SARAH SEBO

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RESEARCH OVERVIEW

My current research explores **social dynamics** in **human-robot interactions**. I design social robots that can shape human-to-human interactions, enable long-term human-robot social relationships, and build a fundamental understanding of how to engineer human-like social interactions. My research demonstrates real impact in people's everyday lives through the design and development of robots for use in education, within collaborative teams, and in the home.

Key words: Human-Robot Interaction (HRI), Robotics, Human-Computer Interaction (HCI)

EMPLOYMENT

Assistant Professor   2020 - current
Univeristy of Chicago, Computer Science Department

EDUCATION

Ph.D. in Computer Science   2014 - 2020
Yale University
Advisor: Brian Scassellati
Thesis Title: "Developing Robots Teammates that Enhance Social Dynamics and
Performance in Human-Robot Teams"
Thesis Committee: Brian Scassellati, Malte Jung, Marynel Vázquez, Nicholas Christakis

B.S. in Electrical and Computer Engineering   2010 - 2014
Franklin W. Olin College of Engineering

AWARDS AND HONORS

HRI 2025 Best Paper Honorable Mention Award - User Studies Track	2025
HRI 2025 Outstanding Reviewer Recognition	2025
NSF CAREER Award	2024
HRI 2024 Best Paper Honorable Mention Award - Theory and Methods Track	2024
2019 Rising Star in EECS	2019
Robotics: Science and Systems (RSS) Pioneer	2016
National Science Foundation Graduate Research Fellowship - Honorable Mention	2016
HRI Pioneer	2016

AWARDED RESEARCH GRANTS

NSF CISE Core Medium ($750k, Co-PI with Elaine Short and Trevion Henderson)	2024
NSF CAREER ($775k, PI)	2024
NSF CISE Core Medium ($1.2m, Co-PI with Bilge Mutlu and Joe Michaelis)	2023
UChicago-Chapin Hall Joint Research Fund ($64k, Co-PI with Kiljoong Kim)	2023

AWARDED TEACHING GRANTS

Curricular Innovation Fund for UChicago Human-Robot Interaction Course ($48k)	2025
Milgrom Computer Coding Fellowship (Co-PI w/ Randall H. Landsberg)	2022
Curricular Innovation Fund for UChicago Intro Robotics Course ($78k)	2022

AWARDED GRANTS, SCHOLARSHIPS, AND PRIZES TO STUDENTS

Data Science Institute Postdoctoral Scholars Program to PostDoc Teresa Flanagan	2024
Quad Undergraduate Research Scholars Program($5k) to undergraduate Kaitlyn Li	2024
Milgrom Student Research Initiative Grant ($20k) to PhD student Alex Wuqi Zhang	2023
Quad Undergraduate Research Scholars Program($5k) to undergraduate Clark Kovacs	2023
Quad Undergraduate Research Scholars Program($5k) to undergraduate Stephanie Kim	2021

JOURNAL PUBLICATIONS

J6   Hadas Erel*, Marynel Vázquez*, **Sarah Sebo***, Nicole Salomons*, Sarah Gillet*, and Brian Scassellati* (2024). RoSI: A Model for Predicting Robot Social Influence. *ACM Transactions on Human-Robot Interaction*.
*equal contribution

J5   Sarah Gillet, Marynel Vázquez, Sean Andrist, Iolanda Leite, and **Sarah Sebo** (2024). Interaction-Shaping Robotics: Robots that Influence Interactions between Other Agents. *ACM Transactions on Human-Robot Interaction*.

J4   Nicole Salomons, **Sarah Strohkorb Sebo**, Meiying Qin, and Brian Scassellati (2021). A Minority of One against a Majority of Robots: Robots Cause Normative and Informational Conformity. *ACM Transactions on Human-Robot Interaction*, 10(2).

J3   **Sarah Sebo**, Ling Liang Dong, Nicholas Chang, Michal Lewkowicz, Michael Schutzman, and Brian Scassellati (2020). The Influence of Robot Verbal Support on Human Team Members: Encouraging Outgroup Contributions and Suppressing Ingroup Supportive Behavior. *Frontiers in Psychology: Performance Science*, 11.

J2   **Sarah Sebo**, Brett Stoll, Brian Scassellati, Malte F. Jung (2020). Robots in Groups and Teams: A Literature Review. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW2).

J1   Margaret Traeger, **Sarah Strohkorb Sebo**, Malte F. Jung, Brian Scassellati, Nicholas A. Christakis (2020). Vulnerable Robots Positively Shape Human Conversational Dynamics in a Human-Robot Team. *Proceedings of the National Academy of Sciences (PNAS)*, 117(12), 6370-6375.

CONFERENCE PUBLICATIONS

C21 Lauren Wright, Andre Dang, **Sarah Sebo** (2025). "I Know That Other Robot, You Can Turn Them Off": Ingroup Robots Elicit Lower Compliance to Instructions that Undermine Another Robot. To Appear In *Proceedings of the 34th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2025)*.

C20 Alex Wuqi Zhang, Rafael Queiroz, **Sarah Sebo** (2025). Balancing User Control and Perceived Robot Social Agency through the Design of End-User Robot Programming Interfaces. In *Proceedings of the the 21st ACM/IEEE International Conference on Human Robot Interaction (HRI 2025)*.
Acceptance rate: 25%
🏆 *Best Paper Honorable Mention Award*

C19 Ting-Han Lin, Hannah Dinner, Tsz Long Leung, Bilge Mutlu, J. Gregory Trafton, **Sarah Sebo** (2025). Connection-Coordination Rapport (CCR) Scale: A Dual-Factor Scale to Measure Human-Robot Rapport. In *Proceedings of the the 21st ACM/IEEE International Conference on Human Robot Interaction (HRI 2025)*.
Acceptance rate: 25%

C18 Tewodros W. Ayalew*, Jennifer Wang*, Michael L. Littman, Blase Ur, **Sarah Sebo** (2025). Enabling End Users to Program Robots Using Reinforcement Learning. In *Proceedings of the the 21st ACM/IEEE International Conference on Human Robot Interaction (HRI 2025)*.
*equal contribution
Acceptance rate: 25%

C17 Alex Wuqi Zhang, Clark Kovacs, Liberto de Pablo, Justin Zhang, Maggie Bai, Sooyeon Jeong, **Sarah Sebo** (2025). Exploring Robot Personality Traits and Their Influence on User Affect and Experience. In *Proceedings of the the 21st ACM/IEEE International Conference on Human Robot Interaction (HRI 2025)*.
Acceptance rate: 25%

C16 Michael Fusheng Xu, Bengisu Cagiltay, Joseph Michaelis, **Sarah Sebo**, Bilge Mutlu (2024). Robots in Family Routines: Development of and Initial Insights from the Family-Robot Routines Inventory. In *Proceedings of the the 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2024)*.

C15 Stephanie Kim, Jacy Reese Anthis, **Sarah Sebo** (2024). A Taxonomy of Robot Autonomy for Human-Robot Interaction. In *Proceedings of the the 20th ACM/IEEE International Conference on Human Robot Interaction (HRI 2024)*.
Acceptance rate: 25%
🏆 *Best Paper Honorable Mention Award*

C14 Spencer Ng, Ting-Han Lin, You Li, **Sarah Sebo** (2024). Role-Playing with Robot Characters: Increasing User Engagement through Narrative and Gameplay Agency. In *Proceedings of the the 20th ACM/IEEE International Conference on Human Robot Interaction (HRI 2024)*.
Acceptance rate: 25%

C13   Alex Wuqi Zhang, Ting-Han Lin, Xuan Zhao, **Sarah Sebo** (2023). Ice-Breaking Technology: Robots and Computers Can Foster Meaningful Connections between Strangers through In-Person Conversations. In *Proceedings of the 2023 ACM CHI Conference on Human Factors in Computing Systems (CHI 2023)*.
Acceptance rate: 28%

C12   Alex Mazursky, Madeleine DeVoe, **Sarah Sebo** (2022). Physical Touch from a Robot Caregiver: Examining Factors that Shape Patient Experience. In *Proceedings of the 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2022)*.
Acceptance rate: 64%

C11   Ting-Han Lin*, Spencer Ng*, **Sarah Sebo** (2022). Parental Benefits of an Interactive Robot Character in Immersive Puzzle Games. In *Proceedings of the 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2022)*.
*equal contribution
Acceptance rate: 64%

C10   Keziah Naggita, Elsa Athiley, Beza Desta, **Sarah Sebo** (2022). Parental Responses to Aggressive Child Behavior towards Robots, Smart Speakers, and Tablets. In *Proceedings of the 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2022)*.
Acceptance rate: 64%

C9   Bengisu Cagiltay, Joseph Michaelis, **Sarah Sebo**, Bilge Mutlu (2022). Exploring Children's Preferences for Taking Care of a Social Robot. In *Proceedings of the 21st ACM Interaction Design and Children Conference (IDC 2022)*.
Acceptance rate: 35%

C8   Shannon Yasuda, Devon Doheny, Nicole Salomons, **Sarah Strohkorb Sebo**, Brian Scassellati (2020). Perceived Agency of a Social Norm Violating Robot. In *Proceedings of the 42nd Conference of the Cognitive Science Society (CogSci 2020)*, 1480-1486.
Acceptance rate: 63%

C7   **Sarah Strohkorb Sebo**, Ling Liang Dong, Nicholas Chang, Brian Scassellati (2020). Strategies for the Inclusion of Human Members within Human-Robot Teams. In *Proceedings of the the 15th ACM/IEEE International Conference on Human Robot Interaction (HRI 2020)*, 309-317. ACM.
Acceptance rate: 24%

C6   **Sarah Strohkorb Sebo**, Priyanka Krishnamurthi, Brian Scassellati (2019). "I Don't Believe You": Investigating the Effects of Robot Trust Violation and Repair. In *Proceedings of the 14th ACM/IEEE International Conference on Human Robot Interaction (HRI 2019)*. 57-65. IEEE.
Acceptance rate: 24%

C5   Aditi Ramachandran*, **Sarah Strohkorb Sebo***, Brian Scassellati (2018). Personalized Robot Tutoring using the Assistive Tutor POMDP (AT-POMDP). In *Proceedings of the 33rd AAAI Conference on Artificial Intelligence (AAAI 2018)*, vol. 33, 8050-8057.
*equal contribution
Acceptance rate: 16%

C4 **Sarah Strohkorb Sebo**, Margaret Traeger, Malte Jung, Brian Scassellati (2018). The Ripple Effects of Vulnerability: The Effects of a Robots Vulnerable Behavior on Trust in Human-Robot Teams. In *Proceedings of the 13th ACM/IEEE International Conference on Human Robot Interaction (HRI 2018)*, 178-186.
Acceptance rate: 23%

C3 Nicole Salomons, Michael Van der Linden, **Sarah Strohkorb Sebo**, Brian Scassellati (2018). Humans Conform to Robots: Disambiguating Trust, Truth, and Conformity. In *Proceedings of the 13th ACM/IEEE International Conference on Human Robot Interaction (HRI 2018)*, 187-195.
Acceptance rate: 23%

C2 **Sarah Strohkorb**, Ethan Fukuto, Natalie Warren, Charles Taylor, Bobby Berry, Brian Scassellati (2016). Improving Human-Human Collaboration Between Children With a Social Robot. In *Proceedings of the 25th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2016)*, 551-556.
Acceptance rate: 47%

C1 **Sarah Strohkorb**, Iolanda Leite, Natalie Warren, Brian Scassellati (2015). Classification of Childrens Social Dominance in Group Interactions with Robots. In *Proceedings of the 17th ACM International Conference on Multimodal Interaction (ICMI 2015)*, 227-234.
Acceptance rate: 41%

THESIS

Sarah Strohkorb Sebo (2020). Developing Robot Teammates that Enhance Social Dynamics and Performance in Human-Robot Teams. *PhD Thesis*. Yale University.

TEACHING

CMSC 20600/30600 Introduction to Robotics [website]   2021 - current
Description: UChicago's CMSC 20600/30600 Introduction to Robotics course gives students a hands-on introduction to robot programming covering topics including sensing in real-world environments, sensory-motor control, state estimation, localization, forward/inverse kinematics, vision, and reinforcement learning. This course is centered around 3 mini projects exploring central concepts to robot programming and 1 final project whose topic is chosen by the students. Each of these mini projects will involve students programming real, physical robots interacting with the real world. The use of physical robots and real-world environments is essential in order for students to 1) see the result of their programs come to life in a physical environment and 2) gain experience facing and overcoming the challenges of programming robots (e.g., sensor noise, edge cases due to environment variability, physical constraints of the robot and environment).

CMSC 20630/30630 Human-Robot Interaction: Research and Practice   2020 - current
[website] (Formerly named: CMSC 33281 Topics in Human-Robot Interaction)
Description: UChicago's CMSC 20630/30630 Human-Robot Interaction: Research and Practice course focuses on the core concepts and cutting-edge research in the field of human-robot interaction (HRI), covering topics that include: nonverbal robot behavior, verbal robot behavior, social dynamics, norms & ethics, collaboration & learning, group interactions, applications, and future challenges of HRI. In class meetings, students lead discussions about cutting-edge peer-reviewed research HRI publications. In weekly labs, students engage in hands-on activities to learn the essential skills of human-robot interaction research, including experiment design, robot programming, and data analysis techniques. Students also participate in a quarter-long collaborative research project, where they pursue an HRI

research question that involves conducting their own human-subjects research study where they recruit human subjects to interact with a robot.

INVITED TALKS

UChicago - People & Tech Seminar	Apr 2025
MIT - Robotics Worldwide Workshop - Lightning Talk	Apr 2025
U.S. Military Academy at West Point - HRI Course Guest Lecture	Mar 2025
UMich - Human Evaluation of Robot Systems Course Guest Lecture	Feb 2025
RSS'24 GROUND Workshop on Robot-Group Interactions [website]	Jul 2024
TTIC - Midwest Robotics Workshop - Invited Speaker	Apr 2024
Rohit and Harvanit Kumar Conference on Early Childhood Development	Nov 2023
Northwestern University Center for Robotics and Biosystems Seminar	Jan 2023
UChicago Department of Psychology Brownbag	Oct 2021
UChicago's Center for Decision Research (CDR) Behavioral Science Workshop	Oct 2021
Toyota Technical Institute of Chicago (TTIC) Colloquium	Oct 2021
ICML'21 Workshop on Human-AI Collaboration in Sequential Decision-Making	July 2021
UChicago - Computational Social Science Workshop	May 2021
Tufts University - Computer Science Colloquium	Mar 2021
CU Boulder - Human-Robot Interaction Course Guest Lecture	Nov 2020
Colorado School of Mines - Human-Robot Interaction Course Guest Lecture	Nov 2020
UChicago Human-Computer Interaction Club	Sept 2020
Cornell University - Robots and Groups Lab Presentation	Oct 2018

UNIVERSITY OF CHICAGO MENTORING

Co-authored publication numbers refer to the publication lists above.

PhD Students

Jiwon Moon	incoming Fall 2025
Ting-Han (Timmy) Lin	Fall 2023 - current
Lauren Wright	Fall 2022 - current
Alex Wuqi Zhang	Fall 2021 - current

PostDocs

Teresa (Tess) Flanagan	Fall 2024 - current

Undergraduate Student Thesis Advisor

Spencer Ng (C11, C14) – *Roblox*	Fall 2022 - Spring 2023

Undergradute Research Assistants

Uma Malani	Summer 2025 - current
William Li	Summer 2025 - current
Allison Li	Summer 2025 - current
Jack Huber	Summer 2025 - current
Aaron Huang	Summer 2025 - current
Sabrina Fajardo	Summer 2025 - current
Brian Barragan-Cid	Summer 2025 - current
Justin Zhang (C17)	Summer 2024 - current
Tsz Long (Quincy) Leung (C19)	Summer 2024 - Spring 2025

Kaitlyn Li	Summer 2024 - Spring 2025
Hewitt Watkins	Spring 2024 - current
Guan Chen	Spring 2024 - Spring 2025
Rachel Liu	Spring 2024 - Spring 2025
Chi Wang – *Predoc @ UChicago*	Summer 2023
Kendrick Xie – *MS in Robotics @ UPenn, Meta*	Summer 2023 - Fall 2023
Wei Cai	Summer 2023
Bonnie Ko - *AWS*	Summer 2023
Madeline Busse – *PMG*	Spring 2023 - Spring 2024
Pooja Vegesna	Spring 2023 - Spring 2024
Rafael Queiroz (C20)	Spring 2023 - Spring 2024
Elizabeth Singer	Spring 2023 - Summer 2023
Riya Sahni – *PhD in CS @ Columbia*	Spring 2023
Liberto de Pablo (C17) – *UChicago MSCAPP*	Winter 2023 - Spring 2024
Lucas Pardo – *Epic*	Spring 2022 - Spring 2024
Bayard Walsh – *Uber*	Fall 2022 - Spring 2023
You Li (C14)	Fall 2022 - Summer 2023
Andre Dang (C21) – *Capital One*	Fall 2022 - Summer 2023
Varsha Etigunta	Summer 2022
Stephanie Kim (C15) – *MS in HCI @ Georgia Tech, US Space Force*	Summer 2021 - Spring 2023
Jason Lin – *AWS*	Summer 2021 - Fall 2022
Elsa Athiley (C10) – *Google*	Spring 2021 - Summer 2021
Lane Painter – *MS @ University of Cambridge, NASA*	Fall 2021 - Spring 2022
Clark Kovacs (C17) – *MS @ Barcelona School of Economics*	Fall 2021 - Spring 2024
Javier Portet	Summer 2021 - Winter 2022
Yunfei Shen	Summer 2021
Bhakti Shah – *PhD in CS @ St. Andrews*	Winter 2021 - Winter 2022
Spencer Ng (C11, C14) – *Roblox*	Fall 2020 - Spring 2023
Efraim Dahl – *MS in AI @ Utrecht University*	Fall 2020 - Spring 2022
Ting-Han (Timmy) Lin (C11, C13) – *PhD in CS @ UChicago*	Fall 2020 - Spring 2022
Beza Desta (C10) – *Princeton University - RA*	Fall 2020 - Summer 2021
Madeleine DeVoe (C12) – *Meta*	Fall 2020 - Summer 2021
Alex Zhou – *Ralph Lauren*	Fall 2020 - Spring 2021

High School Student Research Assistants

John Falciglia	Summer 2025
Nazik Akmatalyeva	Summer 2025
Sidharth Gujja	Summer 2025
Maggie Bai (C17) – *California Institute of Technology*	Summer 2024
Eli Coustan – *Duke University*	Summer 2024
Himani Musku – *Carnegie Mellon University*	Summer 2024
Clarisse Cheung – *University of Chicago*	Summer 2023
Esha Mujumdar – *University of Illinois Urbana-Champaign*	Summer 2023
Hannah Dinner (C19) – *University of Illinois Urbana-Champaign*	Summers 2022, 2024

YALE UNIVERSITY MENTORING

Co-authored publication numbers refer to the publication lists above.

Yale Undergrades Completing Thesis Projects: Hannah Burgess, Rachel Ha, Sean Hackett, Priyanka Krishnamurthi (C6), Evelyn Roberts

Undergradute Research Assistants: Bobby Berry (C2), Kayleigh Bishop, Nicholas Chang (C7, J3), Ling Dong (C7, J3), Adam Erickson, Ethan Fukuto (C2), Charles Taylor (C2), Tom Wallenstein, Natalie Warren (C1, C2), Shannon Yasuda (C8)

High School Summer Interns: Isabelle Gallagher - University of Michigan, Michal Lewkowicz (J3) - Yale University, Neil Madhavani - Cornell University, Michael Schutzman (J3) - Binghamton University

SERVICE

Organizing Committee

ACM/IEEE Conference on Human-Robot Interaction (HRI), *Finance Co-Chair*	2025, 2026
ACM/IEEE Conference on Human-Robot Interaction (HRI), *Registration Co-Chair*	2021
HRI Pioneers Workshop at HRI 2017, *General Co-Chair*	2017

Editorial Service

ACM Transactions on Human-Robot Interaction, *Associate Editor*	2021-present

Frontiers in Robotics and AI, *Guest Editor*

– Special Issue: From Child-Centered to Family-Centered Design for New Technology	2024-2025
– Special Issue: Social Dynamics in Multi-Agent Groups and Teams	2021-2022

Program Committee

Robotics: Science and Systems Conference (RSS)	2025
ACM/IEEE Conference on Human-Robot Interaction (HRI)	2021-2024

Refereeing: Grant Agencies

National Science Foundation (NSF)	2021, 2022, 2023, 2025
Air Force Office of Scientific Research (AFOSR)	2021

Workshop Program Committee Member

From Child-Centered to Family-Centered Interaction Design (IDC 2023), *Co-Organizer*	2023
HRI Pioneers (HRI 2017), *General Co-Chair*	2017

Conference Paper Referee

ACM/IEEE Conference on Human-Robot Interaction (HRI)
Conference on Computer Supported Collaborative Work and Social Computing (CSCW)
International Conference on Human Factors in Computing Systems (CHI)
Int. Symposium on Robot and Human Interactive Communication (RO-MAN)
International Conference on Intelligent Robots and Systems (IROS)
International Conference on Robotics and Automation (ICRA)
AAAI Conference on Artificial Intelligence (AAAI)
ACM Symposium on on User Interface Software and Technology (UIST)
Interaction Design and Children (IDC) Conference

Journal Article Referee

Science: Robotics
ACM Transactions on Human-Robot Interaction
Interaction Studies
IEEE Transactions on Affective Computing
IEEE Transactions on Cognitive and Developmental Systems
International Journal of Child-Computer Interaction
International Journal of Social Robotics
International Journal of Human - Computer Studies
Frontiers in Robotics and AI
Autonomous Agents and Multi-Agent Systems

SELECTED OUTREACH

Summer Robotics Course for South Side Chicago High School Students   2023-2025

My PhD students and I designed and co-teach an annual 6-week summer course to local South-Side Chicago high school students enrolled in UChicago's Collegiate Scholars Program. This course provides students with a hands-on introduction to designing and programming robots using Blockly, a block-based programming tool (see course website).

Robot Demos at Chicago's Museum of Science and Industry   2022-2025

My students and I demo our robots and research annually at the Griffin Museum of Science and Industry's (MSI) National Robotics Week Block Party exhibit.

Human-Robot Interaction Lab Tours   2022-2025

My students and I regulary demo our research and robots to groups including Girls Who Code, the Warrior Scholars Project, and UChicago Alumni.

SELECTED PRESS

5/16/25 [More Control, Less Connection: How User Control Affects Robot Social Agency](#), UChicago CS News

4/7/25 [Robot Block Party brings two days of tech fun to Griffin Museum of Science and Industry](#), Fox 32

7/29/24 [Sarah Sebo Awarded Prestigious CAREER Grant](#), UChicago CS News

4/12/24 [Annual robot block party held at Museum of Science and Industry](#), NBC Chicago

4/12/24 [Local universities competing in MSIs Robot Block Party](#), WGN News

11/07/23 [High School Students in the Collegiate Scholars Program Get to Know Robots](#), UChicago Magazine

03/29/2023 [Robots and Computers Can Help Strangers Have Meaningful In-Person Conversations](#), UChicago CS News

01/08/2023 [University of Chicago Prof. Sarah Sebo presents robot-human interaction research](#), The Daily Northwestern

10/18/2022 [UChicago Research Tests Whether Robots or Humans Are Better Game Partners](#), UChicago CS News

09/06/2022 [First In-Person Robotics Class Lets Students See Code Come To (Artificial) Life](#), UChicago CS News

03/27/2020 Empathy Machine: Humans Communicate Better after Robots Show Their Vulnerable Side, Scientific American

03/09/2020 Robots that admit mistakes foster better conversation in humans, Yale News

03/29/2019 Robot discovers that lying about a betrayal helps to rebuild trust, New Scientist