



## inside this issue

Assistive Technology Awareness Week & Disabilities & Assistive Technologies Expo	1
Rehabilitation Engineering Research Center	2
Coleman Institute 14th Annual Conference	2
Clinic Spotlight: Finding His Voice	3
Contribute to ATP	3
Meet Our Students	4
Now Hiring: Student Position	4

### DID YOU KNOW?

**1 IN 5 PEOPLE  
IN THE U.S. LIVES  
WITH A DISABILITY**

Assistive Technology Partners envisions a world where all persons with cognitive, sensory and/or physical disabilities are engaged in life at home, school, work and play, without barriers and without boundaries.

To receive the communicATor e-newsletter or to request a hard copy, contact us: [generalinfo@at-partners.org](mailto:generalinfo@at-partners.org) or call 303-315-1280.

Alternate formats available upon request.



## Assistive Technology Awareness Week & Disabilities and Assistive Technologies Expo

Governor Hickenlooper proclaimed October 5-11, 2014, Assistive Technology Awareness Week in Colorado. Organizations who serve people with disabilities geared up to remind people about the tools and resources that are available to improve the quality of an individual's life. Assistive Technology (AT) comes in many shapes and forms and can be as simple as hearing aids, a talking alarm clock, manual wheelchairs, or as sophisticated as a voice-activated computer system and stair climbing wheelchairs. AT tools can assist in dressing or cooking as well as helping people stay in communication with friends and family through specially adapted electronic devices such as computers or the telephone.

This year, Assistive Technology Partners (ATP) hosted the Disabilities & Assistive Technologies Expo at the Colorado Convention Center in collaboration with the Denver Commission for People with Disabilities. The Expo featured 60+ vendors showcasing the latest innovations in hardware, software, and AT devices and solutions for home, school, work and play. Colorado organizations that provide services to individuals with disabilities or to those who are experiencing problems associated with aging were also present. The Expo was free and open to the public. Attendance was steady throughout the event with over 300 individuals visiting. New technology for mobility, communication, positioning and learning were available for demonstration and trial as well as information on current research in the field.

Other events throughout the state included the Division of Vocational Rehabilitation open house which highlighted AT Awareness in a variety of ways. The American Council of the Blind of Colorado held the Raisin' Cane event in downtown Denver. The group challenged downtown employees and City/State officials to a blindfolded walk down the 16th Street Mall to support and increase awareness about eye health, accessibility and blind/visually impaired issues.

To keep up to date on all ATP Events, visit the Upcoming Events page on our website [www.assistivetechologypartners.org](http://www.assistivetechologypartners.org). ATP



## Rehabilitation Engineering Research Center

ATP is proud to announce a grant award, the Rehabilitation Engineering Research Center for Advancing Technologies for Adults with Cognitive Disabilities (RERC). This project, funded since 2004, received a five year extension for 2014-2019. It is funded by the National Institute on Disability and Rehabilitation Research (NIDRR), United States Department of Health and Human Services. In addition, the Coleman Institute for Cognitive Disabilities has provided additional funding to support the efforts of the RERC. The projects focus on research and engineering projects around product usability testing, Context aware technologies to facilitate workplace success, inclusive design and standards development.

In 2004 NIDRR initiated funding for the nation's first Rehabilitation Engineering Research Center for the Advancement of Cognitive Technologies (RERC-ACT). In a peer reviewed national competition, the University of Colorado succeeded in securing the Center. In 2009, the grant was re-competed and now again in 2014. Once again, the University of Colorado succeeded. The combined federal grants exceed \$14 million and the combined commitment by the Coleman Institute was

over \$1.6 million. Cathy Bodine, Associate Professor, Department of Bioengineering, University of Colorado Denver, continues to serve as principal investigator.

The RERC-ACT I incorporated 13 separate projects on the University of Colorado Denver, Anschutz, Boulder and Colorado Springs campuses in nine different academic units. Research partners from four other research universities in Illinois, California, Michigan and Kansas also participated. Other collaborators include the Institute for Matching Persons and Technology, Inc., AbleLink Technologies, Inc., AT Sciences, LLC, and CaringFamily. Projects fell into five categories: needs assessment projects; community living and technology; health, family support and technology; education, employment and technology; and technology standards development.

RERC-ACT II expanded on past successes and introduced new elements of research and development of cognitive technologies across the life span. Efforts were focused in three main areas: creating a product usability testing facility to focus rigorous industry-standard product testing protocols on cognitive assistive technology, developing a core software/sensor platform to support mobile animated agents used

for multiple applications, and developing infrastructure standards, long considered an important missing link for information technology access by people with cognitive disabilities.

The new RERC is designed to take advantage of the wealth of knowledge and expertise our team has developed over the past decade; and reflects the changing landscape in emerging and new technologies; as well as the growing importance of the role technology plays, or has the potential to play, in the lives of working age adults with cognitive disabilities around the world. The three research projects include: R1) Perform usability tests with technologies used by person with cognitive disabilities; R2) Conduct a study which focuses on a simulator enabling us to test specific User Interface features with specific populations; R3) Conduct an applied clinical trial of the Non-Linear Context-Aware Interactive Prompting Platform (IPP); with three major developmental components. The first project (D1) provides an easy to configure authoring system for nontechnical set-up of the IPP in warehouse environments. D2 combines workplace business systems monitoring (computerized inventory management/ business processes) with navigation and contextualized prompts; and, D3 collects ongoing data and compares the prescribed task to actual performance enabling error detection and correction.

Our focus is to expand our cognitive standards work, training, dissemination/knowledge utilization, and commercialization efforts. We are also welcoming three highly talented consultants to the RERC. They include: Dr. Sara Czaja, Social Scientist; Dr. Tim Greher, Neuropsychologist; and Dr. Tim Reistetter, Research Methodologist.



## CLINIC SPOTLIGHT Finding His Voice

Seven and a half years ago, Leander was born with abnormal airway structures that necessitated the placement of an artificial opening in his throat to maintain an open airway. Because the air that comes from his lungs is detoured through this hole, or stoma, Leander has no voice to speak with. However, that didn't stop him from communicating. At two and a half, Leander came to ATP with a repertoire of signs and gestures he used to make requests, initiate and terminate interactions, summon help and, of course, get an adult's attention.

Though Leander was successful when communicating with his family and those familiar with him, he was approaching preschool age. His mother wanted him to initiate communication with his peers and participate in a classroom. Consequently, Christina Perkins, MA, CCC-SLP worked with Leander and his family to identify an Augmentative Alternative Communication (AAC) device. It was important that Leander not only be able to operate the device, but that it would support his language development well into the future. Through guided home trials, research and practice supported unfailingly by his mother, an AAC device was purchased that allowed Leander to build his messages word by word.

Pushing the correct buttons in the correct order to generate the words Leander wanted to "say" was the first challenge

of their speech language therapy. Now, Leander is seven and a half. He attends 1st grade and he is learning the same curriculum as his classmates. The new challenge, as with any first grader, is learning to read and write with the help of his communication device. Most children learn to read by sounding out or decoding letters that form words. Later on, these skills evolve into sounding-out, recognizing and deconstructing unfamiliar compound words when reading connected text. For the teacher, the child's voiced attempts to read the word can provide important feedback on how successful the child is. Take away the voice, and many teachers lose their footing. "How do we know he's reading the text?" "How do we know his is reading the sounds correctly?" was often asked as Leander silently passed his index finger under each word in the story. But, his teachers learned to ask him comprehension questions and Leander learned to point to the text on the page, indicating the correct answer.

Leander is learning about the sound of language without the ability to generate it himself. Through his AAC device, he has demonstrated that he hears the word *dear* and will use a homonym in its place to

communicate his message. So when he says, "oh deer, on no!" when describing a story, it is clear that Leander is making similar spelling mistakes as other children his age and that he hears the long vowel. When Leander uses a button that says "good idea", in a sentence saying, "I have no good idea", then deletes the extra word to eloquently respond to his therapist that he "has no idea", it becomes clear that he is aware that the two words "good" and "idea" are different units with different meanings. He is reading. He is hearing and he is using his language in an incredibly creative way. Recently, Leander began attending public school and, much to the cringing of adults, was heard to echo language from his peers. He used his communication device to exclaim, "Oh hail" and "Oh shirt". These were just more examples of the brilliant way he used the limited vocabulary on his device to express himself.

Perhaps his near future holds a gentle lesson on socially appropriate language... AAC device or not!



## Contribute to Assistive Technology Partners

There is much more work to be done, and you can help. ATP relies heavily on donations, grants and other sources for funding. Your contribution allows ATP to provide a full-range of AT services to help persons with cognitive, sensory and/or physical disabilities reach their highest potential at home, work, school and play.

Donations can be made by phone at 303.315.1281 or mailed to Cathy Bodine at CUDenver/ATP, 601 East 18th Avenue, Suite 130, Denver, CO 80203. If you or someone you know can benefit from AT please contact us at 303.315.1280 or [cathy.bodine@ucdenver.edu](mailto:cathy.bodine@ucdenver.edu).



## Say Hello to Our New Students

ATP is home to some great University student employees and interns. We've recently had the pleasure of adding some new faces to our office. Check out the bios below to learn more about these amazing students.

Alexis Missel is a Leveling student, completing graduate school prerequisites at Metropolitan State University of Denver in the Speech, Language and Hearing Science Department. Alexis received her BA in Psychology with a minor in Philosophy from Mississippi State University. She currently works as a student assistant with the SWAAAC project where she helps manage incoming/outgoing educational and communication devices for the Loan Bank, as well as assists with event planning and marketing. Ultimately, Alexis plans to attend a Speech/Language Pathology Master's program to pursue a career clinically as a Speech/Language Pathologist.



Chelane Obland is an undergraduate student majoring in Public Health at University of Colorado Denver. After completing her BS, Chelane plans to attend medical school to pursue a career in anaesthesiology or neurology. She currently works as a student assistant in the ATP office and manages the SWAAAC website. She came to ATP to gain skills that will be useful in her future career along with experience working with medical professionals.

Eric Gunther is a current MS student in Bioengineering working towards completion of his Masters design project at ATP under the mentorship of Dr. Cathy Bodine. He is a graduate of Harvey Mudd College with a BS in Molecular Biology and was drawn to assistive technology as a way to bridge the gap between biological research and patient-oriented design. He is working toward the development of a radio frequency ID (RFID) based indoor positioning system to assist workers with cognitive disabilities in the navigation and completion of warehouse duties.



Allison Schultz is currently a research student at ATP under the mentorship of Dr. Cathy Bodine. She is a second year graduate student working towards a Bioengineering degree at the University of Colorado Denver, Anschutz Medical Campus. She loves helping people and wants to make the world a better place. Her project is to develop a 'Smart Cart' to enable people with cognitive disabilities to work more effectively.

## Coleman Institute 14th Annual Conference

Over 600 registrants from 40 states, the District of Columbia and 5 foreign countries gathered on October 9th, 2014 at the OMNI Interlocken for the Coleman Institute 14th Annual Conference. The Coleman Conference brings together faculty and students, engineers, computer and social scientists, clinicians, policy leaders, administrators, service providers, community leaders and self-advocates and families to explore how technology can improve the quality of life for people with cognitive disabilities.

The conference included 59 speakers and breakout presenters with more than 32 sessions and a joint Coleman Institute and ANCOR Technology Showcase. Assistive Technology Partners presented and provided volunteer services for this year's event.

Many of the video and PowerPoint presentations are linked from the [Agenda or the Listing of Breakout Sessions](#), as are the Conference presenters' biosketches, on the Coleman Institute website - [www.colemaninstitute.org](http://www.colemaninstitute.org).