The Richmond VAMC Assistive Technology Program has been busy this Spring sharing their knowledge about different assistive technology devices and evaluation processes.

**Presentations:**
- International Seating Symposium
  * Rehab Engineers + 3D Printing + Electronics = Personalized AT
- The CollaborATE: A Transdisciplinary Approach to Assistive Technology Through the Lifespan at Virginia’s Children’s Hospital
  * Going Old School: Low Technology Solutions for Adult Communication Needs
  * How Does Engineering, 3D Printing, and Patient Centered Design Fit into the Rehabilitation Word?
- Brian Injury Association of Virginia’s Annual Conference
  * Trends in Assistive Technology for Individuals with Brain Injuries

**Making News:**
- CNET visited the AT Lab to learn how the program is using smart technologies to improve the lives of Veterans.
- Style Weekly (local Richmond paper) also came to the AT Lab to learn about how 3D Printing is impacting our Veterans lives with new innovative solutions.
- You Tube— Brian Burkhardt, AT Clinical Rehab Engineer, shared how the AT Program work in 3D printing adds an unique ability to the AT Program. [https://youtu.be/Sz7ZCphlOg](https://youtu.be/Sz7ZCphlOg)

**Other Opportunities of Spreading the AT Knowledge:**
- MyHealtheVet...Expanding Access with Assistive Technology
- Boston VA Medical Center Leadership Strategic Planning
  * Making to Innovate within the VA
- 2nd Annual VA Brain Trust
  * Rapid Veteran Centered Assistive Technology Development & Deployment
The Pointello Augmentative and Alternative Communication device (by Talk to Me Technologies) provides a quick and easy way to communicate medical requests, basic needs and common words and phrases. Patients who have been evaluated by a Speech Language Pathologist, and are found to have a condition that is resulting in permanent, transient, or intermittent severe expressive impairment may benefit from the use of this product.

The simple design includes the use of a laser pointer that is used by the communicator to easily indicate their needs to a listener/caregiver. The user is given the option of 3 wall mounted communication boards: medical communication board, core words, or core phrases. Pointello then provides a wireless laser pointer (with three ways to wear). Once the access method has been determined based on the patient’s physical/cognitive abilities, the Veteran simply needs to don the laser and begin spelling/indicating their wants/needs.

Totaling $299 this device is considered extremely affordable when compared to other high tech AAC devices, with minimal extraneous costs/fees. It is durable and dependable, requiring no charging or extensive set-up/training. Pointello is immediately effective once set-up, and able to be used in most environments, given that it provides the option to use wall mount board or small travel board.

Overall, this device has proved to be reliable and simple. It is somewhere in the middle of the AT continuum, allowing a “mid-tech” option for patients who do not need/want an expensive device or only require a short term communication solution.
Environmental Control Units (ECU) can be somewhat intimidating to a new user. Occasionally patients are not excited about adding this technology to assist in their daily activities. Mr. Delano Draine was one of these patients. Although hesitant, he gave the Assistive Technology Program a chance and is now a shining example of the benefits of the right technology, at the right time, and in the right setting.

Mr. Draine, a 59 year old gentlemen, served in the Army as a Teletype operator. In 2012 he was injured and has C4 ASIA C incomplete tetraplegia. When admitted to the Spinal Cord service for rehabilitation Mr. Draine was given access to his nurse call and in room television with two separate sip-and-puff switches. These gave him independence, but were cumbersome and did not allow access telephone access.

Tell us about your experience with the AT Program.

I was very apprehensive about using an ECU at first, but it really comes in handy. I have so much more independence and access to the outside world. When I first used the Quartet Simplicity ECU I was in a two person room. I didn’t use it much because it talks out loud and I didn’t want to annoy my roommate. When I moved to a single room I started using so much I had the sip-and-puff switches removed. Instead of having two straws in my face all the time I just have a microphone close by my pillow.

What challenges were you having that precipitated your referral to the AT Program?

I am a Quadriplegic patient and was using a sip-and-puff to access the nurse call and the television. I wanted more control and access. I wanted to make and receive telephone calls by myself, without having to call a nurse to help me. Also, the sip-and-puff straws were so difficult to position so that they were close enough for me to reach, but not in my mouth all the time.

Who did you see and what device did you receive?

My Occupational Therapist, Heather Kloepping, introduced me to Brian Burkhardt who setup and trained me on using the Quartet Simplicity ECU. The Quartet uses voice recognition to allow me to control the telephone, nurse call, television, and even a Kindle E-reader.

How has the Quartet changed your life?

I am much more independent and have less things to worry about. I can actually answer the telephone now, instead of calling someone to answer it for me. I talk to my friends and family much more now. The sip-and-puff switch for the television changes the channels, but you can only change the channel up. So finding the channel I want to watch was very time consuming. With the Quartet ECU I can access all the television functions anyone else can, just by using my voice.

What activities are you doing now that you were not able to do before?

I can make and receive telephone calls, I can control the television with ease, and I am reading books on a Kindle.

Would you say your quality of life as improved?

It has improved greatly. I feel like I have almost unlimited access to the outside world and the things around me.
Nuts and Bolts...Using an iPad isn’t so tricky with a host of stylus options

John Miller, AT Rehab Technician

Touchscreens are ubiquitous in today’s society, but not everyone can take advantage of the simple finger jab to open apps or check email. That’s why adaptive styluses are important for people with physical disabilities such as paralysis, muscle weakness, or hand deformities. Depending on the individual, some of the following solutions may open up their access to the internet, games, e-books, and much more.

For people with muscle weakness in their hands, they may require something as simple as a thicker stylus body. One example is the Cosmonaut, which is the size of a dry erase marker and has a rubber exterior for good traction.1 Additionally, AT rehab engineers here at McGuire have made custom exteriors for regular styluses to adapt them for patients, such as foam tubing with a 3D-printed lip that keeps the patient’s hand from sliding past the stylus tip, or inserting a stylus through a racquetball or foam ball for a spherical exterior. Those that cannot grip a stylus at all but still have some arm movement need not worry; they can take advantage of the Caduceus stylus, which boasts a bendable aluminum body that can be wrapped around a user’s wrist or fingers for use without gripping the stylus itself.2 For a sturdier product, they can also check out the Limitless Stylus, a tip that protrudes off a wrist/arm brace to deliver screen tapping capabilities.3

For patients with more complete paralysis, they may need to rely on a mouthstick with a stylus tip to access their electronic tablets and phones. This area of adaptive styluses is less developed. From the same vendor that makes the Caduceus stylus, one can find a mouthstick stylus at a length of one’s choice (9” to 18”).4 They also offer mouthstick tip replacements which are handy once the user has worn out the current stylus tip. On the more expensive side, Enabling Devices offers an Adjustable Touch Screen Mouth Stylus, which telescopes from 8.5 to 15 inches.5 For the sake of cost efficiency, convenience, and providing a sturdy lightweight product, we AT rehab engineers at McGuire make our own version of the mouthstick stylus, cutting off the tip end of a regular stylus and fastening it to the body of a mouthstick made by Performance Health (formerly Patterson Medical). With a hot glue gun and heat shrink, we can make the mouthstick stylus to custom fit our patient.

Ultimately, the goal is to provide the best access possible to a patient given their physical limitations. There are plenty of good stylus solutions out there to help veterans get on their electronic devices and stay connected to friends, family, and the world.

5. Enabling Devices Adjustable Touch Screen Mouth Stylus $190.95; https://enablingdevices.com/catalog/AdaptedElectronics/iPad_Accessories/adjustable-touch-screen-mouth-stylus