

John Farnsworth | Assistant Professor

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🌐 <http://www.colorado.edu/lab/experimentalaerodynamics>

Research Interests

Experimental Fluid Mechanics and Aerodynamics · Flow Control · Unsteady Aerodynamics · Fluid-Structure Interaction · Experimental Techniques and Flow Visualization (e.g. Particle Image Velocimetry) · Renewable Energy Applications (e.g. Wind Turbines, Wave Energy Converters, etc.) · Nature Inspired Fluid Flow (e.g. Biological Flight, Geophysical Flows, etc.) · Collaborative Experiments and Computational Simulations

Education

Rensselaer Polytechnic Institute <i>Ph.D. Aeronautical Engineering</i>	Troy, NY 2008–2011
Rensselaer Polytechnic Institute <i>M.S. Aeronautical Engineering</i>	Troy, NY 2006–2007
Rensselaer Polytechnic Institute <i>B.S. Aeronautical and Mechanical Engineering, Magna Cum Laude</i>	Troy, NY 2002–2006

Professional Experience

University of Colorado at Boulder <i>Assistant Professor</i> Ann and H.J. Smead Department of Aerospace Engineering Sciences	Boulder, CO 2014–Present
Air Force Research Laboratory (AFRL) <i>Summer Faculty Fellow</i> AFRL/RQ Wright-Patterson Air Force Base - Unsteady Aerodynamics Program	Dayton, OH 2020
United States Air Force Academy <i>Visiting Post-Doctoral Researcher</i> Department of Aeronautics, Aeronautics Research Center	USAF Academy, CO 2011–2014
Rensselaer Polytechnic Institute <i>Department of Mechanical, Aerospace, and Nuclear Engineering</i> <ul style="list-style-type: none">○ Research Assistant, Flow Control Research Laboratory, 2008 – 2011○ Teaching Assistant, 2006 – 2007○ Undergraduate Research Assistant, Flow Control Research Laboratory, 2004 – 2006	Troy, NY 2002–2011
Naval Undersea Warfare Center <i>Summer Graduate NREIP Intern</i> Vehicle Dynamics and Signature Control Branch	Newport, RI 2008, 2009, 2010
NASA Langley Research Center <i>Summer Research Scholar</i> Aerodynamic Configurations Branch	Hampton, VA 2006

Teaching Experience

University of Colorado at Boulder.....	
Intro. Thermo. and Aero. (ASEN 2002): U-Grad Course, Instructor	<i>F2015, F2016, F2017</i>
Aerodynamics (ASEN-3111): U-Grad Course, Instructor	<i>F2018, F2019</i>
Senior Projects I (ASEN 4018): U-Grad Course, Project Adviser	<i>F2014</i>
Senior Projects II (ASEN 4028): U-Grad Course, Project Adviser	<i>S2015</i>
Fund. of Fluid Dynamics (ASEN 5051): Grad Course, Instructor	<i>F2014, F2020</i>
Boundary Layers and Convection (ASEN-5519): Grad Course, Instructor	<i>S2019</i>
Exp. Fluid Mechanics (ASEN 6011): Grad Course, Instructor	<i>S2016, F2018, F2020</i>
Flow Control (ASEN 6519): Grad Course, Instructor	<i>S2018</i>
United States Air Force Academy.....	
Aeronautical Laboratory (AE 471): Research Project Lead	<i>F2011-S2014</i>
Rensselaer Polytechnic Institute.....	
Fluid Dynamics Laboratory: Undergraduate Course, Teaching Assistant	<i>F2006, S2007, F2007</i>
Engineering Graphics and CAD: Undergraduate Course, Teaching Assistant	<i>S2006</i>

Sponsored Research Activities

- Standard Grants and Awards.....
16. **Co-PI, “Novel Sloping Wind Tunnel Experiments and Adaptive Mesh Simulations of Fine-Scale Combustion for Physics-Based Models of Wildland Fire,”** SERDP Proposal No.: RC20-C3-1382, \$2,088,770, 09/17/2020 - 1/31/2024, PI: P. Hamlington, Co-PIs: J. Daily, J. Farnsworth, M. Hannigan, C. Hoffman, J.K. Hiers, R. Linn, G. Rieker, and N. Skowronski.
 15. **PI, “Unsteady Aerodynamic Response of Small Aspect Ratio Wings in Surging Flow,”** Air Force Research Lab (AFRL) Summer Faculty Fellowship, \$21,400, 06/01/2020 - 07/24/2020, PI: John Farnsworth, Student: Jaylon McGhee.
 14. **PI, “Educational Flow Visualization Wind Tunnel,”** EEF Mini Grant, Engineering Excellence Fund (EEF), College of Engineering and Applied Science, University of Colorado Boulder, \$4,000, 01/01/2020 - 05/31/2020, Faculty PI: John Farnsworth, Student PI: Silvio Rossi Student Co-PI: Emanuele Costantino.
 13. **PI, “Novel Small UAS Flight Control through Active Flow Control,”** Center for Unmanned Aircraft Systems, NSF Industry-University Cooperative Research Centers Program, \$70,000, 09/01/2019 - 08/31/2020, Award Number: CU20-04, PI: John Farnsworth, Co-PI: Dale Lawrence.
 12. **Sub-PI, “Experimental investigation of the mechanism and characteristics of evaporation from wavy soil surfaces under turbulent atmospheric airflow,”** Deutsche Forschungsgemeinschaft (DFG) Collaborative Research Centre 1313, PI: Kathleen M. Smits (University of Texas Arlington); **“Sub-Contract: Wind Tunnel testing of evaporation from wavy soil surfaces under turbulent atmospheric airflow,”** €25,000, 03/01/2019 - 02/28/2020, Sub-PI: John Farnsworth.
 11. **Sub-PI, “CAREER: Robust numerical modeling for rational design of membrane filtration processes,”** National Science Foundation, PI: Nils Tilton (Colorado School of Mines); **“Sub-Contract:**

Experimental validation using Particle Image Velocimetry,” \$16,804, 12/01/2018 - 12/01/2020, Sub-PI: John Farnsworth.

10. **PI, “CUAS Small UAS Turbulence and Gust Modeling in a Wind Tunnel,”** Center for Unmanned Aircraft Systems, NSF Industry-University Cooperative Research Centers Program, \$70,000, 09/01/2018 - 08/31/2019, Award Number: CU18-08, PI: John Farnsworth, Co-PI: Dale Lawrence.
9. **“PI, A coordinated experimental and computational study of global and convective gusts on swept wings,”** Unsteady Aerodynamics and Turbulent Flows Program, Air Force Office of Scientific Research, \$725,041; 06/15/2018 - 06/14/2021, Cooperative Agreement Number: FA9550-18-1-0311, PI: John Farnsworth, Co-PI: Kenneth Jansen.
8. **Co-PI, “Collaborative Research: NISC S12-S2I2 Conceptualization of CFDSI: Model, Data, and Analysis Integration for End-to-End Support of Fluid Dynamics Discovery and Innovation,”** NSF Office of Advance Cyberinfrastructure (OAC), \$321,838.00, 03/01/2018 - 8/31/2019, Award Number: 1743178, PI: Kenneth Jansen, Co-PIs: Jed Brown, John Evans, John Farnsworth, and Alireza Doostan.
7. **PI, “CUAS Small UAS Turbulence and Gust Modeling in a Wind Tunnel,”** Center for Unmanned Aircraft Systems, NSF Industry-University Cooperative Research Centers Program, \$70,000, 09/01/2017 - 08/31/2018, Award Number: CU17-09, PI: John Farnsworth, Co-PI: Dale Lawrence.
6. **“PI, Unsteady Wind Tunnel Modifications for the Study of Convective Longitudinal Gusts,”** Innovative Seed Grant Program, Research & Innovations Office, University of Colorado Boulder, \$49,976; 07/01/2017 – 06/30/2018, PI: John Farnsworth.
5. **“PI, Flow Control for Flexible Structures,”** United States Air Force Academy, \$86,045; 9/26/2014-5/31/2017, Cooperative Agreement FA7000-14-2-0018; PI: John Farnsworth.
4. **“Co-PI, Numerical Simulations of Unsteady Aerodynamics Using High Performance Computing Resources,”** United States Air Force Academy, \$48,332; 07/23/2015 – 06/30/2016, Cooperative Agreement FA7000-15-2-0009, PI: Peter Hamlington, Co-PIs: Kenneth Jansen and John Farnsworth.
3. **PI, “Wind Tunnel Instrumentation Support,”** EEF Major Grant, Engineering Excellence Fund (EEF), College of Engineering and Applied Science, University of Colorado Boulder, \$38,287.50; 05/01/2015 - 05/01/2016, PI: John Farnsworth, Co-PI: Trudy Schwartz.
2. **“PI, Collaborative Investigations in Fluid Dynamics,”** United States Air Force Academy, \$277,803.60; 07/29/2011 – 07/28/2014, Cooperative Agreement FA7000-11-2-0005, PI: John Farnsworth.
1. **“GRA, Propulsor Thrust Vectoring through Stator-Induced Circumferentially-Varying Preswirl,”** University Laboratory Initiative (ULI) Program, Office of Naval Research, 2008 – 2011, PI: Michael Amitay, Student Investigator: John Farnsworth.

Supercomputing Grants Received.....

5. **Co-PI, “Adaptive DDES of a Vertical Tail/Rudder Assembly with Active Flow Control,”** DOE INCITE Project, CPU-Hours Granted: 1M Node Hours (Cray XC40), 01/01/2021 - 12/31/2021, PI: K. Jansen, Co-PIs: M. Amitay, J. Brown, A. Doostan, J. Evans, J. Farnsworth, M. Rasquin, O. Sahni, M. Shephard, C. Smith, P. Spalart, E. Whalen.
4. **PI, “Swept Wing Gust (Project # AFOSR46122612),”** DoD High Performance Computing Allocation, CPU-Hours Granted: 6M, 10/01/2020 - 09/31/2021, PI: J. Farnsworth, Co-PI: K. Jansen.

3. **Co-PI, “Data Analytics and Machine Learning for Exascale Computational Fluid Dynamics,”** DOE Aurora Early Science Project, Funding: One Post-Doctoral Researcher, CPU-Hours Granted: 65 exaFLOPS-hours in the first 90 days the machine is available, 08/01/2018 - 12/31/2021, PI: K. Jansen, Co-PIs: R. Balakrishnan, S. Becker, J. Brown, A. Doostan, J. Evans, J. Farnsworth, M. Shephard C. Smith, P. Spalart.
2. **Co-PI, “Adaptive Detached Eddy Simulation of a Vertical Tail/Rudder Assembly with Active Flow Control,”** DOE INCITE Project, CPU-Hours Granted: 40M, 01/2017 - 12/2017, PI: K. Jansen, Co-PIs: C. Carothers, J. Evans, J. Farnsworth, M. Rasquin, O. Sahni, M. Shephard, C. Smith, P. Spalart, E. Whalen.
1. **Co-PI, “Extreme Scale Unstructured Adaptive Computational Fluid Dynamics,”** DOE Aurora Early Science Project, Funding: One Post-Doctoral Researcher, CPU-Hours Granted: 660M, 12/2016 - 12/2019, PI: K. Jansen, Co-PIs: M. Amitay, J. Evans, J. Farnsworth, P. Spalart, E. Whalen, J. Brown, C. Carothers, O. Sahni, C. Smith, M. Rasquin, I. Bolotnov.

Honors and Awards

Most Comprehensive Flow Visualization Award Flow Visualization Showcase at the 23rd AIAA Computational Fluid Dynamics Conference, AIAA Aviation Forum, Denver, CO; Jun. 2017.

Senior Member American Institute for Aeronautics and Astronautics, 2015.

Michael A. Sadowsky Prize Graduate Research Award, Mechanical Aerospace and Nuclear Engineering Department, Rensselaer Polytechnic Institute, May 2007.

Honorable Mention National Science Foundation Graduate Research Fellowship Program, 2007.

Honorable Mention National Science Foundation Graduate Research Fellowship Program, 2006.

Magna Cum Laude B.S. Aeronautical and Mechanical Engineering, Rensselaer Polytechnic Institute, 2006.

Professional Service and Leadership

Professional Affiliations.....

American Institute of Aeronautics and Astronautics (AIAA): Senior Member *2005 - Present*

American Physical Society (APS): Member *2007 - Present*

Professional Leadership.....

Member: NATO AVT-282: Unsteady aerodynamic response of rigid wings in gust encounters, 2017 - 2020

Member: AIAA Applied Aerodynamics Technical Committee, 2012 - 2018.

Subcommittee Chair: Publicity and Publications Subcommittee, AIAA Applied Aerodynamics Technical Committee, 2016 - 2018.

Co-Chair: Active Flow Control Data Base, AIAA Fluid Dynamics Technical Committee, 2020 - Present.

Conferences, Symposia, and Workshop Organization.....

Co-Organizer: 6th Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO (Virtual Event); August 04, 2020.

Co-Organizer: 5th Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO; July 29, 2019.

Co-Organizer: 4th Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO; August 13-14, 2018.

Student Volunteer Coordinator: 70th APS Division of Fluid Dynamics Meeting, Denver, CO; November

19-21, 2017.

Co-Organizer: 3rd Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO; August 11, 2017.

Technical Chair/Organizer: 35th AIAA Applied Aerodynamics Conference, AIAA Aviation Forum, Washington, D.C.; June 5-9, 2017.

Co-Organizer: 2nd Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO; August 9, 2016.

Co-Technical Chair/Co-Organizer: 34th AIAA Applied Aerodynamics Conference, AIAA Aviation Forum, Washington, D.C.; June 13-17, 2016.

Co-Organizer: 1st Annual Rocky Mountain Fluid Mechanics Symposium (Local Student Conference), Boulder, CO; August 4, 2015.

Conference Session Chair.....

- o 6th Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO (Virtual Event); August 04, 2020.
- o 72nd APS Division of Fluid Dynamics Meeting, Seattle, WA; November 23-26, 2019.
- o 5th Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO; July 29, 2019.
- o 57th AIAA Aerospace Sciences Meeting, SciTech Forum, San Diego, CA; January 7-11, 2019.
- o 4th Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO; August 13-14, 2018.
- o 56th AIAA Aerospace Sciences Meeting, SciTech Forum, Kissimmee, FL; January 8-12, 2018.
- o 3rd Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO; August 11, 2017.
- o 35th AIAA Applied Aerodynamics Conference, Aviation Forum, Denver, CO; June 5-9, 2017.
- o 55th AIAA Aerospace Sciences Meeting, SciTech Forum, Grapevine, TX; January 9-13, 2017.
- o 69th APS Division of Fluid Dynamics Meeting, Portland, OR; November 20-22, 2016.
- o 2nd Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO; August 9, 2016.
- o 34th AIAA Applied Aerodynamics Conference, Aviation Forum, Washington, D.C.; June 13-17, 2016.
- o 54th AIAA Aerospace Sciences Meeting, SciTech Forum, San Diego, CA; January 4-8, 2016.
- o 1st Annual Rocky Mountain Fluid Mechanics Symposium, Boulder, CO; August 4, 2015.
- o 33rd AIAA Applied Aerodynamics Conference, Aviation Forum, Dallas, TX; June 22-26, 2015.
- o 53rd AIAA Aerospace Sciences Meeting, SciTech Forum, Kissimmee, FL; January 5-9, 2015.
- o 52nd AIAA Aerospace Sciences Meeting, SciTech Forum, National Harbor, MD; January 13-17, 2014.
- o 31st AIAA Applied Aerodynamics Conference, San Diego, CA; June 24-27, 2013.
- o 51st AIAA Aerospace Sciences Meeting, New Horizons Forum, Grapevine, TX; January 7-10, 2013.
- o 30th AIAA Applied Aerodynamics Conference, New Orleans, LA; June 25-28, 2012.

Peer-Reviewer for the following journals and conference proceedings.....

Journal of Fluid Mechanics · Journal of Fluids and Structures · Experiments in Fluids · AIAA Journal · Journal of Renewable and Sustainable Energy · Journal of Aerospace Information Systems · Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering · AIAA Applied Aerodynamics Technical Conference Meeting Papers · AIAA Fluid Dynamics Technical Conference Meeting Papers

University Service

University of Colorado Boulder.....

Reviewer: Astronaut Scholarship, CU Top Scholarships Office, Spring 2015, 2016, & 2017.

Reviewer: UK Graduate Fellowships (Rhodes, Marshall, Gates, and Churchill), Spring 2016.

Reviewer: Innovative Seed Grant Program, CU Research & Innovation Office, Spring 2015, 2018, & 2020.

College of Engineering and Applied Science (CEAS).....
Faculty Advisor: CU Boulder NSF S-Stem Gold Shirt Program, CU Bold Center, Fall 2016 to Present.
Interviewer: CU Boulder NSF S-Stem Gold Shirt Program, CU Bold Center, Spring 2018, Spring 2019.
Co-Organizer: Boulder Fluid and Thermal Sciences Seminar Series, Spring 2015 to Present.
Ann and H.J. Smead Department of Aerospace Engineering Sciences (AES).....
Focus Area Lead: Fluids, Structures, and Materials Focus Area, Fluids Track, Fall 2018 - Present.
Member: Distinguished Visiting Scholar and Lecturer Committee, Summer 2018 - Present.
Chair: Distinguished Visiting Scholar and Lecturer Committee, Fall 2019 - Present.
Member: Graduate Committee, Fall 2018 - Present.
Member: Bylaws Subcommittee, Fall 2017 - Spring 2019.
Member: Instructor Search Committee, Fall 2017 - Spring 2018.
Member: Facilities Committee, Fall 2019 - Present.
Member: AES Strategic Vision Committee, Fall 2019 - Present.
Member: AES Building Art & Memorabilia Committee, Spring 2019 - Fall 2019.
Member: Outreach Committee, Fall 2015 - Spring 2019.
Member: Undergraduate Committee, Fall 2015 - Spring 2017.
Member: Preliminary Examination Committee for numerous Ph.D. students, Fall 2015 - Present.

Students and Researchers Advised

(University of Colorado Boulder - UCB)

Ph.D. Advisees (Dissertation Committee Chair).....
Samantha Sheppard: Ph.D. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 05/2024*
Jaylon McGhee: Ph.D. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 05/2024*
Mark Blanco: Ph.D. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 05/2023*
Dasha Gloutak: Ph.D. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 05/2022*
Joseph Straccia: Ph.D. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 06/2021*
Ethan Culler: Ph.D. Aerospace Engineering Sciences, UCB *Graduation Date: 08/2018*
M.S. Advisees (Thesis Committee Chair).....
Aleix Lopez Garulo: M.S. Aerospace Engineering Sciences, UCB *Expected Graduation Date: 05/2021*
Caleb Grady: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 12/2020*
Matthew Knickerbocker: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 05/2020*
Hunter Ringenberg: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 05/2020*
Lucas Droste: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 05/2019*
Grant Dunbar: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 05/2019*
Daniel Sinner: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 12/2018*
Daniel Bateman: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 12/2017*
Nishant Agarwal: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 05/2017*
Naveen Penmetsa: M.S. Aerospace Engineering Sciences, UCB *Graduation Date: 08/2016*

Undergraduate Research Advisees.....	
Jamison Bunnell: Aerospace Engineering Sciences, UCB	<i>05/2019 - 12/2019</i>
Jose Cardenas Abedrop: Aerospace Engineering Sciences, UCB	<i>08/2018 - 08/2019</i>
Emanuele Costantino: Aerospace Engineering Sciences, UCB	<i>05/2018 - 08/2019</i>
Karston Christensen: Aerospace Engineering Sciences, UCB	<i>05/2018 - 05/2019</i>
Lucas Droste: Aerospace Engineering Sciences, UCB	<i>05/2016 - 05/2018</i>
Grant Dunbar: Aerospace Engineering Sciences, UCB	<i>05/2016 - 05/2018</i>
Ashley Montalvo: Aerospace Engineering Sciences, UCB	<i>05/2017 - 12/2017</i>
Yuma Yagi: Aerospace Engineering Sciences, UCB	<i>05/2017 - 08/2017</i>
Severyn Polakiewicz: Aerospace Engineering Sciences, UCB	<i>08/2016 - 05/2017</i>
Ryan Aronson: Aerospace Engineering Sciences, UCB	<i>05/2016 - 05/2017</i>
Kevin Paynter: Mechanical Engineering, UCB	<i>08/2015 - 05/2016</i>
Undergraduate Gold Shirt Advisees.....	
Hanna Nachtigal: Engineering (Open Option), Gold Shirt Cohort # 11	<i>08/2019 - 05/2020</i>
Jacqueline Padilla: Engineering (Open Option), Gold Shirt Cohort # 11	<i>08/2019 - 05/2020</i>
Darian Payan: Engineering (Open Option), Gold Shirt Cohort # 11	<i>08/2019 - 05/2020</i>
Cesario Garcia: Aerospace Engineering, Gold Shirt Cohort #8	<i>08/2018 - 05/2020</i>
Edgar Palma: Aerospace Engineering, Gold Shirt Cohort #8	<i>11/2016 - 05/2020</i>
Adam Benmoussa: Engineering (Open Option), Gold Shirt Cohort #8	<i>11/2016 - 05/2018</i>
Kofi Assabil: Economics, Gold Shirt Cohort #8	<i>11/2016 - 05/2018</i>

Student Awards and Prizes

Samantha Sheppard: 2021 Beverly Sears Graduate Student Grant Recipient	<i>01/2021</i>
Samantha Sheppard: National Defense Science & Engineering Graduate (NDSEG) Fellowship	<i>09/2020</i>
Jaylon McGhee: National Science Foundation (NSF) Graduate Research Fellowship	<i>09/2020</i>
Jaylon McGhee: 2020 Smead Aerospace GAANN Fellowship	<i>01/2020</i>
Jaylon McGhee: 2019 Ryland Family Graduate Fellowship	<i>08/2019</i>
Samantha Sheppard: 2019 Smead Graduate Scholar	<i>03/2019</i>
Hunter Ringenberg: 2019 Smead Aerospace GAANN Fellowship	<i>01/2019</i>
Joseph Straccia: National Science Foundation (NSF) Graduate Research Fellowship	<i>09/2016</i>
Ethan Culler: National Defense Science & Engineering Graduate (NDSEG) Fellowship	<i>09/2015</i>

Scholarly Works

(Advised students and postdoctoral researchers underlined)

Citation Metrics.....	
Number of Citations 405 (Google Scholar) 236 (Scopus)	
h-index 9 (Google Scholar) 7 (Scopus)	
i10-index 7 (Google Scholar)	

Book Chapters.....

¹M. Amitay and **J. Farnsworth**, "Separation control", in *Synthetic jets*, edited by K. Mohseni and R. Mittal (CRC Press, Sept. 2014), pp. 193–233.

Journal Articles.....

¹⁴B. Gao, **J. Farnsworth**, and K. Smits, "Evaporation from undulating soil surfaces under turbulent airflow through numerical and experimental approaches", *Vadose Zone J.* **19** (2020).

¹³**J. Farnsworth**, D. Sinner, D. Gloutak, L. Droste, and D. Bateman, "Design and qualification of an unsteady low-speed wind tunnel with an upstream louver system", *Exp. Fluids* **61** (2020).

¹²J. Straccia and **J. Farnsworth**, "Vortex ring bifurcation and secondary structures in a finite-span synthetic jet", *Journal of Fluid Mechanics* **903** (2020).

¹¹E. Culler and **J. Farnsworth**, "Higher frequencies in stall flutter moment development", *J. Fluids Struct.* **85**, 181–198 (2019).

¹⁰K. Jansen, M. Rasquin, **J. Farnsworth**, N. Rathay, M. Monastero, and M. Amitay, "Interaction of a synthetic jet with separated flow over a vertical tail", *AIAA J.* **56**, 2653–2668 (2018).

⁹E. Culler, C. Fagley, J. Seidel, T. McLaughlin, and **J. Farnsworth**, "Developing a reduced order model from structural kinematic measurements of a flexible finite span wing in stall flutter", *J. Fluids Struct.* **71**, 56–69 (2017).

⁸C. Porter, C. Fagley, **J. Farnsworth**, J. Seidel, and T. McLaughlin, "Closed-Loop Flow Control of a Forebody at a High Incidence Angle", *AIAA J.* **52**, 1430–1440 (2014).

⁷C. Fagley, **J. Farnsworth**, C. Porter, J. Seidel, T. McLaughlin, J. Lee, and E. Lee, "Open-Loop Dynamics of the Asymmetric Vortex Wake behind a von Kármán Ogive at High Incidence", *Int. J. Flow Control* **5**, 59–78 (2013).

⁶S. Huyer, A. Dropkin, D. Beal, **J. Farnsworth**, and M. Amitay, "Preswirl Maneuvering Propulsor", *IEEE J. Oceanic Eng.* **37**, 122–138 (2012).

⁵**J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, "Interactions of a propeller with a stator-induced circumferentially varying flow", *Exp. Fluids* **52**, 495–510 (2012).

⁴**J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, "Measurements of a stator-induced circumferentially varying flow", *Exp. Fluids* **51**, 423–442 (2011).

³V. Maldonado, **J. Farnsworth**, W. Gressick, and M. Amitay, "Active control of flow separation and structural vibrations of wind turbine blades", *Wind Energy* **13**, 221–237 (2010).

²**J. Farnsworth**, J. Vaccaro, and M. Amitay, "Active Flow Control at Low Angles of Attack: Stingray Unmanned Aerial Vehicle", *AIAA J.* **46**, 2530–2544 (2008).

¹M. Ciuryla, Y. Liu, **J. Farnsworth**, C. Kwan, and M. Amitay, "Flight Control Using Synthetic Jets on a Cessna 182 Model", *J. Aircraft* **44**, 642–653 (2007).

Theses.....

²**J. Farnsworth**, "Fundamental Investigation of Circumferentially Varying Stator Cascades", PhD thesis (Rensselaer Polytechnic Institute, Troy, New York, May 2011).

¹**J. Farnsworth**, "Aerodynamic Performance Modification of the Stingray UAV at Low Angles of Attack", MA thesis (Rensselaer Polytechnic Institute, Troy, New York, Dec. 2007).

Conference Papers.....

- ²⁹R. Balin, J. Wright, J. Patterson, **J. Farnsworth**, J. Evans, R. Lakhani, P. Spalart, and K. Jansen, “**Invited:** hybrid turbulence model computations of the NASA juncture flow model using PHASTA”, in AIAA paper 2020-1777 (2020 AIAA SciTech Forum, Jan. 2020).
- ²⁸M. Rasquin, **J. Farnsworth**, R. Balin, and K. Jansen, “Modeling strategies of active flow control applied to a vertical tail assembly”, in AIAA paper 2020-2944 (2020 AIAA Aviation Forum, June 2020).
- ²⁷D. Gloutak, E. Costantino, and **J. Farnsworth**, “Characteristic wing measurements of a NACA 0015 in steady and unsteady surging wind tunnel flow”, in AIAA paper 2020-1558 (2020 AIAA SciTech Forum, Jan. 2020).
- ²⁶G. Dunbar and **J. Farnsworth**, “Design of flush air data systems insensitive to manufacturing variance”, in AIAA paper 2020-1977 (2020 AIAA SciTech Forum, Jan. 2020).
- ²⁵D. Sinner, L. Droste, D. Bateman, and **J. Farnsworth**, “Design and qualification of an unsteady wind tunnel with an upstream louver system”, in AIAA paper 2019-2163 (2019 AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, Jan. 2019).
- ²⁴E. Culler and **J. Farnsworth**, “Pitch rate induced separation delay modeling of dynamic stall and stall flutter”, in AIAA paper 2019-1394 (2019 AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, Jan. 2019).
- ²³R. Laurence, G. Dunbar, **J. Farnsworth**, and B. Argrow, “Aircraft geometry effects on a distributed flush airdata system”, in AIAA paper 2018-1519 (2018 AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, Jan. 2018).
- ²²K. Jansen, M. Rasquin, **J. Farnsworth**, N. Rathay, M. Monastero, and M. Amitay, “Interaction of a synthetic jet actuator on separated flow over a vertical tail”, in AIAA paper 2017-3243 (35th AIAA Applied Aerodynamics Conference, AIAA Aviation Forum, June 2017).
- ²¹E. Culler, **J. Farnsworth**, C. Fagley, J. Seidel, and T. McLaughlin, “Driven versus “Free flutter” motion of a NACA 0018 finite span rigid wing”, in AIAA paper 2017-4359 (35th AIAA Applied Aerodynamics Conference, AIAA Aviation Forum, June 2017).
- ²⁰J. Straccia and **J. Farnsworth**, “Application of a biot-savart solver to predict axis switching phenomenon in finite-span vortices expelled from a synthetic jet”, in AIAA paper 2017-3311 (47th AIAA Fluid Dynamics Conference, AIAA Aviation Forum, June 2017).
- ¹⁹C. Fagley, J. Seidel, T. McLaughlin, and **J. Farnsworth**, “Aero-Servo-Elastic Control of a Cyber-Physical Flexible Wing”, in AIAA paper 2016-0320 (54th AIAA Aerospace Sciences Meeting, Jan. 2016).
- ¹⁸E. Culler, **J. Farnsworth**, C. Fagley, and T. McLaughlin, “Spanwise Variation of Stall Flutter on a Flexible NACA 0018 Finite Spanwing”, in AIAA paper 2016-1554 (54th AIAA Aerospace Sciences Meeting, Jan. 2016).
- ¹⁷**J. Farnsworth**, S. Corbett, J. Seidel, and T. McLaughlin, “Aeroelastic Response of a Finite Span NACA 0018 Wing Part 1: Experimental Measurements”, in AIAA paper 2015-0249 (53rd AIAA Aerospace Sciences Meeting, Jan. 2015).
- ¹⁶**J. Farnsworth**, C. Fagley, C. Porter, and T. McLaughlin, “Asymmetric Vortex State Response to Open-Loop Actuation for Variations in Angle of Attack and Reynolds Number”, in AIAA paper 2014-0931 (52nd AIAA Aerospace Sciences Meeting, Jan. 2014).
- ¹⁵C. Fagley, C. Porter, J. Seidel, **J. Farnsworth**, and T. McLaughlin, “Experimental Closed-Loop Flow Control of a von Kármán Ogive at a High Angle of Attack”, in AIAA paper 2013-2924 (31st AIAA Applied Aerodynamics Conference, June 2013).

- ¹⁴C. Porter, C. Fagley, **J. Farnsworth**, J. Seidel, and T. McLaughlin, “Closed Loop Flow Control of a Tangent Ogive at a High Angle of Attack”, in AIAA paper 2013-0395 (51st AIAA Aerospace Sciences Meeting, Jan. 2013).
- ¹³C. Porter, C. Fagley, **J. Farnsworth**, J. Seidel, and T. McLaughlin, “Numerical Simulations of Closed-Loop Flow Control of a Tangent Ogive at a High Angle of Attack”, in AIAA paper 2013-2923 (31st AIAA Applied Aerodynamics Conference, June 2013).
- ¹²E. Stephen, **J. Farnsworth**, C. Porter, R. Decker, T. McLaughlin, and J. Dudley, “Impinging Shock Wave - Boundary Layer Interactions on a Three-Dimensional Body”, in AIAA paper 2013-2733 (43rd AIAA Fluid Dynamics Conference, June 2013).
- ¹¹C. Fagley, C. Porter, J. Seidel, **J. Farnsworth**, and T. McLaughlin, “Optimal Sensor Arrangement for Asymmetric Vortex State Estimation on a Slender Body at High Incidence”, in AIAA paper 2012-3046 (6th AIAA Flow Control Conference, June 2012).
- ¹⁰C. Fagley, **J. Farnsworth**, J. Seidel, and T. McLaughlin, “Experimental Study of Open Loop Plasma Actuation on a von Kármán Ogive”, in AIAA paper 2012-0905 (50th AIAA Aerospace Sciences Meeting, Jan. 2012).
- ⁹C. Porter, J. Seidel, C. Fagley, **J. Farnsworth**, and T. McLaughlin, “Vortex Dynamics of a Tangent Ogive at High Angle of Attack”, in AIAA paper 2012-2953 (6th AIAA Flow Control Conference, June 2012).
- ⁸**J. Farnsworth**, C. Fagley, C. Porter, J. Seidel, and T. McLaughlin, “The Transient Response of a von Kármán Ogive to Open Loop Plasma Actuation”, in AIAA paper 2012-2955 (6th AIAA Flow Control Conference, June 2012).
- ⁷S. Huyer, A. Dropkin, D. Beal, **J. Farnsworth**, and M. Amitay, “Pre-swirl Maneuvering Propulsor: Part 1 Computations”, in AIAA paper 2010-4958 (28th AIAA Applied Aerodynamics Conference, June 2010).
- ⁶J. Vasile, Y. Elimelech, **J. Farnsworth**, M. Amitay, and K. Jansen, “Interaction of a Finite-span Synthetic-jet and Cross-flow over a Swept Wing”, in AIAA paper 2010-4584 (5th AIAA Flow Control Conference, June 2010).
- ⁵**J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, “Pre-swirl Maneuvering Propulsor: Part 2 Experiments”, in AIAA paper 2010-4959 (28th AIAA Applied Aerodynamics Conference, June 2010).
- ⁴**J. Farnsworth**, M. Amitay, S. Huyer, and D. Beal, “Stator-Induced Circumferentially Varying Preswirl Propulsor”, in AIAA paper 2009-3620 (27th AIAA Applied Aerodynamics Conference, June 2009).
- ³V. Maldonado, **J. Farnsworth**, W. Gressick, and M. Amitay, “Active Enhancement of Wind Turbine Blades Performance”, in AIAA paper 2008-1311 (46th AIAA Aerospace Sciences Meeting, Jan. 2008).
- ²**J. Farnsworth**, F. Cannelle, M. Ciuryla, and M. Amitay, “Control of the Stingray UAV at Low Angles of Attack”, in AIAA paper 2007-0321 (45th AIAA Aerospace Sciences Meeting, Jan. 2007).
- ¹**J. Farnsworth**, J. Vaccaro, and M. Amitay, “Aerodynamic Performance Modification of the Stingray UAV at Low Angles of Attack”, in AIAA paper 2007-4426 (25th AIAA Applied Aerodynamics Conference, June 2007).

Presentations and Posters.....

- ⁷³(**Project Review**) **J. Farnsworth** and K. Jansen, *A coordinated experimental and computational study of global and convective*, AFOSR Unsteady Aerodynamics and Turbulent Flows Program Review Meeting, Virtual Event, July 2020.

- ⁷²**(Project Review)** J. Farnsworth, D. Lawrence, A. Lopez Garulo, and J. Straccia, *CU19-06: Novel small UAS flight control through active flow control*, C-UAS Spring Industry Advisory Board (IAB) Meeting, Provo, UT, Feb. 2020.
- ⁷¹**(Project Review)** J. Farnsworth, D. Lawrence, A. Lopez Garulo, and J. Straccia, *CU20-03: Novel small UAS flight control through active flow control*, C-UAS Summer Industry Advisory Board (IAB) Meeting, Virtual Event, Aug. 2020.
- ⁷⁰**(Contributed Talk)** D. Gloutak, J. McGhee, and J. Farnsworth, *Impact of reduced frequency on a finite wing in surging flow*, 6th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2020.
- ⁶⁹**(Contributed Talk)** D. Gloutak, J. McGhee, and J. Farnsworth, *Unsteady versus quasi-steady aerodynamic response of finite aspect ratio wings in surging flow*, 73rd Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2020.
- ⁶⁸**(Contributed Talk)** J. McGhee, D. Gloutak, and J. Farnsworth, *Impact of reynolds number on a finite wing in surging flow*, 6th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2020.
- ⁶⁷**(Contributed Talk)** A. Lopez Garulo, J. Straccia, and J. Farnsworth, *Novel small UAS flight control through active flow control*, 6th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2020.
- ⁶⁶**(Contributed Talk)** M. Blanco, J. Farnsworth, and K. Jansen, *Computational fluid dynamic simulations of a finite NACA 0015 wing in an unsteady flow*, 6th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2020.
- ⁶⁵**(Contributed Talk)** J. Farnsworth, K. Jansen, D. Gloutak, and M. Blanco, *Collaborative experiments and simulations of an unsteady free-jet wind tunnel for the study of gust interactions*, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2019.
- ⁶⁴**(Invited Seminar)** J. Farnsworth, *Design and qualification of an unsteady low-speed wind tunnel with an upstream louver system*, Institute for Flow Physics and Control Seminar, Department of Aerospace & Mechanical Engineering, University of Notre Dame, Notre Dame, IN, Apr. 2019.
- ⁶³**(Invited Seminar)** J. Farnsworth, *Flow control: controlling separation from the classical to the modern era*, Fluids, Structures, & Materials Focus Area Seminar, Ann and H. J. Smead Department of Aerospace Engineering Sciences, University of Colorado Boulder, Boulder, CO, Oct. 2019.
- ⁶²**(Invited Seminar)** J. Farnsworth, *Measurement, modeling, and control of unsteady aerodynamic phenomena*, National Renewable Energy Laboratory (NREL) Flatirons Campus, Boulder, CO, Oct. 2019.
- ⁶¹**(Invited Talk)** J. Farnsworth, *Pitch rate induced separation delay modeling of dynamic stall and stall flutter*, US Army Research Office - Georgia Tech Dynamic Stall Workshop, Atlanta, GA, Sept. 2019.
- ⁶⁰**(Project Review)** J. Farnsworth and K. Jansen, *A coordinated experimental and computational study of global and convective*, AFOSR Unsteady Aerodynamics and Turbulent Flows Program Review Meeting, USAFA, CO, July 2019.
- ⁵⁹**(Project Review)** J. Farnsworth and D. Lawrence, *CU19-06: Novel small UAS flight control through active flow control*, C-UAS Summer Industry Advisory Board (IAB) Meeting, State College, PA, Aug. 2019.
- ⁵⁸**(Project Review)** J. Farnsworth, D. Lawrence, and B. Argrow, *CU19-03: Small UAS gust and turbulence measurement*, C-UAS Summer Industry Advisory Board (IAB) Meeting, State College, PA, Aug. 2019.

- ⁵⁷**(Contributed Talk)** D. Gloutak, E. Costantino, and **J. Farnsworth**, *Influence of surging flow frequency on lift coefficient for finite wings*, 5th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, July 2019.
- ⁵⁶**(Contributed Talk)** D. Gloutak, E. Costantino, M. Blanco, K. Jansen, and **J. Farnsworth**, *Experimental measurements of a finite NACA 0015 wing in an unsteady flow as compared to theory*, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2019.
- ⁵⁵**(Contributed Talk)** E. Costantino, D. Gloutak, and **J. Farnsworth**, *Influence of aspect ratio on lift coefficient for finite wings in surging flow*, 5th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, July 2019.
- ⁵⁴**(Contributed Talk)** H. Ringenberg, A. Doostan, and **J. Farnsworth**, *Sparse identification of non-linear dynamics for an unsteady pitching wing section*, 5th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, July 2019.
- ⁵³**(Contributed Talk)** J. Straccia and **J. Farnsworth**, *Vortex ring bifurcation in a moderate aspect ratio, rectangular orifice synthetic jet*, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2019.
- ⁵²**(Project Review)** L. Droste, T. Barth, D. Lawrence, and **J. Farnsworth**, *CU18-08: Small UAS turbulence and gust modeling in a wind tunnel*, C-UAS Spring Industry Advisory Board (IAB) Meeting, College Station, TX, Feb. 2019.
- ⁵¹**(Contributed Talk)** M. Blanco, D. Gloutak, **J. Farnsworth**, and K. Jansen, *Computational fluid dynamic simulations of a finite NACA 0015 wing in an unsteady flow*, 72nd Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2019.
- ⁵⁰**(Contributed Talk)** A. Doddi, D. Lawrence, **J. Farnsworth**, and L. Kantha, *Atmospheric turbulence measurements using small unmanned aircraft systems*, ISARRA 2018 (International Society for Atmospheric Research using Remotely Piloted Aircraft), July 2018.
- ⁴⁹**(Contributed Talk)** K. Jansen, J. Fang, R. Balin, M. Rasquin, and **J. Farnsworth**, *Active flow control of separation on a 1/19th and 1/9th scale vertical tail*, 71st Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2018.
- ⁴⁸**(Contributed Talk)** **J. Farnsworth** and N. Agarwal, *Dynamic stall and vortex dynamics of a single blade in cycloidal rotation around an advance ratio of one*, 71st Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2018.
- ⁴⁷**(Invited Talk)** **J. Farnsworth**, *An update on the longitudinal gust wind tunnel and flight data from the cu uas group*, NATO AVT-282: Unsteady aerodynamic response of rigid wings in gust encounters, 42nd NATO AVT Panel Business Meeting, Athens, Greece, Dec. 2018.
- ⁴⁶**(Invited Talk)** **J. Farnsworth**, *Measurement, modeling, and control of unsteady aerodynamic phenomena*, Ann and H.J. Smead Department of Aerospace Engineering Sciences Seminar, Sept. 2018.
- ⁴⁵**(Invited Talk)** **J. Farnsworth**, *What gusts are achievable in a louvered wind tunnel?*, NATO AVT-282: Unsteady aerodynamic response of rigid wings in gust encounters, 41st NATO AVT Panel Business Meeting, Torino, Italy, Apr. 2018.
- ⁴⁴**(Project Review)** **J. Farnsworth**, J. Evans, and G. Dunbar, *CU18-11: Calibration-free, multi-hole pressure probes through additive manufacturing*, C-UAS Summer Industry Advisory Board (IAB) Meeting, Ann Arbor, MI, Aug. 2018.
- ⁴³**(Project Review)** **J. Farnsworth** and D. Lawrence, *CU17-04: Small UAS turbulence measurement, modeling, and mitigation*, C-UAS Spring Industry Advisory Board (IAB) Meeting, Menlo Park, CA, Feb. 2018.

- ⁴²**(Project Review)** **J. Farnsworth**, D. Lawrence, L. Droste, and T. Barth, *CU18-09: Small uas turbulence and gust modeling in a wind tunnel*, C-UAS Summer Industry Advisory Board (IAB) Meeting, Ann Arbor, MI, Aug. 2018.
- ⁴¹**(Contributed Talk)** **D. Sinner**, L. Droste, D. Bateman, and **J. Farnsworth**, *Performance of an unsteady, low-speed wind tunnel with an upstream louver system for longitudinal velocity modulation*, 4th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2018.
- ⁴⁰**(Contributed Talk)** **D. Sinner**, L. Droste, D. Bateman, and **J. Farnsworth**, *Performance of an unsteady, low-speed wind tunnel with an upstream louver system for longitudinal velocity modulation*, 71st Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2018.
- ³⁹**(Contributed Poster)** E. Culler and **J. Farnsworth**, *The influence of higher harmonics and structural deformability in stall flutter*, Advances in Numerical Methods for Simulation, Optimization, and Uncertainty Quantification of Coupled Physics Problems, Multi Physics Workshop, Boulder, CO, Apr. 2018.
- ³⁸**(Contributed Talk)** G. Dunbar and **J. Farnsworth**, *Design and testing of a multi-hole probe geometry insensitive to manufacturing variance*, 4th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2018.
- ³⁷**(Contributed Talk)** G. Dunbar and **J. Farnsworth**, *Design and testing of a multi-hole probe geometry insensitive to manufacturing variance*, 71st Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2018.
- ³⁶**(Contributed Talk)** L. Droste, D. Sinner, D. Bateman, and **J. Farnsworth**, *Continuous pseudorandom longitudinal velocity perturbations in an unsteady low-speed wind tunnel*, 4th Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2018.
- ³⁵**(Contributed Talk)** L. Droste, D. Sinner, D. Bateman, and **J. Farnsworth**, *Continuous pseudorandom longitudinal velocity perturbations in an unsteady low-speed wind tunnel*, 71st Annual Meeting of the APS Division of Fluid Dynamics, Nov. 2018.
- ³⁴**(Contributed Talk)** K. Jansen, **J. Farnsworth**, M. Rasquin, N. Rathay, M. Monastero, and M. Amitay, *Interaction of a synthetic jet actuator with a severely separated crossflow*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Volume 62, Number 14, Nov. 2017.
- ³³**(Contributed Talk)** P. Weidman and **J. Farnsworth**, *Periodic bubble formation and ejection for flow over paper*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Volume 62, Number 14, Nov. 2017.
- ³²**(Contributed Talk)** A. Montalvo, E. Culler, and **J. Farnsworth**, *Uncertainty quantification from measures of divergence in 2d piv data*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Volume 62, Number 14, Nov. 2017.
- ³¹**(Contributed Talk)** A. Montalvo, E. Culler, and **J. Farnsworth**, *Uncertainty quantification from measures of divergence in 2d piv data*, 3rd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2017.
- ³⁰**(Contributed Talk)** D. Bateman and **J. Farnsworth**, *Design and qualification of an unsteady wind tunnel*, 3rd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2017.
- ²⁹**(Contributed Talk)** E. Culler and **J. Farnsworth**, *The influence of second harmonic phase and amplitude variation in cyclically pitching wings*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Volume 62, Number 14, Nov. 2017.
- ²⁸**(Contributed Talk)** E. Culler and **J. Farnsworth**, *The influence of second harmonic phase and amplitude variation in cyclically pitching wings*, 3rd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2017.

- ²⁷**(Contributed Talk)** J. Straccia and **J. Farnsworth**, *Vortex dynamics of very low aspect ratio rectangular orifice synthetic jets*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Volume 62, Number 14, Nov. 2017.
- ²⁶**(Contributed Talk)** L. Droste, A. Aronson, and **J. Farnsworth**, *Design and qualification of an axisymmetric jet for performing probe calibrations*, 3rd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2017.
- ²⁵**(Contributed Talk)** L. Droste, R. Aronson, and **J. Farnsworth**, *Design and qualification of an axisymmetric jet for performing probe calibrations*, AIAA Region V Student Conference, Denver, CO, Apr. 2017.
- ²⁴**(Contributed Talk)** N. Agarwal and **J. Farnsworth**, *Unsteady aerodynamics of a single cycloidally rotating naca 0012 blade*, AIAA Region V Student Conference, Denver, CO, Apr. 2017.
- ²³**(Contributed Talk)** **J. Farnsworth**, N. Penmetsa, and R. Starkey, *Experimental and computational investigation of a dual-throat thrust vectoring nozzle*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Volume 61, Number 20, Nov. 2016.
- ²²**(Contributed Talk)** E. Culler, **J. Farnsworth**, C. Fagley, and J. Seidel, *Comparison of driven and simulated "free" stall flutter in a wind tunnel*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Volume 61, Number 20, Nov. 2016.
- ²¹**(Contributed Talk)** J. Straccia and **J. Farnsworth**, *Application of biot-savart solver to predict axis switching phenomena in finite-span vortices expelled from a synthetic jet*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Volume 61, Number 20, Nov. 2016.
- ²⁰**(Contributed Talk)** J. Straccia and **J. Farnsworth**, *Application of biot-savart solver to predict axis switching phenomena in finite-span vortices expelled from a synthetic jet*, 2nd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2016.
- ¹⁹**(Contributed Talk)** N. Penmetsa, **J. Farnsworth**, and R. Starkey, *Experimental and computational investigation of a dual-throat thrust vectoring nozzle*, 2nd Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2016.
- ¹⁸**(Invited Poster)** **J. Farnsworth**, *Low-speed research wind tunnel facility*, C-UAS Summer Industry Advisory Board (IAB) Meeting, Boulder, CO, Aug. 2015.
- ¹⁷**(Invited Poster)** **J. Farnsworth**, K. Jansen, and J. Evans, *Research in flow control and fluid-structure interaction*, C-UAS Summer Industry Advisory Board (IAB) Meeting, Boulder, CO, Aug. 2015.
- ¹⁶**(Invited Seminar)** **J. Farnsworth**, *Study, implementation, and testing of active flow control*, Undergraduate Fluid Mechanics, Department of Engineering, Hofstra University, Hempstead, NY, Sept. 2015.
- ¹⁵**(Invited Seminar)** **J. Farnsworth**, *Towards controlling stall flutter on flexible finite span wings*, Department of Aerospace Engineering, University of Maryland, College Park, MD, July 2015.
- ¹⁴**(Invited Talk)** **J. Farnsworth**, *Flow control of flexible structures*, NATO ET-154: Incompressible Aerodynamics of Large Gust Encounters for Rigid Bodies, 35th NATO AVT Panel Business Meeting, Rzeszow, Poland, Apr. 2015.
- ¹³**(Contributed Talk)** E. Culler and **J. Farnsworth**, *Spanwise variation of stall flutter on a flexible naca 0018 finite span wing*, 1st Annual Rocky Mountain Fluid Mechanics Research Symposium, Boulder, CO, Aug. 2015.
- ¹²**(Contributed Talk)** E. Culler, **J. Farnsworth**, C. Fagley, and J. Seidel, *Spanwise variation of stall flutter on a flexible naca 0018 finite span wing*, 2015 AIAA Rocky Mountain Section Technical Symposium, Golder, CO, Nov. 2015.

- ¹¹**(Contributed Poster)** J. Akkala, J. Buchholz, **J. Farnsworth**, and T. McLaughlin, *Vorticity Transport on a Flexible Wing in Stall Flutter*, 67th Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 59, No. 20, San Francisco, CA, Nov. 2014.
- ¹⁰**(Contributed Poster)** **J. Farnsworth**, J. Akkala, J. Buchholz, and T. McLaughlin, *Kinematics and Flow Evolution of a Flexible Wing in Stall Flutter*, 67th Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 59, No. 20, San Francisco, CA, Nov. 2014.
- ⁹**(Invited Seminar)** **J. Farnsworth**, *Study, implementation, and testing of active flow control*, Boulder Fluid and Thermal Sciences Seminar Series, College of Engineering & Applied Science, University of Colorado Boulder, Boulder, CO, Sept. 2014.
- ⁸**(Invited Seminar)** **J. Farnsworth**, *Vehicle control and performance modification through flow control*, Department of Aerospace Engineering Sciences, University of Colorado Boulder, Boulder, CO, Mar. 2013.
- ⁷**(Contributed Talk)** **J. Farnsworth**, Z. Francis, R. Witt, C. Porter, and T. McLaughlin, *Flow Visualization of a von Kármán Ogive Forebody with Plasma Actuation*, 65th Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 57, No. 17, San Diego, CA, Nov. 2012.
- ⁶**(Contributed Talk)** **J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, *Interactions of a Propeller with a Circumferentially Varying Flow*, 64th Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 56, No. 18, Baltimore, MD, Nov. 2011.
- ⁵**(Invited Seminar)** **J. Farnsworth**, *Vehicle control and performance modification through flow control*, Aeronautics Research Center, Department of Aeronautics, United States Air Force Academy, USAF Academy, CO, Feb. 2011.
- ⁴**(Contributed Talk)** **J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, *Interaction of a circumferentially varying stator row upstream of a propeller in a uniform flow*, 63rd Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 55, No. 16, Long Beach, CA, Nov. 2010.
- ³**(Contributed Talk)** **J. Farnsworth** and M. Amitay, *The interaction of an array of circumferentially varying stators with a uniform crossflow*, 62nd Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 54, No. 19, Minneapolis, MN, Nov. 2009.
- ²**(Contributed Talk)** **J. Farnsworth**, M. Amitay, D. Beal, and S. Huyer, *Stator-Induced Circumferentially Varying Preswirl Propulsor*, 61st Annual Meeting of the APS Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 53, No. 15, San Antonio, TX, Nov. 2008.
- ¹**(Contributed Talk)** **J. Farnsworth**, J. Vaccaro, and M. Amitay, *Flow Control of the Stingray UAV at Low Angles of Attack*, 60th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 12, Salt Lake City, UT, Nov. 2007.