TechSAge News
Summer 2021

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

TechSAge Project Directors: Jon A. Sanford, M.Arch., Wendy A. Rogers, Ph.D. & Tracy L Mitzner, Ph.D.

Project Coordinator: Elena Remillard, M.S.

Georgia Tech & The University of Illinois Urbana Champaign

In this issue of TechSAge News, we take a look back at the past year to highlight achievements and updates from the Center. Learn more about our featured projects and staff, and catch up on the latest events, publications, and study opportunities

INTRODUCTION

The 2020-2021 year was filled with adaptations to allow us to continue making progress as we managed the everyday challenges of conducting research in a pandemic. With online outreach being more important than ever, we launched a new and improved website to serve as a central hub for news and resources. Our social media efforts have also expanded to share center happenings and promote engagement with stakeholders during this socially distant time.

Team members participated in professional and scientific conferences that were all held 100% remotely. These virtual conferences provided the convenience and safety of presenting and participating from home as well as the unique opportunity to archive recorded presentations. For many of us, these virtual events also brought about nostalgia for travel and in-person networking.

Although Zoom remains the go-to way our team stays connected, campus re-openings initiated the much-anticipated joy of reconnecting with colleagues face-to-face.

Screenshot of TechSAge workshop presenters at the RESNA virtual conference (July 2021). Pictured: Travis Kadylak. Laura Rice, Elena Remillard & Jacob Sosnoff.

Project Directors outdoor retreat in North Georgia (early Summer 2021). Pictured: Project Coordinator (Elena Remillard) and Co-Directors (Wendy Rogers, Jon Sanford, & Tracy Mitzner

In addition, we had to find creative solutions to engage research participants remotely, including conducting interviews and user testing via video conferencing and delivering technology to individuals at their homes. Nonetheless, in a year when many of our participants spent more time at home, we saw renewed interest in our research studies and a growing Participant Registry. Several participants shared with us how the opportunity to do studies from home was a welcome, 'breath of fresh air' to their routine.

This year also marked the opening of the McKechnie Family LIFE Home at the University of Illinois. LIFE stands for Living in Interactive Future Environments and the home is a cutting-edge research center focused on innovations in home environments. Led by Director, Wendy Rogers, and Assistant Director of Research, Harshal Mahajan, the LIFE Home facility includes a two-bedroom home; an attached garage; multi-purpose research and collaboration rooms; outdoor areas; and capacity for community engagement. Research and development efforts focus on a range of topics related to in-home activities to improve quality of life and independence for people of all ages and abilities. The LIFE Home simulation environment will be an invaluable resource to support TechSAge technology research and development.

McKechnie Family LIFE Home at the University of Illinois.

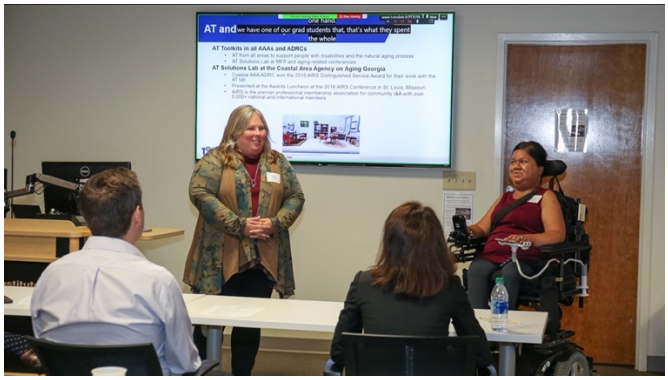
TechSAge team members pose with Stretch Robot at the LIFE Home (July 2020). Pictured: Harshal Mahajan, Travis Kadylak, Wendy Rogers, & Megan Bayles

PROJECT SPOTLIGHT

Training

In addition to supporting people aging with long-term disabilities through research and development, TechSAge continued to promote awareness of the needs of this population and to educate others on the importance of accessibility. Led by Carolyn Phillips, Director of Tools for Life (Georgia's AT Act Program) and Director of Services and Learning at Georgia Tech's Center for Inclusive Design and Innovation, TechSAge training projects have helped researchers and students understand and practice inclusive habits through innovative programming.

As part of the T1 Blended Online and In-Person Learning Program, TechSAge has supported a variety of academic courses, internships, and research assistantships for students at the undergraduate and graduate levels. These immersive student programs were designed to emphasize teaching the fundamentals of accessibility and universal design. Carolyn noted, "we're taking that deeper dive investing in our students who are going to be the future developers, designers, planners, and making sure that they are thinking about inclusive design and about people with disabilities as they age."



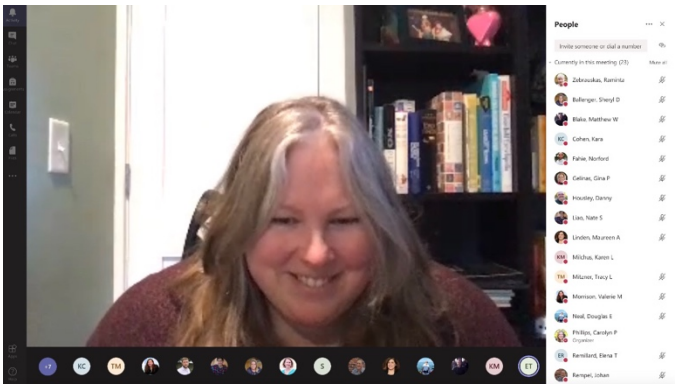
Carolyn Phillips and Liz Persaud presenting at the Technology and Aging Summit at Georgia Tech (August 2019)

Screenshot of training webinar that introduces moderators Carolyn Phillips and Liz Persaud (July 2021)

Outside of the traditional classroom, TechSAge training efforts have included podcasts, webinars, and design workbooks designed to engage broader audiences, including researchers and professionals across a range of disciplines. Specific topics covered accessibility how-to's; 'Disability 101': tips for communication; and inclusive human-centered design. For archived content, see the TechSAge Resources page.

T2 TechSAge Design Competition project, led by the TechSAge training team, is aimed at inspiring students to design innovative technology-based solutions to support people aging with disabilities. A planned hackathon at Georgia Tech in 2020 was postponed. However, the team is developing plans for future competitions at Georgia Tech, the University of Illinois, and beyond, with flexible options for remote participation.

Liz Persaud using the Vgo telepresence robot for a remote conversation.



Carolyn Phillips shares training updates with the team at the Center for Inclusive Design and Innovation (Spring 2021)

Training team member, Liz Persaud, shared insights on how the team transitioned to offering presentations and trainings 100% online as a result of the COVID-19 pandemic. She noted, “Accessibility is at the forefront, whether in-person or online. Even prior to COVID, when we were doing trainings in-person, there was always some piece of it that was online, with captioning and interpreting available, and a virtual component for people to be able to chat with us.” Transportation, scheduling, and mobility limitations are just a few of the many reasons in-person events can be challenging for people with disabilities to attend. Liz went on to say that the shift towards online event participation has been a welcomed change among many in the disability community.

Carolyn and Liz, along with their services and learning team at CIDI, have spent the last year working with the Centers for Disease Control and Prevention (CDC) Foundation towards the goal of making public health information about COVID-19 accessible. Topics cover symptoms of coronavirus, vaccinations, safety recommendations and more. Liz shared, “We’re targeting three specific groups within the disability community: individuals who are blind or have vision related disabilities, individuals that need ASL [American Sign Language], so who are deaf, or have hearing related disabilities, and then individuals that benefit from plain language, so that could be individuals with intellectual or cognitive disabilities. Check out the complete archive of accessible resources available in Braille, ASL, plain language and more on the microsite: COVID-19 Accessible Resources.

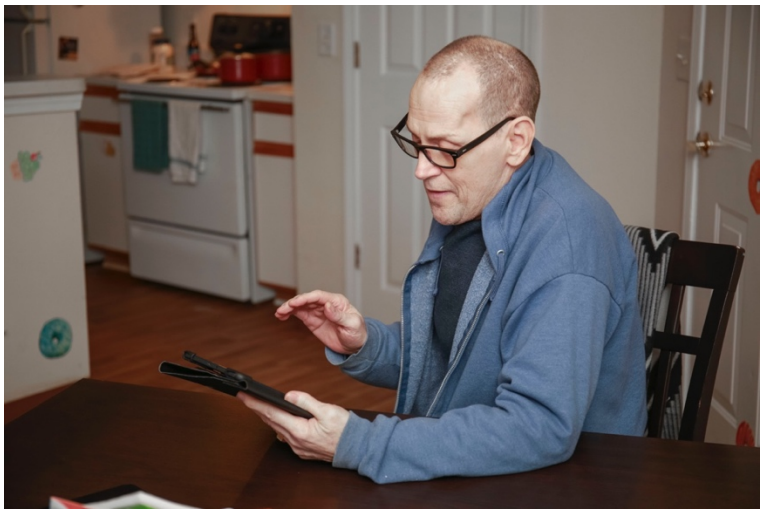
COVID-19 Accessible Resources graphic

In reflecting on COVID-19, Carolyn noted, “We've done a lot of emergency work in our days, Liz and I together as a team, but this one has just been heartbreaking on a lot of levels. I'm hoping that we can change the culture of public health and public health literacy." With over 1 million views and 224,000 unique visitors to the microsite and growing, it is safe to say the TechSAge training team is certainly making an impact in supporting access to information for people with disabilities as the pandemic continues.

Both Carolyn and Liz are personally and professionally committed to promoting accessibility and inclusion. Liz shared, “We often say in our presentations out in the world that 'disability is often a consequence of the environment'. If something is not accessible, or not universally designed, it becomes a barrier. All of a sudden, it's about Liz, who uses a wheelchair, Liz, who can't do this, or who can't do that. But if something is accessible, for example, if I don't have to struggle to pick up a book because it's now in electronic format, that's accessible to me. So for me, accessibility is a lifeline.” In looking towards the future, Carolyn said, “Our job is far from over, when it comes to designing worlds, virtually and the built environment, where people can truly navigate in a way that's equitable and that is inclusive. We’ve got to be proactive and think holistically about supporting our whole community”.

Story by Tiffany Khaikham & Elena Remillard

FEATURED ARTICLE



Little is known about the everyday activity challenges people aging with long-term mobility disabilities experience. To effectively design technologies that support these individuals, we must have an in-depth, contextual understanding of their unique activity support needs. A recently published TechSAge article in the Disability and Health Journal explores the specific challenges people aging with mobility disabilities face in carrying out a wide range of daily activities in the home and community, as well as the responses they employ to overcome these challenges. Learn more about findings from the Aging Concerns, Challenges, and Everyday Solution Strategies (ACCESS) study in the article by Koon, Remillard, Mitzner, and Rogers.

*This article was highlighted in Research In Focus: A Weekly Digest of New Research from the NIDILRR Community.

TELEWELLNESS TOOL

Check out the latest addition to our TechSAge Tools series:

Guidelines for Delivering Telewellness Programs to Older Adults with Disabilities
This tool provides guidelines for designing wellness classes delivered via video conferencing, or “telewellness” classes, for older adults with disabilities. It includes key considerations in the design and execution of telewellness programs, (e.g., software selection, safety, class organization and logistics, social time structure, and technical support), which are informed by our experience developing and conducting a Tele Tai Chi program as part of a clinical trial.

Screenshot of an online tai chi class broadcasted to a group of participants on Zoom.

2021 GRADUATES

We asked a few graduates to share: **What have you enjoyed most about your involvement in TechSAge research?**

"What I've enjoyed most about my experience at TechSAge is being able to utilize the skills I've learned in class in a real-world setting and being provided with the creative freedom to do so in an innovative way." - Lisa Le

"My experience with TechSAge allowed me to understand first-hand how research should be a collaborative, community-focused, and inclusive space. This collective exploration is something I hope to continue expanding upon in my career." - Jennifer Lee

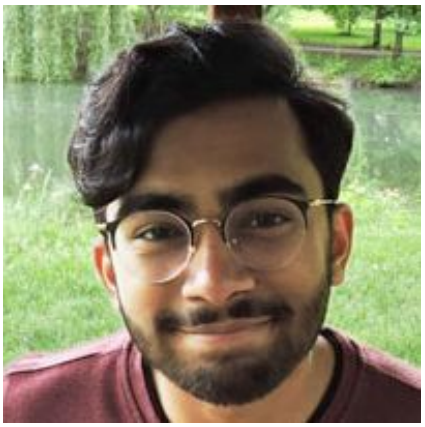
AWARDS AND RECOGNITIONS

Libak Abou, Ph.D. student in Kinesiology at Illinois, received the Laura J. Huelster Scholarship Award as part of the 2021 Department of Kinesiology and Community Health Awards. Libak investigates fall prediction among people living with spinal cord injury, with the goal of improving evidence-based practice in physical therapy.

Kenneth Blocker, Ph.D. student in the Cognitive Science of Teaching and Learning program at Illinois, received the Barak Rosenshine Award – a College of Education award granted to a student based on their academic merit, professional experience, public service, and commitment to the field of Education.

Roshanak Khaleghi completed her Ph.D in Industrial Engineering at Illinois. On TechSAge, she assisted with usability assessments of technology solutions/applications that can be integrated with Amazon Alexa to address the needs of older adults in controlling their home environment and maintaining routine health activities. She is now working as a Quantitative AVP in Americas Model Risk Management Department of MUFG Bank in Toronto, Canada.

Romee Maitra supported TechSAge as a volunteer intern during her summer breaks from high school, assisting with a variety of tasks including literature reviews, social media, as well as research support for the Tele Tai Chi project. Romee recently graduated from Johns Creek High School and will be attending the University of Georgia this Fall to study Genetics



Vikram Ramavarapu is a Math and Computer Science major at Illinois who has been working on the D4 Voice-Activated Digital Assistants project. Building on this work, he was recently awarded a TechSAge App Factory award to support building an Amazon Alexa app that guides the user through using the different Alexa features and curates different usable apps.

Widya Ramadhani, a Ph.D. student in Architecture, was selected as a Barbara A. Yates Fellow from the Women and Gender in Global Perspectives Program at the University of Illinois. The Barbara A. Yates Fellowship is designed to support policy-oriented research on socioeconomic issues related to women and gender in developing countries.

STAFF SPOTLIGHTS

Tiffany Khaikham, our TechSAge Communications Intern, is an undergraduate business student at Georgia Tech. Tiffany manages the Center's social media presence and develops new promotional content to highlight accomplishments and news. She is also actively involved with website content management, as well as the development of this newsletter. Her interests include experimenting with graphic design tools and social media analytics. In her free time, Tiffany enjoys playing soccer and spending time with her friends and family.

TechSAge investigator, Jacob Sosnoff, is now the associate dean of research at the School of Health Professions, University of Kansas Medical Center (KUMC) in Kansas City, Kansas. He also has a faculty appointment in the Department of Physical Therapy and Rehabilitation Science. Read the news story on his new role. Jacob was also recently recognized as a world expert on accidental falls by Expertscape's PubMed-based algorithms. He is in the top 0.1% of scholars writing about Accidental Falls over the past 10 years.

Brian Pastor, who has been a member of the TechSAge team since 2018, has taken a new role as the Adult Protective Services Program Administrator for the State of Illinois Department on Aging. He will direct the state-wide program that works to prevent abuse of older adults and those with disabilities, connecting those who have experienced abuse with services and promoting recovery. He will also act as a policy expert in this field, working with lawmakers to ensure that new laws complement the program and its missions. Best wishes, Brian. We will miss you!

PRESENTATIONS AND EVENTS

Catch up with recent TechSAge conference presentations. Links to archived content are included below, where available.

Rehabilitation Engineering Society of North America (RESNA) 2021

2021 International Symposium on Human Factors and Ergonomics in Health Care

American Public Health Association (APHA) 2020

View poster: Exploring Exercise Challenges & Response Strategies among Adults Aging with Long-Term Mobility Disability (Lyndsie Koon)

International Society for Gerontechnology (ISG) World Conference 2020

View poster: Contextualizing Smart Home Technologies with Augmented Reality Tools to Facilitate Aging in Place(Laura Levy)

Human Factors and Ergonomics Society (HFES) International Annual Meeting

Proceedings paper available upon request

TechSAge Presentations:

- Understanding Exercise Challenges and Barriers for Older Adults with Mobility Disabilities (Qiong 'Tina' Nie et al.)
- Digital Home Assistants and Aging: Initial Perspectives from Novice Older Adult Users (Kenneth Blocker et al.)

12th Annual DIVERSITY Symposium

Understanding Accessibility as Inclusion: Georgia Tech's Pathway to Accessibility

2020 Georgia Tech Diversity Symposium

Watch panel presentation video on the Principles of Accessible Design, featuring TechSAge Co-Director, Jon Sanford. presenting "Design for Diversity: Design for One or Design for All" (start at 4:55 in video).

American Congress of Rehabilitation Medicine (ACRM) Annual Conference

Recorded presentations available:

- Technology Advances to Support People Aging with Long-Term Mobility Disabilities (Wendy Rogers, Brian Jones, Tracy Mitzner, Harshal Mahajan, Laura Rice, & Elena Remillard)
- Expression of Positive and Negative Affect When Discussing Everyday Challenges by Persons Aging with Mobility Disabilities (Ahmad Rathor)

Gerontological Society of America 2020

Recorded presentations available:

- Identifying the Scope of Activity Support Needs for individuals Aging-in-Place with a Disability (Megan Bayles)
- An Inclusive Design Approach in Translating an In-Person Evidence-Based Tai Chi Intervention to an Online Platform for Adults Aging with Long-Term Mobility Disability (Tracy Mitzner)
- Assessing and Selecting Digital Home Assistant Health Applications for Older Adults with Long-Term Mobility Disabilities (Travis Kadylak)

PARTICIPANT SPOTLIGHT

Yaser (Yas) Abdallah is not only one of our most active research participants, but also a fierce advocate for people with disabilities. He serves as a District Activist Leader for the National MS Society and is a Georgia Grassroots Advocate. Throughout his life, Yas has always embraced new technologies because of the incredible impact they have had on improving his life and the lives of others with aging with disabilities. At TechSAge, he has participated in a wide range of studies, from interview studies to technology evaluations. He often serves as our go-to pilot participant, given his ability to provide insightful feedback on study materials and design. Yas is passionate about making sure that people aging with disabilities are properly represented in research by using his strong network to recruit study participants and even helped arrange a TechSAge photoshoot to showcase real faces of people aging with disabilities.
Story by Sofi Soto. Thanks to Sofi for her work on TechSAge communications over the past 2 years.

OTHER NEWS

Recently Funded Grants by TechSAge Staff

- *Feasibility and Efficacy of a Fear of Falling Intervention for Wheelchair Users with Multiple Sclerosis;* NIDILRR Disability and Rehabilitation Research Projects Program Award of $2.46 million (PI: Harshal P. Mahajan, Co-Is: Laura Rice, Jacob Sosnoff)
- *Wayfinding Assistance for Persons with Visual Impairments via Mobile Robotics;* Illinois Campus Research Board Research Support Award of $30,000 (Co-PIs: Katherine Driggs-Campbell & Wendy Rogers)
- *Soft and Dexterous Service Robot Configurations to Support Healthcare at Home for Older Adults;* Jump Applied Research through Community Health through Engineering and Simulation (ARCHES) Grant from OSF HealthCare Total award of $74,086 (Co-PIs: Girish Krishnan, Wendy Rogers, & Ryan Riech)

Media Features

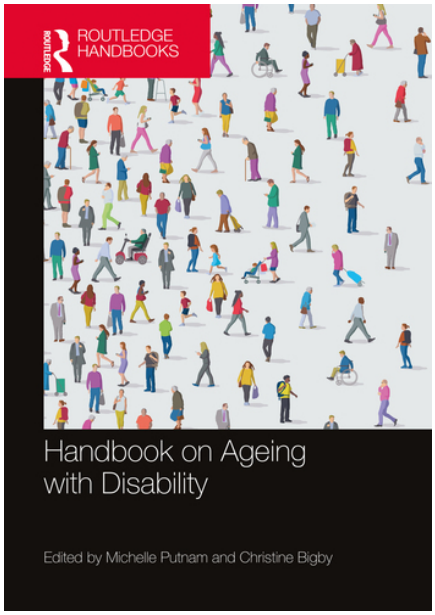
- American Psychological Association (APA) monitor feature article on how psychologists are “optimizing tech for older adults" highlights the user-centered research efforts of TechSAge Investigators Wendy Rogers, Tracy Mitzner, & Lyndsie Koon.
- The Verge article, “Apple’s new health features bring new focus to elder care technology”, discusses Apple's new walking steadiness indicator and features an interview with Investigator Jacob Sosnoff on the potential for this iPhone feature to increase users' awareness of their falls risk and help prevent falls.

SELECT PUBLICATIONS

- Abou, L., Fliflet, A., Hawari, L., Presti, P., Sosnoff, J.J., Mahajan, H.P. Frechette, M.L., & Rice, L.A. (In Press) Sensitivity of Apple Watch fall detection feature among wheelchair users, *Assistive Technology*,
- Rogers, W. A., Ramadhani, W. A., & Harris, M. T. (2020). Defining aging in place: The intersectionality of space, person, and time. *Innovation in Aging, 4*, 1–11.
- Sanford, J. A., & Remillard, E. T. (2020). Design for one is design for all: The past, present and future of universal design as a strategy for aging-in-place with disability. In M. Putnam, C. Bigby (Eds.), *Handbook on Ageing with Disability* (pp.169-185). Taylor & Francis/Routledge (Informa UK Limited).

All publications available upon request

HANDBOOK ON AGEING WITH DISABILITY



Edited by Michelle Putnam (TechSAge Advisory Board Member) and Christine Bigby

"The Handbook on Aging with Disability is the first to pull together knowledge about the experience of aging with disability. It provides a broad look at scholarship in this developing field and across different groups of people with disability in order to form a better understanding of commonalities across groups and identify unique facets of aging within specific groups. Drawing from academic, personal, and clinical perspectives, the chapters address topics stemming from how the aging with disability experience is framed, the heterogeneity of the population aging with disability and the disability experience"

*Features book chapters by TechSAge Investigators (Jon Sanford & Elena Remillard) and Advisory Board Members (Margaret Campbell, Marcia Finlayson, & Michelle Putnam)

Get 20% Discount on Book

PARTICIPANT REGISTRY

We maintain a registry of names of people who are interested in being contacted about research studies. Opportunities include: surveys, focus groups, interviews, and technology evaluations. Depending on the study, you may be able to participate on the phone, online, on campus, at your home, or in other locations. Compensation varies by study.

Interested in joining? We need to ask you a few questions about yourself to see which studies you might be eligible for and match your interests with our researchers. This information is for screening purposes only and will not be shared with anyone outside of our research team. Click link to complete the brief survey: Join the Participant Registry.

Researcher talks with participant at her home (February 2019).

STUDY OPPORTUNITIES

Tele Tai Chi Study

Seeking older adults with mobility challenges for an online, seated tai chi class

We are conducting a clinical trial for 'Tele Tai Chi' – a virtual, seated, group tai chi class for older adults with long-term mobility disabilities. Participation involves completing: an 8-week program with two 1-hour classes per week on Zoom, questionnaires, and an interview.

Participants must:

- be between the ages of 60-80
- have mobility challenges for at least 10 years
- and have access to a computer or tablet with a webcam and internet access

Up to $60 compensation
Click here for study flyer

Find Wheels: A Detection System to Monitor and Manage Falls among Wheelchair Users

Seeking wheelchair and scooter users to evaluate a prototype fall detection device. Participation involves: wearing device for 12 weeks, filling out surveys, and being interviewed after wearing the device.

Participants must:

- Use a wheelchair (power or manual) or scooter for at least 75% of your mobility
- Have used a wheelchair or scooter for at least 1 year
- Have a self-reported fall history (at least 1 fall in the past 3 years)
- Have access to a smart phone

$60 compensation
Click here for study flyer

Aging Concerns, Challenges, and Everyday Solution Strategies (ACCESS)

We are conducting a study that explores the everyday activities and challenges among older adults with long-term disabilities. Participation involves: an interview completed via Zoom or phone (1-1.5 hours) and questionnaires (30-45 minutes)

We are seeking individuals (ages 60-80) in the following 3 groups:

- Multiple sclerosis (MS) study flyer
- Vision loss due to glaucoma or macular degeneration study flyer
- Late-deafened (hearing loss that occurred after development of speech and language) study flyer

*Must have MS, vision loss, or hearing loss for at least 10 years.

Compensation: $45 in Amazon e-codes
For full details, see individual study flyers linked above.

UPCOMING EVENTS

Human Factors and Ergonomics Society (HFES) 65th International Annual Meeting

- In-person event: October 4 - 7, 2021 at the Baltimore Marriott Waterfront Hotel in Baltimore, MD
- Online edition: October 25 - 27, 2021

Gerontological Society of America 2021 Annual Scientific Meeting

- In-person event: November 10 - 13, 2021 in Phoenix, AZ

American Public Health Association (APHA) 2021

- October 24 - 27, 2021 in Denver, CO
- In-person and online event

TECHSAGE MISSION

- to support and empower people with chronic conditions and long-term impairments to age-in-place
- through increasing knowledge about, availability of, and access to effective design and technologies
- that enable individuals to sustain independence; maintain health; engage safely in basic activities at home and in the community; and fully participate in society.

FOLLOW US

For more information on TechSAge, visit our website:
www.TechSAgeRERC.org

Rehabilitation Engineering Research Center on Technologies to Support Aging-in-Place for People with Long-Term Disabilities (RERC TechSAge). TechSAge is funded by grant #90REGE0006-01-00 from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), a Center in the Administration for Community Living (ACL), Department of Health and Human Services (HHS).