Emma Fraley

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Objective

Blue Origin intern with opportunity to further my learning through hands-on aerospace industry experience, gain engineering and leaderships skills.

Education

Oregon State University – University Honors College — Corvallis, OR
Honors Bachelor of Science, *Mechanical Engineering* — GPA 3.84
Expected Graduation — June 2018

Experience

OSU Experimental Sounding Rocketry Association (ESRA) Structures and Integration Sub-Team | Senior Project (OSU), Corvallis, OR | June 2017 – Present

- Research materials and manufacturing processes for structural components of rocket
- Design fin can and determine composite layup for fins, bulkheads, body tubes, coupler tubes, nose cone, and boat tail
- Manufacture and test structural components for rocket
- Work with other sub-teams to integrate all rocket sub-systems and components

Honors College Thesis Research | Applied Mechanics and Composites Technology Lab (OSU), Corvallis, OR | September 2017 – Present

- Characterize bonding of 3D printed core and carbon fiber
- Manufacture and test samples (3-point bending and bonding tests)
- Write undergraduate thesis

Intern | Space Dynamics Laboratory | June 2017 – August 2018

- Worked on CAD model and design for the 3U CubeSat OPAL
- Wrote assembly/integration procedure for electronics stack for OPAL
- Designed and modeled a 3D printed, magnetic, pull-apart CubeSat model for outreach
- Completed analysis for a redesign of a moment of inertia measurement table for CubeSats
- Collaborated with professionals and other student employees in an industry setting

Intern | Cornell University, Ithaca, NY | June 2016 – August 2016

- Worked on CAD model and structural design of 1U CubeSat StarShot Alpha
- Worked on mills in the machine shop to manufacture spacecraft components
- Assembled structural components and wiring harness of the CubeSat
- Created assembly procedures for CubeSat assembly

Undergraduate Researcher | CIRE lab (OSU), Corvallis, OR | June 2015 – June 2016

- Collected and extracted data for turbulent flame research
- Used Solidworks to design a stand for a hot wire instrument

Leadership

2017-2018 OSU ESRA Team Lead | June 2017 - Present

- Team point of contact
- Set deadlines/critical dates and keep team on track of deadlines/critical dates
- Organize team events and activities
- Communicate with other OSU rocketry teams

- Lead weekly meetings

OSU AIAA Vice President | September 2016 – June 2017

- Worked with executive team to plan tours, speakers, and other events and to secure funding
- Coordinated with project teams under the AIAA branch
- Communicated with interested students to share events and news

AIAA Region VI Student Paper Conference Chair | May 2015 – April 2016

- Planned 2016 AIAA Region VI Student Paper Conference held at Oregon State University
- Communicated with business and industry contacts to secure venue, hotel, catering, transportation, tours, and speakers as well as respond to conference attendees
- Collaborated with professors and other AIAA executive members regarding schedule and budget

Girl Scout Activity Leader | July 2015
Girl Scouts of America, Philomath, OR

- Designed and led water rocket activity for Girl Scouts in 1st through 6th grade
- Taught campers basic principles of flight and assisted them with rocket building and launching

Skills

- Solidworks
- Solid Edge
- MATLAB
- Composite layup

Activities

OSU American Institute of Aeronautics and Astronautics (AIAA) | October 2014 – Present

- Worked with Structures and Integration sub-team during 2016-2017 terms
- Worked with Structures and Integration and Propulsion sub-teams during 2015-2016 terms
- Achieved NAR level 1 and 2 High Power Rocketry Certification
- Assisted ESRA team with competition rocket and attended ESRA competition in June 2015

Washington Aerospace Scholars | November 2012 – July 2013

- Completed five-credit University of Washington online course focused on aerospace
- Based on academic performance I was selected to for a weeklong WAS summer residency
- Worked with a team to design a mission to Mars
- Participated in hands-on building challenges and industry tours
- Mentored by professionals from various aerospace fields

References

Available upon request.