J. Mitch Wolff

Education

Institution	Field of Study	Degree/Date
Purdue University	Mechanical Engineering	Ph.D., 1995
Purdue University	Mechanical Engineering	M.S.M.E., 1989
Purdue University	Mechanical Engineering	B.S.M.E., 1983

Professional Experience

Position	Institution	Dates
Professor	Wright State University, Mech. & Mat. Eng.	08/14-current
Senior Mechanical Engineer	Rolls-Royce North American Corporation	05/13-08/14
Professor	Wright State University, Mech. & Mat. Eng.	08/12-05/13
Scientific Advisor for INVENT	Air Force Research Laboratory	09/08-08/12
Professor	Wright State University, Mech. & Mat. Eng.	09/95-08/08

Selected Publications (Total Journal/Conference over 140)

1. Gross, A., Marks, C. R., Sondergaard, R., Bear, P., Wolff, J. M., "Experimental and Numerical Characterization of Flow through Highly Loaded Low-Pressure Turbine Cascade, AIAA J. of Propulsion and Power, May 2017, doi: 10.2514/1.B36525.
2. Doty, J., Yerkes, K., Byrd, L., Murthy, J., Alleyne, A., Wolff, M., Heister, S. and Fisher, T., "Dynamic thermal management for aerospace technology: review and outlook," AIAA Journal of Thermophysics and Heat Transfer, Vol. 31, No. 1, 2017, pp. 86-98.
3. Riggins, D., Camberos, J., Wolff, M., and Bowcutt, K., "Mission-Integrated Exergy Analysis for Hypersonic Vehicles: Methodology and Applications," AIAA Journal of Propulsion and Power, Vol. 29, No. 3, May-June 2013, pp. 610-620.
4. Marks, C., Sondergaard, R., Wolff, M., and Anthony, R., "Experimental Comparison of DBD Plasma Acuators for Low Reynolds Number Separation Control," *ASME Journal of Turbomachinery,* Vol. 133, No. 1, 2011, pp. 55-63.
5. Milligan, R., Eklund, D., Wolff, M., Gruber, M., and Mathur, T., "Dual Mode Scramjet Combustor: Analysis of Two Configurations," *AIAA Journal of Propulsion and Power*, Vol. 27, No. 6, Nov.-Dec. 2011, pp. 1317-1319.
6. Estevadeordal, J., Marks, C., Sondergaard, R., and Wolff, M., "Curved Laser-Sheet for Conformal Surface Flow Diagnostics," *Experiments in Fluids*, Vol. 50, No. 3, March 2011, pp. 761-768.
7. McQuilling, M., Wolff, M., Fonov, S., Crafton, J., and Sondergaard, R., "Experimental Investigation of a High-Lift Low Pressure Turbine Suction Surface," *AIAA Journal*, Vol. 48, No 11, Nov. 2010, pp. 2465-2471.
8. McQuilling, M., Wolff, M., Fonov, S., Crafton, J., and Sondergaard, R., "An Experimental Investigation of Low-Pressure Turbine Suction Surface Using a Shear and Stress Sensitive Film," *Experiments in Fluids,* Vol. 44, No. 1, January 2008, p. 73-88.
9. Corbett, M., Williams, J., Wolff, M., Walters, E., Wells, J., and Lamm, P., "Transient Turbine Engine Modeling and Real-Time System Integration Prototyping," 2006-01-3040, *SAE Transactions Journal of Aerospace,* March 2007, pp. 856-862.
10. Urbassik, R. M., Wolff, J. M., and Polanka, M. D., "Unsteady Aerodynamics and Interactions Between a High Pressure Turbine Vane and Rotor," *ASME Journal of Turbomachinery,* Vol. 128, No. 1, 2006, pp. 35-42.
11. Veley, E., Marks, C. R., Anthony, R., Sondergaard, R., Fletcher, N., Wolff, M., "Unsteady Flow Measurements in a Low Pressure Turbine Cascade using Surface Mounted Thin Film Sensor," *AIAA Paper 2017-4825*, 53rd AIAA Joint Propulsion Conference, Atlanta, GA, 10-12 July 2017.
12. Bear, P., Wolff, M., Gross, A., Marks, C. R., Sondergaard, R., "Experimental Investigation of Total Pressure Loss Development in a Highly Loaded Low Pressure Turbine Cascade," *GT2017-64684*, ASME Turbo Expo, Charlotte, NC, June 26-30, 2017.
13. Sharpe, J., Bear, P., Wolff, M., Marks, C. R., Sondergaard, R., "Computational Investigation of Secondary Flow Structures in Low Pressure Turbines," *AIAA Paper 2017-0108*, 55th AIAA Aerospace Sciences Meeting, SciTech, Grapevine, TX, 9-13 January, 2017.
14. Buettner, R., Roberts, R. A., Wolff, M., Behbahani, A., "Design of a Transient Variable Cycle Turbine Engine Model for System Integration with Controls," *AIAA Paper 17-1940*, 55th AIAA Aerospace Sciences Meeting, SciTech, Grapevine, TX, Jan. 9-13, 2017.
15. Bracey, M., Nuzum, S. R., Roberts, R. A., Wolff, M., Zumberge, J., "Air Cycle Machine Transient Modeling with Exergy Analysis," *AIAA Paper 16-5004*, 14th AIAA International Energy Conversion Engineering Conference, Propulsion and Energy Forum, Salt Lake City, UT, July 24-27, 2016.
16. Donovan, A., Roberts, R. A., Wolff, M., "Enhanced ECS/Generator Models in an Integrated Air Vehicle Platform," *AIAA Paper 16-4915*, 14th AIAA International Energy Conversion Engineering Conference, Propulsion and Energy Forum, Salt Lake City, UT, July 24-27, 2016.
17. Bear, P. S., Wolff, M., Gross, A., Marks, C. R., Sondergaard, R., "Secondary Loss Production Mechanisms in a Low Pressure Turbine Cascade," *AIAA Paper 16-4554*, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Propulsion and Energy Forum, Salt Lake City, UT, July 24-27, 2016.

18. Nuzum, S. R., Roberts, R. A., Wolff, M., "An Aerospace Vehicle Model Including a Cryogenic Thermal Subsystem," *AIAA Paper 16-0673*, 57th AIAA/ASCE/AHS/ASC Structural Dynamics, and Materials Conference, SciTech, San Diego, CA, Jan. 3-8, 2016.
19. Marks, C. R., Sondergaard, R., Bear, P. S., Wolff, M., "Reynolds Number Effects on the Secondary Flow of Profile Contoured Low Pressure Turbines," *AIAA Paper 16-0114*, 54th AIAA Aerospace Sciences Meeting, SciTech, San Diego, CA, Jan. 3-8, 2016.
20. Nuzum, S. R., Roberts, R. A., Wolff, M., "Various Integrated Aerospace Systems utilizing a Cryogenic Fluid," *AIAA Paper 15-4245*, 13th AIAA International Energy Conversion Engineering Conference, Propulsion and Energy Forum, Orlando, FL, July 26-29, 2015.
21. Donovan, A. B., Roberts, R. A., Wolff, M., "Fuel Pump Trade Study for a Conceptual Design of an Integrated Air Vehicle System," *AIAA Paper 15-4172*, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Propulsion and Energy Forum, Orlando, FL, July 26-29, 2015.
22. O'Connell, T., Russell, G., McCarthy, K., Lucas, E., Zumberge, J., and Wolff, M., "Energy Management of an Aircraft Electrical System," *AIAA Paper 10-7092*, 8th AIAA International Energy Conversion Engineering Conference, Nashville, TN, July 26-28, 2010.
23. Zumberge, J., Wolff, M., McCarthy, K., O'Connell, T., Walters, E., Russell, G., and Lucas, E., "Integrated Aircraft Electrical Power System Modeling and Simulation Analysis," *SAE Paper 2010-01-1804,* SAE Power Systems Conference, Fort Worth, TX, Nov. 2–4, 2010.
24. Corbett, M., and Wolff, M., "Double Bypass Turbofan Engine Modeling including Transient Effects," *SAE Paper 2010-01-1800,* SAE Power Systems Conference, Fort Worth, TX, Nov. 2–4, 2010.
25. Wolff, M., Zumberge, J., Bodie, M., Russell, G., McCarthy, K., O'Connell, T., Lucus, E., and Walters, E., "Integrated Thermal/Power/Propulsion/Vehicle Modeling Issues Related to a More Electric Aircraft Architecture," *RTO-MP-AVT-178 #28*, NATO Specialists Meeting, System Level Thermal Management for Enhanced Platform Efficiency, Bucharest, Romania, Oct. 4-7, 2010.
26. Wolff, M., Corbett, M., Zumberge, J., Miller, C., and Bodie, M., "Hardware in the Loop – Aircraft Electric Laboratory," *RTO-MP-AVT-178 #23*, NATO Specialists Meeting, System Level Thermal Management for Enhanced Platform Efficiency, Bucharest, Romania, Oct. 4-7, 2010.
27. Sanders, D., Nessler, C., Sondergaard, R., Polanka, M., Marks, C., Wolff, M., and O'Brien, W., "A CFD and Experimental Investigation of Unsteady Wake Effects on a Highly Loaded Low Pressure Turbine Blade at Low Reynolds Number," *ASME GT2010-22977,* ASME Turbo Expo, Glasgow, UK, June 14-18, 2010.
28. Milligan, R., Eklund, D., Wolff, M., Mathur, T., and Gruber, M., "Dual Mode Scramjet Combustor: Analysis of Two Configurations," *AIAA Paper 10-1254,* 48th Aerospace Sciences Meeting, Orlando, Florida, January 4-7, 2010.

Professional Memberships

1) American Institute of Aeronautics and Astronautics, 1994-Present, Associate Fellow. 2) Society of Automotive Engineers, 1995-Present. 3) American Society of Mechanical Engineers, 1986-Present, Fellow. 4) American Society of Engineering Educators, 1993-Present.

Honors and Awards (Since Joining WSU)

1) Affiliate Societies Council, Dayton, Outstanding Engineers & Scientists Award, 2003. 2) College of Engineering and Computer Science Outstanding Faculty Member, 2001. 3) College of Engineering and Computer Science Outstanding Teacher Award, 1999. 4) ASEE Dow Outstanding New Educator Award, 1999 5) SAE Ralph R. Teetor Educational Award, 1999.

Selected Professional Service

Reviewer for Professional Journals: *ASME Journal of Turbomachinery*; *AIAA Journal of Power and Propulsion*; *Journal of Fluids and Structures*; *Journal of Aerospace Engineering*; *Journal of Sound and Vibration*; *International Journal of Modelling and Simulation, SAE Transactions, International Journal of Turbo and Jet Engines*.
Other Professional Service: International Society for Air Breathing Engines (ISOABE), US National Committee Member 2001-present; *45th AIAA/ASME/SAE/ASEE Joint Propulsion Meeting,* Denver, CO, August 2-5, 2009, Session Chair –Compressor – I Session; *ISHM Conference*, Covington, KY, August 10-13, 2009, Organizing Committee; *ISHM Conference*, Covington, KY, August 10-13, 2009, Session Chair – Subsystems Application Session; 50th AIAA Aerospace Science Meeting, Nashville, TN, Jan. 8-12, 2012, Session Chair – INVENT: Modeling & Simulation for Integrated Aircraft Systems.

Selected Professional Development Activities

The University of Tennessee Space Institute, Dayton, OH, "Aero-Propulsion Systems, Technology, Test and Evaluation," Continuing Education Lecture Series, April 21-25, 2008; AFRL/RB & NASA, Dayton, OH, "Sensitivity Analysis and Uncertainty Quantification Short Course," May 12-13, 2009, Wright State University/AFRL/WBI, Dayton, OH; "Introduction to Design of Experiments (DOE) Short Course," June 1-2, 2010, Wright State University/AFRL/WBI, Dayton, OH; "Design with Constructal Theory Short Course," June 3-4, 2010; von Karman Institute for Fluid Dynamics, Brussels, Belgium, "Engine Intake Aerothermal Design: Subsonic to High Speed Application," VKI Lecture Series, Nov. 14- 16, 2011; von Karman Institute for Fluid Dynamics, Wright State University, Dayton, OH, "Physics-Based Modeling & Simulation for Aerospace Systems," VKI Lecture Series, Aug. 21-23, 2012.