

Melissa A. Green

Assistant Professor, Mechanical and Aerospace Engineering, Syracuse University

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Research interests

Biological fluid mechanics, specifically fish swimming; fluid structure interactions; vortex dynamics; turbulence; turbulent combustion

Affiliations

- 2012 – Assistant Professor
Syracuse University, Syracuse, NY, USA
Mechanical and Aerospace Engineering
- 2009 – 2011 NAS/NRC Postdoctoral Research Associate
Naval Research Laboratory, Washington, DC, USA
Laboratory for Computational Physics and Fluid Dynamics
Advisor: Elaine Oran
- 2009 Postdoctoral Research Associate, Princeton University, Princeton, NJ, USA
Mechanical and Aerospace Engineering
ONR MURI: Toward a Mission-Configurable Stealth Underwater Batoid
Advisor: Alexander J. Smits

Education

- 2009 Ph.D. Princeton University, Princeton, NJ, USA
Mechanical and Aerospace Engineering
Analysis of bio-inspired propulsors
Advisors: Clarence W. Rowley and Alexander J. Smits
- 2003 B.S. University of Notre Dame, Notre Dame, IN, USA
Aerospace Engineering

Honors and Awards

- 2016 Dean's Award for Excellence in Engineering Education (Syracuse University)
- 2016 Senior Member, American Institute of Aeronautics and Astronautics
- 2015 The Filtertech, Pi Tau Sigma, and Sigma Gamma Tau Award for Excellence in Education in Mechanical and Aerospace Engineering (Syracuse University)
- 2014 Air Force Office of Scientific Research Young Investigator Award
- 2009 National Research Council Research Associateship
- 2007 Wu Prize for Excellence (Princeton University School of Engineering and Applied Science)
- 2004 – 2007 National Science Foundation Graduate Research Fellowship
- 2006 Larisse Rosentweig Klein Memorial Award (Princeton Mechanical and Aerospace Engineering department)

Teaching experience

Assistant Professor, Syracuse University

- 2018 Spring Dynamics of Mechanical Systems (MAE 321)
- 2017 Fall Aircraft Performance and Dynamics (AEE 427)
- 2017 Spring Dynamics of Mechanical Systems (MAE 321)
- 2016 Spring Dynamics of Mechanical Systems (MAE 321)
- 2015 Fall Aircraft Performance and Dynamics (AEE 427)
- 2015 Spring Dynamics of Mechanical Systems (MAE 321)
- 2014 Fall Aircraft Performance and Dynamics (AEE 427)
- 2014 Spring Fluid Dynamics Measurements (MAE 645)
- 2013 Fall Aircraft Performance and Dynamics (AEE 427)
- 2012 Fall Aircraft Performance and Dynamics (AEE 427)

Awarded grants

- 2017 1. Office of Naval Research, Biologically Inspired Underwater Propulsion Program
PI: Melissa A. Green
Co-PI: Dr. Rajeev Kumar, Research Assistant Professor, Syracuse University
Experimental analysis of the three-dimensional vortex wakes generated by bio-inspired body-caudal fin flow field interactions
Dates: 8/1/2017 - 7/31/2020
Total award: \$670,949
- 2016 2. Office of Naval Research, Sea Based Aviation
PI: Melissa A. Green
CoPI: Dr. David Rival, Queen's University, Kingston, Ontario, Canada
The topology of force production in unsteady flow around swept wings
Dates: 7/1/2016 - 6/30/2019
Total award: \$710,740
- 2015 3. National Science Foundation
PI: Samuel Scozzafava, Vice President for Information Technology, Syracuse University
CoPI: Melissa A. Green
*Leading the Way for Research Computing at Syracuse University and Beyond: CC*DNI Engineer*
Dates: 9/1/2015 - 8/31/2017
Total award: \$396,098
- 2014 4. Air Force Office of Scientific Research Young Investigator Program
PI: Melissa A. Green
Using Lagrangian coherent structures to characterize vortex shedding on bluff bodies in cross-flow
Dates: 8/15/2014 - 8/14/2017
Total award: \$355,160
- 2014 5. Office of Naval Research, Biologically Inspired Underwater Propulsion Program
PI: Melissa A. Green
Lagrangian methods in unsteady propulsion: characterizing vortex wake structure and force production
Dates: 5/15/2014 - 5/14/2017
Total award: \$671,706

Journal publications

- 2018 1. Liu, Y., Wilson, C., **Green, M. A.**, and Hughes, C. W. *Gulf Stream transport and mixing processes via coherent structure dynamics*, Journal of Geophysical Research - Oceans, **123**, 4, pp. 3014–3037.
- 2018 2. Bailey, S. C. C., Pentelow, S., Ghimire, H., Estejab, B., **Green, M. A.** & Tavoularis, S. *Experimental Investigation of the Scaling of Vortex Wandering in Turbulent Surroundings*, Journal of Fluid Mechanics, **843**, pp. 722-747.
- 2018 3. Kumar, R., King, J. T., & **Green, M. A.** *Three-dimensional pitching panel wake: Lagrangian analysis and momentum distribution from experiments*, AIAA Journal, doi:10.2514/1.J056621.
- 2018 4. King, J. T., Kumar, R., & **Green, M. A.** *Experimental observations of the three-dimensional wake structures and dynamics generated by a rigid, bio-inspired pitching panel*, Physical Review Fluids, **3**, 3, 03470.
- 2018 5. Rockwood, M., Huang, Y., & **Green, M. A.** *Tracking coherent structures in massively-separated and turbulent flows*, Physical Review Fluids, **3**, 1, 014702.
- 2018 6. Krishna, S., **Green, M. A.**, & Mulleners, K. *Flow field and force evolution for a symmetric hovering flat plate*, AIAA Journal, **56**, 4, pp. 1360–1371.
- 2017 7. Rockwood, M.P., Taira, K., & **Green, M. A.** *Detecting vortex formation and shedding in cylinder wakes using Lagrangian coherent structures*, AIAA Journal, **55**, 1, pp. 15–23.
- 2017 8. Magstadt, A. S., Kan, P., Berger, Z. P., Ruscher, C. J., Berry, M. G., **Green, M. A.**, Lewalle, J. & Glauser, M. N. “Turbulent flow physics and control: The role of big data analyses tools,” in *Whither Turbulence in and Big Data in the 21st Century?* Ed. Pollard, A., Castillo, L., Danaïla, L., & Glauser, M. N. Springer, pp. 295-322. Online.
- 2016 9. Kumar, R., King, J. T. & **Green, M. A.** *Momentum distribution in the wake of a trapezoidal pitching panel*, Marine Technology Society Journal, **50**, 5, pp. 9-23.
- 2015 10. Huang, Y. & **Green, M. A.** *Detection and tracking of vortex phenomena using Lagrangian coherent structures*, Experiments in Fluids **56**, 7, pp. 1-12
- 2011 11. Buchholz, J.H.J., **Green, M. A.**, & Smits, A. J. *Scaling the circulation shed by a pitching panel*, J. Fluid Mech. **688**, pp. 591–601.
- 2011 12. **Green, M. A.**, Rowley, C. W., & Smits, A. J. *The unsteady three-dimensional wake produced by a trapezoidal pitching panel*, J. Fluid Mech. **685**, pp. 117–145
- 2010 13. **Green, M. A.**, Rowley, C. W., & Smits, A. J. *Using hyperbolic Lagrangian coherent structures to investigate vortices in bioinspired fluid flows*, Chaos **20**, 017510.
- 2008 14. **Green, M. A.** & Smits, A. J. *Effects of three-dimensionality on thrust production by a pitching panel*, J. Fluid Mech. **615**, pp. 211–220.
- 2007 15. **Green, M. A.**, Rowley, C. W., & Haller, G. *Detection of Lagrangian coherent structures in three-dimensional turbulence*, J. Fluid Mech. **572**, pp. 111–120.

Conference extended abstracts (peer-reviewed and/or invited)

- 2018 16. Ayodeji, B.-O. T., Dong, H., King, J. T., Kumar, R. & Green, M. A. *Computational study of the three-dimensional wake and performance of a trapezoidal pitching panel*, AIAA Science and Technology Forum 2018, Kissimmee, FL, USA. 8–12 January 2018.

- 2017 17. Rockwood, M.P., Brooks, S. & Green, M. A. *Relating surface pressure to Lagrangian wake topology around a circular cylinder in cross-flow*, AIAA AVIATION Forum 2017, Denver, CO, USA. 5–9 June 2017.
- 2017 18. Kumar, R., King, J. T., & Green, M. A. *Three-dimensional finite-time Lyapunov exponent field in the wake of an oscillating trapezoidal pitching panel*, AIAA AVIATION Forum 2017, Denver, CO, USA. 5–9 June 2017.
- 2017 19. King, J. T., Kumar, R. & Green, M. A. *Experimental study on the effects of trailing edge geometry on the wake structure of a trapezoidal pitching panel*, AIAA AVIATION Forum 2017, Denver, CO, USA. 5–9 June 2017.
- 2017 20. Dhillon, R. S., Pietraszewski, N. & Green, M. A. *Three dimensional flow visualization in virtual reality*, AIAA AVIATION Forum 2017, Denver, CO, USA. 5–9 June 2017.
- 2017 21. Huang, Y. & Green, M. A. *Leading edge vortex separation study by different vortex and flow separation identification methods*, AIAA AVIATION Forum 2017, Denver, CO, USA. 5–9 June 2017.
- 2017 22. Dannenhoffer, J. F. & Green, M. A. *Use of a Full-motion Flight Simulator for Teaching Aircraft Performance and Dynamics*, AIAA Science and Technology Forum 2017, Grapevine, TX, USA. 9–13 January 2017.
- 2016 23. Krishna, S., Mulleners, K. & Green, M. A. *Effect of rotational phase on the flow topology of a flapping flat-plate wing*, AIAA Science and Technology Forum 2016, San Diego, CA, USA. 4–8 January 2016.
- 2016 24. King, J. T., Kumar, R. & Green, M. A. *Experimental Study of the Three-Dimensional Wake of a Trapezoidal Pitching Panel*, AIAA Science and Technology Forum 2016, San Diego, CA, USA. 4–8 January 2016.
- 2016 25. Rockwood, M. P. & Green, M. A. *Correlation of the Surface Pressure Distribution on a Circular Cylinder with Objective Identification of Vortex Formation and Shedding*, AIAA Science and Technology Forum 2016, San Diego, CA, USA. 4–8 January 2016.
- 2016 26. Huang, Y. & Green, M. A. *Comparing leading and trailing edge vortex circulation history with vortex identification and tracking methods*, AIAA Science and Technology Forum 2016, San Diego, CA, USA. 4–8 January 2016.
- 2016 27. Rossetti, J. S., Dannenhoffer, J., & Green, M. A. *Snapshot Lagrangian Proper Orthogonal Decomposition of Cylinder Wake Flow*, AIAA Science and Technology Forum 2016, San Diego, CA, USA. 4–8 January 2016.
- 2015 28. Huang, Y., Rockwood, M.P. & Green, M. A. *Tracking coherent structures in massively-separated and turbulent flows*, Ninth International Symposium on Turbulence and Shear Flow Phenomena, The University of Melbourne, Melbourne, AUS. 30 June – 3 July 2015.
- 2015 29. Rockwood, M.P. & Green, M. A. *An Analysis of the Unsteady Wake Behind a Circular Cylinder using Lagrangian Coherent Structures*, AIAA Science and Technology Forum 2015, Kissimmee, FL, USA. 5–9 January 2015.
- 2015 30. Huang, Y. & Green, M. A. *Eulerian and Lagrangian methods for detecting vortex formation and shedding*, AIAA Science and Technology Forum 2015, Kissimmee, FL, USA. 5–9 January 2015.
- 2015 31. Rice, T. T. & Green, M. A. *Three dimensional unsteady wake of a trapezoidal pitching panel*, AIAA Science and Technology Forum 2015, Kissimmee, FL, USA. 5–9 January 2015.

- 2014 32. Rockwood, M.P. & Green, M. A. *An Analysis of the Unsteady Wake Behind a Circular Cylinder using Lagrangian Coherent Structures*, AIAA Science and Technology Forum 2014, National Harbor, MD, USA. 13–17 January 2014.
- 2013 33. Green, M. A. *Eulerian and Lagrangian methods for coherent structure analysis in both computational and experimental data*, 51st AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition, Grapevine, TX, USA. 7–10 January 2013.
- 2013 34. Rockwood, M.P. & Green, M. A. *An experimental analysis of the unsteady wake behind a circular cylinder using Eulerian and Lagrangian techniques*, 51st AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition, Grapevine, TX, USA. 7–10 January 2013.
- 2009 35. Green, M. A., Rowley, C. W., & Smits, A. J. *Three-dimensional wake of a biologically inspired propulsor*, 39th AIAA Fluid Dynamics Conference, San Antonio, TX, USA. 22–25 June 2009.
- 2005 36. Green, M., Parker, K., & Soria, J. *2D PIV of a Pitching Aerofoil*, Fourth Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion, The University of Adelaide, South Australia, Australia. 7–9 December 2005.

Invited talks

- 2018 Mar Gesellschaft für Angewandte Mathematik und Mechanik e.V. 89th Annual Meeting, Session S13: Flow Control, Munich, Germany
- 2018 Mar Clarkson University, Department of Mechanical and Aeronautical Engineering Seminar
- 2017 Sep Queen’s University, Bio-propulsion workshop
- 2017 June AIAA AVIATION Forum, FD-24: Special Session: Research Frontiers in Bio-Inspired Propulsion I, Denver, CO
- 2017 Feb Stanford University, Fluid Mechanics Seminar
- 2017 Jan AIAA Science and Technology Forum, FD-34: Special Session: Low Reynolds Number Flows, Grapevine, TX
- 2016 May AmeriMech Symposium on Fluid Transport and Nonlinear Dynamics
- 2015 Mar City College of New York, Department of Mechanical Engineering Seminar
- 2015 Feb Caltech, GALCIT Colloquium
- 2015 Feb University of California, Los Angeles, Department of Mechanical and Aerospace Engineering Seminar
- 2014 Nov Lehigh University, Department of Mechanical Engineering and Mechanics Seminar
- 2014 Oct Illinois Institute of Technology, Department of Mechanical, Materials, and Aerospace Engineering Seminar
- 2014 Oct University of Illinois, Urbana-Champaign, Fluid Mechanics Seminar
- 2014 June US Congress on Theoretical and Applied Mechanics, Session: “Bioflight I: Models (experimental, numerical and theoretical),” East Lansing, MI
- 2014 May Extreme Flows Workshop, Princeton, NJ
- 2014 Mar Johns Hopkins University, Department of Mechanical Engineering Fluid Dynamics Seminar
- 2013 Nov Vanderbilt University, Department of Mechanical Engineering Seminar
- 2013 Nov Frontiers in Fluid Dynamics Research Symposium, San Juan, PR
- 2013 Sep BIRS Workshop 13w5089 Uncovering Transport Barriers in Geophysical Flows
- 2013 Apr University of Buffalo, Department of Mechanical and Aerospace Engineering Seminar
- 2013 Feb Florida State University, Department of Mechanical Engineering Seminar
- 2013 Jan Syracuse University, Department of Mechanical and Aerospace Engineering Seminar

- 2013 Jan AIAA Aerospace Sciences Meeting, Visualization, AMT-10/FD-26: Analysis and Interpretation of Very Large Sets of Fluid Dynamics Data, Grapevine, TX
- 2012 July 9th American Institute of Mathematical Sciences Conference on Dynamical Systems, Special Session 27: Transport Barriers in Dynamical Systems, Orlando, FL
- 2011 May Lorentz Center Workshop: Coherent Structures in Dynamical Systems, Leiden, The Netherlands
- 2011 May Syracuse University, Department of Mechanical and Aerospace Engineering Seminar
- 2010 May 8th American Institute of Mathematical Sciences Conference on Dynamical Systems, Special Session 30: Lagrangian Coherent Structures and Invariant Manifolds: Analysis and Applications, Dresden, Germany
- 2010 Feb Stanford University, Department of Aeronautics and Astronautics Seminar
- 2009 Oct University of Iowa, Department of Mechanical Engineering Seminar
- 2009 Jan California Institute of Technology, Department of Mechanical Engineering Seminar

Non-refereed abstracts and presentations

- 2017 37. Tu, H. & Green, M. A. *Force production and time-averaged flow structure around thin, non-slender delta wings*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2017 38. Kumar, R., King, J. T., & Green, M. A. *Lagrangian coherent structure analysis in the three-dimensional wake of a bio-inspired trapezoidal pitching panel*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2017 39. Krishna, S., Green, M. A., & Mulleners, K. *Unsteady fluid dynamics around a hovering wing*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2017 40. King, J. T. & Green, M. A. *Experimental study on the effects of trailing edge geometry on the propulsive performance and wake structure of bio-inspired pitching panels*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2017 41. Pietraszewski, N., Dhillon, R. S. & Green, M. A. *3D flow visualization in virtual reality*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2017 42. Brooks, S. & Green, M. A. *Experimental study of attached splitter plate effects on the wake of a circular cylinder using finite-time Lyapunov exponents*, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, USA. 19–21 November 2017.
- 2016 43. Rockwood, M. P. & Green, M. A. *Relating surface pressure to Lagrangian wake topology around a circular cylinder in cross flow*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.
- 2016 44. Huang, Y. & Green, M. A. *Identification and tracking of hairpin vortex auto-generation in turbulent wall-bounded flow*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.
- 2016 45. Kumar, R., King, J. T., & Green, M. A. *Momentum distribution in the wake of a bio-inspired trapezoidal pitching panel*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.
- 2016 46. King, J. T., Kumar, R. & Green, M. A. *Experimental study of surface pattern effects on the propulsive performance and wake of a bio-inspired pitching panel*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.

- 2016 47. Mulleners, K., Krishna, S. & Green, M. A. *Identification of separate flow features in the shear layer*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.
- 2016 48. Krishna, S. Mulleners, K. & Green, M. A. *Potential flow predictions for a flapping flat plate wing*, 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, OR, USA. 20–22 November 2016.
- 2015 49. King, J. T. & Green, M. A. *Experimental study of Strouhal number effects on the wake produced by a trapezoidal pitching panel*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 50. Huang, Y., Hadjighasem, A., Green, M. A., & Haller, G. *Objective detection of vortices in massively-separated flow*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 51. Rockwood, M. P., & Green, M. A. *Correlating Velocity Information in the Vicinity of Lagrangian Saddle Points to the Spatially and Temporally Resolved Static Pressure Distribution on a Circular Cylinder*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 52. Bohl, D. & Green, M. A. *Experimental Investigation of Dynamic Stall on a NACA0012 Airfoil Undergoing Sinusoidal Pitching*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 53. Haffner, E., Green, M. A., Hamlington, P., Poludnenko, A., & Oran, E. *Coherent structure dynamics during turbulence-flame interaction*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 54. Krishna, S., Mulleners, K., & Green, M. A. *A Lagrangian approach to study flow topology around a flapping flat-plate wing*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 55. Galvez, R. & Green, M. A. *The Finite Time Lyapunov Exponent Field of N Interacting Vortices in the Zero Viscosity Limit*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 56. Rossetti, J., Green, M. A., & Dannenhoffer, J. *Lagrangian Proper Orthogonal Decomposition of the Wake Downstream of a Cylinder*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2015 57. Liu, Y., Wilson, C., & Green, M. A. *Lagrangian coherent structures in the Gulf Stream*, 68th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 22–24 November 2015.
- 2014 58. Berger, Z. P., King, J. T., & Green, M. A. *Identification of Vortex Breakdown in Bio-Inspired Wakes Using Proper Orthogonal Decomposition*, 67th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 23–25 November 2014.
- 2014 59. Huang, Y. & Green, M. A. *Eulerian and Lagrangian methods for vortex tracking in 2D and 3D flows*, 67th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 23–25 November 2014.
- 2014 60. Rockwood, M.P. & Green, M. A. *The Effect of Phase Averaging Techniques on Lagrangian Coherent Structures in the Wake of a Circular Cylinder*, 67th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, USA. 23–25 November 2014.

- 2013 61. Jeter, T. R. & Green, M. A. *Vortical wake evolution and its effect on performance using Lagrangian coherent structures*, 66th Annual Meeting of the APS Division of Fluid Dynamics, Pittsburgh, PA, USA. 24–26 November 2013.
- 2013 62. Rockwood, M.P. & Green, M. A. *A Lagrangian Coherent Structures Analysis of the Unsteady Wake Behind a Circular Cylinder*, 66th Annual Meeting of the APS Division of Fluid Dynamics, Pittsburgh, PA, USA. 24–26 November 2013.
- 2012 63. Green, M. A. *Using LCS to identify vortex shedding on a cylinder in cross-flow*, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, CA, USA. 18–20 November 2012.
- 2012 64. Rockwood, M.P. & Green, M. A. *2D FTLE in 3D flows: The accuracy of using two-dimensional data for Lagrangian analysis in a three-dimensional turbulent channel*, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, CA, USA. 18–20 November 2012.
- 2011 65. Green, M. A., Hamlington, P. E., Poludnenko, A. Y., & Oran, E. S. *Using LCS to study coherent structures in reacting flows*, 64rd Annual Meeting of the Division of Fluid Dynamics, Baltimore, MD, USA. 20–22 November 2011.
- 2010 66. Green, M. A., Kaplan, C. R., Oran, E. S. & Boris, J. P. *A dynamic model of human physiology*, 63rd Annual Meeting of the Division of Fluid Dynamics, Long Beach, CA, USA. 21–23 November 2010.
- 2009 67. Green, M. A., Rowley, C. W., & Smits, A. J. *Three-dimensional wake of a biologically-inspired propulsor*, 62nd Annual Meeting of the Division of Fluid Dynamics, Minneapolis, MN, USA. 22–24 November 2009.
- 2009 68. Green, M. A., Rowley, C. W., & Smits, A. J. *Vortex Wake Structure of Rigid Panels with Biologically Inspired Geometry*, 2009 SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA. 17–21 May 2009.
- 2008 69. Green, M. A., & Smits, A. J. *LCS analysis of a biologically inspired wake*, 61st Annual Meeting of the Division of Fluid Dynamics, San Antonio, TX, USA. 23–25 November 2008.
- 2007 70. Green, M. A. & Rowley, C. W. *Detection of Lagrangian Coherent Structures in 3D Turbulence*, 2007 SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA. 28 May – 1 June 2007.
- 2007 71. Green, M. A., & Smits, A. J. *Wake structure of rigid pitching panels with biologically inspired geometry*, 60th Annual Meeting of the Division of Fluid Dynamics, Salt Lake City, UT, USA. 18–20 November 2007.
- 2006 72. Green, M. A., Rowley, C. W., & Haller, G. *Detection of Lagrangian coherent structures in 3D Turbulence*, 59th Annual Meeting of the Division of Fluid Dynamics, Tampa Bay, FL, USA. 19–21 November 2006.
- 2006 73. Buchholz, J., Green, M. A., & Smits, A. J. *Pressure distribution, thrust performance, and wake structure of a low-aspect ratio pitching panel*, 59th Annual Meeting of the Division of Fluid Dynamics, Tampa Bay, FL, USA. 19–21 November 2006.
- 2005 74. Green, M., Parker, K., & Soria, J. *2D PIV of a pitching airfoil*, 58th Annual Meeting of the Division of Fluid Dynamics, Chicago, IL, USA. 20–22 November 2005.

Service

2015 – pres AIAA Journal
 Associate Editor

- 2013 – pres. *Senior Member*, AIAA Fluid Dynamics Technical Committee, Fundamentals of flow phenomena Sub-committee
Chair of Massively Separated Flows Discussion Group
 Website manager
- 2012 – pres. Member, American Society of Mechanical Engineers (ASME)
- 2011 – pres. Member, American Institute of Aeronautics and Astronautics (AIAA)
- 2011 – pres. Peer reviewer: *Journal of Fluid Mechanics*; *Chaos*, *Physical Review Fluids*; *Physics of Fluids*; *Experiments in Fluids*; *Physical Review E*; *AIAA Journal*; *Experimental Thermal and Fluid Science*; *Journal of Hydro-environment*; *Physica D*; *Journal of Fluids and Structures*; *Geophysical Research Letters*; *Theoretical and Computational Fluid Dynamics*; *Progress in Turbulence*; ASME International Gas Turbine Institute Turbo Expo
- 2006 – pres Member, American Physical Society
Vice-chair (2017) and **Chair** (2018) of the APS Division of Fluid Dynamics External Affairs Committee

 Conference service

- 2018 AIAA Aviation Forum, 25–29 June
Assistant Organizer, Fluid Dynamics
- 2013 – pres 1000 Island Fluid Dynamics Meeting
Technical chair, session organizer
- 2017 Symposium on the Physics and Control of Turbulent Shear Flow, 10-11 July 2017
Co-organizer
- 2017 AIAA Science and Technology Forum, 9–13 January
Assistant Organizer, Fluid Dynamics
Session chair: FD-07. Low-Re and Bio-Inspired Flows I: Applications
Session chair: FD-34. Special Session: Low Reynold's Number Flows
- 2016 APS Division of Fluid Dynamics Annual Meeting, 23–25 November
Session chair: G3: Vortex Dynamics: Mechanisms and Plates
- 2016 AIAA Science and Technology Forum, 4–8 January
Co-technical chair, Fluid Dynamics
Session chair: FD-01: Special Session: Low Re & Bio-inspired Flows Discussion Group
- 2015 AIAA Aviation, 22–26 June
Assistant Organizer, Fluid Dynamics, Fundamental Flow Phenomena Sub-topic
Session chair: FD-02: Fundamental Fluid Flows
- 2015 AIAA Science and Technology Forum, 5–9 January
Session chair: FD-01, Bio-inspired Flow
- 2014 APS Division of Fluid Dynamics Annual Meeting, 23–25 November
Session chair: D18: Vortex Dynamics: Flow Induced Vibrations and Interactions
- 2014 AIAA Science and Technology Forum, 13–17 January
Assistant Organizer, Fluid Dynamics, Fundamental Flow Phenomena Sub-topic
Session chair: FD-07: Bioinspired Aerodynamics: Numerical
Session chair: FD-34: Vortex Flows
- 2013 APS Division of Fluid Dynamics Annual Meeting, 24–26 November
Session chair: G12, Vortex Dynamics and Vortex Flows IV

- 2013 AIAA Fluid Dynamics Meeting, 24-27 June
Session chair: FD-04, Flapping-Wing Aerodynamics
- 2012 APS Division of Fluid Dynamics Annual Meeting
Session chair: G28, Swimming Efficiency
- 2012 American Physical Society Division of Fluid Dynamics Annual Meeting
Session chair: E13, Biofluids: Cardiovascular: FSI and CFD

Other Academic contributions

- 2018 Invited guest speaker, Rowan College at Gloucester County STEAM Con
- 2016 – 2017 Invited guest speaker, Syracuse University chapter of ASEE “Engineering PhD Academic Career Pathways”
- 2016 Organized Pointwise/Caelus CFD and Meshing Workshop for Syracuse University Mechanical and Aerospace Engineering juniors and seniors. Attendance ~ 20 students.
- 2015 Organized Syracuse CoE Research Science and Technology Forum, “Optimizing Dynamic Thrust: What Would Nature Do?”
- 2014 – pres. Syracuse Museum of Science and Technology Summer Women’s Science Camp, Organizer of “Research Day” on Syracuse University campus
- 2014 – pres. Project ENGAGE, Participating faculty