

to the Internet of Things (IoT), provide great promise and potential to support successful aging-in-place for people with long-term disabilities. This symposium highlights ongoing research at the TechSAGE Rehabilitation Engineering Research Center to identify technology needs and develop/adapt new technologies to promote independence, health, and participation of this population. To understand user needs, Harris et al. will present findings from a large-scale interview study with older adults with long-term vision and mobility disabilities (N=120) that explored specific task-based challenges with community activities (e.g., going to entertainment events, volunteering) as well as solutions and strategies to overcome them. Koon et al. will present findings on perceived facilitators and barriers to using digital assistants (e.g., Amazon Alexa) to facilitate a variety of everyday tasks at home, from shopping to communicating with others, among adults aging with mobility disabilities. Levy et al. will discuss findings from research driving the creation of augmented reality tools that can enable individuals to experience how IoT devices, such as smart thermostats and lightbulbs, could be used within the context of one's own abilities and home. Mitzner et al., will describe the development of a Tele Tai Chi intervention for older adults with long-term mobility disabilities that employs teleconferencing software to translate an in-person, evidence-based class to an online, social experience. TechSAGE Program Officer, Sarah Ruiz (National Institute on Disability, Independent Living, and Rehabilitation Research), will serve as the discussant.

#### **A TELEWELLNESS APPROACH TO REDUCE BARRIERS TO GROUP EXERCISE FOR ADULTS AGING WITH MOBILITY DISABILITY**

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Group exercise classes have the potential to provide physical, cognitive, and emotional health benefits, through the physical activity performed as well as the social interaction among class participants. Substantial barriers exist for adults aging with lower-body mobility disabilities to engage in group exercise classes, including lack of transportation to classes, inaccessible buildings where classes are held, and lack of appropriate modifications offered for this population of older adults. Just as telehealth interventions have reduced barriers to healthcare, telewellness interventions can reduce barriers to engaging in wellness activities, such as group exercise classes. We will discuss a research study employing teleconferencing software to translate an evidence-based group tai chi class for adults aging with lower-body mobility disabilities. We will present the adaptation requirements identified to test the efficacy of a telewellness intervention for improving increasing social interaction and positive health behaviors (i.e., physical exercise frequency) for adults aging with disabilities.

#### **SUPPORTING AGING IN PLACE WITH THE INTERNET OF THINGS: MEETING CHALLENGES OF USE THROUGH AUGMENTED REALITY TOOLS**

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Internet of Things (IoT) devices (including smart thermostats, lightbulbs, and door locks) have the potential to greatly enhance independence and promote aging-in-place among older adults with mobility disabilities. However, these devices require extensive information technology expertise to select, configure, use, and adapt to meet one's needs and this creates considerable barriers to their adoption, acceptance, and utilization. Meanwhile, increasingly available consumer augmented reality (AR) technologies can enable individuals to experience how IoT function and are used within the context of one's own abilities and home. This may provide potential users an effective means of overcoming barriers to adoption, acceptance, and utilization of IoT to support aging in place. We present preliminary results from a participatory design study of older adults with mobility disabilities on the use of AR on a smart phone device to support IoT understanding.

#### **IDENTIFYING COMMUNITY PARTICIPATION CHALLENGES FOR ADULTS AGING WITH MOBILITY AND VISION DISABILITIES**

Maurita T. Harris,<sup>1</sup> Lyndsie M. Koon,<sup>1</sup> Elena T. Remillard,<sup>2</sup> and Wendy A. Rogers<sup>1</sup>, *1. University of Illinois at Urbana Champaign, Champaign, Illinois, United States, 2. Georgia Institute of Technology, Atlanta, Georgia, United States*

There are growing numbers of older adults with mobility and vision disabilities acquired in early to mid-life who are a part of a population described as "aging with disability". For these individuals, the addition of normative age-related declines (e.g., vision loss, arthritis) on top of a long-term disability can create extensive barriers to community participation. We present findings on activity challenges with community participation among older adults with long-term vision and mobility disabilities (N=120) from the Aging Concerns, Challenges, and Everyday Solution Strategies (ACCESS) interview study. Results provide detailed insights on the specific task-based challenges experienced when engaging in one's community (e.g., going to entertainment events, doing activities with a group or organization, and participating in religious services and activities) as well as the solutions and strategies employed to overcome those challenges. Findings provide guidance for the design of supportive technologies that promote participation and independence for this understudied population.

#### **VOICE-ACTIVATED DIGITAL ASSISTANTS: PERCEPTIONS FROM NOVICE USERS WITH LONG-TERM MOBILITY DISABILITY**

Lyndsie M. Koon,<sup>1</sup> Kenneth Blocker,<sup>2</sup> and Wendy Rogers<sup>3</sup>, *1. University of Illinois, Urbana-Champaign, Illinois, United States, 2. University of Illinois at Urbana Champaign, Champaign, Illinois, United States, 3. University of Illinois, Champaign, Illinois, United States*

Voice-activated digital assistants (e.g., Amazon Echo, Google Home) are an emerging technology that have great potential to provide support for adults aging with a long-term mobility disability. Digital assistant technologies allow the user to perform a variety of everyday tasks and activities through voice interactions. Such tasks may include environmental control (e.g., turning on/off lights, voice-activated temperature control); supporting self-health management