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### 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.



## 5th Annual Déjà vu Rendezvous Event a Success!

Assistive Technology Partners (ATP) is deeply grateful for the ongoing support from the Colorado construction industry's annual Déjà vu Rendezvous event. Held May 11, 2012, this fifth event offered fabulous food catered by Gourmet Fine Catering and a chance to unite past and current members of the Colorado construction community while supporting a worthwhile cause. Proceeds help ATP meet our mission for persons with cognitive, sensory, and/or physical disabilities to reach their highest potential at home, school, work and play through the addition of appropriate assistive technologies to their lives. The event was hosted at Denver's Mile High Station and received record attendance and support of over \$200,000.

The event has grown tremendously since its inception five years ago. Created by retired Trautman & Shreve CEO, Bill Caile, the event is unique in its format. Déjà vu Rendezvous had more than 100 event sponsors, with UMB Bank leading the initiative as the presenting sponsor. GE Johnson, vice president, Mike Harms, chaired the planning committee of over fifteen construction industry leaders. Cathy Bodine, executive director of ATP, indicated, "We are so grateful to the local construction companies and our generous sponsors for choosing ATP to benefit from such a wonderful annual event." Funds will be used to support persons with disabilities, their families and others who are unable to afford services.

"This event was first envisioned as a way to annually celebrate the fantastic industry and relationships we have all established," said Harms. "It has grown beyond our wildest imaginations and we will continue to set our sights higher. The ultimate reward is that we are raising money for such a great cause." **ATP**

Branzan  
CFM  
Colorado Construction and Design  
CRL Associates, Inc.  
CRS/Surescape  
Bill and Sarah Caile  
E Light Electric

Encore Electric  
Ferguson  
GE Johnson  
GH Phipps  
Gourmet Catering  
Hensel Phelps  
Ludvik Electric  
McGraw Hill

Mortenson  
RK Foundation  
RK Mechanical  
Ron and Vicky Norby  
Saunders Construction Inc.  
Trautman & Shreve  
Wholesale Specialties Inc.



Social Robotics Senior Development Team from Colorado School of Mines with ATP Instructor/Engineering Coordinator Michael Melonis (center) and Gizmo the Robot.

## Mining Adaptive Technology

This past year, four senior design teams from Colorado School of Mines stepped up to the challenge of developing assistive technology for individuals with disabilities. Much of the credit and interest can be attributed to one of their professors, Dr. Joel Bach, who spent the previous semester on sabbatical at ATP. Dr. Bach quickly made the connection that the field of assistive technology (AT) has a plethora of challenges, and he has access to some incredibly smart students. The four projects included social robotics, brain to computer interface, adapted gaming, and mechanical cycling. They each addressed challenges associated with physical, developmental and cognitive disabilities. The Social Robotics project addressed the important early developmental milestone of reaching. Reaching is an important skill as it lays the foundation for physical exploration and later cognitive development. Research in other areas of child development has seen success with the use of robotics. Due to the repetition

that is necessary to encourage reach, a robot is an obvious supplement. This team created a robot they named Gizmo. Gizmo would slowly approach a child with disabilities who is either lying down or sitting in a supported position. As Gizmo approached the child, it would continually assess the child's interest. Depending on the situation, Gizmo would encourage reach using a number of different techniques. This project encountered numerous technical challenges. The most difficult to overcome was recognizing the child's interest through vision sensors and then instructing Gizmo with the appropriate response. The Non-invasive Brain to Computer Interface project is in its second year of development. The initial design team created a proof of concept. During this past year, the new team wanted to use the technology to drive a powered wheelchair. The system consisted of a headset with 14 sensors which are capable of capturing brain activity through the movement

of the muscles around the skull. This brain activity can then be translated into commands to drive a powered wheelchair. Once the commands are translated the request is sent to the wheelchair to: move the chair forward or backwards; turn left or right backwards; lift the chair up or down; or tilt the chair. The team completed a working prototype, but has concluded that a more sophisticated network



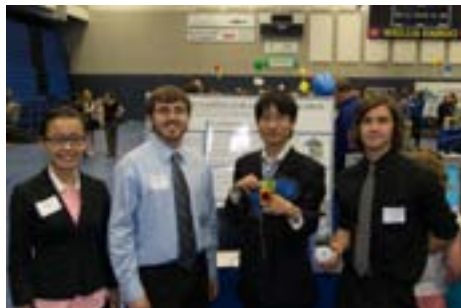
of sensors is necessary for a reliable acquisition of brain signals. The Adaptive Gaming Team performed a number of modifications to the WiiMote controller such that it would be more sensitive to movement capture. The most impressive modification was a special set of gaming gloves with movement sensors placed in the finger tips (using an accelerometer). These gloves detected slight movements that were translated and sent to the WiiMote. This allowed a person with limited upper extremity mobility the ability to control certain Wii games. The Adaptive Gaming Team also developed a single switch interface to the Sphero. The Sphero is a very cool new technology that looks like a ball, but can be controlled like a robot. A switch can be plugged into the headphone jack of an Android phone and cause the Sphero to move forward allowing the child to bowl or putt a golf ball.

(Continued on pg 3)



“Mining” cont.

They also created another modification, a helmet mount that allowed the Sphero to respond to head movements and change directions.



The Mechanical Cyclist Assist project was not sponsored by ATP, but included impressive assistive technology. The project team developed a prosthetic enhancement for an individual with a trans-femoral amputation. The client is an avid cyclist, but was not able to get out of the saddle and ride in a standing position. It was important to the client that the prosthetic enhancements continue to allow him to ride in a seated position and not require him to modify his bike. Also, he did not want the mechanism to affect his gait when walking around. This project

met the client’s needs and allowed him to ride in a standing position. It also won first place in the design competition against 43 other Senior Projects.

## Say Hello to Our Students

ATP is home to some great University student employees and interns. Our newest summer editions are Cara Campbell and Jordan Wehe, members of CU’s Undergraduate Pre Health Program (UPP). Cara and Jordan are spending their summer break as full time interns at ATP where they are shadowing clinicians, learning how to write literature reviews, cataloging AT devices and writing Facebook posts all while gaining invaluable knowledge about how AT can help individuals with disabilities. By participating as interns, Cara and Jordan will be able to network with current professionals, gain insight into solving current health care disparities and acquire knowledge and experiences that will accompany them in their career paths in medicine.

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## Free Single Switch Interfaces

An Eagle Scout Candidate from Boy Scout Troop 645, Connor D., has developed 15 single switch interfaces as part of his project to achieve the rank of Eagle. These switch interfaces look like a keyboard to the computer and can send one of 5 different characters to the computer (Enter, Space, Backspace, Tab, and Delete). Computer Games or other Applications that respond to these keystrokes can be driven using the switch interface. In addition, computer macros can respond to these keystrokes to perform other activities. Connor has built these single switch interfaces with the intent that they are given away to ATP clients.



*If you are interested in a free switch, please send an email to [generalinfo@assistivetechologypartners.com](mailto:generalinfo@assistivetechologypartners.com)*



### “Students” Continued

Matt Davidson is a PhD student in the Department of Engineering working on his dissertation involving the development of a new prosthetic wrist design which allows for a third degree of freedom. Matt is working with ATP in order to do usability testing and learning more about serving and working with people with disabilities. Please visit the About Us section of our webpage to learn more about ATP’s current and past student employees and interns.

## AT Awareness Week in October

Governor Hickenlooper has declared October 14-20, 2012 Assistive Technology Awareness Week in Colorado. Organizations who serve people with disabilities are gearing up to remind people about the tools and resources that are available to improve the quality of an individual’s life. Contact one of Colorado’s Assistive Technology Program sites to find opportunities in your area to learn more about AT. ATP’s Denver, Grand Junction and Colorado Springs offices will be hosting open houses on Thursday,

October 18. The Open Houses are open to the public. Or if you are already an expert in the field, find a way to raise awareness about AT with colleagues, family and friends.

*SETAC will be hosting a second open house on Monday, October 15 from 3:30-6:00 p.m. at Bellwether Nutrition and Rehabilitation Services in Pueblo (201 Lamkin Street, Suite 101A, Pueblo). This will be another chance to come and check out a variety of low and high tech AT for activities of daily living.*

## Adapted Home: Grand Junction

The Adapted Home is returning to Grand Junction. People with disabilities, caregivers and seniors who want to make their lives easier are invited to view the Adapted Home at the Mesa County Fairgrounds’ Community Building on Thursday, Friday and Saturday, August 16-18, 2012. The Adapted Home is free to the public and will be open from 9 a.m. to 6 p.m. Thursday and Friday and from 9 a.m. to 4 p.m. on Saturday. This unique 2,500 sq. ft. exhibit features a kitchen, bedroom, living room, bathroom, office and recreation room filled with devices to assist individuals with mild

or severe motor, communication, vision, hearing or cognitive disabilities. Items on display will range from low-tech items that can be bought in any hardware or department store to such high-tech innovations as talking microwaves and computer software for people with limited vision. Among the many dozens of items that will be displayed are phones for the hearing impaired; environmental control computer; electronic communication devices; and alternative keyboards

## Adapted Home: Colorado Springs

The Independence Center in Colorado Springs along with numerous other community groups are sponsoring the Adapted Home at the Freedom Financial Expo Center in the greater Pikes Peak region. The Adapted Home will be open to the public on Friday, October 5 and Saturday, October 6 from 8 a.m. to 6 p.m. The Freedom Financial Expo Center is located at 3650 North Nevada Avenue. For more information, please call The Independence Center at (719)471-8181 or Assistive Technology Partners’ Southeast Technical Assistance Center (SETAC) at (719)380-6229.



## Assistive Technology Expo Connects People with Solutions

On June 3, over 300 attendees joined us at The Conference Center at Adams 12 in Thornton, for ATPs first Assistive Technology Expo. The 2012 AT Expo: Technology for Living & Learning featured over 60 vendors showcasing the latest innovations in hardware, software, educational materials, 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 AT Expo Planning Committee is already working on next year’s event and would love to get your feedback. Please contact [elizabeth.woodruff@ucdenver.edu](mailto:elizabeth.woodruff@ucdenver.edu) with any comments or suggestions.*

## CLINIC SPOTLIGHT WHEELCHAIR PERFORMANCE

The Wheelchair Performance Clinic at Assistive Technology Partners has some new toys. Thanks to the generous donations of resources and time by the Assistive Technology Partners Advisory Council, our clinic now has an indoor manual wheelchair skills course. In the past, ATP clinicians have done all manual wheelchair skills training outside of the office on the corners of 18th and Pearl. While using the environment around us as a training tool has some great benefits, it also had a lot of drawbacks. Snow, rain and fast moving traffic seemed to pose more than a few problems during the skills training sessions with clients. Several of our Advisory Council members heard our plea and put together a variety of sizes of ramps and curbs made from wood and aluminium for ATP clients to practice in the safety of our basement. Used in

conjunction with our seating and mobility clinic and SmartWheel evaluations, the clinicians at ATP are able to provide a more comprehensive assessment and treatment for our clients. These ramps and curbs are portable and can be taken to community events to provide outreach skills training for individuals who can't come to us. ATP clinicians were able to attend the Colorado Jr. Wheelchair Camp in June. Children of all ages, both manual and power wheelchair users, were able to try their skills on the obstacle course. A special thanks to Rick Kinning, Donnie Hirschfield, Wes Torbett, Gary Constant and Tom Traxler for all their hard work and support.



**For more information on the featured wheelchairs, please visit:**

<http://www3.uch.edu/uchinsider/Wheelchair%20Performance.pdf>

<http://www3.uch.edu/uchinsider/Assistive%20Technologies.pdf>



## SWAAAC Celebrates 2011-12 School Year

*The SWAAAC project functions as a central AT resource to families, educators and related service providers in Colorado's public schools. SWAAAC is funded by the Colorado Department of Education (CDE) and provides services and support via phone, email, website, discussion forum, distance and on-site training.*

The school year ended with the 2012 SWAAAC Summer Symposium: Creating Access Through Technology in Education. Over 200 participants attended this 2-day event and represented districts and organizations from Colorado, Wyoming, New Mexico, Arizona and Oregon. Nationally renowned speakers provided full day workshops on apps that embrace Universal Design for Learning (UDL), free and inexpensive Web 2.0 tools and creating low-tech classroom solutions.

Jonathan Mooney, author and learning activist, mesmerized the audience with his motivational and eye opening keynote presentation. An award ceremony was also held during the Monday evening dinner and keynote presentation. Five SWAAAC members were nominated by their colleagues and received awards for their outstanding contributions. Award recipients included:

**SWAAACtastic Award:**

Sue Loeffler, Denver Public Schools

**Rookie of the Year Award:**

Elizabeth Levine Kerch, Aurora Public Schools

**CurATor Award:**

Marcia Blum, Englewood School District

**Making a Difference One Student at a Time Award:**

Carol Chop, St. Vrain Valley School District  
Ann Scott, Poudre School District