

## EDUCATION

- 2014 - 2019     **Rensselaer Polytechnic Institute (RPI), Troy, NY, USA**  
Ph.D. Candidate in Aeronautical Engineering  
**Thesis: “Development of a Novel Actuator and it’s Application for Flow Control”** under the advisement of Prof. Michael Amitay
- Top tier lab in the US for research in Aerodynamic Flow Control
  - Fully-funded project through The Boeing Company
- 2010 - 2014     **Roger Williams University (RWU), Bristol, RI, USA**  
B.Sc. in Mechanical Engineering
- ABET Accredited Institution
  - Graduated Magna Cum Laude
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## RESEARCH EXPERIENCE

- 2014 - Current     **Rensselaer Polytechnic Institute, Center for Flow, Physics and Control**
- Leading technology development for The Boeing Company in active flow control actuators as a means to control flow separation
  - Conducted experimental and computational analyses to explore the effects of dynamic cylindrical pin actuators on the region of flow separation over flapped airfoils
  - Collaborated with the Boeing Smart Materials Lab to develop a new type of piezoelectric actuator
- 2013     **Aerospace Undergraduate Research Position through the NSF – Texas A&M National Aerothermochemistry High Speed Wind Tunnel Laboratory** under the advisement of Prof. Rodney Bowersox
- Developed computational and experimental skills in advanced research of hypersonic and plasma flow modeling/testing
  - Prepared weekly progress presentations and prepared formal research presentation with poster and formal written report
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## RELEVANT WORK EXPERIENCE

- 2014 - Current     **Boeing Research Project – Rensselaer Polytechnic Institute**  
**Experimental Flow Control Researcher** with Prof. Michael Amitay
- Publishing academic journal and conference papers
  - Collaborating with the Smart Materials Lab for Flow Control at The Boeing Company
  - Present the work and research results at national aeronautical and flow control- related conferences
- 2013 - 2014     **Principal Systems Engineering – FAA National Design Competition – Roger Williams University**
- Received first place in the Runway Safety Category of the national competition
  - Developed an innovative solution involving runway safety for landing while working with general aviation airport operations managers
  - Engaged in conceptualization of applications, systems, and equipment to address current challenges and collaborated with the American Association of Airport Executives, and the Federal Aviation Administration
  - Presented the prototype design, concepts, and results to the FAA in Washington, D.C. in July, 2014
- 2012 - 2013     **Laboratory Teaching Assistant – Roger Williams University**
- Collaborated with professors to review lab objectives and course materials
  - Provided weekly tutoring and help with assignments for students
  - Administered lab experiments and demonstrated measurement techniques and appropriate handling of machinery and equipment
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## HONORS AND AWARDS

- 2016 - 2019     The National Defense Science and Engineering Graduate (NDESG) Fellowship  
2015 - 2016     The Boeing Scholarship  
2014 - 2015     RPI Graduate Fellowship  
2014     National FAA Design Competition (2014), First Place  
2012     Alpha Chi National Honor Society  
2010-2014     Roger Williams University Dean’s List
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## SKILLS

- Stereo-Particle Image Velocimetry theory and applications by LaVision
- Computer Software: LabVIEW, Solidworks, NX Unigraphics, C, MatLab, Maple, Tecplot 360, LaTeX
- Testing with pressure transducers, hotwire anemometry, flow visualizations and wind tunnel operations

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## LEADERSHIP EXPERIENCE & OUTREACH

- Chapter Founder & President of Engineers Without Borders (EWB) at Roger Williams University, 2013-2014
- Project Manager of multidisciplinary team of students in the National EPA RainWorks Challenge Competition, 2013
- Vice President of the Society of Women Engineers (SWE) at Roger Williams University, 2012-2013
- Laboratory Teaching Assistant, Roger Williams University, 2014
- Volunteer for 'Katrina Relief Urban Plunge' to rebuild homes in New Orleans, LA, 2012
- Academic Tutor, Roger Williams University, 2011-2014

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## PUBLICATIONS

Gildersleeve, S., and Amitay, M., "Virtual and Physical Surface Modifications as Means for Flow Control", submitted to *AIAA Journal*, July 2017.

Gildersleeve, S., and Amitay, M., "Control of Flow Separation over a Flapped Airfoil using Low Aspect Ratio Circular Pins", submitted to *AIAA Journal*, May 2017.

Gildersleeve, S., Tuna, B.A., and Amitay, M., "Interactions of a Low Aspect Ratio Cantilevered Dynamic Pin with a Laminar Boundary Layer", *AIAA Journal*, May 2017, <http://dx.doi.org/10.2514/1.J055632>

Gildersleeve, S., Clingman, D., & Amitay, M. (2017). Flow around Low Aspect Ratio Cylinders and their Applications for Flow Control. In *2017 AIAA SciTech Forum*.

Gildersleeve, S., Clingman, D., & Amitay, M. (2016). Separation Control over a Flapped NACA 0012 Model using an Array of Low Aspect Ratio Cylindrical Pins. In *8<sup>th</sup> AIAA Flow Control Conference*.

Gildersleeve, S., Tuna, B. A., Leong, C. M., Clingman, D., & Amitay, M. (2015). Interactions of a Low Aspect Ratio Dynamic Pin with a Laminar Boundary Layer. In *45th AIAA Fluid Dynamics Conference* (p. 2634).

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## PRESENTATIONS

Gildersleeve, S., and Amitay, M., "Dynamic Pin Actuator and its Application for Separation Control", *57th Israel Annual Conf. on Aerospace Sciences*, March 15-16, 2017, Tel-Aviv & Haifa, Israel.

Gildersleeve, S., Amitay, M., and Clingman, D., "Flow around Low Aspect Ratio Cylinders and their Applications", *55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum*, AIAA 2017-1449, Grapevine, Texas, January 2017.

Gildersleeve, S., Clingman, D., & Amitay, M. (2016). Investigation of Vortical Flow Patterns in the Near Field of a Dynamic Low-Aspect Ratio Cylinder. *Bulletin of the American Physical Society*, 61.

Gildersleeve, S., Clingman, D., & Amitay, M. (2016). Separation Control over a Flapped NACA 0012 Model using an Array of Low Aspect Ratio Cylindrical Pins. *Aviation 2016*, June 13-16, Washington DC.

Gildersleeve, S., Clingman, D., & Amitay, M (2016). Separation Control over a Flapped NACA 0012 Model using an Array of Low Aspect Ratio Cylindrical Pins. *Thousand Islands Fluid Dynamics Meeting*, April 22-24, 2016, 1000 Island, Canada.

Gildersleeve, S., Clingman, D., & Amitay, M. (2015). The Flow Field Downstream of a Dynamic Low Aspect Ratio Circular Cylinder: A Parametric Study. *Bulletin of the American Physical Society*, 60.

Gildersleeve, S., Leong, C.M., Tuna, B.A., Clingman, D., & Amitay, M. (2015). Interactions of a Low Aspect Ratio Dynamic Pin with a Laminar Flow. *Thousand Islands Fluid Dynamics Meeting*, May 1-3, 2015, 1000 Island, Canada.

Gildersleeve, S., Spatcher, D., Leong, C. M., Clingman, D., & Amitay, M. (2014). Interactions of a Cross-flow with Dynamic Discrete Roughness Elements. *Bulletin of the American Physical Society*, 59.

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## **PATENT**

2016, "Jet Assisted Surface Mounted Actuator (JASMA)," with Amitay, M., Provisional Patent 2016-046, April 25, 2016; PCT submitted in April 2017.

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## **PROFESSIONAL MEMBERSHIPS**

Society of Women Engineers  
American Physical Society

American Institute of Aeronautics and Astronautics  
American Society of Mechanical Engineers