Patrick A. Carrington   Curriculum Vitae

University of Maryland, Baltimore County (UMBC)

Information Technology and Engineering (ITE), Room 438

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EDUCATION

Ph.D., Human-Centered Computing   **2011 – 2017**
University of Maryland, Baltimore County   Baltimore, Maryland

Dissertation Title: Chairable Computing: From Physical Access to Physical Activity for Wheelchair Users
Committee: Dr. Amy Hurst (advisor), Dr. Helena Mentis, Dr. Ravi Kuber,
   Dr. Nilanjan Banerjee, and Dr. Gregory Abowd

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

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

GRANTS AND FUNDING

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

- **Nokia Research, University Cooperation Funding**   **$11,450**   2013

HONORS, SCHOLARSHIPS, AND AWARDS

SCHOLARSHIPS AND FELLOWSHIPS
- **HIMSS National Capitol Area:** Student Scholarship $2,000   2016
- **Generation Google Scholarship:** Scholarship Recipient $10,000   2015-2016
- **National Science Foundation:** LSAMP Bridge to the Doctorate Fellowship $93,667   2011-2013

TRAVEL AWARDS
- **National Society Blacks in Computing Conference:** iAAMCS Travel Scholarship   2016
- **UMBC Graduate Student Association:** GSA Travel Grant   2014-2015
- **SREB Institute on Teaching and Mentoring:** Travel Scholarship   2013, 2016

AWARDS
- **CHI 2014:** Best Paper Honorable Mention (Top 5%)   2014
- **Carnegie Mellon University/University of Pittsburgh NSF ERC QoLT Summer Research Symposium:** Best Paper Award   2012
- **Carnegie Mellon University/University of Pittsburgh NSF ERC QoLT Summer Research Symposium:** Best Elevator Pitch Award   2012

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

[J.1] Carrington, P., Chang, J-M., Chang, K., Hornback, C., Hurst, A., and Kane, S.K. (2016) The Gest-Rest Family: Exploring input possibilities for Wheelchair armrests. *ACM* Transactions on *Accessible Computing.* ACM.

PEER-REVIEWED CONFERENCE PAPERS

[C.4] Carrington, P., Chang, K., Mentis, H., and Hurst, A. (2015) "But, I don't take steps": Examining the inaccessibility of fitness device for wheelchair athletes. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2015).* ACM.

[C.3] Carrington, P., Hosmer, S., Yeh, T., Hurst, A., and Kane, S.K. (2015) "Like This, But Better": Supporting Novices' Design and Fabrication of 3D Models Using Existing Objects. *In Proceedings of iConference 2015.*

[C.2] Carrington, P., Hurst, A., and Kane, S.K. (2014) The Gest-Rest: A Pressure-Sensitive Chairable Input Pad for Power Wheelchair Armrests. *In Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014).* ACM.

[C.1] Carrington, P., Hurst, A., and Kane, S.K. (2014) Wearables and Chairables: Inclusive Design of Mobile Input and Output Techniques for Power Wheelchair Users. *In Proceedings of ACM Conference on Human Factors in Computing Systems (CHI 2014).* ACM. *[Best Paper Honorable Mention - Top 5%]*

PEER-REVIEWED CONFERENCE ABSTRACTS AND POSTERS

[P.2] Carrington, P., Hurst, A., and Kane, S. K. (2013). How Power Wheelchair Users Choose Computing Devices. *In Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2013)* p. 52. ACM.

[P.1] Carrington, P., Kuber, R., Anthony, L., Hurst, A. and Prasad, S. (2012) Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach. *In Proceedings of BCS HCI 2012*, 333-338.

WORKSHOPS

[W.2] Carrington, P., Hurst, A., Kane, S.K. (2014) Designing Chairables: Assistive Augmentations to Support Wheelchair Users. *Workshop on Assistive Augmentation in Conjunction with CHI 2014.*

[W.1] Anthony, L., Carrington, P., Chu, P., Kidd, C., Lai, J., and Sears, A. (2011) Gesture Dynamics: Features Sensitive to Task Difficulty and Correlated with Physiological Sensors. *In Proceedings of ICMI MMCogEmS 2011*.

DOCTORAL COLLOQUIA

[D.1] Carrington, P. (2014) Developing a Chairable Computing Platform to Support Power Wheelchair Users. *ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014).*

EDITORIAL REVIEWED WORKS

[M.1] Kane, S.K., Hurst, A., Buehler, E., Carrington, P., Williams, M. (2014) Collaboratively Designing Assistive Technology. *ACM Interactions*. 21, 2 (March 2014), p. 78-81.

NON-REFEREED PUBLICATIONS AND TECH REPORTS

[O.1] Anthony, L., Carrington, P., Chu, P., Kidd, C., Lai, J., and Sears, A. (2011). Detecting Events of Interest with Physiological Sensors in a Real-World Email Search Task. *Technical Report UMBC-IS-TR-007*, 10 Oct 2011.

PRESS AND BLOG MENTIONS

[1] Dubrow, A. Making the maker movement accessible. NSF.gov, 2015.
https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=135608

[2] Dougherty, D. Joe Olsons diy-enabled wheelchair. Makezine Blog, 2014.
http://makezine.com/ 2014/07/08/joe-olsons-diy-enabled-wheelchair/

[3] Masterson, K. Launch pad. UMBC Magazine, Winter 2014.
http://umbcmagazine.wordpress.com/umbc-magazine-winter-2014/launch-pad/

OTHER PRESENTATIONS

INVITED TALKS

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

PRESENTATIONS

- **The Easy Make Oven: An Interactive Surface for Modifying Physical Prototypes**   March 2013
Philadelphia AMP Research Symposium

- **The Easy Make Oven: An Interactive Surface for Modifying Physical Prototypes**   Feb 2013
UMBC Graduate Research Conference

POSTERS

- **The Gest-Rest Family: Comparing Input Possibilities for Wheelchair Armrests**   June 2015
Google Scholar's Retreat 2015 Poster Session

- **Detecting Affect using Posture Data from a Smart Chair**   April 2012
UMBC Graduate Research Conference

- **ProcedurePal: A Mobile App to Support Procedural Memory Training**   April 2012
Information Systems Department Poster Session

TEACHING EXPERIENCE

INSTRUCTOR

- **IS 101: Introduction to Computer Based Systems**   Fall 2014, Spring 2015

TEACHING ASSISTANT

- **IS 303: Fundamentals of HCI,** *Instructor: Dr. Helena Mentis*   Fall 2015
- **Information Architecture for the Web (Online),** *Instructor: Dr. Anita Komlodi*   Spring 2014
- **IS 101: Introduction to Computer Based Systems,** *Instructor: Dana Smith*   Fall 2011

MENTORING

RESEARCH MENTORING

- Denzel Ketter, B.S. Information Systems, Minor in Computer Science expected graduation Aug 2017.
- Jackson O'Dell, B.S. Information Systems, expected graduation May 2019.

- Niara Comrie, B.A. Mathematics, expected graduation May 2017.
- Jeremy Chang, B.S. Mechanical Engineering, graduated in May 2015, Currently Pursuing a Ph.D. in Aerospace Engineering at the University of Maryland, College Park.
- Kevin Chang, B.S. Mechanical Engineering, graduated in May 2015, Currently Pursuing a M.S. in Mechanical Engineering at the University of Maryland, Baltimore County.
- Amanda Mancuso, B.S. Information Systems, graduated in May 2015, Received M.S. in Human-Centered Computing from UMBC in 2016 and is now employed as a UX Designer.

PEER MENTORING
- William Easley, Ph.D. Human-Centered Computing, expected graduation in May 2019.
- Adegboyega Akinsiku, Ph.D. Human-Centered Computing, expected graduation in December 2019.
- Abdullah Ali, M.S. Human-Centered Computing, graduated in May 2016, currently pursuing a Ph.D. in Human-Computer Interaction at the University of Washington.
- Eric Corbett, M.S. Human-Centered Computing, graduated in 2014, currently pursuing a Ph.D. in Digital Media at Georgia Institute of Technology.

WORK EXPERIENCE

RESEARCH EXPERIENCE

Department of Information Systems, UMBC Baltimore, Maryland
Research Assistant, Supervisor: Dr. Amy Hurst August 2011 - Present

New Devices Group, Intel Corporation Hillsboro, Oregon
Human Factors Engineering Intern, User Experience Research June – Sep 2015

New Devices Group, Intel Corporation Hillsboro, Oregon
Human Factors Engineering Intern, User Experience Research May – Aug 2014

CMU/University of Pittsburgh NSF ERC: Quality of Life Technology Center Pittsburgh, Pennsylvania
QoLT Bridge Researcher, Supervisor: Dr. Seung-Jun Kim May – July 2012

Department of Information Systems, UMBC Baltimore, Maryland
Research Assistant, Supervisor: Dr. Lisa Anthony Jan 2011 – Aug 2011

Department of Information Systems, UMBC Baltimore Maryland
Research Assistant, Supervisor: Dr. Andrew Sears Jan 2009 – Dec 2010

OTHER EXPERIENCE

International Center for Spinal Cord Injury, Kennedy Krieger Institute Baltimore, Maryland
Rehabilitation Aide April – Aug 2013

Department of Information Systems, UMBC Baltimore, Maryland
Web Developer Jan 2009 – May 2011

IS & T Global Sustainment, Lockheed Martin Aeronautics Company Marietta, Georgia
Business Analysis Intern June – Dec 2010

ACADEMIC SERVICE

Student Volunteer Co-Chair: Organizing Committee CHI 2017 2017

Reviewer: International Journal of Human-Computer Studies	2016
Program Committee: ASSETS 2015 Papers	2015
Reviewer: ASSETS 2015 Posters and Demos	2015
Reviewer: Papers and Notes submissions to CHI 2015, 2016, 2017	2014 – 2017
Senior Student Volunteer: CSCW 2014, CSCW 2015, CHI 2014, and CHI 2016	2014 – 2016
Reviewer: Late-Breaking Work submissions to CHI 2013 - 2017	2013 – 2015
President: Human-Centered Information Systems Graduate Student Organization	2015 – 2016
Vice-president: Human-Centered Information Systems: Graduate Student Organization	2015
Lab Manager: Prototyping and Design Lab	2014 – 2015
Graduate Organization for IS: Liaison for HCC	2013 – 2015
Student Volunteer: UbiComp 2014, CHI 2013, and UIST 2012	2012 – 2014

COMMUNITY SERVICE AND OUTREACH

Exhibitor: UMBC 50th Anniversary Celebration PAD Lab Maker Exhibit	2016
Exhibitor: 26th Annual Celebration of the American's with Disabilities Act	2016
Organizer: UMBC Exhibit at Mini-MakerFaire	Sep 2013
Peer Mentor: NSF LSAMP Bridge to Doctorate Program	2013 – 2017
Panelist: IS Dept. Ph.D. Day "How to be a Successful Ph.D. Student"	Feb 2014

AFFILIATIONS AND MEMBERSHIP

Association for Computing Machinery	2012 – Present
Golden Key Honors Society: UMBC Chapter	2010 - Present