DEPARTMENT OF VETERANS AFFAIRS

Assistive Technology AT

PM&R Assistive Technology Programs

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AT Newsletter Edited by:
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Richmond AT Program Coordinator

2016 Hands-On Course in Assistive Technology

Experience is the best teacher

Using computer screen readers, wearing hearing aids, and driving a car with hand controls are some of the things VHA technicians and clinicians experienced during the Hands-On Assistive Technology Conference in September.

During the conference over 100 VHA staff from 53 facilities spent three days in San Pedro, California meeting experts, sharing resources and learning from other co-workers with a wide range of knowledge and abilities so they can take ideas and information back to their local VAMCs and clinics to help Veterans and other co-workers who work with Vets.

VA Staff were enthusiastic about the hands-on learning opportunity. "I am a kinesthetic learner and I need to learn hands-on," said Jessica Joson an Occupational Therapist at the Palo Alto VAMC. "Many of my Veterans are also kinesthetic learners and visual learners and I am glad I had the opportunity to attend events like this".

Beyond the usual benefits of hands-on learning, the conference also enhanced caregivers understanding from the Veterans point of view. For example, getting into a power wheel chair and tilting all the way back (something many spinal cord injury patients do every day) and learning to drive a car with hand control enables VHA staff to experience and understand some of the challenges our Vets face each day.

Better Connections and Better Resources to Serve our Veterans

Bill Wenninger, VACO Rehabilitation Planning Specialist who oversees the AT projects in Polytrauma Centers, believes bringing together experts from across the VA gives us the opportunity to speed up the learning and sharing of resources. "We want to give learning opportunities to staff in a way they are excited about it so they can take back knowledge and new skills to their home facilities to help spread the word even further about how AT helps Veterans. We want to deliver AT a way that is easy for Veterans to understand and apply it in a way that is meaningful for Veterans quality of care and life experiences."

Continuing to Sharing the Knowledge

To hear more voices from the AT Conference, see demonstration of Assistive Technology from VA co-workers, and become part of this community helping Veterans visit the AT Pulse page at: www.vapulse.net/groups/assistive-technology

AT Lab Highlights…Puget Sound

Exciting progress is being made with our AT program at the Puget Sound VA Medical Center. We welcome our newest addition, Ms. Nellie Thomas, MOTR/L. Nellie brings a wealth of experience and a strong background in Assistive Technology working with patients at the Boston Home, a residential facility for individuals with MS. In addition, she completed continuing education through the University of Pittsburg RST CERT/VA ATT course, including participation in the Deep Dive in May of 2016. We are thrilled to have her level of AT enthusiasm at our facility.

VA Puget Sound hosted our second annual AT Fair at our American Lake (Tacoma) campus in September. This provides Rehab Therapy Staff, Primary Care Providers, CLC Nursing Staff and Pain Clinic team members with hands-on experience and education on Assistive Technology. Various specialty services presented their AT devices and services including Audiology, Speech Language Pathology, Occupational Therapy, Physical Therapy, Blind Rehab, Rehab Medicine, Respiratory Therapy and Recreation Therapy. We hope to continue to make this annual event a priority for the medical center to provide continuing education on available technologies and services.

Speech Pathologist Laura Hardy is in the process of establishing a continuing education program to provide monthly training for SLP and other interested staff members. Training will provide in-depth hands-on opportunities to increase skills and comfort level with speech generating devices, cognitive prosthetics, access methods, etc.

With some excellent guidance from Melissa Oliver, we are making great strides in developing a formal collaborative seating and mobility clinic to improve processes for wheelchair referrals. Maureen Mclain, PT and Cathy Covey, OT are leading an interdisciplinary team and have taken this on as a Sprint Project for the medical center, which will help to drive our progress in this direction. We are looking forward to our next scheduled site visit by the national VA AT lead team in October, with a primary focus on this objective and other areas of our mobility program.

AT Lab Highlights…Eastern Colorado Health Care System

The Eastern Colorado Healthcare System Assistive Technology/Wheelchair program and the University of Pittsburgh RSTCE successfully hosted the third annual AT Deep Dive in Denver in May 2016. There were more than 25 participants along with local and national vendors and several community partners. The team recently added two new members- an Occupational Therapist (ATP) dedicated to the AT/WC program with years of experience working with individuals with spinal cord injuries and a COTA with years of VA and specifically mental health experience. We are actively seeking to fill an open Rehabilitation Engineer position to round out the team and prepare for the opening of a dedicated Spinal Cord Injury unit.

AT Lab Highlights…Tampa

OUTREACH

- Welcomed visitors and offered tours to the Orlando SimLearn team (Dr. Yasuharu Okuda, Lygia Arcaro and Harry Robinson), the Neulife Rehab Center team, the team at National Intrepid Center of Excellence as well as Albuquerque's Clinical Rehabilitation Engineer (Ben Salatin).
- We have completed 5 inter-facility VISN 8 E-consults.
- Responded to over 50 emails from providers at 15 different VA hospitals nationwide to offer AT support, collaboration and expertise.

PROFESSIONAL DEVELOPMENT

- Collaborated with SpeechVive, a device designed to facilitate communication for users with dysarthria related to neurodegenerative diseases like Parkinson's, vendor for product demonstration
- Attendance at the Paralyzed Veterans of America Summit 2016 +Expo in Orlando, FL
- Attendance at the VA Technology in Rehabilitation: A Hands-On Course in Assistive Technology in Long Beach, CA
- Collaborated with OrCam-MyEye, a wearable camera technology on the user's eyeglasses frame that converts visual information into the spoken word, vendor for product demonstration
- The James A. Haley VA Hospital in Tampa, FL recently hosted the 2-week Driver's Training Instructor Training Course. Six therapists traveled from other VA facilities for this specialized training so that they could be assigned to their VA Driver Rehabilitation Programs. The goal of this training conference is to prepare Driver Rehabilitation Specialists in new evaluation instruments and technological advances in adaptive equipment and vehicular modifications. The two-week curriculum consists of didactic content and demonstrations on vehicle structural modifications, mobility lift systems, road lessons, student instruction with patients, and other components required to administer a Driver Rehabilitation Program.

TELEHEALTH

- AT clinical video telehealth sessions for FY2016 approximate 35

CURRENT PROJECTS AND PERFORMANCE IMPROVEMENT

- Ongoing additions to comprehensive library of short video tutorials on various AT topics available for patient, staff and caregiver education
- Ongoing weekly team huddles as part of the Lean Six Sigma (LSS) model for improvement
- Ongoing participation in PI committee meetings and activities in preparation for CARF 2017 survey
- Working towards improved organization and management of inventory

SUCCESSES

- A Caregiver's Perspective on Assistive Technology: Delia Karahalios, wife to a USMC Veteran and Audiologist for the Veterans Affairs Healthcare System of Greater Los Angeles tells her personal story in how caring people at the VA and assistive technology have improved the life of her husband. https://youtu.be/ull_s69keAY
- Initial AT video tutorials for staff, patients and caregivers have been posted to the VA's National YouTube page as well as the Assistive Technology Group on VA Pulse

AT Lab Highlights…Richmond

AT Program Collaborates with Engineering Programs:

- Established an Educational Affiliation with University of Virginia Biomedical Engineering Department. and took our first Student groups this Spring.
- Took on our first BioMed Engineering student trainee this Fall.
- Presented at the University of Virginia's joint Biomedical Engineering Course about Prosthetics and Assistive Technology

AT Team Welcomes a New Team Member:

John Miller joined the Assistive Technology Team on July 10, 2016 as the AT Program's Rehab Technician. He is a recent graduate from University of Virginia's Master Program in BioMedical Engineering.

AT Outreach:

- Brian Burkhardt and Melissa Oliver presented at RESNA Annual Conference in Arlington, Virginia on Innovative Solutions in Assistive Technology.
- Hosted several AT Device in-services for rehabilitation staff.

Strategic Planning:

In October, AT Program hosted University of Pittsburgh AT group to assist in strategic planning for the next 3 years.

Congratulations to Melissa Oliver for being named one of the Innovator Network Specialists at McGuire VAMC.

VA Innovators Network

AT Lab Highlights…Minneapolis

Minneapolis SCI/D Center and AT Program host SCI/D Hub and Spoke Conference

The Minneapolis VA SCI/D and AT Program hosted a two-day conference May 10-11 of clinicians from the regional SCI/D Hub and Spoke system of care. Initial therapy breakout sessions included hands-on demonstrations of power wheelchair control configuration with joystick, head array and sip-and-puff interfaces. Follow-up breakout sessions focused on integration of power wheelchair control systems with Windows/ Apple/Android phones/tablets and reviewed voice control of Apple and Android devices. Sessions were taught by Brian Fay, PhD, Chris Schieffer, DPT, Crystal Stien, DPT, and Shanna Tubbs, DPT.

Bi-Annual Assistive Technology and Disability Services Fair a hit with Vets

The Minneapolis AT Program partnered with the Minneapolis Diversity Advisory Committee to host the third bi-annual Assistive Technology and Disability Services Fair on August 15, 2016. The Fair welcomed veterans, friends and family to visit with eight assistive technology vendors and ten local service agencies. Vendors included providers of computer access software/hardware, environmental control systems, augmentative communication, wheeled mobility and device mounting solutions. Service agencies represented concerns such as brain injury, stroke, dementia, spinal cord disease and government benefits. A big draw, new to this year's fair, was local providers of service dogs for veterans.

VETERAN STORY… Tyrone Stubbs

Tyrone's Story:

SSgt Tyrone Stubbs is from Bainbridge, GA and a huge fan of UGA. He signed up for the Army when he was a junior in High school and then left for boot camp in 1994 to Ft. Leonardwood, MO. He then transferred to Ft. Benning, GA. SSgt Tyrone Stubbs was in the Army for 11 years until 2005 in the 101st Airborne and Air Assault Division. He served two combat tours in Iraq totaling three years as an Infantry soldier. He suffered an injury to his right knee during an air jump mission which led to his medical retirement. As a civilian, he worked as a truck driver up until the date of his injury. He has a long line of military service within his family including his brother, son and five of his cousins, all Army. Tyrone has three daughters and three sons.

In June 2014, Tyrone was attacked by his girlfriend with a flat-headed screwdriver which was used to stab him in the head resulting in a severe penetrating brain injury. As a result, he presented with physical, sensory and speech impairments. He was initially treated in GA and received minimal rehabilitation before returning home to live with his mother, who also has a medical condition. In January 2016, he was admitted to the Gainesville VA for two weeks for seizure management where he also received rehabilitation. He was then transferred to the Tampa VA for an 8-month rehabilitation admission. He now resides and receives post-acute rehabilitation services at Neuro-restorative, a post-acute rehab center largely for people with TBI.

What types of AT services did you receive?

Tyrone received services for seating and mobility, adapted equipment for ADLs, communication, vision and computer access.

"I got to pick Georgia colors for my wheelchair, red and black. It's a hydraulic, pump chair, I can be pushed while I steer or I can go by myself using my left hand since my right hand is weaker.
I got a new computer with 17" screen made by Microsoft with a special mouse. The special mouse has a rolling ball that is easier to use for me. It lets me type with a keyboard on the screen with the settings slowed down. It gives me access to my Facebook, YouTube, Hotmail and Pandora accounts. It also lets me write stories and letters and surf the internet.
I also received a weighted fork and pen to make writing and eating with my left hand easier."

For communication, "I tried the iPad first but my typing was slow because I was shaking a lot in typing, but it was nice. I tried the Lightwriter and it was alright. Then I tried the Allora, it was real good. It was faster and sturdier. Typing was easier with my shaking finger. I type on the Allora when I need to. I have a new mount for the Allora. I can remove the mount and take the Allora off to charge it. The mount looks good and it fits my chair and it looks cool to me. Everybody likes it."

With which therapists did you work? Veronica Chandler (Gainesville SLP), Jessica Lewis (PT), Kerry Allen (PT), Kerri Martin (OT), Danny Jennings (OT), Ursula Draper (AT/OT), Andres Gordillo (SLP Grad student), Lini Nakano (SLP) and Telina Caudill (AT/SLP). "Nice people taking care of me. I've got good therapists."

What AT solutions did you receive?

A J3 tilt wheelchair, the Allora 2, a Daessy swing-aside wheelchair mount, a Cadex medication reminder alert watch, a laptop, a Kensington expert mouse, a weighted fork, a Saebo glove, a Guardian Alert, new glasses and an eye patch.

What can you do now that was difficult before?

"Without the AAC, it was hard, nobody understood me. I learned a lot with the Allora 2. Being able to save phrases and pull it up quickly helped me move faster. If someone doesn't understand what I said, I can key in the word. I can put in proper names and I like the Bluetooth piece. My speech has gotten better, I type when I need to. It was slow, hard and bad to depend on somebody to push me, time consuming. Now I can go by myself outside and around the hospital. I couldn't even move my arm when I came here. And now I can move it better when I eat, walk, shower and type. I can grasp and release and push when I need to. I can do things for me like brush my teeth. I can transfer by myself. I can get on the computer to watch TV/movies, listen to Pandora or check Facebook."

Update on RESNA/NCART 2016 Conference

...Seth Hills, AT Rehab Engineer

RESNA/NCART is a collaborative event organized by two of North America's rehabilitation and assistive technology associations. The conference was hosted in Arlington, VA. Four members of the McGuire AT team were in attendance including Director, Melissa Oliver, Rehab Engineers, Brian Burkhardt and Seth Hills, and Trainee, Simone Gregor. The venue provided ample opportunity to mix with like-minded individuals from various backgrounds, see new technology, and be made aware of existing products and uses. Each day included a plenary session where various topics were discussed. Tuesday's session included a discussion on the role of technology in improving transportation and mobility and highlighted efforts by Google (self-driving car) and Ohio State University (Smart Mobility/Smart City Challenge) to promote cooperative development of interconnected infrastructure (http://www.leannetwork.com/e107_files/downloads/Smart%20mobility%20-%20Carla%20Bailo%20-%20OSU.pdf).

The man "driving", Steve Mahan, is BLIND!

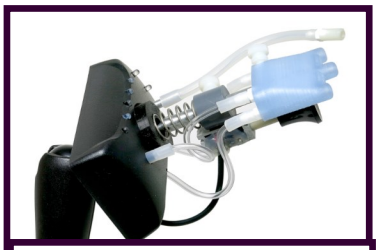
The conference aimed to "leverage proximity to the nation's capital to engage policymakers on assistive technology issues, and included interactive exhibits by manufacturers and industry practitioners." While I did not participate in the Capitol Hill visits, there was good turnout and representation by our Rehabilitation and Assistive Technology peers.

Favorite manufacturer exhibits: Mealtime Partner (hands free self-feeding, nice hydration systems), Jaco robot arm (just neat), Mount'n Mover (cool app development and application to remote servo ctrl), Braze (Sorry Brian for stealing your idea), Whill (fun test ride), Quantum (nice free stuff).

Wednesday's Plenary Session included government officials and an Advocate that provided information useful to consumers and clinicians. Two of the four presenters were John Tschida and Peter Thomas. The NIDILRR (National Institute on Disability, Independent Living, and Rehabilitation Research) although a small and rather underfunded organization is making some in-roads into ensuring that research dollars actually end up producing usable products. Several presenters, funded by NIDILRR, developed processes that outline efficient product development and ensure translation of viable ideas to devices available to end users (Need to Knowledge-NtK, Knowledge Translation for Technolgy Transfer-KT4TT). They have made this process available to researchers/developers via an online tool (http://sphhp.buffalo.edu/cat/kt4tt/best-practices/need-to-knowledge-ntk-model/ntk-commercial-devices.html) that walks through the many steps of product development from problem definition to production. These tools are useful for anyone interested in inventing.

Cross Compatible Gaming Device- CCGD- cronusmax.com

Thursday's Plenary session was a breakout session where attendees were organized into groups to discuss how an organization (RESNA/NCART or other Governmental Organization) should collect follow-up data on AT device users. Key issues discussed were privacy (patients may have more going on in their life than they are comfortable sharing with their care team), incentivization (how can patients and providers be encouraged to gather and submit meaningful information), dynamic (technology and socioeconomics change and as they do the tracking system needs to be able to change as well), comprehensive (covering devices as simple as a mouth-stick for example through more complex rehabilitation technology like seating/communication/power mobility).



Quadstick- A Gaming Controller for

There were several sessions on adaptive gaming (video gaming) of interest. Sangeetha Padalabalanarayanan and Mohanraj Thirumalai with the RecTech RERC discussed Active Video Games (AVGs). Adaptations that their group developed included a balance platform (e.g. for use with Wii-fit games), and a controller mat with buttons that can be configured (re-positioned) for individual patient needs. Patrick Wagner and Erin Muston-Firsch from The Denver Craig Rehabilitation Hospital demonstrated the use of a Cross Compatible Gaming Device (CCGD), the Quadstick remote, and Lick-it Mode switch. The CCGD allows the use of various controllers/keyboards/input devices across many different platforms (i.e. gives the user the ability to use a PS4 controller on a PC, an XBOX controller with a Playstation, or any number of different configurations). The Quadstick has 3 sip-and-puff switches. The monkey tail can be draped around the user's neck to hold a tablet or phone.

Monkey Tail Tablet Holder by Octa- https://www.octa.com/

Innovation Creation Series…Richmond Make-A-Thon Follow-Up

What impact did hosting the Make-A-Thon at the Richmond VAMC have on some of the attendees:

Ty Sayman of Team Spline:

How did participating in the VA Innovation Creation Series- Prosthetics and Assistive Technology Challenge impact your life overall?

It was a fantastic event that was very positive in many ways. The students that I mentor had an opportunity to take their interest in technology and apply it directly to an existing real-world problem.

What opportunities did this event provide you?

We were able to meet many like-minded people who are interested in collaboration on solving problems for other people. The design was pushed forward by one of the other team members. Our students (Ausvin, Jason, and Mihir)

What did you learn from this event that you did not already know prior to coming?

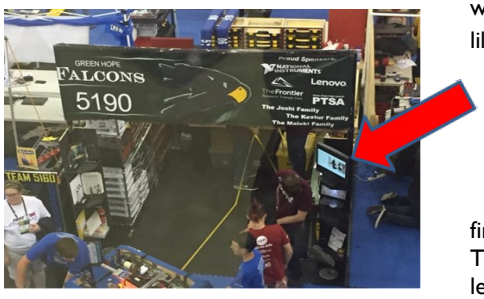
How well groups can be formed in a short period of time to solve problems. The way the event was run was very informative.

What have you done with the design you and your team created? (provide as many details as possible)

Not as much as we would have liked. Other than talking about it with anyone who would listen, and printing out the versions on our 3-D printer.

Anything else you would like to share about your experience, please do so.

It was very positive and motivational for both me as a mentor, and for the students that I brought to the event. Its hard to see, but the upper right side shelf has a display case with a 3-D printed version of the coupling. It was featured prominently in our team's award for engineering inspiration this year as well (picture below shows were they are demo it at a conference).



Matt Baker of Team The MiX

How did participating in the VA Innovation Creation Series- Prosthetics and Assistive Technology Challenge impact your life overall?

This event really helped me take a deeper look at how my maker space's technologies and tools could be used to promote greater civic and social engagement. It has directly influenced programming ideas and projects we work on with the teens members of The MiX. Currently, we are working on a couple of weeks of projects based on creating/improving upon assistive devices. Again, really trying to get our teens to think about using 3D printers, laser cutters, etc. . . For more than just creating fun little trinkets.

What opportunities did this event provide you?

The Innovation Creation Series helped garner attention for The MiX since I was on the grand prize winning team. It also served as a great example to our teen members, who saw a real world application of 3D printing and prototyping.

What did you learn from this event that you did not already know prior to coming? I learned that there is a much bigger group of "makers" out there who are really trying to make a positive impact on society. I was impressed by the diversity of professions and ages represented.

What have you done with the design you and your team created? (provide as many details as possible)

I'm actually not sure exactly where our design has gone but I'm pretty sure Lisa Marie Wiley has continued to champion and push forward Team Spline's prosthetic coupler design.

Anything else you would like to share about your experience, please do so.

I had a great time at this event. I really appreciated the opportunity to directly interact with the Veterans in order to best solve their problem/issue. I'm was also pleased at the focus on keeping everything open sourced and completely accessible. I would love to participate in another event like this should it happen again.

Iris Lin:

How did participating in the VA Innovation Creation Series- Prosthetics and Assistive Technology Challenge impact your life overall?

It was a great experience, it was the first hack-a-thon type event I have attended. The event prompted me to think about challenges that veterans face that I had not considered before.

What opportunities did this event provide you?

For me, since I was working a summer internship, it was one of the projects I ended up working on. It was a challenging and interesting goal to work towards, and the time limit meant that we had to think about things pretty emergently as opposed to procrastinating. Also, the actual event was great in terms of getting to meet people with expertise in both medical and engineering fields.

What did you learn from this event that you did not already know prior to coming? One of the things I learned that I had not been aware of is how difficult it is to create assistive devices for small, specialized patient populations. Even if good designs are created by innovators, often it seems that it's nearly impossible to bring the device to market. For example, my project was geared towards a very specific and small patient population, and we later discovered how difficult it is to further develop it as a product, simply because there is not a large enough market who would benefit.

What have you done with the design you and your team created? (provide as many details as possible)

Following the event, we worked for some time with Spark Engineering, a small company that does work to bring ideas from innovators to market. However, it was very difficult to really get anywhere with it, for the reasons that I mention above. The population of people who might benefit from the creation of the device is very small. While doing research into assistive devices for diabetics, I spoke with a few diabetes educators who would tell me things like "We used to have this great device available that would do this and this, but later was discontinued because there just weren't enough people who needed it." Following the completion of my internship that summer, I started back in my second year of medical school, and other students subsequently took over further project development, so I am not sure what has since happened with it.

Anything else you would like to share about your experience, please do so.

One of the prompts was to create devices for female veterans suffering from tremors who wished to apply makeup. While this was not a prompt I worked on, it did pique my interest. Now that I am in my third year of med school and have spent time with many patients in Neurology, I am thinking about doing some research into assistive devices that are available for people with essential tremor, as I have seen the effects that this condition can have on people.

Assistive Technology Program Mission

To enhance the ability of Veterans and Active Duty members with disabilities to fulfill life goals through the coordination and provision of appropriate interdisciplinary assistive technology services.

To serve as an expert resource to support the application of assistive technology within the VA health care system

FY16 AT EDUCATIONAL OPPORTUNITIES WITH EES

When: **1st Friday of the month**

Time: **1pm EST**

Program Description:

This live – meeting program is designed for Rehabilitation Services physicians and rehabilitation clinicians to address the knowledge gap in providing assistive technology that addresses current health care requirements of Veterans with specific rehabilitative needs. This course will cross many areas of disability including, Polytrauma, Visual impairments, Physical limitations, Cognitive and communication deficits that may limit Activities of Daily Living. There are 5 Assistive Technology (AT) labs located at the Polytrauma Rehabilitation Centers; however, this training would expand that knowledge and skills of providers beyond those 5 AT centers. The training will assist in increasing Veterans' level of function, independence and safety while providing consistency and care across the VHA system.

Audience: Health care professionals including physicians, speech-language pathologists, occupational therapists and other clinical staff such as physical therapists, recreation therapists, blind rehabilitation specialists and kinesiotherapists.

Topics:

- November 4, 2016—AT Device Reviews
- December 2, 2016—Blind Rehabilitation Technology for Wayfinding for Vision Impairments
- January 6, 2017—TBD
- February 3, 2017—Safe Patient Handling
- March 3, 2017—Low Tech Options for Communication
- April 7, 2017—Cognitive screening/ evaluation for Powered Mobility
- May 5, 2017—Dementia and Assistive Technology