TechSAGE

Rehabilitation Engineering Research Center on Technologies to Support Aging-in-Place for People with Long-Term Disabilities

www.rerctechsage.org

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Publications

Journal Publications

(In press)


(Published)


Kapusta, A. S., Grice, P. M., Clever, H. M., Chitalia, Y., Park, D. & Kemp, C. C. (2019). A system for bedside assistance that integrates a robotic bed and a mobile manipulator. PLOS ONE, 14(10), https://doi.org/10.1371/journal.pone.0221854


https://doi.org/10.1097/TGR.0000000000000043

https://doi.org/10.4017/gt.2015.14.1.004.00

https://doi.org/10.4017/gt.2015.14.1.004.00

https://doi.org/10.1044/gero19.1.04

**Trade Journal Publications**


**Book Chapters**

*(Submitted)*


*(In press)*


*(Published)*


Liu, Y. E., Harrington, C. N., Melgen, S., & Sanford, J. A. (2016). GatePal—Universal design for airport navigation to allow departing travelers to stay informed. In M. Antona & C. Stephanidis (Eds.), *Universal Access in...
Human-Computer Interaction. Users and Context Diversity (pp. 586-594). Springer International Publishing. [https://doi.org/10.1007/978-3-319-40238-3_56](https://doi.org/10.1007/978-3-319-40238-3_56)

Sanford, J. A., & Gonzalez, E. T. (2016). RERC TechSAge: Making a difference to the lives of older adults with disability through design and technology. In J. Zhou & G. Salvendy (Eds.), Human Aspects of IT for the Aged Population. Design for Aging (pp. 82-91). Springer International Publishing. [https://doi.org/10.1007/978-3-319-39943-0_9](https://doi.org/10.1007/978-3-319-39943-0_9)


Sanford, J. A. (2015). Universal design as an approach to technology intervention for seniors. In J. Zhou & G. Salvendy (Eds.), Human Aspects of IT for the Aged Population. Design for Aging (pp. 115-122). Springer International Publishing. [https://doi.org/10.1007/978-3-319-20892-3_12](https://doi.org/10.1007/978-3-319-20892-3_12)

Conference Proceedings

(Submitted)

(In press)

(Published)


https://doi.org/10.1007/978-3-319-20913-5_6

https://doi.org/10.1007/978-3-319-20913-5_45

https://doi.org/10.1109/ICHI.2015.70

https://doi.org/10.1109/IROS.2015.7353563


https://www.semanticscholar.org/paper/Actions-Speak-Louder-Than-Words%3A-An-exploration-of-Levy-Solomon/45ce2cb7ca3d32a14621469ac78d17a488e9f6a0

https://www.semanticscholar.org/paper/A-Robotic-System-for-Reaching-in-Dense-Clutter-that-Bhattacharjee-Grice/b31472c952a612426e892b92bdc6073bfa1e6b74

https://ieeexplore.ieee.org/document/7009736

https://doi.org/10.1177/1541931214581260

https://ieeexplore.ieee.org/document/7041456


Technical Reports and Papers


Organized Symposia and Conferences

(Past)


Sosnoff, J. (organizer). (2019, April). *Illinois Multiple Sclerosis Research Day Conference* 150 participants including a wide range of stakeholders including industry, researchers, and persons with MS. Hosted at Illinois with attendance by Georgia Tech collaborators; TechSAge had 4 posters on display and hosted a dinner meeting following the conference for industry representative and TechSAge attendees.

Rogers, W. A., Sosnoff, J., & Gunderson, J. (organizing committee & participants) (2018, November). *A Dialogue on Disability*. This day-long session, organized by the College of Applied Health Sciences at UIUC, addressed the evolving needs of industry and fostered discussion on disability from a people, technology and hiring perspective. Industry participants included: HoneyWell, State Farm, RSM, Busey, Motorola Solutions, Sandia National Laboratories, Grant Thornton.


Presentations

Conference Presentations (without proceedings)

(Uplcoming)

(Past)

Harris, M., Koon, L. M., Remillard, E. T., Mitzner, T. L., & Rogers, W. A. (2019, November). Identifying Community Participation Challenges for Adults Aging with Mobility or Sensory Disabilities. Symposium presentation at the 2019 Annual Scientific Meeting of the Gerontological Society of America, Austin, TX.


Sanford, J. A. (2019, October). *SmartBathroom technologies to promote aging-in-place with a disability*. Panel presentation at the 63rd international annual meeting of the Human Factors and Ergonomics Society (HFES), Seattle, WA.

Remillard, E. T. (2019, October). *Translating an In-Person Evidence-Based Tai Chi Intervention to Tele-Technology for Persons with Mobility Disabilities*. Panel presentation at the 63rd international annual meeting of the Human Factors and Ergonomics Society (HFES), Seattle, WA.

Phillips, C. P. (2019, October). *Designing for Aging-in-Place with Disability: Moving Knowledge to Practice*. Panel presentation at the 63rd international annual meeting of the Human Factors and Ergonomics Society (HFES), Seattle, WA.

Campbell, M. (2019, October). *Strategies to help close the gap between the promise and practice of technology-based solutions for older adults and individuals with disabilities*. Panel presentation at the 63rd international annual meeting of the Human Factors and Ergonomics Society (HFES), Seattle, WA.

Koon, L. M. (November 2019). *Challenges with Managing Health & Basic Daily Living Activities among People Aging with Long-Term Mobility Disabilities: Opportunities for Technology-Based Solutions*. Symposium presentation at the 96th annual conference of the American Congress of Rehabilitation Medicine (ACRM), Chicago, IL.


Rice, L. (November 2019). *Developing a fall detection system to monitor and manage falls*. Symposium presentation at the 96th annual conference of the American Congress of Rehabilitation Medicine (ACRM), Chicago, IL.

Sanford, J. A. (November 2019). *SmartBathroom Technologies*. Symposium presentation at the 96th annual conference of the American Congress of Rehabilitation Medicine (ACRM), Chicago, IL.

Levy, L. M. (2019, August). *Beyond Results: design considerations for scientifically valid games that empower users after play*. Presented at the National Science Foundation Game-based Assessment Conference. Minneapolis, Minnesota.

Rogers, W. A. (2019, August). (1) *Collaborations in health, aging, research, and technology: University initiatives*; and (2) *Contributing to the solutions: Engaging in university research activities*. State Universities Annuitants Association (SUAA) Big 10 Conference University of Illinois at Urbana-Champaign Chapter, Champaign, IL.

Blocker, K. A. (2019, August). *Research findings on Current and Novice Users of Digital Home Assistants*. State Universities Annuitants Association (SUAA) Big 10 Conference University of Illinois at Urbana-Champaign Chapter, Champaign, IL.


Transition: Tools for Life and CIDI Services. Institute Designed for Educating All Students (IDEAS), Saint Simons, GA.


Rebola C. (2018, May). *Universal design as a strategy for technology design*. International Society for Gerontechnology 11th World Conference of Gerontechnology, St. Petersburg, FL, USA

Harris, M. T., Koon, L. M., & Rogers, W. A. (2018, May). *The potential for technology to support managing one’s health while aging with an impairment*. International Society for Gerontechnology 11th World Conference of Gerontechnology, St. Petersburg, FL, USA


Phillips, C., Kumar, A., & Wilson, R. (May, 2018). *Leveraging collaboration with Your AT act program*. Health and Human Services, Administration for Community Living, Regions III & IV, Aging Network Meeting and Technical Assistance Sessions, Atlanta, GA.


Upadhaya, R., Oswal, A., & Jones, B. (2017). *Addressing the alerting needs of older adults to age in place*. Paper presentation at the 8th International Conference on Applied Human Factors and Ergonomics (AHFE), Los Angeles, CA.


Rogers, W. A. (2016, September). *Psychological research to guide technology design that supports successful aging*. The 14th Psychology and Aging Congress. Bordeaux, France.


Wilson, R. (2016, June). *Tools for life and money follows the person.* Aging and Disability Resource Center (ADRC) Conference 2016, Atlanta, GA.


Rogers, W. A. (2016, March). *Aging and technology: How do we know what works?* Invited presentation at the University of Kansas Gerontology Center. Lawrence, KS.


Persaud, L. (2014, December). Tracking trends in assistive technology. Visiting Nurse Health System, Long-Term Care Staff and Directors Annual Meeting, Atlanta, GA.


Kemp, C. C. (2014, May). Poster presentation at the Assistive Technology Conference, Atlanta, GA.


Invited Presentations


T. Holder, C. Montes (2019 October). Exploring Assistive Technology Solutions and Resources. Presentation and AT Demonstration for Shepherd Center staff, Atlanta, GA.


Housley, D. (2019 April). Exploring assistive technology funding options through the lifespan. Informational Session at Disability LINK, Atlanta, GA.


Remillard, E.T. (2018, November). Technology to support successful aging. Invited presentation at National Church Residences Southeast Advisory Board Meeting. Atlanta, GA.


Rogers, W. A. (2018, April). *Technologies for successful older adult aging, autonomy, and independence.* State Universities Annuitants Association (SUAA) University of Illinois at Urbana-Champaign Chapter, Champaign, IL.

Rogers, W. A., & Bartlo, W. (2018, April). *New and emerging technologies to support older adults: Research from the University of Illinois at Urbana-Champaign.* Leading Age Illinois, Schaumburg, IL.


Rogers, W. A. (2018, January). *Collaborations in health, aging, research and technology (CHART) and the LIFE home.* Senior Task Force, Champaign, IL.

Remillard, E. T., Singleton, J. L., Mitzner, T. L., & Rogers, W. A. (2018, February). *Everyday technology use among Deaf older adults.* Invited Presentation at the Atlanta Chapter of the Association of Late Deafened Adults, Lawrenceville GA.


Rogers, W. A. (2017, November). *Technology enhancements to support aging-in-place.* HIV & Aging: Mitochondria to the Metropolis. Emory University, Atlanta, GA.


Gonzalez, E. (2017, February). Invited panelist at the Atlanta Post-Polio Association (APPA) website launch reception, Atlanta, GA.


Rogers, W. A. (2016, September). *Psychological research to guide technology design that supports successful aging.* The 14th Psychology and Aging Congress Bordeaux, France.


Outreach Activities
Singleton, J. (2016, October). RERC TechSAge recruitment booth at American Sign Language (ASL) Fair, Decatur, GA.
Gonzalez, E. (2015, November). RERC TechSAge recruitment event and presentation from the “Aging with a Mobility Impairment” Home Study, Atlanta Post-Polio Association (APPA) monthly meeting, Atlanta, GA.
Gonzalez, E. (2015, May). RERC TechSAge Booth, Fulton County Senior Expo and Symposium, Atlanta, GA.
Gonzalez, E. (2015, May). RERC TechSAge Booth, Cobb County Senior Services: Aging by Design Summit and Expo, Marietta, GA.
Gonzalez, E. (2014, October). RERC TechSAge Booth, Shepherd Center Fall Advocacy Event, Atlanta, GA.
Fausset, C. B. (2014, July). RERC TechSAge recruitment event, Atlanta Post-Polio Association (APPA) monthly meeting, Atlanta, GA.

Technology Products
- **ALIGN ATL App (Co-PIs Jon Sanford & Subhrajit Guhathakurta):** The ALIGN (Application for Locational Intelligence and Geospatial Navigation (ALIGN) ATL app is a user-friendly, mobile device app for pedestrian route planning and navigation in Atlanta, Georgia. The app is designed with special features that aid older adults and people with mobility and/or visual limitations in avoiding outdoor environmental barriers, such as uneven sidewalks and missing curb cuts, by intelligently identifying routes that are tailored to the individual’s specific needs and abilities. Pick your starting point, destination, and most important parameters, and ALIGN will create a route that best suits the options you’ve selected. Parameters include audible crossing signals, street lights, low crime rates, sidewalks, and more. The app will notify you of conflicts both before you start your route and during the turn by turn navigation. ALIGN ATL available on the Apple App Store: [https://apps.apple.com/app/id1386356715](https://apps.apple.com/app/id1386356715)

- **Autobed – Web controlled electric hospital bed (PI Charlie Kemp):** The Autobed module is an additional module for an Invacare fully electric hospital bed (Model 5410IVC) so that the bed can be controlled from a web-based interface. This module can be easily plugged between the hand control and the Invacare bed, without having to modify any existing hardware on the bed. The Autobed technology gives the control of an electric bed to the motor impaired bedridden person. This enables any motor impaired person who can operate a web browser to control their own electric bed at a very low cost. Invacare, Co. is currently working on commercializing Autobed. [http://pwp.gatech.edu/hrl/autobed-a-web-controlled-robotic-bed/](http://pwp.gatech.edu/hrl/autobed-a-web-controlled-robotic-bed/)
• **Brain Food** (*PI Maribeth Gandy-Coleman*): This is the code-base for the Brain Food prototype tablet-based cognitive intervention game. It is written in using the Unity3D game engine. It provides an example to the game developer community of how variable priority training (VPT) can be integrated into a “time management” style game. [https://github.com/imtc-gatech](https://github.com/imtc-gatech)

• **Food for Thought Platform** (*PI Maribeth Gandy-Coleman*): This is a platform for creating custom accessible instrumented “time management” games for serious games research/scientific experiments by non-technologists. It includes in-editor “wizards” that allow the user to create levels of a cognitive game within difficulty and multi-tasking requirements they define. It has a built-in logging system to collect detailed play data. It comes with hundreds of sample levels built by psychology researchers studying cognitive training. It is built around game themes, mechanics, and interfaces that were tuned for older adult players. This platform has been used in at least a dozen cognitive game and assessment studies over the period of six years [https://github.com/imtc-gatech](https://github.com/imtc-gatech).

• **GaitRate iOS App** (*Co-PIs Brian Jones & Ted Johnson*): The GaitRate App is a handheld replacement for the traditional stopwatch method of gait speed measurement typically used in home visit assessments and research studies. The app returns a calculated gait speed measurement and survival estimates for older patients (65-95), based on published research. The GaitRate App is being released to the Apple AppStore to provide these professionals with a tool to easily measure short-distance gait speed in their practice and compare the results against the published norms. More Information on the GaitRate iOS App: [www.gaitspeed.org](http://www.gaitspeed.org)

• **The GaitRate Wall-Mount System** (*Co-PIs Brian Jones & Ted Johnson*): The GaitRate Wall-Mount System (patent pending) was developed to allow an easy and reproducible measurement of gait speed in clinics and hospital settings, where a permanent installation is possible. While the system can be used to measure short-distance courses of 3 meters to 5 meters, a 4-meter course with acceleration and deceleration zones is recommended to allow comparison against the survival estimates provided in published research. This system is currently protected under a provisional patent. We are currently seeking industry partners interested in this solution or our findings. [www.gaitspeed.org](http://www.gaitspeed.org)

• **Unity Vision Loss Tools** (*PI Maribeth Gandy-Coleman*): This is a drag-and-drop plugin for the Unity3D game engine that allows game developers to explore how their interface would appear to people with eight types of vision impairment.

**Training Activities**

**Courses**

Sanford, J. (Spring 2019). Health and Design (ID 3031)- Undergraduate course focused on aging, disability, and Universal Design. Georgia Institute of Technology, Atlanta, GA.

Sanford, J. (Spring 2019) Health and Design (ID 6062) – Graduate design studio focused on aging, disability, and Universal Design. Georgia Institute of Technology, Atlanta, GA.

Sanford, J., Melgen, S., & Whitney, M.K. (Fall 2018). Universal Design in the Built Environment: Universal Design for Community Health (ID 4210/6800 ARCH 4843/8843), Georgia Institute of Technology, Atlanta, GA. Using a universal design approach, students learn how to design for social impact and community health through a focus on local farmer’s markets as a locus for social engagement, activity and good nutrition.

Gandy Coleman, M. (2018, Spring & Summer). Principles of Computer Audio (CS4590), Georgia Institute of Technology, Atlanta, GA. Course content on accessible/universal game design, sonification techniques for assistive technology, and situational awareness.

Sanford, J. A. (Spring, 2018). Health and Design, Graduate Industrial Design Studio, Georgia Institute of Technology.
Jones, B (advisor; 2018, Spring). Mobile Ubiquitous Computing. Description: 70 students were introduced to aware home projects including Smartbathroom. Students chose projects related to ambient alerting, with 12 projects directly applicable to TechSAge. Georgia Institute of Technology, Atlanta, GA.

Jones, B. (2017, Fall). Living Labs Seminar (CS8000AHS), Georgia Institute of Technology, Atlanta, GA. Description: Course featured small workshops with seminar attendees in the domains of connected home in support of different needs. Aware Home Tour was a primer for a discussion around supports for individuals aging in place and with disabilities.

Rogers, W. A. (Fall 2017). Technology, Health, and Aging (CHLH494). University of Illinois Urbana-Champaign
Sanford, J. A. (Fall 2017). Universal Design for Sustainable Communities. Two-day short course on design opportunities to engage older adults in farmers’ markets as a part of the Georgia Tech Serve, Learn Sustain (SLS) Buzz Course program. Atlanta, GA.

Sanford, J. A. (Fall 2015), Universal Design (ID 6800 & 4210; ARCH 8843, &4843), Georgia Institute of Technology, Atlanta, GA.

Sanford, J. A. (Spring 2015), Apps for Aging, Georgia Institute of Technology, Atlanta, GA.

Sanford, J. A. (Fall 2014), Advanced Universal Design (ID 6800/Arch 8843), Georgia Institute of Technology, Atlanta, GA.

Course projects
Wilson, J. & Gandy-Coleman, M. (Spring 2017). Accessible Game Design and Auditory Interfaces (CS 4455), Georgia Institute of Technology, Atlanta, GA.

McLaughlin, A. (Fall 2015), Student accessibility evaluations of Food for Thought cognitive training game prototypes. North Carolina State University, Raleigh, NC.

Competitions
TechSAge Design Competition (www.techsagecompetition.com). The TechSAge Design Competition seeks to inspire talented college students from around the world to develop innovative technology-enabled design solutions for the aging population. Top designs from the competition follow a rigorous two-phase competition, in which a talented panel of experts in the field judge Phase I, and the RERC TechSAge Advisory Board evaluates the Phase II designs.

- 2018: 3rd annual international design competition on technologies to support aging with disability. 12 Universal Design entries were submitted, including 20 competitors from 9 different schools.
- 2017: 2nd annual international design competition on technologies to support aging with disability. 14 Universal Design entries were submitted, including 25 competitors from 12 different schools.
- 2016: Launched 1st ever international design competition on technologies to support aging with disability. 23 Universal Design entries were submitted, with competitors including 36 individuals, representing 14 international schools as well as business entities. Convergence Innovation Competition, Georgia Institute of Technology
- (2016, April): TechSAge sponsored a special award in Universal Design
- (2015, April): TechSAge sponsored a new judging area and special award in Universal Design

Guest Lectures
Housley, D. (2019, March). Finding the Fun(ding). Georgia State University Occupational Therapist Program, Atlanta, GA.

Sosnoff, J. J (2019, March). Guest lecture on falls and assistive device use to senior design students. University of Illinois at Urbana-Champaign.


Levy, L. (2018, December). *Games for Change: Game Jam*. Levy is working with ~800 students in the 6th-12th grade from the Atlanta Metro Area teaching principles of game design, project management, project leadership via “Games for Change.” The students, under the advisement of the faculty mentors created games to instill understanding and change in the players within a theme (e.g. “Aging Communities”).


Jones, B. (2017, Fall). *Real-time systems to support people’s needs in the home environment*. Guest lecture and tour for RealTime Embedded Systems (CS4220/6235). Aware Home, Georgia Institute of Technology, Atlanta, GA.

Jones, B. (2017, November). *How Technology Can Support the Needs of Older Adults*. Guest lecture and tour for Georgia State University Gerontology Students. Aware Home, Georgia Institute of Technology, Atlanta, GA.

Sanford, J. & Jones, B. (2017, September). Workshop with the Children’s School 7th grade classes on the needs of an aging population. Field trip hosted at the Center for Assistive Technology and Environmental Access, Georgia Institute of Technology, Atlanta, GA.


Bruce, C. (June, 2017). “Design Workshop”. 2-hour Workshop for the Georgia Tech EXCEL Summer Camp, Atlanta, GA.

Gandy Coleman, M. (2017, April). *Auditory interfaces for wearable and pervasive devices*. Guest Lecture for Assistive Technology Class (PSYC 8040), Georgia Institute of Technology, Atlanta, GA.


Bruce, C. (2016, June). “Design Workshop”. 2-hour Workshop for the Georgia Tech EXCEL Summer Camp, Atlanta, GA.


Lambeth, A. (2016, April). From A to ∞, presentation on accessible game design, games research, and careers utilizing interaction media skills to 81 middle school students and 13 teachers Georgia Institute of Technology, Atlanta, GA.

Levy, L., Solomon, R., Lambeth, A. (2016, February). Presentation on Accessible Gaming to hundreds of middle and high school students across a 12-hour demonstration window at the Sandy Spring Education Force, STEAM event, North Springs Charter High School, Atlanta, GA.

Liu, Y. (2016, February). Workshop on Universal Design, Georgia Institute of Technology, Atlanta, GA.

Kascak, L. (2016, February). Universal Design Principles for Interfaces, Applied Experimental Psychology Lab, Georgia Institute of Technology, Atlanta, GA.
Persaud, L. & Wilson, R. (2016, February). Healthy Living with Assistive Technology. East Cobb Senior Center, Marietta, GA.

Bruce, C. (2016, January). “Universal Design to Support Engagement”. Guest presentation in Georgia Tech ARCH 3012 course, Atlanta, GA.


Persaud, L. (2015, February). Tracking Trends in Assistive Technology, Guest Lecture, Michigan State University, Social and Environmental Aspects of Disability Masters Class, Atlanta, GA.

Kascak, L. (2015, February). Workshop on Universal Design, Georgia Institute of Technology, Atlanta, GA.


TechSAge State of the Science Conference March 27-28, 2017: Guest Presentations
(Organized by RERC TechSAge)
Archived presentations available from: http://techsage.gatech.edu/videos

- Keynote Lecture: Michelle Putnam, Ph.D. Aging with Disability and Technology as Policy Disruptors.
- Brenna Argall, Ph.D. Human Autonomy through Robotics Autonomy.
- Andrew Sixsmith, Ph.D. Aging & Technology: From the Laboratory to the Real World.
- T. Kesavadas, Ph.D. Universal Concierge and VR: Improved Care for an Aging Population.
- Jeffrey Woods, Ph.D. Age-Friendly Champaign-Urbana: Leveraging a Community Outreach Effort for Research.
- Elizabeth Mynatt, Ph.D. Aging & Personal Technology.
- Ayanna Howard, Ph.D. Current Research in Gaming, Robotics, & Assistive Technology.
- Mary Blumberg. Atlanta Regional Commission: Lifelong Communities

Design and Technologies for Healthy Aging (DATHA) Talks
(Organized by RERC TechSAge)
Archived presentations available from: http://datha.gatech.edu/node/237


Luukkonen, P. (2017, January). Coastal Area Agency on Aging’s Ability Solutions Assistive Technology Lab. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.


Ross, D. (2016, October). Electrochromic Glasses for Individuals with Vision Impairment. Invited Presentation, Design and Technology for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Kerssens, C. (2016, September). Bridging the Worlds of Research and Industry. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.
Sanford, J. & TechSAge team (2016, April). *Poster Session on RERC TechSAge Research Studies, Development Projects*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Ratliff, J. (2016, March). *The Importance of High-touch Technology Education for Older Adults*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Harvey, L. (2016, February). *The Role of Technology in Creating an Age-Friendly City: Current Trends and Future Vision*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.


Hackett, B. (2015, November). *Systematically Leveraging Community Partners and Connections – The Best Solution to a Broken System*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Harrington, E. (2015, October). *Taking Control to Prevent Falls: The Shepherd Center’s Fall and Injury Prevention Program*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Ray, R. (2015, September). *Transportation and Aging: The Atlanta Regional Commission’s Simply Get There App*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.


Brand, C. (2015, April). *Friends of Disabled Adults and Children (FODAC)*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Head, E. (2015, March). *Older Driver Safety*. Invited Presentation, Design and Technology for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.

Harrington, C. (2015, February). *Bathroom Assistive Technology for Older Adults (Marge Klompe Research Exchange program in the Netherlands)*. Invited Presentation, Design and Technologies for Healthy Aging (DATHA), Georgia Institute of Technology, Atlanta, GA.


**Leading Age Technology and Aging Summit (2015 – 2017)**

(organized by RERC TechSAge, Wireless RERC, and Tools for Life)


Alwan, M. (2016, November). *Leading Age Center for Aging Services Technologies*. Presentation at the 2016 Leading Age Technology and Aging Summit, Georgia Institute of Technology, Atlanta, GA.
Demos

- **SmartBathroom demonstrations**
  - IPaT Living Labs Seminar (Fall, 2019)
  - Ferguson Ventures Innovation Center (Fall, 2019)
  - ITU Kaleidoscope Conference: *ICT for Health: Networks, standards and innovation* (December 4-6, 2019), event hosted for the first time in the U.S. at Georgia Tech.
  - Georgia Tech GVU Showcase (2016, 2018, 2019)
  - Center for Assistive Technology and Environmental Access (CATEA) Open House (2016, November)
  - Cobb County Senior Services, Aware Home Visit (2016, August)
  - TechSAge Advisory Board Meeting (2016, 2017)

- **Gait Speed project demonstrations**
  - TechSAge Advisory Board Meeting (2015, 2016)
  - ITU Kaleidoscope Conference: *ICT for Health: Networks, standards and innovation* (December 4-6, 2019), event hosted for the first time in the U.S. at Georgia Tech.

- **Demos for National Robotics Week, Healthcare Robotics Lab, Georgia Institute of Technology (2016, April)**

- **Assistive Technology Solutions Labs (Tools for Life)**
  - D. Housley, R. Wilson. (2019 August). Elder Care Fair Assistive Technology Lab. Federal Reserve Bank of Atlanta, Atlanta, GA.

**Tours and Hosted Presentations**

• D. Housley, J. Rempel (2019 November). Center for Inclusive Design and Innovation Resources and Activities, Interactive Tour of Production Departments and AT Lab for Cox Communications staff, Atlanta, GA.


• Phillips, C. et al. (2019, March). Accessibility & Assistive Technology Solutions and Strategies. HHS | ACL Tour and Meeting at CIDI, Atlanta, GA.

• C. Phillips, et all. (2019, March). *Accessibility & Assistive Technology Solutions and Strategies*. Microsoft Tour and Meeting at CIDI, Atlanta, GA.


• Aware Home tours and demonstrations:
  - Community of Computing Consortium (CCC) (2019, March)
  - Malmo University, Sweden (2018, December)
  - Stanley Black and Decker
  - Flex, David Johnson, VP Product Industrialization, Ann Marie Kenitzer (Director, Flex Centers of Excellence), Garry Wong, Director, Technical Business Development - general interest in what types of research are performed in Aware Home
  - IBM
  - Eaton
  - Vivint
  - CDI
  - Tektonic
  - Anthem Innovation Center Team
  - EXCEL program at Georgia Tech
  - Ashok Kapur, CEO, Hawkeye Medical, LLC
  - Sensorcall.com
  - Kimball: Sam Barry and Carrie Richards – interest in smart furniture – included discussions of smart furniture for people with disabilities in the workplace
  - CS8000AHS GT Living Labs Seminar
  - RealTime Embedded Systems
  - The Children’s School 7th grade classes
  - Lokyee Lee, Georgia State School of Gerontology students
  - CESIMC, Teacher Internet of Things Training Course
  - GT Mobile Ubiquitous Computing
  - Cree (2017, February)
  - Comcast Cable (2017, January)
  - Flextronics (2017, January; 2016, October)
  - Jacob Sosnoff, Associate Director of the Center on Health, Aging, and Disability, University of Illinois (2016, October)
  - Lee J. Metcalf, Vice President, Daugherty Business Solutions (2016, October)
  - Georgia Tech Realtime Embedded Systems class (2016, October)
o Georgia Tech Architecture studio class (2016, August)
o Gait Smart (2016, August)
o Amazon Smarthome (2016, September)
o John Fitch, Birkeland Current (2016, July)
o Olivier Oullier, World Economic Forum (2016, July)
o Elena Soboleva, Journalist, GEO Magazine Russia (2016, June)
o Georgia State University (GSU) Occupational Therapy (2016, May)
o Centralite (2016, May)
o Lenbrook LifeCare Community (2016, May)
o Proctor and Gamble (2016, April)
o Neil Alexander: Professor at the University of Michigan, Department of Internal Medicine and Division of Geriatric and Palliative Medicine, Director of the UM Mobility Research Center, and Director of the VA Ann Arbor Health Care System Geriatric Research Education and Clinical Center (2016, April)
o Multiple Georgia Tech student groups from Computer Science, Psychology, Industrial Design, Electrical and Computer Engineering (2016, March-May)
o National Aging in Place Council (Georgia Chapter) (2015, December)
o Cox Communications (2015, November)
o Georgia Tech Women’s Club (2015, November)
o Graduate computing students in the Real-Time Embedded Systems class (2015, October)

**Webinars, Videos, Podcasts, Online Courses**

**Universal Design** - Produced by Tools for Life (Georgia's AT Program) and RERC TechSAge, this video series explores the 7 Principles of Universal Design and how they can be applied to products, interfaces and spaces to make for designs that are usable by all people to the greatest extent possible. The series will cover each principle individually and offer examples to those wishing to learn more about the UD Principles.

- **1. Laying the Foundation for Universal Design**
- **2. Principles of Universal Design**
- **3. Equitable Use**
- **4. Flexibility in Use**
- **5. Simple and Intuitive Use**


**Other Accomplishments**

**Other Collaborations**

**Pilot Research Projects**

**Other Supplements**

- Illinois Physical Therapy Foundation award for “Prediction of falls using clinical balance measures among non-ambulatory individuals with spinal cord injury: A prospective cohort study”. (PI Laura Rice, $1K)
- NIDILRR grant for ENHANCE (Enhancing Neurocognitive Health, Abilities, Networks, and Community Engagement) RERC awarded to Weill Cornell Medicine, Florida State University and the University of Illinois at Urbana Champaign. Wendy Rogers is a PI for UIUC research, development, and training efforts (accounting for 1.5 million over the 5-year grant).
- Cognitive Empowerment Program (Georgia Tech/Emory Brain Health Initiative) seed grant award, “Feasibility of Using Tele-Technology for Mind-Body Interventions for People with Mild Cognitive Impairment” (CoPIs: Tracy Mitzner & Patty Griffiths, funded $29K)
- Cognitive Empowerment Program (Georgia Tech/Emory Brain Health Initiative) seed grant award, “Feasibility of Measuring Natural Gait Speed In-Home to Quantify Falls Risk in Individuals with MCI”. (Investigators: Jon Sanford, Joe Nocera, Dawn Fletcher)
- Cognitive Empowerment Program (Georgia Tech/Emory Brain Health Initiative) seed grant award, “Development and Testing of a Social Game with the Therapeutic Potential for Individuals with MCI and their Families” (Investigators: Chantal Kerssens, Maribeth Gandy Coleman & Laura Levy)
- NIH Award on “Cannabis use and risk of falling in older adults”; (PI: Rudroff, University of Iowa; Co-Investigator: Jake Sosnoff).
- NSF Award on the “Next-Generation Robotic Intelligence that Provides Psycho-Social Support for Older Adults” (Project team: Claudia Rebola)
- NSF DRL grant “Highly Adaptive Science Simulations for Accessible STEM” (Co-PI Carrie Bruce; UC Boulder is Prime; funded $1.9M)
• Supporting Social Engagement through Technology for Older Adults with and without MCI (4/1/18 - 12/31/18) [R43AG059450] Phase I Small Business Innovation Research Grant from the National Institute on Aging (National Institutes of Health). Dillon Myers, Principal Investigator for Potluck, LLC and Wendy A. Rogers, Principal Investigator for University of Illinois.


• Koon, L. M. & Ramavarapu, S. S (2017) Collaborations in Health, Aging, Research and Technology (CHART) Pilot Grant. Examining the Facilitators and Barriers to Using a Digital Home Assistant Technology for Older Adults [$4,715]

• Su Jin Lee (PI), Jon Sanford and Patty Griffiths received a Field Initiated Program award from the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR). The award will support the three-year project “Considerations for Caregivers and Care Recipients During Bathroom Activity Performance”. The immediate output of the study will be an evidence base for design criteria for bathroom design interventions that will meet the specific toilet transfer needs of the dyadic target population

• Application for Locational Intelligence and Geospatial Navigation (ALIGN) team, led by Principal Investigators Jon Sanford & Subhro Guhathakurta, received a Field Initiated Program award from the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR). The award will support the team for a three-year effort to produce a prototype of ALIGN 2.0 that will enhance the effectiveness and extend the utility of the existing database and routing algorithm through the inclusion and application of real-time barriers to community mobility.

• Ted Johnson, Brian Jones, and Carolyn Clevenger were awarded a seed grant by Atlanta Clinical & Translational Science Institute (ACTSI) Health Innovation Program Seed Grant. This award was for their project titled, “Assessing Gait Speed to Inform Frailty Evaluation (AGILE)”, which is related to their TechSAge project D1.3, “A Mobile Application to Measure Gait Speed”.

• Jon Sanford and Elena Gonzalez were awarded the Georgia Tech “GT FIRE Mini” award to support food and beverages for monthly meetings of Design and Technologies for Healthy Aging (DATHA) for the 2015-2016 school year.

Students Thesis/Projects Supported by TechSAge
• Rachel Stuck defended Master’s thesis “Understanding dimensions of trust between older adults and human or robot care providers” (2017).

Internships Supported by TechSAge
• Nadia Ferrer, B.S. student in Engineering Psychology, Tufts University (Summer 2017)
• Christelle Montreuil, Ph.D. student in Universal Design & Accessibility, Université Laval, Quebec, Canada (Fall 2015)

App Development Awards supported by TechSAge
• Ljilja Kascak was awarded $5000 to support development of MS Assistant, a health monitoring mobile application for people with Multiple Sclerosis.
• Yilin (Elaine) Liu was awarded $3000 to support development of GatePal, an airport wayfinding application that provides navigational information and activity planning information (e.g. flight schedule, time for each activity) to older adult travelers.

Awards
Center Awards/Achievements
• TechSAge was selected as a finalist for the 2016 Atlanta Magazine Groundbreaker awards. The 2016 groundbreaker selections were focused on making Atlanta an “all-ages” city.

Faculty Awards/Achievements
• Jon Sanford named member of the AGE-WELL International Scientific Advisory Committee.
• Patricia Griffiths was inducted as a fellow of the Gerontological Society of America, Behavioral and Social Sciences section (2018)
• *Health and Wellbeing for Interior Architecture* book, featuring chapter by Jon Sanford entitled, “Universal Design, Design for Aging in Place, and Habilitative Design in Residential Environments” won the 2018 Interior Designers Educators Council (IDEC) Book Award.
• Authors Jon Sanford, Subhrajit Guhathakurta, Sarah Melgen and Ge Zhang received “Best Papers” award for “Utility of a Mobile Route Planning App for People Aging with Disability” at the 2018 Smart Accessibility Conference in Rome, Italy.
• Authors Elena Remillard, Tracy Mitzner, Jenny Singleton and Wendy Rogers received “Best Papers” award for “A Qualitative Approach to Understanding User Needs for Aging with Disability” at the 2018 Smart Accessibility Conference in Rome, Italy.
• Carolyn Phillips named interim director of AMAC Accessibility (2017, November)
• Jon Sanford was inducted as a fellow of the Gerontological Society of America (2017).
• Wendy Rogers began her appointment at the University of Illinois in January, 2017. She was appointed as the Shahid and Ann Carlson Khan Professor of Applied Health Sciences.
• Wendy Rogers was inducted as a Fellow of the Gerontological Society of America (2016, November).
• Wendy Rogers received the 2014 Oliver Hansen Outreach Award from the Human Factors and Ergonomics Society recognizing “significant activities that broaden awareness of the existence of the human factors/ergonomics profession and the benefits it brings to humankind.”
• Jon Sanford was awarded the 2014 Outstanding Research and Scholarship Award, College of Architecture, Georgia Institute of Technology.

Student Awards/Achievements
• Zackory Erickson lead author of paper “Multidimensional Capacitive Sensing for Robot-Assisted Dressing and Bathing”, named Best Student Paper Award finalist at the International Conference on Rehabilitation Robotics (ICORR), 2019 in Toronto, Canada.
• Su Jin (Susan) Lee accepted to AGEWELL Canada Summer Institute (2019, Summer). She is the first U.S. student to attend.
• Maurita Harris awarded a National Institute on Aging Research Supplement to Promote Diversity in Health-Related Research.
• Achyuthkumar Sanath received an honorable mention award for the 2016 RESNA Student Scientific Paper Competition for paper titled, “Analysis of the Effect of a Rear Wall Grab Bar configuration on the Fall Risk Associated with Toilet Transfer in Older Adults with Mobility Impairment”. (2016, July).

Megan Rich presented her work titled, “Tool Usage by an Assistive Mobile Manipulator for Activities of Daily Living”, at the Petit Fellowship Final Presentations Event (2015, November)

**Georgia Tech President’s Undergraduate Research Award (PURA)**

- Hiyong Byun (Human Factors and Aging Lab)
- Megan Rich (Healthcare Robotics Lab)

**Community Outreach and Media**

**Internet**

- Dr. Lam Tai Chi for Health Newsletter (2019, November). Issue highlights Tele Tai Chi project and partnership with GT [https://us7.campaign-archive.com/?u=883badf8d833f6a20e63083172&id=e533dd9c8f](https://us7.campaign-archive.com/?u=883badf8d833f6a20e63083172&id=e533dd9c8f)


- National Rehabilitation Information Center (NARIC) News and Notes Weekly Digest (2019, November). “Tai Chi Leader Meets with TechSAge Researchers to Talk Preventative and Inclusive Health” news story featured. [http://www.iconcontact-archive.com/archive?c=654309&f=1190&s=119094&m=909994&t=635cba0a9267f719dd304fcd1ae764b160681b0bc4432192fe4b80b0dfebc7c#](http://www.iconcontact-archive.com/archive?c=654309&f=1190&s=119094&m=909994&t=635cba0a9267f719dd304fcd1ae764b160681b0bc4432192fe4b80b0dfebc7c#)


- OneClick.chat Blog (2019, March). Blog post highlighting Telewellness Technologies project, “We’re partnering with Georgia Tech to Tackle Aging and Disability-Related Needs”. [https://www.blog.oneclick.chat/my-blog/georgiatechgrant](https://www.blog.oneclick.chat/my-blog/georgiatechgrant)


• TechRepublic (2018, May). TechSAge Co-Director Tracy Mitzner was interviewed for article: 3 reasons why hiring older tech pros is a smart decision. https://www.techrepublic.com/article/3-reasons-why-hiring-older-tech-pros-is-a-smart-decision/


• BBB Radio (2018, March) TechSAge Co-Director Dr. Wendy Rogers was interviewed by BBC’s Aleks Krotoski for The Digital Human podcast and discussed the Human Factors and Aging Laboratory’s work related to human-robot interaction and older adults. http://www.bbc.co.uk/programmes/b09tvvn


• Institute for People and Technology (IPaT) Insider (2016, April). International Design Competition Brings Design for Aging with Disability to the Next Level: http://ipat.gatech.edu/international-design-competition-brings-design-aging-disability-next-level


• Dexigner competition listing (2015, November) http://www.dexigner.com/design-competitions

• Frog Design home page competition listing: TechSAge Competition (2015, December) http://www.frogdesign.com

mHealth HUB (2015, December): https://mhealth.md2k.org


Interview Magazine


Newspaper TV

Fulton County Television (FGTV) Connect: Social Isolation. TechSAge investigators, Elena Gonzalez & Su Jin Lee, discuss opportunities for local older adults to participate in aging research at Georgia Tech on an episode of Connect, a program powered by the Fulton County Department of Senior Services. Start at ~9:18: https://youtu.be/tNO5598tqnY?t=9m7s