

# KRISTIN WILLIAMS

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## EDUCATION

Carnegie Mellon University, Ph.D. (Human-Computer Interaction) expected 2022 – Dissertation in progress, ‘An Upcycled IoT: Creating Tomorrow’s IoT out of Today’s Household Possessions’; advised by Drs. Scott Hudson and Jessica Hammer

University of Maryland at College Park, M.S. (Human-Computer Interaction) 2015 – Thesis ‘The Cost of Turning Heads: The Design and Evaluation of Vocabulary Prompts on a Head-Worn Display to Support Persons with Aphasia’

Reed College, B.A. (Philosophy) 2008 – Thesis ‘Pursuit in Action or Capable of Being Acquired’, an investigation of the role of Aristotle’s Doctrine of the Mean in education

## EMPLOYMENT

2019	Research Intern at FX Palo Alto Laboratory
2014 – 2015	Research Assistant to Dr. Leah Findlater, College of Information Studies of the University of Maryland College Park
2013 – 2014	Graduate Assistant to the Dean’s Office, College of Agriculture and Natural Resources of the University of Maryland, College Park
2011 – 2013	Public Services and Collection Specialist at the Global Resource Center of George Washington University
2008 – 2010	US Peace Corps Volunteer Kazakhstan
2006	Research Assistant to Dr. Margaret Scharle, Department of Philosophy at Reed College

## SCHOLARSHIPS & AWARDS

- Rising Stars in EECS 2021
- Best Paper Award for the SIGCHI Conference on Human Factors in Computing Systems 2019
- National Science Foundation East Asia and Pacific Summer Institutes Fellowship 2016
- University of Maryland Human Computer Interaction Lab Conference Travel Award 2015
- American Association of University Women Career Development Grant 2014–2015
- Dominick Roda Memorial Award 2008
- Spirit of Conference Award 2008 (for the Annual SUNY Oneonta Undergraduate Philosophy Conference)

- Georgia Governor's Scholarship 2003 (Declined)

## GRANTS

- UNESCO Kazakhstan C4D (2010), \$7,500
- US Peace Corps Kazakhstan SPA (2010), \$3,500
- Mellon Foundation Opportunity Grant (2008), \$600
- Mellon Foundation Opportunity Grant (2007), \$500

## PUBLICATIONS

Reinhart, A., Brooks, L., Jahja, M., Rumack, A., Tang, J., Al Saeede, W., Arnold, T., Basu, A., Bien, J., Cabrera, Á., Chin, A., Chua, E.J., Clark, B., DeFries, N., Forlizzi, J., Gratzl, S., Green, A., Haff, G., Han, R., Hu, A.J., Hyun, S., Joshi, A., Kim, J., Kuznetsov, A., La Motte-Kerr, W., Lee, Y.J., Lee, K., Lipton, Z.C., Liu, M.X., Mackey, L., Mazaitis, K., McDonald, D.J., Narasimhan, B., Oliveira, N.L., Patil, P., Perer, A., Poltsch, C.A., Rajanala, S., Rucker, D., Shah, N.H., Shankar, V., Sharpnack, J., Shemetov, D., Simon, N., Srivastavab, V., Tann, S., Tibshirani, R., Tuzhilina, E., Van Nortwick, A.K., Ventura, V., Wasserman, L., Weiss, J. C., Williams, K., Rosenfeld, R., and Tibshirani, R.J. 'Beyond Cases and Deaths: The Benefits of Auxiliary Data Streams in Tracking the COVID-19 Pandemic' *Proceedings of the National Academy of Sciences of the United States of America* Dec 2021, (PNAS 2021) Vol. 118, No. 51 e2111452118

Williams, K. Pulivarthy, R., Hudson, S., and Hammer, J. 'The Upcycled Home: Removing Barriers to Lightweight Modification of the Home's Everyday Objects' *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI 2020) pp.1-13

Avrahami, D., Williams, K., Lee, M., Tokunaga, N., Tjahjadi, Y., and Marlow, J. 'Celebrating Everyday Success: Improving Engagement and Motivation using a System for Recording Daily Highlights' *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI 2020) pp.1-13

Williams, K. Pulivarthy, R., Hudson, S., and Hammer, J. 'Understanding Family Collaboration around Light Weight Modification of Everyday Objects in the Home' *Proceedings of the ACM on Human-Computer Interaction* (CSCW 2019) Vol. 3, Paper No. 185.

Williams, K., Clarke, T., Gardiner, S., Tomasic, A, and Zimmerman, J. 'Find and Seek: Assessing the Impact of Table Navigation on Data Look-up with a Screen Reader' *ACM Transactions on Accessible Computing* (TACCESS 2019) Vol. 12, Issue 3.

Hofmann, M., Williams, K., Kaplan, T., Valencia, S., Hann, G., Hudson, S., Mankoff, J., and Carrington, P. 'Occupational Therapy is Making: Clinical Rapid Prototyping and Digital Fabrication' *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI 2019) Paper No. 314 **\*Best Paper Award\***

Rello, L., Romero, E., Rauschenberger, M., Ali, A., Williams, K., Bigham, J., and Cushen-White, N. 'Screening Dyslexia for English Using HCI Measures and Machine Learning' *Proceedings of the 2018 International Conference on Digital Health* (DH 2018) pp.80-84

Bigham, J., Williams, K., Banerjee, N., and Zimmerman, J. 'Scopist: Building a Skill Ladder into Crowd Transcription' *Proceedings of the 14th Web for All Conference on The Future of Accessible Work* (W4A 2017) Article No. 2

Williams, K., Moffatt, K., Faroqi-Shah, Y., and Findlater, L. 'The Cost of Turning Heads: A Controlled Comparison of a Head-Worn Display and a Smartphone to Support Conversation of Persons with Aphasia' (ASSETS 2016) pp. 111-120.

Rello, L., Williams, K., Ali, A., Cushen-White, N., and Bigham, J. 'Dytective: Towards Detecting Dyslexia Across Languages Using an Online Game' *Proceedings of the 13th Web for All Conference* (W4A 2016) Article No. 29.

Williams, K., Findlater, L., Moffatt, K. and McCall, D. 'Designing Conversation Cues on a Head-Worn Display to Support Persons with Aphasia' *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI 2015) pp. 231-240.

Williams, K. 'A Denial of Photocopy Virtue: A Problem of Student Passivity in Education', *Proceedings of the 13<sup>th</sup> Annual SUNY Oneonta Undergraduate Philosophy Conference: The Art of Living* (2008) 12pp.

#### MANUSCRIPTS IN PROCESS

Williams, K., Hammer, J., and Hudson, S. 'IoT Stickers: a Tangible User Interface for Authoring Embedded Computing Applications' *Under Review*

#### OTHER WRITINGS (LIGHT PEER REVIEW)

The Citational Justice Collective: Leal, D.D.C., León, G.M., Maestre, J.F., Williams, K., Wong-Villacrés, M., Reynolds-Cuéllar, P., Oswal, S.K., Pargman, T.C., Sharma, V. 'Citational Practices: Interrogating Hegemonic Knowledge Structures in Computing Research in Latin America' *Workshop for CLIHC 2021*

Williams, K., Hammer, J., and Hudson, S. 'An Upcycled IoT: Building Tomorrow's IoT out of Today's Household Possessions' *XRDS: Crossroads, The ACM Magazine for Students – Computing and Sustainability*, Vol. 27, No. 4 (Summer 2021)

Williams, K., Kane, B., Clarke, C., and Widdicks, K. 'The Environmental Impact of Research Communities: Insights from Conference Sustainability Chairs' *XRDS: Crossroads, The ACM Magazine for Students – Computing and Sustainability*, Vol. 27, No. 4 (Summer 2021)

Williams, K., Hammer, J., and Hudson, S. 'The IoT Codex: A Book of Paper Engineering Techniques for Authoring and Composing Embedded Computing Applications' *The 11<sup>th</sup> Annual Workshop on the Intersection of HCI and PL* (PLATEAU 2020) pp.1–6

Williams, K. 'IoT Stickers: Enabling Lightweight Modification of Everyday Objects'. *UIST '20 Adjunct: Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology* (UIST 2020) pp. 183–188

Williams, K. and Albaugh, L. 'Unmaking Digital Fabrication Using Glitch and Upcycling'. Workshop on Troubling Innovation: Craft and Computing Across Boundaries. ACM Conference on Human Factors in Computing (CHI 2019).

Bigham, J., Williams, K. 'Building a Brighter Future for Crowd Work' *XRDS: Crossroads, The ACM Magazine for Students – The Future of Work*, Vol. 23 No. 2 (Winter 2016)

Williams, K. 'Reasoning Outside Normative Requirements: Disability and Technology Design'. Workshop on Ethics and Obligations for Studying Digital Communities. ACM Conference on Supporting Group Work (GROUP 2016).

Williams, K. Book Review: *Absolute Poverty and Global Justice*; Elke Mack, Stephen Klasen, Michael Schramm, and Thomas Pogge, (eds.); Ashgate Press: 2009. *Journal of Human Development and Capabilities*, Vol. 12, No. 2 (August 2011)

Williams, K. 'NGO Prehistory: Lessons to be Learned from Failure', *Insights into Development* – Book project on NGO development in Kazakhstan (2010)

Williams, K. 'Learn to Get a Job? An Examination of Education Policy and Integration into the Global Economy', *Proceedings of The Challenges of Globalization and Tendencies in the Modern World: Intercultural Communication*, hosted by the Aktobe Oblast In-Service Teacher Training Institute (2009)

## REFEREED PRESENTATIONS

'A Denial of Photocopy Virtue: a Critique of an Emulation Model of Virtue Education' – *SUNY Oneonta Undergraduate Philosophy Conference* (2008)

Comments on 'An Aristotelian Critique of the Mathematical Approach to the Study of Being' by Robert Talley – *SUNY Oneonta Undergraduate Philosophy Conference* (2008)

'A Denial of Photocopy Virtue: a Critique of an Emulation Model of Virtue Education' – *Pacific University Undergraduate Philosophy Conference* (2008)

Comments on 'On Annas and the Problem of External Goods' by Stephen Kenney, an examination of the role of external goods in Aristotle's theory of ethics – *Pacific University Undergraduate Philosophy Conference* (2008)

'Moving Away from Bad Examples: a Contemporary Approach to Aristotle's Doctrine of the Mean' – *Pacific University Undergraduate Philosophy Conference* (2007)

Comments on 'A Metaphorical, Heuristic Account of Aristotle's Doctrine of the Mean' by Benjamin Hole – *Pacific University Undergraduate Philosophy Conference* (2007)

## INVITED TALKS

'An Upcycled IoT: Creating Tomorrow's Internet of Things Out of Today's Household Possessions' – Technology for Social Change Seminar Series, School of Computing and Information, University of Pittsburgh, Pittsburgh, PA, November 2021

'An Upcycled IoT: Creating Tomorrow's Internet of Things Out of Today's Household Possessions' – Digital Engineering Special Seminar, Hasso Plattner Institute, University of Potsdam, Virtual Visit, November 2021

'An Upcycled IoT: Creating Tomorrow's Internet of Things Out of Today's Household Possessions' – Sears Deep Learning AI Session, Virtual Visit, October 2021

'An Upcycled IoT: Creating Lightweight Modification of Everyday Objects' – HCI Seminar Series, Stanford University, Palo Alto, CA, September 2019

'Understanding Family Collaboration around Light Weight Modification of Everyday Objects' – FX Palo Alto Laboratory, Palo Alto, CA, July 2019

'Designing and Creating Audio Attendant: Integrating Peripheral Sounds into Kinetic Typography' – National Research Foundation of South Korea, Seoul, South Korea, August 2016

'Designing Conversation Cues on a Head-Worn Display to Support Persons with Aphasia' – 32<sup>nd</sup> Annual Human Computer Interaction Lab Symposium, University of Maryland, College Park, MD, May 2015

## GUEST LECTURES OR PANELS

Guest Lecture for Spring 2021 Justice, Ethics, Diversity, and Inclusion in HCI, *Ethical, Inclusive, Critical, and Countercultural HCI Research Processes*

Invited conference address, *10<sup>th</sup> Annual Insights into Development Conference*, Almaty, Kazakhstan (2019)

Workshop Lead for Spring 2019 *Carnegie STEM Girls*, Tour Your Future in Game Design at the OH! Lab

Guest Lecture for Fall 2018 Programmable User Interfaces, *Prototyping for Tangible and Physical Computing*

Invited team lead for Microsoft Research 2018 Hackathon on Machine Learning and Accessibility, *Aphasia Augmented Language*

Panelist for the Carnegie Mellon University's 2018 Women@SCS Graduate School and Research in Computer Science – Invited Panel for Participants in the National Science Foundation's Research Experience for Undergraduates

Panelist for the 2013 Librarian Focus Group: A Forum for Publishers and Librarians – Invited Panel for the Society of Scholarly Publishing

Talk on 'NGO Prehistory: Civic Initiative and Its Obstacles' for the *Insights for Development: Kazakhstan Conference on Communication for Development* (2010)

Talk on 'Critical Thinking and the Information Age' invited speaker for the conference *The Challenges of Globalization and Tendencies in the Modern World: Intercultural Communication* (2009)

'Pursuit in Action or Capable of Being Acquired' (2007) – Presented and defended portions of research to the Philosophy Department's Senior Symposium

## SERVICE

Program Committee

SIGCHI Conference on Human Factors in Computing

- Late Breaking Work 2021

Organizing Committee

SIGCHI Conference on Human Factors in Computing

- Sustainability Co-Chair 2022

ACM Conference on Computer Supported Collaborative Work and Social Computing

- Sustainability Co-Chair 2020

ACM Symposium on User Interface Software and Technology

- Sustainability Co-Chair 2019–2020

Reviewer

CHI 2016–present

CSCW 2019–present

IMWUT 2021

International Journal of Human–Computer Studies 2020

Interacting with Computers 2016

Local Committees

Carnegie Mellon University Human Computer Interaction Institute's Faculty Hiring Committee 2021

Carnegie Mellon University School of Computer Science Ethics for Technologists Monthly Lecture Series Organizing Committee 2018–2020 (Co-founder; SCS Funded)

Carnegie Mellon University School of Computer Science SCS4All Web Team 2016–2018  
University of Maryland Human Computer Interaction Master's Program Committee Student  
Representative 2014–15

Steering Committee

Reed College Alumni Chapter Steering Committee (Vice Chair) 2012–2015  
Steering and Curatorial Board for Bamboo DiRT (Digital Research Tools) 2012–2013

**TEACHING EXPERIENCE (UNIVERSITY LEVEL)**

Teaching Assistant

05-410/610 User-Centered Research and Evaluation (Spring 2020)

05-430/630 Programming Usable Interfaces (Fall 2018)

Students Supervised (Independent Studies/Research)

Jade Hampton – Summer 2020

Jasmine Shen – Summer 2020

Nanxi Wang – Spring 2020

Ashley Hong – Fall 2019–Spring 2020

Jackie Zhang – Fall 2019

Eileen You – Spring 2019

Rajitha Pulivarthy – Summer 2018–Spring 2019

Nila Banerjee – Spring 2016

**SELECTED PRESS COVERAGE**

WIRED, Facebook and Google Survey Data May Help May COVID-19's Spread, 4/24/2020

<https://www.wired.com/story/survey-data-facebook-google-map-covid-19-carnegie-mellon/>

CNN, New forecasting data could help public health officials prepare for what's next in the coronavirus pandemic, 4/23/2020, [https://www.cnn.com/us/live-news/us-coronavirus-update-04-23-20/h\\_473c68f3d0cea263896b85e12aec7d13](https://www.cnn.com/us/live-news/us-coronavirus-update-04-23-20/h_473c68f3d0cea263896b85e12aec7d13)

Popular Mechanics, We're Flattening the Curve. So When Will This All Be Over? 4/23/2020,  
<https://www.popularmechanics.com/technology/a32240823/cmu-facebook-google-covid-19-symptom-tracking/>

WESA, CMU Map Helps Predict Spikes of COVID Illness Across the US, 4/23/2020,  
<https://www.wesa.fm/post/cmu-map-helps-predict-spikes-covid-illness-across-us>

KDKA Radio, CMU Using Google Searches to Get Ahead of Next COVID-19 Wave, 4/23/2020,  
<https://kdkaradio.radio.com/articles/cmu-using-google-searches-to-get-ahead-of-next-covid-19-wave>

ZDNet, Carnegie Mellon Research Suggests our View of COVID-19 is Going to Change with 'Digital Surveillance', 4/23/2020, <https://www.zdnet.com/article/carnegie-mellon-research-suggests-our-view-of-covid-19-is-going-to-change-with-digital-surveillance/>

#### **PROFESSIONAL MEMBERSHIPS**

Association for Computing Machinery (ACM), Special Interest Group of Human Factors in Computing (SIGCHI)