

ROBIN N. BREWER, Ph.D.

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EDUCATION

Doctor of Philosophy
2013- 2017

TECHNOLOGY AND SOCIAL BEHAVIOR
(joint Computer Science and Communication Studies)
Northwestern University

Dissertation Title: *Understanding Interactive Voice Response Systems to Support Online Engagement of Visually Impaired Older Adults*
Dissertation Committee: Dr. Anne Marie Piper (advisor), Dr. Darren Gergle, Dr. Michael Horn, Dr. Meredith Ringel Morris

Research Interests: Human-Computer Interaction (HCI), Social Computing, Accessibility, Engagement in Online Communities

Master of Science
2011-2012

HUMAN-CENTERED COMPUTING
University of Maryland, Baltimore County

Bachelor of Science
2007-2011

COMPUTER SCIENCE
University of Maryland, College Park

WORK EXPERIENCE

PRESIDENTIAL POSTDOCTORAL FELLOW | UNIVERSITY OF MICHIGAN | 09.2017 - PRESENT
Studying, designing, and evaluating novel approaches to make information and resources accessible to older adults and people with vision impairments; currently investigating the use and design of voice-based interfaces

RESEARCH ASSISTANT | NORTHWESTERN UNIVERSITY | 09.2013 - 09.2017
Developed interventions to increase opportunities for online communication for digitally-isolated populations currently by building voice-user interfaces to support older adults

USER EXPERIENCE RESEARCHER | MICROSOFT RESEARCH | 06.2016 - 09.2016
Researched novel interactions for intelligent reminder systems through elicitation interviews, diary studies, usability testing, and survey analysis

USER EXPERIENCE RESEARCHER | FACEBOOK | 01.2015 - 03.2015
Led a product team of designers and engineers through a project to understand challenges of Facebook use across interfaces globally and for older adults by deploying surveys and conducting eye-tracking studies and interviews

USER EXPERIENCE RESEARCHER | IBM RESEARCH | 05.2013 - 08.2013
Designed a prototype of a modeling and simulation tool for what-if analyses using principles of participatory design and ideation to elicit design feedback from expert users

USER EXPERIENCE DESIGNER | IBM | 05.2012 - 08.2012
Conducted a study for external IBM clients to test usability of a new data quality software web interface

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RESEARCH ASSISTANT | UNIVERSITY OF MARYLAND, BALTIMORE COUNTY | 08.2011 - 08.2013

Conducted contextual interviews to understand intergenerational family dynamics on Facebook; Applied a mixed methods approach to study touch-screen device interactions of children

RESEARCH ASSISTANT | CARNEGIE MELLON UNIVERSITY | 05.2010 - 08.2010

Designed study to redesign Facebook privacy controls; Conducted interviews using different card sorting techniques

RESEARCH ASSISTANT | UNIVERSITY OF MARYLAND, COLLEGE PARK | 10.2009 - 05.2011

Developed interactive restaurant menu for children; Led participatory design team for kids; Conducted interviews to understand how kids search online

PUBLICATIONS

journal articles

1. **Brewer, R. N.**, Cornejo, R., Schwaba, T., Gergle, D., Piper, A. M. "Exploring Traditional Phones as an E-Mail Interface for Older Adults." ACM Transaction on Accessible Computing (TACCESS). 2016. *INVITED TO PRESENT AT ASSETS 2016*
2. Piper, A.M., **Brewer, R.**, Cornejo, R. "Technology learning and use among older adults with late-life vision impairments." Universal Access in the Information Society (UAIS). 2016.
3. Piper, A.M., **Brewer, R.N.**, Cornejo, R. "Understanding the Challenges and Opportunities of Smart Mobile Devices among the Oldest Old." International Journal of Mobile Human Computer Interaction (IJMHCI). 2016.
4. Coughlan, T., Mackley, K. L., Brown, M., Martindale, S., Schlogl, S., Mallaband, B., Arnott, J., Hoonhout, J., Szostak D., **Brewer, R.**, Poole, E., Pirhonen, A., Mitchell, V., Pink, S., Hine, N. "Current Issues and Future Directions in Methods for Studying Technology in the Home." PsychNology Journal. 2014.
5. Brown, Q., Anthony, L., Tate, B., Nias, J., **Brewer, R.**, Irwin, G. "Designing Smarter Touch-Based Interfaces for Educational Contexts." Educational Interfaces, Software and Technology Journal of Personal and Ubiquitous Computing (PUC). 2013.
6. Foss, E., Hutchinson, H., Druin, A., **Brewer, R.**, Lo, P., Sanchez, L., and Golub, E. "Children's search roles at home: Implications for designers, researchers, educators, and parents." Journal of the American Society for Information Science and Technology (JASIST). 2012.

peer-reviewed conference papers

7. **Brewer, R.N.**, Kameswaran, V. "Understanding the Power of Control in Autonomous Vehicles for People with Vision Impairments." ASSETS 2018.
8. Kameswaran, V., Gupta, J., Pal, J., O'Modhrain, S., Y, V., Veinot, T., **Brewer, R.N.**, Parameshwar, A., O'Neill, J. "We can go anywhere": How ride-hailing is transforming transport for visually-impaired riders in Metropolitan India." CSCW 2018.

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9. **Brewer, R.N.**, Piper, A.M. "xPress: Rethinking Design for Aging and Accessibility through an IVR Blogging System." CSCW 2017.
10. **Brewer, R.N.**, Morris, M.R., Lindley, S. "How to Remember What to Remember: Exploring Possibilities for Digital Reminder Systems." Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp). 2017.
11. Rong, X., Fourney, A., **Brewer, R.N.**, Morris, M.R., Bennett, P.N. "Managing Uncertainty in Time Expressions for Virtual Assistants." CHI 2017. **HONORABLE MENTION AWARD**
12. Morris, M.R., Bigham, J.P., **Brewer, R.**, Bragg, J., Kulkarni, A., Li, J., Savage, S. "Subcontracting Microwork." CHI 2017.
13. Lazar, A., Diaz, M., **Brewer, R.**, Kim, C., Piper, A. M. "Going Gray, Failure to Hire, and the Ick Factor: Analyzing How Older Bloggers Talk about Ageism." CSCW 2017. **HONORABLE MENTION AWARD**
14. **Brewer, R. N.**, Morris, M.R., Piper, A. M. "'Why would anybody do this?': Understanding Older Adults' Motivation and Challenges in Crowd Work." CHI 2016.
15. **Brewer, R. N.**, Piper, A.M. "'Tell it Like it Really Is': A Case of Online Content Creation and Sharing Among Older Adult Bloggers." CHI 2016.
16. Cornejo, R., **Brewer, R. N.**, Edasis, C., Piper, A. M. "Vulnerability, Sharing, and Privacy: Analyzing Art Therapy for Older Adults with Dementia." CSCW 2016.
17. **Brewer, R.**, Kieliszewski, C. "Exploring Interaction Design for Advanced Analytics and Simulation." HCI International. 2014.
18. **Brewer, R.**, Anthony, L., Brown, Q., Irwin, G., Nias, J., Tate, B. "Using Gamification to Motivate Children to Complete Empirical Studies in Lab Environments." IDC 2013.
19. Burton, M., Brady, E., **Brewer, R.**, Neylan, C., Bigham, J. P., Hurst., A. "Crowdsourcing Subjective Fashion Advice Using VizWiz: Challenges and Opportunities." ASSETS 2012.
20. Walsh G., Druin A., Guha M. L., Bonsignore, E., Foss, E., Yip JC., Golub, E., Clegg, T., Brown, Q., **Brewer, R.**, Joshi A., Brown, R. "DisCo: a co-design online tool for asynchronous distributed child and adult design partners." IDC 2012.
21. Kelley, P.G., **Brewer, R.**, Mayer, Y., Cranor, L.F., and Sadeh,N. "An investigation into facebook friend grouping." INTERACT 2011.
22. Brown, Q., Bonsignore, E., Hatley, L., Druin A., Walsh, G., Foss, B., **Brewer, R.**, Hammer, J., Golub, E. "Clear Panels: A Technique to Design Mobile Application Interactivity." DIS 2010.

workshop and symposium papers

23. **Brewer, R.** "Facilitating discussion and shared meaning: Rethinking co-design sessions with people with vision impairments." PervasiveHealth 2018.

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24. Pierce, C., **Brewer, R.**, Morris, E., Essiet, M. "Computer-Supported Health and Well-Being Services: A Systems Approach to Telehealth and Coaching Systems." PervasiveHealth 2018.
25. **Brewer, R.**, Andujar, M., Erete, S., Metoyer, R., Perez-Quinones-M., Rankin, Y. "Computer-Human Interaction Mentoring (CHIMe)" a Symposium at CHI (co-organizer). CHI 2018.
26. **Brewer, R.**, "Before, During, and After: Research with Older Adults with Vision Impairments" in Workshop on Reflections on Design for Underserved Populations. CSCW 2017.
27. **Brewer, R.**, Cornejo, R., Piper, A.M., "Understanding How to Care for Aging Generations Online" in Workshop on The Future of Networked Privacy. CSCW 2015.
28. **Brewer, R.**, Piper, A.M., "Design for Older Adulthood: Changes in Living Environment, Social Goals, and Ability" in Workshop on Designing Technology for Major Life Events. CHI 2014.
29. **Brewer, R.** "Increasing Participant Motivation when Conducting Interviews in Non-Traditional Home Spaces" in Workshop on Methods for Studying Technology in the Home. CHI 2013.
30. Brown Q., Anthony, L., **Brewer, R.**, Irwin, G., Nias, J., Tate, B. "Challenges of Replicating HCI Studies with Children" in Workshop on RepliCHI. CHI 2013.
31. **Brewer, R.** in Workshop on Rapidly Iterating Crowd Ideas – CrowdCamp. CSCW 2013.

poster sessions

32. **Brewer R. N.**, Cartwright, M., Karp, A., Pardo, B., Piper, A. M. "An Approach to Audio-Only Editing for Visually Impaired Seniors." ASSETS 2016, Reno, NV, October 25, 2016.
33. **Brewer, R. N.**, Morris, M. R., Piper, A. M. "Exploring Cognitive Benefits as an Alternative Motivation for Engaging Older Adults in Crowdwork." HCOMP 2015, San Diego, CA, November 8-11, 2015.
34. **Brewer, R.**, Jones, J. "Pinterest: Exploring Reminiscence as an Incentive to Digital Reciprocity for Older Adults." CSCW 2015, Vancouver, BC, Canada, March 14-18, 2015
35. **Brewer, R.**, Gellner, M., Piper, A.M. "Portrait Pigeon: An Interactive Photo Messaging Wall for Seniors." UbiComp 2014, Seattle, WA, September 13-17, 2014.
36. **Brewer, R.**, Kieliszewski, C., "Simplifying a Modeling and Simulation Interface." IBM Almaden Research Center Poster Showcase, San Jose, CA, August 1, 2013.
37. **Brewer, R.** "Designing for Increased Information Exchange and Contribution to Social Media." Google Scholar Retreat, New York, NY, July 18, 2013.
38. **Brewer, R.**, Hurst, A., Ronch, J. "Wisely Connected: Designing an online communication tool for older adults." Grace Hopper Celebration for Women in Computing, Baltimore, MD, October 3-6, 2012.

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TEACHING AND TALKS

instructor

1. **Brewer, R.** Build-A-Bot: Understanding Chatbots and Digital Assistants. Co-instructor in GEN_CMN 159. *Computing Everywhere*. Northwestern University. Spring 2017.
2. **Brewer, R.** Fundamentals of Computing: Logic and Commands. Co-instructor in GEN_CMN 206. *Computing Everywhere*. Northwestern University. Spring 2016.
3. **Brewer, R.** Instructor of record in IS 303. *Fundamentals of Human-Computer Interaction*. University of Maryland, Baltimore County (UMBC). Fall 2011.

invited teaching

4. **Brewer, R.** Designing for Older Adults. Guest Lecture in COSC 480: *User-Centered Design* by Madeline Smith. Colgate University. Winter 2018.
5. **Brewer, R.** Accessibility and Aging. Guest Lecture in SI 573/574: *Health Informatics Seminar* by Dr. Tiffany Veinot and Annie Krill. University of Michigan. Winter 2018.
6. **Brewer, R.** Front-End Evaluation. Guest Lecture in EECS 497: *Major Design Project* by Dr. Satish Narayanasamy. University of Michigan. Fall 2017.
7. **Brewer, R.** Designing for Older Adults. Guest Lecture in COMM_ST 398: *Assistive Communication Design* by Dr. Anne Marie Piper. Northwestern University. May 26, 2015.
8. **Brewer, R.** Insights into Interviewing Older Adults. Guest Lecture in IS 375: *Understanding Customers and the User Experience* by Dr. D. Yvette Wohn. New Jersey Institute of Technology. October 22, 2014.
9. **Brewer, R.** The Prototyping Process. Guest Lecture in COMM_ST 398: *Contextual Interviewing for Design* by Dr. Anne Marie Piper. Northwestern University. November 28, 2013.

invited talks

10. **Brewer, R.** Brave Initiatives: Girls Building a Better World through Code. Mobile Lab Coalition Conference Keynote. July 25, 2018.
11. **Brewer, R.** Beyond Accessibility: Designing Meaningful Technologies for Aging. Michigan Center for Urban African American Aging Research (MCUAAAR): Healthier Black Elders Center Lunch and Learn. June 7, 2018
12. **Brewer, R.** Understanding and Designing for Late-Life Online Engagement. University of Michigan MISC Seminar Series. November 14, 2017.
13. **Brewer, R.** Understanding and Designing for Late-Life Online Engagement. University of Wisconsin Madison HCI Initiative. October 23, 2017.
14. **Brewer, R.** Understanding and Designing for Late-Life Online Engagement. ProHealth Research Group at Indiana University. March 24, 2017.

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15. **Brewer, R.** Points Prizes and Achievements, Oh My! Using Gamification to Motivate Children to Complete Empirical Studies on Mobile Devices. UMBC Graduate Research Conference, Baltimore, MD. February 20, 2013. **INFORMATION SYSTEMS ORAL PRESENTATION, 1ST PLACE**
16. **Brewer, R.** The Media Richness Theory: Online Communication Patterns of Older Adults. IBM Almaden Research Lab, San Jose, CA. July 18, 2012.
17. **Brewer, R.** Wisdom of Crowds: Crowdsourcing, Open-Source and DIY Technologies. National Society of Black Engineers (NSBE) National Convention 2012, Pittsburgh, PA, March 28-April 1, 2012

FUNDING

- Supporting People with Vision Impairments in Autonomous Vehicles, Center for Connected and Automated Transportation – U.S. Department of Transportation, 2018-2019, (\$168,337) (PI)

STUDENTS MENTORED

- Vaishnav Kameswaran | University of Michigan | Ph.D. student in Information
- Desiree McLain | University of Michigan | Master's student in Information
- Hussain Alafaireet | University of Michigan | Master's student in Information
- Puhe Liang | University of Michigan | Master's student in Information
- Melody Kan | University of Michigan | Master's student in Information
- Madia Esset | University of Michigan | Master's student in Health Informatics
- Chelsea Kim | Northwestern University | Undergraduate student in Communication Studies
now Ph.D. student at University of California, Davis in Communication
- Vanessa Oguamanam | University of Maryland | Undergraduate student in Computer Science
now Ph.D. student at Georgia Institute of Technology in Human-Centered Computing
- Vickie Li | Northwestern University | Undergraduate student in Computer Science
- Scott Neaves | Northwestern University | Undergraduate student in Computer Science
- Ted Schwaba | Northwestern University | Undergraduate student in Communication Studies
now Ph.D. student at University of California, Davis in Psychology

AWARDS

- Presidential Postdoctoral Fellowship | University of Michigan | 2018
- Graduate Student Engagement Award | The Graduate School at Northwestern University | 2016
- APEX Power 30 Under 30 | Porsche | 2016
- CHI Outstanding Review Award | Association for Computing Machinery | 2015, 2016
- Segal Design Research Fellowship | Segal Design Institute | 2015
- UNCF Scholarship | Google | 2013
- GEM Fellow | Adobe | 2012
- Bridge to the Doctorate Fellow | NSF | 2011-2013

ACADEMIC SERVICE

- Reviewer | ACM UIST conference | 2018
- Associate Chair | Program Committee | ACM ASSETS conference | 2018

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- Associate Chair | Program Committee | ACM CHI conference | 2018, 2019
- Panelist | NSF | 2017, 2018
- Accessibility Co-Chair | Organizing Committee | ACM CHI conference | 2017
- Local Arrangements Chair | Organizing Committee | ACM ASSETS conference | 2017
- Reviewer | ACM CSCW conference | 2014 - present
- Reviewer | ACM CHI conference | 2013 – present

OUTREACH, ORGANIZATIONS, AND MEMBERSHIPS

- Brave Initiatives (www.braveinitiatives.com) | Detroit Lead | 2015 - present
- Omicron Delta Kappa | 2013 - present
- Association for Computing Machinery | 2011 - present
- National Society of Black Engineers | 2005 – present