James W. (Jim) Gregory, Ph.D.

Dean, College of Engineering
Professor, Department of Aerospace Engineering
Embry-Riddle Aeronautical University – Daytona Beach

[redacted]

August 18, 2024

SUMMARY OF FORMAL EDUCATION

Ph.D. Aeronautics & Astronautics
Purdue University, West Lafayette, IN, 2005

M.S. Aeronautics & Astronautics
Purdue University, West Lafayette, IN, 2002

B.S. Aerospace Engineering, with Highest Honors, Cooperative Plan
Georgia Institute of Technology, Atlanta, GA, 1999

SUMMARY OF ADMINISTRATIVE EXPERIENCE

2021-Present Dean, College of Engineering
Embry-Riddle Aeronautical University – Daytona Beach

2020-2021 Department Chair, Department of Mechanical and Aerospace Engineering
The Ohio State University

2017-2020 Director, Aerospace Research Center
The Ohio State University

2014-2017 Associate Director, Aerospace Research Center
The Ohio State University

OVERVIEW OF ADMINISTRATIVE ROLES

Dean, College of Engineering, Embry-Riddle Aeronautical University, 2021 – Present

Overview and Major Accomplishments

- Leadership responsibility for 116 permanent faculty, 28 visiting faculty and adjuncts, and 24 support staff across 5 academic departments, serving 3554 students (3229 undergraduate + 325 graduate) as of autumn ’23 census.
- Academic oversight of 8 BS degree programs, 8 MS degrees, and 3 PhD degrees.
- Management of space allocation and resources for academic and research lab space in 6 buildings, with an operational budget of $29.2M.

- Oversight for the largest aerospace engineering program in the nation, ranked nationally in the top 5 among doctoral degree granting institutions.
- Created an experiential learning environment where a student team designed, built, and delivered the first student project to land on the Moon. Supported the team through fundraising, visioning, networking, and partnership building. The EagleCam project launched on February 15, 2024 and landed on the moon on February 22, with the goal of capturing images of the Intuitive Machines Odysseus lander.
- Spearheaded the valuation and recording of the value of the EagleCam mission as a $3M philanthropic gift from Intuitive Machines to Embry-Riddle.
- Key member of an Embry-Riddle team that recruited Boeing to establish a new on-campus facility, where they are creating 400 new, high-paying engineering jobs in Volusia County. I worked with Boeing to establish recruiting pathways for Embry-Riddle students to internships and full-time positions.
- Piloted the college to a rise in the rankings, with the college breaking into the top-100 for the first time and vaulting the aerospace program from #8 up to #4.
- Led the college forward in record enrollment growth (+28% over three years) through advocacy for resources, creative staffing, and optimization of faculty workloads.
- Improved first-year retention by 8.6 percentage points for the college over a two-year period (from 79.9% to 88.5%) through culture change and student success initiatives. The College was the only one to surpass the University goal of 88%, far outperforming sister Colleges.
- Accelerated research growth, growing new award funding by 47% over a 2-year period. Accomplished through an emphasis on mentoring and empowering faculty to win new, major grants.
- Currently leading a team to design a new hypersonics test facility, enabled by $26M in state funding.
- Led a team to propose, create, and implement a new undergraduate program in Systems Engineering, starting in Autumn 2024. Secured final approval by the Board of Trustees; partnered with enrollment management to develop successful marketing and recruiting strategies, where new admits and transfers are already exceeding targets.
- Successfully persuaded central administration to secure 14 net new faculty lines for the college (over a two-year period), with plans developed for investment in additional faculty lines over the next few years.
- Initiated and currently running a pilot study to revamp core classes in the second year, introducing experiential learning and just-in-time learning concepts, done in collaboration with industry.

Leadership Development

- Built an effective, high-functioning administrative team with delegated authority to lead the college. Created and filled a new Senior Associate Dean position which serves as an internal-facing dean. Also created and filled new positions of Associate Dean for Research and Associate Dean for Undergraduate Studies.

- Actively cultivating the leadership skills of the team through regular 1:1 mentoring discussions, group discussions on leadership books, and team-building retreats.
- Created five new faculty fellow positions with the dual goals of advancing strategic initiatives and cultivating the skill sets of future academic leaders.
- Mentoring and leadership development for department chairs, with a focus on encouraging them to provide direct feedback to faculty in their units.

Student Success

- Initiated the development of a peer tutoring center, offering peer mentoring and tutoring support for students. Development of the center was done in collaboration with student government, to ensure that it would meet the needs of the student body.
- Revamped an expanded ERAU celebration of Engineers Week. New elements included a keynote address by an NAE member, a special screening of *Good Night Oppy* with Q&A by the NASA JPL team who created the Mars rovers, and student panel discussions.
- Led a competitive proposal to secure an opportunity for a STEM outreach activity where local students spoke with an astronaut on board the space station via amateur radio (April 2024).

External Reputation

- Engaged with external mass media outlets to provide commentary on contemporary events and showcase Embry-Riddle excellence. For example, this interview with Greg Warmoth (WFTV) or this interview series with NPR.
- Built college communications from the ground up, working to shape external perceptions of ERAU excellence. Includes regular emails to other Deans and Department Chairs, alumni, and friends.
- While on travel, I arrange targeted meetings with Deans at peer institutions (meet-and-greet) to share stories of excellence and benchmark from others.

Community Building and Culture

- Provided stable, compassionate, and engaging leadership through turbulent or traumatic situations such as unexpected staff and student deaths, sudden resignations, and hurricane aftermath.
- Shaped culture and attitudes on contentious issues such as mask-wearing policies (COVID) through clear, consistent, respectful, engaging, transparent, and compassionate engagement.
- Reestablishing community among the faculty through regular group lunches, dinners in my home, and new seminar series – focused on building connections, mutual support, and centering on scholarly advancement.
- Initiated new, regular internal communications that not only share news but also offer related personal insights. Intentionally shaping culture through implicit and explicit communication of values of honor, dignity, respect, kindness, and gratitude; celebrating the successes of our people; and maintaining a regular focus on our shared mission.

- Led a community-engaged strategic planning process where key initiatives in the plan were forged at the interface of leadership vision and faculty / staff aspirations.

Research

- Created a new initiative to incentivize faculty research proposals, as Embry-Riddle embraces movement towards research growth. Invested $260k in catalyzing growth for 20 outstanding faculty. Outcomes directly tied to this program include 2 NSF CAREER awards, 15 journal papers, 34 conference papers, and $1.35M in new grants.
- Appointed two new short-term faculty fellows for research growth, working under the Associate Dean for Research, to cultivate new research in the College.
- Oversaw the development of a mentoring program for early-career faculty to help them develop successful research proposals.
- Created a new college-wide research seminar series, focusing on high profile researchers and interdisciplinary topics.
- Over a two-year period, the college has seen dramatic growth in new awards (47%) and growth in research expenditures (8%). New awards will supercharge expenditure growth in years to come.
- Partnered with University leadership to plan and roll out the new $50M Cici and Hyatt Brown Center for Aerospace Technology.

Philanthropy and Corporate Engagement

- Reinvigorated a focus on philanthropic engagement in the College, with current efforts oriented towards major gifts for naming the College of Engineering, endowed professorships, graduate fellowships, scholarships for URM undergraduate students, building renovations, and creation of a spacecraft operations lab facility.
- One notable recent highlight is an innovative joint gift from Intuitive Machines and Columbia Sportswear for $200k to support student fellowships and scholarships.
- Catalyzed the development of a new professional education program on System Safety, developed in partnership with a major aerospace company. Initial offering was piloted in summer 2023, with a follow-on offering in 2024.

Diversity, Equity, and Inclusion

- Hired and advanced a diverse team of leaders, including 1 Hispanic and 2 women faculty leaders.
- Initiated and oversaw a proposal to the ASEE Diversity Recognition program, leading to Bronze recognition.
- Provided oversight for a pilot study to shape first-year students' perceptions of DEI through cultivation of empathy, with a strong measurable influence. Currently expanding the effort to a larger cohort of students.
- Formed a faculty committee on DEI to directly advise me on the climate of the college and offer policy recommendations to promote equity and a diverse community.
- Actively support and engage with underrepresented minority affinity groups such as NSBE, SHPE, SWE, etc. through regularly attending student meetings for dialogue,

providing funding for students to attend regional and national meetings, and attending national meetings with students.
- Identified salary equity issues that disproportionately affected women and underrepresented minority faculty, and provided substantial targeted raises through advocacy, resource requests, and smart policies.

Chair, Department of Mechanical and Aerospace Engineering, The Ohio State University, 2020-2021

- Leadership of a large, complex academic department with three academic programs (aerospace, mechanical, and nuclear engineering), approximately 80 faculty, 30 staff, 1600 undergraduate students, and 300 graduate students.
- Management of a $16M annual operational budget, 230k square foot Scott Laboratory, and research expenditures of over $26M.
- Appointment to this role announced in January 2020, with an official start in June 2020. I effectively took the reins of the department in mid-March to lead the department through the onset of the COVID-19 pandemic.
- Managed COVID-related challenges, including a graceful and complete shutdown of all in-person research and instructional activity. Steered the department through the online pivot, maintaining high quality of instruction and research output through robust engagement with our faculty. Handled faculty and student anxieties through numerous discussions and open office hours – listening carefully to concerns, expressing care, addressing what I could, and advocating for change with other stakeholders.
- Led the department faculty in defining hiring needs for 10+ faculty lines through a collaborative, consensus-based process. Together, we determined the highest priority, most strategic themes and cluster areas that addressed the department's research and teaching needs.
- Successfully dealt with several difficult personnel issues that developed prior to my term as chair but came to light under my leadership. I addressed head-on challenges such as hazing based on protected class, a formal complaint by a graduate student towards his faculty advisor, and a Title IX sexual harassment complaint. Addressing these issues with compassion, conviction, and courage was critical for changing the culture of the department.
- Provided oversight for a burgeoning relationship between the department and the OSU College of Medicine, establishing an MAE faculty member as co-Director of the Center for Cancer Engineering, which bridges medical and engineering research fields.
- Promoted a diverse, equitable, and inclusive environment through listening sessions, active solicitation of student feedback, and action to promote change.
- Elevated outstanding women and URM faculty into leadership roles within the department. Celebrated the successes of our talented underrepresented faculty. Successfully led a nomination drive for a female colleague who won the University's highest teaching award.
- Created a new administrative structure for the department, adding new program directors for aerospace engineering and mechanical engineering (to join a pre-existing

nuclear engineering program director), to ensure proper oversight of each academic program. Also recruited top internal faculty leaders to these roles.
- Participated in robust leadership training programs for rising leaders (Big10 Academic Alliance Academic Leaders Program) and for new department chairs (Ohio State).

Director, Aerospace Research Center, The Ohio State University, 2017-2020
- Provided administrative and technical leadership to a multidisciplinary research center focused on aerospace industry needs.
- Expanded interdisciplinary collaborations, bringing in faculty from aerospace engineering, mechanical engineering, biomedical engineering, electrical engineering, and computer science to collaborate on large proposals and projects.
- Facilitated voluntary engagement of over 15 faculty and provided administrative and infrastructure support for about 50 graduate students. The Center was home to 6 research staff, and 7 administrative and technical support staff.
- Under my leadership, annual research expenditures grew from $2.8M in FY17 to $7.7M in FY20.
- Placed a specific focus on mentoring of early-career faculty towards research excellence and broader impact, resulting in two young faculty maturing into technical leadership roles as co-directors of a research laboratory.

Associate Director, Aerospace Research Center, The Ohio State University, 2014-2017
- Primary responsibility was to plan and catalyze new research growth for the center into the area of unmanned aircraft systems (UAS).
- Convened a statewide group of researchers and technical leaders in the area of UAS to share capabilities and plan for future opportunities. This groundwork helped establish the critical long-term foundation for Ohio's subsequent win (2023) of Joby Aviation's $500M air taxi production plant.
- Led Ohio State's proposal as a part of a large, multi-University team for an FAA Center of Excellence on UAS. This culminated in OSU being selected for the winning team on a 10-year, multi-million dollar research grant.
- Led a team of staff and students to develop and flight-test a turbojet-powered UAS that was flown in a beyond visual line of sight mission to set world records for speed and distance of a UAS.

LEADERSHIP DEVELOPMENT PROGRAMS

Big10 Academic Alliance, Academic Leaders Program, 2020-21.

Ohio State University New Chairs Program, 2020-21.

WORK EXPERIENCE

Embry-Riddle Aeronautical University, College of Engineering, Daytona Beach, Florida. August 2021 – Present. Also full professor in Aerospace Engineering, with tenure.

The Ohio State University, Department of Mechanical and Aerospace Engineering, Columbus, Ohio. January 2008 – August 2021 (Department of Aerospace Engineering, 2008-2010).

- Chair, Department of Mechanical and Aerospace Engineering (2020 – 2021)
- Director, Aerospace Research Center (2017 – 2020)
- Associate Director, Aerospace Research Center (2014 – 2017)
- Professor (2017 – 2021)
- Associate Professor (2013 – 2017)
- Assistant Professor (2008 – 2013)

Air Force Research Laboratory, Summer Faculty Fellowship, Dayton, Ohio, summers 2009 and 2010. Air Vehicles Directorate.

US Air Force Academy, Department of Aeronautics, Colorado Springs, Colorado. December 2005 – December 2007. National Research Council Postdoctoral Fellow (12/05 – 12/06) and Visiting Research Scientist (1/07 – 12/07).

National Academy of Engineering, Aeronautics and Space Engineering Board, Washington, D.C., September – November 2005, Christine Mirzayan Science & Technology Policy Graduate Fellowship Program.

Tohoku University, Department of Aeronautics and Space Engineering, Sendai, Japan, Summer 2004. International Internship Program Student Award, International Center of Excellence of Flow Dynamics.

NASA Glenn Research Center, **Optical Instrumentation Technology Branch,** Cleveland, Ohio, Summer 2002 and 2003. Lewis' Educational and Research Collaborative Internship and Graduate Student Researchers Program.

Purdue University, School of Aeronautics and Astronautics, West Lafayette, Indiana, August 1999 – August 2005. Graduate Research Assistant and NASA GSRP Doctoral Fellow.

Georgia Institute of Technology, School of Aerospace Engineering, Atlanta, Georgia, July 1995 – January 1999. Student Research Assistant with the Experimental Aerodynamics Group.

Delta Air Lines, Atlanta, Georgia, March 1995 – June 1998. Cooperative student work in Liaison Engineering – support for aircraft maintenance.

MAJOR INTERNATIONAL AWARDS AND RECOGNITIONS

Fellow, American Institute of Aeronautics and Astronautics, 2022.

Fellow, Royal Aeronautical Society, 2021.

Stanford / Elsevier List of the Top 2% Scientists in the World, 2020 – Present.
doi: 10.17632/btchxktzyw.6.

National Aeronautic Association Frank G. Brewer Trophy, 2020, honoring significant contributions of enduring value to aerospace education in the United States. Citation: "For his enduring contributions and leadership in engaging the public and students in the science of flight through video series, innovative laboratory experiences, and world-record-setting testing of unmanned aerial vehicles."

FAI World Records for Autonomous Unmanned Aerial Vehicle, August 30, 2017
(certified by the National Aeronautic Association as national records; and by the Fédération Aéronautique Internationale as world records)

- Absolute Speed (U-Absolute subclass), 237 km/h
- Speed over a Straight 15/25km Course, 237 km/h
- Distance Over an Out and Return Course, 45 km

Fulbright Scholar Award, "Study of Dynamic Stall and its Implications for Wind Turbine Performance," to collaborate with Prof. David Greenblatt at the Technion – Israel Institute of Technology, Haifa, Israel, 2014-15.

Army Research Office Young Investigator Award, "Time-Varying Compressible Dynamic Stall Mechanisms Due to Freestream Mach Oscillations," 2011.

Thomas Hawksley Gold Medal (Best Paper Award), for the best original paper published by the Institution of Mechanical Engineers (UK) in 2008 for the paper, "A Review of Pressure-Sensitive Paint for High Speed and Unsteady Aerodynamics," in *Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering*.

Kenneth Harris James Prize (Best Paper Award), *Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering*, for the paper, "A Review of Pressure-Sensitive Paint for High Speed and Unsteady Aerodynamics," 2008.

Boeing Engineering Student of the Year, Presented at *Flight International* magazine's *Aviation Excellence Awards* at the Asian Aerospace Airshow in Singapore, 2006.

AIAA Foundation Orville and Wilbur Wright Graduate Award, 2005. "For significant research contributions to the field of aerospace engineering."

AIAA National Student Paper Competition, First Place Graduate Student, 2004.

OTHER HONORS, AWARDS, AND RECOGNITIONS

Charles F. Kettering Aerial Torpedo "Bug" Award, 2018, presented by the Engineers Club of Dayton, for outstanding achievements which pushed the boundaries of Unmanned Aerial Systems technology as evidenced by world records for speed and distance of an autonomous Unmanned Aerial System set by their vehicle.

Outstanding Aerospace Engineer, Purdue University School of Aeronautics and Astronautics, 2018. Alumni award presented to just over 2% of the school's 8800 alumni.

AIAA Associate Fellow, 2016-2022. (Promoted to Fellow in 2022)

NASA Group Achievement Award, Kiowa Warrior Advanced Experimental Measurements Team, contractor support of PSP data acquisition and analysis, 2013.

Lumley Research Award, College of Engineering, The Ohio State University, 2013.

Outstanding Professor Award, Aerospace Engineering Program, 2010 and 2013, (selected by students).

Outstanding Paper Award, AIAA Ground Testing Technical Committee, 2012.

Alfred Gessow Award for Best Paper, 68th Annual Forum of the American Helicopter Society, 2012, co-author of best paper out of 230 presented at the Forum.

SAE Ralph R. Teetor Educational Award, 2012.

Indo-American Frontiers of Engineering Symposium, National Academy of Engineering, 2012.

McCarthy Engineering Teaching Award, College of Engineering, 2011, recognizes the contributions of junior faculty to create more innovative and effective teaching and learning.

Outstanding Paper Award, AIAA Ground Testing Technical Committee, 2011 (one of seven best papers selected from hundreds presented in AIAA Ground Test sessions in 2010-11).

Distinguished Undergraduate Research Mentor Award, Denman Undergraduate Research Forum, 2009.

Frontiers of Engineering Program, National Academy of Engineering, 2008.

Academic Keys, Future Faculty Grant, 2007.

Best Paper by a Young Presenter Award, Signal Processing Technical Committee, Acoustical Society of America, 2006. Awarded for the paper "Pressure-sensitive paint as a distributed optical microphone array," presented at the 4th Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan, Honolulu, HI, 28 November – 2 December, 2006.

Sigma Xi Graduate Student Poster Competition, Purdue University, First Place in Engineering, 2005.

AIAA Region III Student Paper Competition, First Place, 2003.

NASA Graduate Student Researchers Program Fellowship, August 2002 – July 2005.

Outstanding Graduate Student Award, School of Aeronautics and Astronautics, Purdue University, 2002.

Sigma Gamma Tau, 1996 – Present, Aerospace Honor Society, member.

Duke of Paducah, 1994. Honorary award to recognize citizenship and community service in Paducah, Kentucky.

Eagle Scout, Boy Scouts of America, December 1993.

LICENSES

Commercial Pilot, FAA, Airplane, Single-Engine, Land with Instrument Rating. >400 flight hours.

Extra Class License, AD4GN, FCC, 1993. Highest level Amateur Radio License.

RESEARCH GRANTS AWARDED

Summary and Highlights:
(beginning in 2008, including ongoing grants and contracts and projected renewals)

- Total External Funding as PI or co-PI: **$20.07 million** (Gregory share ~$14.19 M)
- External Funding as sole or lead PI: **$11.60 million**
- External Funding as co-PI: **$8.48 million** (Gregory share ~$2.60 M)

1. Gregory, JW, (PI) *Preliminary Investigation of Side View Mirror Vibration*, Honda R&D Americas, Inc., July 1 – September 30, 2008, $34k.

2. Gregory, JW, (PI) *Evaluation of Fast PSP for Unsteady Separated Flows*, Air Force Research Laboratory, December 1, 2008 – March 31, 2009, $55k.

3. Gregory, JW, (PI) *Integrated, real-time, optical measurement techniques for aerolastic tests*, Air Force Phase I SBIR subcontract with Innovative Scientific Solutions, Inc., January 1 – August 24, 2009, $17k.

4. Gregory, JW, (PI) *Fast-responding pressure-sensitive paint for rotorcraft aerodynamic investigations*, NASA Phase I SBIR subcontract with Innovative Scientific Solutions, Inc., February 1 – July 22, 2009, $33k.

5. Gregory, JW, (PI) *Investigation of Side View Mirror Vibration Phenomena*, Honda R&D Americas, Inc., April 1, 2009 – March 31, 2010, $100k (plus $48k in OSU cost share).

6. Gregory, JW, (PI) *AFRL Summer Faculty Fellowship*, Air Force Research Laboratory, July 1 – September 30, 2009, $19k.

7. Gregory, JW, (PI) *Open Source Software for Data Fusion of Experimental Measurements*, Army Phase I SBIR subcontract with Innovative Scientific Solutions, Inc., November 1, 2009 – March 31, 2010, $23k.

8. Gregory, JW, (PI) *Integrated, real-time, optical measurement techniques for aerolastic tests*, Air Force Phase II SBIR subcontract with Innovative Scientific Solutions, Inc., December 1, 2009 – November 30, 2011, $200k.

9. Gregory, JW, (PI) *Fast PSP Evaluation of Pressure Structures on ATL*, Air Force Research Laboratory, October 1, 2009 – June 30, 2010, $50k.

10. Gregory, JW, (PI) *Evaluation of Hot Film Sensor Array in Transonic Flow*, Tao Systems, Inc., September 1, 2009 – March 30, 2010, $23k.

11. Gregory, JW, (PI) *Fast-responding pressure-sensitive paint for rotorcraft aerodynamic investigations*, NASA Phase II SBIR subcontract with Innovative Scientific Solutions, Inc., January 1, 2010 – December 31, 2011, $250k.

12. Gregory, JW, (PI) *Development of Globally Competent and Socially Engaged Engineers: International Collaborative Design Project for Aerial Detection of Landmines*, Battelle Endowment for Technology and Human Affairs, September 1, 2010 – August 31, 2012, $60k.

13. Gregory, JW, (PI) *Multidimensional forcing strategies for wake control*, Air Force Office of Scientific Research, June 1, 2010 – May 30, 2012, $300k.

14. Gregory, JW, (PI) *AFRL Summer Faculty Fellowship: PSP for Micro Air Vehicles*, Air Force Research Laboratory, July 1 – September 30, 2010, $20k.

15. Komerath, NM, (PI) and Gregory, JW (co-PI) *Diagnostics for Transient Multidimensional Rotorcraft Flows*, Subaward from the Georgia Tech Vertical Lift Research Center of Excellence, September 15, 2011 – September 14, 2016, $373k.

16. Gregory, JW (PI) *Time-Varying Compressible Dynamic Stall Mechanisms Due to Freestream Mach Oscillations*, Army Research Office Young Investigator Award, October 1, 2011 – September 30, 2014, $150k.

17. Samimy, M (PI), and Gregory, JW (co-PI), *Active Sensing and Control of Isolator Unstart in a SCRAMJET Engine*, US Air Force Phase I SBIR subcontract with Innovative Scientific Solutions, Inc., January 1, 2012 – September 30, 2012, $50k.

18. Rizzoni, G (PI), Babu, SS, Canova, M, Daehn, G, Dapino, MJ, Gregory, JW (co-PI), Guezennec, YG, Ozguner, UA, Selamet, A, Sioshansi, RM, Wang, J, Wang, J, Xu, L, Zhaung, M, *GATE: Energy Efficient Vehicles for Sustainable Mobility*, Department of Energy, September 1, 2011 – August 31, 2016, $907k.

19. Gregory, JW, (PI) *Transition Detection with Pressure-Sensitive Paint*, Air Force Research Laboratory, October 1, 2011 – September 30, 2012, $72k.

20. Gregory, JW, (PI) *Fast Responding PSP for large scale wind tunnel testing*, NASA Phase I SBIR (subcontract with Innovative Scientific Solutions, Inc.), January 1, 2012 – June 30, 2012, $36k.

21. Gregory, JW (PI) and Shearer, S., *Precision Agriculture with Remote Sensing Based on a Small Unmanned Aerial Vehicle*, Ohio State University Center for Aviation Studies Seed Grant, January 1, 2012 – September 30, 2012, $35k.

22. Gregory, JW (PI), *PSP Measurement on an Aero-Optics Turret*, University of Notre Dame / Air Force Research Laboratory, May 1, 2012 – April 30, 2012, $25k.

23. Gregory, JW (PI) and Bons, JP, *High-frame-rate System for Unsteady Study of Compressible Dynamic Stall*, Army Research Office, Defense University Research Instrumentation Program (DURIP), June 15, 2012 – June 14, 2013, $290k.

24. Samimy, M (PI), Adamovich, I, and Gregory, JW, *Flow Control with NS-DBD Plasma Actuators for Enhancement of Rotorcraft Performance and Fuel Economy*, Army Research Lab / Army Research Office Cooperative Agreement, October 1, 2012 – September 30, 2015, $600k.

25. Gregory, JW (PI) and Bons, JP, *Flow Control of Dynamic Stall on the VR-12 Airfoil*, Sikorsky Aircraft Co. / Army AATD, October 1, 2012 – March 30, 2013, $241k.

26. Samimy, M (PI), and Gregory, JW, *Active Sensing and Control of Isolator Unstart in a SCRAMJET Engine*, US Air Force Phase II SBIR (subcontract with Innovative Scientific

Solutions, Inc.), January 1, 2013 – December 31, 2014, $300k.

27. Gregory, JW (PI), *Fast Responding PSP for large scale wind tunnel testing*, NASA Phase I SBIR (subcontract with Innovative Scientific Solutions, Inc.), May 23 – Nov 23, 2013, $35k.

28. Gregory, JW (PI), *Aft Body Flow Control*, Honda R&D Americas, Inc., October 1, 2013 – April 16, 2014, $50k.

29. Gregory, JW (PI), *Fast responding PSP for large scale wind tunnel testing*, NASA Phase II SBIR (subcontract with Innovative Scientific Solutions, Inc.), June 4, 2014 – April 30, 2016, $250k.

30. Gregory, JW (PI), *Aft Body Flow Control – Phase 2*, Honda R&D Americas, Inc., August 22, 2014 – May 30, 2015, $120k.

31. Cantemir, CG (PI), and Gregory, JW, *10MW Ring Motor*, NASA, NNX14AL87A, August 4, 2014 – August 3, 2018, $1,798k.

32. Bons, JP (PI) and Gregory, JW, *Synchronized Flow Control of Dynamic Stall under Coupled Pitch and Freestream Oscillations*, Army Research Office, August 1, 2015 – April 30, 2016, $50k.

33. Bons, JP (PI), Ameri, AA, and Gregory, JW, *Revolutionary Turbine Cooling with Micro-Architectures Enabled by Direct Metal Laser Sintering*, Department of Energy / National Energy Technology Laboratory, October 1, 2015 – September 30, 2018, $637k.

34. Gregory, JW (PI), *Surveillance Criticality for SAA*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, October 1, 2015 – September 30, 2016, $100k.

35. D'Souza, KX (PI), Dunn, MG, and Gregory, JW, *UAS Airborne Collision Severity Evaluation*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, October 1, 2015 – September 30, 2016, $113k.

36. Smith, PJ (PI) and Gregory, JW, *UAS Human Factors Considerations*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, October 1, 2015 – September 30, 2017, $120k.

37. Lee, J (PI), Gregory, JW, and Shum, CK, *Development of real-time detection of cyanotoxins in drinking and irrigation water sources using unmanned aerial vehicles and validation with laboratory measurements*, OSU Field to Faucet Initiative, April 1, 2015 – September 29, 2016, $100k.

38. German, B.J. (PI), Briceno, S., Clarke, J.-P., Garrow, L.A., Kennedy, G.J., Mavris, D.N., Pritchett, A.R., Gregory, J.W., and Brentner, K.S., *Economical Thin-Haul Aviation Concepts*

(ETHACS), NASA Leading Edge Aeronautics Research, June 1, 2016 – May 31, 2017, $87k (OSU portion).

39. Komearth, N.M. (PI), Rajagopalan, R.G., and Gregory, J.W., *Multirotor Aerodynamic Interactions Over A Wide Range of Reynolds Number*, Vertical Lift Research Center of Excellence, October 1, 2016 – September 30, 2021, $375k (OSU portion).

40. Volakis, J. (PI), Koksal, C.E., and Gregory, J.W., *Secure Command and Control Link with Interference Mitigation*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, October 1, 2016 – September 30, 2019, $675k.

41. Smith, P. (PI) and Gregory, J.W., Human Factors Considerations of UAS Procedures and Control Stations, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, October 1, 2016 – September 30, 2018, $99k.

42. Gregory, J.W. (PI), Busch, G., Johnson, R., Prakash, V., and Czapor, B., *UAV Icing Protection*, Ohio Federal Research Network, September 19, 2016 – September 18, 2018, $1,000k.

43. Gregory, J.W. (PI) and Bons, J.P., *Unsteady Compressibility Effects for Modern Rotorcraft*, Army Research Office, February 15, 2017 – February 14, 2020, $365k.

44. Gregory, J.W. (PI) and Bons, J.P., *Unsteady Freestream Velocity Oscillation System at Rotorcraft-Relevant Mach Amplitude*, Army Research Office DURIP, August 2017 – July 2018, $215k.

45. Bolte, J. H. (PI), Gregory, J. W., Kang, Y. S., and McCrink, M. H., *Ground Collision Severity Study 2017-18*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, August 1, 2017 – January 31, 2019, $255k.

46. McCrink, M.H. (PI) and Gregory, J.W., *Development of Micro Data Acquisition Devices for Classroom Flight Testing of Gliders*, US Air Force Test Pilot School, March 31, 2017 – August 31, 2018, $179k.

47. Gregory, J.W. (PI) and Bons, J.P., *Summer Research Opportunity: Unsteady Compressibility Effects for Modern Rotorcraft*, Army Research Office, May 1, 2018 – August 31, 2018, $13k.

48. Gregory, J.W. (PI) and Bons, J.P., *Rotor Blade Dynamic Stall Performance at Low Reynolds Number*, Army Research Office, March 1, 2018 – August 31, 2018, $120k.

49. Gregory, J.W. (PI), Guvenc, L., Aksun-Guvenc, B., Smith, G., Chen, C., McCrink, M.H., O'Brien, A.J., *Unmanned Aircraft Traffic Management Solutions for the State of Ohio*, Ohio Department of Transportation, July 24, 2018 – July 23, 2021, $5,950k.

50. Smith, G. (PI) and Gregory, J.W., *Small UAS Detect and Avoid Requirements Necessary for Limited Beyond Visual Line of Sight (BVLOS) Operations: Separation Requirements and Testing – OSU*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, June 1, 2018 – July 31, 2020, $150k.

51. D'Souza, K.X. (PI) and Gregory, J.W., *Airborne Collision Severity Evaluation – Engine Ingestion*, Federal Aviation Administration ASSURE Center of Excellence on Integrating UAS in the NAS, July 1, 2018 – September 30, 2020, $867k.

52. Smith, P. (PI), McCrink, M., and Gregory, J.W., *Integrating Expanded and Non-Segregated UAS Operations into the NAS: Impact on Traffic*, Federal Aviation Administration, ASSURE Center of Excellence on Integrating UAS in the NAS, September 9, 2019 – September 8, 2021, $302k.

53. Gregory, J.W. (PI), Guvenc, L., Aksun-Guvenc, B., Smith, G., Chen, C., McCrink, M.H., O'Brien, A.J., *Unmanned Aircraft Traffic Management Solutions for the State of Ohio: Third Radar*, Ohio Department of Transportation, July 24, 2018 – July 23, 2021, $293k.

54. McCrink, M.H. (PI) and Gregory, J.W., *Safety Case Development, Process Improvement, and Data Collection*, Federal Aviation Administration, ASSURE Center of Excellence on Integrating UAS in the NAS, February 12, 2020 – August 11, 2022, $175k.

55. McCrink, M.H. (PI) and Gregory, J.W., *High-Resolution Self-Calibrating Ground and UAS Based Cloud and Precipitation Sensors*, Department of Energy Phase I SBIR subaward from Innovative Scientific Solutions, Inc., February 18, 2020 – February 17, 2021, $61k.

56. Gregory, J.W. (PI), Guvenc, L., Aksun-Guvenc, B., Smith, G., Chen, C., McCrink, M.H., O'Brien, A.J., *Unmanned Aircraft Traffic Management Solutions for the State of Ohio (Addendum)*, Ohio Department of Transportation, July 24, 2021 – July 24, 2022, $604k.

57. McCrink, M.H. (PI) and Gregory, J.W., *Identify Wake Turbulence and Flutter Flight Testing Requirements for UAS*, Federal Aviation Administration, ASSURE Center of Excellence on Integrating UAS in the NAS, August 25, 2020 – June 24, 2022, $699k.

PUBLICATIONS AND PRESENTATIONS

Summary:

- 1 Book published by Wiley in May 2021
- 1 Video lecture course published by The Great Courses
- 3 Patents
- 64 peer-reviewed journal papers
    - Key journals include *Annual Review of Fluid Mechanics, Journal of Fluid Mechanics, Physics of Fluids*, *Experiments in Fluids, AIAA Journal*

    - 38 journal papers co-published with advisees (students and/or postdoctoral researchers)
- 105 peer-reviewed or abstract-reviewed conference papers
- 41 invited seminar presentations

h-Index:
- 39 (Google Scholar, https://scholar.google.com/citations?user=rOBt4m4AAAAJ)
- 25 (ISI / Thompson Reuters, ResearcherID A-2343-2015)

Books

1. Gregory, JW and Liu, T, 2021, *Introduction to Flight Testing*, John Wiley & Sons.

Lecture Series

1. Gregory, JW, 2017, *The Science of Flight*, a series of 24 half-hour lectures written and delivered on various topics spanning flight in the atmosphere and space. Filmed, produced and marketed by The Great Courses, in collaboration with the Smithsonian Air & Space Museum. To date, over 14,000 copies have been sold and over 250,000 hours have been streamed online.

Patents

1. Tomac, M, and Gregory, J, "Frequency-Synchronized Fluidic Oscillator Array," U.S. Patent 11,085,469, August 10, 2021.

2. Hossain, MA, Bons JP, Gregory, JW, and Ameri, A, "Out-of-Plane Curved Fluidic Oscillator," U.S. Patent 11,865,556, January 9, 2024.

3. Tomac, M, and Gregory, J, "Variable Characteristics Fluidic Oscillator and Fluidic Oscillator with Three Dimensional Output Jet and Associated Methods," U.S. Patent 11,958,064, April 16, 2024 and European Patent EP3717784, March 6, 2024.

Refereed Journal Publications (* indicates advisee)

1. Caradonna, F, Henley, E, Silva, M, Huang, S, Komerath, N, Mahalingam, R., Reddy, U., Funk, R., Wong, O., Ames, R., Darden, L., Villareal, L., and Gregory, J, 1999, "Performance Measurement and Wake Characteristics of a Model Rotor in Axial Flight," *Journal of the American Helicopter Society*, vol. 44, no. 2, pp. 101-108, doi: 10.4050/JAHS.44.101. **IF: 0.796**

2. Sakaue, H, Gregory, JW, Sullivan, JP, and Raghu, S, 2002, "Porous Pressure-Sensitive Paint for Characterizing Unsteady Flow Fields," *AIAA Journal*, vol. 40, no. 6, pp. 1094-1098, doi: 10.2514/2.1757. **IF: 1.207**

3. Gregory, JW, Sullivan, JP, and Raghu, S, 2005, "Visualization of Jet Mixing in a Fluidic Oscillator," *Journal of Visualization*, vol. 8, no. 2, pp. 169-176 (Invited Paper), doi: 10.1007/BF03181660. **IF: 0.575**

4. Gregory, JW, Sullivan, JP, Wanis, SS, and Komerath, NM, 2006, "Pressure-sensitive paint as a distributed optical microphone array," *Journal of the Acoustical Society of America*, vol. 119, no. 1, pp. 251-261, doi: 10.1121/1.2140935. **IF: 1.503**

5. Gregory, JW and Sullivan, JP, 2006, "Effect of Quenching Kinetics on Unsteady Response of Pressure-Sensitive Paint," *AIAA Journal*, vol. 44, no. 3, pp. 634-645, doi: 10.2514/1.15124. **IF: 1.207**

6. Gregory, JW, Sullivan, JP, Raman, G, and Raghu, S, 2007, "Characterization of the Microfluidic Oscillator," *AIAA Journal*, vol. 45, no. 3, pp. 568-576, doi: 10.2514/1.26127. **IF: 1.207**

7. Huang, CY, Gregory, JW, and Sullivan, JP, 2007, "A Modified Schlieren Technique for Micro Flow Visualization," *Measurement Science & Technology*, vol. 18, no. 5, pp. N32-N34, doi: 10.1088/0957-0233/18/5/N04. **IF: 1.433**

8. Huang, CY, Gregory, JW, and Sullivan, JP, 2007, "Microchannel Pressure Measurements Using Molecular Sensors," *Journal of Microelectromechanical Systems*, vol. 16, no. 4, pp. 777-785, doi: 10.1109/JMEMS.2007.892914. **IF: 1.754**

9. Huang, CY, Gregory, JW, and Sullivan, JP, 2007, "Flow Visualization and Pressure Measurement in Micronozzles," *Journal of Visualization*, vol. 10, no. 3, pp. 281-288, doi: 10.1007/BF03181695. **IF: 0.575**

10. Gregory, JW, Asai, K, Kameda, M, Liu, T, and Sullivan, JP, 2008, "A Review of Pressure-Sensitive Paint for High Speed and Unsteady Aerodynamics," *Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering*, vol. 222, no. 2, pp. 249-290 (**Invited Review Paper; Kenneth Harris James Best Paper Award; Thomas Hawksley Gold Medal**), doi: 10.1243/09544100JAERO243. **IF: 0.678**

11. Gregory, JW, Baughn, JW, Porter, CO, and Byerley, AR, 2008, "Optical Method for Measuring Low Wall Shear Stresses Using Thermal Tufts," *AIAA Journal*, vol. 46, no. 5, pp. 1088-1095, doi: 10.2514/1.29876. **IF: 1.207**

12. Gregory, JW, Gnanamanickam, EP, Sullivan, JP, and Raghu, S, 2009, "Variable-Frequency Fluidic Oscillator Driven by a Piezoelectric Bender," *AIAA Journal*, vol. 47, no. 11, pp. 2717-2725, doi: 10.2514/1.44078. **IF: 1.207**

13. Fang, S*, Disotell, KJ*, Long, SR*, Gregory, JW, Semmelmayer, FC, and Guyton, RW, 2011, "Application of fast-responding pressure-sensitive paint to a hemispherical dome in unsteady transonic flow," *Experiments in Fluids*, v. 50, n. 6, pp. 1495-1505, doi: 10.1007/s00348-010-1010-1. **IF: 1.670**

14. Disotell, KJ* and Gregory, JW, 2011, "Unsteady Surface Signature of a Pulsed Vortex Generator Jet," *Journal of Visualization*, v. 14, n. 2, pp. 121-127, doi: 10.1007/s12650-011-0080-3. **IF: 0.575**

15. Juliano, TJ*, Kumar, P*, Peng, D*, Gregory, JW, Crafton, J, and Fonov, S, 2011, "Single-shot, lifetime-based pressure-sensitive paint for rotating blades," *Measurement Science & Technology*, v. 22, no. 8, pp. 085403, doi: 10.1088/0957-0233/22/8/085403. **IF: 1.433**

16. Disotell, KJ* and Gregory, JW, 2011, "Measurement of Transient Acoustic Fields Using a Single-Shot Pressure-Sensitive Paint System," *Review of Scientific Instruments*, v. 82, no. 7, pp. 075112-1-8, doi: 10.1063/1.3609866. **IF: 1.614**

17. Gompertz, K*, Jensen, C*, Kumar, P*, Peng, D*, Gregory, JW, and Bons, JP, 2011, "Modification of a Transonic Blowdown Wind Tunnel to Produce Oscillating Freestream Mach Number," *AIAA Journal*, v. 49, n. 11, pp. 2555-2563, doi: 10.2514/1.J051090. **IF: 1.207**

18. Tomac, M*, Yugulis, K*, Gregory, JW, Loftus, J, and Ferrito, T, 2011, "Investigation of Vibration Phenomena Induced by Air Flow over Side View Mirror," *Journal of Fluids Engineering*, v. 133, n. 12, pp. 121102, doi: 10.1115/1.4005425. (A Top 10 Most Downloaded Article in January 2012). **IF: 0.932**

19. Fang, S*, Long, S*, Disotell, KJ*, Gregory, JW, Semmelmayer, FC, and Guyton, RW, 2012, "Comparison of Unsteady Pressure-Sensitive Paint Measurement Techniques," *AIAA Journal*, v. 50, n. 1, pp. 109-122, doi: 10.2514/1.J051167. **IF: 1.207**

20. Juliano, TJ*, Disotell, KJ*, Gregory, JW, Crafton, J, & Fonov, S, 2012, "Motion-Deblurred, Fast-Response Pressure-Sensitive Paint on a Rotor in Forward Flight," *Measurement Science & Technology*, v. 23, n. 4, 045303, doi: 10.1088/0957-0233/23/4/045303. **IF: 1.433**

21. Montefort, J, Pohl, N, Liu, T, Gregory, JW, and Crafton, J, 2013, "Thin-Wing Vibration Control Using Flexible Fins," *AIAA Journal*, v. 51, n. 9, pp. 2218-2230, doi: 10.2514/1.J052093. **IF: 1.207**

22. Peng, D*, Jensen, CD*, Juliano, TJ*, Gregory, JW, Crafton, J, Palluconi, S, and Liu, T, 2013, "Temperature-Compensated Fast Pressure-Sensitive Paint," *AIAA Journal*, vol. 51, no. 10, pp. 2420-2431, doi: 10.2514/1.J052318. **IF: 1.207**

23. Yugulis, K*, Hansford, S, Gregory, JW, and Samimy, M, 2014, "Control of High Subsonic Cavity Flow Using Plasma Actuators," *AIAA Journal*, vol. 52, no. 7, pp. 1542-1554, doi: 10.2514/1.J052668. **IF: 1.207**

24. Gregory, JW, Sakaue, H, Liu, T, and Sullivan, JP, 2014, "Fast Pressure-Sensitive Paints for Flow and Acoustic Diagnostics," *Annual Review of Fluid Mechanics*, vol. 46, pp. 303-330, doi: 10.1146/annurev-fluid-010313-141304. **IF: 11.163**

25. Gordeyev, S, De Lucca, N, Jumper, EJ, Hird, K*, Juliano, TJ*, Gregory, JW, Thordahl, J, and Wittich, DJ III, 2014, "Comparison of unsteady pressure fields on turrets with different surface features using pressure-sensitive paint," *Experiments in Fluids*, vol. 55, 1661, doi: 10.1007/s00348-013-1661-9. **IF: 1.670**

26. Disotell, KJ*, Peng, D*, Juliano, TJ*, Gregory, JW, Crafton, J, and Komerath, NM, 2014, "Single-Shot Temperature- and Pressure-Sensitive Paint Measurements on an Unsteady Helicopter Blade," *Experiments in Fluids*, vol. 55, 1671, doi: 10.1007/s00348-014-1671-2. **IF: 1.670**

27. Tomac, MN* and Gregory, JW, 2014, "Internal Jet Interactions in a Fluidic Oscillator at Low Flow Rate," *Experiments in Fluids*, vol. 55, 1730, doi: 10.1007/s00348-014-1730-8. **IF: 1.670**

28. Gregory, JW, Disotell, KJ*, Peng, D*, Juliano TJ*, Crafton, J, and Komerath, NM, 2014, "Inverse Methods for Deblurring PSP Images of Rotating Surfaces," *AIAA Journal*, vol. 52, no. 9, pp. 2045-2061, doi: 10.2514/1.J052793. **IF: 1.207**

29. Liu, T, Woodiga, S, Gregory, J, and Sullivan, J, 2014, "Global Skin Friction Diagnostics Based on Surface Mass-Transfer Visualizations," *AIAA Journal*, v. 52, n. 11, pp. 2369-2383, doi: 10.2514/1.J052682. **IF: 1.207**

30. Bhattacharya, S* and Gregory, JW, 2015, "Effect of Three-Dimensional Plasma Actuation on the Wake of a Circular Cylinder," *AIAA Journal*, v. 53, no. 4, pp. 958-967, doi: 10.2514/1.J053316. **IF: 1.207**

31. Bhattacharya, S* and Gregory, JW, 2015, "Investigation of the cylinder wake under spanwise periodic forcing with a segmented plasma actuator," *Physics of Fluids*, v. 27, no. 014102, doi: 10.1063/1.4905536. **IF: 2.031**

32. Metka, M* and Gregory, JW, 2015, "Drag Reduction on the 25-degree Ahmed Model Using Fluidic Oscillators," ASME *Journal of Fluids Engineering*, v. 137, no. 5, 051108, doi: 10.1115/1.4029535. **IF: 0.932**

33. Metka, M*, Gregory, J, Sassoon, A, and McKillen, J, 2015, "Scaling Considerations for Fluidic Oscillator Flow Control on the Square-back Ahmed Vehicle Model," *SAE Int. J. Passeng. Cars - Mech. Syst*., v. 8, no. 1, pp. 328-337, doi: 10.4271/2015-01-1561.

34. Huang, CY, Matsuda, Y, Gregory, JW, Nagai, H, and Asai, K, 2015, "The applications of pressure-sensitive paint in microfluidic systems," *Microfluidics and Nanofluidics*, v. 18, no. 5-6, pp. 739-753, doi: 10.1007/s10404-014-1510-z. **IF: 2.528**

35. Peng, D* and Gregory, JW, 2015, "Vortex dynamics during blade-vortex interactions," *Physics of Fluids*, v. 27, no. 053104, doi: 10.1063/1.4921449. **IF: 2.031**

36. Pandey, A* and Gregory, JW, 2015, "Step Response Characteristics of Polymer/Ceramic Pressure-Sensitive Paint," *Sensors*, v. 15, no. 9, pp. 22304-22324, doi: 10.3390/s150922304. **IF: 2.245**

37. Pandey, A* and Gregory, JW, 2016, "Frequency Response Characteristics of Polymer/Ceramic Pressure-Sensitive Paint," *AIAA Journal*, v. 54, no. 1, pp. 174-185, doi: 10.2514/1.J054166. **IF: 1.207**

38. Watkins, AN, Leighty, BD, Lipford, WE, Goodman, KZ, Crafton, J, and Gregory, JW, 2016, "Measuring Surface Pressures on Rotor Blades Using Pressure Sensitive Paint," *AIAA Journal*, v. 54, no. 1, pp. 206-215, doi: 10.2514/1.J054191. **IF: 1.207**

39. Tomac, MN* and Gregory, JW, 2016, "Internal Flow Physics of a Fluidic Oscillator in the Transition Regime," *Atomization and Sprays*, v. 26, no. 7, pp. 673-686, doi: 10.1615/AtomizSpr.2015012652. **IF: 0.781**

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41. Ali, MY*, Pandey, A*, and Gregory, JW, 2016, "Dynamic Mode Decomposition of Fast Pressure Sensitive Paint Data," *Sensors*, v. 16, no. 6, 862, doi: 10.3390/s16060862. **IF: 2.245**.

42. Danon, R, Gregory, JW, and Greenblatt, D, 2016, "Transient Wall-Jet Flowing over a Circular Cylinder," *Experiments in Fluids*, v. 57, no. 9, 141, doi: 10.1007/s00348-016-2226-5. **IF: 1.670.**

43. McCrink, M* and Gregory, JW, 2017, "Blade Element Momentum Modeling of Low-Re Small UAS Electric Propulsion Systems," *Journal of Aircraft*, v. 54, no. 1, pp. 163-176, doi: 10.2514/1.C033622. **IF: 0.556**

44. Peng, D* and Gregory, JW, 2017, "Asymmetric Distributions in Pressure/Load Fluctuation Levels during Blade-Vortex Interactions," *Journal of Fluids and Structures*, v. 68, pp. 58-71, doi: 10.1016/j.jfluidstructs.2016.10.008. **IF: 1.709.**

45. Hossain, MA, Prenter, R, Lundgreen, RK, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Experimental and Numerical Investigation of Sweeping Jet Film Cooling," *ASME Journal of Turbomachinery*, v. 140, n. 3, 031009. doi: 10.1115/1.4038690. **IF 2.592**

46. Bhattacharya, S* and Gregory, JW, 2018, "Optimum-Wavelength Forcing of a Bluff Body Wake," *Physics of Fluids*, v. 30, n. 1, 015101. doi: 10.1063/1.4999091. **IF 2.627**

47. Wong, OD, Watkins, AN, Goodman, KZ, Crafton, J, Forlines, A, Goss, L, Gregory, JW, and Juliano, TJ*, 2018, "Blade Tip Pressure Measurements Using Pressure-Sensitive Paint,"

Journal of the American Helicopter Society, v. 63, n. 1, 012001, pp. 1-11. doi: 10.4050/JAHS.63.012001. **IF 0.621**

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49. Hossain, MA, Agricola, L, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Sweeping jet impingement heat transfer on a simulated turbine vane leading edge," *Journal of the Global Power and Propulsion Society*, v. 2, pp. 402-414. doi: 10.22261/JGPPS.5A7OAZ

50. Tomac, MN* and Gregory, JW, 2018, "Oscillation characteristics of mutually impinging dual jets in a mixing chamber," *Physics of Fluids*, v. 30, 117102. doi: 10.1063/1.5051731 **IF 2.627**

51. Tomac, MN* and Gregory, JW, 2019, "Phase Synchronized Fluidic Oscillator Pair," *AIAA Journal*, v. 57, n. 2, pp. 670-681. doi: 10.2514/1.J057065. **IF 1.951**

52. Hossain, MA, Agricola, L, Ameri, A, Gregory, JW, and Bons, JP, 2019, "Sweeping Jet Film Cooling on a Turbine Vane," *ASME Journal of Turbomachinery*, v. 141, n. 3, 031007, 11 pp. doi: 10.1115/1.4042070. **IF 2.592**

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54. Wang, Z, Henricks, Q, Zhuang, M, Pandey, A*, Sutkowy, M*, Harter, B*, McCrink, M*, Gregory, J, 2019, "Impact of Rotor-Airframe Orientation on the Aerodynamic and Aeroacoustic Characteristics of Small Unmanned Aerial Systems," *Drones*, 3(56). doi: 10.3390/drones3030056.

55. Valasek, J, Harris, J, Pruchnicki, S, McCrink, M*, Gregory, JW, and Sizoo, DG, 2020, "Derived Angle-of-Attack and Sideslip Angle Characterization for General Aviation," *Journal of Guidance, Control, and Dynamics*, v. 43., n. 6, pp. 1039-1055. doi: 10.2514/1.G004010. **IF 2.061**

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57. Zhu, W*, McCrink, MH*, Bons, JP, and Gregory, JW, 2020, "The unsteady Kutta condition on an airfoil in a surging flow," *Journal of Fluid Mechanics*, v. 893, n. R2. doi: 10.1017/jfm.2020.254. **IF 3.137**

58. Bhattacharya, S* and Gregory, JW, 2020, "The Effect of Spatially and Temporally Modulated Plasma Actuation on Cylinder Wake," *AIAA Journal*, v. 58, n. 9, pp. 3808-3818, doi: 10.2514/1.J059269. **IF 1.951**

59. Pandey, A* and Gregory, JW, 2020, "Instabilities and turbulence in a forced turbulent convex wall jet," *Physics of Fluids*, v. 32, 095111, doi: 10.1063/5.0020708. **IF 3.514** *(An **Editor's Pick** paper).*

60. Hossain, MA, Ameri, A, Gregory, JW, and Bons, JP, 2020, "Sweeping Jet Film Cooling at High Blowing Ratio on a Turbine Vane," *ASME Journal of Turbomachinery*, v. 142, n. 12, 121010, 12 pp., doi: 10.1115/1.4047396. **IF 2.713**

61. Hossain, MA, Ameri, A, Gregory, JW, and Bons, JP, 2021, "Experimental Investigation of Innovative Cooling Schemes on an Additively Manufactured Engine Scale Turbine Nozzle Guide Vane," *ASME Journal of Turbomachinery*, v. 143, n. 5, 051004, 14 pp., doi: 10.1115/1.4049618. **IF 2.713**

62. McCrink, M* and Gregory, JW, 2021, "Design and Development of a High-Speed UAS for Beyond Visual Line-of-Sight Operations," *Journal of Intelligent & Robotic Systems*, 101: 31, 16 pp., doi: 10.1007/s10846-020-01300-2. **IF 2.259**

63. Pandey, A* and Gregory, JW, 2021, "Spanwise Wavelength of Streamwise Vortices in a Forced Turbulent Convex Wall Jet," *AIAA Journal*, v. 59, n. 5, pp. 1875-1879, doi: 10.2514/1.J060199. **IF 1.951**

64. Hossain, A, Ameri, A, Gregory, JW, and Bons, JP, 2021, "Effects of Fluidic Oscillator Nozzle Angle on the Flowfield and Impingement Heat Transfer," *AIAA Journal*, doi: 10.2514/1.J059931. **IF 1.951**

Technical Reports (* indicates advisee)

1. Watkins, AN, Leighty, BD, Lipford, WE, Wong, O, Goodman, KZ, Crafton, J, Forlines, A, Goss, L, Gregory, JW, Juliano, TJ*, 2011, "Deployment of a Pressure Sensitive Paint System for Measuring Global Surface Pressures on Rotorcraft Blades in Simulated Forward Flight: Preliminary PSP Results from Test 581 in the 14- x 22-Foot Subsonic Tunnel," National Aeronautics and Space Administration, NASA/TM-2011-217316.

Conference Papers (presenter underlined, * indicates advisee, # indicates a journal paper directly followed from this conference paper, † indicates abstract peer review, ‡ indicates paper peer review)

1. Caradonna, F, Henley, E, Silva, M, Huang, S, Komerath, NM, Reddy, U, Mahalingam, R, Funk, R, Wong, O, Ames, R, Darden, L, Villareal, L, Gregory, J, 1997, "An Experimental Study of a

Rotor in Axial Flight," AHS Specialists' Meeting on Rotorcraft Aerodynamics and Aeroacoustics, Williamsburg, VA.†#

2. Sakaue, H, Gregory, JW, Sullivan, JP, Raghu, S, 2001, "Porous Pressure Sensitive Paint for Unsteady Flow Fields," 39th AIAA Aerospace Sciences Meeting (AIAA 2001-0554), Reno, NV.†# doi: 10.2514/6.2001-554

3. Gregory, JW, Sakaue, H, Sullivan, JP, Raghu, S, 2001, "Characterization of Miniature Fluidic Oscillator Flowfields using Porous Pressure Sensitive Paint," post-deadline paper at the ASME Fluids Engineering Division Summer Meeting (FEDSM 2001-18058), New Orleans, LA.†

4. Huang, CY, Sakaue, H, Gregory, JW, Sullivan, JP, 2002, "Molecular Sensors for MEMS," 40th AIAA Aerospace Sciences Meeting (AIAA 2002-0256), Reno, NV.† doi: 10.2514/6.2002-256

5. Gregory, JW, Sakaue, H, Sullivan, JP, 2002, "Unsteady Pressure Measurements in Turbomachinery Using Porous Pressure Sensitive Paint," 40th AIAA Aerospace Sciences Meeting (AIAA 2002-0084), Reno, NV.† doi: 10.2514/6.2002-84

6. Gregory, JW, Sakaue, H, Sullivan, JP, 2002, "Fluidic Oscillator as a Dynamic Calibration Tool," 22nd AIAA Aerodynamic Measurement Technology and Ground Testing Conference (AIAA 2002-2701), St. Louis, MO.† doi: 10.2514/6.2002-2701

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8. Gregory, JW and Sullivan, JP, 2003, "Characterization of Hartmann Tube Flow with Porous Pressure-Sensitive Paint," 33rd AIAA Fluid Dynamics Conference and Exhibit (AIAA-2003-3713), Orlando, FL.† doi: 10.2514/6.2003-3713

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10. Gregory, JW, 2004, "Porous Pressure-Sensitive Paint for Measurement of Unsteady Pressures in Turbomachinery," 42nd AIAA Aerospace Sciences Meeting (AIAA 2004-0294), Reno, NV (***1st Place, AIAA National Student Paper Competition***).† doi: 10.2514/6.2004-294

11. Gregory, JW, Sullivan, JP, Raman, G, and Raghu, S, 2004, "Characterization of a Micro Fluidic Oscillator for Flow Control," 2nd AIAA Flow Control Conference (AIAA 2004-2692), Portland, OR.†# doi: 10.2514/6.2004-2692

12. Gregory, JW, Sullivan, JP, and Raghu, S, 2004, "Visualization of Internal Jet Mixing in a Fluidic Oscillator," 11th International Symposium on Flow Visualization, University of Notre Dame.†#

13. Gregory, JW, and Peterson, SD, 2005, "Flow Visualization with Laser-Induced Thermal Tufts," 43rd AIAA Aerospace Sciences Meeting (AIAA 2005-0699), Reno, NV.† doi: 10.2514/6.2005-699

14. Gregory, JW, Gnanamanickam, EP, Sullivan, JP, and Raghu, S, 2005, "Variable-Frequency Fluidic Oscillator Driven by Piezoelectric Devices," 43rd AIAA Aerospace Sciences Meeting (AIAA 2005-0108), Reno, NV.†# doi: 10.2514/6.2005-108

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Paint," 43rd AIAA Fluid Dynamics Conference (AIAA 2013-3135), San Diego, CA, June 24-27, 2013.† doi: 10.2514/6.2013-3135

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55. McCrink, MH* and Gregory, JW, 2014, "Flight Test Protocol for Electric Powered Small Unmanned Aerial Systems," AIAA Atmospheric Flight Mechanics Conference (AIAA 2014-2814), Atlanta, GA, June 16-20, 2014.† doi: 10.2514/6.2014-2814

56. Tomac, MN* and Gregory, JW, 2014, "Internal Flow Physics of a Fluidic Oscillator in the Transition Regime," ***Invited Paper and Presentation*** at the Active Flow and Combustion Control 2014 conference, Technische Universität Berlin, Berlin, Germany, September 10-12, 2014.†# doi: 10.14279/depositonce-37

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59. Naigle, S*, Frankhouser, M*, Hird, K*, Bons, JP, and Gregory, JW, 2015, "Blowing Flow Control of Dynamic Stall under Coupled Pitch and Freestream Oscillations," Paper No. 125, American Helicopter Society 71st Annual Forum, Virginia Beach, VA, May 5-7, 2015.†

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62. McCrink, MH* and Gregory, JW, 2015, "Blade Element Momentum Modeling of Low-*Re* Small UAS Electric Propulsion Systems," AIAA Aviation Forum, 33rd AIAA Applied Aerodynamics Conference (AIAA 2015-3296), Dallas, TX, June 22-26, 2015.†# doi: 10.2514/6.2015-3296

63. Frankhouser, M* and Gregory, JW, 2015, "Nanosecond Dielectric Barrier Discharge Plasma Actuator Flow Control of Compressible Dynamic Stall," AIAA Aviation Forum, 46th AIAA Plasmadynamics and Lasers Conference (AIAA 2015-2341), Dallas, TX, June 22-26, 2015.† doi: 10.2514/6.2015-2341

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65. Pandey, A*, Gregory, JW, Stanfield, S, and Crafton, J, 2016, "Comparison of Blur Elimination Techniques for PSP Images of Rotating Surfaces," 54th AIAA Aerospace Sciences Meeting (AIAA 2016-2019), San Diego, CA, January 4-8, 2016.† doi: 10.2514/6.2016-2019

66. Gregory, JW and McCrink, MH*, 2016, "Accuracy of Smartphone-Based Barometry for Altitude Determination in Aircraft Flight Testing," 54th AIAA Aerospace Sciences Meeting (AIAA 2016-0270), San Diego, CA, January 4-8, 2016.† doi: 10.2514/6.2016-0270

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70. Metka, M*, Gregory, J, McKillen, J, 2016, "Investigation of Fluidic Oscillator Flow Control for Ground Vehicles," Second International Conference in Numerical and Experimental Aerodynamics of Road Vehicles and Trains (Aerovehicles 2), Goteborg, Sweden, June 21-23, 2016.†

71. Hossain, MA, Prenter, R, Agricola, LM, Lundgreen, RK, Ameri, A, Gregory, JW, and Bons, JP, 2017, "Effects of Roughness on the Performance of Fluidic Oscillators," 55th AIAA Aerospace Sciences Meeting (AIAA 2017-0770), Grapevine, TX, January 9-13, 2017.† doi: 10.2514/6.2017-0770

72. Lundgreen, RK, Hossain, MA, Prenter, R, Bons, JP, Gregory, J, and Ameri, A, 2017, "Impingement Heat Transfer Characteristics of a Sweeping Jet," 55th AIAA Aerospace Sciences Meeting (AIAA 2017-1535), Grapevine, TX, January 9-13, 2017.† doi: 10.2514/6.2017-1535

73. McCrink, MH* and Gregory, JW, 2017, "Range and Endurance Estimation for Low-Re Electric UAS," 55th AIAA Aerospace Sciences Meeting (AIAA 2017-1214), Grapevine, TX, January 9-13, 2017.† doi: 10.2514/6.2017-1214

74. Hossain, MA, Prenter, R, Lundgreen, RK, Agricola, LM, Ameri, A, Gregory, JW, and Bons, JP, 2017, "Investigation of Crossflow Interaction of an Oscillating Jet," 55th AIAA Aerospace Sciences Meeting (AIAA 2017-1690), Grapevine, TX, January 9-13, 2017.† doi: 10.2514/6.2017-1690

75. Bons, JP, Frankhouser, MW*, and Gregory, JW, 2017, "Synchronized Flow Control of Dynamic Stall under Coupled Pitch and Freestream Oscillations," American Helicopter Society 73rd Annual Forum (Paper number 73-2017-0199), Fort Worth, TX, May 9-11, 2017.†

76. Tomac, MN* and Gregory, JW, 2017, "Phase-Synchronized Fluidic Oscillator Pair," 47th AIAA Fluid Dynamics Conference (AIAA 2017-3314), Denver, CO, June 5-9, 2017.† doi: 10.2514/6.2017-3314

77. McCrink, M* and Gregory, JW, 2017, "Aerodynamic Parameter Estimation for Derived Angle of Attack Systems," AIAA Atmospheric Flight Mechanics Conference (AIAA 2017-4061), Denver, CO, June 5-9, 2017.† doi: 10.2514/6.2017-4061

78. Hossain, MA, Prenter, R, Lundgreen, RK, Ameri, A, Gregory, JW, and Bons, JP, 2017, "Experimental and Numerical Investigation of Sweeping Jet Film Cooling," Proceedings of

the ASME Turbo Expo 2017: Turbomachinery Technical Conference and Exposition, GT2017-64479, Charlotte, NC, June 26-30, 2017. ‡ #

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80. Hossain, MA, Agricola, LM, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Effects of Curvature on the Performance of Sweeping Jet Impingement Heat Transfer," 2018 AIAA Aerospace Sciences Meeting (AIAA 2018-0243), Kissimmee, FL, January 8-12, 2018.† doi: 10.2514/6.2018-0243.

81. McCrink, MH* and Gregory, JW, 2018, "Design and Development of a High-Speed UAS for Beyond Visual Line-of-Sight Operations," 2018 AIAA Aerospace Sciences Meeting (AIAA 2018-0750), Kissimmee, FL, January 8-12, 2018.†# doi: 10.2514/6.2018-0750.

82. Pandey, A*, Sutkowy, M*, McCrink, MH* and Gregory, JW, 2018, "Aerodynamic Study of a Quad-Rotor Helicopter using Pressure-Sensitive Paint," 2018 AIAA Aerospace Sciences Meeting (AIAA 2018-1526), Kissimmee, FL, January 8-12, 2018.† doi: 10.2514/6.2018-1526.

83. Sutkowy, ML, Jr.*, Pandey, A*, McCrink, MH* and Gregory, JW, 2018, "Rotor Wake Structure Development in Low Reynolds Number Conditions," 2018 AIAA Aerospace Sciences Meeting (AIAA 2018-1830), Kissimmee, FL, January 8-12, 2018.† doi: 10.2514/6.2018-1830.

84. Wang, Z, Pandey, A*, Sutkowy, M*, Harter, B*, McCrink, MH*, Gregory, JW, and Zhuang, M, 2018, "A Comprehensive Approach to Study Aerodynamic and Aeroacoustic Performances of Small Multicopter Unmanned Aerial Systems," 2018 AIAA Aerospace Sciences Meeting (AIAA 2018-0268), Kissimmee, FL, January 8-12, 2018.†# doi: 10.2514/6.2018-0268.

85. Sutkowy, ML, Jr.*, Harter, B*, McCrink, MH*, and Gregory, JW, 2018, "Impact of Wake Structure Characteristics on Small-Scale Rotor Performance over a Range of Reynolds Numbers," American Helicopter Society 74th Annual Forum (Paper number 74-2018-0135), Phoenix, AZ, May 14-17, 2018.†

86. Hossain, MA, Agricola, L, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Sweeping Jet Film Cooling on a Turbine Vane," Proceedings of the ASME Turbo Expo 2018: Turbine Technical Conference and Exposition, GT2018-77099, Oslo, Norway, June 11-15, 2018. ‡ #

87. Hossain, MA, Agricola, LM, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Sweeping jet impingement cooling on a simulated turbine vane leading edge," Global Power and Propulsion Conference, Montreal Canada, GPPS2018-0148. ‡# doi: 10.5281/zenodo.1342688.

88. Lee, H*, McCrink, MH*, and Gregory, JW, 2018, "Unmanned Aerial System Framework for Human-Robot Interaction," 2018 AIAA Aviation Forum (AIAA 2018-2984), Atlanta, GA, June 25-29, 2018. † doi: 10.2514/6.2018-2984.

89. Zhu, W*, Harter, B*, Gregory, JW, and Bons, JP, 2018, "Characterizing Wave Propagation in an Unsteady Transonic Wind Tunnel," 2018 AIAA Aviation Forum (AIAA 2018-3568), Atlanta, GA, June 25-29, 2018. † doi: 10.2514/6.2018-3568.

90. Thorpe, R*, McCrink, MH*, and Gregory, JW, 2018, "Measurement of Unsteady Gusts in an Urban Wind Field using a UAV-based Anemometer," 2018 AIAA Aviation Forum (AIAA 2018-4218), Atlanta, GA, June 25-29, 2018. † doi: 10.2514/6.2018-4218.

91. Jiao, L, Chen, Y, Peng, D, Liu, Y, and Gregory, JW, 2018, "Experimental Study of the Interaction between Rotor Wake and a Cylinder in Hover," 2018 AIAA Aviation Forum (AIAA 2018-4214), Atlanta, GA, June 25-29, 2018. † doi: 10.2514/6.2018-4214.

92. Hossain, MA, Agricola, LM, Ameri, A, Gregory, J, Bons, JP, "Sweeping jet film cooling on a turbine vane," ASME Turbo Expo 2018, GT2018-77099. ‡# doi: 10.1115/GT2018-77099.

93. Agricola, LM, Hossain, MA, Ameri, A, Gregory, J, Bons, JP, "Turbine Vane Leading Edge Impingement Cooling with a Sweeping Jet," ASME Turbo Expo 2018, GT2018-77073. ‡ # doi: 10.1115/GT2018-77073.

94. Hossain, MA, Agricola, LA, Ameri, A, Gregory, JW, and Bons, JP, 2018, "Effects of Exit Fan Angle on the Heat Transfer Performance of Sweeping Jet Impingement," 2018 AIAA Propulsion and Energy Forum (AIAA 2018-4886), Cincinnati, OH, July 9-11, 2018. †# doi: 10.2514/6.2018-4886.

95. Lee, H*, McCrink, M*, and Gregory, JW, 2019, "Visual-Inertial Odometry for Unmanned Aerial Vehicle using Deep Learning," 2019 AIAA SciTech (AIAA 2019-1410), San Diego, CA, January 7-11, 2019. † doi: 10.2514/6.2019-1410.

96. Zhu, W*, Bons, JP, and Gregory, JW, 2019, "Reynolds Scaling Effects on Dynamic Stall of VR-7 and VR-12 Airfoils," 2019 SciTech (AIAA 2019-0304), San Diego, CA, January 7-11, 2019. † doi: 10.2514/6.2019-0304.

97. Hossain, MA, Ameri, A, Gregory, JW, and Bons, JP, 2019, "Effects of Rotation on a Fluidic Oscillator," 2019 SciTech (AIAA 2019-0885), San Diego, CA, January 7-11, 2019. † doi: 10.2514/6.2019-0885 and 10.2514/6.2019-0885.c1.

98. Singhal, A*, Thorpe, R*, McCrink, M*, and Gregory, JW, 2019, "Flight Test Vehicle for Determination of Multi-Rotor UAV Trim Conditions," American Helicopter Society 75th Annual Forum (Paper number 75-2019-0391), Phoenix, AZ, May 14-17, 2019.†

99. Harter, B*, McCrink, M*, and Gregory, JW, 2019, "Identification of Lagrangian Coherent Structures using the Background-Oriented Schlieren Method," 2019 AIAA Aviation Forum (AIAA 2019-2810), Dallas, TX, June 17-21, 2019.† doi: 10.2514/6.2019-2810.

100. Hossain, MA, Asar, ME, Gregory, J, Bons, JP, "Experimental Investigation of Sweeping jet film cooling in a transonic turbine cascade," ASME Turbo Expo 2019, Phoenix, AZ. Paper number: 2019-91678. ‡ # doi: 10.1115/GT2019-91678.

101. Hossain, MA, Ameri, A, Gregory, J, Bons, JP, "Sweeping jet film cooling at high blowing ratio on a turbine vane," ASME Turbo Expo 2019, Phoenix, AZ. Paper number: GT2019-91696. ‡ # doi: 10.1115/GT2019-91696.

102. Harter, B* and Gregory, JW, 2020, "Lagrangian Coherent Structures in Optimal Vortex Ring Formation," 2020 AIAA SciTech Forum (AIAA 2020-0141), Orlando, FL, January 6-10, 2020.† doi: 10.2514/6.2020-0141.

103. Zhu, W*, McCrink, MH*, Bons, JP, and Gregory, JW, 2020, "Aerodynamic Performance and Trailing Edge Flow Physics on an Airfoil in an Oscillating Freestream," 2020 AIAA SciTech Forum (AIAA 2020-1758), Orlando, FL, January 6-10, 2020.† doi: 10.2514/6.2020-1758.

104. Hossain, MA, Ameri, A, Gregory, JW, and Bons, JP, 2020, "Experimental Investigation of Innovative Cooling Schemes on an Additively Manufactured Engine Scale Turbine Nozzle Guide Vane," ASME Turbo Expo 2020, Virtual Conference. Paper number: GT2020-15707. ‡ # doi: 10.1115/GT2020-15707.

105. Emshoff, BL*, McCrink, MH*, and Gregory, JW, 2021, "Low-Altitude Radar Track Filtering and Classification Using Deep Learning, 2021 AIAA SciTech Forum (AIAA 2021-1411), Virtual Conference, January 11-15 & 19-21, 2021.† doi: 10.2514/6.2021-1411.

Invited Seminar Presentations

1. **Illinois Institute of Technology**, Department of Mechanical, Materials, and Aerospace Engineering, Chicago, IL, "Pressure-Sensitive Paint for Unsteady Flow Measurements," February 3, 2003.

2. **United States Air Force Academy**, Department of Aeronautics, Colorado Springs, CO, "Development of Fluidic Oscillators for Flow Control Applications," February 8, 2005.

3. **University of Notre Dame**, Department of Aerospace and Mechanical Engineering, South Bend, IN, "Development of Fluidic Oscillators for Flow Control Applications," February 24, 2005.

4. **American University of Beirut**, Department of Mechanical Engineering, Beirut, Lebanon, "Unsteady Aerodynamic Measurements with Pressure-Sensitive Paint," April 5, 2005.

5. **Georgia Institute of Technology**, School of Aerospace Engineering, Atlanta, GA, "Development of Fluidic Oscillators for Flow Control Applications," April 11, 2005.

6. **Oklahoma State University**, School of Mechanical and Aerospace Engineering, Stillwater, OK, "Development of Fluidic Oscillators for Flow Control Applications," July 14, 2005.

7. **University of Michigan**, School of Aerospace Engineering, Ann Arbor, MI, "Development of Fluidic Oscillators for Flow Control Applications," September 6, 2005.

8. **University of Wyoming**, Department of Mechanical Engineering, Laramie, WY, "Development of Pressure-Sensitive Paint for Unsteady Measurements," March 30, 2006.

9. **Air Force Research Laboratory**, Air Vehicles Directorate, Wright-Patterson AFB, OH, "Development of Fluidic Oscillators for Flow Control Applications," July 6, 2006.

10. **Center for Naval Analyses Corporation**, Alexandria, VA, "Development of Pressure-Sensitive Paint for Unsteady Measurements," July 24, 2006.

11. **University of Toronto**, Institute for Aerospace Studies, Toronto, ON, Canada, "Development of Fluidic Oscillators for Flow Control Applications," December 14, 2006.

12. **United States Naval Academy**, Mechanical Engineering Department, Annapolis, MD, "Development of Pressure-Sensitive Paint for Unsteady Measurements," March 1, 2007.

13. **University of Maryland**, Department of Aerospace Engineering, College Park, MD, "Development of Pressure-Sensitive Paint for Unsteady Measurements," March 8, 2007.

14. **Middle East Technical University**, Department of Aerospace Engineering, Ankara, Turkey, "Development of Pressure-Sensitive Paint for Unsteady Measurements," March 26, 2007.

15. **Worcester Polytechnic Institute**, Department of Mechanical Engineering, Worcester, MA, "Development of Pressure-Sensitive Paint for Unsteady Measurements," April 12, 2007.

16. **University of Tennessee**, Mechanical, Aerospace, and Biomedical Engineering Department, Knoxville, TN, "Development of Pressure-Sensitive Paint for Unsteady Measurements," April 23, 2007.

17. **The Ohio State University**, Department of Aerospace Engineering, Columbus, OH, "Development of Pressure-Sensitive Paint for Unsteady Measurements," May 4, 2007.

18. **Air Force Research Laboratory**, Air Vehicles Directorate, Wright-Patterson AFB, OH, "Unsteady Pressure Measurements with Porous Pressure-Sensitive Paint," April 9, 2009.

19. **Western Michigan University**, Department of Mechanical and Aeronautical Engineering, Kalamazoo, MI, "Unsteady Pressure Measurements with Porous Pressure-Sensitive Paint," March 23, 2010.

20. **Vanderbilt University**, Department of Mechanical Engineering, Nashville, TN, "Unsteady Pressure Measurements with Porous Pressure-Sensitive Paint," April 5, 2010.

21. **University of Notre Dame**, Department of Aerospace and Mechanical Engineering, South Bend, IN, "Unsteady Pressure Measurements with Porous Pressure-Sensitive Paint," November 12, 2010.

22. **University of Illinois Urbana-Champaign**, Department of Aerospace Engineering, Urbana, IL, "Targeting of three-dimensional wake instabilities for bluff body flow control," November 11, 2013.

23. **University of Illinois Urbana-Champaign**, Department of Aerospace Engineering, Urbana, IL, "Unsteady Pressure Measurements on Rotor Blades in Forward Flight using Porous Pressure-Sensitive Paint," January 23, 2014.

24. **Shanghai Jiao Tong University**, School of Mechanical Engineering, Shanghai, China, "Unsteady Pressure Measurements on Rotor Blades using Fast Pressure-Sensitive Paint," November 11, 2014.

25. **Georgia Institute of Technology**, School of Aerospace Engineering, Atlanta, GA, "Unsteady Pressure Measurements on Rotor Blades in Forward Flight using Porous Pressure-Sensitive Paint," February 12, 2015.

26. **Technion – Israel Institute of Technology**, Faculty of Mechanical Engineering, Haifa, Israel, "Unsteady Pressure Measurements on Rotor Blades in Forward Flight using Porous Pressure-Sensitive Paint," February 23, 2015.

27. **Tel Aviv University**, School of Mechanical Engineering, Tel Aviv, Israel, "Fast-Response Pressure-Sensitive Paint," March 9, 2015.

28. **Ben-Gurion University of the Negev**, Department of Mechanical Engineering, Beer-Sheva, Israel, "Fast-Response Pressure-Sensitive Paint," March 19, 2015.

29. **Embry-Riddle Aeronautical University**, Department of Aerospace Engineering, Daytona Beach, FL, "Fast-Response Pressure-Sensitive Paint," March 7, 2016.

30. **University of Arizona**, Department of Aerospace and Mechanical Engineering, Tucson, AZ, "Fast-Response Pressure-Sensitive Paint," March 24, 2016.

31. **10th ABCM Spring School on Transition and Turbulence**, São José Dos Campos, SP – Brazil, "Fast-Response Pressure-Sensitive Paint," September 19-23, 2016.

32. **Nanjing University of Aeronautics and Astronautics**, School of Aerospace Engineering, Nanjing, China, "Compressible Dynamic Stall in an Unsteady Freestream," November 3, 2017.

33. **Shanghai Jiao Tong University**, School of Mechanical Engineering, Shanghai, China, "Optimum-Wavelength Forcing of a Bluff Body Wake," November 6, 2017.

34. **Purdue University**, School of Aeronautics and Astronautics, West Lafayette, Indiana, "Setting World Records for Speed and Distance with an Autonomous Jet-Powered UAV," December 5, 2017.

35. **Auburn University**, Department of Aerospace Engineering, Auburn, Alabama, "Unsteady Compressible Aerodynamics in a Time-Varying Freestream," October 19, 2018.

36. **University of California – Irvine**, Department of Mechanical and Aerospace Engineering, "Unsteady Compressible Aerodynamics in a Time-Varying Freestream," January 11, 2019.

37. **Purdue University**, School of Aeronautics and Astronautics, West Lafayette, Indiana, "Limitations of Unsteady Airfoil Theory for Surging Flows," March 25, 2019.

38. **North Carolina A&T State University**, Autonomous Control and Information Technology Institute, "Safe, Autonomous Flight of Air Vehicles in an Urban Environment," April 5, 2019.

39. **NASA Glenn Research Center**, Communications and Intelligent Systems Division, Distinguished Technical Lecture Series, "Development of an Unmanned Aircraft Traffic Management System," June 20, 2019.

40. **University of Illinois Urbana-Champaign**, Department of Aerospace Engineering, Urbana, IL, "Limitations of Unsteady Airfoil Theory for Surging Flows," November 14, 2019.

41. **University of Texas**, Department of Aerospace Engineering, Austin, TX, "Limitations of Unsteady Airfoil Theory for Surging Flows," February 6, 2020.

Presentations (presenter underlined, * indicates advisee)

1. Gregory, JW, Sakaue, H, Sullivan, JP, Raghu, S, 2000, "Porous Pressure Sensitive Paint for Unsteady Flow Fields," 8th Pressure Sensitive Paint Workshop, NASA Langley Research Center, Hampton, VA.

2. Gregory, JW, Sakaue, H, Sullivan, JP, 2002, "Unsteady Pressure Measurements in Turbomachinery Using Porous Pressure Sensitive Paint," 9th Pressure Sensitive Paint Workshop, George Washington University, Washington, DC.

3. Gregory, JW and Sullivan, JP, 2003, "Porous Pressure-Sensitive Paint for Measurement of Unsteady Pressures in Turbomachinery," AIAA Region III Student Conference, Paducah, KY (***1st Place, AIAA Region III Student Paper Competition***).

4. Bencic, TJ, Bell, JH, Schairer, E, and Gregory, J, 2004, "Time-Resolved Measurements with Pressure and Temperature-Sensitive Paints," *Advanced Measurement Techniques for Aero Engines and Stationary Gas Turbines*, VKI Lecture Series, von Karman Institute for Fluid Dynamics, Brussels, Belgium, March 1-5, 2004.

5. Bencic, TJ, VanderWal, RL, and Gregory, JW, 2004, "Nanorod Material Development for Fast Response Pressure-Sensitive Paint Applications," Great Lakes Photonics Symposium, Cleveland, OH.

6. Gregory, JW, 2004, "Unsteady Measurements with Pressure-Sensitive Paint: Recent Work at Purdue University," 21st Century Center of Excellence of Flow Dynamics Seminar, Nikko, Japan.

7. Gregory, JW, 2005, "Pressure-Sensitive Paint for Unsteady Aerodynamic Measurements," AIAA Mid-Atlantic Region Mini Conference at the Johns Hopkins Applied Physics Lab.

8. Gregory, JW, Sullivan, JP, and Raghu, S, 2005, "Jet Interaction Studies in a Fluidic Oscillator," 58th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, Chicago, IL.

9. Gregory, JW, 2006, "Assessment of Noise Reduction Technologies for Civilian Aircraft," 61st Annual Meeting of the American Scientific Affiliation, Grand Rapids, MI.

10. Gregory, JW, Sullivan, JP, Wanis, SS, and Komerath, NM, 2006, "Pressure-sensitive paint as a distributed optical microphone array," 4th Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan, Honolulu, HI, 28 November – 2 December, 2006 (***Best Paper by a Young Presenter Award***).

11. Gregory, JW, Enloe, CL, and McLaughlin, TE, 2007, "Gaseous Effects on Plasma Formation and Force Production of a Single DBD Plasma Actuator," 4th International Conference on Flow Dynamics, Sendai, Japan, September 26-28, 2007.

12. Gregory, JW, Porter, CO, Sherman, DM, and McLaughlin, TE, 2007, "Drag Reduction on a Circular Cylinder using Spatially Distributed Forcing," 60th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, Salt Lake City, UT, November 17-20, 2007.

13. Gregory, JW, Porter, CO, Sherman, DM, and McLaughlin, TE, 2008, "Circular Cylinder Wake Control using Spatially Distributed Plasma Forcing," 33rd Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 4, 2008.

14. Disotell, KJ*, and Gregory, JW, 2009, "Visualization of Pulsed Vortex Generator Jets with Porous Pressure-Sensitive Paint," 34th Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 3, 2009.

15. Fang, S*, Disotell, KJ*, Gregory, JW, Semmelmayer, FC, and Guyton, RW, 2009, "Unsteady Surface Pressure Measurements On A Hemispherical Dome With Porous Pressure-Sensitive Paint," 34th Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 3, 2009.

16. Gregory, JW, Porter, CO, McLaughlin, TE, 2009, "Bluff Body Wake Control using Spatially Distributed Plasma Forcing," *From fast cars to slow flows over bluff bodies*, Imperial College, London, UK, June 29-30, 2009.

17. Tomac, MN*, and Gregory, JW, 2009, "Investigation of Flow-Induced Vibrations on Side-View Mirrors," Sixth International Conference on Flow Dynamics, Sendai, Japan, November 4-6, 2009.

18. Gregory, JW, Peng, D*, Kumar, P*, and Fang, S*, 2009, "Recent Developments in Unsteady Pressure-Sensitive Paint Methods," Sixth International Conference on Flow Dynamics, Sendai, Japan, November 4-6, 2009.

19. Tomac, MN*, Gregory, JW, Loftus, J, and Ferrito, T, 2010, "Effect of the Flow on Vibration Characteristics of Side-View Mirrors," 35th Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 9, 2010.

20. Peng, D*, Gregory, JW, Crafton, JW, and Fonov, S, 2010, "Development of a Two Layer Dual-luminophore Pressure Sensitive Paint and its Applications in Unsteady Flow Field Measurements," 10th PSP Workshop, Beijing, China, May 23-25, 2010.

21. Fang, S*, Long, SR*, Disotell, KJ*, Gregory, JW, Semmelmayer, FC, and Guyton, RW, 2010, "Comparison of Unsteady Pressure-Sensitive Paint Measurement Techniques," ***Invited Presentation***, PSP Workshop, Beijing, China, May 23-25, 2010.

22. Kumar, P*, Peng, D*, Gregory, JW, Crafton, JW, and Fonov, S, 2010, "Development of Single-Shot Lifetime PSP Measurement Technique for Rotorcraft," PSP Workshop, Beijing, China, May 23-25, 2010.

23. Gregory, JW, Guyton, RW, and Babinsky, HB, 2010, "Testing Capabilities for Transonic Flow Control," Invited panel session, presented at 5th AIAA Flow Control Conference, Chicago, IL, June 28 – July 1, 2010.

24. Long, SR* and Gregory, JW, 2011, "A Temperature Corrected Dual-Luminophore Pressure-Sensitive Paint System for Unsteady Pressure Measurements," AIAA Region III Student Conference, Dayton, OH (***1st Place in the Undergraduate Paper Category, AIAA Region III Student Paper Competition***).

25. Disotell, KJ* and Gregory, JW, 2011, "Measurement of Transient Acoustic Fields Using a Single-Shot Pressure-Sensitive Paint System," AIAA Region III Student Conference, Dayton, OH (***1st Place in the Graduate Presentation Category, AIAA Region III Student Paper Competition***).

26. Gregory, JW and Bhattacharya, S*, 2011, "Effects of Spanwise-Modulated Blowing on the Cylinder Near-Wake," DFD11-2011-002218, 64th Annual Meeting of the APS Division of Fluid Dynamics, November 20-22, 2011, Baltimore, MD.

27. Bhattacharya, S* and Gregory, JW, 2012, "A Comparative Study of Spatially Modulated Forcing of Cylinder Wake with Segmented Plasma Actuators of Different Wavelengths," BAPS.2012.DFD.G25.6, 65th Annual Meeting of the APS Division of Fluid Dynamics, November 18-20, 2012, San Diego, CA.

28. Tomac, M* and Gregory, J, 2013, "Jet Interactions in a Feedback-Free Fluidic Oscillator in the Transition Region," BAPS.2013.DFD.E12.1, 66th Annual Meeting of the APS Division of Fluid Dynamics, November 24-26, 2013, Pittsburgh, PA.

29. Disotell, K* and Gregory, J, 2013, "Unsteady Structure of Three-Dimensional Stall Cells," BAPS.2013.DFD.G4.3, 66th Annual Meeting of the APS Division of Fluid Dynamics, November 24-26, 2013, Pittsburgh, PA.

30. Bhattacharya, S* and Gregory, JW, 2013, "The Influence of Spanwise Segmented Plasma Actuator Forcing on a Circular Cylinder Wake and the Selection of Optimum Wavelength," BAPS.2013.DFD.G25.4, 66th Annual Meeting of the APS Division of Fluid Dynamics, November 24-26, 2013, Pittsburgh, PA.

31. Peng, D* and Gregory, J, 2013, "Experimental Study of Vortex Dynamics during Blade-Vortex Interaction," BAPS.2013.DFD.R12.7, 66th Annual Meeting of the APS Division of Fluid Dynamics, November 24-26, 2013, Pittsburgh, PA.

32. Metka, M*, Gregory, JW, Sassoon, A, and McKillen, J, 2014, "Drag Reduction on the Square Back Ahmed Model Using Fluidic Oscillators," presented at the 1st Aerovehicles Conference, Bordeaux, France, June 23-25, 2014. (Including a published 2-page, peer-reviewed abstract.)

33. Gregory, JW, 2014, "UAS at The Ohio State University," Moderator and Speaker for the UAS Academic Review panel session at the Ohio UAS Conference, August 26, 2014, Dayton, OH.

34. Metka, M*, Gregory, JW, Sassoon, A, and McKillen, J, 2015, "Scaling Considerations for Fluidic Oscillator Flow Control on the Square-back Ahmed Vehicle Model," 2015-01-1561, SAE World Congress and Exhibition, Detroit, MI, April 21-23, 2015 (talk accompanying the journal paper by the same title).

35. Disotell, K*, Nikoueeyan, P, Naughton, J, and Gregory, JW, 2015, "Application of Fast Pressure-Sensitive Paint to an Oscillating Wind Turbine Airfoil," North American Wind Energy Academy Symposium, Blackburg, VA, June 9-11, 2015.

36. Pandey, A* and Gregory, JW, 2015, "Iterative Blind Deconvolution Algorithm for Deblurring PSP Image of Rotating Surfaces," BAPS.2015.DFD.M27.2, 68th Annual Meeting of the APS Division of Fluid Dynamics, November 22-24, 2015, Boston, MA.

37. Gregory, JW, Danon, R, and Greenblatt, D, 2015, "Time-Resolved Visualization of Görtler Vortices in a Pulsed Convex Wall Jet using Fast Pressure-Sensitive Paint," BAPS.2015.DFD.M28.1, 68th Annual Meeting of the APS Division of Fluid Dynamics, November 22-24, 2015, Boston, MA.

38. Gregory, JW, 2016, "Active Flow Control at Ohio State: From Laboratory Basic Research to Flight Application," ONR/NAVAIR workshop, *Active Flow Control for Naval Aviation Fixed Wing Aeromechanics Applications*, Patuxent River, MD, April 6, 2016.

39. Zhu, W* and Gregory, JW, 2017, "Characterization of Noise Generation in Fluidic Oscillators," 14th International Conference on Fluid Control, Measurements and Visualization (FLUCOME), University of Notre Dame, Notre Dame, IN, October 9, 2017.

40. Pandey, A* and Gregory, JW, 2017, "Modifying the inlet characteristics of a Turbulent Coanda Wall Jet," BAPS.2017.DFD.Q16.00002, 70th Annual Meeting of the APS Division of Fluid Dynamics, November 19-21, 2017, Denver, CO.

41. Gregory, JW, Zhu, W*, and Bons, JP, 2018, "Unsteady Compressibility Effects on a Surging Airfoil," invited presentation for a special session on surging airfoils, AIAA SciTech, January 8, 2018.

42. Gregory, JW, 2018, "Opportunities and Challenges for Increasing Autonomy to meet Air Force Needs," US Air Force Science and Technology 2030 Workshop, Indiana University, Bloomington, IN, May 10, 2018 (Invited).

43. Sutkowy, M*, Thorpe, R*, Harter, B*, McCrink, M*, and Gregory, JW, 2018, "Challenges to Operation of UAVs in Urban Wind Fields," 18th Polish-American Conference on Science and Technology, Warsaw, Poland, May 24, 2018 (Invited).

44. Gregory, JW, 2018, "Risks and Opportunities of Autonomous Air Vehicles," Risk Implications of Smart Technologies, Risk Institute, Fisher College of Business, The Ohio State University, Columbus, OH, June 14, 2018 (Invited).

45. Gregory, JW, Zhu, W*, Altamirano, G*, Plank, J*, and Bons, JP, 2018, "Unsteady Lift on a Fixed-AoA Airfoil in Unsteady Freestream," BAPS.2018.DFD.A16.00005, 71st Annual Meeting of the APS Division of Fluid Dynamics, November 18-20, 2018, Atlanta, GA.

46. Harter, B*, McCrink, M*, and Gregory, JW, 2018, "Visualization of Lagrangian Coherent Structures in Vortex Formation and Advection," BAPS.2018.DFD.L17.00002, 71st Annual Meeting of the APS Division of Fluid Dynamics, November 18-20, 2018, Atlanta, GA.

47. Pandey, A* and Gregory, JW, 2018, "Secondary Instability of Streamwise Vortices in a Turbulent Convex Wall Jet," BAPS.2018.DFD.Q18.00003, 71st Annual Meeting of the APS Division of Fluid Dynamics, November 18-20, 2018, Atlanta, GA.

48. Gregory, JW, Zhu, W*, Altamirano, G*, Harter, B*, McCrink, M*, and Bons, JP, 2019, "Limitations of Unsteady Airfoil Theory for Surging Flows," invited presentation for a special session on surging airfoils, AIAA SciTech, January 7, 2019.

49. Harter, B*, McCrink, M*, and Gregory, JW, 2019, "Identification of Lagrangian Coherent Structures in Vortex Ring Formation and Advection," Abstract 44DCASS-069, 44th Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 5, 2019.

50. Thorpe, R*, Singhal, A*, McCrink, M*, and Gregory, JW, 2019, "Building a UAV System Model for use in Gusting Environments," Abstract 44DCASS-062, 44th Dayton-Cincinnati Aerospace Sciences Symposium, Dayton, OH, March 5, 2019.

51. Harter, B*, and Gregory, JW, 2019, "Lagrangian Coherent Structures in Optimal Vortex Ring Formation," AIAA Region III Student Paper Competition, Cleveland, OH, April 5, 2019. (***First Place Paper***).

52. Gregory, JW and McCrink, M, 2019, "Unmanned Aircraft Traffic Management for Ohio," 19th Polish-American Conference on Science and Technology, Columbus, OH, April 16-17, 2019 (Invited).

53. Gregory, JW, 2019, "Safe and Efficient Navigation of UAS in the Urban Environment," National Center for Atmospheric Research (NCAR) UAS Weather Forum, AUVSI XPONENTIAL co-located event, Chicago, IL, August 29, 2019 (Invited).

54. Gregory, JW, 2020, "Autonomous Air and Ground Vehicles – Safely Adapting to Complex and Changing Environments," Smart Vehicle Concepts Center Program Review (NSF I/UCRC), Columbus, OH, September 10, 2020 (Invited, recorded talk).

RESEARCH IMPACT / MEDIA APPEARANCES

Summaries of my research work that have been independently written and published by major publications, or commentary of mine that has appeared in journalism written or broadcast by others.

1. *Nature*, 2006, "Paint that listens," vol. 439, p. 121, January 12, 2006.

2. *Physics Today*, 2006, "Pressure-sensitive paint (PSP) as an array of optical microphones," vol. 59, no. 3, p. 9, March, 2006.

3. *Aviation Week*, 2017, "Ohio State Pushes Speed Envelope in UAS Research," by Graham Warwick, September 6, 2017.

4. *Wired*, 2017, "President Trump Moves to Fill America's Skies with Drones," by Jack Stewart, October 26, 2017.

5. *Washington Post*, 2018, "While it's extremely rare, here's why it's possible to get sucked out of an airplane," by Lori Aratani and Faiz Siddiqui, April 18, 2018.

6. *Popular Science*, 2018, "This new system could help air taxis and drone deliveries avoid crashing," by Rob Verger, June 21, 2018.

7. NPR *Marketplace*, 2019, "Why sit in traffic when you can rideshare a drone?," by Jack Stewart, February 18, 2019.

8. NPR *Marketplace*, 2019, Uber Copter, by Jack Stewart, June 6, 2019.

9. Curious Kids, *The Conversation*, 2019, How Does a Curveball Curve?, by Jim Gregory, October 14, 2019.

ADVISING

Student Advisee Honors and Awards:

- Sigma Gamma Tau Harry H. Hilton Great Lakes Regional Award undergraduate awardees:
  - David Huynh (2013)
  - Brian Munguia (2014)
  - Michael Strauch (2017)
- 9 completed undergraduate honors research theses
- 2009 NASA Student Aeronautics Competition, honorable mention

George Altamirano

- Patrick S. Osmer SROP Fellowship, 2018 (2 years)

- Dean's Distinguished Graduate Enrichment Fellowship, 2018 (2 years)

Samik Bhattacharya

- University Fellowship Awardee, 2009

Kevin Disotell

- NSF Graduate Fellowship Awardee, 2010
- NDSEG Fellowship Awardee, 2010
- Ohio State Presidential Fellowship Awardee (one of the top 15 Ph.D. candidates, university-wide), 2014
- AIAA Region III student paper competition, first place graduate presentation, 2011
- AIAA Region III student paper competition, second place undergraduate paper, 2010
- Barry M. Goldwater Scholarship and Excellence in Education Program (honorable mention), 2009
- 1st Place, NSF Innovation in Graduate Education Challenge (top proposal out of 500+), 2013

Shuo Fang

- Lead author of outstanding paper, AIAA 2010-4919

Braxton Harter

- University Fellowship Awardee, 2017
- National Defense Science and Engineering Graduate Fellowship, 2018
- National Science Foundation Graduate Fellowship Research Program, 2018, Honorable Mention.
- AIAA Region III Student Paper Competition, 2019, First Place Master's Student Paper.

Chris Jensen

- Lead author of outstanding paper, AIAA 2012-3111

Nathan Kidder

- NASA Aeronautics fellowship (declined), 2014
- Aviation Week's "Tomorrow's Engineering Leaders: The Twenty20's" – selected as one of the Top 20 students in the country, 2014

Sam Long

- AIAA Region III student paper competition, first place undergraduate paper, 2011
- Denman undergraduate research forum, first place in Engineering, 2011

Matt McCrink

- Nominee by the FAA ASSURE COE on Integrating UAS in the NAS for the 2015 DOT/FAA COE Outstanding Student of the Year.

Matt Metka

- ASME Young Engineer Paper Contest, Fluids Engineering Division, Second Place, IMECE2013-67343

Mark Sutkowy

- University Fellowship Awardee, 2016
- National Science Foundation Graduate Fellowship Research Program, 2017, Honorable Mention.

Ryan Thorpe

- University Enrichment Fellowship Awardee, 2017

Kevin Williams

- Vertical Flight Foundation John Zuk Scholarship, 2016 ($3000)

Kevin Yugulis

- College of Engineering Fellowship Awardee, 2010

Research Scientist Collaborator / Advisee:

- Matt McCrink, Ph.D., 2016 – 2021. Ph.D. from Ohio State University, M.S. and B.S. from Boise State University.

Postdoctoral Advisees:

- Tom Juliano, Ph.D., 2010 – 2012, Ph.D. and M.S. from Purdue University, B.S. from CalTech. Subsequently NRC postdoctoral fellow at AFRL / Wright-Patterson AFB. Now a tenured Associate Professor at the University of Notre Dame.
- Mohd Yousuf Ali, Ph.D., 2015 – 2016. Ph.D. from Florida State University, M.S. from Birla Institute of Technology (Ranchi, India), and B.S. from Middle East Technical University (Ankara, Turkey). Now a clinical-track faculty member at Florida State University.
- Matt McCrink, Ph.D., 2015 – 2016. Ph.D. from Ohio State University, M.S. and B.S. from Boise State University. Now a research professor at Ohio State.
- Dhuree Seth, Ph.D., 2020 – 2021. Ph.D. from Embry-Riddle Aeronautical University. Continuing as a postdoctoral researcher working with Matt McCrink.
- Mehmet Tomac, Ph.D., 2016 – 2017. Ph.D. from Ohio State University. Now a research engineer at Rokestan in Ankara, Turkey.

Ph.D. Advisees:

- Samik Bhattacharya, 2009 – 2013.
  Ph.D. Dissertation: *Investigation of Three Dimensional Forcing of Cylinder Wake with Segmented Plasma Actuators and the Determination of the Optimum Wavelength of Forcing*, December 2013.
  Now a tenured Associate Professor and NSF CAREER awardee at the University of Central Florida, Orlando, FL.
- Kevin Disotell, 2010 – 2015.
  Ph.D. Dissertation: *Low-Frequency Flow Oscillations on Stalled Wings Exhibiting Cellular Separation Topology*, December 2015.
  Now a research scientist at Ohio State.
- Matt McCrink, 2011 – 2015.
  Ph.D. Dissertation: *Development of Flight-test Performance Estimation Techniques for Small Unmanned Aerial Systems*, December 2015.
  Now a research professor at Ohio State.
- Anshuman Pandey, 2012 – 2019.
  Ph.D. Dissertation: *Streamwise Vortices in a Convex Wall Jet*, August 2019.
  Now a tenure-track Assistant Professor at the University of South Florida.

- Di Peng, 2008 – 2014.
  Ph.D. Dissertation: *Vortex Dynamics and Induced Pressure/Load Fluctuations During Blade-Vortex Interactions*, December 2014.
  Now a tenured Associate Professor at Shanghai Jiao Tong University, Shanghai, China.
- Mehmet Tomac, 2008 – 2012.
  Ph.D. Dissertation: *Internal Fluid Dynamics and Frequency Characteristics of Feedback-Free Fluidic Oscillators*, December 2012.
  Now a research engineer at Rokestan, Ankara, Turkey.
- Wenbo Zhu, 2016 – 2021.
  Ph.D. Dissertation: *Experimental Investigation of the Lift Frequency Response and Trailing-Edge Flow Physics of a Surging Airfoil*, December 2021.
  Now a postdoctoral researcher at the University of Maryland – College Park.

M.S. Thesis Advisees:

- George Altamirano, M.S. student, 2018 – 2020.
  M.S. Thesis: *Investigation of Longitudinal Aero-Propulsive Interactions of a Small Quadrotor Unmanned Aircraft System*, December 2020.
- Joseph Balla, M.S. student, 2010 – 2012.
  M.S. Thesis: *Pressure-Sensitive Paint for Detection of Boundary Layer Transition*, August 2012.
- Casie Clark, M.S. student, 2012 – 2014.
  M.S. Thesis: *Body Optimization and Aerodynamic Performance of the Buckeye Bullet 3 Land Speed Race Vehicle*, April 2014.
- Brandon Emshoff, M.S. student, 2019 – 2021.
  M.S. Thesis: *Neural Network Classification Approach to Clutter Removal for UTM-Enabling Low-Altitude Radar Surveillance*, December 2021. (Co-advised by Prof. Jeffrey Bons for the last few months, due to my departure from Ohio State).
- Shuo Fang, M.S. student, 2008 – 2010.
  M.S. Thesis: *Application of Fast-Responding Pressure-Sensitive Paint to a Hemispherical Dome in Unsteady Transonic Flow*, December 2010.
- Matthew Frankhouser, M.S. student, 2013 – 2015.
  M.S. Thesis: *Nanosecond Dielectric Barrier Discharge Plasma Actuator Flow Control of Compressible Dynamic Stall*, December 2015
- Braxton Harter, M.S. student, 2017 – 2019.
  M.S. Thesis: *Lagrangian Coherent Structures in Vortex Ring Formation*, August 2019.
- Christopher Jensen, M.S. student, 2010 – 2012.
  M.S. Thesis: *Global Pressure and Temperature Surface Measurements on a NACA 0012 Airfoil in Oscillatory Compressible Flow at Low Reduced Frequencies*, March 2012.
- Pradeep Kumar, M.S. student, 2008 – 2010.
  M.S. Thesis: *Development of a Single-shot Lifetime PSP Measurement Technique for Rotating Surfaces*, September 2010.

- Elliot Lee, M.S. student, 2017 – 2019.
  M.S. Thesis: *Deep Learning for Visual-Inertial Odometry: Estimation of Monocular Camera Ego-Motion and its Uncertainty*, August 2019.
- Matthew Metka, M.S. student, 2013 – 2015.
  M.S. Thesis: *Application of Fluidic Oscillator Separation Control to a Square-back Vehicle Model*, December 2015.
- Shawn Naigle, M.S. student, 2014 – 2016.
  M.S. Thesis: *Flow Control of Compressible Dynamic Stall using Vortex Generator Jets*, April, 2016. (co-advised with Prof. Bons).
- Mark Sutkowy, M.S. student, 2016 – 2018.
  M.S. Thesis: *Relationship between Rotor Wake Structures and Performance Characteristics over a Range of Low-Reynolds Number Conditions*, August 2018.
- Kevin Yugulis, M.S. student, 2010 – 2012 (co-advised with M. Samimy)
  College of Engineering Fellowship Awardee
  M.S. Thesis: *High Subsonic Cavity Flow Control Using Plasma Actuators*, August 2012.

Undergraduate Honors Thesis Advisees:

- Isaac Bensignor, *Development of a Propulsion Rotor Performance Model for Ultra-Low Reynolds Number Flow ($Re < 10^5$)*, 2021.
- Nachiket Deshpande, *Modification of Aircraft to Serve as Humanitarian Mobile Medical Facilities: A Systems Engineering Approach*, 2010.
- Kevin Disotell, *A Semi-Empirical Model of the Wall-Normal Velocity Induced by Flow-Shaping Plasma Actuators*, 2010.
- Matthew Frankhouser, *Study of Shock Wave Boundary Layer Interaction Using Pressure-Sensitive Paint*, 2013.
- Alvaro Hernandez, *Conceptual Design of an Aircraft to Match the Mission Profile of a Mobile Hospital for Humanitarian Service*, 2010.
- David Huynh, *Experimental Design of a Shock Tube For the Time Response Study of Porous Pressure-Sensitive Paint*, 2013.
- Nathan Kidder, *Aerodynamic Impact of Leading Edge Surface Treatments on Wind Turbine Blades*, 2015.
- Samuel Long, *A Temperature Corrected Dual-Luminophore Pressure-Sensitive Paint System*, 2011.
- Ryan McMullen, *The Frequency Response of Porous Polymer/Ceramic Pressure-Sensitive Paint*, 2013.
- Matthew Metka, *An Examination of Active Drag Reduction Methods for Ground Vehicles*, 2013.
- Michael Thomas, *Experimental Determination and Validation of sUAS Moments of Inertia*, 2020.

Undergraduate Research Advisees:

- George Altamirano, Undergraduate Research Assistant, Summer Research Opportunity Program (SROP), 2017.

- Abdulkadir Bashir, Undergraduate Research Assistant, 2017.
- Rokhaya Diawara, Undergraduate Research Assistant, 2017 – 2018.
- Kevin Disotell, Undergraduate Research Assistant, 2008 – 2010.
- Haelie Egbert, Undergraduate Research Assistant, summer 2018.
- Matthew Frankhouser, Undergraduate Research Assistant, 2011 – 2013.
- Kellyn Gerenstein, Undergraduate Research Assistant, ARO Undergraduate Research Apprenticeship Program, summer 2019.
- Ross Heidersbach, Undergraduate Research Assistant, 2016 – 2019.
- Andrew Hermetet, Undergraduate Student, 2010.
- Kyle Hird, Undergraduate Research Assistant, 2012 – 2013.
- David Huynh, Undergraduate Research Assistant, 2011 – 2013.
- Christopher Jensen, Undergraduate Research Assistant, 2008 – 2010.
- Nathan Kidder, B.S./M.S. student, 2013 – 2015.
- Thomas Krajnak, Undergraduate Research Assistant, 2014 – 2017.
- Samuel Long, Undergraduate Research Assistant, 2009 – 2011.
- Matthew Metka, Undergraduate Research Assistant, 2012 – 2013.
- Ryan McMullen, Undergraduate Research Assistant, 2011 – 2013.
- Jacob McQuaide, Undergraduate Research Assistant, Summer 2008.
- Marco Palacio, Undergraduate Research Assistant, 2008 – 2009.
- Zach Palmer, Undergraduate Research Assistant, 2015 – 2016.
- Jack Plank, Undergraduate Research Assistant, 2017 – 2018.
- Madhav Shah, Undergraduate Research Assistant, 2017.
- Raymond Tan, Undergraduate Research Assistant, 2010 – 2011.
- Riley Vollmer, Undergraduate Research Assistant, summer 2008.
- Kevin Williams, Undergraduate Research Assistant, 2015 – 2016.
- Kevin Yugulis, Undergraduate Research Assistant, 2009 – 2010.

High School Student Research Advisees:

- Steven Chen, ARO High School Apprenticeship Program, summer 2019.
- Brenda Sanchez, high school intern, summer 2019.
- Aria Nielsen, ARO High School Apprenticeship Program, summer 2018.

Committee Membership:

- Lucas Agricola, M.S. Spring 2018 (advisor: J. P. Bons)
- Brett Barker, M.S. July 2010 (advisor: J. P. Bons)
- Stuart Benton, Ph.D. Summer 2015 (advisor: J. P. Bons)
- Matthew Bloxham, Ph.D. March 2010 (advisor: J. P. Bons)
- David Castaneda, Ph.D. April 2020 (advisor: M. Samimy)
- Barrett Clark, Ph.D. August 2018 (advisor: M. Srinivasan)
- Christopher Clifford, Ph.D. Summer 2015 (advisor: M. Samimy)
- Michael Crawley, Ph.D. Autumn 2015 (advisor: M. Samimy)
- Cameron DuBois, M.S. Spring 2013 (advisor: M. Samimy)

- Ata Ghasemi Esfahani, M.S. Summer 2017 (advisor: M. Samimy)
- Kyle Gompertz, M.S. June 2009 (advisor: J. P. Bons)
- Rebecca Hollis, M.S. June 2009 (advisor: J. P. Bons)
- Arif Hossain, Ph.D. April 2020 (advisor: J. P. Bons)
- Jesse Little, Ph.D. March 2010 (advisor: M. Samimy)
- Kristine McElligott, B.S. Honors Thesis, June 2010 (advisor: M. Samimy)
- Curtis Memory, Ph.D. December 2010 (advisor: J. P. Chen)
- Dennis Omari, B.S. Honors Thesis, April 2016 (advisor: M. Samimy)
- Michael Papageorge, Ph.D. Student, expected Spring 2016 (advisor: J. Sutton)
- Jonathan Pluim, M.S. June 2009 (advisor: J. P. Bons)
- Chris Rethmel, M.S. Spring 2011 (advisor: M. Samimy)
- Christopher Smith, M.S. March 2010 (advisor: J. P. Bons)
- Alex Soderlund, Ph.D. April 2020 (advisor: M. Kumar)
- David Stark, Ph.D. May 2019 (advisor: J. Bolte)
- Michael Thake, M.S. Autumn 2010 (advisor: J. P. Bons)
- Michael Walker, Ph.D. Spring 2018 (advisor: J. P. Bons)
- Joshua Webb, M.S. Summer 2011 (advisor: J. P. Bons)
- Nathan Webb, Ph.D. Spring 2013 (advisor: M. Samimy)
- Steven Whitaker, M.S. Spring 2014 (advisor: J. P. Bons)
- Nicole Whiting, M.S. Summer 2019 (advisor: M. Samimy)
- Cliff Whitfield, Ph.D. June 2009 (advisor: G. M. Gregorek)

TEACHING EXPERIENCE

Key Innovations and Curricular Development:

- Studio recorded and edited a full set of high-quality lectures for *Introduction to Aerospace Engineering*, and used these to "flip" the classroom in a large, sophomore-level course. Student performance was measured, with a resulting full letter grade improvement in the class average.
- Developed an innovative design project that was an international collaboration between students at The Ohio State University and the American University of Beirut to develop and test an unmanned aircraft for aerial detection of buried landmines.
- Developed substantial hands-on lab activities and projects including high-altitude balloon launches for measurement of atmospheric properties, analysis of US Airways flight 1549 ("Miracle on the Hudson") flight recorder data, glider design/build/fly, and airfoil design/build/test using rapid prototyping.

***Introduction to Aerospace Engineering I* (Aero Eng 200 / 2200, OSU)**

- Autumn Quarter 2008, 34 students. Overall Rating: **4.8 / 5.0** (College avg: 4.3 / 5.0).
- Autumn Quarter 2009, 112 students. Overall Rating: **4.7 / 5.0** (College avg: 4.1 / 5.0). *Significant development of new course material (lecture and labs).*
- Autumn Quarter 2010, 132 students. Overall Rating: **4.7 / 5.0** (College avg: 4.0 / 5.0).

- Autumn Semester 2012, 120 students. Overall Rating: **4.7 / 5.0** (College avg: 4.0 / 5.0).
- Autumn Semester 2013, 134 students. Overall Rating: **4.4 / 5.0** (College avg: 4.1 / 5.0).
- Autumn Semester 2015, 154 students. Overall Rating: **4.2 / 5.0** (College avg: 4.0 / 5.0).
- Autumn Semester 2016, 169 students. Overall Rating: **4.3 / 5.0** (College avg: 4.1 / 5.0).
- Autumn Semester 2017, 144 students. Overall Rating: **3.6 / 5.0** (College avg: 4.1 / 5.0). *Classroom managed by a TA, while I focused entirely on development of new video recordings (in a studio) of lecture content, to be used in future years.*
- Autumn Semester 2018, 123 students. Overall Rating: **4.5 / 5.0** (College avg: 4.2 / 5.0).
- Autumn Semester 2019, 142 students. Overall Rating: **4.3 / 5.0** (College avg: 4.2 / 5.0).

Introduction to Aerospace Engineering II **(Aero Eng 201, OSU)**

- Winter Quarter 2012, 97 students. Overall Rating: **4.7 / 5.0** (College avg: 4.0 / 5.0). *Significant development of new course material (lecture and labs).*

Thermodynamics **(Aero Eng 405, OSU)**

- Spring Quarter 2008, 73 students. Overall Rating: **4.7 / 5.0** (College avg: 4.1 / 5.0). *Significant development of new course material.*
- Spring Quarter 2009, 56 students. Overall Rating: **4.7 / 5.0** (College avg: 4.3 / 5.0).

Preliminary Design of Atmospheric Flight Vehicles I **(Aero Eng 515.01, OSU)**

- Autumn Quarter 2009, 38 students. Overall Rating: **4.5 / 5.0** (College avg: 4.3 / 5.0). *Significant development of new course material.*

Detailed Design of Atmospheric Flight Vehicles **(Aero Eng 517.01, OSU)**

- Spring Quarter 2010, 36 students. Overall Rating: **4.2 / 5.0** (College avg: 4.2 / 5.0). *Significant development of new course material.*

Aircraft Flight Test Engineering **(Aero Eng 612 / 5612, OSU)**

- Spring Quarter 2010, 15 students. Overall Rating: **4.4 / 5.0** (College avg: 4.5 / 5.0). *Significant development of new course material.*
- Spring Quarter 2011, 15 students. Overall Rating: **4.0 / 5.0** (College avg: 4.5 / 5.0).
- Spring Semester 2013, 20 students. Overall Rating: **4.6 / 5.0** (College avg: 4.3 / 5.0).
- Spring Semester 2014, 19 students. Overall Rating: **5.0 / 5.0** (College avg: 4.5 / 5.0).
- Spring Semester 2017, 20 students. Overall Rating: **5.0 / 5.0** (College avg: 4.5 / 5.0).
- Spring Semester 2018, 20 students. Overall Rating: **4.8 / 5.0** (College avg: 4.6 / 5.0).
- Spring Semester 2019, 20 students. Overall Rating: **4.3 / 5.0** (College avg: 4.3 / 5.0).

Helicopter Aerodynamics **(Aero Eng 694, OSU)**

- Spring Quarter 2012, 15 students, Overall Rating: **4.7 / 5.0** (College avg: 4.5 / 5.0). *New course development.*

Experimental Fluid Mechanics **(Aero Eng 860 / 6860, OSU)**

- Winter Quarter 2009, 15 students. Overall Rating: **4.7 / 5.0** (College avg: 4.4 / 5.0). *Developed completely new graduate course (lecture and labs).*
- Winter Quarter 2011, 15 students. Overall Rating: **4.5 / 5.0** (College avg: 4.3 / 5.0).
- Spring Semester 2016, 14 students. Overall Rating: **4.6 / 5.0** (College avg: 4.5 / 5.0).

***Aeronautical Laboratory* (Aero 471, USAFA)**, Fall Semester 2006. 13 students. Supervised six funded research projects with intense student participation.

PROFESSIONAL SOCIETY MEMBERSHIPS

American Institute of Aeronautics and Astronautics (AIAA) - Fellow
American Helicopter Society (AHS)
American Society of Mechanical Engineers (ASME)
American Society for Engineering Education (ASEE)
Royal Aeronautical Society (RAeS) - Fellow

PROFESSIONAL SERVICE

FIRST Robotics Orlando Regional, External Advisory Board member, 2022 – Present.

AIAA Atmospheric Flight Mechanics Technical Committee, 2020 – 2023.

Associate Editor*, International Journal of Flow Control*, 2008 – 2016.

Editorial Advisory Board, *Journal of Unmanned Aerial Systems*, 2014 – 2020.

AIAA Fluid Dynamics Technical Committee, 2007 – 2013
Chair of Student Outreach Subcommittee, 2007 – 2013

Conference Organization:
- **Technical Chair and Conference Organizer, 6th AIAA Flow Control Conference**, New Orleans, Louisiana, summer 2012. Organized two invited sessions.
- **Co-organizer, 4th AIAA Flow Control Conference,** Seattle, Washington, 2008.
- **Co-organizer, 49th AIAA Aerospace Sciences Meeting**, Fluid Dynamics sessions, Orlando, Florida, 2011.
- Co-organized the "Drones as Disruption" Symposium, on November 6, 2015. This event featured internationally-recognized invited experts in the areas of done technology, policy, and law to speak on the interdisciplinary challenges of drone regulation.

Reviewer for:
Journal of Fluid Mechanics
Physics of Fluids
Experiments in Fluids
Experimental Thermal and Fluid Science
AIAA Journal
Journal of Aircraft
International Journal of Flow Control
Journal of Applied Physics
Journal of Fluids Engineering
Journal of Micromechanics and Microengineering
Journal of Propulsion and Power
Journal of Vibration and Acoustics
Journal of Visualization
Theoretical and Computational Fluid Dynamics
Measurement Science & Technology
Microfluidics and Nanofluidics
Proc. of the Institution of Mechanical Engineers, Part G, J. of Aerospace Engineering
Proc. of the Institution of Mechanical Engineers, Part C, J. of Mechanical Engineering Science
Sensors
Sensors & Actuators: B. Chemical
National Aeronautics and Space Administration, *Innovation in Aeronautics Instruction*
AIAA Fluid Dynamics Conference
AIAA Flow Control Conference
AIAA Aerospace Sciences Meeting
SAE World Congress
ASME International Gas Turbine Institute, Turbo Expo
DoD / ASEE SMART Scholarship Program
Army Research Office proposals
CRDF-Siberian Branch of the Russian Academy of Science Joint Basic Research Competition
United States-Israel Binational Science Foundation
Natural Sciences and Engineering Research Council of Canada

Faculty Advisor for Sigma Gamma Tau, The Ohio State University, 2008 – 2018.

University, College, and Department Committees:
Graduate Studies Committee, Dept. of Aerospace Engineering, 2008-2010.
Undergraduate Committee, Dept. of Mechanical and Aerospace Engineering, 2010 – 2017. (Chair: 2013 – 2014, 2015 – 2016)
Faculty Representative to Dept. of Aerospace Engineering Alumni Board, 2009 – 2010.
Undergraduate Honors Committee, College of Engineering, 2009 – 2012.
Battelle Endowment for Technology and Human Affairs proposal selection committee, 2011 – 2014. (Chair: 2012 – 2014).
College of Engineering Facilities Plan Task Force, 2012 – 2013.

Center for Aviation Studies, Faculty Oversight Committee, 2011 – 2014.

Aerospace Research Center, Faculty Oversight Committee, 2013 – 2014.

Promotion and Tenure Committee, Department of Mechanical and Aerospace Engineering, 2017 – 2019

Strategic Planning Steering Committee, Department of Mechanical and Aerospace Engineering, 2017 – 2019