

# Lara Zlokapa

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Berkeley, California, USA



## OBJECTIVE

I am passionate about innovative mechanical design that tangibly improves people's lives. A highly motivated team player and fast learner, I am eager to apply my engineering design, creative problem solving, and technical writing skills as well as my enthusiasm to empower others to live to their full potential.



## EDUCATION

**University of California, Berkeley**

Aug. 2016 – May 2020 (Expected)

*B.S., Mechanical Engineering*

- GPA: 3.637/4.00
- Relevant Coursework: Global product development (current); mechatronics (current); heat transfer (current); dynamic control systems and feedback; bioinspired design; mechanical behavior of engineering materials; planar machinery design; engineering dynamics; fluid mechanics; solid mechanics; thermodynamics; circuitry.



## SPECIAL SKILLS

**Design/Modeling:** SolidWorks, AutoCAD, Autodesk Fusion 360, 3D printing, GD&T dimensioning and tolerancing, machine shop skills (end mill, lathe, etc.), soldering, laser cutting, water jet cutting, Adobe Creative Suite.

**Programming:** MATLAB, LaTeX, Python, basic Arduino, HTML, CSS.

**Writing/Communication:** Business plan author, essay-writing teacher (high school level), team policy debater.

**Languages:** English (native), German (intermediate), French (intermediate), Serbo-Croatian (beginning).



## TECHNICAL EXPERIENCE

**Berkeley Expert Systems Technologies (BEST) Lab, UC Berkeley, CA**

Sept. 2018 – Present

*Research Intern, Drumming Prosthesis*

- Design cost-effective drumming prosthetic for trans-radial amputees with team of 5 MEng and 1 PhD student under Professor Alice Agogino.
- Analyzed data of drummer surveys to establish design criteria.
- Designed adaptable, adjustable drumstick-spring holder for multiple drumsticks and arm lengths for body-powered drumming prosthetic.
- 3D printed body powered prosthetic parts using BioFlex and PLA on FDM 3D printers.

**Human Powered Vehicles Team, UC Berkeley, CA**

*Co-President, Frame Subteam Lead*

May 2018 – Present

- Bike goal: design, manufacture, and race a bike at 70mph at the international IHPVA WHPSC competition.
- Lead overall design of bike as well as all team meetings for 30-person club.
- Lead bike frame subteam of 5 members.

*Member, Fairing Subteam*

Aug. 2017 – Mar. 2018

- Designed and 3D modeled aerodynamic tricycle fairing in SolidWorks and Fusion 360 in team of 5.
- Analyzed aerodynamic fluid flow of fairing 3D models in ANSYS.
- Performed carbon fiber lay-ups to create frame and fairing of vehicle.
- Vehicle won 3<sup>rd</sup> place overall, 2<sup>nd</sup> place Design Award, and the Craftsmanship Award out of 18 teams at ASME's E-Fest Human Powered Vehicle Challenge.

**Applied BioMechanics, Alameda Island, CA**

May 2018 – Jan. 2019

*Engineering Associate in Accident Reconstruction Simulation*

- Simulated vehicle collisions in HVE (an accident dynamics simulation program) using my 3D models.
- Laser scanned collision sites and vehicles and created 3D models of the scans in Rhino for 30+ court cases.
- Performed some manual mechanics and dynamics calculations to back simulation results.
- Prepared court exhibits based on analysis for Dr. Cheng's and Dr. Doeherty's expert witness testimonies.

**EnableTech**, UC Berkeley, CA

Jan. 2018 – May 2018

*Member, Gripper Project Team*

- Designed and laser cut mechanical, cost-effective gripper in interdisciplinary team of 5 for quadriplegic user without grip strength to pick up objects from floor and shelf.
- 3D modeled hand grip for device in SolidWorks.

**Berkeley Emergent Space Tensegrities (BEST) Lab**, UC Berkeley, CA

May 2017 – Nov. 2017

*Research Intern, 6-Bar Tensegrity Robot Project*

- Designed, 3D modeled (Autodesk Fusion 360), 3D printed, and directed final production of end caps with improved durability and frictionless cable movement for 6-bar spherical tensegrity robot intended for search and rescue and as rover for Jupiter's moon Titan.
- Produced end cap dimension drawings in AutoCAD.
- Worked on overall 6-bar tensegrity robot design in team of 3 Ph.D. students and 3 undergraduate students.
- Soldered and assembled over 48 motor control circuit boards for 6-bar tensegrity robot.



## LEADERSHIP & ACTIVITIES

**Human Powered Vehicles Club**, UC Berkeley, CA

Apr. 2018 – Present

*Co-President*

- Manage all club operations and events (outreach, project management, resource management, overall timeline and scheduling, faculty sponsor coordination, subteam progress, sponsor relations, etc.).
- Create club budget, manage club expenses, and collaborate with sponsors (such as General Motors or Ford).
- Organize, schedule, and follow up on all team activities (subteam progress, sponsor relations, outreach, etc.).

**Society of Women Engineers**, Berkeley, CA

Jan. 2018 – May 2018

*Career Options Committee Member*

- Organized, facilitated, and coordinated Technical Writing panel with Sandia National Labs representatives and Academia Panel with three UC Berkeley engineering professors (audience of approximately 25 per event).

*Committee Member of the Month (March 2017), Shadow an Engineer Committee Member*

Jan. 2017 – May 2017

- Coordinated externships with 13 major companies, including AutoDesk.
- Created and evaluated applications for externships, selecting 30 out of the 60 applicants.

**Pioneers in Engineering (PiE)**, UC Berkeley, CA

Jan. 2017 – May 2017

*Robotics Competition Team Mentor*

- Mentored team of 10 El Cerrito High School students over 8 weeks for PiE robotics competition.
- Guided team's game strategy and analysis, robot design process, and building of actual robot.
- Awards team earned: 2nd place team, PiE Season Award, Software Award finalist.

**Women in Science and Engineering**, UC Berkeley, CA

Aug. 2016 – May 2017

*Conference Committee Member*

- Organized and created schedule for all-day, 200-person STEM conference in 15-person team.
- Introduced National Inventor's Hall of Fame inductee and led Q&A session at conference.
- Received and coordinated speakers at conference.
- Designed event website with WordPress.
- Publicized conference through announcements at 100-600 person classes.