

Featured NIDRR grantees

## 21st Century Research

**Think and Link: Email for Individuals with Cognitive Disabilities**, *Western Oregon University* (H133A010610) led by McKay Moore Sohlberg, PhD. Richard Johnson, EdD, Project Officer.

Abstract: This project improves the access and use of electronic mail by individuals with cognitive disabilities resulting from brain injury. Activities of this project include: (1) identifying the wide range of issues critical for long-term, effective use of email by people with cognitive disabilities; (2) developing a diagnostic protocol, a cyber-evaluation of the potential of a person with cognitive disabilities to use electronic communication; (3) developing a software toolkit that allows caregivers, support persons, and professionals to fit an individual user with a customized email system; (4) creating a virtual clinic that supports widespread dissemination and use of these materials by cognitive rehabilitation professionals. An open-source software site on the web allows other worldwide researchers to use the new tools and contribute tools of their own.

Find out more at: [www.think-and-link.org](http://www.think-and-link.org)

**ACCESS: Assisted Cognition in Community, Employment, and Support Settings**, *University of Washington* (H133A031739) led by Kurt Johnson, PhD. Delores Watkins, Project Officer.

Abstract: Project ACCESS investigates the use of assisted cognition as a tool for caregivers in supporting individuals with disabilities in living, working, and fully participating in community activities. The use of assisted cognition devices has the potential to increase an individual's independence and decrease their reliance on the family/friend/caregiver network and community support staff. Devices in development include the activity compass and the ADL Prompter. The activity compass meshes several technologies (Palm Pilot, GPS receiver, and wireless modem). Over time, the device learns a user's typical daily routines, monitors for variations, and then decides whether a prompt is necessary when a routine is unexpectedly changed. The ADL prompter monitors data collected by sensors embedded in a living or work environment. Using artificial intelligence software, the data from these sensors are interpreted and decisions made based upon the needs of the user. Although initially designed for people with Alzheimer's, these devices have applications as support tools for caregivers and people with disabilities since they potentially support "distributed caregiving" wherein the caregiver or family member monitors, prompts, and/or supports from a distance.

Find out more at: [cognitivetech.washington.edu](http://cognitivetech.washington.edu)

**Rehabilitation Research and Training Center on Aging with Developmental Disabilities**, *University of Illinois at Chicago* (H133B031134) led by Tamar Heller, PhD. Margaret Campbell, PhD, Project Officer.

Abstract: The mission of the RRTCADD is to have a sustained beneficial impact on the health and community inclusion of adults with intellectual and developmental disabilities (I/DD) as they age

Please note: These abstracts have been modified. Full, unedited abstracts, as well as any available REHABDATA citations, are available at [naric.com](http://naric.com)

through a coordinated set of research, training, and dissemination activities. One of the project's major goals is enhancing caregiving supports and transition planning among older caregivers and other family members. This goal is addressed through coordinated and complementary sets of activities within the core areas. To enhance caregiving supports and transition planning, RRTCADD research includes epidemiological surveys on family demographic and health characteristics, including families of minority backgrounds and families of persons with dual diagnoses of I/DD and psychiatric impairments; sibling roles and interventions in transition planning; and consumer direction in family support.

Find out more at: [www.uic.edu/orgs/rrtcammr](http://www.uic.edu/orgs/rrtcammr)

### **Southeastern Michigan Traumatic Brain Injury System**

(SEMTBIS), *Wayne State University and Rehabilitation Institute of Michigan* (H133A020515) led by Robin A. Hanks, PhD. Delores Watkins, Project Officer.

Abstract: The Southeastern Michigan Traumatic Brain Injury System (SEMTBIS) program conducts projects developed with the help of SEMTBIS consumers, as well as other members of the

Detroit community. Three studies evaluate: (1) a peer-mentoring intervention, (2) a dynamic system of survivor and significant-other well-being, and (3) resumption of driving after brain injury. Study 1 is a randomized controlled trial of a peer-mentoring program for both survivors and their caregivers. Study 2 studies 250 community-dwelling adults with TBI and their caregivers/significant others, exploring the relationship of survivor-caregiver situations with survivor distress and family dysfunction. It also studies whether or not social support acts as a moderating influence upon the well-being of persons with TBI.

Find out more at: [www.semtbis.org](http://www.semtbis.org)

**Caregiver and Environmental Influences on Outcome for Infants and Preschoolers with Traumatic Brain Injury**, *University of Texas Health Science Center at Houston* (H133G040279) led by Mary R. Prasad. A. Cate Miller, PhD, Project Officer.

Abstract: This project is guided by a transactional model of development which postulates that a child's eventual outcome is a result of transactions between the child's biological risk factors and a continuum of environmental conditions. Project 1 assesses predictors of outcome in infants and preschoolers with moderate or severe TBI who are 6 to 47 months of age in relation to socio-demographically matched comparison children. Child behavior, caregiver stress, and family functioning are expected to have a direct impact on outcome from TBI; however, the effect of brain injury on developmental outcomes is also expected to be partially mediated through the influence of these factors on the caregiver-child interaction. Project 2 pilots a randomized, controlled, home-based, caregiver-focused intervention for infants and preschoolers with TBI that enhances caregiver skills for stimulating cognitive development.

Find out more at: [www.kmrrec.org/rehabengineering](http://www.kmrrec.org/rehabengineering)

**For November, RehabWire splits its focus. In honor of Family Caregiver Month, we highlight NIDRR research on caregivers and their role in rehabilitation. To recognize Alzheimer's Awareness Month, we focus on articles and reports on Alzheimer's and its treatment.**

## Selections from REHABDATA

Heyn, P., Abreu, B. (2004) **The effects of exercise training on elderly persons with cognitive impairment and dementia: A meta-analysis.** *Archives of Physical Medicine and Rehabilitation*, 85(10), 1694-1704. NARIC Accession Number: J46760. Project Number: H133P040003; H133P990001.

Abstract: Article presents an analysis of research on the effects of exercise on older adults with Alzheimer's disease or related dementia. The 30 studies selected for review were limited to randomized trials evaluating exercise in adults 65 years of age or older with cognitive impairment. The studies included quantitative results for physical fitness, physical functioning, cognition, or behavior outcomes. The effect size was calculated for each outcome measure. Results showed a medium to large treatment effect for health-related physical fitness components, and an overall medium treatment effect for combined physical, cognitive, functional, and behavioral outcomes. The results provide preliminary evidence for the effectiveness of exercise treatments for people with dementia and related cognitive impairments.

Braddock, D., Rizzolo, M. (2004) **Emerging technologies and cognitive disability.** *Journal of Special Education Technology (JSET)*, 19(4), 49-56. NARIC Accession Number: J48744.

Abstract: Article discusses emerging technologies that may benefit people with cognitive disabilities, including intellectual and developmental disabilities, Alzheimer's disease and other dementias, severe and persistent mental illness, and stroke. Three areas of technology advancement are described: (1) personal support strategies (personal digital assistants, computer-assisted learning and communication, and universal design); (2) assisted care systems (smart houses, smart transportation and tracking technology, and personal robots); and (3) virtual technologies.

Giraldo, C., Helal, S. (2003) **Mobile assistant for Alzheimer patients.** In R. Simpson (Ed.), *Proceedings of the RESNA 26th International Conference: Technology and Disability: Research, Design, Practice and Policy.* NARIC Accession Number: O15606. Project Number: H133E010106.

Abstract: Describes the Mobile Patient Care-Giving Assistant (mPCA), a cognitive assistance system which integrates smart phones and wireless and visual sensors. The mPCA can potentially assist people with Alzheimer's disease in daily activities by means of reminders, orientation, context-sensitive teaching, and monitoring.

Liu, L., Miyazaki, M. (2004) **The feasibility of using videophones for assessing cognitively impaired seniors in their homes.** In D. Anson (Ed.), *Proceedings of the RESNA 27th International Conference: Technology and Disability: Research, Design, Practice and Policy.* NARIC Accession Number: O15767.

Abstract: Study examined the feasibility of using a plain old telephone system (POTS)-based videophone for interactions between health professionals and older adults with dementia and their caregivers. Interviewers administered the Mini-Mental State Exam and the Modified Mini-Mental State Exam to participants

with Alzheimer's disease and administered the Safety Assessment Scale and the Global Deterioration Scale to caregivers both face-to-face and via videophone. Results indicated that it is feasible to use a videophone for conducting interviews and cognitive screening tests using a POTS-based videophone.

Janicki, M., Dalton, A. (2005) **Providing group home care for adults with intellectual disabilities and Alzheimer's disease.** NARIC Accession Number: O16076. Project Number: H133B031134.

Abstract: Study examined service delivery in two samples of group homes specializing in dementia care for people with intellectual disabilities. The first sample of group homes in five different countries provided comparative international data on home designs, staffing, costs, and residents. The second sample of homes, from the United States and the United Kingdom, provided data on the impact of dementia. Major findings included: (1) staffing and design of homes varied but generally abided by general practices of dementia care, (2) home relied on existing resources to manage changes posed by dementia care, (3) program and environmental adaptations were implemented to address progression of dementia, and (4) residents with dementia presented more demands on staff time regarding hygiene maintenance and behavior management when compared to other residents not affected by dementia.

Bellenir, K. (Ed.). (2003) **Alzheimer's disease sourcebook.** *Health Reference Series.* NARIC Accession Number: R08402.

Abstract: Third edition provides basic consumer information concerning the warning signs of Alzheimer's disease (AD) and the symptoms of other dementias including: multi-infarct dementia, AIDS-related dementia, alcoholic dementia, Huntington's disease, Binswanger's disease, dementia with Lewy bodies, Pick's disease, delirium, and confusional states. Information is provided to help newly diagnosed patients and their caregivers understand and cope with the disease. Includes facts about long-term care issues and reports on research efforts in prevention, diagnosis, and treatment. A glossary and resource listings provide additional help and information.

Sifton, C. (2004) **Navigating the Alzheimer's journey: A compass for caregiving.** NARIC Accession Number: R08577.

Abstract: Author uses personal stories, professional experiences, and evidence-based research to provide a resource for family members who are caring for a person with Alzheimer's disease. Chapters discuss basic information on Alzheimer's disease and other dementias, how to communicate and interact successfully with someone who has dementia, how to manage activities of daily care, why challenging behaviors occur and how to respond to them, how to arrange the environment to support everyday functioning, how to capitalize on remaining abilities, when and how to get help, and what plans to make for the future.

For your calendar

2006 International Conference on  
Alzheimer's Disease and Related Disorders.  
July 15 - 20, Madrid, Spain.  
[www.alz.org/icad/overview.asp](http://www.alz.org/icad/overview.asp)

The Family Caregiver Alliance has fact sheets, guides, monographs, and other publications available to download at [www.caregiver.org](http://www.caregiver.org)