Laura Stegner

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My research is at the intersection of Human-Robot Interaction (HRI), Human-Computer Interaction (HCI), Robotics, and Healthcare. Motivated by global challenges posed by increasing caregiver shortages, I seek to design, build, and evaluate intelligent systems that support complex tasks in healthcare environments. I take an interdisciplinary approach to my work, utilizing qualitative, community-based, quantitative, and technical approaches from across computer science, engineering, social science, nursing, and design.

Academic Positions

Assistant Professor, George Washington University — 2025–Current
Department of Mechanical and Aerospace Engineering

Education

Ph.D. in Computer Sciences, University of Wisconsin–Madison (UW–Madison) — 2019–2025
Advisor: Dr. Bilge Mutlu, Research area: Human-Robot Interaction, Doctoral minor: Kinesiology

M.S. in Computer Sciences, University of Wisconsin–Madison — 2019–2022

B.S. in Electrical Engineering, University of Cincinnati (UC) — 2014–2019
Summa Cum Laude, Distinguished University Honors Scholar

Exchange Student, Newcastle University — Fall 2018
Full semester academic exchange

Study Abroad, Seoul National University — Summer 2015
Summer language and culture exchange program

Awards and Honors to Me

2025 **CRA-WP Grad Cohort for Women**
Full funding for workshop attendance

2024 **Cisco Distinguished Graduate Fellowship**
9 months of full PhD funding

2023 **Heidelberg Laureate Forum**
Full funding to attend the Heidelberg Laureate Forum as a Young Researcher

2023 **Golden Brick Award**
UW–Madison departmental award for outstanding service

2023 **Best Talk**
Awarded at the UW–Madison Computer Science Symposium

2020 **National Science Foundation Graduate Fellowship**
3 years of full PhD funding and 2 years of additional program support

2019 **LUCID Training Program**
2 years of full PhD funding

2019 **Presidential Leadership Medal of Excellence**
Recognized for outstanding service and leadership during undergraduate studies

2018 **Rowe Scholarship Fund**
Full support for an exchange semester at Newcastle University

2018 **DAAD RISE Germany Scholar**
3 months research support at the Max-Planck Institute for Software Systems

2019 **Mantei/Mae Award**
Selected annually by UC Electrical Engineering and Computer Science Department for outstanding academic achievement, also awarded in 2017 and 2018

2016 **UC EECS Department Scholarship**
Nominated by a committee of faculty and staff for academic merit and service to the department

2014 **Cincinnatus University Scholar**
Four-year award for partial tuition support based on academic merit and community service

2014 **American Electric Power Educational Trust Scholarship**
Merit-based award for one semester's tuition

Publications

Peer-Reviewed Full Conference Papers

[C9] **Maintenance Goals in End-User Tasking of Robots** — Under Review
L. Stegner, D. Porfirio, M. Roberts, B. Mutlu, and L. Hiatt
Robotics: Science and Systems 2025

[C7] **Understanding On-the-Fly End-User Robot Programming** — DIS '24 Acceptance rate: 26.9%
L. Stegner,* Y. Hwang,* D. Porfirio, and B. Mutlu | *Equal contribution
Designing Interactive Systems Conference 2024
10.1145/3643834.3660721

[C6] **"This really lets us see the entire world:" Designing a conversational telepresence robot for homebound older adults** — DIS '24 Acceptance rate: 26.9%
Y. Hu, **L. Stegner**, Y. Kotturi, C. Zhang, Y. Peng, F. Huq, Y. Zhao, J. Bigham, B. Mutlu
Designing Interactive Systems Conference 2024
10.1145/3643834.3660710

[C5] **Situated Participatory Design: A Method for In Situ Design of Robotic Interaction with Older Adults** — CHI '23 Acceptance rate: 27.6%
L. Stegner, E. Senft, and B. Mutlu
2023 CHI Conference on Human Factors in Computing Systems
10.1145/3544548.3580893

[C4] **Sketching Robot Programs On the Fly** — HRI '23 Acceptance rate: 23.8%
D. Porfirio, **L. Stegner**, M. Cakmak, A. Sauppé, A. Albarghouthi, and B. Mutlu
2023 ACM/IEEE International Conference on Human-Robot Interaction
10.1145/3568162.3576991

[C3] **Designing for Caregiving: Integrating Robotic Assistance in Senior Living Communities** — DIS '22 Acceptance rate: 21.5%
L. Stegner and B. Mutlu
Designing Interactive Systems Conference 2022
10.1145/3532106.3533536

[C2] **Figaro: A Tabletop Authoring Environment for Human-Robot Interaction** — CHI '21 Acceptance rate: 26.3%
D. Porfirio, **L. Stegner**, M. Cakmak, A. Sauppé, A. Albarghouthi, and B. Mutlu
2021 CHI Conference on Human Factors in Computing Systems
10.1145/3411764.3446864

[C1] **Paracosm: A test framework for autonomous driving simulations** — FASE 2021
R. Majumdar, and A. Mathur, M. Pirron, **L. Stegner** and D. Zufferey
24th Intl. Conference on Fundamental Approaches to Software Engineering
10.1007/978-3-030-71500-7_9

Peer-Reviewed Workshop Papers and Posters

[P8] **Designing End-User Tools for Integrating Care Robots in Senior Living Facilities** — GC-Women '25 Poster
L. Stegner
2025 CRA-WP Grad Cohort for Women Workshop

[P7] **Towards Leveraging End-User Knowledge for Long-Term Use of Robots in Care Facilities** — HRI '24 Workshop
L. Stegner, Y. Hwang, D. Porfirio, and B. Mutlu
Human-Robot Interaction for Aging in Place Workshop at HRI '24

[P6] **Considerations for End-User Development in the Caregiving Domain** — AAAI FSS '23
L. Stegner, D. Porfirio, M. Roberts, and L. Hiatt
Association for the Advancement of Artificial Intelligence 2023 Fall Symposium on Unifying Representations for Robot Application Development (UR-RAD)

[P5] **Towards Extending Person-Centered Care to Address Care Technology** — IROS '23 Workshop
L. Stegner, E. Senft, T. Roberts, and B. Mutlu
Geriatronics AI Workshop at IROS 2023

[P4] **Knowing Who Knows What: Designing Socially Assistive Robots with Transactive Memory System** — CHI '23 Workshop
Y. Hu, **L. Stegner**, and B. Mutlu
Socially Assistive Robots as Decision Makers Workshop at CHI '23

[P3] **Factors that Affect Personalization of Robots for Older Adults** — HRI '23 Workshop
L. Stegner, E. Senft, and B. Mutlu
CONCATENATE Workshop at HRI '23

[P2] **Programming-Direct Manipulation Integration for Simulation Environments** — RISE Germany '18 Poster
R. Majumdar, A. Mathur, M. Pirron, **L. Stegner** and D. Zufferey
2018 Research Internships in Science and Engineering Germany Meeting

[P1] **Determination of manganese using cathodic stripping voltammetry and lead using anodic stripping voltammetry** — ACS CRM '16 Poster
L. Stegner, W. Kang, E. Haynes, W.R. Heineman, I. Papautsky
2016 American Chemical Society Central Regional Meeting

Invited Talks

2025 **George Mason University**, RobotiXX Lab

2025 **University of Colorado Boulder**, Collaborative AI and Robotics Lab

2025 **Colorado School of Mines**, Mines Interactive Robotics Research Lab (MIRRORLab)

2024 **George Washington University**, Assistive Robotics and Tele-Medicine (ART-Med) Lab

2024 **National University of Singapore**, Collaborative Learning and Adaptive Robots Group (Virutal)

2023 **University of Maryland**, Human-Computer Interaction Laboratory

2023 **Johns Hopkins University**, Intuitive Computing Lab

2023 **Heidelberg Laureate Forum**, Lightning Talk & Poster Flash Session

2023 **Colorado School of Mines**, MIRRORLab Summer Speaker Series (Virtual)

2023 **National Robotarium and Edinburgh Centre for Robotics**, Computer Science Seminar Series

Teaching

Courses

2025 **Engineering Computations (Co-Instructor)**, GWU MAE 2117
Re-designed course materials to enhance AI-forward learning

2019 **Engineering Foundations (Teaching Assistant)**, UC ENED 1020
Led weekly discussion sessions for project-based introductory engineering course

2019 **Programming for ECE (Lab Instructor)**, UC EECE 1080C
Designed and led labs for a programming course using the Zumo32U4 bots from Polulu

2017 **Learning Community (Peer Leader)**, UC MLTI 1011
Developed and taught two lectures per week for a class of 15 freshman engineers to ease college transition

Guest Lectures and Workshops

2022 **Guest Lecturer**, UW-Madison SOC WORK/SOC 422: Social Issues in Aging
Design considerations for robots in senior living communities

2022 **Session Instructor**, UW-Madison Grandparents University
Co-organized and led interactive lab on social robotics for children and their grandparents

2021 **Workshop Facilitator**, UW-Madison Psychology Research Experience Program
Created hands-on virtual workshop introducing natural language processing with Python

Mentoring and Supervision

I mentor students in both research and technical skills according to their individual interests and goals. Students either work on independent projects or collaborate as part of a larger team.

UW-Madison

Masters (Semester Project)
Pedro Goulart

Undergraduates
Allen Chien, Yuqing Wang, Soft Liampisan, Yi Cheng Lee, Shanshan Li, Mary Kristjanson, Wen Jie Lee, Julian Zhu, Kartikeye Khanna, Akarsh Ache, Zach Potter, Emma Liu

Academic Service

Event Organization

2025 **Unifying Representations for Robot Application Development (UR-RAD)**
Association for the Advancement of Artificial Intelligence 2025 Fall Symposium Series

2024 **Unifying Representations for Robot Application Development (UR-RAD)**
Association for the Advancement of Artificial Intelligence 2024 Fall Symposium Series

2024 **RoboCare Design Workshop: Understanding, Translating, Operationalizing, and Scaling Up Design Knowledge Regarding Robotic Systems for Care Assistance**
DIS '24 Companion: Companion Publication of the 2024 ACM Designing Interactive Systems Conference

2024 **End-User Development for Human-Robot Interaction (EUD4HRI)**
HRI '24: Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction

2023 **Unifying Representations for Robot Application Development (UR-RAD)**
Association for the Advancement of Artificial Intelligence 2023 Fall Symposium Series

Referee Service

Journals

- Transactions on Human-Robot Interaction
- Human-Computer Interaction
- Information Technology & People
- International Journal of Social Robotics

Conferences

- ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- ACM Conference on Designing Interactive Systems (DIS)
- ACM Conference on Computer Supported Cooperative Work (CSCW)
- IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR)

Student Volunteer

- DIS '24

Leadership and Outreach

Mentor, ACM-W student chapter mentorship program — 2023–2025
Monthly meetings with a group of 3-4 undergraduate women in computer and data science

Student Representative, Grace Hopper Celebration for Women in Computing — 2024
Answered questions from prospective graduate students who visited the UW–Madison booth

Mentor, UW–Madison Computer Sciences New Grad — 2023–2024
Supported a small group of incoming graduate students through virtual meetings

Coordinator and Panelist, High school outreach day — 2023
Organized and hosted half-day lab visit and lead panel

Tour Guide, People and Robots Lab — 2021–2024
Introduced lab spaces and coordinated tech demonstrations, 3-5 annually

Treasurer, Student Association for Computing Machinery (ACM) — 2020–2024
Managed $15,000 USD annual coffee budget for the UW–Madison Computer Sciences department

Vice President, Eta Kappa Nu Honor Society — 2017–2019
Led initiative where members produced videos explaining challenging concepts from core courses

Math and Reading Tutor, Cincinnati Public Schools — 2014–2018
Assisted elementary schoolers with math and reading concepts in group and individual settings

Professional Experience

U.S. Naval Research Laboratory, NREIP Researcher — Jun–Sep 2023, May–Aug 2024
PI: Dr. Laura Hiatt, Location: Washington, DC, USA

- Improving the alignment of user expectations and robot task execution for user-specified tasks using automated planning and end-user programming

Max Planck Institute for Software Systems (MPI-SWS), Research Intern — Jun–Sep 2018, May–Aug 2019
PI: Dr. Rupak Majumdar, Location: Kaiserslautern, Germany

- Creating parameterized test environments for autonomous car controllers

Novel Device Lab / Eccrine Systems, Inc., Research Co-op — Aug–Dec 2017
PI: Dr. Jason Heikenfeld, Location: Cincinnati, Ohio, USA

- Developing and characterizing a sweat flow-rate sensor

American Electric Power, Protection and Controls Intern — Jan–May 2017
Supervisor: Rachel Perdew, Location: Columbus, Ohio, USA

- Assisted with detailed scoping for substation networking projects and performed quality review of schematic and wiring diagrams

Sandvik Hyperion, Manufacturing Systems Co-op — May–Aug 2016, Aug–Dec 2015
Supervisor: Mark Harrand, Location: Worthington, Ohio, USA

- Developed and released database modules and end-user software to digitize process improvement tracking and import data from sister plant into local database