

Robert Randolph

CONTACT INFORMATION

Department of Aerospace Engineering,
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RESEARCH INTERESTS

Light-Matter interaction, Laser Diagnostics, Hypersonics, Gas flow measurements, Aircraft Control.

EDUCATION

Doctor of Philosophy (Currently Enrolled)
August 2019 – Expected May 2024
Texas A&M University, Department of Aerospace Engineering
Advisor: Prof. Alexandros Gerakis

Bachelor of Science

August 2015 – May 2019

Rutgers University, School of Engineering

- Mechanical Engineering with a Concentration in Aerospace
- GPA: 3.76/4.00, Dean's List all Semesters
- Presidential Scholar, Rutgers Honors College

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

August 2019 - *present*

Optical Probing & Manipulation Group, Texas A&M University

Advisor: Dr. Alexandros Gerakis. Using advanced four-wave mixing optical diagnostics, mainly in the form of coherent Rayleigh Brillouin scattering (CRBS), to measure thermodynamic properties of neutral gas and plasma supersonic and hypersonic flows.

Summer Intern

May 2018 - August 2019

NASA Marshall Space Flight Center EV30

Advisor: Dr. Patrick Hull. Designed additively manufactured capacitive sensors and incorporate into real-time structural health monitoring program using Matlab.

Summer Intern

May 2017 - August 2017

NASA Marshall Space Flight Center ES21

Advisor: Dr. Patrick Hull. Repurposed a 3D printer and characterized spreading thermosetting materials including Ecoflex mixed with carbon fiber for use with In-Space Additive Manufacturing.

Undergraduate Research Assistant

September 2016 - June 2019

Lab for Machines, Manufacturing, and Mechatronics, Rutgers University Mechanical and Aerospace Engineering Department

Advisor: Dr. Aaron Mazzeo. Worked alongside a graduate student on a NASA funded project to investigate In-Space Additive Manufacturing. Work included collecting data on thermal properties of printing materials and designing program to automate portions of the data analysis. Research experience also included assisting a senior design team in constructing a 3D printer for the same project.

Emergency Medical Technician (EMT-B)

April 2017 - July 2019

Rutgers University Emergency Services

Provided emergency medical services to all of Rutgers University and its affiliated health clinics as well as mutual aid to the surrounding areas. Also provided EMS coverage at special events including Rutgers football games.

PUBLICATIONS AND PRESENTATIONS Xie, J., **Randolph, R.**, Simmons, G., Vinciguerra, M., Suri, S., Bonini, N., Root, A., Hull, P.V., and Mazzeo, A.D., "Spreading of Fast-curing, Thermosetting Silicones," *Applied Physics Letters*, Vol. 115, No. 23, 2019.

Xie, J., **Randolph, R.**, Simmons, G., Hull, P. V., and Mazzeo, A.D. "Predictive modeling of fast-curing thermosets in nozzle-based extrusion." ASME IMECE, Tampa, FL, November, 2017.

PROFESSIONAL MEMBERSHIPS **American Physical Society, American Institute of Aeronautics and Astronautics**

TECHNICAL SKILLS **Programming:** LabVIEW, MATLAB.
Applications: Autodesk Inventor, Solidworks, L^AT_EX, Origin, Microsoft Office software (Word, Powerpoint, Excel and Access).
Operating Systems: Windows.

CERTIFICATIONS PADI Rescue Diver
Issued July 2019

Remote Pilot Certificate
Issued March 2017
Licensed by the Federal Aviation Administration to fly small Unmanned Aerial Systems (drones) under Part 107 rules.

Private Pilot's License
Issued August 2016
Licensed by the Federal Aviation Administration to fly single-engine land planes. Currently possess about 130 hours of flight time.

Emergency Medical Technician
Issued April 2015
Licensed by the New Jersey Department of Health to perform medical care at the EMT Basic Level

ACTIVITIES American Institute of Aeronautics and Astronautics (AIAA) Rutgers Chapter
August 2015 - May 2019
Club president for 2018-2019 school year. Past served as treasurer to manage approximately \$12,000 in funds per semester and operations manager to organize and manage inventory of club supplies as well as to plan and oversee safety for RC flights. Also leader for mechanical and autopilot branches of project for AUVSI SUAS competition to design a UAV with autopilot system capable of finding and identifying targets on the ground. Placed 12th of 68 teams internationally for 2019.

Rutgers University Outdoors Club
October 2015 - May 2019
Club president for 2018-2019 school year. Past served as quartermaster to manage club equipment and loan equipment to club members.

Wall Community First Aid Squad
October 2014 - *Present*
As an EMT-B, responded to calls, provided first aid to patients, and transported them to the hospital. Also provided first aid at planned events.

REFERENCES Available upon request