Patrick A. Carrington

Human-Computer Interaction Institute · Carnegie Mellon University
407 S. Craig Street, Room 201, Pittsburgh, PA 15213
pcarrington@cmu.edu · (443) 472-0310

Academic Appointments

Associate Professor 2025–present
Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania

Assistant Professor 2019–2025
Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania

Postdoctoral Research Fellow 2017–2019
Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania
Supervisor: Jeffrey P. Bigham

Education

Ph.D., Human-Centered Computing 2017
University of Maryland, Baltimore County, Baltimore, Maryland

M.S., Human-Centered Computing 2012
University of Maryland, Baltimore County, Baltimore, Maryland

B.S., Information Systems 2011
University of Maryland, Baltimore County, Baltimore, Maryland
Cum Laude
Information Systems Certificate: Web Development

Honors and Awards

Sara Kiesler Faculty Fellowship — Human-Computer Interaction Institute 2025–2026

Best Paper Honorable Mention · HRI 2026 · DIS 2021 · CHI 2020 · ASSETS 2018 · CHI 2014

Best Poster Honorable Mention · SUI 2026

Best Paper Award · TVCG 2026 · ASSETS 2024 · CHI 2019

Publications

PEER-REVIEWED JOURNAL ARTICLES

J.3 Frank Elavsky, Chieri Nnadozie, Lucas Nadolskis, **Patrick Carrington**, and Dominik Moritz. Skeleton: Visual Authoring of Non-visual Data Experiences. IEEE Transactions on Visualization and Computer Graphics (TVCG 2026). IEEE. 2026. **Best Paper Award**

J.2 Frank Elavsky, Marita Vindedal, Ted Gies, **Patrick Carrington**, Dominik Moritz, and Øystein Moseng. Toward Softerware: Enabling Personalization of Interactive Data Representations for Users With Disabilities. IEEE Computer Graphics and Applications 2026. doi.org/10.1109/mcg.2025.3609294

J.1 **Patrick Carrington**, Jian-Ming Chang, Kevin Chang, Catherine Hornback, Amy Hurst, and Shaun K. Kane. The Gest-Rest Family: Exploring input possibilities for Wheelchair armrests. ACM Transactions on Accessible Computing (TACCESS). ACM. 2016. doi.org/10.1145/2873062

PEER-REVIEWED CONFERENCE PAPERS

C.42 JiWoong Jang, Julia Liu, **Patrick Carrington**, and Andrew Begel. Participation Without Power? A Systematic Review and Call to Center Shared Authority in Accessibility Research. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2026). ACM. 2026. (acceptance 30.17%)
doi.org/10.1145/3797867.3829026

C.41 Yunzhi Li and **Patrick Carrington**. Not Just Pockets: Understanding Phone-Carrying Behaviors of Wheelchair Users for Mobile Context-Awareness. Proceedings of the ACM International Conference on Mobile Human-Computer Interaction (MobileHCI 2026). ACM. 2026. (acceptance 37.8%)

C.40 Xianjing Han, Bin Zhu, Shiqi Hu, Franklin Mingzhe Li, **Patrick Carrington**, Roger Zimmermann, and Jingjing Chen. OSCBench: Benchmarking Object State Change in Text-to-Video Generation. Proceedings of the Annual Meeting of the Association for Computational Linguistics (ACL 2026), Volume 1: Long Papers. ACL. 2026. (acceptance 18.9%)
doi.org/10.18653/v1/2026.acl-long.1425

C.39 JiWoong Jang, **Patrick Carrington**, and Andrew Begel. The Three Praxes Framework: A Thematic Review and Map of Social Accessibility Research. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2026). ACM. 2026. (acceptance 25%)
doi.org/10.1145/3772318.3791125

C.38 Atieh Taheri, Hamza El Alaoui, **Patrick Carrington**, and Jeffrey P. Bigham. "I followed what felt right, not what I was told": Autonomy, Coaching, and Recognizing Bias Through AI-Mediated Dialogue. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2026). ACM. 2026. (acceptance 25%)
doi.org/10.1145/3772318.3791078

C.37 JiWoong Jang, **Patrick Carrington**, and Andrew Begel. From Autonomy to Sovereignty: A New Telos for Socially Assistive Technology. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2026). ACM. 2026. (acceptance 25%)
doi.org/10.1145/3772318.3791585

C.36 Abena Boadi-Agyemang, Sanika Moharana, Cynthia L. Bennett, Elizabeth J Carter, **Patrick Carrington**, and Aaron Steinfeld. Pluriversal Approach to Co-designing Delivery Robots with People with Disabilities. Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI 2026). ACM/IEEE. 2026. **Best Paper Honorable Mention** (acceptance 23.8%)
doi.org/10.1145/3757279.3785567

C.35 Lotus Zhang, Zhuohao (Jerry) Zhang, Gina Clepper, Franklin Mingzhe Li, **Patrick Carrington**, Jacob O. Wobbrock, and Leah Findlater. VizXpress: Towards Expressive Visual Content by Blind Creators Through AI Support. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2025). ACM. 2025. (acceptance 28%)
doi.org/10.1145/3663547.3746345

C.34 Franklin Mingzhe Li, Akihiko Oharazawa, Chloe Zhu, Misty Fan, Daisuke Sato, Chieko Asakawa, and **Patrick Carrington**. More than One Step at a Time: Designing Procedural Feedback for Non-Visual Makeup Routines. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2025). ACM. 2025. (acceptance 28%)
doi.org/10.1145/3663547.3746366

C.33 Franklin Mingzhe Li, Kaitlyn Ng, Bin Zhu, and **Patrick Carrington**. Exploring Object Status Recognition for Recipe Progress Tracking in Non-Visual Cooking. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2025). ACM. 2025. (acceptance 28%)
doi.org/10.1145/3663547.3746318

C.32 Atieh Taheri, Misha Sra, **Patrick Carrington**, and Jeffrey P. Bigham. Designing Through Lived Experience: Reflections on Control, Embodiment, and Social Bias in Accessibility Research. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2025). ACM. 2025. (acceptance 28%)
doi.org/10.1145/3663547.3749829

C.31 Zheng Ning, Leyang Li, Daniel Killough, Jooyoung Seo, **Patrick Carrington**, Yapeng Tian, Yuhang Zhao, Franklin Mingzhe Li, and Toby Jia-Jun Li. AROMA: Mixed-Initiative AI Assistance for Non-Visual Cooking by Grounding Multimodal Information Between Reality and Videos. Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2025). ACM. 2025. (acceptance 22.2%)
doi.org/10.1145/3746059.3747650

C.30 Franklin Mingzhe Li, Kaitlyn Ng, Bin Zhu, and **Patrick Carrington**. OSCAR: Object Status and Contextual Awareness for Recipes to Support Non-Visual Cooking. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI EA 2025). ACM. 2025. (acceptance 24.9%)
doi.org/10.1145/3706599.3720172

C.29 Yunzhi Li, Vimal Mollyn, Kuang Yuan, and **Patrick Carrington**. WheelPoser: Sparse-IMU Based Body Pose Estimation for Wheelchair Users. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2024). ACM. 2024. **Best Paper Award** (acceptance 29.7%)
doi.org/10.1145/3663548.3675638

C.28 Noor Hammad, Frank Elavsky, Sanika Moharana, Jessie Chen, Seyoung Lee, **Patrick Carrington**, Dominik Moritz, Jessica Hammer, and Erik Harpstead. Exploring The Affordances of Game-Aware Streaming to Support Blind and Low Vision Viewers: A Design Probe Study. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2024). ACM. 2024. (acceptance 29.7%)
doi.org/10.1145/3663548.3675665

C.27 Franklin Mingzhe Li, Ashley Wang, **Patrick Carrington**, and Shaun K. Kane. A Recipe for Success? Exploring Strategies for Improving Non-Visual Access to Cooking Instructions. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2024). ACM. 2024. (acceptance 29.7%)
doi.org/10.1145/3663548.3675662

C.26 Sanika Moharana, Gloria Washington, **Patrick Carrington**, and Christina N. Harrington. Towards Contextualizing Embodiment of Intelligent Systems. Intelligent Systems Conference 2024. (acceptance 33.8%)
doi.org/10.1007/978-3-031-66329-1_9

C.25 JiWoong Jang, Sanika Moharana, **Patrick Carrington**, and Andrew Begel. "It's the only thing I can trust": Envisioning Large Language Model Use by Autistic Workers for Communication Assistance. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2024). ACM. 2024. (acceptance 26.4%)
doi.org/10.1145/3613904.3642894

C.24 Franklin Mingzhe Li, Michael Xieyang Liu, Shaun K. Kane, and **Patrick Carrington**. A Contextual Inquiry of People with Vision Impairments in Cooking. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2024). ACM. 2024. (acceptance 26.4%)
doi.org/10.1145/3613904.3642233

C.23 Siyou Pei, Alexander Chen, Chen Chen, Franklin Mingzhe Li, Megan Fozzard, Hao-Yun Chi, Nadir Weibel, **Patrick Carrington**, and Yang Zhang. Embodied Exploration: Facilitating Remote Accessibility Assessment for Wheelchair Users with Virtual Reality. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2023). ACM. 2023. (acceptance 30%)
doi.org/10.1145/3597638.3608410

C.22 Franklin Mingzhe Li, Lotus Zhang, Maryam Bandukda, Abigale Stangl, Kristen Shinohara, Leah Findlater, and **Patrick Carrington**. Understanding Visual Arts Experiences of Blind People. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2023). ACM. 2023. (acceptance 27.6%)
doi.org/10.1145/3544548.3580941

C.21 Yunzhi Li, Franklin Mingzhe Li, and **Patrick Carrington**. Breaking the "Inescapable" Cycle of Pain: Supporting Wheelchair Users' Upper Extremity Health Awareness and Management with Tracking Technologies. Proceedings of the ACM CHI Conference on Human Factors in Computing

Systems (CHI 2023). ACM. 2023. (acceptance 27.6%)
doi.org/10.1145/3544548.3580660

C.20 Franklin Mingzhe Li, Cheng Lu, Zhicong Lu, **Patrick Carrington**, and Khai N. Truong. An Exploration of Captioning Practices and Challenges of Individual Content Creators on YouTube for People with Hearing Impairments. Proceedings of the ACM on Human-Computer Interaction; Computer Supported Cooperative Work (CSCW 2022). ACM. 2022. (acceptance 26%)
doi.org/10.1145/3512922

C.19 Franklin Mingzhe Li, Michael Xieyang Liu, Yang Zhang, and **Patrick Carrington**. Freedom to Choose: Understanding Input Modality Preferences of People with Upper-body Motor Impairments for Activities of Daily Living. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2022). ACM. 2022. (acceptance 26.5%)
doi.org/10.1145/3517428.3544814

C.18 Nikolas Martelaro, **Patrick Carrington**, Sarah Fox, and Jodi Forlizzi. Designing an Inclusive Mobile App for People with Disabilities to Independently Use Autonomous Vehicles. Proceedings of the ACM Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2022). ACM. 2022. (acceptance 38%)
doi.org/10.1145/3543174.3546850

C.17 Franklin Mingzhe Li, Franchesca Spektor, Meng Xia, Mina Huh, Peter Cederberg, Yuqi Gong, Kristen Shinohara, and **Patrick Carrington**. "It Feels Like Taking a Gamble": Exploring Perceptions, Practices, and Challenges of Using Makeup and Cosmetics for People with Visual Impairments. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2022). ACM. 2022. (acceptance 24.7%)
doi.org/10.1145/3491102.3517490

C.16 Franklin Mingzhe Li, Jamie Dorst, Peter Cederberg, and **Patrick Carrington**. Non-Visual Cooking: Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2021). ACM. 2021. (acceptance 29%)
doi.org/10.1145/3441852.3471215

C.15 Rushil Khurana, Ashley Wang, and **Patrick Carrington**. Beyond Adaptive Sports: Challenges & Opportunities to Improve Accessibility and Analytics. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2021). ACM. 2021. (acceptance 29%)
doi.org/10.1145/3441852.3471223

C.14 Cynthia L. Bennett, Emily Ackerman, Bonnie Fan, Jeffrey P. Bigham, **Patrick Carrington**, and Sarah Fox. Accessibility and The Crowded Sidewalk: Micromobility's Impact on Public Space. Proceedings of the ACM Conference on Designing Interactive Systems (DIS 2021). ACM. 2021. **Best Paper Honorable Mention** (acceptance 24.5%)
doi.org/10.1145/3461778.3462065

C.13 Xingyu Liu, **Patrick Carrington**, Xiang'Anthony' Chen, and Amy Pavel. What Makes Videos Accessible to Blind and Visually Impaired People?. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2021). ACM. 2021. (acceptance 26.3%)
doi.org/10.1145/3411764.3445233

C.12 Saiganesh Swaminathan, Yellina Yim, Scott E. Hudson, Cynthia L. Bennett, and **Patrick Carrington**. From Tactile to NavTile: Opportunities and Challenges with Multi-Modal Feedback for Guiding Surfaces during Non-Visual Navigation. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2021). ACM. 2021. (acceptance 26.3%)
doi.org/10.1145/3411764.3445716

C.11 Cole Gleason, Amy Pavel, Emma McCamey, Christina Low, **Patrick Carrington**, Kris M. Kitani, and Jeffrey P. Bigham. Twitter A11y: A Browser Extension to Make Twitter Images Accessible. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2020). ACM. 2020. **Best Paper Honorable Mention** (acceptance 24.3%)
doi.org/10.1145/3313831.3376728

C.10 Cole Gleason, Amy Pavel, Xingyu Liu, **Patrick Carrington**, Lydia B. Chilton, and Jeffrey P. Bigham. Making Memes Accessible. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019). ACM. 2019. (acceptance 26%)
doi.org/10.1145/3308561.3353792

C.9 Megan Hofmann, Kristin Williams, Toni Kaplan, Stephanie Valencia, Gabriella Han, Scott E. Hudson, Jennifer Mankoff, and **Patrick Carrington**. "Occupational Therapy is Making": Design Iteration and Digital Fabrication in Occupational Therapy. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2019). ACM. 2019. **Best Paper Award** (acceptance 23.8%)
doi.org/10.1145/3290605.3300544

C.8 Cole Gleason, **Patrick Carrington**, Cameron Cassidy, Meredith Ringel Morris, Kris M. Kitani, and Jeffrey P. Bigham. "It's almost like they're trying to hide it": How User-Provided Image Descriptions Have Failed to Make Twitter Accessible. Proceedings of the Web Conference (WWW 2019). 2019. (acceptance 18%)
doi.org/10.1145/3308558.3313605

C.7 **Patrick Carrington**, Gierad Laput, and Jeffrey P. Bigham. Exploring the Data Tracking and Sharing Preferences of Wheelchair Athletes. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2018). ACM. 2018. **Best Paper Honorable Mention** (acceptance 26%)
doi.org/10.1145/3234695.3236353

C.6 Lucas Rosenblatt, **Patrick Carrington**, Kotaro Hara, and Jeffrey P. Bigham. Vocal Programming for People with Upper-Body Motor Impairments. W4A 2018. 2018. (acceptance 58%)
doi.org/10.1145/3192714.3192821

C.5 **Patrick Carrington**, Denzel Ketter, and Amy Hurst. Understanding Fatigue and Stamina Management Opportunities and Challenges in Wheelchair Basketball. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2017). ACM. 2017. (acceptance 22%)
doi.org/10.1145/3132525.3132543

C.4 **Patrick Carrington**, Kevin Chang, Helena Mentis, and Amy Hurst. "But, I don't take steps": Examining the Inaccessibility of Fitness Trackers for Wheelchair Athletes. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2015). ACM. 2015. (acceptance 24%)
doi.org/10.1145/2700648.2809845

C.3 **Patrick Carrington**, Shannon Hosmer, Tom Yeh, Amy Hurst, and Shaun K. Kane. "Like This, But Better": Supporting Novices' Design and Fabrication of 3D Models Using Existing Objects. Proceedings of iConference 2015. 2015. (acceptance 36%)

C.2 **Patrick Carrington**, Amy Hurst, and Shaun K. Kane. The Gest-Rest: A Pressure-Sensitive Chairable Input Pad for Power Wheelchair Armrests. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014). ACM. 2014. (acceptance 26%)
doi.org/10.1145/2661334.2661374

C.1 **Patrick Carrington**, Amy Hurst, and Shaun K. Kane. Wearables and Chairables: Inclusive Design of Mobile Input and Output Techniques for Power Wheelchair Users. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2014). ACM. 2014. **Best Paper Honorable Mention** (acceptance 23%)
doi.org/10.1145/2556288.2557237

PEER-REVIEWED CONFERENCE ABSTRACTS AND POSTERS

P.6 Atieh Taheri, **Patrick Carrington**, and Jeffrey P. Bigham. Anteroom: Bounded-Choice Message Triage for Executive and Motor Access. UIST 2026 Adjunct 2026.

P.5 Brandon Woodard, Lucas Li, Jillian Bogosian, **Patrick Carrington**, Christian Eckhardt, and Joseph LaViola. Metaphorically Spatial: A Formative Design Exploration of Lightweight Smartphone Audio Guidance. Proceedings of the ACM Symposium on Spatial User Interaction (SUI 2026). ACM. 2026. **Best Poster Honorable Mention**
doi.org/10.1145/3822518.3839299

P.4 JiWoong Jang, Yunzhi Li, and **Patrick Carrington**. "I Should Feel Like I'm In Control": Understanding Expectations, Concerns, and Motivations for the Use of Autonomous Navigation on Wheelchairs. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2022). ACM. 2022.
doi.org/10.1145/3517428.3550380

P.3 Christina Low, Emma McCamey, Cole Gleason, **Patrick Carrington**, Jeffrey P. Bigham, and Amy Pavel. Twitter A11y: A Browser Extension to Describe Images. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019). ACM. 2019.
doi.org/10.1145/3308561.3354629

P.2 **Patrick Carrington**, Amy Hurst, and Shaun K. Kane. How Power Wheelchair Users Choose Computing Devices. Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2013). ACM. 2013.
doi.org/10.1145/2513383.2513426

P.1 **Patrick Carrington**, Ravi Kuber, Lisa Anthony, Amy Hurst, and Sapna Prasad. Developing an interface to support procedural memory training using a participatory-based approach. Proceedings of BCS HCI 2012. 2012.
doi.org/10.14236/ewic/hci2012.47

WORKSHOP ORGANIZATION

WO.3 Riku Arakawa, Franklin Mingzhe Li, Nandi Zhang, Mina Huh, Amy Pavel, Ryo Suzuki, **Patrick Carrington**, and Yukang Yan. Accessible Cyber-Physical Activities. UIST 2025 Adjunct 2025.
doi.org/10.1145/3746058.3758472

WO.2 Diogo Branco, **Patrick Carrington**, Silvia Del Din, Afsaneh Doryab, Hristijan Gjoreski, Tiago Guerreiro, Roisin McNaney, Kyle Montague, Alisha Pradhan, Andre Rodrigues, and Julio Vega. Wild by Design: Workshop on Designing Ubiquitous Health Monitoring Technologies for Challenging Environments. UbiComp/ISWC 2021 Adjunct 2021.
doi.org/10.1145/3460418.3479271

WO.1 Cole Gleason, **Patrick Carrington**, Lydia B. Chilton, Benjamin M. Gorman, Hernisa Kacorri, Andrés Monroy-Hernández, Meredith Ringel Morris, Garreth W. Tigwell, and Shaomei Wu. Addressing the Accessibility of Social Media. CSCW 2019 Companion 2019.
doi.org/10.1145/3311957.3359439

WORKSHOP PAPERS

W.4 Sanika Moharana, **Patrick Carrington**, and Christina N. Harrington. Inclusive Design of CUIs Across the Intersection of Race and Disability. ACM CHI 2023 Workshop. CUI@CHI: Inclusive Design of CUIs Across Modalities and Mobilities. 2023.

W.3 Saiganesh Swaminathan, Stephanie Valencia, and **Patrick Carrington**. An Approach to Last Meter Problem: Designing and Deploying Low-Cost, Custom Fabricated Interactive Tactile Tiles for Navigation and Spatial Awareness. CHI 2019 Workshop on Hacking Blind Navigation 2019.

W.2 **Patrick Carrington**, Amy Hurst, and Shaun K. Kane. Designing Chairables: Assistive Augmentations to Support Power Wheelchair Users. Workshop on Assistive Augmentation in Conjunction with CHI 2014. 2014.

W.1 Lisa Anthony, **Patrick Carrington**, Peng Chu, Jianwei Lai, and Andrew Sears. Gesture Dynamics: Features Sensitive to Task Difficulty and Correlated with Physiological Sensors. Proceedings of ICMI MMCogEmS 2011. 2011.

DOCTORAL COLLOQUIA

D.1 **Patrick Carrington**. Developing a Chairable Computing Platform to Support Power Wheelchair Users. ASSETS 2014 Doctoral Colloquium; published in ACM SIGACCESS Accessibility and Computing (2015) 2015.
doi.org/10.1145/2809904.2809911

DISSERTATION

T.1 **Patrick Carrington**. Chairable Computing. Dissertation. University of Maryland, Baltimore County. 2017.

EDITORIAL REVIEWED WORKS

E.4 **Patrick Carrington** and Eliezer Bernart. Computer Science and Sports: the digital evolution of physical competition. ACM XRDS. Volume 25 Issue 4, Summer 2019 2019. doi.org/10.1145/3329889

E.3 **Patrick Carrington**, Gierad Laput, and Jeffrey P. Bigham. SpokeSense: developing a real-time sensing platform for wheelchair sports. ACM SIGACCESS Accessibility and Computing, Issue 124 2019. doi.org/10.1145/3386308.3386310

E.2 Jeffrey P. Bigham and **Patrick Carrington**. Learning from the Front: People with Disabilities as Early Adopters of AI. HCIC 2018. 2018.

E.1 Shaun K. Kane, Amy Hurst, Erin Buehler, **Patrick Carrington**, and Michele Williams. Collaboratively Designing Assistive Technology. ACM Interactions. 21, 2 (March 2014). 2014. doi.org/10.1145/2566462

NON-REFEREED PUBLICATIONS AND TECH REPORTS

O.2 Erica Principe Cruz, Lynn Kirabo, **Patrick Carrington**, and Jessica Hammer. Building Anti-Racist Futures at the CMU HCII: Recruiting BIPOC Graduate Students: Virtual Recruitment Event Design. BIPOC Literary Journal: The Colors We Carry. BIPOC at Carnegie Mellon University. 2021.

O.1 Lisa Anthony, **Patrick Carrington**, Peng Chu, Chris Kidd, Jianwei Lai, and Andrew Sears. Detecting Events of Interest with Physiological Sensors in a Real-World Email Search Task. Technical Report UMBC-IS-TR-007 2011.

Research Grants and Gifts

HHS-NINILRR: Accessible Delivery Robots 2023
Co-PI · $400,000 · PI: Aaron Steinfeld · Co-PIs: Patrick Carrington

Google Collaboration: AI in the Accessible Kitchen 2023
PI · $80,000 · PI: Patrick Carrington

NSF SCC IRG: Enabling Independent Mobility in People with Physical Disabilities 2022
Co-PI · $260,000 · PI: Carol Menassa (U-Mich) · Co-PIs: Patrick Carrington
CMU PI

Mobility21 UTC: Bus on the Edge: Passengers 2022
Co-PI · $100,000 · PI: Christoph Mertz · Co-PIs: Patrick Carrington

NSF SCC-PG: Equitable New Mobility 2022
Co-PI · $150,000 · PI: Sarah Fox · Co-PIs: Corey Harper, Nikolas Martelaro, Patrick Carrington, Jodi Forlizzi

USDOT Inclusive Design Challenge–Stage 1 2021
Co-PI · $300,000 · PI: Nikolas Martelaro · Co-PIs: Patrick Carrington, Sarah Fox, Jodi Forlizzi

Mobility21 UTC "Big Idea": Integrating Solutions to Enable the "Complete Trip" 2021
Co-PI · $571,324 · PI: Stephen Smith · Co-PIs: Patrick Carrington, Artur Dubrawski, Srinivasa Narasimhan, Jean Oh, Zachary B. Rubinstein, Robert Tamburo, Ji Zhang

Mobility21 UTC: Data Collection Systems to Support Community Driven Mobility Services 2021
PI · $100,000 · PI: Patrick Carrington · Co-PIs: Nikolas Martelaro, Sarah Fox, Jodi Forlizzi

Mobility21 UTC: Designing the Future of Transit Work 2021
Co-PI · $100,000 · PI: Sarah Fox · Co-PIs: Nikolas Martelaro, Patrick Carrington, Jodi Forlizzi

Microsoft Research Software Engineering Innovations Fund — Wheeltop Interaction: Full-Body Gesture Control for Power Wheelchair Users 2013
Contributor · $25,000
Significant Writing Contribution with Kane, S.K. and Hurst, A.

Nokia Research, University Cooperation Funding 2013
Contributor · $11,450

Invited Talks and Panels

Creating "Everyday" Accessible Experiences — March 2026
SCIS Research Seminar, Singapore Management University

Creating "Everyday" Accessible Experiences — January 2026
Informatics Seminar Series, UC Irvine

Choosing Your Own Adventure: Enabling Accessible Experiences — November 2023
Information Science Seminar Series, University of Colorado, Boulder

Understanding Everyday Challenges to Create Accessible Experiences — March 2023
OurCS Virtual Diversity Conference Workshop

Understanding Everyday Challenges to Create Accessible Experiences — March 2023
Workshop on Bridging AI and Disability

AI in the Accessible Home — February 2023
AAAI Workshop on AI Assisting Daily Tasks

Wearable AT and Logging — November 2022
NIDILRR RERC Meeting

An Accessibility Researcher's Origin Story — April 2022
PROMISE Seminar Series

From Content to Intent: Designing Accessible UX on Social Media — March 2022
University of Pittsburgh, DBMI Seminar Series

Designing Systems to Enable Accessible User Experiences — March 2022
uxWaterloo

Building Chairables: Designing Technologies for Accessibility and Engagement — May 2021
BostonCHI

Building Chairables: Designing Accessible Mobile Computing Experiences — March 2021
DUB Seminar Series, University of Washington

Building Chairables: Designing Technologies for Accessibility and Engagement — January 2021
Human-Computer Interaction Seminar Series, Stanford University

Building Chairables: Designing Accessible Mobile Computing Experiences — November 2020
MISC Seminar Series, University of Michigan

Building Chairables for Sports — November 2019
Computer Science Seminar Series, James Madison University

Chairable Computing: Designing Accessible Computing Experiences for Wheelchair Users — June 2019
The iSchool Inclusion Institute (i3), University of Pittsburgh

Digital Access for People with Motor Impairments — February 2018
Digital Access Training: Universal Access Committee, Carnegie Mellon University

Chairable Computing: Designing Mobile and Wearable Tech for Wheelchair Users — May 2017
Human-Computer Interaction Institute, Carnegie Mellon University

Designing Accessible Interactive Systems for People with Mobility Impairments — November 2014
HCI Seminar at Rochester Institute of Technology

HCI Today: Supporting Ability and Performance through Technology (panel) — October 2019
HCII 25th Panel: HCI Today

What People with Disabilities Can Teach Us About AI (panel) — June 2018
HCIC 2018 Panel: AI and HCI, New Interaction Modalities

Teaching

05-391/891 · Designing Human-Centered Software
Carnegie Mellon University
Fall 2026 · Spring 2026 · Spring 2025 · Fall 2024 · Spring 2024 · Fall 2023 · Spring 2023 · Fall 2022

05-332/632 (formerly 05-499/899) · Introduction to Accessibility and Assistive Technology
Carnegie Mellon University
Fall 2025 · Fall 2024 · Spring 2022 · Fall 2021 · Spring 2021

05-430/630 · Programming Usable Interfaces
Carnegie Mellon University
Fall 2020 · Spring 2020

IS 101 · Introduction to Computer Based Systems
University of Maryland, Baltimore County
Spring 2015 · Fall 2014

Supervision and Advising

POSTDOCTORAL FELLOWS

Atieh Taheri — (with Jeffrey Bigham) · Presidential Postdoctoral Fellow — 2024–present

DOCTORAL ADVISEES

Ezra Awumey — advisor — 2024–present
JiWoong Jang — co-advisor · (with Andrew Begel) — 2022–present
Sanika Moharana — co-advisor · (with Christina Harrington) — 2022–present
Yunzhi Li — advisor — 2021–present
Frank Elavsky — co-advisor · (with Dominik Moritz) — 2021–2026
Franklin Mingzhe Li — advisor — 2020–2026

DOCTORAL COMMITTEES

Rebecca Moore — University of Utah — 2026–present
Abena Boadi-Agyemang — 2025–2026
Florian Lang — LMU Munich — 2025
Maggie Collier — 2024–2025
Tamanna Motahar — University of Utah — 2022–2024
Reza Moradinezhad — Drexel University — 2021–2022
Megan Hoffmann — 2021–2022
Kristin Williams — 2021–2022
Cole Gleason — 2019–2020

MASTER'S STUDENTS

Chloe Zhu — mentor · MHCI — 2025–present
Riya Mody — mentor · MHCI — 2024–2025
Ashley Wang — thesis advisor · CS — 2022–2023
Peter Cederberg — mentor · Interaction Design — 2020–2022
Isabel Ngan — mentor · MHCI — 2021
Simran Jobanputra — mentor · MHCI — 2019–2020

VISITING RESEARCHERS

Owais Yousuf — Post-baccalaureate · George Mason University · Visiting researcher, mechanical engineering — 2026–present

Brandon Woodard — Ph.D. · Brown University · Visiting researcher 2022–2023

UNDERGRADUATE RESEARCHERS

Kaitlyn Ng 2024–2026
Misty Fan 2025
Tatyana Cruz — CMU ECE 2025
Ashley Fong — University of California, Berkeley · Summer REU 2024
Areen Khalaila — Brandeis University · Summer REU 2024
Rachel Sadeh — Summer REU, continuing as a research assistant 2022–2023
JiWoong Jang 2021–2022
Yuqi Gong 2021–2022
Ashley Wang 2020–2022
Jamie Dorst 2021
Juan Garza — Summer REU 2021
Mei-Lian Vader — Summer REU 2021
Yellina Yim 2020–2021
Nali Huynh 2020–2021
Andrew Chuang 2020
Xingyu Liu 2019–2020
Christina Low — Summer REU 2019–2020
Emma McCamey — Summer REU 2019–2020
Cameron Cassidy — Summer REU 2019
Toni Kaplan 2019
Elena Deng 2019
Stephanie Wang — CMU · Statistics and ML, Summer REU 2018
Adrian Jenkins — Hampton University · Computer Science, Summer REU 2018
Lucas Rosenblatt — Summer REU 2017–2018
Denzel Ketter — UMBC 2017
Catherine Hornback — UMBC 2015–2016
Jian-Ming Chang — UMBC 2015–2016
Kevin Chang — UMBC 2015–2016

Academic and Professional Service

UNIVERSITY

Universal Access Committee 2026–present
CMU-Portugal Program Selection Committee 2025–2026

DEPARTMENTAL

Accessibility Lunch Seminar (Co-Organizer) 2019–present
HCII Ph.D. Admissions Committee Co-Chair 2021–2026
HCII Diversity, Equity, and Inclusion Committee (BLM Subcommittee Chair) 2020–2021
HCII Undergraduate Admissions Committee 2020
HCII Ph.D. Admissions Committee 2020

PROGRAM COMMITTEE

ASSETS 2026, Program Committee 2026
CHI 2024, Papers Program Committee 2024

ASSETS 2024, Program Committee	2024
ASSETS 2023, Program Committee	2023
CHI 2023, Papers Program Committee	2023
ASSETS 2022, Program Committee	2022
ASSETS 2020, Program Committee	2020
CHI 2019, Papers Program Committee	2019
Pervasive Health 2019, Technical Program Committee	2019
ASSETS 2019, Program Committee	2019
ASSETS 2018, Program Committee	2018
CHI 2018, Papers Program Committee	2018
Pervasive Health 2018, Technical Program Committee	2018
Pervasive Health 2017, Technical Program Committee	2017
Mobile HCI 2017, Late Breaking Work Associate Chair	2017
ASSETS 2015, Program Committee	2015

REVIEWING

ACM Transactions on Computer-Human Interaction (TOCHI)	2019–present
Designing Interactive Systems (DIS)	2018–present
ACM Transactions on Accessible Computing (TACCESS)	2018–present
SIGACCESS Conference on Accessible Computing (ASSETS)	2015–present
ACM Conference on Human Factors in Computing Systems (CHI)	2013–present
User Interface Software and Technologies (UIST)	2018–2025
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)	2020–2024
International Web for All Conference (W4A)	2020–2022
International Conference on Mobile Human-Computer Interaction (MobileHCI)	2020
International Symposium on Wearable Computing (ISWC)	2017
International Journal of Human-Computer Studies (IJHCS)	2016–2017

ORGANIZING

CSCW 2027, Accessibility Co-Chair	2027
CSCW 2026, Accessibility Co-Chair	2026
ASSETS 2025, Student Research Competition Co-Chair	2025
ASSETS 2023, Doctoral Consortium Co-Chair	2023
ASSETS 2021, Doctoral Consortium Co-Chair	2021
Human-Computer Interaction Consortium (HCIC) 2021, Co-Chair	2021
UIST 2019, Diversity Chair	2019
ACM Collective Intelligence 2019, Accessibility Chair	2019
ASSETS 2019, Local Arrangements Chair	2019
CHI 2018 Organizing Committee, Student Volunteer Co-Chair	2018
CHI 2017 Organizing Committee, Student Volunteer Co-Chair	2017

STUDENT VOLUNTEER

ACM Conference on Human Factors in Computing Systems (CHI)	2013–2016
Computer Supported Cooperative Work (CSCW)	2014–2015
International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)	2014
User Interface Software and Technologies (UIST)	2012

OTHER

CSCW 2026, Doctoral Consortium Mentor	2026

ACM XRDS Magazine, Guest Editor	2019
ACM ASSETS, Session Chair	2017–2018
UMES Regional Research Symposium, Invited Moderator	2017

Community Service and Outreach

PROMISE AGEP: Summer Success Institute — Panelist	August 2020
CampBioE @ University of Pittsburgh “STEM Careers” — Panelist	August 2018
National Wheelchair Basketball Tournament — Operations Committee	2016–2018
Maryland Science Center Gadgets and Gears Day — Exhibitor · 800 attendees	2017
UMBC 50th Anniversary Celebration PAD Lab Maker Exhibit — Exhibitor · 2,000 attendees	2016
Maryland Celebration of the 26th Anniversary of the ADA — Exhibitor · 300 attendees	2016
UMBC Exhibit at Mini-MakerFaire — Organizer	September 2013
NSF LSAMP Bridge to Doctorate Program — Peer Mentor	2013–2017
IS Dept. Ph.D. Day “How to be a Successful Ph.D. Student” — Panelist	February 2014

Press and Blog Mentions

Williams, M.. Virtually Accessible: HCII Researchers Ensure AR, VR Technologies Work for Everyone. SCS News. link	2024
Spice, B.. Accessing Recipe Information Without Looking: SCS Researchers Gain Cooking Insights From People With Low Vision. SCS News. link	2024
Blazina, E.. CMU team to examine autonomous vehicles for people with disabilities. Pittsburgh Post-Gazette. link	2021
Keppler, N.. ChairJam Puts Spin on Hackathon Concept. cmu.edu. link	2019
Harlan, K.. HCII Team Tests Fitness Tracker for Wheelchair Athletes at NWBT. hcii.cmu.edu. link	2018
Dubrow, A.. Making the maker movement accessible. NSF.gov. archived copy	2015
Dougherty, D.. Joe Olsons diy-enabled wheelchair. Makezine Blog. link	2014
Masterson, K.. Launch pad. UMBC Magazine, Winter 2014 . archived copy	2014

Affiliations and Membership

Healthcare Information and Management Systems Society (HIMSS)	since 2017
ACM Special Interest Group for Computer-Human Interaction (SIGCHI)	since 2013
ACM’s Special Interest Group on Accessible Computing (SIGACCESS)	since 2012
Association for Computing Machinery (ACM)	since 2011
Golden Key Honors Society: UMBC Chapter	since 2010