

Jennifer Mankoff

Richard E. Ladner Professor

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Research Interests

My research focuses on accessibility, health and inclusion. My work combines critical thinking and technological innovation. I strive to bring both structural and personal perspectives to my work. Integrating computational approaches with human-centered design, I integrate fabrication, optimization, and machine learning to enable the creation of accessible artifacts, tools, and spaces.

Education

1995-2001 **Georgia Institute of Technology, Atlanta, GA** *Ph.D., College of Computing, Thesis Advisors: Gregory Abowd and Scott Hudson.*

Thesis: "An architecture and interaction techniques for handling ambiguity in recognition based input"

1991-1995 **Oberlin College, Oberlin, OH** *B.A. in Computer Science, High Honors. Thesis Advisor: Rhys Price-Jones.*

Thesis: "IIC: Information in context"

Experience

University of Washington, Seattle WA

2017-present

Richard E. Ladner Professor, Allen School

2017-present

Adjunct Professor, iSchool

2020-present

Affiliate Faculty Member, Disability Studies

2020-present

Adjunct Professor, HCDE

2019-present

Carnegie Mellon, Pittsburgh, PA

Professor , HCI Institute	2016–2017
Associate Professor , HCI Institute	2008–2016
Assistant Professor , HCI Institute	2004–2008
Affiliate Faculty Member , ECE	2015–2017

Consulting and Sabbaticals

Consultant , Tableau, Seattle, WA	Q3 and Q4, 2022
Consultant , Disney, Pittsburgh, PA	2014–2017
Consultant , Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio	2014–2017
Visiting Professor , ETH Zürich, CH	2014–2017
Visiting Professor , IIIT Hyderabad, Hyderabad India	2014–2017

University of California, Berkeley, Berkeley, CA

Assistant Professor , Electrical Engineering and Computer Science	2001–2004
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PhD Employment, Georgia Tech, Atlanta, GA

2000	Research Assistant , Dr. Moore and Dr. Mynatt. <i>Investigated training and user interface techniques supporting disabled users with extremely limited input channels.</i>
2000	Teaching Assistant , Dr. Potts, Introduction to Human Computer Interaction.
1998–2000	Research Assistant , Dr. Abowd & Dr. Hudson <i>Investigated the toolkit-level infrastructure needs inherent in recognition-based input.</i>
1996	Research Assistant , Dr. Shilit, FX Pal, Palo Alto, CA <i>Investigated placement of computing resources around office place at "points of need." Experimented initially with paper prototype, then touch-screen displays.</i>

Undergraduate Employment, Oberlin, Oberlin, OH

1994	Research Assistant , Dr. Wills, Bell labs, Naperville, IL <i>Designed and implemented C++ object hierarchy to display simple, colorful, interactive, graphs of univariate data (e.g., histogram, boxplot, barplot)</i>
1993	Research Assistant , Dr. Gaasterland, Argonne National Labs, Argonne, IL <i>Designed and implemented general graphical user interface for biological genobase databases. Also extended phylogenetic tree visualization program to encode data using color.</i>
1992–1995	Teaching/Research Assistant , Dr. Geitz, Oberlin College, Oberlin, OH <i>Worked with students in undergraduate classes including pre-calculus, introduction to programming, introduction to graphics, programming languages, calculus and algorithms. Work</i>

included tutoring, grading, recitations and curriculum development with goal of “leveling the playing field” for students with diverse backgrounds. Also gave regular seminars on topics including EMACS, UNIX and repetitive strain injury.

Personal

Musician Violist; Pianist; Vocalist *Member of the Seattle Festival Orchestra. Won audition for noon concert series at UC Berkeley, Spring, 2004. Also, at various times Orchestra member; Viola/Piano Teacher; Wedding musician; Chamber music; etc.*

Assistance Dog Trainer, 1997-2000 *Canine Companions for Independence Trained guide dogs for work with people with disabilities*

Artist/Craftsperson *Amateur artist, with focus on paint & craft-based artifacts.*

Languages *German, Fluent; ASL, Beginner*

Evidence of External Reputation

Leadership Positions

2023-present *Director, Center for Research and Education on Accessible Technology and Experiences*

2019-2023 *Founding Co-Director, Center for Research and Education on Accessible Technology and Experiences*

2014–2021 *Chair, AccessSIGCHI Community*

2019–2020 *Inaugural Associate Chair for Diversity and Inclusion, Allen School*

Citations and Awards

2022 **SIGCHI Social Impact Award**

2021 **SIGACCESS ASSETS Impact Award** for 2010 publication on Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology [C-76]

2020 **AccessComputing Capacity Building Award**

2019 **Elected to SIGCHI Academy**

2020 **ASSETS 2020 Best Student Paper Award**




2019 **CHI 2019 Best Paper Award**

2016 **CHI 2016 Best Paper Award**

2018 **Invited Plenary Talk**, EICS, *Consumer-Grade Fabrication and Its Potential to Revolutionize Accessibility*

- 2017 **GVU Distinguished Alumni Award**
- 2016 **AMiner Most Influential Scholar** (top 100 in field)
- 2014 **Mobile HCI 2014 Best Paper Award**
- 2012 **Invited Plenary Talk**, ICT4S *Defining an agenda for computational sustainability*
- 2010 **ASSETS 2010 Best Paper Award**
- 2007 **Alfred P. Sloan Research Fellow**
- 2006 **IBM Faculty Fellow** *Adaptive Assistance: Dynamically tailoring assistive technologies for interactive computer users*
- 2004 **IBM Faculty Fellow** *Tools for supporting early-stage, accessible design*
- 2000 **IBM Graduate Fellowship**
- 2000 **Intel Fellowship** (declined in favor of IBM)
- 1995–1997 **NSF Traineeship Recipient** Georgia Tech Atlanta, GA *Investigated computing in the home, specifically focusing on bringing techniques for bringing physically separated people and places together*
- 2000 **CHI Doctoral Consortium**
- 1995 **Elected to Sigma Xi**
- 1994 **Elected to Phi Beta Kappa**

Invited talks, seminars and Colloquia

- 2022 *Making for All and All for Making* Keynote speaker, Symposium on Computational Fabrication. 
- 2021 *Stitching Together: Musings on creation* Computational Fabrication Seminar. 
- 2020 *Making Beyond Hobbyism*. Stanford University
- 2019 *Making Accessibility*. UIUC Distinguished Lecture
- 2019 *Making Accessibility*. University of British Columbia
- 2018 *Making Accessibility*. Microsoft Research
- 2018 *Consumer-Grade Fabrication and Its Potential to Revolutionize Accessibility*. **Invited plenary talk**, EICS 2018
- 2017 *Fabricating Accessibility*. **GVU Distinguished Alumni Brownbag Talk**, Atlanta, GA
- 2017 *Longitudinal, Human Data Modeling for Health*. Jewish Healthcare Foundation Pittsburgh, PA
- 2017 *Multi-Stakeholder Approach to Sustainable Behavior Change* CMU Energy Week, Pittsburgh, PA 
- 2017 *Concepts in End-User Modeling and Design*. 3D Printing Summit, CMU, Pittsburgh, PA
- 2013 *Defining an agenda for Computational Sustainability*. Invited plenary talk, ICT for Sustainability conference (ICT4S)

- 2012 *Rethinking the role of feedback in encouraging energy saving.* Invited talk, ETH IED Energy Science Center
- 2012 *Challenges in Making the Hidden Visible.* Invited talk, ETH Computer Science Department (also given for SwissCHI)
- 2011 *Personal informatics: Making the hidden visible.* Invited talk, IIT Hyderabad
- 2011 *Energy Feedback Techniques.* Invited talk, IBM Research Delhi
- 2011 *A Tale of Two Motivations: The greening of IT, impact, and the climate crisis: Finding a path forward.* Invited keynote, IBM Academy of Technology 3rd Conference on Technology and Humans
- 2011 *Information and power: Making the unknown available.* Invited talk, [Techease](#) conference.
- 2011 *Making Important Information Available Visually.* Invited talk, Rajiv Gandhi University of Knowledge Technologies
- 2009 *Lessons learned in the course of addressing real world problems through research.* Invited speaker at the Grace Hopper Conference on Women and Computing, Tucson, AZ.
- 2009 *Impact of Online Information on Individuals with Lyme disease: Potential and pitfalls.* Invited talk at the Greater New York Lyme Neuroborreliosis Support Group, New York, NY.
- 2008 *Facebook and A Polar Bear may persuade people to pare down their energy use.* Invited Google Tech Talk  and Intel Research Colloquium Talk
- 2007 *Leveraging social networks to motivate voluntary change in energy use.* Invited talk at the first conference on Behavior, Energy and Climate Change Conference, Sacramento, CA.
- 2006 *Flexible, mobile and responsive techniques for making important audio events available visually.* University of Pittsburgh, Pittsburgh, PA.
- 2006 *Exiting the Cleanroom: Tools and techniques for situated iterative design of Ubiquitous Computing applications.* Microsoft Research, Seattle, WA. 
- 2004 *Making Accessibility Accessible to Designers.* IBM T. J. Watson, Hawthorne, NY.
- 2003 *A Research Agenda for Ambient and Peripheral Displays.* Fx Palo Alto. With Anind Dey.
- 2003 *Experiences as a woman in Computer Science.* Stanford Speaker Series for Women in Computer Science, Stanford University, CA.
- 2002 *Ambiguity in User Interfaces: Representations and Resolutions.* San Jose State CoE Engineering Seminar.
- 2002 *An Architecture and Interaction Techniques for Handling Ambiguity in Recognition-based Input.* Sonoma State University

- 2002 *When user interfaces and users don't match up: Automating universal access.* International Computer Science Institute, Berkeley, CA.
- 2000 *Interface Techniques for Handling Recognition Errors and Ambiguity in Recognition-based Input.* University of Maryland Human Computer Interaction Laboratory (HCIL), Fall 2000 Seminar series. 2000.
- 2000 *Programming support for natural interaction.* Job talk. Given at: UC Berkeley, Georgia State, Harvard, UC Boulder, IBM, Indiana University, Karlsruhe, University of Maryland, Northwestern, NYU, Stanford, UIUC, University of Washington, and SFU.

Professional Activities and Service

Conferences and Workshops Organized

- Winter 2023 CREATE eSports day; CREATE Race, Disability & Technology Workshop
- Summer 2022 CREATE [Accessible and Inclusive Textiles](#) Hackfest
- Summer 2019 UW CSE [MSR Summer Institute](#) on Fabrication
- Winter 2017 [3D Printing Summit](#) at CMU
- Spring 2016 Joint Summit on 3D Printing and Accessibility with the E-Nable Community Foundation and the University of Pittsburgh
- Fall 2016 CMU SCS [Capacity Building for Accessibility](#) event sponsored by University of Washington's [ACCESS Computing](#)

National and International Service

- 2014–2021 *Chair*, AccessSIGCHI Community
- 2019–2020 Member, Oberlin Computer Science Review Committee
- 2018–2019 Member, COMPASS Steering Committee
- 2017–2019 *Chair*, E-NABLE Research Group
- 2017–2019 Member, e-NABLE Strategic Planning Committee (SPC)
- 2017–2019 Member, CHI Steering Committee
- 2018 Member, UIST 10 Year Impact Award Committee
- 2018 *Chair*, COMPASS program committee chair (joint with Jay Chen and Carla Gomez)
- 2017 *Chair*, UIST Program Committee (joint with Chris Harrison)
- 2017 *Chair*, CHI Subcommittee (joint with Emmanuel Pietriga)
- 2016–2018 *Associate Editor*, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)
- 2013 *Accessibility Chair* for UbiComp 2013.
- 2010–2012 Member, Computing Research for Environmental and Societal Sustainability

- committee of the National Research Council's Computer Science and Telecommunication Board. ([report](#))
- 2004-2006 *Vice President*, SIGACCESS
- 2003 Registration/Student Volunteer Chair ACM ICMI-PUI, (with Anind Dey)
- 2002 *Inaugural Chair*, Doctoral Consortium ACM ASSETS
- 2000 Student Volunteer Chair ACM UIST

Editorial board memberships and other reviewing service

- Ongoing *Program Committee Member* ACM ASSETS '14, '07, '05, '00; ACM CHI '23, '16, '11, '03, ACM UIST '16, '15, '10, '08, '06, '02, '01; Ubicomp '15, '07; Design and Evaluation of Ambient Information Systems (Workshop at Pervasive '07); COMSNETS Energy in Communication, Information, and Cyber-Physical Systems Workshop '13; ICT4S '14, '13.
- 2018-2019 *Editorial Board Member*, IEEE Pervasive Computing
- 2016-2018 *Associate Editor*, PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
- 2008-2010 *Editorial Board Member*, ACM Transactions on Accessible Computing
- 2009 *Invited Co-editor*, Pervasive Magazine, Special Issue on Environmental Sustainability, Issue published: January-March 2009.

Memberships in Professional Societies

- Lifetime Association for Computing Machinery
- Lifetime Society for Disability Studies
- 2016-2019 Enable Community Foundation Affiliate

Mentorship Program Participation

- 2016-present Do-IT (Disability, Opportunities, Internetworking, and Technology)
- 2003 School 2 Career
- 2004-2017 IFYRE
- 2001-present CRA CREW and CRA-W (research experiences for undergraduate women)
- 2001-2004 Computer Technologies Program (IT training for people with disabilities)
- 2001-2004 Berkeley SUPERB (undergraduate REU program)

University and Department Service and Committee Work

University of Washington

- 2023 Member, Chair & professorship committee
- 2022-2023 Member, ADA Faculty, staff & student advisory board
- 2022-present Member, founding Disabled Faculty & Staff Affiliates committee
- 2019-2020 Associate Chair for Diversity and Inclusion, Allen School
- 2019-2020 UW NASEM Advisory Group
- 2018-2019 Dean's Search Committee Member

2018–2019 Introductory Curriculum Committee Member
2017–2020 Diversity Committee Member

Carnegie Mellon University

2015–2017 Junior faculty mentoring lead for HCII
2015–2016 Diversity Committee: Member
2012–2017 Hiring Committee: 2016/17 (Head); 2015/16 (Head); 2014/15 (Head); 2013/14 (Head); 2012/2013
2014–2016 MCDS Human Centered Data Science Track: Track head
2010–2012 UCRE Reorganization (2010 and 2012)
2014–2016 Co-created and run DIY-AT seminar with Scott Hudson
2012–2014 Created SCS Green website and blog
2010 Created CS Sustainability seminar
2004–2015 Curriculum Committee: 2014/15; 2009, 2004–2007
2006 Orientation Coordinator
2004–2006 Graduate Admissions Committee
2002–2006 Helped to organize regular meetings of female engineering faculty at both UC Berkeley and CMU

University of California, Berkeley

2002–2004 Disability Studies Advisory Board
2003–2004 Undergraduate Study Committee
2002–2004 RSI Lending Library Coordinator
2002–2003 Graduate Admissions Committee
2002–2003 Undergraduate Advising Committee

Georgia Tech Service and Committee Work

1995–2001 RSI Lending Library Coordinator

Contributions to Education

F 2023 *Accessibility* Undergraduate class covering accessibility basics & theory; GUI and website accessibility; accessibility of modern computing technologies; and accessibility in the world at large

S 2021, W 2023 *The Future of Access Technology* PMP Masters class covering accessibility basics & theory; GUI and website accessibility; accessibility of modern computing technologies; and accessibility in the world at large.

F 2019, F 2020 *The Future of Access Technology* PhD-level Graduate class covering accessibility basics & theory; GUI and website accessibility; accessibility of modern com-

- puting technologies; and accessibility in the world at large.
- 2017–present *Quarterly Accessibility Seminar* Reading group focused on accessibility. Notable topics include disability studies (2019/2020) and race (2020)
- W/S 2019 *Husky Adapt VIP* Mentor for two groups of students in 2-quarter long course on developing accessible technology solutions. Instructor of record was Kat Steele
- S 2019, W 2020 *Interaction Programming* New class to teach interactive device programming abstractions in Android. Based on SSUI but targeted at 2nd and 3rd year undergraduate students
- F 2017 *Computer Science for Social Good* New class exploring computer science for social good. Technologically, our focus is on 3D printing and its applications. Students assemble their own 3D printer and use it for a final project.

Courses Taught at CMU

- S 2015 *Web Accessibility. Co-taught with Jeff Bigham* A mini which covers the history and practice of creating websites that enable a broad population to use them and meet government guidelines that are increasingly being enforced across the web.
- F 2014, 2015, 2016 *SSUI*. This course considers the basic and detailed concepts that go into building software to implement user interfaces. It considers factors of input, output, application interface, and related infrastructure as well as the typical patterns used to implement them. It will also consider how these components are organized and managed within a well-structured object oriented system. After considering these fundamental concepts in the first portion of the class, the later part will consider advanced topics related to emerging future concepts in user interface design.
- S 2014, 2015, 2016 *Interactive Data Science*. A project based introduction to the data-driven interactive systems. This course explores the new opportunities enabled by this data through a combination of guest lectures, discussion of current literature, and practical skills development. Over the course of the semester, students learn about the entire data pipeline from sensing to cleaning data to different forms of analysis and computation.
- S 2013, 2011 (w/ Miller), 2010 *Environmental Hackfest*. A project-based introduction to the confluence of environmental issues and technology, focused on project-based interventions and multidisciplinary group work. Students range from art to engineering to design to computer science and HCI.
- Su 2010, 2011 **Media Computation**. A 6-week intensive introduction to programming, taught online (in Java).

- S 2009, S 2007 **Computer Science Perspectives in HCI.** A seminar-style deep exploration of the innovations and challenges that have been tackled by the pioneers of our field over the past 60 years.
- F2013, 2007–09, 2004 **Process and Theory.** Introduction to Graduate Research. Covers multidisciplinary research, skills, and includes a project.
- F 2012, 2007 **UCRE.** Required introduction to HCI evaluation methods taken by Masters students and 2nd Majors.
- S 2005 **Assistive Technology.** Graduate Seminar. Typically includes extremely diverse, cross-disciplinary students and community members. Included service learning.
- F2006, F2007 **Clinical Module.** Providing technical information for the planning of a new course on clinical and translational research as part of the University of Pittsburgh's new Multidisciplinary Clinical Research Scholar's Program

Courses Taught at UC Berkeley

- F 2003, F 2002 **Human-Computer Interaction.** Undergraduate course. Included service-learning theme
- S 2003 **Designing Technology for Girls and Women.** *Freshman Seminar, With Dr. Alice Agogino.* Co-listed in Engineering and Women's Studies. Included service learning. Explored issues of gender among first year engineers.
- S 2003 **Human-Computer Interaction.** Graduate course. Focused on Research Methods
- S 2002 **Assistive Technology and Accessibility.** Typically includes extremely diverse, cross-disciplinary students and community members. Included service learning.

Courses Taught at Other Universities

- Su 2014 **Data Pipeline Short Course.** *University of Zürich*
- S 2012 **Environment, Technology and Society.** *ETH, CH*
- F 2011 **Human-Computer Interaction.** *With Dr. Anind Dey, IIIT Hyderabad.*

Volunteer Teaching

- S 2014, F 2015, F 2016 **Making & Computation Club.** *Waldorf School of Pittsburgh.* Founded and led 3d printing/computation/making club at the Waldorf School of Pittsburgh with 6–8 grade students.
- S 2015, 2014 **Computational Thinking.** *Waldorf School of Pittsburgh.* 8th Grade class; 1 month long.
- F 2003 **Teaching Hearing Technology to the Hard of Hearing.** *UC Berkeley, DeCal Course, Faculty adviser.* Taught students to work with and for hard of hearing people, learning and teaching about hearing technology.

S 2003 **Partnership in Education** *UC Berkeley, DeCal Course, Faculty advisor* Mentoring class for local disabled community college students.

Curriculum Design at UW (Course materials at websites)

2023 **Accessibility** 2023 🌐 Undergraduate class, derived from the future of access technology.

2020 & 2023 **The Future of Access Technology.** 2020 🌐 & 2023 🌐 PMP version: Exploring cutting edge access tools. Course has included open source contributions to NVDA and Odilia screen readers; website assessments for community groups; disability studies; activism; and open ended final projects that covered a range of topics.

2020 **The Future of Access Technology.** 🌐 Grad version (Quals course): Exploring cutting edge access tools from a research perspective. Similar topics to PMP version.

2019 **Interaction Programming.** 🌐 Significant curriculum development work including auto-gradeable assignments, learning goals and related materials, and so on. The main focus of the class is on interactive device programming abstractions. It is taught based on SSUI but targeted at 2nd and 3rd year undergraduate students. It is taught in Android.

Curriculum Design at CMU

2015 **Web Accessibility.** 🌐 *With Jeff Bigham,* designed an introduction to accessibility centered on web in particular for graduate and undergraduate students in SCS and beyond.

2014 **Computational Thinking.** Designing and introduction to computation for middle school students based in part on Carnegie Mellon's Computer Science Unplugged Curriculum.

2014 **Interactive Data Science.** 🌐 Designed new course from scratch. Course is designed to be accessible to programmers and non-programmers, which meant developing a series of 7 tutorials that walk students through the basic programming and data analysis skills necessary to complete the midterm and final projects. All programming exercises are on Google Appspot to help the students develop a portfolio. Currently pursuing funding for further development of the online portion of the course as part of CMU's new Data Science initiative.

2012 **User Centered Research and Evaluation.** Wholesale redesign based on workshop run by Karen Holtzblatt and Hugh Beyer. The entire first half of the course was redesigned to involve students directly in real world application of the materials being taught and provide a hands-on introduction to contextual inquiry.

Also updated parts of the second half of the course with more real-world applied work, and created a two-week module on accessibility analysis.

2009 **Media Computation.** 🌐 Designed and implemented a 6 week intensive introduction to programming especially for the HCII Masters Students. This course makes use of the OLI infrastructure and includes live lectures 3 times a week as well as interactive online exercises, homeworks, quizzes, and web pages describing all of the programming concepts that need to be learned. Currently available free and open online, where over 20,000 students have registered to take the public and free version, and 10 instructors at external schools have registered to teach it.

2010-2013 **Environmental Hackfest.** 🌐 Designed curriculum for a new class pushing the boundaries of multidisciplinary work to create positive environmental change.

2006-2009 **Computer Science Perspectives in HCI.** 🌐 Designed curriculum for a seminar-style deep exploration of the innovations and challenges that have been tackled by the pioneers of our field over the past 60 years. The intersection of humans and computation has reflected dramatic changes in technology over time, from the vision of Vannevar Bush to the ability to predict human interruptibility with sensors.

2004-2009 **Process and Theory.** 🌐 Helped to re-design the curriculum for the introduction to graduate studies to ensure that it covers key skills needed for success in the graduate program, including issues from skimming papers and writing literature surveys to research ethics.

2002-2005 **Assistive Technology.** 🌐 Designed curriculum for assistive technology and accessibility course. Focused on educating engineering, computer, and human computer interaction students about disability studies, and encouraging diverse, cross-disciplinary projects. No similar course to base this on, it combines aspects of disability studies, rehabilitation, computer science, and Human Computer Interaction.

Teaching and Learning Innovation and Development

2023 **Competency based learning.** Experimenting with a disability-justice based approach to grading that emphasizes competencies over other types of performance and allows for repeated submission of things demonstrating the same competency.

2002-2004 **Service Learning.** Experimented with Service learning in four courses over 2 years. Research conducted during this time was published as an experience report at CHI [O-27], leading to contacts with faculty members at two other institutions who wished to use service learning in their own courses. One said

“You reignited my desire to do service learning,” (Sophie Quigley, 5/1/06) while another said “after your CHI experience report I was inspired to try service learning myself.” (Khai Truong, 12/1/06)

2002 **Active Learning** CRA Academic Careers and Teachingn Workshop and NSF New Century Scholars Attended and learned about teaching skills and active learning, methods applied to all classes

Research Mentoring

2001-2005 **Undergraduate Research Experience.** Explored different models for mentoring undergraduates, especially during early stages of their career, and exposing them to research. General model involves a combination of regular advising and exposure to skills and topics ranging from how to interview to time management, along with participation in a research project. Many of the undergraduates involved in different variations on this effort have gone on to top PhD programs including HCII (Megan Hofmann, Julia Schwarz, Gary Hsieh and Ruth Wylie); UC Berkeley SIMS (Morgan Ames and Tu Tran); Stanford (Lisa Chan); Georgia Tech (Catherine Grevet) and UW (Kit Kuksenok) while many others have gone on to successful jobs, other degrees, or other fields. Many students expressed the value of this approach to me, and as an example, one student currently working at NASA said “I don’t think I ever properly thanked you for opportunities and encouragement you provided while I was working on the Nutrition project... my time with the I/O group was very formative and definitely helped me with future research endeavors,” (Eric Park) while another student recently emailed “Thank you for all the ways you’ve supported and encouraged us. You have definitely been someone who has made an impact in my life and I’m forever grateful.” (Hanyi Wang)

Student Advising

Post Docs and Visitors

2023 **Stacy Hsueh** ARRT Post Doc.
2023 **Matthew Butler.** Visiting Faculty. Worked on tactile graphics
2022-2024 **Alexandra Portnova.** ARRT Post Doc. Co-advised with Heather Feldner and Kathleen Steele. Worked on inclusive hand sensing
2022-2023 **Momona Yamagami.** ARRT Post Doc. Worked on inclusive EMG systems
2019-2022 **Margaret Morris.** Visiting Researcher Worked on UWEXP project to address the student experience from a health and wellness perspective
2019 **Vivian Motti.** Visiting Faculty. Worked on sensing of user experience.

- 2015-2016 **Alex Chen.** *Post Doc.* Worked on WebAnywhere.
- 2015-2016 **Hongbo Ni.** *Visiting Faculty.* Worked on hypertension detection.
- 2016-2017 **Nur Camellia Binte Zakaria.** *Visiting Student.* Worked on eating prediction.
- 2016-2017 **Kasthuri Jayarajah.** *Visiting Student.* Worked on student location prediction.
- 2016 **Jeeun Kim.** *Visiting Student.* Worked on 3D printing under uncertainty.

Current PhD Students

Kate Glazko *UW Allen School*

Jerry Cao *UW Allen School, co-advised with Shwetak Patel* Studying inclusive and accessible health-care

Han Zhang *UW Allen School, co-advised with Anind Dey.* Studying student microclimates and long term outcomes.

Aashaka Desai *UW Allen School.* Studying Disability Innovation.

Kelly Mack *UW Allen School.* Studying Invisible Disability.

Venkatesh Potluri *UW Allen School.* Studying Blind Programming.

Completed PhD Students

- 2023 🏆 **Xuhai 'Orson' Xu** *UW iSchool, co-advised with Anind Dey.* First position: Post-Doc at Harvard "Computational Support for Longitudinal Wellbeing" Won UW's 2023 Distinguished Dissertation Award in the category of Mathematics, Physical Sciences, and Engineering; also chosen University of Washington's submission for the 2023 WAGS/ProQuest Innovation in Technology competition.
- 2022 🏆 **Megan Hofmann** *CMU HCII, Co-advised with Scott Hudson.* First position: Northeastern University. "Optimizing Medical Making: Applications of Generative Design for Fabrication in Healthcare Settings" Won SIGCHI Dissertation Award
- 2019 **Mark Baldwin.** *UC Irvine, Co-advised with Gillian Hayes.* First position: UC Irvine. "An Activity Centered Approach to Nonvisual Computer Interaction"
- 2018 **Nikola Banovic.** *CMU HCII, Co-advised with Anind Dey.* First position: University of Michigan. "Computational Method for Understanding Complex Human Routine Behaviors"
- 2017 **Kirsten Early.** *CMU ML, Co-advised with Steve Feinberg.* First position at Yahoo! Research. "Dynamic Question Ordering: Obtaining Useful Information while Reducing Burden"
- 2015 **Christian Koehler.** *CMU ECE, Co-advised with Anind Dey.* First position at Samsung. .
- 2014 **Julia Schwarz.** *CMU HCII, Co-advised with Scott Hudson.* First position at Microsoft. "Monte Carlo Methods for Managing Uncertain User Interfaces"
- 2014 **Sunyoung Kim.** *CMU HCII, Co-advised with Eric Paulos.* First position Post-Doc

- at Harvard). “Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection”
- 2013 **Tawanna Dillahunt.** *CMU HCII*. GEM Fellowship; IBM Fellowship. First position at University of Michigan. “Using Social Technologies to Increase Sharing and Communication around Household Energy Consumption in Low-Income and Rental Communities”
- 2010 **Amy Hurst.** *CMU HCII*, Co-advised with Scott Hudson, NSF Fellowship. First position at UMBC. “Automatically detecting user capabilities and needs”
- 2007 **Scott Carter.** *UC Berkeley*. First position at FX Pal. “Ubiquitous computing support for evaluation”
- 2007 **Tara Matthews.** *UC Berkeley*. NSF Fellowship. First position at IBM. “Evaluation of ambient displays”

Masters Theses

- 2022 **Taylor Gotfrid** *UW Allen School*. Research work focused on Disability and Craft, no thesis.
- 2011 **Lauren Chapman.** *CMU Design*, Co-advised with Suguru Ishizaki. “Design for Chronic Illness: Exploring service systems and new technologies for patients with type 2 diabetes.”
- 2005 **Ana Ramirez.** *UC Berkeley*, Co-advised with Mark Davis, SIMS. NSF Fellowship. “Designing systems that direct human action.”
- 2003 **Scott Lederer.** *UC Berkeley*, Co-advised with Anind Dey. NDSEG Fellowship. “Designing disclosure: Interactive personal privacy at the dawn of ubiquitous computing.”
- 2003 **Holly Fait.** *UC Berkeley*. “Simulation of user interaction experiences to improve evaluation for accessibility.”
- 2003 **Wai-Ling Ho-Ching.** *UC Berkeley*, Co-advised with James Landay. “Can you see what I hear? The design and evaluation of a peripheral sound display for the deaf”

Other Advisees

Have directly supervised over 100 students from High School through Masters level, many leading to publications. Created experimental, sustainable undergraduate-only research project focused on peer learning (2001-2004, Nutrition project). Below, students that I directly supervised through 2017 are listed, along with the number of years I supervised them and any awards or honors or publications. Since then I have only kept thesis students up to date.

Honors Theses.

Nora Morsi, 2022 “Accessibility for Sensor Data using the Physical computing Streaming Sensor data Toolkit”

Duncan McIsaac, 2016 “Re-envisioning the Keyboard as a Spatial User Interface”

Catherine Grevet, 2009 “Motivating Community-Oriented Behavior through an Online Social visualization,” Wellesley College. Undergraduate Honors Thesis

Ruth Wylie, 2003 “The Effects of Computers on Cognitive Assessment,” UC Berkeley. Undergraduate Honors Thesis.

Devin Blais, 2007 “Green Facebook Applications: A competitive Analysis,” Carnegie Mellon University. Undergraduate Honors Thesis.

Middle, High School, Undergraduate, and Masters Research

Primarily includes students I directly advised.

UW Accessibility Work Jerry Cao (2019-2021); Tongyan Wang (2022-2023); Gene Kim (Su 2022 DREU Student); Ellie Seehorn (Su 2022 DREU Student)

UW EXP (2017-present) Mayki Hu (2017), Nicole Kathleen Riley (2017), Woosuk Seo (2017-18, Michigan PhD)

DIY-AT (2014-2019) Joyce Liu (2015), Nanako Era (2015), Jeff Harris (2015), Megan Hoffmann (2015-2017, CMU PhD), Duncan McIsaac (2015-2016) eDigs (2014-2018): Exploring the impact of better information on prospective tenants. Vikram Kamath (2014-2015, CMU PhD), Vinay Ramkrishnan (2014-2015), Nidhi Vyas (2014-2016, CMU MS), Omead Kohanteb (2014, Google A11y UX), Chandramouli Sharma (2014), Victor Li (2014).

Data Science (2014) Advisor to Ubiquitous Learning Research Lab (led by Chandramouli Sharma, India, Teach for India).

ChronicWeb (2008-2013) Exploring the impact of the social web on the experience of chronic illness. Kit Kuksenok (W09, DMP Su09, UW PhD); Kelly Waldman (QoLT REU student, Su09); Akshay Minosha (IIIT Hyderabad, 2012), Rohan Arora (MS 2013), Jessie Schroeder (DMP Su13, UW PhD), Jamie Waldman (HCII MS student 2013/14), Cheng Guo (Pitt MS Student 2013/14).

StepGreen (2006-2013) Exploring human behavior change in the context of global warming. Creating a system for motivating consumers to reduce energy consumption. Aubrey Schick (2006-07); William Wedler (Initial demo, 2006); Devin Blais (2006-08); Anish Mathur (Interviews and Data Analysis, 2006-07, IFYRE); Ayca Akin (Design, 2007); Rachel Graves (Design, 2007); Laura Seitz (Civil and Environmental Engineering, 2007); Raye Gomez (DMP, 2007); April Wensel (DMP, 2007); Shiva Kaul (Main system, 2007-08); Hee Young Jeong (Design, Interviews, 2007-08); Karalyn Baca (Testing, 2007-2008, IFYRE);

Catherine Grevet (DMP 2008, GaTech PhD); Julia Schwarz (DMP 2008, CMU PhD, Microsoft); Kwadwo Som-Pimpong (Misc, 2009-10); Jenny Schweers (Misc, 2009-10); Pratibha Singh (Marketing, 2009-10); Lavanya Shaji (Marketing, 2010); Margaret Hall (Marketing, 2010); Malavika Gopal (Marketing, 2010); Sophie Zhou (Facebook game, 2010-11); Young Jae Park (CarbonScore, 2010-11); Erik Irvin-Williams (Android app, 2010-present); Louis de Valliere (CampusGreen, 2010-11); Kelly Lau-Kee (Misc, 2011); Eshan Chordia (Misc, 2010); Eva Schlinger (Misc, 2010); Meghana Koushik (Misc); Freetson Wang (Facebook Game, 2010-11); Ting Luo (Visualization software, 2011); Jeho Oh - KAIST (Visualization software, 2011); Mi Sun - (Visualization software, 2011); Renaud Tircher (Visualization Software, 2011); Ariel Liu (2011-2012); Joheun Lee (2011-2012); Tianle Huang (2012, VLIS NILM); Peng Zhang (2012, VLIS NILM); Yogesh Dalal (2012, VLIS NILM); Chandramouli Sharma (S2013, Housing Site).

Ubicomp Toolkits (2001-2009) Exploring toolkits to enhance evaluation and development of ubiquitous technologies. Kyle Rector (DMP Su09, UW PhD). Intel First Year Research (IFYRE) students (2006-2008): The IFYRE program aims to involve first and second year CMU students in research, and specifically targets minority students. Below is a list of IFYRE students I have advised/am advising. These students participate in a weekly group meeting, and additionally are assigned to a variety of research projects in my lab. Karalyn Baca (F07-Su08) Anish Mathur (F06-S07), Kelly Phouyaphone (F06-S07), Jenny Han (F06-S07), Austin Sung (F06-S07). Adaptabilities (2002-present): Creating software that can sense and adapt to changing user needs. Aubrey Shick (Su06), Madhu Prabaker (Su06), Kelly Phouyaphone (F06, IFYRE), Jenny Han (F06, IFYRE), Austin Sung (F06, IFYRE). Also looking at novice/expert users. Jim Lin (Su06), Daniel Zinzow (Su06). Mark Baldwin (MS 2013, Braille display). Omari Payne (S2013, HS, Braille Display), Chandramouli Sharma (S2013, Braille Display) Gendered aspects of engineering education (2003): Project to explore gendered aspects of engineering education. Marisa Bauer (S03, "Certificate of Achievement" award for commitment to women's issues in CS).

Talc (2002-2003) Project to explore web accessibility for people with disabilities [J.2, J.5]. Group included undergraduate and masters students. Audrey Le (F02-S03); Tony Lai (F02-S04); Carol Pai (F03-S04); Ray Juang (F03-S04). Cognitive Assessment (2002-2003): Project designed and led by a student to develop a computational tool for cognitive assessment. Ruth Wylie (F02-S03, Highest Honors, CMU PhD).

Nutrition (2001-2003) Experimental undergraduate-only research project. Teaching goal was to develop a community of undergraduate researchers that is self-supporting (result was successful). Research goal is to design and evaluate system for reasoning about extremely ambiguous information; goal is to suggest nutritional lapses and persuade users to shop

differently to address lapses. Sharon Lee (F01-S04); Elizabeth Nitao (F01-S03); Gary Hsieh (F01-S02, CMU PhD, UW Faculty); Ho Chak Hung (F02-S03); Eric Park (F03-S04); Doris Lin (F02-S04); Hanyi Wang (S01-F03); Dana Wu (F02-S04); Anjali Koppal (F03-S04); Lexin Shan (F03-S04); Eric Diep (F03-S04)

Ambient (2001-2003) Project to explore applications, evaluation, and development of ambient and peripheral displays. Group included undergraduate, masters, PhD students and multiple faculty. General Involvement: Lisa Chan (F01-S03); Steven Chan (F01-S02); Chinmayi Bettadapur (F01-S04, CREW); Gary Hsieh (S02-S03); Morgan Ames (F01-S03); Adebola Osuntogun (Su03, SUPERB); Kyle Rector (Su09, nCRA DMP); Evaluation Project to explore evaluation of ambient displays: Gary Hsieh (F02-S04), Morgan Ames (F01-S03); Healthy Cities Project to develop public display of city health. Morgan Ames (F02-S03), Chinmayi Bettadapur (F02-S03).

PhD Student Committee Service

- 2023** *Esther Jang, UW Allen School, Doctoral Committee.*
- 2023** *Nick Reid, Biomedical Informatics, GSR.*
- 2023** *Mara Kirdani-Ryan, UW Allen School, Doctoral Committee.*
- 2023** *Nick Reid, Biomedical Informatics, GSR.*
- 2022** *Yuxuan Mei, UW Allen School, Qualls Committee.*
- 2022** *Jasper Tran O'Leary, UW Allen School, Doctoral Committee.*
- 2022** *Daniel Revier, UW Allen School, Qualls Committee.*
- 2021** *Liang He, UW Allen School, Generals Committee, Jon Froehlich and Leah Findlater (advisors). "Fabricating Kinetic Objects with 3D Printable Springs for Interactivity"*
- 2021** *Tianyu Jiang, Mechanical Engineering, Generals Committee (JSR), Xu Chen (advisor). "Mechatronic Design and Feedback Control for Quality-assured Laser Powder Bed Fusion Additive Manufacturing"*
- 2021** *Benjamin Xie, UW iSchool, Dissertation Reading Committee, Amy Ko (advisor). "Stakeholders' interpretations of data for equitable computing education."*
- 2021** *Udaya Lakshmi, Georgia Tech, Dissertation Committee, Rosa Arriaga (advisor). "Warm solutions: Medical making and collaborative infrastructure for care."*
- 2020** *Dhruv Jain, UW Allen School, Dissertation Committee, Jon Froehlich and Leah Findlater (advisors). "Sound Sensing and Feedback Techniques for Deaf and Hard of Hearing People"*
- 2020** *Anne Ross, UW Allen School, Thesis Committee, James Fogarty and Jacob Wobbrock (advisors). "A large-scale, multi-factor approach to understanding and improving mobile application accessibility."*

- 2020** *Jessica Schroeder, UW Allen School, Thesis Committee, James Fogarty and Sean Munson (advisors). "Goal-directed self-tracking in the management of chronic health conditions."*
- 2019** *Philip Garrison, UW Allen School, Qualifying Committee Richard Anderson (adviser).*
- 2019** *Simon Klakegg, University of Oulu, Denzil Ferreira (advisor). "Enabling awareness in nursing homes with mobile health technologies."*
- 2018** *Xiaoyi Zhang, UW Allen School, James Fogarty (advisor)*
- 2018** *Katta Spiel, University of Vienna, Geraldine Fitzpatrick (advisor). "Evaluating experiences of autistic children with technologies in co-design."*
- 2018** *Jeeun Kim, Tom Yeh (advisor). "Modular systems for fabrication: Toward a collaborative partnership between humans and machines."*
- 2016** *Adrian DeFreitas, CMU HCII, Anind Dey (advisor). "A framework to support opportunistic groups in context-aware applications."*
- 2015** *Kyle Rector, UW Allen School, Richard Ladner (advisor). "Enhancing quality of life for people who are blind or low vision using computing technology."*
- 2008** *Lisa Anthony, CMU HCII, Kenneth R. Koedinger (advisor). "Developing handwriting-based intelligent tutors to enhance mathematics learning"*
- 2006** *Jake Wobbrock, CMU HCII, Brad Myers (adviser) "EdgeWrite: A versatile design for text entry and control." Technical Report CMU-HCII-06-104.*
- 2005** *Jimmy Lin, UC Berkeley, James A. Landay (adviser). "Using design patterns and layers to support the early-stage design and prototyping of cross-device user interfaces."*
- 2005** *Jennae Bulat, UC Berkeley, Anne Cunningham (adviser). "The role of print exposure in the development of early literacy skills among kindergarten students."*
- 2004** *Scott Klemmer, UC Berkeley, James A. Landay (adviser). "Tangible user interface input: Tools and techniques."*

MS Thesis Committee Service

- 2011-12** Taylor Raack, *Masters Project, CMU VLIS, Stepgreen NILM support.*
- 2007-08** Marty McGuire, *Masters Project, CMU VLIS, Stepgreen Social Website 2007-08).*
- 2004** Christopher Beckmann, *Masters Thesis, UC Berkeley, "Transcate: Accountable interface techniques for context-aware applications,"*
- 2003** Miriam Walker *Masters Thesis, UC Berkeley "High-Fidelity or Low-fidelity, paper or computer? Choosing attributes when testing web prototypes,"*

Contract and Grant Support

Current

- 4/23** National Science Foundation, J. Mankoff, A. Schultz & M. Hofmann \$599,999 HCC: Small: End-User Guided Search and Optimization for Accessible Product Customization and Design
- 9/21** Meta, J. Mankoff, \$150,000 Framework for Diverse EMG Gesture Recognition
- 6/21-6/25** National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), J. Mankoff, H. Feldner, K. Steele, A. Caspi, \$998,591 ARRT: Postdoctoral training in physical computing and fabrication to support innovations for community living and participation. [NARIC Summary](#)
- 10/20** National Science Foundation, J. Mankoff, P. Nurius, E. Riskin, A. Dey, \$637,981 NSF: EHR: Using Passive Sensing to Assess the Impact of Real-Time Discrimination against Women and Underrepresented Minorities in Engineering.

Funded and Completed

- 3/20** Google, J. Mankoff & J. Froehlich, \$76,502 “Leveraging Advanced Tools to Support Accessible Programming”
- 11/19** Google, J. Mankoff, \$100,000 “2019 Security and Privacy Research Award” for work on privacy-sensitive student data collection.
- 10/19** National Science Foundation, A. Schultz, J. Mankoff, Z. Tatlock, \$500,000 NSF Small: Knit Pattern Understanding for Garment Modeling, Modification and Fabrication
- 10/19** National Science Foundation, J. Mankoff, P. Nurius, E. Riskin, A. Dey, \$200,000 NSF: RAPID: Assessing the impact of Harassment and other Negative Events on Inclusion of Undergraduate Students in STEM
- 10/19** Samsung, J. Mankoff, P. Nurius, E. Riskin, \$150,000 Passively Collected Longitudinal Data for Detecting and Predicting Depression over Time
- 1/19** National Science Foundation, M. Ernst, J. Mankoff, A. J. Ko, Z. Tatlock, \$1,000,000 CPS: Medium: Formal Verification of Accessibility
- 12/17** College of Engineering, ECE and Allen School, J. Mankoff, \$150,000 each to support UWEXP project to understand the experience of UW Undergraduate Students in STEM
- 9/17** NIDLLIR, A. Stenifeld, J. Mankoff, A. K. Dey, et al., \$422,419 DRRP on Accessible Transportation
- 4/17** Autodesk, J. Mankoff, \$5,000 Autodesk Fusion Forge Grant
- 9/17** Manufacturing Futures Initiative, , \$161,180 Manufacturing Futures Initiative “Simplifying 3D Model Design”

- 9/14** NIDDILIR, J. Bigham, B. Parmato, et al., \$941,026 “RERC on Information and Communication Technology (ICT) Access—From Cloud to Smartphone: Accessible and Empowering ICT”
- 1/15** Yahoo!, A. Dey and J. Mankoff, \$100,000 “Yahoo! InMind Proposal: Modeling Routines”
- 9/15** Software Engineering Institute, S. Rosenthal, J. Mankoff and S. Hudson \$175,000 “Supporting software architecture best practices in additive manufacturing.”
- 1/15** Scott Institute, A. Dey, Y. Agarwal and J. Mankoff, \$70,000 “Scott Institute Energy Seed Grant”
- 9/15** Siebel Foundation, J. Mankoff and S. Fienberg, \$50,000 “Encouraging Better Infrastructure through Intelligent Prediction of Utility Costs.”
- 1/15** Metro21 Initiative, J. Mankoff and C. Tonkinwise, \$25,000 “Eco-Digs. Easy. Economical. Excellent Housing.”
- 09/12** National Science Foundation, J. Mankoff and S. Hudson, \$499,919 “HCC: Small: New Infrastructure Concepts for Robust Handling of Inputs with Uncertainty” (plus REU supplements 16,000 in 5/15 and 19,200 in 5/13)
- 9/09** National Science Foundation, J. Mankoff, \$492,079 “Helping People Negotiate Uncertain Information Online” (plus REU Supplement, \$12,000 in 5/10 and \$12,000 in 5/11 and \$12,000 in 2012)
- 9/09** National Science Foundation, J. Mankoff, H. S. Matthews and J. Landay, \$235,988 Collaborative Research: Mobilizing Information Technology Systems to Motivate Reduced Energy Consumption and Carbon Dioxide Emissions
- 9/09** National Science Foundation, J. Mankoff, S. Kiesler, \$70,000 “Google Research Proposal: Helping People Find Trustworthy Health Information Online”
- 8/08** National Science Foundation, J. Mankoff, S. Fussell, and H. S. Matthews, \$450,000 “StepGreen: Mobilizing social networks and context awareness to motivate reduced energy consumption” (plus REU supplements: \$16,000 in 5/09 and \$16,000 in 5/10 and \$16,000 in 5/11)
- 8/08** PITA, J. Mankoff, H. S. Matthews, \$86,788 “Improving Household Awareness of Energy Use and Greenhouse Gas Emissions with Personalized Data Streams”
- 1/08** Intel Research, A. K. Dey, J. Forlizzi, S. E. Hudson, J. Mankoff, \$8 MSP Units Intel Research, Equipment grant
- 1/08** Google, J. Mankoff, S. Fussell, D. Matthews, \$60,000 “Google Grant Proposal: Energy Reduction through Personalized Suggestions on Social Networks”
- 5/08** National Science Foundation, J. Mankoff, S. Fussell, \$12,000 REU Supplement: SGER: Footprints: Exploring methods of personalizing suggestion for actions in an energy conservation social network site


- 9/07** National Science Foundation, J. Mankoff, S. Fussell, D. Matthews, M. Johnson, \$96,610 NSF SGER IIS-0745885 "Footprints: Exploring methods of personalizing suggestions for actions in an energy conservation social network site"
- 9/07** Sloan Foundation, J. Mankoff, \$45,000 Sloan Fellowship "Systems support for diversity"
- 1/07** Intel Research, J. Mankoff, S. Fussell, D. Matthews and M. Johnson, \$263,000 Intel Research, "Leveraging computational technologies to support behavior change"
- 9/06** PITA, J. Mankoff and S. Hudson, \$43,468 "Adapting Computer Interfaces"
- 9/06** QOLT, J. Mankoff, S. Hudson and R. Simpson, Two years of salary QoLT ERC HSI Thrust, selected project
- 8/06** IBM, J. Mankoff, \$30,000 IBM Faculty Fellowship, "Adaptive assistance: Dynamically tailoring assistive technologies for interactive computer users"
- 5/06** National Science Foundation, J. Mankoff, \$12,000 REU Supplement, to "Web Accessibility for Low Bandwidth Input"
- 5/04** MICRO, J. Mankoff, \$66,556 "Evaluation for Universal Accessibility"
- 5/04** Intel Research, J. Mankoff, \$60,000 "Tools for supporting Ubicomp Evaluation"
- 9/04** IBM, J. Mankoff, \$40,000 IBM Faculty Fellowship, "Tools for supporting early-stage, accessible design"
- 9/03** MICRO, J. Mankoff, \$44,000 "Early-stage evaluation of Ubiquitous Computing Applications"
- 9/03** National Science Foundation, Eric Brewer et al., \$2,600,000 NSF ITR "A Scalable Enabling IT Infrastructure for Developing Countries"
- 9/03** Service Learning Center, J. Mankoff, \$1,000 Service Learning Mini-Grant, Service Learning R&D Center
- 6/03** National Science Foundation, J. Mankoff, \$12,000 REU Supplement to "Human-Centered Design of Context-Aware Computing"
- 6/03** URAP, J. Mankoff, \$2,000 Nutrition Project. With Doris Lin.
- 1/03** CITRIS, J. Mankoff, \$5,000 CITRIS Seed Grant, "Nutrition awareness and support"
- 1/03** HP Research, J. Mankoff, \$17,000 "Group awareness support". Written with PhD. Scott Carter.
- 12/02** Intel Research, J. Mankoff, \$40,000 "Ubicomp design and evaluation"
- 9/02** National Science Foundation, J. Landay, A. Dey and J. Mankoff, \$2,300,000 NSF ITR IIS-0205644, "Human-Centered Design of Context-Aware Computing: Scalability, Usability, and Privacy"
- 9/02** CREW, A. Dey and J. Mankoff, \$2,250 Collaborative Research Environment for Women (CREW) proposal, "Ambient Displays," for Chinmayi Bettadapur and



- Morgan Ames. 19/41 accepted.
- 9/02** National Science Foundation, J. Mankoff, \$240,000 NSF IIS-0511895 (was IIS-0209213) on “Web Accessibility for Low Bandwidth Input”
- 4/02** UC Berkeley, J. Mankoff, \$6,500 Junior Faculty Research Grant, Committee on Research
- 1/02** PANGEA, J. Mankoff, \$7,500 CommerceNet grant of one summer student plus server machine, in association with PANGEA foundation


Patents

- 2018** U.S. Patent No. 10,160,165, McCann, J., Peng, H., Hudson, S., and Mankoff, J. Washington, DC: U.S. Patent and Trademark Office. [Three-dimensional printer with an inverted cutting surface and a movable platform for creating layered objects](#)
- 2018** U.S. Patent Application 15/655,666, Dey, Anind K., Nikola Banovic, and Jennifer C. Mankoff. [Data Processing System for Generating Data Structures](#), filed January 25, 2018.
- 2018** U.S. Patent 10,127,417, McCann, James, Andrew Spielberg, Scott Hudson, Alanson Sample, and Jennifer Mankoff [Systems and methods for determining interaction states of wireless tags based on probability distributions.](#), issued November 13, 2018.

Software/ Designed Artifacts

Notebook Accessibility (released 2023)  We perform a large scale systematic analysis of a randomly chosen set of 100000 Jupyter notebooks, a subset of a large dataset of ten million notebooks provided by JetBrains, to identify various accessibility challenges in published notebooks affecting the creation and consumption of these notebooks. Our repository contains the processing and reproducibility scripts, along with reproducible Jupyter notebooks presenting the results of the paper.

GLOBEM (released 2023)  GLOBEM is the first multi-year longitudinal passive sensing dataset with 500 unique participants. Datasets available on [Physionet](#). We re-implemented a number of published of longitudinal behavior modeling algorithms; Codebase is open-source: . We benchmark these algorithms and report on their cross-dataset generalizability. [\[J-5, 1\]](#) Our goal is to enable researchers and developers to develop new algorithms with easy-to-extend templates.

OPTIMISM (released 2023) . [C-1] The Optimization Programming Toolkit Integrating Metaheuristic Intuitive Search Methods helps non-technical domain experts and programmers collaboratively implement optimizers in diverse domains. The toolkit is designed to be domain agnostic and enables domain experts to participate in optimizer implementation through a simple and generalized framework that can implement a wide variety of optimization methods. OPTIMISM deconstructs many metaheuristic methods into a small set of pluggable operations called objectives and modifiers, which helps domain experts express their goals and modification strategies. At the same time, OPTIMISM enables programmers to flexibly experiment with a variety of optimization methods with minimal additional coding.

Bow Hand [thing:2365703](https://github.com/thing/2365703)

Site-overload was designed to support user studies but can also support internationalization and other needs (such as multiple clients of an overarching system). It works especially nicely when changes are minor (such as variations in a user study, logo changes, and so on). It is designed to work with an already functioning (Ruby on Rails) site with no changes necessary (to the site).

StepGreen.org was a deployed social website supporting green behavior. It includes a public API for client support and has been used in support of third party organizations including the Pittsburgh Zoo and Cornell University. The codebase and API were released for others doing similar work. However the site is no longer active. [StepGreen API Docs](#).

Momento supported the rapid creation of Ubicomp interfaces sufficient for evaluation. Based on a user centered design process, it addresses challenges found in Ubicomp evaluation. It supports peripheral monitoring of incoming data, can leverage existing devices and provides integrated support for quantitative and qualitative data [C-85]

Reporter aided researchers performing diary studies that involve digital capture of media such as audio and photographs. It enables communication between study participants and researchers, and allows sharing and annotation of captured media [C-94]

EASE simulates the impact of motor impairments and low vision on computer use. EASE (Evaluating Accessibility through Simulation of user Experience) can help developers identify disability-related usability problems early in the design process. EASE can also be used to allow fine-grained exploration of user capabilities that are difficult to account for, such as typing speed.

PDTk provided structured support for managing user attention. The PDTk (Peripheral Display Toolkit) supports the development of peripheral displays (a subset of Ubicomp applica-


tions that allow a person to be aware of information while she is attending to some other primary task or activity) [C-101]

IAT was a toolkit that can help applications to be optimized to the needs of people with motor impairments. It uses a formal model of input, based on Markov information sources, to translate a user's input to a form recognizable by any Windows-based application

OOPS was a toolkit that enables backwards-compatible inclusion of recognition based input in GUI interfaces. A major contribution of OOPS (Organized Option Pruning System) is its fine-grained control of the methods used by end users to resolve ambiguities due to recognition errors, through a process called mediation

Cirrin is a novel, circular soft keyboard that supports pen input of ASCII characters using word-level unistrokes

News and other coverage

- 2018** Lisa Stiffler, GeekWire Working Geek column, [UW computer scientist Jennifer Mankoff channeled adversity into a career path](#)
- 2018** Emily Sohn, Nature Careers, [When sickness interrupts science. How to balance a long-term illness and a research career](#)
- 2018** Erin Winick, MIT Technology Review, [6 of the most amazing things that were 3D-printed in 2018](#)
- 2018** Elizabeth Montalbano, Design News, November 14, 2018, [Assistive Objects Can Track Their Own Use](#)
- 2018** Hannah Hickey-UW, Futurity, April 23rd 2018, [Keyboard tech speeds browsing for blind Internet users](#)
- 2017** Jennifer Kite-Powell, Forbes, May 15, 2017, [This 3D Printed Arm Was Designed To Help A Boy Play The Cello](#)
- 2017** Evan Ackerman, IEEE Spectrum, May 11, 2017, [Mechanical Metamaterials and Other 3D Printing Tech from CHI 2017](#)
- 2017** Bruce Brown HealthTech Insider, March 8, 3D Printing for Assistive Technology Fabrication 
- 2015** Finding Ada, [Jennifer Mankoff #ALD15 @findingada](#)
- 2015** Essential Pittsburgh, June 23, [Homegrown Terror Series Explores Americans Joining Isis](#)
- 2015** CBS Local, May 18, [New Website And App Designed To Help Renters Estimate Utility Bills](#), by Jon Delano

- 2015** Futurity, May 11, [New 3D-printed objects are soft and fuzzy](#)
- 2012** Post Gazette, May 29, [Renters examine electric usage in TREK program by Diana Nelson Jones](#)
- 2011** Pohla Smith, Post Gazette, April, [Computer Scientist researched her own condition, Lyme Disease](#)
- 2010** National Wildlife Federation Magazine, May 14, [Nudging People to Combat Climate Change by Peter Aldhous](#)
- 2009** Scott Carter, March, [Ada Lovelace Day](#)
- 2008** ABC News, November, Centerpiece of High End Computing: Cell Phones
- 2008** Debra Smit, Pop City, July, Carnegie Mellon's StepGreen tracks our sustainable lifestyle
- 2006** Peter Frick-Wright, Sierra Club Magazine, November/December [OurSpace \(Talk of the Quad\)](#)
- 2006** Lisa Steinfeld, i711.com, March, [What Happened?](#)
- 2003** Engineering News, January 20, Vol 73 No. 1S., [EECS professors design 'aware chair' communication system for physically and speech-impaired](#)
- 2003** Oberlin Alumni Magazine, [Able Computing](#)
- 2003** David Pescovitz, Berkeley Engineering Lab Notes, May, [Ambient Displays that Don't Distract](#)
- 2003** New York Times, (Barnaby Feder), June 10, [Glass that Glows and Gives Stock Information](#)
- 2002** Nature, (Lidia Pringle), Aug. 22, Artificial intelligence: Fast hands-free writing by gaze direction

Safe.millennium.berkeley.edu coverage

Helped to create [safe](#) website to help people find out if friends and family were safe in the aftermath of September 11th. Website is archived at [web.archive.org](#). Website was mentioned in numerous articles around the world shortly after 9/11, including Newsbytes news network, and the International Herald Tribune, as well being mentioned on ABC by Peter Jennings and posted on CNN, Yahoo and MSNBC. Project was also featured on Business Newswire, as well as in several UC Berkeley news articles and discussed in academic venues.

- 2001** Steve Gold, Newsbytes News Network, Help Sites Spring Up In Aftermath Of WTC Assaults
- 2001** Andy Farquarson, Guardian Unlimited, UK, [While phone lines went down in New York, people flocked to the net](#)
- 2001** International Herald Tribune, Internet Sites Offering More Information
- 2001** Raman Mohan, Tribune, India, [Net in aid of attack victims' kin](#)
- 2001** Kevin Coughlin, The Star Ledger, [Internet becomes only link after cell phones](#)

[fail](#)

- 2001** Science Daily, [Web Site Lists Safety Of Loved Ones Following Terrorist Attacks](#)
- 2001** Maria Sprow, Michigan Daily, Universities nationwide help victims
- 2001** Steve Caulk News Staff Writer. Rocky Mountain News. Denver, Colo.: Sep 17, 2001. pg. 1.B, Disaster sets web humming, webmasters, users scrambling
- 2001** Dennis Berman. Wall Street Journal (Eastern edition). New York, N.Y.: Sep 17, 2001. p. B.6, E-Business: The Web at Its Worst: Pranks Turn Cruel, Rage Finds Outlets
- 2001** Dana Mulhauser, the Chronicle of Higher Education, 9/18/01, Campuses Near World Trade Center Plan to Resume Classes; Elsewhere, Flag-Waving and Retaliation Are Debated
- 2001** Ka-Ping Yee, Communications of the ACM, 44(12): 25-28, Dec Operating an Emergency Information Service
- 2003** Briavel Holcomb, Philip B. Bakelaar, Mark Zizzamia, Journal of Urban Technology, 10(1):111-128, April, The Internet in the Aftermath of the World Trade Center Attack

Some news articles focused specifically on [safe.millennium.berkeley.edu](#)

- 2001** News Editors, Business Wire, [UC Berkeley Professor, Students, Create Web Site to Help Public Know If Loved Ones are Safe Following Today's Terrorist Attacks](#)
- 2001** Robert Sanders and Cyrus Farivar. Berkleyan: 20 September [Web Site Helps Families, Friends Track Loved Ones](#),

Articles also appeared in other UC venues including [California Alumni](#), the [Daily Californian](#), and [OCUP news](#)

Refereed Journal Papers

- [J33] K. A. Mack, M. Hofmann, U. Lakshmi, J. Cao, N. Auradkar, R. I. Arriaga, S. E. Hudson, and J. Mankoff. "Rapid convergence: The outcomes of making ppe during a healthcare crisis". *ACM Transactions on Computer-Human Interaction*. **2023**, 30 (1), 1–25. URL: <https://dl.acm.org/doi/10.1145/3542923>.
- [J32] M. Hofmann, U. Lakshmi, K. A. Mack, R. I. Arriaga, S. E. Hudson, and J. Mankoff. "Making a medical maker's playbook: An ethnographic study of safety-critical collective design by makers in response to COVID-19". *Proc. ACM Hum. Comput. Interact.* **2022**, 6 (CSCW1), 101:1–101:26. URL: <https://doi.org/10.1145/3512948>.
- [J31] M. Hofmann, U. Lakshmi, K. A. Mack, R. I. Arriaga, S. E. Hudson, and J. Mankoff. "Making a medical maker's playbook: an ethnographic study of safety-critical collective design by makers in response to COVID-19". *Proc. ACM Hum. Comput. Interact.* **2022**, 6 (CSCW1), 101:1–101:26. URL: <https://doi.org/10.1145/3512948>.
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