

# Sunyoung Kim

## **Assistant Professor**

Department of Library & Information Science  
School of Communication & Information  
Rutgers University, the State University of New Jersey  
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## **CURRENT EMPLOYMENT**

Assistant Professor, Department of Library and Information Science, Rutgers University (2016 –)  
Associate Faculty, Department of Computer Science, Rutgers University (2016 –)  
Associate Faculty, School of Arts and Sciences, Rutgers University (2017–)  
Core Faculty Member, Rutgers Global Health Institute, Rutgers University (2020–)

## **RESEARCH INTEREST**

Human-Computer Interaction, Ubiquitous computing, Health, wellness & environmental sustainability, Qualitative & ethnographic methods, User-centered design, Design research

**Application areas:** Everyday health and wellness, Healthy aging, Patient-centric care, Vulnerable population, Environmental sustainability, Community empowerment, Citizen science

## **EDUCATION AND PROFESSIONAL PREPARATION**

### 2014-16 **Postdoctoral fellow, Center for Research on Computation and Society**

John A. Paulson School of Engineering and Applied Sciences  
Harvard University, Cambridge, MA, USA  
Advisors: Krzysztof Z. Gajos & Barbara J. Grosz

### 2014 **Ph.D. in Human-Computer Interaction**

Human-Computer Interaction Institute, School of Computing  
Carnegie Mellon University, Pittsburgh, PA, USA  
Committee: Eric Paulos (co-chair), Jennifer Mankoff (co-chair), Niki Kittur, Jason Ellis  
Thesis: “Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection”

### 2008 **M.S. in Human-Computer Interaction**

School of Computing  
Georgia Institute of Technology, Atlanta, GA, USA  
Advisor: Gregory Abowd

Thesis: “Are you sleeping?: sharing portrayed sleeping status within a social network  
2000 **B.S. in Architecture & Housing and Interior Design**  
Yonsei University, Seoul, Korea

## **PROFESSIONAL EXPERIENCE**

2016 – Assistant Professor, Department of Library & Information Science, School of Communication & Information, Rutgers University, New Brunswick, NJ

2008 - 2014 Research Assistant, Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA

Summer 2010 Research Intern, Mobile computing group, IBM Research Almaden, CA (Supervisor: Jeff Pierce)

Summer 2008 Research Intern, Intel Research Seattle, WA (Supervisor: Daniel Avrahami)

2007 - 2008 Research Assistant, School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA

Fall 2006 Research Assistant, College of Architecture, Georgia Institute of Technology, Atlanta, GA

2003 - 2006 Assistant Manager, Search Portal Division, Daum Communications, Seoul, Korea

2000 - 2003 Interaction Designer, Intelligent Apartment Team, CVNet, Samsung Corp., Seoul, Korea

## **GRANTS, HONORS & AWARDS**

2021-2022 Rutgers COVID Impact on Scholarly Productivity Faculty Grant Program **(PI)**, \$5,000

2020-2021 Rutgers SCI Grant for Individual Research Funding **(PI)**  
“Exploring children’s technology use and parental control practices during COVID-19”, \$1,400

2019-2022 Busch Biomedical Grant **(PI)**  
“Creating a novel indoor air quality monitoring tool for children with asthma”, \$39,963

2019-2022 Rutgers’ Community Design for Health and Wellness Grant **(PI)**  
“Designing for Engagement in Indoor Air Quality in Low-Income Households”, \$17,800

- 2019 Rutgers' Community Design for Health and Wellness Grant **(PI)**  
"Exploring Design Opportunities to Enhance Online Health Information Seeking Practices through Public Libraries", \$3,000
- 2019 Annual faculty outstanding research award, Department of Library and Information Science, Rutgers University
- 2019 Nominated for the best paper in HICSS 2019  
"SwellFit: Developing A Wearable Sensor for Monitoring Peripheral Edema."
- 2018-2020 New Jersey Health Foundation Research Grant Program **(PI)**  
"Developing a Dialog-Based Personal Assistant to Support Social Engagement Among Older Adults", \$34,011
- 2018 Rutgers SCI Grant for Individual Research Funding **(PI)**  
"Towards the Design of Persuasive Systems for Improving Indoor Environmental Quality in Low-Income Households" PI, \$3,000
- 2017 Rutgers SCI Research Development Grant **(PI)**  
"Enhancing the Perception and Assessment of Indoor Environmental Quality in Low-Income Households", \$3,600
- 2017 Rutgers University Council Grant **(PI)**  
"The Wisdom of the Elderly: Engaging Seniors to Design Patient Portals for Older Adults", \$3,400
- 2014 An invited participant at the Rising Stars in EECS, University of California, Berkeley
- 2013 A selected participant at the Human Computer Interaction Symposium
- 2011 IBM Research Graduate Fellowship

## **PUBLICATIONS**

### **Under review/In preparation**

1. **Kim, S.** & Stanton, K. "Exploring technology adoption and use for and by older adults living in an assisted living facility. Staff's perspectives" (in preparation)
2. **Kim, S.** Ahmed, S., & Oseitutu, I. "Investigating Difficulties Encountered by Undocumented Students in Pursuing Higher Education" (in preparation)

### **Journals**

1. **Kim, S.**, Stanton, K., Park, Y., & Thomas, S. (2022). "A Mobile App for Children With Asthma to Monitor Indoor Air Quality (AirBuddy): Development and Usability Study," *JMIR Formative Research*. 6(5): e37118

2. **Kim, S.**, Yao, W., & Du, X. (2022). "Exploring older adults' adoption and use of a tablet computer during COVID-19: Longitudinal qualitative study," *JMIR Aging*, 5(1): e32957
3. **Kim, S.**, & Sohanchyk, G. (2022). "Exploring Children's Engagement in Monitoring Indoor Air Quality: Longitudinal Study," *JMIR Formative Research*6(1): e32404
4. **Kim, S.**, Park, Y., & Ackerman, M.K. (2021). "Designing an Indoor Air Quality Monitoring App for Asthma Management in Children: User-Centered Design Approach," *JMIR Formative Research* (5)9: e27447.
5. **Kim, S.**, & Choudhury, A. (2021)."Exploring older adults' perception and use of smart speaker-based voice assistants: A longitudinal study." *Computers in Human Behavior*: 106914.
6. Tsoulou, I., Senick, J., Mainelis, G.,& **Kim, S.** (2021). Residential indoor air quality interventions through a social-ecological systems lens: A systematic review. *Indoor Air*. 00:1–19.
7. **Kim, S.** (2021). "Exploring How Older Adults Use a Smart Speaker–Based Voice Assistant in Their First Interactions: Qualitative Study" *JMIR mHealth and uHealth*, 9(1), e20427.
8. **Kim, S.**, & Choudhury, A. (2020). Comparison of Older and Younger Adults' Attitudes Toward the Adoption and Use of Activity Trackers. *JMIR mHealth and uHealth*, 8(10), e18312.
9. **Kim, S.**, Trinidad, B., Mikesell, L., & Aakhus, M. (2020). "Improving Prognosis Communication for Patients facing Complex Medical Treatment: A User-Centered Design Approach," *International Journal of Medical Informatics*, 104-147.
10. **Kim, S.**, Senick, J., & Mainelis, G. (2019) "Sensing the Invisible: Understanding the Perception of Indoor Air Quality Among Children in Low-Income Families," *International Journal of Child-Computer Interaction*, 19, 79-88.
11. **Kim, S.**, & Fadem, S. (2018). "Communication matters: Exploring older adults' current use of patient portals." *International Journal of Medical Informatics*, 120: 126-136.

### **Peer-Reviewed Conference Proceedings**

1. Du, X., Yao, W., & **Kim. S.** (2021). "Lessons Learned from Supporting Low-income Older Adults to Use a Tablet PC in the Age of Digital Divide." *In Adjunct Publication of the 23rd International Conference on Mobile Human-Computer Interaction* (pp. 1-5).
2. Du, X. & **Kim. S.** (2021). "Exploring an Opportunity to Support Local Food Systems through Online Food Delivery Services with Live-Streaming Farms in China." *In Adjunct Publication of the 23rd International Conference on Mobile Human-Computer Interaction*, (pp. 1-6).
3. **Kim, S.**, Li, M., Senick, J., & Mainelis, G. (2020). Designing to engage children in monitoring indoor air quality: a participatory approach. *In Proceedings of the Interaction Design & Children Conference* (pp. 323-334).
4. **Kim, S.** & Li, M. (2020). "Awareness, Understanding, and Action: A Conceptual Framework of User Experiences and Expectations about Indoor Air Quality

- Visualizations." *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (pp. 1-12).
5. **Kim, S.**, Mikesell, L., Fadem, S., & Aakhus, M. (2019). "Designing a Personalized Support Tool for Patients Facing Bone Marrow Transplant." *In Proceedings of the 13th EAI International Conference on Pervasive Computing Technologies for Healthcare*, pp. 41-50. ACM.
  6. **Kim, S.** (2019) "Comparative Review of Research on Health Information Technology in Biomedical Informatics and Human-Computer Interaction." *In the International Conference on Human-Computer Interaction*, pp. 16-32. Springer, Cham.
  7. **Kim, S.**, Allen, T., & Bhatt, T. (2019). "Creating an EMR System to Support Mobile Clinics in Haiti." *In Proceedings of the ACM Conference on Information and Communication Technologies and Development*. p. 23. ACM.
  8. **Kim, S.**, Ivarantchi, Y., & Gajos, K. Z. (2019). "SwellFit: Developing A Wearable Sensor for Monitoring Peripheral Edema." *In Proceedings of the 52nd Hawaii International Conference on System Sciences*. **(Best paper honorable mention)**
  9. **Kim, S.** (2018). "Investigating Everyday Information Behavior of Using Ambient Displays: A Case of Indoor Air Quality Monitors." *In Proceedings of the ACM Conference on Human Information Interaction & Retrieval*, pp. 249-252. ACM.
  10. **Kim, S.**, Gajos, K. Z., Muller, M., & Grosz, B. J. (2016). "Acceptance of mobile technology by older adults: a preliminary study." *In Proceedings of the ACM Conference on Human-Computer Interaction with Mobile Devices and Services*, pp. 147-157. ACM.
  11. **Kim, S.**, Mankoff, J., & Paulos, E. (2015). "Exploring barriers to the adoption of mobile technologies for volunteer data collection campaigns." *In Proceedings of the ACM Conference on Human Factors in Computing Systems*, pp. 3117-3126. ACM.
  12. **Kim, S.**, Paulos, E., & Mankoff, J. (2013). "inAir: a longitudinal study of indoor air quality measurements and visualizations." *In Proceedings of the ACM Conference on Human Factors in Computing Systems*, pp. 2745-2754. ACM.
  13. **Kim, S.**, Mankoff, J., & Paulos, E. (2013). "Sensr: evaluating a flexible framework for authoring mobile data-collection tools for citizen science." *In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing*, pp. 1453-1462. ACM.
  14. **Kim, S.**, Robson, C., Zimmerman, T., Pierce, J., & Haber, E. M. (2011). "Creek watch: pairing usefulness and usability for successful citizen science." *In Proceedings of the ACM Conference on Human Factors in Computing Systems*, pp. 2125-2134. ACM.
  15. **Kim, S.**, & Paulos, E. (2011). "Practices in the creative reuse of e-waste". *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (pp. 2395-2404). ACM
  16. **Kim, S.**, & Paulos, E. (2010). "InAir: sharing indoor air quality measurements and visualizations." *In Proceedings of the ACM Conference on Human Factors in Computing Systems*, pp. 1861-1870. ACM.

17. **Kim, S.**, Paulos, E., & Gross, M. D. (2010). "WearAir: expressive t-shirts for air quality sensing." In *Proceedings of the ACM Conference on Tangible, Embedded, and Embodied Interaction*, pp. 295-296. ACM.
18. **Kim, S.**, & Paulos, E. (2009). "Listening to air quality." In *Proceedings of the First International Conference on Expressive Interactions for Sustainability and Empowerment* (pp. 9-9). British Computer Society.
19. **Kim, S.**, & Paulos, E. (2009). "inAir: measuring and visualizing indoor air quality." In *Proceedings of the ACM Conference on Ubiquitous Computing*, pp. 81-84. ACM.
20. **Kim, S.**, Kientz, J. A., Patel, S. N., & Abowd, G. D. (2008). "Are you sleeping?: sharing portrayed sleeping status within a social network". In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing* (pp. 619-628). ACM

### Extended Abstracts

1. Fadem, S., **Kim, S.**, Mikesell, L., Aakhus, M., & Strair, R. (2018). "Personalizing Decision Support for AML Patients by Incorporating Experienced Patient Videos about Treatment Outcomes", In *the BMT Tandem Meetings*
2. Aakhus, M., Mikesell, L., & **Kim, S.** (2018). "Designing deliberation into Precision Medicine", In *Proceedings of the 9th Conference of the International Society for the Study of Argumentation*.
3. Fadem, S., **Kim, S.**, Mikesell, L., Bontempo, A. & Aakhus, M. (2017). "Designing an interactive system of experiential videos to support patients considering bone marrow transplant in their decision- making process", In *the Women's Healthcare Innovation and Leadership Showcase*.
4. **Kim, S.**, Mankoff, J., & Paulos, E. (2014). "Exploring the Opportunities of Mobile Technology Use in Nonprofit Organizations", In *Proceedings of the ACM Conference on Human Factor in Computing System, Extended Abstracts* (pp. 1939-1944). ACM.
5. **Kim, S.** & Paulos, E. (2012). "A subscription-based authoring tool for mobile citizen science campaigns". In *Proceedings of the ACM Conference on Human Factor in Computing System, Extended Abstracts* (pp. 2135-2140). ACM.

### Book Chapter

1. Paulos, E., **Kim, S.**, & Kuznetsov, S (2010). "The Rise of the Expert Amateur: Citizen Science and Micro -Volunteerism", chapter contribution in *From Social Butterfly to Engaged Citizen*. Edited by Marcus Foth, MIT Press.

### Doctoral Consortium

1. **Kim, S.** (2012). "A flexible tool for participating, authoring, and managing citizen science campaigns on-the-go". In *Proceedings of the ACM Conference on Ubiquitous Computing* (pp. 556-559). ACM.

### Workshop Papers and Others

1. **Kim, S.**, Iravantchi, Y., Gajos, K. Z., & Grosz, B. J. (2015). "Exploring Opportunities for Social Infrastructure in Congestive Heart Failure Management". In *the ACM Conference on Computer Supported Cooperative Work and Social Computing*, Workshop on Moving Beyond e-Health and the Quantified Self, Vancouver, BC, Canada.
2. **Kim, S.**, Mankoff, J., & Paulos, E. (2014). "Reflecting the Current Practices of Technology Use in Volunteer Data Collection Activities on the Opportunities of Mobile Technology", Technical Report, CMU-HCII-14-107, Carnegie Mellon University.
3. **Kim, S.** (2013). "E-waste: Repair or Replace? That is the Question" In *the Human Computer Interaction Consortium*, Monterey, CA, USA
4. **Kim, S.** (2013). "Sustainable Reusability in the Rise of Electronic Waste" In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Reclaiming Repair, Paris, France.
5. **Kim, S.** (2013). "Technology to empower citizen scientists", In *the U.S. Environmental Protection Agency*, Kentucky, USA.
6. **Kim, S.** (2011). "Environmental inference: using activity inference as a way to collect environmental data for urban health", In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Data collection by the people for the people, Vancouver, BC, Canada.
7. **Kim, S.** & Paulos, E. (2010). "Understanding e-Waste: How to Encourage Re-use and Longevity-of-use of Domestic e-Waste", In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Examining appropriation, re-use and maintenance for sustainability, Atlanta, Georgia, USA.
8. **Kim, S.** & Paulos, E. (2009). "Building a simple, low-cost air quality sensor for monitoring indoor air quality", In *the ACM Conference on Human Factor in Computing Systems*, Workshop of DIY for CHI: methods, Communities and values of reuse and customization, Boston, Massachusetts, USA.

## **TEACHING**

### **Instructor**

- Interaction Design Studio, Fall 2019 - (Graduate level)
- Foundations of Interaction Design and Informatics, Fall 2019 - (Graduate level)
- Critical Thinking in Designing Health Technologies, Spring 2018 - (Graduate level)
- Experimental Design and Evaluation for Interaction Design, Fall 2017 - (Graduate level)
- Human Computer Interaction, Fall 2016 – Spring 2019 (Undergraduate level)

### **Teaching Assistant**

- Fall 2010      Human-Computer Interaction Methods with Professor Bonnie John & Matthew Kam (Graduate level)
- Spring 2010    Basic Interaction Design with Professor Eric Paulos (Graduate level)

## **INVITED TALKS**

- 2021 “Human-Computer Interaction – Cognitive Science Perspectives” at the Center for Cognitive Science, Rutgers University
- 2020 “Introduction to Human-Computer Interaction ” at the Center for Cognitive Science, Rutgers University
- 2019 “Digital Media and Human Behavior: Digital Innovation and Human-Computer Interaction” at LASER (Leonardo Art Science Evening Rendezvous) NB, the Zimmerman Art Museum, New Jersey
- 2017 “Human-Computer Interaction for Machine Learning” at the Department of Computer Science, Rutgers University
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at Simon Fraser University, Vancouver, Canada
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at Yale University, Connecticut
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at University of Illinois Urbana Champaign, Illinois
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at University California of Santa Barbara, Santa Barbara
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at San Jose State University, San Jose
- 2015 “Personal Sensing and Feedback towards Healthy and Environmentally Sustainable Behaviors” at the Harvard School of Engineering and Applied Science, Harvard
- 2014 “Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection” at the Rising Starts in EECS workshop
- 2014 “Sensing and Feedback for Healthy and Environmentally Sustainable Behaviors” at Berkeley Institute of Design Seminar, University of California, Berkeley
- 2013 “Citizen Science: A mobile tool for promoting citizen’s engagement in solving real-world problems” at HCI – Environment, Technology and Society By Jennifer Mankoff
- 2013 “Technology to empower citizen scientists” at The U.S. Environmental Protection Agency, Kentucky, USA
- 2010 “Creek Watch: pairing usefulness and usability for successful citizen science” at IBM Workshop for Frontiers of Cloud Computing



## **IN PRESS**

June 2013 Water-technology.net Smarter water for crowded cities, <http://www.water-technology.net/features/featureibm-smarter-water-project-smart-cities>

November 2010 Forbes IBM Launches iPhone App For Crowdsourcing Water Quality, <http://www.forbes.com/sites/kerryadolan/2010/11/04/ibm-launches-iphone-app-for-crowdsourcing-water-quality/>

September 2010 Huffpost Tech Citizen Science: Check out IBM's Creek Watch iPhone App, [http://www.huffingtonpost.com/2010/09/24/citizen-science-check-out\\_n\\_738220.html](http://www.huffingtonpost.com/2010/09/24/citizen-science-check-out_n_738220.html)

August 2010 ABC Local Scientists use iPhone app to collect creek data, [http://abclocal.go.com/kfsn/story?section=resources/lifestyle\\_community/green&id=7639420](http://abclocal.go.com/kfsn/story?section=resources/lifestyle_community/green&id=7639420)

## **ACADEMIC SERVICE**

### **Conference Organizing Chair/Committee**

- Publication Area Chair, The ACM Conference on Human Factors in Computing Systems (CSCW), 2021
- Publication Area Chair, The ACM Conference on Human Factors in Computing Systems (CHI), 2021
- Publication Area Chair, The ACM Conference on Designing Interactive Systems (DIS), 2020
- Publicity Chair, The ACM Conference on Ubiquitous Computing (ubicomp), 2019
- Accessibility Chair, The ACM Conference on Human Factors in Computing Systems (CHI), 2019
- Student Volunteer Chair, The ACM Conference on Human Information Interaction and Retrieval (CHIIR), 2018
- Demo Chair, The ACM Conference on Ubiquitous Computing (UbiComp), 2017

### **Journal Review**

- Transaction on Computer Human Interaction
- Computers in Human Behavior
- International Journal of Medical Informatics
- Journal of Medical Internet Research
- Computer Supported Cooperative Work (CSCW)
- IEEE Pervasive Computing
- IEEE Internet Computing
- EchoPsychology
- Indoor and Built Environment
- Media Psychology

## **Conference Proceedings Review**

- The ACM Conference on Human Factors in Computing Systems (CHI)
- The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
- The ACM Conference on Ubiquitous Computing (UbiComp)
- The ACM Conference on Human-Computer Interaction with Mobile Devices and Services (Mobile HCI)
- The ACM conference on Designing Interactive Systems (DIS)
- The ACM Conference on Tangible, Embedded and Embodied Interaction (TEI)
- The ACM Conference on Creativity & Cognition (Creativity & Cognition)
- The International Conference on Designing Pleasurable Products and Interfaces (DPPI)
- The Asia Pacific Conference on Computer Human Interaction (APCHI)

## **Student volunteer**

- The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2013
- The ACM Conference on Human Factors in Computing Systems (CHI) 2009