

# Jesse L. Grupper

## Education

---

### Tufts University - Medford, MA

*Bachelor of Science, Mechanical and Biomedical Engineering, May 2019*

GPA: 3.70, Dean's List

**Relevant Coursework:** Biomechanical Engineering Design, Mechanical Design and Fabrication, Human Centered Design, Biological Systems Engineering, Computational Design, Linear Algebra, Modern Physics

## Skills

---

**Computer:** LabVIEW, MATLAB, C++, 123D Design, SolidWorks, HTML, Microsoft Word, PowerPoint, Excel

**Fabrication:** Laser cutter, 3D printer, molding, casting, water jet, drill press, chop saw, horizontal band saw

## Projects

---

- Pedal Power – Converting rotational energy to electrical energy for bike travelers' smart phones.
- The Smart Cane – A device to help the elderly find their cane with radio frequencies and a homing device.
- The Coin Coaster – An educational toy made of different 3D printed coin tracks to help kids save money.
- Collapsible Tupperware – More modular Tupperware to help students save space.
- Iron Hand – An assistive device to help a boy with ectrodactyly play hockey.

## Engineering Experience

---

### Fuel Cell Manufacturing R&D

Golden, CO

*Undergraduate Research Intern*

June 2018 – July 2018

- Developed quality monitoring methods for in-line high-volume manufacturing
- Used thermal and optical scanning to determine Polytetrafluoroethylene and catalyst electrode loadings
- Generated a model for experimental optical and thermal scanning data
- Measured penetration depths of electrode loadings using reflective properties of materials

### Dr. Barry Trimmer's Neuromechanics and Biomimetics Lab

Medford, MA

*Undergraduate Research Assistant*

October 2016 – July 2017

- Fabricated soft robotic prototypes to aid in natural disaster relief
- Controlled robot motion with an electromagnetic motor and clutch array using a rotary encoder and an Arduino
- Constructed and tested different types of rotary encoders to maximize efficiency and accuracy in prototypes.
- Tracked robot motion and velocity using a camera and Kinovea software
- Collaborated with peers to design iterations of prototypes and presented these prototypes at lab meetings

### Next Step Orthopaedics

Caldwell, NJ

*Orthotic and Prosthetic Assistant*

June 2015 - July 2015

- Molded and casted lower-extremity prostheses for patients using plaster casts and carbon fiber
- Created casts for patients with drop-foot
- Organized the tools and casting materials

## Student Involvement

---

### Biomechanics Club

Medford, MA

*Founder and President*

January 2018-Present

- Creating a space to help students discover careers and build projects in the field

### Residential Life

Medford, MA

*Resident Assistant*

January 2017 – May 2017

- Provided paraprofessional conflict advising to students to ensure their comfort and safety in the building
- Led programming events for over 25 students

## Other Experience

---

### Peak Potential

Montclair, NJ

*Lead Volunteer*

November 2013 – May 2017

- Taught climbing to children with physical disabilities
- Strengthened weaknesses in children by assisting them to move on the climbing wall

## Professional Climbing Career

---

### Climbing

- Placed 5<sup>th</sup> at World University Championships Bratislava, Slovakia 2018
- Placed 1<sup>st</sup> in Sport and Bouldering at USA Climbing's Collegiate Nationals Houston, TX 2017
- Awarded the North Face Young Gun for Good Sportsmanship Atlanta, GA 2015