Jialing Wu

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Research Areas

Pre-college Engineering Education; Computational Social Science; Mixed Methods Research; International Engineering Education; AI in Education

Education

Expected May 2028 — **The Ohio State University, College of Engineering, *Columbus, OH, USA***
Ph.D. in Engineering Education
Minor in Computer Science and Engineering — AI Track
Advisor: Dr. Adam Carberry

May 2024 — **Vanderbilt University, Peabody College, *Nashville, TN, USA***
Master of Education, International Education Policy and Management

July 2017 — **Shanghai University, *Shanghai, China***
Bachelor of Engineering, Mechanical Engineering

Publications

Forthcoming

June 2026 — **Wu, J.**, Ren, S., & Wang, S. (2026). Using Bipartite Network Analysis to Examine Global Collaboration between Engineering and STEM Education (2014–2024). *American Society for Engineering Education (ASEE).*

Wu, J. & Wang, S. (2026). What Does the "Person-Centered Quantitative Approach" Mean in Practice? A Literature Review in STEM Education Research (WIP). *American Society for Engineering Education (ASEE).*

Wu, J. & Carberry, A. (2026). Integrating Robotics and Engineering Education: Initial Validation Testing of an SCCT- and CT-Based Survey Instrument (WIP). *American Society for Engineering Education (ASEE).*

Wu, J. & Lyra, M. M. de. (2026). Exploring Perspectives on Pre-College Robotics Education: A Social Media–Based Topic and Emotion Analysis (WIP). *American Society for Engineering Education (ASEE).*

April 2026 — Wei, X., & **Wu, J.** (2026). Navigating AI in Higher Education: Student Views on Professors' Attitudes toward AI Tools in the Classroom Analyzed through Sentiment Analysis and Topic Modeling. *American Educational Research Association (AERA).*

Wu, J., & Yan, J. (2026). Comparing High School Accessibility in California and New York: A GIS-Based Assessment. *Comparative and International Education Society (CIES).*

Conference Papers

2025 — Wei, X., **Wu, J.**, Klein-Gardner, S., & Dalal, M. (2025, November). Evaluating fidelity of teaching in pre-college engineering: A case study of curriculum implementation [Conference presentation]. *American Evaluation Association (AEA) Annual Conference*, Portland, OR, United States. eval25.eventscribe.net

Lyra, M. M. de., **Wu, J.**, & Carberry, A. (2025, October). Exploring early-career engineering faculty experiences teaching using social cognitive theory [Conference paper]. *2025 IEEE Frontiers in Education Conference (FIE)*, Atlanta, GA, United States. doi:10.1109/FIE63693.2025.11328485

Dalal, M., **Wu, J.**, & Iqbal, A. (2025). Overcoming challenges in robotics education: Examining teacher facilitators and barriers. *Research in Engineering Education Symposium (REES).*

Wu, J., Dalal, M., & Carberry, A. (2025). Advancing equity: Exploring the experiences of transgender and gender non-conforming students in a pre-college engineering course (WIP). *ASEE*. doi:10.18260/1-2--57577
— *Second Place Best Division Paper, ASEE Pre-College Engineering Education Division*

Wei, X., **Wu, J.**, & Klein-Gardner, S. (2025). Parents' knowledge, attitudes, and behaviors on pre-college engineering education course (WIP). *ASEE*. doi:10.18260/1-2--55568

Lachapelle, C., Dalal, M., McKeown, K., & **Wu, J.** (2025). Curriculum design for all learners. *ASEE*. doi:10.18260/1-2--56190

Darling-Aduana, J. S., Heinrich, C., Noonan, J., **Wu, J.**, & Enriquez, K. (2025). Failing to learn from failure: The facade of online credit recovery assessments. *AERA*. doi:10.3102/ip.25.2182630

2024

Wu, J., & Dalal, M. (2024). High school students' perspectives on pre-college Engineering Education Courses (Fundamental). *ASEE*. doi:10.18260/1-2--47527

Wu, J., Leger, N., & Klein-Gardner, S. (2024). High school students' perspectives on mathematical modeling in the Engineering Design Process (RTP). *ASEE*. doi:10.18260/1-2--47528

Research Experience

Aug. 2025 – Present

Independent Research in Computational Social Science, *Columbus, OH, USA*

- Conduct a systematic literature review using the PRISMA search and screening protocol to map major research questions, analytic models, and methodological gaps in person-centered quantitative studies in STEM education.
- Apply large language models (LLMs) for sentiment and topic analysis on large-scale social media data to examine perceptions of pre-college robotics education and use the same analytical pipeline to analyze student comments on instructor attitudes toward AI tools and their impact on classroom dynamics.
- Use GIS analysis with data from the U.S. Department of Education and the U.S. Census Bureau to compare accessibility disparities across California and New York, identifying geographic inequities in school access.
- Use bipartite network analysis on 10 years of publications from leading journals in engineering and STEM education to identify global collaboration hubs, cross-disciplinary bridges, and emerging knowledge clusters.

Aug. 2024 – Present

The Ohio State University, College of Engineering, *Columbus, OH, USA*
Graduate Research Assistant (with Dr. Adam Carberry)

The e4usa+FIRST program combines the Engineering for US All (e4usa) curriculum with FIRST Robotics, offering hands-on engineering for college and high school students.

- Lead the development of research instruments, including surveys grounded in Social Cognitive Career Theory (SCCT) and computational thinking frameworks, to assess student self-efficacy, identity, and skill development.
- Collect pre-test data via Google Forms to conduct initial validity checks for the survey instrument.
- Prepare and submit IRB applications, ensuring research protocols meet ethical standards and compliance requirements across multiple high school sites.
- Conducted qualitative analysis of teachers' interviews on robotics curriculum implementation, identifying facilitators and challenges to inform curriculum revisions and wrote the methods and results sections of research papers.

June 2023 – July 2024

Vanderbilt University, School of Engineering, ***Nashville, TN, USA***
Graduate Research Assistant (with Dr. Stacy Klein-Gardner, Dr. Medha Dalal)
Engineering for Us All (e4usa) is a first-of-its-kind, national initiative designed to introduce engineering design principles to a new generation of students.

- Investigated high school students' perspectives on engineering education courses; analyzed the relationship between students' backgrounds and career choices; conducted qualitative analysis on open-ended responses from 2022–2023 post-test surveys, developed codebooks, and performed statistical tests to compare pre- and post-test data.
- Explored students' opinions on using mathematical modeling tools in engineering design; analyzed focus group data and compared thematic findings with cognitive load theory to identify potential improvements in instructional design.
- Submitted two conference papers for the 2024 ASEE, led research group meetings, managed project timelines, and delivered presentations at conferences.
- Revised Unit 2 curriculum, changing the topic from water filters to wind turbines; revamped 5 lessons and 9 activities, adapted 8 lessons and 7 activities, and overhauled teaching slides and assignments. Redesigned MATLAB code and associated activities; collected teacher feedback during curriculum pilots and the new semester.
- Drafted memos for facilitators in summer teacher professional development programs, ensured proper formatting of Google Forms, and verified the accuracy of links for asynchronous activities on the Canvas platform.

Industry Experience

May – Aug. 2024

Howard Hughes Medical Institute (HHMI), ***Maryland, USA***
Assessment Intern, Science Education
The BioInteractive team at HHMI creates engaging, science-based educational resources that empower educators to teach complex biological concepts through real-world examples and interactive media.

- Developed a comprehensive HTML codebook with 9 chapters and 25 sections to guide the content team in designing Canvas course pages, covering text formatting, hyperlinks, multimedia, call-out boxes, interactive games, and other page elements.
- Monitored teacher enrollment data for an inclusive teaching course, recording key information such as teacher backgrounds, course enrollment dates, and participation duration.
- Utilized UDOIT to perform accessibility audits on course content and developed an issue handbook to provide content editors with actionable guidelines for improving accessibility.

July 2017 – July 2022

Shanton Way Executive Search Co., Ltd., ***Shanghai, China***
Consultant
An Asia-based headhunting firm with offices in Hong Kong, Singapore, and Shanghai.

- Communicated with clients in the educational sector to understand their needs for both academic and non-academic positions, including roles such as principals, department heads, and commercial team members.
- Collaborated with clients across consulting, finance, technology, and pharmaceuticals to recruit senior management personnel such as CEOs, CTOs, and engineering professionals.
- Conducted research on clients' competitors to determine effective search strategies.
- Sourced candidates through LinkedIn and other platforms, managing a pool of over 1,500 professionals in international and bilingual schools, as well as K–12 educational companies.
- Promoted clients' organizations and job openings, assessing candidates based on career aspirations and alignment with client expectations.
- Interviewed and evaluated candidates, focusing on their experience in navigating policy and cultural challenges in international environments, and recommended suitable candidates.

Training and Certificates

2025	**Summer Institute in Computational Social Science**, University of Rochester Topics: LLMs, network analysis
2024	**ICPSR Summer Program**, University of Michigan Topics: Python programming, R programming, text analysis

Scholarships and Awards

2025–2026	**Frederic Bastiat Fellowship**, Mercatus Center at George Mason University Selected for a competitive one-year graduate fellowship ($5,000) providing training in classical liberal political economy and policy-relevant research
2025	**Career Development Grant**, The Ohio State University
	Smith Scholarship, Department of Engineering Education, The Ohio State University
2022–2024	**Scholastic Achievement Scholarship**, Vanderbilt University, Peabody College
2014, 2015	**University Scholarship for Academic Excellence**, Shanghai University

Leadership and Service

2025–2026	Graduate Ambassador; Department of Engineering Education, The Ohio State University
2023–2024	Founding Member and Treasurer; International Mentorship at Peabody (iMAP), Vanderbilt University
	Mentor; Peabody Peer Career Mentor Program, Vanderbilt University
	Mentor; Peabody International Students and Affairs, Vanderbilt University
2017–2022	Migrant Children Program Coordinator and Teacher; AIQUZHI Volunteer Group

Skills

Technical	Python, R, Text Analysis, Data Modeling, Statistical Analysis, Network Analysis, LLM
Professional	Communication, Technical Presentations, Curriculum Design, Instructional Material Development
Languages	Mandarin (Native), English (Fluent)