

CURRICULUM VITAE

Lauren A. Cooper, Ph.D.
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Department of Mechanical Engineering
California Polytechnic State University, SLO

Education and Degrees

Ph.D. Mechanical Engineering

University of Colorado, Boulder

Graduated May 2014

GPA: 3.72

Research focus: To explore: 1) best practices related to project-based learning; 2) how project-based learning impacts student motivation; 3) how to integrate the context of service into project-based learning.

M.S. Civil Engineering, Building Systems Program

University of Colorado, Boulder

Graduated December 2008

GPA: 3.68

Research focus: Developed easy-to-use residential-scale energy auditing software and educational materials to train novice energy auditors. Created a course in bio-inspired design for first-year students.

B.S. Engineering, Mechanical Specialty

Colorado School of Mines

Graduated May 2006

GPA: 3.25

Minor in Humanitarian Engineering

Recipient of the Maryanna Bell Kafadar Award for Excellence in the Humanities

Teaching-related Experience

California Polytechnic State University, San Luis Obispo, CA

Assistant Professor, Department of Mechanical Engineering (September 2018 – current position)

Lecturer, Department of Mechanical Engineering (January 2018 – June 2018)

Courses taught (or currently teaching):

- ME329: Mechanical Systems Design
- ME328: Design for Strength and Stiffness
- ME234: Philosophy of Design
- ME128: Introduction to Mechanical Engineering

Colorado School of Mines, Golden CO

Teaching Assistant Professor, Department of Civil and Environmental Engineering (2011-2014)

Adjunct Faculty, Division of Engineering, Design, and Society (2016 – 2017)

Program Coordinator, Humanitarian Engineering (2016 – 2017)

Courses taught:

- EGGN401: Human-Centered Design: Projects for People
- EGGN301: Human-Centered Problem Definition
- EGGN491/492: Senior Capstone Design, Lead Course Faculty

- EPIC151: Engineering Practices Introductory Course Sequence
- CEEN311: Mechanics of Materials, Course Coordinator
- LAIS498: Disability, Technology, and Society
- HNRS405: McBride Honors Program, Practicum Advisor
- CSM191: Engineering Grand Challenges: Solving Really Big Problems

Adjunct Instructor, University of Colorado, Boulder

2009 - 2011

Integrated Teaching and Learning Program and the Department of Mechanical Engineering

Courses taught:

- MCEN3047: Data Analysis and Measurements
- GEEN1400: First-Year Engineering Projects: Nature-Inspired Design

Engineering Outreach Fellow, University of Colorado, Boulder

2006 - 2009

Integrated Teaching and Learning Program

- Assimilated hands-on engineering lessons and activities into elementary, middle, and high school science and math classes at partner public schools
- Published a variety of engineering lessons and activities (<http://www.teachengineering.com>)
- Mentored incoming first-year engineering students

Sponsored Research Projects

One Day's Pay Program, University of Colorado, Boulder

2009 - 2014

Integrated Teaching and Learning Program and the Department of Mechanical Engineering

Program provided engineering students with academic opportunities to participate in altruistic engineering design projects to develop their technical and non-technical skills while discovering the social context around their low-cost, creative innovations. The infusion of altruistic design experiences into different academic student learning venues provided an ideal opportunity to conduct research on engineering learning mechanisms and engineering diversity and inclusiveness. My main project involved students in the design and fabrication of adapted tricycles for children in the community with physical disabilities.

Industry Experience

NexGen Energy Partners, Curriculum Specialist

2009 - 2010

Boulder, CO

- Created wind energy curriculum for schools
- Organized wind energy education workshops for teachers
- Prepared and submitted technical grants

International Center for Appropriate and Sustainable Technology

2009

Lakewood, CO

- Created basic energy auditing software for residential building applications
- Performed energy audits to recommend energy efficiency measures
- Co-developed training course and video series in energy auditing, energy efficiency, and renewable energy as part of organization's workforce development

Science Undergraduate Laboratory Internship

2006

Boulder, CO

- Awarded SULI internship at the National Wind Technology Center
- Developed and tested software application to conduct power performance testing of residential-scale wind turbines

Relevant Skills

- SolidWorks
- AutoCAD
- Visual Basic in Excel
- R Project for statistical computing
- eQUEST for energy modeling
- MATLAB
- Arduino
- 3D printing and laser cutting
- Prototyping
- Wood shop and machine shop (proficient)
- Field and technical sketching

Language and Travel

- Proficient in Spanish
- Co-led study abroad trip with CSM students to Harbin, China in December 2011
- Completed Senior Capstone Design project in Colinas de Suiza, Honduras in March 2006
- Biomedical engineering internship at hospital in Managua, Nicaragua from June - August 2005

Publications

1. Cooper, L. (2017). Lauren Cooper: Human-Centered Design for Emotional Accessibility. [Video file]. Retrieved from: <https://www.youtube.com/watch?v=5iooL4ij5Cc>
2. Cooper, L. (2014). Designing the Design Experience: Identifying Factors of Student Motivation in Project-based Learning and Project-Based Service-learning. *Mechanical Engineering Graduate Theses & Dissertations*. Retrieved from: http://scholar.colorado.edu/mcen_gradetds/86

3. Cooper, L., M. Zarske, D. Kotys-Schwartz, and D. Reamon. (2012). One Day's Pay: Educating K-16 Engineers to Design Affordable Innovations. *Proceedings of the 2012 National Science Foundation Engineering Education Awardees Conference*.
4. Cooper, L., D. Kotys-Schwartz, and D. Reamon. (2011). Project-Based Service-Learning and Student Motivation. *Proceedings of the ASME 2011 International Mechanical Engineering Congress and Exposition*.
5. Rockenbaugh (Cooper), L., D. Kotys-Schwartz, and D. Reamon. (2011). Project-Based Service-Learning and Student Motivation. *Proceedings of the 2011 American Society for Engineering Education Annual Conference*.
6. Rockenbaugh (Cooper), L., M. Zarske, D. Kotys-Schwartz, and D. Reamon. (2011). Engineering for American Communities: Engaging Engineering Students in Multidisciplinary Altruistic Engineering Design Projects. *Proceedings of the 2011 American Society for Engineering Education Annual Conference*.