

Yakira I. Mirabito

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Nationality: American, US-born citizen

Education

University of California, Berkeley

M.S./Ph.D., Mechanical Engineering, Expected 2024

Dissertation: *Engineering Equity: Exploring Design Rationale, Hierarchy, and Strategic Decision-Making*

Committee: Kosa Goucher-Lambert (Chair), Alice Agogino, and Sara Beckman

Northwestern University, Evanston

B.S., Materials Science and Engineering, 2018

ETH Zurich, Switzerland

Exchange Student, Mechanical Engineering, Fall 2015

Research Activity

Peer-Reviewed Publications

5. **Mirabito, Y.**, Tchatchouang, M., and Goucher-Lambert, K., “Feature, Specification, and Evidence (FSE) Framework for Communicating Design Rationale,” *In revisions*.
4. **Mirabito, Y.**, and Goucher-Lambert, K., 2024, “Examining the Design Actions and Reasoning Factors that Impact Design Performance,” *Journal of Mechanical Design*, 146(7): 071401.
3. **Mirabito, Y.**, and Goucher-Lambert, K., 2021, “Factors Impacting Highly Innovative Designs: Idea Fluency, Timing, and Order,” *Journal of Mechanical Design*, 144(1): 011401.
2. Hermann, A., Ostarhild, J., **Mirabito, Y.**, Bauer, N. and Senner, V., 2020, “Stretchable piezoresistive vs. capacitive silicon sensors integrated into ski base layer pants for measuring the knee flexion angle,” *Sports Engineering*, 23(1):22.
1. Thurnherr, C., **Mirabito, Y.**, Kress, G., and Ermanni, P., 2016, “Highly anisotropic corrugated laminates deflection under uniform pressure” *Composite Structures*, 154, 31-38.

Peer-Reviewed Conference Papers

5. **Mirabito, Y.**, Liu, X., and Goucher-Lambert, K., 2024, “Computationally evaluating design rationale,” *ASME International Design Engineering Technical Conferences - Design Theory and Methodology Conference*, Washington, DC, Aug 25-28, *Under review*.
4. **Mirabito, Y.**, and Goucher-Lambert, K., 2022, “Investigating How Engineers and Designers Communicate Design Rationale,” *ASME International Design Engineering Technical Conferences - Design Theory and Methodology Conference*, St. Louis, MO, Aug 14-17.
3. **Mirabito, Y.**, and Goucher-Lambert, K., 2022, “Design Strategies that Work: How Engineers Use Sequential Decision Making to Improve Design Performance in Concept Selection,” *Design Computing and Cognition Conference*, Glasgow, Scotland, July 4-7.
2. **Mirabito, Y.**, and Goucher-Lambert, K., 2021, “Connecting design actions, reasoning, and outcomes in concept selection,” *ASME International Design Engineering Technical Conferences - Design Theory and Methodology Conference*, Virtual, Online, Aug 17-20.

1. **Mirabito, Y.**, and Goucher-Lambert, K., 2020, “The role of idea fluency and timing on highly innovative design concepts,” *ASME International Design Engineering Technical Conferences - Design Theory and Methodology Conference*, Virtual, Online, Aug 17-19.

Presentations

5. **Mirabito, Y.**, and Goucher-Lambert, K., 2022, “Framework for Communicating Design Rationale,” *Society of Hispanic Professional Engineers National Conference – Engineering Science Symposium*, Charlotte, NC, Nov 2-6.
4. **Mirabito, Y.**, and Goucher-Lambert, K., 2021, “Which concept and why? An exploration of decision making in concept selection,” *Society of Hispanic Professional Engineers National Conference – Engineering Science Symposium*, Orlando, FL, Nov 10-14. *Honorable mention*
3. **Mirabito, Y.**, and Goucher-Lambert, K., 2021, “An exploration of concept selection dynamics: actions, reasoning, and outcomes,” *GEM Conference*, Houston, TX, Sep 9-11.
2. **Mirabito, Y.**, and Goucher-Lambert, K., 2020, “Predictive factors of highly innovative designs,” *Society of Hispanic Professional Engineers National Conference – Engineering Science Symposium*, Oct 26-31. *Honorable mention*
1. **Mirabito, Y.**, Hermann, A., and Senner, V., 2018, “The analysis of integrated capacitive stretch sensors in compression pants for knee angle measurement” *NanoRING Symposium*. Technical University of Munich.

Financial Honors and Awards

14. Elisabeth M. and Winchell M. Parsons Scholarship (\$5,000), American Society of Mechanical Engineers, 2023
13. H2H8 Graduate Research Grant Recipient (\$10,000), Hearts to Humanity Eternal, 2023
12. Graduate Student Scholarship (\$5,000), Hispanic Scholarship Fund, 2023
11. Broadening Participation Fellowship (\$2,000), ASME Design Engineering Division, 2022
10. Conference Travel Grant (\$1,500), UC Berkeley, 2022
9. **NSF Graduate Research Fellowship Program** (\$150,000), 2021
8. Honorable Mention, Ford Foundation Predoctoral Fellowship, 2021
7. Graduate Student Scholarship (\$2,000), Hispanic Scholarship Fund, 2020
6. **Chancellor’s Fellowship** (\$100,000), UC Berkeley, 2019
5. First-Year Fellowship (\$50,000), UC Berkeley Mechanical Engineering Department, 2019
4. NSF Innovation at the nexus of Food, Energy, and Water Systems (InFEWS) Fellowship (\$100,000, DGE-1633740), 2019
3. GEM Associate Fellowship (\$90,000), The National GEM Consortium, 2019
2. NSF NanoRING Program (\$10,000, IRES-1460031), Technical University of Munich, 2018
1. Benjamin A. Gilman International Scholarship (\$5,000), U.S. Department of State, 2015

Teaching Activity

Instructor

Graduate Student Instructor, Spring 2024

DESINV 290: Design Equity and Justice, UC Berkeley

Graduate Student Project Mentor, Spring 2023

DESINV 15: Design Methodology, UC Berkeley

Graduate Student Instructor, Summer 2020

Reimagining design education for remote learning, UC Berkeley

Facilitator and Course Planner, 2016 - 2018

Women in Leadership Program, Northwestern University

Guest Lecturer

ME 103: Experimentation and Measurement, UC Berkeley, Nov 2023

Topic: Which concept and why? Studying decision-making in engineering design

Advising

Undergraduate Research Advising, Not affiliated with formal research program

Student: Xiaowen Liu (Computer Science/Cognitive Science), since Fall 2022

Student: Jasmine Liu (Cognitive Science), Spring 2023

Data Science Discovery Program, Research projects in data science and AI

Student: Lily Barbagelata (Data Science), Fall 2023

Student: Adam Ousherovitch (Applied Math), Fall 2023

Design Scholars Program, UC Berkeley undergraduate research experience in engineering design

Student: Megane Tchatchouang Kayo (Data Science), Summer and Fall 2022

Student: Holly Pilling (Psychology), Summer 2022

Polygence, Research mentorship and support for high school students

Student: Ziv Z. (Ethics in AI project), High School in Florida, Fall 2021

Student: Ryan K. (Mechanical Engineering project), High School in California, Fall 2021

Transfer to Excellence Program, Research experience for community college students

Student: Iretunde Akinsola (Computer Science), De Anza College, Summer 2021

Training and Certification

Certificate in Teaching and Learning in Higher Education, Expected 2024

Graduate Division, UC Berkeley

Teaching Conference for First-Time Graduate Student Instructors

300-Level Course on Pedagogy

Workshops:

How Students Learn

Syllabus and Course Design

Creating and Using Grading Rubrics

Using Group Work Effectively

Creating Inclusive Classrooms

Bringing Design Justice Content into Engineering Courses, Aug 2023

Workshop at ASME International Design Engineering Technical Conferences

Service Activity

Committee Service

Research Seminar Coordinator, Berkeley Institute of Design, UC Berkeley, since 2022

Student Committee Member, Mechanical Engineering Faculty Search, UC Berkeley, 2022

Student Committee Member, Blum Center for Developing Economies Faculty Search, UC Berkeley, 2020

Leadership

Founder and President, since 2020

First-Generation and/or Low-Income Graduate Students (FGLI Grads), UC Berkeley

Awarded Outstanding Graduate Student Group of 2023

CACSSF grant recipient (\$7,000), UC Berkeley Division of Student Affairs

Big C grant recipient (\$3,700), UC Berkeley Division of Equity and Inclusion

Co-President, 2017 - 2018

Quest Scholars Network, Northwestern University

Honors and Awards

5. Dean's Award for Inclusive Excellence, UC Berkeley, 2023
4. RISE! Leader Award, UC Berkeley, 2023
3. The Vice President's Award, Northwestern University, 2018
2. Hilliard Award for Leadership, Scholarship, and Service, McCormick School of Engineering, 2018
1. Wildcat Impact Award for Collaboration, Northwestern University Student Affairs, 2017

Invited Speaker

3. Bridging and Belonging of FGLI Students in Higher Education, Ethnic Studies 198, UC Berkeley, Oct 2022.
2. Racial Justice: What Does it Look Like and How Do We Get There, QuestBridge Convene, Virtual, Online, May 2021.
1. Our Voices Matter: Advocating for Ourselves and Our Communities, QuestBridge Scholar Summit, San Francisco, CA, July 2019.

Appointments

Graduate Student Researcher, 2019-Present

Co-Design Lab, UC Berkeley

Research Associate, 2019

Lieberman Research Worldwide, Los Angeles, CA

Research Assistant, Summer 2018

Sports Equipment and Materials Group, Technical University of Munich

Research Assistant, 2016-2018

Jiaxing Huang Group, Northwestern University

Business Development Representative Intern, 2016-2018

Data and Optimization Co-op, Summer 2016

United Airlines, Chicago, IL

Product Designer, Summer 2017

Freelance Design Work, Chicago, IL

Research Assistant, Fall 2015

Composite Materials and Adaptive Structures Lab, ETH Zurich

Engineering Co-Op, Summer 2015

GE Aviation, Cincinnati, OH

Professional Affiliations

Design Society, since 2023

American Society of Mechanical Engineers, since 2019

Society of Women Engineers, since 2013

Society of Hispanic Professional Engineers, since 2013