

Assistive Technology

Noah Galloway
speaks on
empowering
individuals living
with disabilities,
caregivers and
more through
innovation that
enables, educates
and inspires.



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to expand access?

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READ MORE ON FUTUREOFPERSONALHEALTH.COM**True Grit**

The Wounded Warrior Project brings us inside the story of one veteran whose fight continued long after his service in the Marine Corps.

Expanding Access to 'Assistive'

Twenty-five years since the Americans with Disabilities Act, those of us in the disability and technology communities find ourselves on the edge of a new frontier.

Assistive technology professionals that work in the field, including rehabilitation engineers, therapists and others, have noticed a growing number of people who do not consider themselves as having a disability using technologies that could be considered "assistive."

Helpful features

Think of curb cuts, now in practically every American community. Curb cuts were designed with wheelchair users in mind but are also used by parents pushing baby strol-

lers, kids on scooters and travelers with roller suitcases. Go to any gym and you'll see almost every TV is using closed captioning.

Then there are voice activation technologies, now on every smartphone, which started as a technology for people with disabilities who needed another way to access their devices, and is proving to have value to people without disabilities as well.

Expanding benefit

There's considerable interest in technologies that allow aging parents to stay in their homes, help employees with a temporary disability continue to work and



Michael Brogioli
Executive Director,
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Society of North America
(RESNA)

There's rising consumer demand for "accessible" technology

make daily tasks easier for people with chronic conditions. Because technology is now a part of everyday life, there's rising consumer demand for "accessible" technology—i.e., technology that anyone can use—in phones, laptops, tablets and other tools.

What's now and what's next? Most immediately, look for eye-gaze technologies, more wearables such as smart watches, exoskeletons, and 3-D printed products, as well

as an emphasis on universal design and accessibility in everything, from physical buildings to web apps to kitchen appliances.

We will need to continue to fight to ensure that everyone, regardless of income, has access to assistive technology. Assistive technology professionals will need to continue to promote best practices, including user-centered design and research findings that "bridge the gap" between off-the-shelf technologies and actual, everyday use.

We can be certain of two things: technology will evolve and change, and what's coming holds great promise for a more inclusive society that values everyone's abilities. ■

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INSPIRATION

One Groundbreaking Transplant, One Child, Two New Hands

In his first few years of life, Zion Harvey lost his feet, his hands and a kidney.

By I-Hsien Sherwood

At the age of 2, a serious infection nearly killed the little boy and required the amputation of his extremities. Two years later, Zion needed a kidney transplant and received an organ from his mother.

Despite this difficult start, Zion thrived. He was fitted with prosthetic feet and managed well without hands, learning to feed himself, write and even play video games.

Heartache to history

In July 2015, Zion, now 8, became a pioneer: he was the first child in the world to receive a double hand transplant.

Organ transplants are usually reserved for life-threatening situations. After surgery, recipients must take immunosuppressant drugs for the rest of their lives, which can cause serious complications. But Zion was already taking these medications so his body wouldn't reject his transplanted kidney.

Doctors at The Children's Hospital of Philadelphia (CHOP) followed Zion for nearly two years to determine if he was a candidate for transplantation. His mother, Pattie Ray, consulted with surgeons about the risks to her son, but ultimately, she says it was up to Zion whether he went through with the procedure.

Zion had no doubts: he wanted the chance to have new hands.

Patient's patience

Even after the decision was made, much uncertainty remained; the operation was dependent on finding a donor of the correct gender, size, skin color and blood type. In the meantime, a huge team of doctors and nurses rehearsed every step of the complex procedure multiple times.

Only three months after Zion was put on the organ waiting list, it happened: A generous donor's family agreed to the hand donation. The surgical team at CHOP worked through the night, attaching bones with steel plates, connecting blood vessels and nerves with sutures thinner than a human hair, attaching muscles and tendons and sewing the skin together.

With the surgery successfully completed, Zion now faces a long road of challenging physical and occupational therapy to gain use of his new limbs. But this resilient child is ready. Before the transplant, he said: "When I get those hands, I will be proud of what hands I get." And today he is. ■

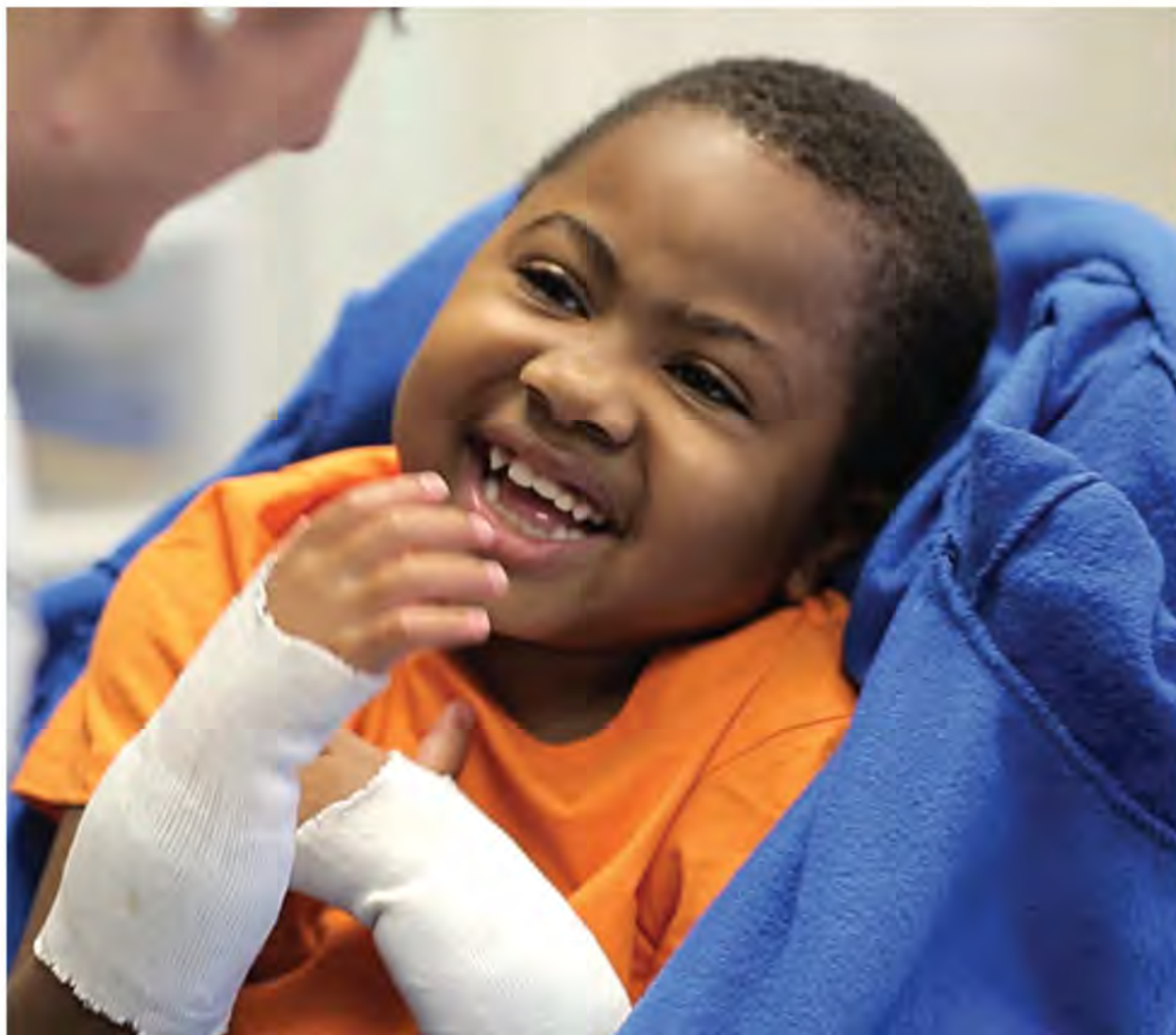


PHOTO: CHILDREN'S HOSPITAL OF PHILADELPHIA

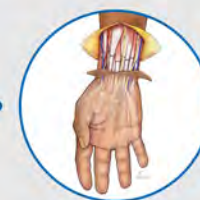
A brief
step-by-step
account
of the
procedure



Bones, plates,
arteries



Blood flow
restored



All connected
anatomy



Hand skin
closure



Read more inspiring stories like Zion's online, at futureofpersonalhealth.com

INSPIRATION

IN THE KNOW

Keeping Caregivers in Mind, Too

By John Schall, CEO, Caregiver Action Network

If you are a family caregiver, you already have your hands full with managing medications, scheduling doctor appointments, providing transportation and keeping up with the latest news about your loved one's health condition. Technology can help with caregiving in two ways: increasing the independence of people with disabilities, and by giving caregivers a much needed helping hand. No single technology is right for all situations, so if you haven't found what you need just keep looking. There are so many solutions out there—and more being offered every day!

More independence

Some technologies help caregivers directly. For instance, lifts help with transfers from bed to chair to bath without injury to the family caregiver. Companies across the country are leaping into the market to give caregivers a much-needed helping hand. Could you use technology to help track medications? Or use a GPS locator if your loved one wanders off? These technology solutions already exist today.

As more and more older Americans want to 'age in place' and stay in their homes longer, many technologies have been developed to keep people in their homes safely, from easy-to-use personal emergency response systems to large-scale home modifications. There are also phone enhancements and simplified social media interfaces that help keep individuals who would otherwise be socially isolated in social contact.

Noah Galloway: How to Set Your Own Bar

The former U.S. Army soldier turned model, motivational speaker and "Dancing With The Stars" contestant is no stranger to adversity. Despite losing part of one leg and one arm in Iraq, Galloway stands tall as a source of inspiration to Americans from all walks of life.

How has life been different since returning from service?

Returning from the service and adapting to civilian life was not as challenging as one would think. I missed being in the military, but I also accepted and embraced the change and looked forward to what my future might hold.

What's been a favorite workout that has helped get you back in shape?

As a fitness advocate, I wouldn't

say there is one favorite workout since part of the process of effectively working out is to transition through different routines and to always mix it up. All my routines are goal-oriented and I am particularly fond of the High Intensity Interval Training (HIIT).

In what ways has your experience on "Dancing with the Stars" enriched your life?

I never expected it to go too far. I was thrilled to have the experience and make it to the finals.

In anything I tackle, I push myself as hard as possible without determining the outcome and I did that too with DWTS. The amount of support I got and the voting, which took me to third place, was both humbling and exciting. I was dancing as much for my fans as for the competition itself.

What inspires you? What keeps you motivated?

My motivation to continuously support and inspire really comes from the stories others share

with me about their reaction to the changes I push myself to make. Again, the support and response from people all over the world continues to inspire me and makes me want to share the message that anyone can do anything no matter what challenges they face. ■

ONLINE EXCLUSIVE

Dive further into the tech-assisted world of individuals living with disabilities, as well as their caregivers. Visit futureofpersonalhealth.com

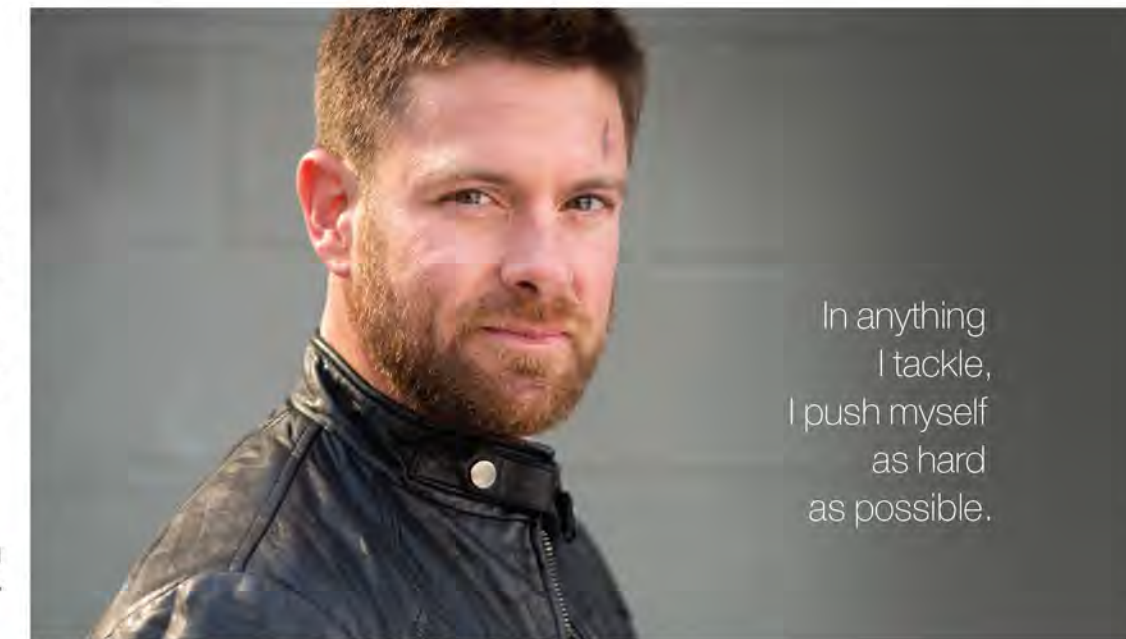


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With rates of obesity 2 to 4 times higher in children and adults with disability compared to the general population, there has never been a greater time of need for new models that focus on the integration of people with disability.

All people have the right to conditions and resources that ensure optimal health. Yet, inaccessible facilities, lack of transportation to recreation venues, absence of staff who know how to adapt programs and a general attitude among providers that people with disability need specialized vs. integrated

services, cultivates a culture of isolation and separation.

Inviting change

These circumstances further expose an already vulnerable population to higher rates of obesity and health disparities. Working at the community level to promote healthy living and prevent chronic disease brings the greatest health benefits to the greatest number of people in need.

“Including people with disability in community-based obesity prevention and reduction programs is an important step to bridge the gap between the known health disparities for

people with disability and implementing solutions to improve health,” says Dr. James H. Rimmer, Director of the National Center on Health, Physical Activity and Disability. “Facilitating the inclusion of people with disability raises the ‘consciousness level’ of all stakeholders engaged in community health.”

Efforts to create healthy, inclusive communities will directly affect generations to come. Activity can also be the key for someone to seek employment, education and become an active, vibrant citizen. The outcome of inclusive physical activity communities is a society that respects and values the rights of all to have equal access to physical activity. ■

By Allison Hoit Tubbs, Senior Information Specialist, National Center on Health, Physical Activity & Disability (NCHPAD)

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INSPIRATION

Mike Savicki's Road to Role Model

For people living with disabilities, having access to handicap-equipped vehicles and other specialized devices is often half the battle.

By Cindy Riley

In November 1990, Mike Savicki's life was forever changed. While training to become a U.S. Navy F-14 fighter pilot, Savicki suffered a severe spinal cord injury after diving into the waters off Florida's Pensacola Beach. Everything changed in an instant, but after seven months of rehabilitation, he was ready to take on life again—with help from the proper equipment.

"If you look at my day as a

quadriplegic, I wouldn't be able to get through it all without assistive technology. The technologies, tools and gadgets I use in everyday activities like bathing, dressing, cooking, writing, typing, driving and exercising—to those I use in the bigger routine that come with being a dad—are always there."

Taking charge

"One of the best things that ever happened to me was getting my driver's license again," Savicki,

47, explains. "I had to learn how to drive with hand controls and learn about getting in and out of a car, driving a full-sized van with a lift and swivel seat. For me, getting back on the road behind the wheel almost saved my life."

Interacting with three-year-old daughter Caroline is one of Savicki's other chief accomplishments.

"She knows her daddy does things differently because he is different. She understands, and has even learned to use some of the smaller household devices and gadgets that help me in the kitchen, garage, yard and my workshop."

Moving forward

Savicki, a triathlete and 18-time finisher of the Boston Marathon,



PHOTO: JEFF FREVEMED

says assistive technology will also aid in his future athletic endeavors.

"There are sports, like golf, kayaking and sailing, that can become a part of not only my life,

but also my wife Sarah's and our daughter's, too. The world is full of new places to go and things to discover, so who knows where my path may lead." ■

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