

# PM&R Assistive Technology Programs

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## VA Wheeled Mobility & Seating Professionals Attend & Present at ISS

by Carmen DiGiovine & Richard M. Schein

### Inside this issue:

AT Lab High- lights: Hines, San Francisco and Eastern Colora- do Health Sys- tem	2
AT Lab High- lights: Tampa & Palo Alto	3
AT Lab High- lights: Richmond & Minneapolis	4
Veteran's Story	5
AT Lab Highlight: San Antonio	6
AT Program and Students	6
Adaptive Gaming	8
Veteran's Story	9
AT Education Op- portunities with EES	10

AT Newsletter Edited by:  
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The 33rd International Seating Symposium (ISS) was held from March 2-4 at the Gaylord Opryland Resort in Nashville, Tennessee. The ISS is the leading educational and scientific conference in the field of wheelchair seating and mobility as well as related technologies. This year's event boasted it's largest crowd yet with nearly 2,400 attendees from over 30 different countries. The Symposium included scientific and clinical papers, research forums, in-depth workshops, and panel sessions totaling 108 sessions. Presentations addressed wheeled mobility and seating challenges, in addition to solutions for people with disabilities across the lifespan. Conditions such as neuromuscular disorders, spinal cord injury and diseases, orthopedic disorders, systemic conditions, obesity, and polytrauma were also addressed. Not to be out done there was an extensive exhibit hall that featured 107 booths with products, demonstrations and non-profit community-based groups.

Of the overall attendees, over 70 VA healthcare professionals involved in wheeled mobility and seating attended the symposium. Of which a few submitted abstracts and were accepted to present their work. The following is a breakdown of the presentations:

- ◆ Meeting Lifetime Mobility Needs of Spinal Cord Injury and Disease presented by Kara Murphy, an Occupational Therapist from the Syracuse VA Medical Center
- ◆ In this session, she discussed changing mobility needs with progression of disorders and with aging, planning for those changes in need, and additional considerations to ensure our Veterans are able to return to/stay in their homes.
- ◆ An Introduction to Hybrid Alternative Driving Systems presented by Steve Mitchell, an Assistive Technology Professional from the Cleveland VA Medical Center.
- ◆ Hybrid Alternative Driving Systems (HADS) combine characteristics of multiple systems to allow key functions to be assigned to other points of control. HADS can be effective when the user lacks sufficient head control, oral motor function, or cognition to use any one system. The presentation was about effectively implementing existing technologies to create new possibilities.
- ◆ Ideas to Innovation: Student Design Projects and Capstone Projects presented by a panel including Mark Warner, a Physical Therapist from the Dayton VA Medical Center (see below 'Close-up' for a detailed description) , (cont. page 7).

### AT Lab Highlights...Hines



Hines is continuing to work on expanding our assistive technology lab. The OT/ATP (has been assigned to attend the ALS Clinic (held every Tuesday morning), which has provided a great resource for the patients as well as expanded the patient population we are working with in the AT Lab. A PT from the SCI center has been assigned to attend as well; however, she works under SCI and not the AT Lab. The OT in the AT Program is also aware of all SCI patients that go through

our SCI rehab program, as she attends the weekly team meetings in SCI and request AT Lab consults as appropriate. She is also currently working with a veteran on Quadstick training so he can access his computer and Xbox. As of right now, consults have been available for SLP and OT. SLP is responsible for AAC and electronic cognitive aids. OT is responsible for environmental control, computer/phone/tablet access, AAC access methods, and

mounting of devices. They are working on consults for PT for seating and mobility and recreation therapy for adapted recreation and sports. It is our hope to create a part-time position for someone to lead the assistive technology lab as a manager of the AT Lab as well as a case manager for the veterans to provide more comprehensive care.

### AT Lab Highlights...San Francisco



The San Francisco AT site continues to have steady growth in the need for AT services and equipment. We continually strive to address the needs of our Veteran patients who live far from the San Francisco VA Medical Center. Many of our existing and new Veteran patients live in the Northern areas of our territory, which extends to the California/Oregon border. Traditionally we have had local VA Clinics located in these northern areas which allowed us to provide expanded Primary Care closer to where many of our Veterans live, but for most specialty clinic services, like Assistive Technology Clinics, these still necessitated a long drive into San Francisco.

Our Health Care System has worked to address this issue by continually expanding available services and staff to provide expanded access to specialty care closer to where our Veterans live. We to address much of these needs through Rehab staff based in the VA clinics and our Home Based Primary Care (HBPC) Program where we have both Physical Therapists and Occupational Therapists. We now have dedicated Rehab clinic space in both our larger Santa Rosa and Eureka VA clinics to help address AT needs in addition to traditional Rehab Services. This has allowed our Therapists the option of seeing patients in their

home environments or in a clinic which has greater access to specialty equipment. Finally, one of our Physical Therapists Jessica Larson now holds the Assistive Technology Practitioner (ATP) credential. From an administrative standpoint, our VISN is working to finalize an integrated VISN wide durable medical equipment (DME) delivery and repair contract that will specifically address the logistics of servicing new and existing durable medical and assistive technology equipment. Both programs are meeting the assistive technology needs of our Veterans by bringing patient care and assistive technology services closer to where our Veterans live.

### AT Lab Highlights...Eastern Colorado Health Care System



The Eastern Colorado Healthcare System (ECHCS) Assistive Technology program hosts the fourth annual Deep Dive in conjunction with University of Pittsburgh Rehab Science and Technology in May 2017. Highlights include subject matter experts providing instruc-

tion in the following areas: Adaptive Gaming, Adaptive Sports, Alternative and Augmentative Communication, Cognitive Prosthetic Devices, Computer Access, Drivers Rehab, Electronic Aids to Daily Living and Wheeled Mobility and Seating. The ECHCS team

has four clinicians that are participating and in the process of obtaining their ATP certification this calendar year.

## AT Lab Highlights...Tampa

### OUTREACH

- ◆ Welcomed visitors and tour of the AT Lab for the Onyx Healthcare USA Inc. group
- ◆ Availability of inter-facility consult within VISN 8
- ◆ Continued support to outlying areas and various VAs via telephone and email

### PROFESSIONAL DEVELOPMENT

- ◆ Vendor in-services from SpeechVive and Talk to Me Technologies
- ◆ Joseph Rankin, RKT and Michael Firestone, DPT received their ATP certification through RESNA

### TELEHEALTH

- ◆ 18 CVT to Home encounters completed this year

### CURRENT PROJECTS AND PERFORMANCE IMPROVEMENT

- ◆ YouTube and VA Pulse Video Tutorial

Library Project ongoing

- ◆ Engagement in the Lean Six Sigma (LSS) model for performance improvement
- ◆ Partnership on pilot project with ONYX Healthcare USA Inc. for eyegaze access to the Get Well Network

### SUCCESES

- ◆ Received 3rd CARF accreditation in February; no recommendations



## AT Lab Highlights...Palo Alto

### International World Congress of Gerontology and Geriatrics.

The presentation titled "Non-Pharmacological Management of Distress Among Community Living Center Residents Using Technology" was accepted for the 21st IAGG World Congress of Gerontology and Geriatrics, taking place on July 2017. The presentation will show how adding assistive technology services reduces distress among the complex Veteran cohort residing in the VA Palo Alto's Geropsychiatric Community Living Center.

This work was made possible through a collaboration between Jonathan Sills, Ph.D., Program Director of Assistive Technology, and James Mazzone, Ph.D., Geropsychiatric Community Living Center Psychologist, with support from Odette Harris, M.D., MPH, Associate Chief of Staff, Rehabilitation.

### AT Center Tour of Stanford Engineering Class

In February of 2017, the VA Palo Alto Assistive Technology Center hosted the 6th annual AT Center tour of Stanford Engineering faculty and students. The focus of this year's tour was to provide a snap shot into how assistive

technology is used across Polytrauma and Spinal Cord Injury (SCI) clinical settings. VA Palo Alto Assistive Technology staff members Debbie Pitsch, PT, MPT, GCS, ATP, Karen Parecki, MS, OTR/L, ATP, and Evi Klein, MA, CCC-SLP, ATP led discussions and provided hands-on opportunities for visiting Stanford University faculty and students to trial various pieces of equipment used to support mobility, adaptive sporting activities, cognitive functioning, computer access, environmental control, and communication.

### DVBIC/VA Palo Alto 7th Annual TBI Research Forum

The joint DVBIC/VA Palo Alto 7th Annual TBI Research Forum was held in March 2017 to correspond with Brain Injury awareness month. VA Palo Alto Assistive Technology Center AT Center Staff exhibited related services and products. Additionally, students at Polytrauma Network Site and Assistive Technology program presented "Health Coaching Shows Patient Self-Reported Increase in Activity Towards Health Goals," based on data obtained through the VA Palo Alto Health Care System's Assistive Technology program's internally developed MyGuide mobile application.



## AT Lab Highlights...Richmond

### AT Outreach:

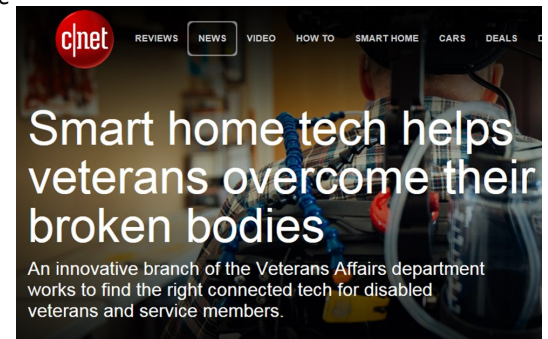
- ◆ Stacy Gross, CCC, SLP presented to local Aphasia Support Group on "Beyond Traditional Speech Therapy"
- ◆ Brian Burkhardt presented on "Rehab Engineers + 3D Printing & Electronics = Personalized AT" at ISS 2017 Annual Conference
- ◆ Jennifer Sites, CCC SLP and Rachel Brenegar, CCC SLP presented at The CollaborATE: A transdisciplinary Approach to Assistive Technology through the Lifespan on low technology solutions for communication. In addition, Brian Burkhardt and Seth Hills (both AT Rehab Engineers) presented at the same conference on 3D Printing.
- ◆ Melissa Oliver, OTR/L, presented at the Virginia Brain Association Annual

Conference on Trends in Assistive Technology for Individuals with Brain Injury.

### AT Making News

- Brian Burkhardt and Melissa Oliver hosted CNET for a day to highlight the Assistive Technology Programs within the VA as well as consumer home automation and its impact on Veterans. CNET had the opportunity to interview two of our Veterans who were very happy to share their story.

**Congratulations to Brian Burkhardt, ATP** for publication in IEEE (The Institute of Electrical and Electronics Engineers) on the *Investigation of Muscle Activity During Loaded Human Gait Using Signal Processing of Multi-Channel Surface EMG and IMU* of being named one of the Innovator Network Specialists at McGuire VAMC.



## AT Lab Highlights...Minneapolis

### Minneapolis AT Program and Speech Pathology present at Minnesota Brain Injury Conference

Brian Fay, PhD, ATP/SMS and Don MacLennan, MA, SLP will present at the 32nd Annual Conference of the Minnesota Brain Injury Alliance. The title of the session is Are Smart Watches appropriate for Users with TBI? The presentation caps a two month trial of three smart watches that have potential for use will patients with mild to moderate brain injury. Specific watches considered are the Apple Watch 2, Sony Smart Watch 3 and the TicWatch. Price range of the watches is wide (\$139 - \$699 MSRP). Criteria for evaluation included (1) watch functions independent of a synchronized phone, (2) customizability of the watch to users with varying levels of cognitive function, and (3)

availability of apps. The conference will be held April 20-21, 2017 in Brooklyn Center, MN.

### Improving Access and Reducing Cost of Environmental Control Systems

The Minneapolis AT Program is investigating use of popular technologies such as smart phones and Amazon Prime or Apple Services to enable more ready access to environmental control systems. We are perched on the start of a new era as smart phones and tablet devices continue to expand capabilities and Internet-based services such as Amazon Prime become more commonly used in society. A recent inpatient of the Minneapolis Polytrauma Center worked with the AT Program to include use of his iPad, Android phone, and an Amazon Echo Dot in his

rehabilitation program. Only the Amazon Dot was provided by the VA for the trial. All the technology proved most helpful as supports such as access to Skype for communication with family, AmazonMusic for access to a previously purchased music library, and iPad photo slide shows of family and friends during the hard work of inpatient TBI rehabilitation. The AT Program looks forward to expanding use of other devices such as Amazon Fire TV sticks, AppleTV, and Insteon room automation. In the long run, the hope is to develop resources for patients and families to implement the changing everyday technology at home in ways that support veteran independence.

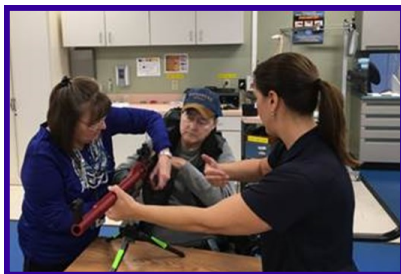




## VETERAN STORY... Opportunities for “ And the.....” (Tampa)

“JUST the right fit” requires .... Now say it really fast, “ Adaptive sports necessitates individualizing modifications while rearranging adapted equipment to maximize proper body mechanics for , “just the right fit” for \_\_\_\_\_. Yes, it’s a mouthful, but, go ahead and fill in that blank; any Leisure pursuit of choice will do for persons facing functional challenges.

Extra steps may sound complicated; however, these adjustments allow Mike Marvel (Center picture) to shoot again after an 8 year spinal cord injury which has caused a pause in many of his favorite past time hobbies. Occupational Therapist, Barbara Taylor, with the James A Haley VA Hospital’s Spinal Cord Injury Unit (shown left in pic), worked with Mike who originally was bed bound a year and a half. After many years and countless therapy sessions, Taylor noticed her patient’s extremity sensation and movement improve.



This new revelation prompted extra commitment in OT sessions paving the way to maximize this Veterans' functioning potential. “It’s worth the extra effort”, states this six year Airforce Veteran. “After all that therapy, I wanted to get out and enjoy LIFE again”.

While in the Medical Foster home based primary care program, Marvel discussed with his primary Rec-

reation Therapist, a variety of leisure pursuits he wanted to attempt. First established was a process for continuity of successful outcomes. Overcoming obstacles required problem solving to function inter-independently with challenges such as transportation, time management, coping skills, and perseverance to join these community supported programs. Marvel self-initiated these tasks which took a combination of efforts to help him along the way which he handed gracefully despite a few hurdles. With progression of enhancing skills of functional independence, coupled with new treatments and updated therapies, this Veteran and his therapy team worked together to open doors for a variety of quality of life improvements.

For the Air Rifle Clinic, Marvel’s unique challenge of his hand bending backwards has required a year and ½ process for improving range of motion on his left hand, his now trigger finger. Moving from the hospital clinic setting to the community based shooting range, this “shoot” introduced Mike to Jennifer Day, Recreation Therapist adaptive sports specialist (seen top and below picture) , who organizes local clinics for disabled Veterans to compete. Following the National VA initiative of “Mission ReDefined”, Recreation Therapists attempt to offer opportunities to promote ways to be physically active simply have more fun! Day states, “ at the Nat’l Veteran’s W/c games, for air compressed shooting, we adapt, adjust, and overcome using “load helpers” for ammo, bean bags for elbows, extra stock for support, tripods and adjustable chairs for ergonomic height, extensions for tables, etc. Once they get ready, they are on their own; it’s their sport, their competition. We start at the local level, allowing participants to explore opportunities to excel in their areas of interest.”



While shooting is a familiar and preferred leisure pursuit for this Veteran, independently pulling a trigger for the first time after injury has been quite the process. OT Barbara Taylor remembers the 6 year journey it has taken Mike to have functional capacity from backwards flexed hands for the ability to use either hand to write for the first time since his SCI original admission. The process of serial casting has significantly increased right hand function and AROM.

Recreation Therapy came into the scene offering to co-facilitate therapies to maximize this Veterans abilities. Used as motivator, additional processes in therapy “was on” to get Mike moving for success for challenges worth fighting for. After a successful trial at the shooting range, Veteran states, “For shooting, I’m right eye dominant , so I’ve got work to do on my right (hand) now.”

## AT Lab Highlights...San Antonio

Theresa Prudencio is a graduate of the University of Texas Medical Branch Galveston, El Paso, TX. She joined San Antonio's VA Polytrauma Center in May 2015 working as our PNS OT. She is considered a subject matter expert in the treatment of traumatic brain disorders and for numerous years has been evaluating, treating, and coordinating the care of wounded soldiers with mild traumatic brain injury. Prior to working with the VA, she earned her credentials as a certified Driving Re-



habilitation Specialist. She was recently accepted into March 2017 Drivers Rehabilitation Instructor's Training Course hosted by Long Beach VAMC. We look forward to Theresa joining forces with Karrie Reinecke (KT, CDRS) in our drivers training program.

Physical Therapist Lilli Bernabe-Trinidad is a graduate from Emilio Aguinaldo College in the Philippines. Much of her career has been spent working in the areas of industrial rehabilitation and sport medicine. She joined the San Antonio VA in July 2015. Since 2015 she has been working in the SCI unit. After having spent much of her last two years performing wheelchair assessments for SCI

patient, we are very pleased to have Lilli join the Wheeled Mobility Clinic where she performs evaluations and intervention for veterans with complex seating, positioning, and navigation/operation needs. Pictured left to right, Complex Wheeled Mobility Clinic staff include: Paul Alonzo, E. Reuben Rodriguez, Lilli Bernabe-Trinidad, Gary Garcia, and Mickie Pedraza).



## Engineering and Occupational Therapy Students Participating in the Richmond AT Program

The McGuire VA Assistive Technology Program established two educational affiliations with the University of Virginia and Virginia Commonwealth University BioMedical Engineering Programs. These affiliations allows us the opportunity to have trainees come and learn about clinical rehabilitation engineering through hands on experience with design and development of rapid prototyping for specific patient needs.

Lindsy Sparks is a biomedical engineering trainee from Virginia Commonwealth University. Here are some of her thoughts about her experience:

**Why did you want to do an internship at the VA?** *I came to the VA in spring '16 to shadow and do needs finding for a class that I was taking. During my visit, I learned about the field of clinical rehabilitation engineering and immediately knew this was a field that I wanted to learn more about and expose myself to.*

**What areas of AT are you interested in and like working with? And Why?** *I enjoy working on individualized projects. I like being able to meet with the patient and see their problem in person and then talk together about what methods they think would or would not work for them and then taking the problem back and begin designing a solution. Many times, the*

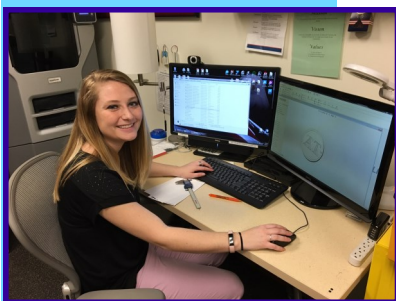
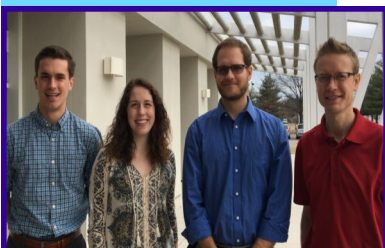


*designers do not get to see how their designs are used with people but the VA allows me to almost immediately get feedback on my designs.*

**Why are you passionate about AT?** *AT allows me to give back to my community and help others while applying my engineering designing skills.*

Christina Stiebris is a biomedical engineering student from the University of Virginia and spent a one week observation with the AT Program. Ms. Stiebris indicated that, "this externship with the VA AT team taught me how dynamic rehabilitative engineering is. I was shown the holistic view of engineering – applying engineering skills and assistive technology to patients in certain context, such as the environment and who will be using or setting up the device."

The AT Program also is working with the Occupational Therapy program at Virginia Commonwealth University providing them with education about Clinical Rehabilitation Engineering and collaborating with occupational therapy. In addition, the AT Program provides training opportunities to learn about design thinking and putting those skills to the test.



## VA Wheeled Mobility & Seating Professionals Attend & Present at ISS, cont.

- ◆ The purpose of the workshop was to provide an overview of Capstone Design Programs, and provide information to non-academic clinicians and suppliers on how they can leverage their real-world experience to train the next generation of engineers and clinicians, while developing prototype designs that can improve the quality of life of individuals with disabilities.
- ◆ Rehab Engineers + 3D Printing + Electronics = Personalized AT presented by Brian Burkhardt a Rehabilitation Engineer from the McGuire Richmond VA Medical Center & Ben Salatin, a Rehabilitation Engineer from the Albuquerque VA Medical Center. The presentation gave participants an overview of a clinical rehabilitation engineer's role within a VA rehabilitation clinic, a basic understanding of the process used to create 3D printed devices and custom electronics and provide clinical examples of these technologies related to seating and mobility.
- ◆ Health Outcomes of Wheelchair Seated Posture in Older Veterans presented by Lelia Barks, an Educator Nurse Researcher from the VA HSR&D Center for Innovation on Disability and Rehabilitation Research. The paper presentation described wheelchair seated posture over 1 day, and its relationship to predictors and health outcomes in two VA community living centers.
- ◆ Developing a Seating Intervention for Older Veterans presented by Lelia Barks, an Educator Nurse Researcher from the VA HSR&D Center for Innovation on Disability and Rehabilitation Research. The paper presentation described barriers,



**Mark Warner (left), Mary Goldberg (center), Carmen DiGiovine (right)**

facilitators, and shared practices in positioning older Veterans in wheelchairs in the VA Community Living Center (CLC).

### Close-up

Mark Warner, PT ATP, Mary Goldberg, PhD and Carmen DiGiovine, PhD ATP/SMS RET gave a presentation titled "Ideas to Innovation: Student Design Capstone Projects" at the 33rd International Seating Symposium. Mark works at the VA in Dayton, OH, Mary works in the Department of Rehabilitation Science and Technology at the University of Pittsburgh and Carmen works in the Occupational Therapy Division at The Ohio State University. The three described the synergistic relationship between clinicians, students, faculty and industry that is part of the student design programs at each school. The presentation generated a lively discussion among attendees. Presenters and attendees provided their experiences with the student design programs, which exist in engineering and health science programs at most universities. They also discussed the potential for developing intellectual property, the role of industry, and the realities

of developing a commercially viable product. Thanks to Marks willingness to lead this workshop, there will be more opportunities for students, clinicians, engineers, and faculty to collaborate with the goal of designing devices that meet the needs of individuals with disabilities.

A few of the instructional courses have been recorded for on-demand viewing and will be added to RSTCE ([www.rstce.pitt.edu](http://www.rstce.pitt.edu)) vast library in the beginning of summer.



# ADAPTIVE GAMING....Seth Hills, AT Rehab Engineer

As younger generations join the overall population of injured and paralyzed Veterans, we are seeing more and more interest in adaptive gaming. Of course gaming (A gamer is someone who plays interactive games, usually video games, although games can also come in other forms, such as tabletop or physical games) isn't strictly limited to any one generation. In response, the Assistive Technology team is working on improving the offerings we have to provide to injured Veteran gamers.

Much of video game play is effected through two handed controllers, body movement (e.g. Wii), and video recognition (e.g. Kinect). This presents a problem for our Veterans that have either lost the use of one or more extremities. One handed game controllers do exist, are fairly basic, and not very ergonomic. Many gamers make do with a normal controller, using it onehanded, and actuating the second joystick against a table or other surface while they control the primary joystick with their functioning hand.

Individuals with Tetraplegia who are gamers are left with even more limitations, fortunately there is a "joystick" for this particular population. The Quadstick game controller is a mouth operated game controller for individuals with tetraplegia.



**Quadstick**

QuadSticks have four sip & puff sensors and a lip position sensor...The QuadStick is directly compatible with the PS3, Android, and many PC games that use a joystick, mouse or keyboard. Through the use of a 3rd party USB adapter, Xbox 360, Xbox One, and PS4

consoles can be used, as well as PC games that require an Xbox 360 controller.

The QuadStick appears to the host device as a PS3 compatible Gamepad, Mouse, Keyboard and Flash drive.

The connections between the input sensors and the signals sent to the host are configurable by the user and can be quickly changed between pre-configured profiles, while playing a game, to match different situations in the game. Specific configuration profiles can easily be created for games that require combinations or unique control inputs."

Other products, such as the LP Pad capitalize on gross muscle movement rather than fine motor skills.

A device that has been mentioned in this newsletter before is the **C r o s s** Compatible Gaming Device (CCGD).



**CronusMax Plus CCGD**

It makes it possible to use any USB input device on any gaming console-sometimes requiring the use of a PC as an intermediate I/O device. This opens up the possibility of using a headtracking mouse, eye tracking, and other keyboards/joysticks for game play.

More games are being developed to help with cognition and therapy treatment. At last year's Technology in Rehabilitation Conference, several iPad/tablet games were showcased that developed individuals' ability to perform a series of activities based upon cause and effect. Also at that conference, the DOD showcased a program they had sponsored. The game is a first person shooter that required the player to complete specific therapy exercises in

order to effect certain actions within the game (e.g. perform a squat or lunge to pick up a weapon, fire, etc.). The system utilizes a Kinect motion capture camera (and some fancy programming wizardry) to determine whether the player's actions were appropriate, and provides hints/instruction if an exercise isn't performed improperly. The goals of these particular programs are to aid in rehabilitation through interactive game play.

The Richmond AT team is currently working on developing a one handed controller built on the wiimote platform, but with more capabilities than in its' current configuration. It will be cross-platform compatible with the use of a CCGD. More to come- stay tuned!



**GimpGear Ultimate Arcade Game Controller**



## VETERAN STORY... Mr. Ruiz

Mr. Ruiz is a 37 year old veteran diagnosed with ALS in February 2013. When he began to have difficulty communicating by speech he started using an iPad with a communication app. At the appropriate time he transitioned to use of the Tobii communication device using eyegaze with an external switch. Mr. Ruiz reported dissatisfaction with the overall speed of communication. He trialed other approaches to include various head mice and switch options. Recently, he was presented with the opportunity to trial the Tellus-5 communication device. The Tellus-5 was introduced into the market approximately 18 months ago - recent enough to be considered a new product but long enough now to reveal its strengths and reliability. Mr. Ruiz felt the device was intuitive and easy to use. He felt it allowed full control of his desktop—something he felt restricted in doing with his previous devices. Mr. Ruiz has academic and work experience as a biomedical technician so he has an understanding and an appreciation of the technical specifications of his communication devices. He, in conjunction with a rehabilitation engineer, felt the need to share the following comparison information based on their direct experience.

### JABBLA TELLUS 5 vs TOBII DYNAVOX I-15+

#### Hardware Comparison:

The JABBLA TELLUS 5 has a screen which measures 13.3", compared the 15" screen on the TOBII DYNAVOX I-15+. While the TOBII DYNAVOX I-15+ has the larger screen, the resolution of the JABBLA TELLUS 5 comes in slightly better at 1280 x 800 versus the 1024 x 768 pixels of the TOBII DYNAVOX I-15+. Both screens are touch screens.

The JABBLA TELLUS 5 runs a better processor. The Core i5 4300u of the JABBLA TELLUS 5 is faster than the Intel® Celeron quad core processor of the TOBII DYNAVOX I-15+. The JABBLA TELLUS 5 processing speed is not burdened by the eye control camera, as the EYETECH DIGITAL TM5 camera has a built in processor. This gives the edge on speed and reliability to the JABBLA TELLUS 5.

Both have built in programmable IR controllers, Bluetooth, WI-FI antennas, and forward facing cameras. Both devices also can be used with switch input, have three USB ports available and run off of long lasting lithium ion batteries.

Conclusion: The TOBII DYNAVOX I-15+

wins in screen size, but the JABBLA TELLUS 5 wins in processing speed.

#### Software Comparison:

The JABBLA TELLUS 5 uses the MIND EXPRESS 4 software as its communication interface. The TOBII DYNAVOX I-15+ uses Tobii's COMMUNICATOR 5. By comparison, they are found to be virtually identical in terms of what they can do regarding communication. Both use text and symbol based communication. Both allow the user to edit and customize cells and buttons. Both record voices for "voice banking". Both



Mr. Ruiz holding his son

devices are running Windows 10 and the user can add Windows compatible software to the device.

The real difference in the software comes in the scope of what it is asked to do. The TOBII DYNAVOX I-15+ runs virtually all programs and computer control through the COMMUNICATOR 5 software. TOBII DYNAVOX offers the user built in applications for Facebook, email, Skype and IR control. These applications are not the full version of the software, but versions designed for use with the eye control. The desktop and computer control of the TOBII DYNAVOX I-15+ are also run through the COMMUNICATOR 5 software.

The TELLUS 5 takes a different approach. While MIND EXPRESS 4 is used for communication and IR control, the TELLUS 5 uses the eye control software QUICKACCESS by the camera manufacturer EYETECH DIGITAL to give the user an unprece-

dent amount of control over the computer. The user can use the QUICKACCESS software to operate any feature on the TELLUS 5. In doing so the user can access Windows 10s native applications for such things as email or Facebook. More than access, the user can type, scroll, right-click, double-click, magnify and operate virtually any program or app available on Windows 10. This gives the user an incredible amount of choice. If they do not like one email client, they can use another. If the user wants they can access consumer grade apps and software like Netflix, Hulu, Pandora, Chrome and many more.

#### Conclusion:

It is hard to beat the amount of choice and control that is given to the user on the TELLUS 5. Instead of running lesser, stripped down versions of Facebook and other software, the user can operate the fully functional, robust versions of software designed not just for those with special needs or limitations, but for the whole world.

Thanks to Mr. Ruiz and rehab engineer Chris Hughes for sharing their feedback based on their experience on the technical aspects of these two AAC devices. Thanks to Connie Servin (SLP) and E. Reuben Rodriguez's (OT) contributions in positioning and access along the way.

On a side note. There is no question that high-tech AAC devices have provided Mr. Ruiz freedom to communicate in ways that would not be impossible otherwise – especially at this time in his life. However, sometimes low-tech devices can open new and wonderful opportunities. Two months ago, Mrs. Ruiz gave birth to their first child - a beautiful healthy little boy. In the middle of managing matters surrounding an AAC, ECU, wheeled mobility, mechanical lifts, and pertinent DME, Mr. Ruiz had one additional request. "Is it possible for you to figure out a way for me to be able to hold my newborn son?" Within a few days occupational therapist E. Reuben Rodriguez returned to the home with two options. The first incorporated a Boppy pillow secured on a lap-tray using a cradling strap. The second used a soft fabric carrier arranged so that baby-Ruiz could rest securely on his father's chest. After fitting Mr. Ruiz with the baby carrier there was great joy to be experienced for a proud father holding his new born son for the first time and then navigating his power wheelchair to take his son for a stroll. Sometimes the simplest things can make the biggest difference.



## 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

#### 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

#### Topics:

- ◆ May 5 - Dementia and Assistive Technology
- ◆ June 2 -Service dogs and guide dogs – Mobility, Hearing and Mental health
- ◆ July 7 -The Impact of Wearable Motion Sensing Technologies on Physical Activity: A Review
- ◆ August 4 - ECU options with VA contracts
- ◆ September 8 (Second Friday) - Prosthetics Regulations include HISA, Driver Rehab, Housing and clothing allowance
- ◆ October 13(Second Friday) -Summary of AT activities in VA including uSPEQ, Standardization of practice, Starting AT Lab, CARF standards
- ◆ November 3 - Adaptive Hearing Devices & Personal Story
- ◆ December 1 - Mobile phone apps



**When:** 1st Friday of the month (unless there is a holiday)

**Time:** 1pm EST