Kelsey L. Scalaro, Ph.D. | Curriculum Vitae

Assistant Teaching Professor, CU Boulder
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Education

Degree, Program, School, Location — *Date*

Doctor of Philosophy | Engineering Education | University of Nevada, Reno 2024
Advisor: Dr. Adam Kirn (University of Nevada, Reno)
Remaining Committee: Dr. Kelly Cross (Georgia Institute of Technology), Dr. Allison Godwin (Cornell University), Dr. Indira Chatterjee (University of Nevada, Reno), Dr. Emily Hand (University of Nevada, Reno)

Dissertation Title: "*Access, Perceive, Interpret, and Believe: A Longitudinal Phenomenology of Undergraduate Engineering Recognition"*

Abstract: How undergraduate engineering students believe others see or recognize them as engineers influences how they see themselves as they author an engineering role identity. How students are recognized as engineers may encourage or limit students in their identity development, but recognition has mostly been explored in support of identity development. This illustrates a need for a more nuanced understanding of recognition as a phenomenon so that it can be used to design pedagogy and practices that facilitate opportunities for all students to be seen as engineers in ways that matter to them. Additionally, work needs to explore identity and its construct (like recognition) over time so that students can be supported across an entire undergraduate engineering program. In support of a rich and nuanced understanding of undergraduate engineering students' experiences of recognition, two overarching research questions guided this work: (RQ1) How do undergraduate engineering students experience the recognition of their engineering identities? And (RQ2) How do these experiences change over a four-year undergraduate engineering program? To answer these questions, a longitudinal phenomenological study design was implemented to understand 11 undergraduate engineering students' experiences across eight semesters of data collection. Seven focus groups and an individual interview with each student were analyzed using content and open coding to iterate towards an understanding of the essence of recognition as it was experienced by the participants. The Perceptions and Interpretations of Engineering Recognition (PIER) model is the predominant outcome of this work that distills students' experiences of recognition into three steps in interpreting meaningful recognition. This work also explores how recognition from different sources is accessed and perceived as well as how recognition beliefs change over time. These results frame recognition as a dynamic and contextual process that varies across an undergraduate engineering program with respect to access, interpretation, and beliefs. These findings set a foundation for future recognition-oriented research and have implications for how meaningful recognition could be supported by faculty, engineering programs, and industry.

Master of Science (non-thesis) | Mechanical Engineering | University of Nevada, Reno 2022
Concentration: Structures and Materials

Bachelor of Science | Mechanical Engineering | University of Nevada, Reno 2015
Capstone Project: Injection Molding Education Tool

Research Experience

Role, Grant Title, Personnel, Description	*Date*
Postdoctoral Researcher & Contracted Researcher, *Assessing Empathy Formation in Engineering Design (RFE),* Principal Investigators: J. Hess, Co-Principal Investigators: N. Fila, A. Godwin, C. Schimpf • Worked with experts to develop a scenario scale instrument to measure empathy in design.	2024 - Present
Postdoctoral Researcher, *UBelong,* Principal Investigators: A. Godwin, Co-Principal Investigators: L. DeAngelo, K. Binning, C. Schunn, N. Buswell • Qualitative data collection seeking to understand undergraduate engineering students' longitudinal belonging experiences at the intersections of race, gender, sexual orientation, and international status.	2024 - 2025
Contracted Researcher, *Developing Engineering Instructional Faculty as Leaders of Educational Change at Hispanic-Serving Institutions,* Principal Investigator: M. Kendall, Co-Principal Investigators: A. Coso Strong, I. Basalo, R. Gonzales • Qualitative analysis for an action research project seeking to understand how faculty shift from deficit to asset perspectives.	2024 - 2025
Contracted Researcher, *Greenway Institute of Elizabethtown College Center for Sustainability and Equity in Engineering (GCES),* Principal Investigator: S. Atwood, Co-Principal Investigator: R. Holcombe • Qualitative research design and analysis for a project exploring students' experiences in a new program that leverages PBL and mastery-based learning.	2023 - 2024
Graduate Researcher, *Engaging Engineering Graduate Program Directors in Shifting the Default to Trauma-Informed Frameworks of Care (GPD),* Principal Investigators: A. Kirn, A. Coso Strong • Qualitative analysis for a project seeking to understand how graduate program directors engage in trauma-informed care.	2024
Research Coordinator, *S-STEM: Creating Retention and Engagement for Academically Talented Engineers, Spring 2019-Present, National Science Foundation: Education and Human Resources (CREATE)* Principal Investigator: I. Chatterjee, Co-Principal Investigators: A. Vollstedt, A. Kirn, J. Lacombe • Mixed-mixed methods research design, collection, and analysis for a longitudinal project seeking to understand how students experience their undergraduate while participating in a cohort program. • Managed all research components of the project and led evaluation efforts as a liaison with an external evaluator.	2019 - 2024
Graduate Researcher, *Nevada Department of Transportation Snowplow Deployment,* Principal Investigator: Eric Wang • Worked with local industry partners to develop a quantitative research design.	2014 - 2015
Undergraduate Researcher, *Weather Ballon Retrieval Prediction,* Advisor: Eric Wang • Design project to support data collection for high-altitude balloon research.	2013 - 2015

Teaching Experience

Position, Course Title, University/Institution, Description	*Term Taught*
Assistant Teaching Professor, *MCEN 3025, Component Design* • Co-taught a class of 120+ students with a large scale lecture format and 4 smaller lab sections. • Supported lecture discussion, office hours, and running laboratory component.	Fall, 2025
Senior Design Director, *MCEN 4045, Senior Design* • Served as a mentor to 4 student design team comprised of 27 senior mechanical engineering students. • Met with each team every week to support their professional development as they learn to manage large projects, work on teams with various roles, interact with a client with changing needs, and meet important deliverable deadlines.	Fall, 2025
Assistant Teaching Professor, *MCEN 4045, Senior Design* • Shadowed Senior Design with the intention of being prepared to support in the event a lead faculty member takes a sabbatical. • Spent up to 6 hours a week attending courses to become familiar with the content. Attended multiple traingings held for students as well has more than 15 hours of testing, manufacturing, and finance reviews for student teams.	Fall, 2025
Cohort Facilitator, *CREATE: S-STEM Cohort,* University of Nevada, Reno • An undergraduate cohort program that leveraged evidence-based practices to support students through graduation. • Organized, designed, and implemented bi-semesterly seminars that supported community building and address career-oriented developmental needs.	Fall, 2019 – Spring, 2024
Program Facilitator and Instructor, *EFIT: Summer Bridge Program,* University of Nevada, Reno • An engineering summer bridge program supporting integration into programs. • Managed undergraduate mentors, designed and implemented one-off classes, and organized content and material.	Summer 2019, Summer 2021, Summer 2022, Summer 2023
Graduate Teaching Assistant, *ME 151: Introduction to Computer-Aided Design,* University of Nevada, Reno • Taught the lab portion of a CAD class. Designed lessons to prepare students for pre-determined assignments.	Spring 2015, Spring 2016
Graduate Teaching Assistant, *ENGR 100: Introduction to Engineering Design***,** University of Nevada, Reno • A course serving as an introduction to engineering design fundamentals for first-year students. • Organized and ran a design lab, reworked portions of curriculum, and instructed lab classes.	Fall, 2014, Fall, 2015, Fall 2019

Industry Experience

Position, Company, Description	*Date*
Mechanical Design Engineer 1, Sierra Nevada Corporation • Design, analyzed, and tested mechanical components and housings for radar and electrical systems for high vibration and high temperature applications. • Analyzed frangible features of radar towers and streamlined their manufacturing and installation. Managed program model and drafting libraries. • Analyzed and fabricated components for multi sensor helicopter landing aid. • Designed products for extreme thermal and vibration environments and utilized CAD for design and drafting; performed stress, fracture, and thermal analysis;	2015 - 2020

Mechanical Engineering Intern and Design Engineer 1, Aerojet Rocketdyne, 2013 - 2015

- Designed, analyzed, and tested solid rocket motors, mono-propellant engines, and pre-burners for liquid rocket engines
- Utilized CAD for design and drafting; performed thermal, vibration, and burn rate analysis; participated in cold and hot fire testing; evaluated and refined manufacturing methods for metal additive manufacturing for injectors, and large-scale composite layups for rocket cases and nozzles.

Funding

Title, Organization	*Total Amount*	*Date*
Graduate Student Travel Award, University of Nevada Reno	$1,500	2024, 2022, 2021
Differential Fee Graduate Research Assistantship Award, University of Nevada Reno	$52,000	2021

Journal Publications

Journal Articles Published

Paper

Kirn, A., Thomas, K., **Scalaro, K.,** Coso Strong, A. (2025). The hats they wear: defining and articulating the enactment of the graduate program director role. Studies in Graduate and Postdoctoral Education. Impact Factor: 1.6

Scalaro, K., Franklin, T., Godwin, A. (2024), Gendered Conformity to Masculine Norms by Engineering Discipline, Journal of Civil Engineering Education. Impact Factor: 1.8

Benedict, B., **Scalaro, K.,** Godwin, A., Kirn, A., & Verdín, D. (2024). From Experiences to Beliefs: Exploring Experiences that Foster Recognition in Engineering Across Race and Gender. Journal for Engineering Education. Impact Factor: 3.9

Kasar, A., **Scalaro, K**., Menezes, P. (2021) Tribological properties of high-entropy alloys under dry conditions for a wide temperature range —a review. Materials. Impact Factor: 3.4

Journal Articles in Progress

Paper

Scalaro, K., Chatterjee, I., Vollstedt, A., & Kirn, A**.** (2026 Submission) The Three-Step Model for the Interpretation of Engineering Recognition. Journal of Engineering Education.

Peer Reviewed Conference Proceedings

Paper

Scalaro, K., Chatterjee, I., Vollstedt, A., & Kirn, A**.** (June 2025). The Role of Practicing Engineers in Recognizing Students' Identities. American Society for Engineering Education Annual Conference and Proceedings.

Scalaro, K., Chatterjee, I., Vollstedt, A., & Kirn, A**.** (June 2025). WIP: Developing Rasch/Guttman Scenario Scales towards an Empathy in Design Instrument. American Society for Engineering Education Annual Conference and Proceedings.

Scalaro, K., Chatterjee, I., Vollstedt, A., & Kirn, A**.** (June 2024) Undergraduate Engineering Students' Experiences of Faculty Recognition. American Society for Engineering Education Annual Conference and Proceedings.

Atwood S., **Scalaro, K.,** & Holcombe, R., (June 2024) Board 315: Initial Findings of Engineering Faculties' Perceptions of Mastery Assessment in a Project-based Engineering Program. American Society for Engineering Education Annual Conference and Proceedings.

Atwood, S., **Scalaro, K.**, & Holcombe, R. (June 2024) Work-in-Progress: Seizing failure as an opportunity to learn: Undergraduate engineering students' conceptions of failure and iteration. American Society for Engineering Education Annual Conference and Proceedings.

Chatterjee, I., **Scalaro, K.,** Vollstedt, AM., Chin, I., Bozsik, J., Williams, JM., Kirn, A. (June 2024), Board 386: S-STEM: Creating Retention and Engagement for Academically Talented Engineers-Lessons Learned from a Four-Year Cohort. American Society for Engineering Education Annual Conference and Proceedings.

Strong, A., Kirn, A., Kayyali, M., **Scalaro, K.** (June 2024) Board 416: Understanding the Experiences of Graduate Program Directors: The Intersection of Roles, Responsibilities, and Care in Engineering Graduate Education. American Society for Engineering Education Annual Conference and Proceedings.

Scalaro, K., Chatterjee, I., Vollstedt, A., LaCombe, J., Parker, M.C, & Kirn, A**.** (June 2023) Interest-Driven Major Pathways for Mid-Program Undergraduate Engineering Students. American Society for Engineering Education Annual Conference and Proceedings.

Steinhorst, K., **Scalaro, K.**, Young, R., Chatterjee, I., Vollstedt, A., & Kirn, A**.** (June 2023) Creating social capital: Developing resources in a cohort program. American Society for Engineering Education Annual Conference and Proceedings.

Chatterjee, I, **Scalaro, K.**, Vollstedt, A., Williams, JM., & Kirn, A. (June 2023) Board 388: S-STEM: Creating Retention and Engagement for Academically Talented Engineers – Lessons learned. American Society for Engineering Education Annual Meeting.

Scalaro, K., Chatterjee, I., Satterfield, D., Vollstedt, A., LaCombe, J., Parker, M.C*, & Kirn, A**.** (June 2022) From knowing to doing: Changes in performance/competence beliefs of developing engineers. American Society for Engineering Education Annual Conference and Proceedings.

Chatterjee, I, **Scalaro, K.**, Vollstedt, A., Lacombe, J.C., & Kirn, A. (June 2022) S-STEM: Creating Retention and Engagement for Academically Talented Engineers - successes and challenges. American Society for Engineering Education Annual Meeting.

Satterfield, D., Parker, M., Bahnson, M., Perkins, H., Tsugawa, M., Cass, C., **Scalaro, K.,** Thomas, K., Sanders, J. & Kirn, A. (June 2022) Unpacking Engineering Doctoral

Student Career Goal Setting and Future Time Perspective. American Society for Engineering Education Annual Meeting.

Scalaro, K., Chatterjee, I., Vollstedt, A., LaCombe, J., & Kirn, A. (October 2021) Is This the Real Life? Exploring How Virtual Learning Environments Influence Engineering Identity. Frontiers in Education Annual Conference.

Scalaro, K., Chatterjee, I., Vollstedt, A., LaCombe, JC, & Kirn, A**.** (June 2021) A Two-step Model for the Interpretation of Meaningful Recognition. American Society for Engineering Education Annual Meeting.

Chatterjee, I, **Scalaro, K.**, Vollstedt, A., Lacombe, J.C., & Kirn, A. (June 2021) S-STEM: Creating Retention and Engagement for Academically Talented Engineers. American Society for Engineering Education Annual Meeting.

Mentorship - Undergraduate Students

Name	*Project Title*	*Progress*
Kiara Steinhorst*	Social Capital of Low-Income Academically Talented Students	2021 (Completed)
Rachel Young*	Social Capital of Low-Income Academically Talented Students	2021 (Completed)

*Both were funded through differential fee graduate research award

Internal Service

Task	*Role*	*Date*
Design Center Colorado Committee	Committee Member	Fall, 2025
Seminar Visit: Andy Dong	Individual Meeting Host	Fall, 2025
First-Year Engineering Orientation	Faculty orientation guide	Fall, 2025
Meet You Major	Faculty Representative	Fall, 2025
Phi Sigma Rho Career Panel	Panelist	2022
College of Engineering Dean Search Committee	Student Representative	2022

External Service

Task	*Role*	*Date*
Journal of Women and Minorities in Science and Engineering	Ad hoc Journal Reviewer	2024
S-STEM PI Symposium	Poster presenter and moderator	2022
ERM Directors Special Session: Bringing Equity and Inclusion Practices Back to your institution	Moderator	2022
American Society for Engineering Education	Ad hoc Conference Reviewer and Moderator	2021 - Present

Professional Training and Certificates

Training or Program	*Date*
Fall Teaching, Learning, and Technology Conference - CTL & OIT	Fall, 2025
Mechanical Engineering Teaching Meetings	Fall, 2025
Postdoctoral Leadership Program, Cornell University	2024
Adult Mental Health First Aid Training, University of Nevad Reno	2023
Safe Zone Training – Level 1 & 2, American Society of Engineering Education	2020, 2021

Awards

Award	*Sponsor*	*Date*
Finalist for ERM Best Paper	American Society of Engineering Education, ERM Division	2022
Graduate Student Award	American Society of Engineering Education, Pacific Southwest Division	2021