Dr. Emma J. McDonnell

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Department of Biomedical Informatics and Medical Education, University of Washington, Seattle, 98122

Education

UNIVERSITY OF WASHINGTON   SEATTLE, WA

Ph.D. in Human Centered Design and Engineering   2019 – 2024
Advised by Dr. Leah Findlater
Committee Members: Dr. Daniela Rosner, Dr. Jon Froehlich, Dr. Mark Harniss
Dissertation Title: *Understanding, Designing, and Theorizing Collective Access*
       Approaches to Captioning-Mediated Communication

Graduate Certificate in Disability Studies   2020-2024

Master of Science in Human Centered Design and Engineering   2019-2023

NORTHWESTERN UNIVERSITY   EVANSTON, IL

Bachelor of Science in Computer Science   2015 – 2019
Minor in Gender and Sexuality Studies

Research Interests

Human-Computer Interactions, Health Informatics, Accessibility, Human-Centered AI, Communication, Disability Studies

Research Experience

UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE   2024-2026
National Library of Medicine Postdoctoral Fellow
- Supervised in the Department of Biomedical Informatics and Medical Education by Dr. Wanda Pratt
- Investigating how perspectives from accessible technology research and disability studies can inform health technologies and health care practices, particularly for people with chronic health conditions
- Exploring generative AI as an accessibility and design aid for people with chronic health conditions

UNIVERSITY OF WASHINGTON   2019 – 2024
Research Assistant
- Advised by Dr. Leah Findlater
- Investigated how to design captioning systems to support hearing and d/Deaf and hard of hearing people in creating more accessible group conversation practices
- Studied the uptake of AI-powered automatic captioning tools and their impact on communication accessibility

NORTHWESTERN UNIVERSITY   2017 – 2019
Research Assistant
- Advised by Dr. Anne Marie Piper and Dr. Bryan Pardo
- Developed a real-time conversation monitoring system for small-group conversations designed to indicate to hearing individuals when their conversation behaviors become inaccessible to hard of hearing people
- Created a small dataset of audio segments from podcasts, and used it to train a machine learning classifier to recognize speech, non-speech noise, or silence to enable blind audio engineers to navigate an audio file faster

Publications

JOURNAL PAPERS

[1] ***Honorable Mention and Diversity and Inclusion Recognition:* Emma J. McDonnell**, Ping Liu, Steven M. Goodman, Raja Kushalnagar, Jon E. Froehlich, and Leah Findlater. 2021. Social, Environmental, and Technical: Factors at Play in the Current Use and Future Design of Small-Group Captioning. In *PACM on Human Computer Interaction*, Vol. 5, CSCW2, Article 434, October 2021. ACM, New York, NY, USA. 25 pages. https://doi.org/10.1145/3479578

[2] Steven M. Goodman, Ping Liu, Dhruv Jain, **Emma J. McDonnell**, Jon E. Froehlich, and Leah Findlater. 2021. Toward User-Driven Sound Recognizer Personalization With People Who Are d/Deaf or Hard of Hearing. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 5, 2, Article 63 (June 2021), 23 pages. https://doi.org/10.1145/3463501

CONFERENCE PAPERS

[1] Kelly Avery Mack, Jesse Martinez, Aaleyah Lewis, Jennifer Mankoff, James Fogarty, Leah Findlater, Heather D. Evans, Cynthia L. Bennett, and **Emma J. McDonnell.** 2025. Modeling Accessibility: Characterizing What We Mean by "Accessible". Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25). ACM. New York, New York, USA. *Forthcoming.*

[2] **Emma J. McDonnell,** Wanda Pratt. 2025. From Chronic Health Condition to Disability Identity: Opportunities for Health Informatics Engagement. American Medical Informatics Association Annual Symposium. *Forthcoming.*

[3] Gina Clepper, **Emma J. McDonnell**, Leah Findlater, and Nadya Peek. 2025. "What Would I Want to Make? Probably Everything": Practices and Speculations of Blind and Low Vision Tactile Graphics Creators. Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems. ACM, New York, NY, USA. https://doi.org/10.1145/3706598.3714173

[4] Steven M. Goodman, **Emma J. McDonnell,** Jon E. Froehlich, and Leah Findlater. 2025. SPECTRA: Personalizable Sound Recognition for Deaf and Hard of Hearing Users through Interactive Machine Learning. Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems. ACM, New York, NY, USA. https://doi.org/10.1145/3706598.3713294

[5] **Emma J. McDonnell** and Leah Findlater. 2024. Envisioning Collective Communication Access: A Theoretically-Grounded Review of Captioning Literature from 2013 to 2023. Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '24). ACM, New York, New York, USA. https://doi.org/10.1145/3663548.3675649

[6] **Emma J. McDonnell,** Tessa Eagle, Pitch Sinlapanuntakul, Soo Hyun Moon, Jon E. Froehlich, Kate Ringland, and Leah Findlater. 2024. "Caption it in an Accessible Way That Is Also Enjoyable": Characterizing User-Driven Captioning Practices on TikTok. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems. ACM, New York, NY, USA. https://doi.org/10.1145/3613904.3642177

[7] **Emma J. McDonnell**, Soo Hyun Moon, Lucy Jiang, Steven M. Goodman, Raja Kushalnagar, Jon E. Froehlich, and Leah Findlater. 2023. "Easier or Harder, Depending on Who the Hearing Person Is": Codesigning Videoconferencing Tools for Small Groups with Mixed Hearing Status. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems. ACM, New York, NY, USA. ACM https://doi.org/10.1145/3544548.3580809

[8] ***Best Paper Nominee:* Emma J. McDonnell*,** Kelly Avery Mack*, Leah Findlater, and Heather D. Evans. 2022. Chronically Under-Addressed: Considerations for HCI Accessibility Practice with Chronically Ill People. In Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22). ACM, New York, NY, USA. https://doi.org/10.1145/ 3517428.3544803

[9] ***Honorable Mention:*** Kelly Avery Mack, **Emma J. McDonnell,** Venkatesh Potluri, Maggie Xu, Jailyn Zabala, Jeffrey P. Bigham, Jennifer Mankoff, and Cynthia L. Bennett. 2022. Anticipate and Adjust: Cultivating Access in Human-Centered Methods. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). ACM, New York, NY, USA. https://doi.org/10.1145/3491102.3501882

[10] Jazz Rui Xia Ang*, Ping Liu*, **Emma J. McDonnell,** and Sarah Coppola. 2022. "In this Online Environment, We're Limited": Exploring Inclusive Video Conferencing Design for Signers. Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems. ACM, New York, NY, USA. https://doi.org/10.1145/3491102.3517488

[11] ***Honorable Mention:*** Kelly Avery Mack, **Emma J. McDonnell**, Dhruv Jain, Lucy Lu Wang, Jon E. Froehlich, and Leah Findlater. 2021. What Do We Mean by "Accessibility Research"?: A Literature Survey of Accessibility Papers in CHI and ASSETS from 1994 to 2019. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems.* Association for Computing Machinery, New York, NY, USA. DOI: https://dl.acm.org/doi/10.1145/3411764.3445412

EXTENDED ABSTRACTS, POSTERS, AND OTHER REVIEWED PUBLICATIONS

[1] **Emma J. McDonnell***, Kelly Avery Mack*, Kathrin Gerling, Katta Spiel, Cynthia L. Bennett, Robin N. Brewer, Rua Mae Williams, Garreth W. Tigwell. 2023. Tackling the Lack of a Practical Guide in Disability-Centered Research. Accepted Workshop Proposal. In Proceedings of the 25th ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23). ACM, New York, NY, USA. https://doi.org/10.1145/3597638.3615650

[2] Kelly Avery Mack, Natasha Sidik, Aashaka Desai, **Emma J. McDonnell,** Kunal Mehta, Christina Zhang, Jennifer Mankoff. 2023. Maintaining the Accessibility Ecosystem: A Multi-Stakeholder Analysis of Accessibility in Higher Education. Experience Report. In Proceedings of the 25th ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23). ACM, New York, NY, USA. https://doi.org/10.1145/3597638.3614547

[3] *In Submission.* Momona Yamagami, Kelly Avery Mack, **Emma J. McDonnell**, Jerry Cao, Katherine M. Steele, Heather D. Evans, Leah Findlater, Jennifer Mankoff, on behalf of CREATE. 2022. Centering Accessibility for Person-Centered Care Planning for MCC. Response to Request for Information on Person-Centered Care Planning for Multiple Chronic Conditions (MCC). Federal Register.

[4] **Emma J. McDonnell.** 2022. Understanding Social and Environmental Factors to Enable Collective Access Approaches to the Design of Captioning Technology. Doctoral Consortium. In Proceedings of the 24th ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22). ACM, New York, NY, USA. https://doi.org/10.1145/3517428.3550417

[5] Lucy Lu Wang, Kelly Avery Mack, **Emma J. McDonnell**, Dhruv Jain, Leah Findlater, and Jon E. Froehlich. 2021. A bibliometric analysis of citation diversity in accessibility and HCI research. In CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI '21 Extended Abstracts), May 8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 11 pages. https://doi.org/10.1145/3411763.3451618

[6] Devva Kasnitz, Jen Mankoff, Meryl Alper, **Emma J. McDonnell,** Kelly Avery Mack, and Venkatesh Potluri. April 18, 2021. Panel. Human Computer Interaction Folk Have Found Disability Studies: Playing Together Well! *Society for Disability Studies @ Ohio State University Conference 2021*

ACCEPTED WORKSHOP PAPERS

[1] **Emma J. McDonnell.** 2022. Time to Think About Time. For the workshop "Dreaming Disability Justice in HCI," *CHI 2022,* New Orleans, LA.

[2] **Emma J. McDonnell**, Leah Findlater, Audrey Desjardins. 2020. Bridging Accessibility and Disability Studies Research to Speculate Beyond Ability Norms. For the workshop "Nothing About Us Without Us: Investigating the Role of Critical Disability Studies in HCI," *CHI 2020,* Honolulu, HI.

"*" signals that authors should be considered co-first authors of this publication.

Grants and Funding

GARVEY INSTITUTE FOR BRAIN HEALTH SOLUTIONS INNOVATION GRANT   November 2024
- $50,000 awarded to fund our team's efforts to center patient expertise in solutions to improve community re-integration following psychiatric hospitalization
- Wrote major portions of the grant application, edited throughout, and contributed to project definition

CREATE STUDENT MINIGRANT   August 2024
- Awarded $1,000 to fund research into how a range of assistive technologies practically provide access to users

NCWIT CONFERENCE ATTENDANCE GRANT   August 2024
- Awarded $2,500 to support travel to the 2024 ASSETS Conference to present research findings

NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOW   2021-2024
- Five-year fellowship awarded to top graduate student applicants in NSF-supported STEM fields
- Three years of financial support in the form of a stipend and tuition waiver, totaling $138,000

Honors and Awards

HCDE PhD STUDENT AWARD OF EXCELLENCE FOR TEACHING AND MENTORSHIP   June 2024
- Annual departmental award for graduating PhD students committed to teaching and mentorship

WE RISE OUTSTANDING SCHOLAR   May 2024
- Recognized by Women Engineers Rise at UW for outstanding scholarship and community engagement

DENNIS LANG AWARD   May 2023
- Awarded annually by UW's Disability Studies Program to undergraduate and graduate students who demonstrate academic excellence in disability studies and a commitment to disability-related social justice issues

GEORGE C. CASEY PRIZE   May 2019
- Awarded to the best essay written by an undergraduate Gender Studies student at Northwestern each year

MURPHY SCHOLAR   2015-2019
- One of 17 (of 377) first years in Northwestern's McCormick School of Engineering and Applied Sciences selected to receive a stipend for independent research and research mentoring

Teaching Experience

DIRECTED RESEARCH GROUP: CURRENT TRENDS IN ACCESSIBILITY RESEARCH   Fall 2020, 2021, 2022, 2023
Facilitator
- Organize, plan, and facilitate weekly discussions of accessibility papers published in CHI and ASSETS that year with HCDE community members ranging from first year undergraduates to post-doctoral scholars
- University of Washington Department of Human Centered Design and Engineering

INTRODUCTION TO DISABILITY STUDIES   Spring 2021
Teaching Assistant
- Dr. Joanne Woiak – University of Washington Disability Studies Program
- Ran two discussion sections, teaching 50 students weekly, grading, and planning weekly section content

USABILITY STUDIES   Winter 2021
Teaching Assistant
- Dr. Sarah Coppola – University of Washington Department of Human Centered Design and Engineering

FUNDAMENTALS OF COMPUTER PROGRAMMING   Winter 2018, Fall 2018, Winter 2019
Head Teaching Assistant
- Dr. Sara Sood and Dr. Ian Horswill - Northwestern University Department of Computer Science
- Worked with Dr. Sara Sood to design and teach discussion sessions for students with no prior coding experience

Selected Invited Talks

UNIVERSITY OF UTAH SCHOOL OF MEDICINE SUMMER SEMINAR   June 2025
Presenter
- From Chronic Health Condition to Disability Identity

UNIVERSITY OF WASHINGTON GLOBAL ACCESSIBILITY AWARENESS DAY   May 2025
Guest Presenter
- Disability History for Technologists

VANDERBILT UNIVERSITY MEDICAL CENTER GRAND ROUNDS April 2025
Guest Presenter
- From Chronic Health Condition to Disability Identity

TEACH ACCESS STUDENT ACADEMY February 2025
Presenter
- Disability History for Technologists
- Over 100 people attended synchronously and recording was sent to over 1000 registrants

ACCESSCOMPUTING WEBINAR January 2023, August 2024
Presenter
- Disability History for Technologists
- Considerations for Technology Design for People with Chronic Illnesses

UNIVERSITY OF WASHINGTON FOUNDATION BOARD April 2024
Representative of the UW CREATE Center
- Advancing Engineering Excellence for the Public Good: From Basic Science to Innovation, Disability Inclusion Equalizes the Playing Field

HCDE 315 and 515 ACCESSIBILITY AND INCLUSIVE DESIGN April 2022, October 2022, January 2023, April 2024
Guest Lecturer for Dr. Sarah Coppola, Dr. Leah Findlater
- Disability Studies for HCI and Design Practice

DEPARTMENT OF INFORMATION SCIENCES, UNIVERSITY OF COLORADO, BOULDER February 2024
Guest Speaker
- Designing Collective Communication Access

SCHOOL OF INFORMATION, UNIVERSITY OF MICHIGAN February 2024
Guest Speaker
- Designing Collective Communication Access

DISABILITY STUDIES WORKING GROUP, NORTHWESTERN MEDICINE January 2024
Guest Speaker
- Translating Disability Studies and Activism into Accessibility Practice

INTERDISCIPLINARY RESEARCH METHODS, NORTHEASTERN UNIVERSITY September 2023
Guest Lecturer for Dr. Michael Arnold Mages
- Methods in HCI Accessibility Research

ADVANCED TOPICS IN ACCESSIBILITY, UNIVERSITY OF MICHIGAN September 2023
Guest Lecturer for Dr. Dhruv Jain
- Disability History for Computer Scientists

CSCI 327 INCLUSIVE TECHNOLOGY DESIGN, OBERLIN COLLEGE February 2023
Guest Lecturer for Dr. Emily Wang
- Disability History for Computer Science

ACCESS LUNCH, CARNEGIE MELLON UNIVERSITY December 2022
Guest Speaker
- Toward Collective Access in Captioning Design

UW ALLEN SCHOOL OF COMPUTER SCIENCE AND ENGINEERING ACCESSIBILTY COLLOQUIUM November 2022
Guest Speaker
- Chronically Under-Addressed: Considerations for HCI Accessibility Practice with Chronically Ill People

ACCESSIBILITY, HCI, AND AGING GROUP, UNIVERSITY OF MICHIGAN October 2022
Guest Speaker
- Toward Collective Access in Captioning Design

Work Experience

IBM, Austin, Texas   June 2018 – September 2018
Research Intern, Division of Accessibility Research
- Implemented an indoor navigation system called NavCog which provides blind users turn-by-turn directions to make multiple spaces on the IBM Austin campus more accessible to blind visitors and employees
- Accessibility Subject Matter Expert and team lead for a group of designers exploring accessible airport navigation
- Created a tool to automatically generate accessible color palettes to enable web designers to meet web accessibility standards for color contrast

UNIVERSITY OF MINNESOTA, Soudan, Minnesota   June 2016 – September 2016
Decommissioning Intern, Soudan Underground Laboratory
- Deconstructed MINOS Neutrino detector, a joint venture between the University of Minnesota and Fermi National Accelerator Laboratory

Mentoring and Advising

UNIVERSITY OF WASHINGTON
- Tae Jones, PhD Computer Science, 2025-Present
- Anastasia Schaadhardt, PhD Information Studies, 2024-Present
- Gina Clepper, PhD Human Centered Design and Engineering, 2023-2025
- Adrian Rodriguez, PhD Human Centered Design and Engineering, 2022-2024
- Weerachet (Pitch) Sinlapanuntakul, PhD Human Centered Design and Engineering, 2023-2024
- Andy Moon, M.S. Human Centered Design and Engineering, 2020-2023
- Lucy Jiang, B.S. Computer Science and Engineering, 2021-2022
- Ana Liu, M.S. Human Centered Design and Engineering, 2019-2022
- Jazz Ang, M.S. Human Centered Design and Engineering 2021-2022

Volunteer and Service Work

UW OFFICE OF THE ADA'S COMMITTEE ON DISABILITY, ACCESSIBILITY, AND INCLUSION   October 2024 – Present
- Member of the university-wide advisory committee providing input on campus climate and guiding policy focused on issues related to disability, accessibility and inclusion

ASSETS 2024 HYBRID CO-CHAIR   June 2024-October 2024
- Member of the ASSETS 2024 Organizing Committee, planning and implementing an accessible, synchronous hybrid conference experience

CSCW 2023 STUDENT VOLUNTEER   October 2023
- Part of the student team conducting tasks necessary to running the CSCW 2023 conference
- Recognized as an "Accessibility Ambassador"

ASSETS 2022 VIRTUAL CO-CHAIR   November 2021-October 2022
- Member of the ASSETS 2022 Organizing Committee, responsible for planning and executing all virtual aspects of the 2022 hybrid conference

UAW 4121 CONTRACT ENFORCEMENT   January 2022 – August 2024
- Member of contract enforcement for UAW chapter #4121, the union that represents Academic Student Employees, Postdocs, and Research Scientists and Engineers at the University of Washington
- Responsible for meeting with students who suspect they have been harmed by a contract violation, investigating the facts of their case, representing them in meetings with administrators, and, when appropriate, supporting students in a contractual grievance process
- Train new members and support other contract enforcement members in their cases

HCDE PhD STUDENT RESEARCH GRANT REVIEWER   April 2022-April 2023
- Providing feedback on and making decisions about PhD student applications for department grants, making decisions about $6000 of funding annually

PhD STUDENT AMBASSADOR   October 2021-June 2024
- Serving as a contact for prospective HCDE PhD students, meeting 1:1 and facilitating information sessions

PhD APPLICATION REVIEW   December 2020-December 2023
- Annually review applications for the HCDE PhD Program

PROSPECTIVE PhD VISIT COORDINATOR   March 2020-March 2024
- Annually plan and run activities to introduce visiting prospective PhD students to HCDE and to Seattle

GIRLS WHO CODE FACILITATOR   September 2021-June 2022
- Supporting high school girls in learning Python and gaining familiarity with computer science

TOURNAMENT DIRECTOR   January 2018 – May 2019
- Ran Northwestern's Tournament of Champions in Extemporaneous Speaking, a national speech tournament for 60-70 of the nation's best high school extemporaneous speakers
- Coordinated an annual conference and two-day tournament, leading a team of 15 peers to manage catering, registration, tournament administration, judging, scheduling, and awards

BEST BUDDIES NORTHWESTERN   September 2015 – March 2019
- Three-year member of the executive board, serving as Vice President and Membership and Activities Coordinator for Northwestern's Best Buddies chapter which connects college students with local disabled high schoolers

Reviewing

- ASSETS 2025^
- TOCHI 2025
- CHI 2022*, 2023, 2024, 2025*, 2026^
- IJHCS 2024
- TACCESS 2022, 2023, 2025
- DIS 2022
- CSCW 2022
- alt.chi 2022
- ISWC 2021

"*" Indicates Special Recognition for Outstanding Reviews
"^" Indicates Member of Program Committee

Skills

- Programming experience in Python, JavaScript, HTML, CSS, R, and Racket
- Working proficiency in Spanish, conversational proficiency in American Sign Language
- Accomplished public speaker, making national semifinals in extemporaneous, impromptu, and persuasive speaking at the collegiate level