

The Impact of Emerging Technology Trends for Individuals with SCI

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Washington Assistive Technology Act Program



Provide Assistive Technology resources and expertise to all Washington residence with disabilities to aid in making decisions and obtaining the technology and related services needed for employment, education and independent living

Each state has a federally funded and mandated AT program that provides comprehensive statewide services:

- <http://www.ata.org/states.html>

University of Washington Center for Technology and Disability Studies (UWCTDS) is the lead agency for WATAP

How WATAP Can Help



Low cost or free programs for consumers

- Device Demonstration
- Device Lending
- Device Reutilization
- Alternative Financing
- Information and Referral

Our programs and services are inclusive to all Washington residents

We can help you through the process

Consultation & Evaluation

In depth assessments and recommendations about Assistive Technology to meet your needs

Professional recommendations for school, work and home modifications

Evaluations and Consultations are provided through the UW Center for Technology and Disability Studies as a fee for service



Intro to the Changing Landscape of Technology

According to an article from CBC News, the population of individuals with disabilities is the fastest-growing minority in the world

The WHO is currently contributing to advancing research in the areas of assistive and medical devices needs and preferences, social innovations in models of care, and medication adherence innovations

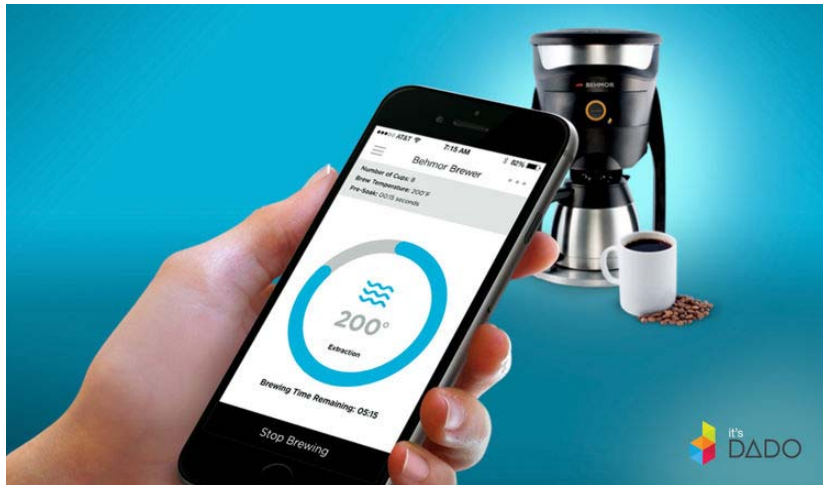
Apple, Amazon, Google and others have discovered what's good for someone with a disability is good for everyone else, too

The Changing Landscape of Technology





Technology Can Be A Powerful Tool



Trends in Technology

Wearable Electronics

VIRTUALLY INVISIBLE DEVICES SENSORS WORN
UNDER CLOTHES TO TRACK POSTURE, AND SHOES
FOR GPS

E-Pants

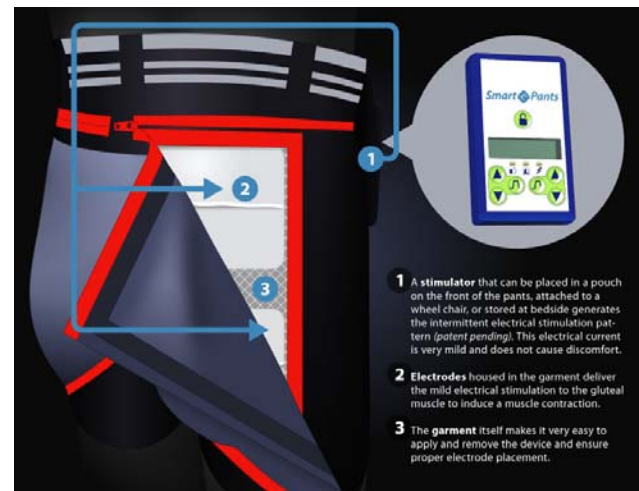
Developed by Dr. Vivian
Mushahwar

Still in development phase

Delivers electrical stim to replicate
fidgeting and muscle contraction

Pads placed on boney
prominences

<http://www.howitworksdaily.com/smart-e-pants-the-electrical-underwear-that-prevents-bedsore/>



SkinTrack

<https://www.technologyreview.com/s/601405/use-your-arm-as-a-smart-watch-touch-pad/>



Cool Design Smart Glass

Smart augmented reality (AR) glasses

Remotely control domestic appliances and environmental controls

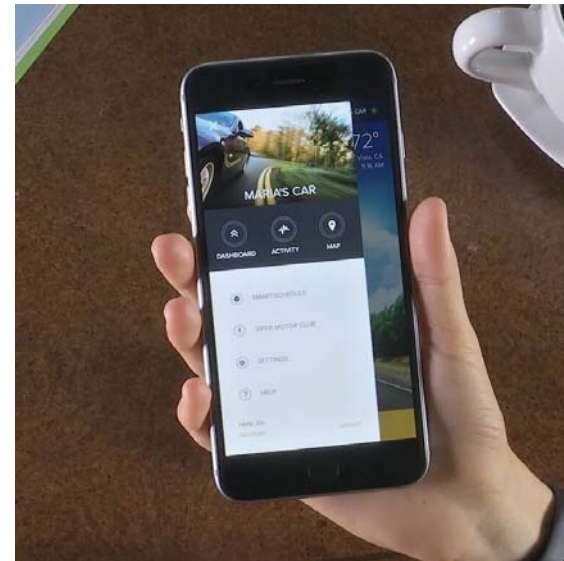


Viper SmartStart

Remote start your car from the comfort of your home or office

Remotely unlock and lock your vehicle right from your smartphone

Locate and track your car, and receive alerts when your vehicle reaches a certain speed or enters or leaves a designated area



Myo Gesture Control Arm Band

Wirelessly control technology with gestures and motion

Reads gestures and motion to let you control technology, touch free

Works with apps in the Myo Market: Netflix, Spotify, iTunes, others

<https://www.myo.com/>



Tap Wearable Keyboard

<http://www.tapwithus.com/>



Mobility

SmartDrive MX2

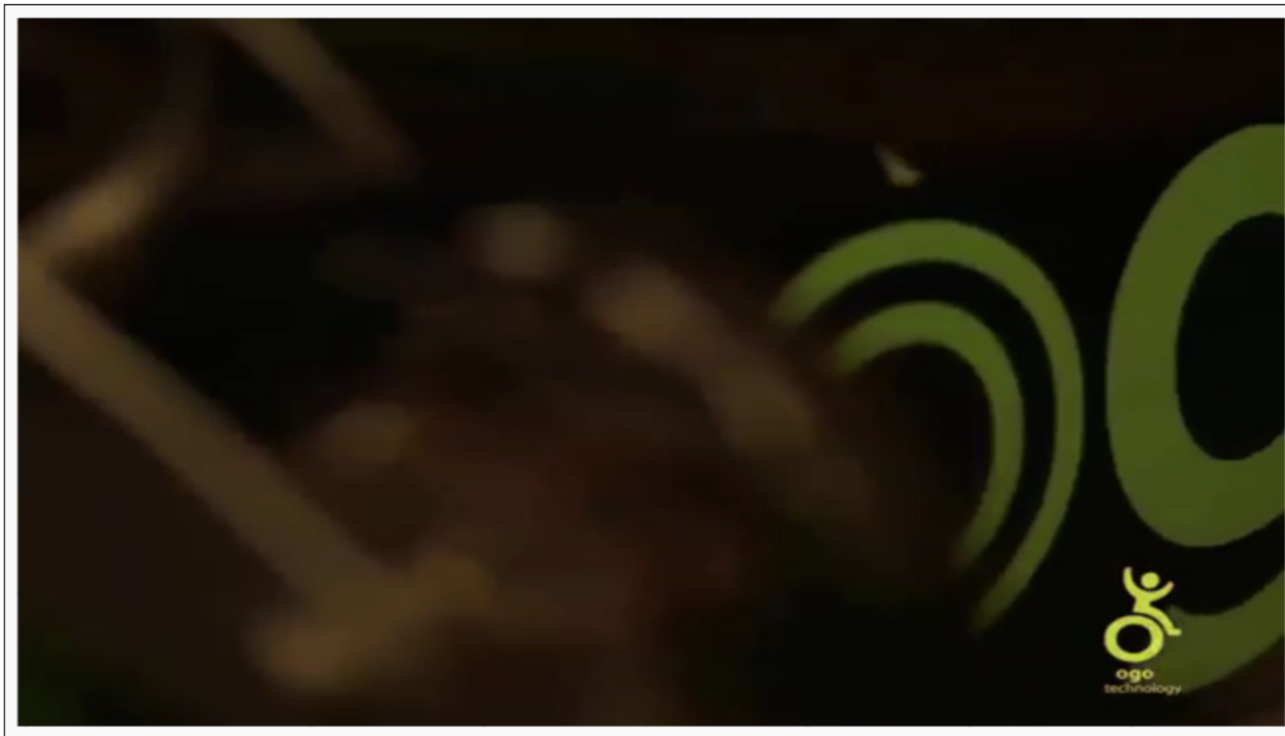
Easy to install, power assist for wheelchairs

Push to go forward, tap brake to stop



Ogo Wheelchair

Blending electronics and battery technology with an intuitive hands-free control system



Ekso Bionics

Ekso GT is the first robotic exoskeleton to be granted clearance for rehabilitation purposes for use with stroke patients and with SCI patients that have injury at levels of T3 to C7.

Clinics using the Ekso GT to help those recovering from stroke or spinal cord injury get back on their feet sooner, promoting better patient outcomes.

<http://eksobionics.com/product/ekso-bionics-ekso-gt/>



Whill Wheelchair

FDA cleared

All directional wheels;
tight turning radius;
multiple terrains

Low profile frame

Not designed for high
level SCI

<http://whill.us/>



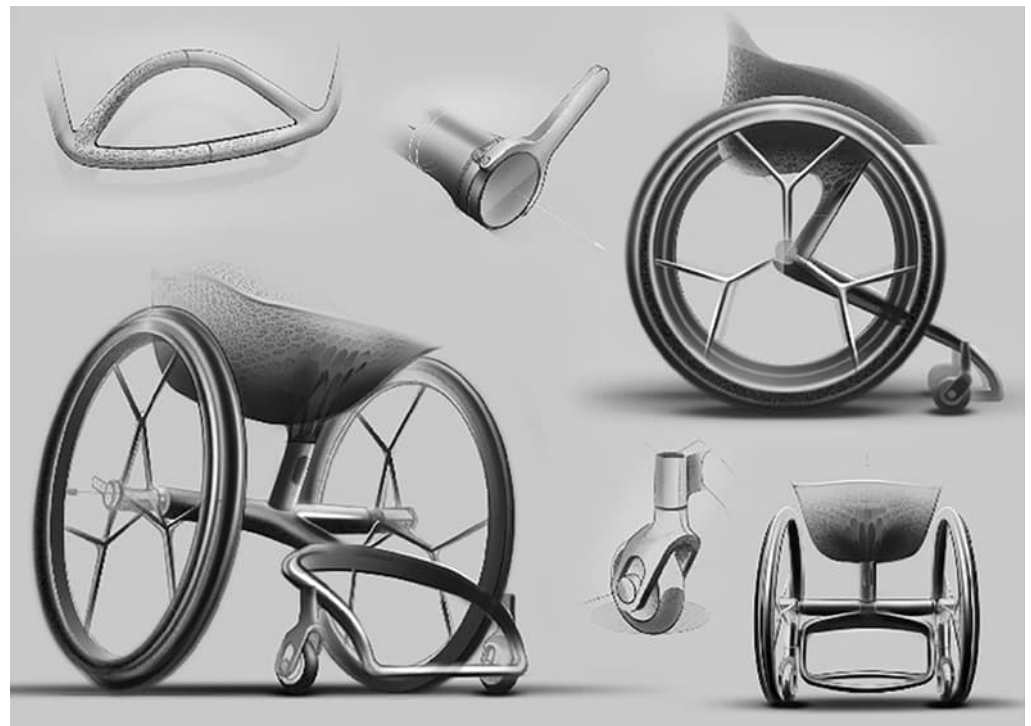
3D Printed GO Wheelchair

Custom made seat and foot bay

Constructed from titanium, carbon fiber, and thermoplastic polyurethane

Manufacture and delivery within two weeks

<http://www.gizmag.com/3d-printed-consumer-go-wheelchair/43219/>



Robotics

Kinova Assistive Robotics

Jaco Arm

- Mico 2 or Mico 3 Fingers
- Light weight
- Weather resistant
- 16 movements
- Flexible fingers



<http://www.kinovarobotics.com/assistive-robotics/products/manipulation/>

Bestic AB Self Feeding System

<http://www.besticinc.com/>



Budgee

<http://www.digitaltrends.com/home/budgee-is-a-follow-me-robot-that-carries-your-things/>



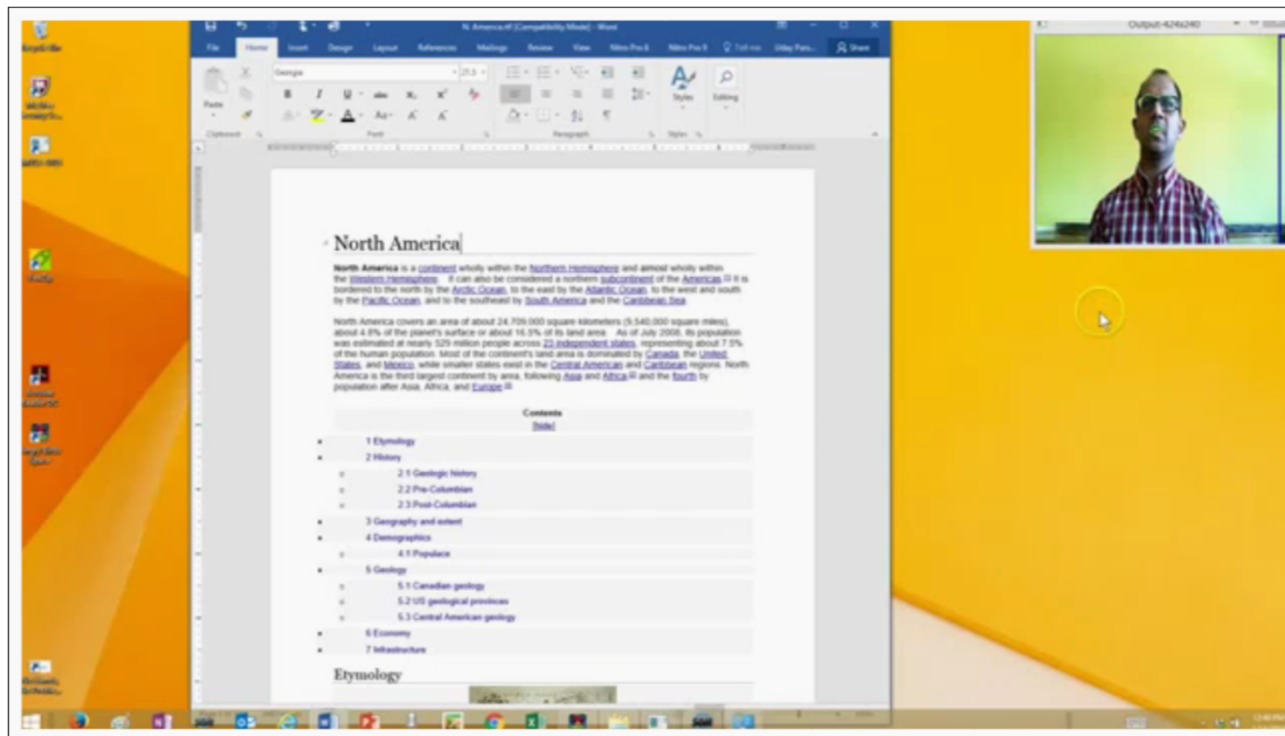
Apps

Luxe On Demand Valet Parking



Smyle Mouse

<https://smylemouse.com/>



Google Voice Access in Beta

<https://googleblog.blogspot.com/2016/04/building-more-accessible-technology.html>



Devices and Hardware

Leap Motion

Senses how you naturally move your hands

Control and interact with your computer in three dimensions

<https://www.leapmotion.com/>



Halo

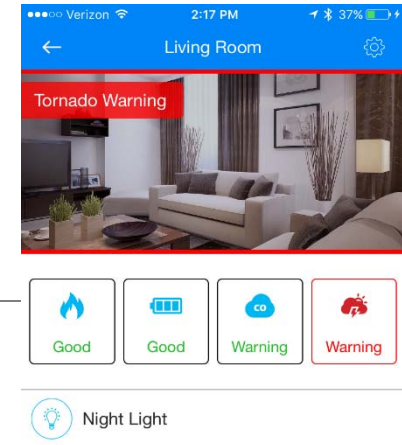
Halo+ smoke alarm and delivers weather and disaster alerts, including tornadoes, floods and hurricanes.

Notifications on dangerous conditions based on user's preferences

Can be customized on user's phone.

Will continue to provide alerts for up to seven days after a power failure.

<http://halosmartlabs.com/>



HERO Med Dispenser

Holds up to 10 meds

Releases meds on a set schedule

Monitors which pills dispensed,
what time and how many

App allows family/caregiver to
receive notifications that meds
medication were not taken

\$500

www.herohealth.com



HERO app - Notifications - Two cards

HERO app - Notifications - No cards

Sesame Touch-Free Smartphone

A software-modified version of the Google Nexus 5 smartphone that pairs head tracking and voice recognition

<https://sesame-enable.com/>



AWS IoT Button

<https://aws.amazon.com/iot/button/>

An easy way to get started with the Internet of Things, based on the Amazon Dash button hardware, the AWS IoT button is a developer kit that can be programmed to control internet-connected devices and services.

Use the button to count items, track usage, initiate a call, send alerts or start and stop a process.

Code in the cloud to configure your button's single, double, and long clicks.



Amazon Echo

Digital Assistant

Hands-free speaker you control with your voice

Echo connects to the Alexa Voice Service to provide information, music or services

- Audibly answers your questions
- Able to play thousands of songs
- Reads audio books
- Makes lists or sets timers
- Activates Smart Home Devices



Echo for Smart Homes

Echo currently works directly with:

- Phillips Hue, Samsung SmartThings, WeMo, Wink, and Insteon

Some devices will require a HUB

- Interface between Echo and device

IFTTT (IF This – Then That) <https://ifttt.com>

- Website creates set of commands instructing Echo
- to complete a task “Alexa trigger find my phone”



Self driving Cars

Still in prototype phase

Google expects that first people to use self driving cars will be baby boomers and individuals with disabilities

<https://www.youtube.com/watch?v=CqSDWoAhvLU>



Wrap Up



Contact Us

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Facebook: @wa.assistivetech



Technology for Independence