the control group declined significantly in both. Problems with the use of the technology were categorized in 4 areas: person, computer, X10 products, and home. Solutions were identified for each area. Participants benefited from the smart home technology and 91 percent recommended its use to others.

Johnson, J., Ravenport, R. (2007) **Consumer feedback on smart home applications.** *Topics in Geriatric Rehabilitation, 23(1), 60-72.* NARIC Accession Number: J52100. Project Number: H133E010106.
Abstract: Three focus groups of older adults with various impairments were held at the University of Florida GatorTech smart home. A smart home is an environment constructed with various technological applications and devices to assist the residents in performing daily activities. A structured discussion followed the demonstration of each of the following technologies: (1) tracking system, (2) remote monitoring, (3) voice activation, (4) smart microwave, (5) smart mailbox, (6) smart front door, (7) cueing system, and (8) security. Content analysis was used to identify the participants' perceptions of smart home technology. Overall, most participants responded more favorably to the smart door and voice activation than any other smart technology application. The findings are being used to modify current smart home applications and guide future designs.

Howell, D., Cleary, K. (2007) **Rural seniors' perceptions of quality of life.** *Physical & Occupational Therapy in Geriatrics, 25(4), 55-71.* NARIC Accession Number: J52628.
Abstract: Interviews were conducted with 4 people aged 65 years and older living in rural areas of the United States to explore their perceptions of quality of life (QOL). Data were analyzed using a phenomenological method. Six themes emerged from the data: (1) autonomy, (2) altruism, (3) engagement in occupation, (4) responsibility for own life, (5) sense of community, and (6) changes in relationships. Each theme is described and supported with quotations from the participants. The findings may assist healthcare workers and community leaders in developing programs aimed at maintaining good QOL for seniors in rural areas.

Molin, G., Pettersson, C. (2007) **Living at home with acquired cognitive impairment — Can assistive technology help?** *Technology and Disability, 19(2/3), 91-101.* NARIC Accession Number: J53271.
Abstract: Article describes an ongoing project in Sweden aimed at delivering and installing new assistive technology in the homes of older adults with cognitive impairment caused by acquired brain injury. The project is client driven with the key objective being to help participants achieve quality of life and empowerment. The emphasis is on the processed involved and interagency cooperation. Preliminary finding are discussed and key issues for future research are identified.

Mann, W., Helal, A. (2006) **Promoting independence for older persons with disabilities: Selected papers from the 2006 international conference on aging, disability and independence.** *Assistive Technology Research Series, 18, 1-235.* NARIC Accession Number: R08809. Project Number: H133E010106.
Abstract: This book includes 25 of the papers submitted for the Third International Conference on Aging, Disability, and Independence (ICADI), held in February 2006.The focus of ICADI is on maintaining independence and active participation in family and community activities for older adults through the use of technology. The papers are organized according to 5 of the 7 ICADI tracks: (1) smart homes, (2) robotics, (3) telehealth, (4) home modifications and universal design, and (5) assistive devices and workplace adaptations.

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NIDRR Grantees on the Cutting Edge

Rehabilitation Engineering Research Center for Successful Aging with Disability: Optimizing Participation Through Technology (OPTT-RERC) *University of Southern California* (H133E080024) led by Carolee J. Winstein, PhD, PT (USC); Philip Requejo, PhD (Rancho Los Amigos). Margaret Campbell, PhD, Project Officer.
Abstract: The goal of this project is to enhance the lives of individuals aging with and into disability through: (1) development and delivery of cutting-edge technologies for identification, evaluation, and rehabilitation of motor processes that facilitate or impede functional performance, employment, and community participation for the intended beneficiaries; (2) employment of state-of-the-art data management, dissemination, and performance evaluation techniques to ensure that the knowledge and products emergent from the RERC are accessible for all intended beneficiaries; (3) assembly of a multidisciplinary team of experts in clinical rehabilitation, engineering, and gerontology, along with a select group of technology partners, and disability advocates to ensure that OPTT-RERC's short- and long-term outcome goals are successfully implemented; and (4) alignment of the clinical and technological strengths of several area programs into an integrated infrastructure to provide training opportunities for future rehabilitation researchers. The Dexterous Manipulation with the Fingertips Project evaluates a clinically useful metric and rehabilitation strategy for dynamic multifinger dexterity (R1) and, in collaboration with the second project area, develops a home-use gaming system to promote retention and improvement of dexterous manipulation via immersion technologies (D1). The Virtual Reality (VR) and Gaming for Home-Based Motor Assessment and Training Project develops low cost, home-based VR toolkits (VRT) for motor assessment and rehabilitation (D2) and investigates the efficacy of the VRT games for use in both the clinic setting and the home for individuals aging with and into disability (R2). The Optimizing Mobility in the Home and Community for Manual Wheelchair Users

What is aging in place?

The National Aging in Place Council defines it as "[t]he ability to continue to live in one's home safely, independently, and comfortably, regardless of age, income, or ability level. It means living in a familiar environment, and being able to participate in family and other community activities."

Visit **www.ageinplace.org** for more information.

*Please note: These abstracts have been modified. Full, unedited abstracts, as well as any available REHABDATA citations, are available at **naric.com**.*

Thousands of additional resources on these topics are available from NARIC's resource pages at www.naric.com/public

NIDRR's research in aging in place falls within the Health and Function and Technology priorities.

Project identifies optimal transfer and lifting mechanics to preserve the shoulder complex (R3) and uses VRT games for targeted and progressive shoulder exercise while sitting in a wheelchair (D3). The Neuromuscular Electrical Stimulation (NMES) for Mobility uses implantable wireless micro-stimulators to prevent recurrences of debilitating pressure ulcers in the middle age and older individuals with disability (D4).

Find out more at: www.isi.edu/research/rerc

Rehabilitation Engineering Research Center on Workplace Accommodations

Georgia Institute of Technology; Center for Assistive Technology and Environmental Access (CATEA) (H133E070026) led by Karen Milchus. Shelley Reeves, Project Officer.

Abstract: The Workplace Rehabilitation Engineering and Research Center (RERC) identifies, develops, and promotes new assistive and universally designed technologies that maximize independence and participation of people with disabilities in the workplace. It focuses on the application of universal design (UD) concepts to improve the utility of workplace tools and devices for all workers through research, development, training, and dissemination. Research activities investigate five topics identified by current RERC research: user needs, longitudinal cost/benefits of accommodations, strategies used by aging workers, the impact of policy on access to and utilization of accommodations, and the effect of accommodations on employee participation in the workplace. Several development activities create and validate new workplace assessment tools for use by practitioners and employees. Other development activities design, prototype, and evaluate new workplace accommodations. Universally designed workstations and human-computer interfaces are being developed. In addition, the Work RERC develops technology for workers with identified and unmet accommodation needs, including prompting aids for employees with developmental disabilities and accommodations for employees with communication disabilities. Finally, Work RERC training activities include both instruction and evaluation of training outcomes and will target VR professionals, workers with disabilities, and students interested in design and engineering.

Find out more at: www.workrerc.org

The Aging in Place Initiative is a partnership of the National Association of Area Agencies on Aging and Partners for Livable Communities. Their website is a great resource for best practices, workshops, grant opportunities, and more for agencies and organizations interested in creating safe, livable communities for seniors. **www.aginginplaceinitiative.org**

Where Can I Find More?

A quick keyword search is all you need to connect to a wealth of disability and rehabilitation research. NARIC's databases hold more than 80,000 resources. Visit **www.naric.com/research** to search for literature, current and past research projects, and organizations and agencies in the US and abroad.

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www.agingtech.org

Current Literature - Selections from REHABDATA

Wilson, D., Mitchell, J. (2009) **Effects of assistive technology on functional decline in people aging with a disability.** *Assistive Technology, 21(4), 208-217.* NARIC Accession Number: J57829. Project Number: H133B031002; H133B980024.

Abstract: Study investigated the impact of an assistive technology (AT) and home modification intervention on function for individuals who are aging with a disability. A total of 91 participants with polio, rheumatoid arthritis, cerebral palsy, spinal cord injury, stroke, and other impairments were randomly assigned the treatment or control group. The treatment group received an in-home evaluation of their equipment and home modification needs. All recommended AT and home modifications were provided and paid for in full or in part by the study. The control group received the standard community-available health care. Outcome data were collected at 12 and 24 months through in-home interviews using the Older Americans Resources and Services Instrument and the Functional Independence Measure (FIM), and through monthly telephone contact on the hours of in-home care, hospitalizations, and acquisition of AT. A significant "group by time" interaction for the FIM suggested a slower decline in function for the treatment group over 2 years. Further analyses found that the treatment group was more likely to use equipment to maintain independence vs. personal assistance. The results support the value of AT for adults aging with a disability and suggest that it be provided earlier in the aging process.

Vogel, C. (2008) **The live well collaborative: A new model for universities and companies to work together to meet the needs of 50+ consumers.** *Topics in Stroke Rehabilitation, 15(2), 103-108.* NARIC Accession Number: J54325. Project Number: H133B031127.

Abstract: Article discusses how consumers aged 50 years and older are affecting the process of designing and marketing new technology. The "baby boomers" lifestyle has created new opportunities for universities and companies to work together to meet the needs of aging consumers. The author proposes the development of a consortium that will coordinate university resources in design, engineering, business, and medical research with corporate research and development and marketing and design.

Sarmiento, K., Langlois, J. (2008) **"Help seniors live better, longer: Prevent brain injury": An overview of CDC's education initiative to prevent fall-related TBI among older adults.** *Journal of Head Trauma Rehabilitation, 23(3), 164-167.* NARIC Accession Number: J54520.

Abstract: Article describes the methods used and materials developed for a fall prevention initiative developed by the Centers for Disease Control and Prevention (CDC). The CDC developed the "Help Seniors Live Better, Longer: Prevent Brain Injury" initiative to help raise awareness about methods to prevent, recognize, and respond to fall-related traumatic brain injuries among older adults. To achieve this objective, the CDC identified 2 target audiences: (1) children of older adults and professional caregivers, and (2) national, state, and local organizations.

Tomita, M., Mann, W. (2007) **Use of currently available smart home technology by frail elders: Process and outcomes.** *Topics in Geriatric Rehabilitation, 23(1), 24-34.* NARIC Accession Number: J52096. Project Number: H133E010106.

Abstract: Study tested the feasibility and effectiveness of smart home technology by comparing the outcomes of frail elders who lived alone with and without a smart home system over a 2-year period. Treatment group participants were provided a computer with Internet access and X10-based smart home technology. The treatment group maintained physical and cognitive status while