustic Modeling of Wings," Department of Mathematics and Theoretical Physics, Cambridge University, UK, Jan.
- 2002 "Computation of Aeroacoustics: A Continuing Challenge," Given to the faculty and graduate students at the University of Poitiers, May 17.
- 2001 "Boundary Element Methods for Airframe Noise Prediction," Given as part of the Aerospace and Mechanical Engineering Seminar Series at Worcester Polytechnic Institute, Worcester, MA, September 21.
- 2001 "Women in Engineering: Challenges and Opportunities," Given at Women in Technology job fair, Bedford, MA, June 16.
- 2001 "Computational Aeroacoustics: Introduction and Application," Given to researchers at FLUENT Inc., NH, March 23.
- 2001 "Aerodynamic Sound in Unbounded Flows," Compact Green's Functions," and "Vortex Sound in A Bounded Flow," part of the von Karman Institute for Fluid Dynamics Lecture series 2001-02, *Advances in Aeroacoustics*, March 12-16.
- 2000 "Using Incompressible, Viscous, Computational, Fluid Dynamics As A Precursor To Acoustic Predictions," Given to the Engineering and Math Departments at Akron University, February, 25.
- 2001 "An Overview of Computational Aeroacoustics Techniques Applied to Cavity Noise Prediction," 39th AIAA Aerospace Sciences Meeting and Exhibit, January 8.
- 2000 Recent BEM Computations Applied to Airframe Noise Prediction," Given as researchers at NASA Langley's CFD/acoustics division, August 11.
- 2000 "One Woman's Career: It Started With Maths At Akron," An informal talk given to a gathering of women in science and engineering (undergraduate and graduate students as well as faculty) at Akron University, February 24.
- 1999 "The Sound In and Around a Cavity Due to Grazing Flow: A New Method of Calculation", Given at ICIAM 99 in Edinburgh, July 9.
- 1999 "Influence of wall aperture shape on the motion of the shear layer spanning the aperture," Given for Dept. of Mechanical Engineering at NorthEastern, Feb. 12.
- 1998 "Aeroacoustics: Friend, Foe, Fun," Given for the BU Pathways Program, April 14.
- 1998 "Acoustic Energy Dissipation in an Open-test-section Wind Tunnel," Given to the Acoustics Department at Ecole Centrale de Lyon, June.
- 1995 "Unsteady Aerodynamics and Aeroacoustics: A Brief Overview of My Favorite Topic," Given in the Aerospace and Mechanical Engineering Department at Oklahoma State University, December 1.

FUNDING:

Current Grants:

1. "Safe, Low-Noise Operation of UAM in Urban Canyons via Integration of Gust Outcomes and Trim Optimization," PI Sheryl Grace, Co-PIs: BU: Dan Li, Roberto Tron; VT: Nathan Alexander, Nanya Interatep; ERAU: Vladimir Golubev, Tasos Lyrantzis, Reda Mankbadi; Tuskegee U: Seyyed Saman, NASA ULI Step B, \$5.7m, September 1, 2023 - August 31, 2027.

Past Grants:

1. "The Role of Cavitation in Droplet Breakup: Understanding and Predicting Hypersonic Structural Loading through Multiscale Simulations and Shock-tube Experimentation" PI Sheryl Grace, Co-PI's Glynn Holt, UCF: Subith Vasu, Michael Kinzel, AFOSR, \$991,000. November, 2021 - November 2025.

2. "ASCENT Project 75 - Improved engine fan broadband noise prediction capabilities," PI: Sheryl Grace, Subaward: UTRC, FAA, \$300,000, Sept, 2020-Aug, 2020. (1st year). \$300,000 allocated Sept, 2021-Aug, 2022 (2nd year), \$400,000 Jan. 23- Dec 23 (3rd year), \$201,044 Jan 24-Dec 24 (4th year), \$219,980 Sept 24-July 26 (5th year).
3. "Control of Micro Aerial Vehicles Under Aerodynamic and Physical Contact Interactions," PI Roberto Tron, Co-PI Sheryl Grace, NSF \$350,000, Sept. 2017-Aug. 2020. Extension submitted April 2021: "Data-Driven Methods for Simulation and Control of Micro Aerial Vehicles with Realistic Aerodynamic Conditions" in response to Dear Colleague Letter : NSF-20-027. \$70,000 (ended 2022).
4. "Analysis of VLES data related to the source diagnostic test cases," PI: Sheryl Grace, AARC, \$97,809, Mar. 2019 - Aug, 2021.
5. "Development and validation of an Euler-Lagrange computational method for modeling cavitation within fuel injectors," PI Emily Ryan, Co-PIs Sheryl Grace, Glynn Holt, James Bird, and ORNL, DOE \$743,000. Feb, 2016-Jul.2019.
6. "Further Investigations into the Effect of Including Real Geometry in a Low-Order Fan Broadband Prediction," AARC, \$40,008, Feb. 2016-December 2017.
7. "Interdisciplinary Development of a Biokinematic Data Acquisition System," PI Sheryl Grace, Co-PIs: Richard West (CS/CAS), Cara Lewis (PT/SAR). Catalyst grant, Hariri Institute, BU, \$30,000.
8. "Analysis of Mean Loading Effects in Fan Broadband Noise Simulations," AARC, \$103,000, Feb. 2013-December 2015.
9. "Human response to infrasound and low-frequency noise and its relevance to the wind turbine debate," Co-PIs Sheryl Grace (BU) and David Mountain (BU), BU ENG Catalyst award \$18,000. May 2013.
10. "Further Investigations into Fan Broadband Noise Simulations," AARC, \$91,550, 3/1/11-12/30/12.
11. "WIN:Women in Networks, Building Community and Gaining Voice," NSF, \$742,702, 9/1/08-8/31/11. Co-PI with Deborah Belle.
12. "Using CFD to Guide Rotor Wake Formulations for Fan Broadband Noise Simulations," AARC, \$96,933.00, 6/1/09-8/31/10. Co-PI with Doug Sondak.
13. "Modeling the HRTF for Gerbils," BU HRC Seed Grant, \$12,170, 6/1/03-8/31/03.
14. "Effect of Blade Shape on Unsteady Response to Turbulence Ingestion," NSWC, Carderock Division, \$21,000, 11/1/00-5/30/01.
15. "An Efficient Method for Computing the Aeroacoustic Response of High-Lift System," Boeing Aircraft Corporation, \$9,617, 11/1/99-5/30/00.
16. "Aeromechanical Effect of Vane Clocking in Turbines", General Electric Aircraft Engines, \$37,000, 8/1/99-5/30/00.
17. "POWRE: Use of Conventional Computational Fluid Dynamics to Predict Sound Generated by Complex Flows," NSF, \$65,000, 7/1/98-12/30/99.
18. "Support for Undergraduate Projects in Boston University's AME Dept.," United Technologies Corporation, yearly continuation, \$32,000 since inception 11/1/96.
19. "Support for Undergraduate Projects in Boston University's AME Dept.," General Electric Aircraft Engines, \$2,000, 9/1/01.

PROFESSIONAL SERVICE

AIAA Professional Society

- Associate Fellow

- Aeroacoustics technical committee member (2024 - present), (2001-2006)
- Associate Fellow Selection Committee (2017- present)
- Meeting subcommittee chair (2002-2005), Aeroacoustics program chair for Aerospace Science Meeting, Jan. 2003.
- Conference paper reviewer (2000-present)
- New England Section event planner and host for Distinguished Lectures: Feb. 2016, Feb. 2017, Apr. 2019, Apr. 2021
- Panelist - regional event, Feb 2026
- Faculty advisor - BU AIAA
 - Faculty advisor (2013-present), (1995-2002)
 - Alumni-student showcase networking event organizer (2016), co-CDO alumni networking event (2020, 2022, 2023, 2024, 2025) (Best attended CDO events both by alumni and students - 2023)
 - National faculty advisor award 2001
 - National outstanding chapter award 96/97, 98/99, & 00/01
 - DBF advisor 2024, 2025
 - Spun off BU rocket team 2000
 - Selected for NASA Connect outreach program 2000.

Environmental Protection efforts - Wind Turbines

- MASS Department of Environmental Protection : Invited to serve on its Wind and Noise Technical Advisory Group (WINTAG) (2013-2016); several meetings with required predatory reading to review MASS DEP policies for citing and review of wind projects.
- Council of Canadian Academies: invited panelist to serve on its Expert Panel on Wind Turbine Noise and Human Health, (2013-2015); review of literature and some available data, meetings and telecoms, contribute to the final report and review the drafts and final version.
- Invited participant in the wind energy aeroacoustics planning forum for the Department of Energy (DOE) run by the National Renewable Energy Lab (NREL) (2013-2014)
- MASS Clean Energy Center : Invited to serve on its Technical advisory board for a wind turbine study it sponsored (2012-present); several telecoms, review of the study plan, data obtained in the study, and the final reports.

Editor, boards, reviewships

- Associate editor Journal of Vibration and Acoustics, (2013-2019)
- Member, NASA Technical Discipline Team (TDT), (2019-2022); monthly telecoms, review of all propulsion work at NASA.
- Academic promotion reviewer: Utah State (2010), KTH (2017), Chalmers Univ of Tech. (2019), Penn State (2020)
- International thesis reader : Golliard, Univ de Poitiers (2002); Neale, Univ. New S. Wales (2006); Daroukh, Institut Nat. Polytech. de Toulouse, (2017); Lewis, Ecole Central de Lyon (2020); Gigier, Ecole Central de Lyon (2022); Allan Beurville, Ecole Central de Lyon (2026)
- US thesis reader: Khanh Nguyen, UCF MS, (2024). Sydney Briggs, UCF PhD (2025).
- NSERC Young Faculty Discover Grant Reviewer (2025)
- Pacific Southwest Region University Transportation Center (CA) Faculty Research Grant review (2025)
- Reviewer: Journals (e.g. AIAA Journal, JASA, Journal of Sound and Vibration, International Journal of Multiphase Flow)
- Proposal review panels: AFOSR, DOD SERDP, NSF, US-Israeli BSF, NASA fellowships.

Other professional society activity

- VFS (Vertical Flight Society)
 - Regional presentation 2024
- ASME
 - Executive Committee Noise Control and Acoustics Division: Secretary/Treasurer 2003, Chair 2004, Vice Chair 2005
 - Noise control and acoustics division (NCAD) program chair for IMECE, Fall, 2004.

- ASA
 - CA session co-organizer 2012-2013.

Service related to the advancement of Women in Science and Engineering:

Member advisory board, BU ARROWS, (2018-2023)

Founded a Women in Science and Engineering organization at Boston University in 2004. The focus was on advancing and retaining STEM female faculty.

- Served as chair (2004-2006) and vice-chair (2006-2008), then as advisor (2008-2012)
- Procured funding from the administration for programs.
- Sent data reports to department chairs, deans and provost
- Formed advisory committee that included Lotte Bailyn, Debra Rolison, Susan Metz, Howard Georgi, Eve Riskin, and Abby Stewart.
- Ran monthly “lunches with leaders.” Organized whole university events to raise awareness of unconscious bias, stereo type threat etc. including events with Virginia Valian, Abby Stewart, Joshua Aroson, etc.
- Organized progression development programs such as Negotiation Skills workshop, Workshop on Imposter Syndrome, etc.
- Worked with Department Chairs to support STEM searches by facilitating meetings between candidates and WISE faculty
- Mentored junior STEM female faculty

Member of the Council for Faculty Diversity and Inclusion at BU (Fall 2006-Spring 2008).

- Wrote the BU Search Manual based on the search manual developed as part of the University of Wisconsin ADVANCE program.

Co-PI together with Professor Deborah Belle (Psychology) on an NSF ADVANCE PAID grant entitled “WIN (Women in Networks).”

- Project program organizer for the grant (Fall 2008-Fall 2012): administered Erskine Grant awards (catalyst awards for new collaborations), ran pre-tenure mentoring program, oversaw WIN Colloquium program, developed and ran new faculty networking event for STEM faculty.
- Helped prepare the NSF data assessment (12 metrics) and assessments of the programs and climate survey.

SIGNIFICANT OUTREACH ACTIVITIES:

NASA ULI UAS Workshops (May 20-24, 2024, May 14-16, 2025, Nov/Dec 2025, Jan/Feb 2026)

- Designed and implemented workshop aimed at upper level undergraduates from minority serving institutions and undergraduate only institutions
- Handled recruitment (development of fliers/emails ..., implementation of online application tool), review, and communications with participants
- Collaborated with colleague at Virginia Tech (2024), Embry Riddle (2025) on logistics (room/board, classrooms etc.)
- Developed 24 hours of lectures and hands on activities
- Collaborated with colleague at Virginia Tech and Embry Riddle who developed schedule of lab tours, guest lectures, etc.
- Worked with The Calculus Project to develop 2 day workshop for high school students run at BU (fall 2025, winter 2026)
- Developed and ran Upward Bound summer activities and The Calculus Project summer event(s) (2026)

NASA Downlink and related events (2022, 2023)

- Wrote winning proposal for Downlink with Alumni Astronaut Bob Hines
- Implemented Downlink event with wrap-around outreach day. Worked with BU Academy and BU faculty and students.

- Created method for students to submit questions to the astronaut, reviewed (and sought approval by NASA) and selected 40 winning questions, organized filming of the students asking their questions
- 400+ middle and high school students from The Calculus Project, Upward Bound, Grow etc. All had access to 4 activities before and after the main event.
- Organized 15 hands on activities, lab tours and presentations (developed 1 of them)
- Worked with BU event planner Christine Wynne to ensure Downlink main (attended by 800+ and watched online by even more) ran smoothly (police, food services, IT etc.)
- Interacted with BU communications to ensure event coverage by press
- Created script for event and worked with Christine to get high profile speakers from BU and Boston for the event
- Organized follow-up in-person event with Bob Hines in 2023
 - 100 BU students in attendance
 - Organized venue, food, IT, publicity & RSVP for main speaker event. Ensured news coverage of his visit
 - Coordinated Bob's entire trip with the Museum of Science (so he could have maximum impact while in Boston)
 - Coordinated Bob's BU schedule - meeting with Deans etc.
- Organized and implemented 2023 BU Calculus Project STEM day
 - Provided a STEM day for 100 middle and high school students
 - Organized 8 speakers, lab tours, etc. (several repeats from the Downlink Day)

BU UDesign - summer week long middle school outreach program

- Provide guest lectures and demos (2009-2022)
- Developed pandemic virtual summer program (2020)
 - At the request of the Assistant Dean, designed kit and week long curriculum for a flight focused program (Glider design)
 - Recruited undergrads to serve as on-line build mentors
 - Ran Zoom class for several hours a day for the weeklong program
 - Enabled College to offer a UDesign week during Covid (my understand is that this was their only offering)
- Identified student to run the virtual Glider design project in 2021 and trained him
- Developed the first UDesign flight week (2007)
 - Developed entire curriculum and hands-on activities (wind tunnel measurements, white plane builds, simulator work, bottle rockets)
 - Ran the full week's course
 - Ran it again in 2008
 - College hired others (high school faculty) to run the program after that

BU Pathways science outreach program

- Assisted in planning for day long event that brought 400 high school girls to campus for a day
- Speaker coordinator (1999-2002)
- Panelist, speaker, poster presenter, etc.

Aero/Mech Engineering Day (1997, 1998)

- Worked with Don Wroblewski to develop outreach day for BU LerNet
- 80 K-12 students exploring topics in Aero and Mech for a day
- Organize speaker/lab tours etc.

ACADEMIC SERVICE:

Departmental leadership

- Associate chair for the Aerospace Program at Boston University (1996-1998)

- ABET coordinator for aerospace, 1999 & 2002.
- Chair ME Lab curriculum review, (Spring 2019)
- Chair ME course redevelopment committee ME357/358 (2025)
- Chair ME Department web committee (Fall 2009-2014)

Search committees

- BU ME department professor of the practice search (2025-2026)
- BU ME department search committee (2023-24)
- Earth & Environment Search Committee Member (2021-22)
- BU ME department search committee (2007-08)
- BU College of Engineering Dean's search Committee (2005-06)

College and University

- BU Undergraduate Academic Programs and Policies Committee (Fall 2016-2019)
- April COE Open house panelist (2020-2024)
- BU COE conduct committee (Fall 2016-2024)
- Board member ARROWS (2015-2022)
- Board member, CFDI (2006-08)
- Board member, Center for Excellence in Teaching, BU (2001-2002) (founding)

Departmental committees

- BU ME graduate committee (2023-)
- BU ME undergraduate committee (1996-20012, 2019-2023)
- BU ME open house : fly-by-wire activity (2007-2019)

GRADUATE MENTORSHIP:

Current BU graduate students:

Adam Rozman, *Multirotor noise*, PhD.

Rebecca Shannon, *Cavitation from droplet-shock interaction*, PhD.

BU PhD theses:

Nuo Li, *Reduced-order Modeling for Turbofan Fan-stage Broadband Interaction Noise*, PhD. Boston University, August, 2026.

Victory Doheny, *The Characterization of Targeted Microbubbles for Adhesiolysis*, PhD. Boston University, August, 2023.

Austin Thai, *Development of High-fidelity Computational Methods for Prediction of Multirotor Aerodynamics, Aeroacoustics, and Trim*, PhD. Boston University, March, 2022.

Dorien Villafranco, *Towards the Improvement of Eulerian Mixture Method Cavitation Models for Use in Internal Nozzle Flows*, Ph.D. Boston University, September, 2019.

W. Gary Dewar, *Experimental Investigation of the Flow Characteristics Within a Shallow Wall Cavity for Both Laminar and Turbulent Upstream Boundary Layers*, Ph.D. Boston University, September, 2001.

Trevor H. Wood, *Aerodynamic Generated Sound by a Wing of Complex Geometry*, Ph. D., Boston University, July 2001.

Masters theses *indicates grant funded as full RA:

Timothy Stuer, *Reynolds-Averaged Navier-Stokes Simulation of Turbulent Flow in a Circular Pipe using Open-FOAM*, Master's Thesis, Boston University, Spring 2017.

*Jeremy Maunus, *Effect of Rotor Wake Structure on Fan Interaction Noise*, Master's Thesis, Boston University, December 2010.

Keith Baggett, *Computational Modeling of an Acoustic Igniter*, Master's Thesis, Boston University, Spring, 2010.

- *Erika Quaranta, *Application of the Boundary Element Method to Computation of the Head-related Transfer Function for Gerbils*, Master's Thesis, Boston University, Spring, 2004.
- Franck Zagadou, *Numerical Analysis of Acoustic Scattering by a Thin Circular Disk, with Application to Train-tunnel Interaction Noise*, Master's Thesis, Boston University, Summer, 2002.
- *Caroline Curtis Granda, *A Computational Acoustic Prediction Method Applied to Two-Dimensional Cavity Flow*, Master's Thesis, Boston University, December, 2001.
- *Trevor H. Wood, *Inverse Aeroacoustic Problem For A Flat Rectangular Wing In A Gust*, Master of Science, Boston University, June 1998.
- *Kelly M. Horan, *The Dependence Of The Rayleigh Conductivity On The Shape Of A Wall Aperture In The Presence Of Grazing Flow*, Master of Science, Boston University, May 1998.

Other PhD & MS theses, significant advising:

- Vadim Voropayev, PhD ERAU *High fidelity modeling of UAM propeller interaction with disturbances*, Advisor Vladimir Golubev
- Stanley Ossyra, PhD ERAU *Mid fidelity modeling of UAM propeller interaction with disturbances*, Advisor Vladimir Golubev
- Jordan Mills, MS ERAU *High fidelity modeling of propeller noise*, Advisor Tasos Lyrinzis
- Daniella Bezuidenhout, MS ERAU *Low fidelity modeling of propeller broadband noise*, Advisor Vladimir Golubev
- Alireza Maleki, PhD ERAU, *High fidelity urban modeling for UAM*, Advisor Vladimir Golubev
- Jia Hua, ERAU, *High fidelity rotor modeling for UAM*, Advisor Reda Mankbadi, PhD August 2025
- Sydney Briggs, UCF, *Shock-drop interaction experiments*, Advisor Subith Vasu, PhD August 2025
- Michael Goncalves ERAU *High and mid fidelity modeling of rotors in disturbances*, Advisor Tasos Lyrinzis, PhD May 2025
- Khanh Nguyen, UCF, *Cavitation modeling for shock-drop interaction*, Advisor Michael Kinzel, MS 2024
- Nicolas Berube, UCF, *Development of shock tube facilities*, Advisor Subith Vasu, MS 2024
- Erin Arai, *Modeling surface tension dominated interfacial dynamics using smoothed particle hydrodynamics*, Advisor Emily Ryan, PhD, May 2019
- Caitlin Bogdan, *Acoustically driven control of mobile robots for source localization in complex ocean environments*, Advisor Greg McDaniel, PhD, May 2018
- Huy Do, *Experimental investigation of cavitation in canonical injector nozzle*, MS. Advisor Glynn Holt, May 2018.

Master's student research projects

- Daniel LeChance, Lucia Vilallonga *Low and mid-fidelity rotor predictions*, MS (ME and CDS) (2024)
- Zijie Huang, Yifan Zhang *Fan wake machine learning*, MS (statistics program) (2021-2023)
- Ankush Gupta, *Statistical analysis of turbulence quantities in turbofan fan-gap obtained from EXA PowerFLOW VLES method*, 2017.
- Jay Lanzafane, *Estimation of Joint Angle and Position via IMU Measurement*, 2017.
- *Gilbert Forsythe, *Turbofan Broadband Exhaust Noise Data Processing*, 2013.
- *Andrew Wixom, *Code Development for RSI*, 2012.
- *Michael Cannamela, *Turbofan Tonal Noise Predictions*, 2008.

HONORS & AWARDS:

- New England AIAA Sustained Service Award, 2021.
- Faculty of the year award, BU ME Dept., 2018-2019.
- INSIGHT Into Diversity Inspiring Women in STEM Award, 2016
- AIAA Associate Fellow, 2005.
- Faculty Service Award, BU COE, Spring 2002.

AIAA National Faculty Advisor Award, January, 2001.

Invited to be guest lecturer for the von Karman Institute Lecture Series on Aeroacoustics, 2001, 2004.

Chosen to participate in *Achieving Success in Academia*, An Invitational Conference for Female Faculty and Graduate Students in Engineering. Hosted by the Women in Engineering Program Advocates Network (WEPAN), Washington, D.C., June, 1997.

Invited to attend and speak at the *IUTAM Symposium on Computational Methods for Unbounded Domains*, Boulder, CO, July 1997.

Best paper award from the Noise Control and Acoustics Division of ASME, for the submission "Predicting Unsteady Aerodynamic Parameters From Airfoil Surface Pressure Measurements," to the International Mechanical Engineering Congress and Exposition, November 1996.

COURSES DELIVERED ("Overall Faculty Rating" out of 5 for recently taught courses with **old** assessment (ended 2022)):

EK 130: Introduction to Wind Energy (Formerly : Honors EK 133: Wind) (developed)

EK 131: Aerodynamics of gliders. (Spring 2017: 4.4; Spring 2020: 4.37) (developed)

EK 210: Intro to Design. (Spring 2021: 4.0, 4.67, Fall 2021: 4.5, Spring 2022: 4.1 , Fall 2022: 4.23 & 3.96) Coordinator, (redeveloped)

EK 301 Mechanics I

ME 303: Fluids I

AM 420/ME 421: Aerodynamics (Spring 2019: 4.44; Spring 2020: 4.68; Spring 2021: 4.64) (redeveloped)

AM 422: Fluids II

AM 405: Propulsion

AM 423: Compressible Flow (redesign)

ME 425: Compressible flow and Propulsion (Fall 2018: 4.71, Fall 2019: 5.0, Fall 2020: 4.37, Fall 2021: 4.17, Fall 2022: 4.57) (developed)

ME 542: Advanced Fluid Mechanics (Fall 2020: 4.54)

ME 547 Introduction to Computational Fluid Dynamics (Spring 2019: 5.0, Spring 2022: 4.45) (developed) formerly ME 702: Computational Fluid Dynamics (Fall 2017: 4.67)

AM 201, ME 321: Introduction to Aircraft Performance (developed)

AM/ME 542: Advanced Aerodynamics (developed)

AM/ME 520: Acoustics I

ME 713/ ME 500: Viscous Flow

Consulting faculty to former Aero and current ME senior design course