

# Haley Barnes

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Engineering Online Portfolio: <https://haba8309.wixsite.com/engineering>

## EDUCATION

### University of Colorado, Boulder, College of Engineering

Major: Engineering Plus  
Emphasis: Mechanical Engineering  
Concentration: Neuroscience  
Certificate: STEM Education

Boulder, CO

Anticipated Graduation: May 2022  
Cumulative GPA: 3.173  
Major GPA: 3.338

## SKILLS

**Technical Skills:** CAD (Solidworks, Fusion360, Creo), rapid prototyping, basic knowledge of MATLAB and Arduino

**Soft Skills:** Communication, leadership, public speaking, time management

## PROFESSIONAL EXPERIENCE

### University of Colorado, Boulder, College of Engineering

Boulder, CO

GEEN 1400 Teaching Assistant

August 2021 - current

GEEN 2851 Teaching Assistant

August 2020 - December 2020

GEEN 1017 Teaching Assistant

January 2020 - May 2020

- Grade weekly assignments, projects and lab work
- Hold weekly office hours and study sessions to assist students and clarify learning topics
- Assist during lectures and labs; host lectures and labs when the professor is unavailable

### Keysight Technologies

Santa Rosa, CA

Quality Engineering Intern

June 2021 - August 2021

- Design and implement system to store data using Zeiss PiWeb, allowing for documentation, inspection, and data driven decisions in relation to manufacturing processes
- Complete additional design and testing projects within the department

### Engineering Plus Department

University of Colorado, Boulder

Lead TA

September 2020 - December 2020

- Lead a group of 33 TAs
- Organize the set up and logistics of the end of semester design expo, including creating and populating the website

### Hillside Elementary School

Boulder, CO

Engineering Elective Teacher

September 2020 - December 2020

- Design and teach hands-on engineering activities for third, fourth, and fifth grade students with learning differences

## PROJECTS

### In Vivo Camera System to Assess Obstructive Sleep Apnea

University of Colorado, Boulder

- IN PROGRESS, year long senior design project working with Children's Hospital Colorado

Fall 2021

### 3D Printed Fixture and Fastener Storage

Keysight Technologies

- Open ended design project with the goal of creating a modular storage system
  - Designed to save space in the measurement lab and protect fixtures from damage

Summer 2021

### 3D Printed Solution to CO<sub>2</sub> Leaks in Laparoscopic Surgery

University College Dublin

- Study abroad semester research project created while working under Dr. Kevin Nolan
  - Successfully created a device to redirect harmful CO<sub>2</sub> jets using an application of the Coandă Effect

Spring 2021

### KoCovers: Customizable Prosthetics Covers for Adolescents

University of Colorado, Boulder

- Semester design project created in GEEN 3400: Invention and Innovation
  - Successfully created a customizable, low cost, and aesthetically pleasing prosthetic cover for children
- Presented at the Fall 2020 Engineering Plus Design Expo

Fall 2020

### Sensation Station: Musical Coordination Game

University of Colorado, Boulder

- Semester design project created in GEEN 2400: Engineering for the Community
  - Designed for use in occupational therapy at Boulder Community Health in Erie, CO
  - Incorporates electronics and manufacturing techniques to improve rhythm, reaction time, and coordination
- Presented at the Fall 2019 Engineering Plus Design Expo

Fall 2019

### "Sandy" the Truss

University of Colorado, Boulder

- Final design project created in GEEN 2851: Statics for Engineers
  - Designed using CAD software and manufactured with laser cutting and a bandsaw
  - Supported 1,963 pounds before failure and had the highest strength to weight ratio in our section

Fall 2019

### Modular Mini: Customizable Toy Car

University of Colorado, Boulder

- Semester design project created in GEEN 1400: First Year Engineering Projects
  - Customizable battery powered toy car with interlocking track pieces and modular 3D printed body pieces
- Presented at the Spring 2019 Engineering Plus Design Expo
  - Awarded "Best in Section"

Spring 2019

## AWARDS & ADDITIONAL INFORMATION

**Awards:** Solidworks Associate Certificate (C-SQYZEBL3WU), Chancellor's Achievement Scholarship, Doyle Foundation Scholarship

**Interests:** Snowboarding, surfing, hiking, health and fitness, 3D modeling