



Georgia's Assistive
Technology Act Program

Wearable Technologies: What are they and how can they assist someone with a Disability

Presented by:

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www.gatfl.gatech.edu

Tools for Life Mission

Tools for Life, Georgia's Assistive Technology Act Program, is dedicated to increasing access to and acquisition of assistive technology (AT) devices and services for Georgians of all ages and disabilities so they can live, learn, work and play independently and with greater freedom in communities of their choice.



The TFL Network



Visit Us Online!



The screenshot shows the Georgia Tech Tools for Life website. The header features the Georgia Tech logo and the 'TOOLS for LIFE' logo, with the tagline 'Georgia's Assistive Technology Act Program'. A navigation bar includes links for HOME, ASSISTIVE TECHNOLOGY, TFL NETWORK, and CALENDAR OF EVENTS, along with a search bar. A left sidebar lists various resources: TRAINING, FUNDING, PUBLICATIONS, TFL WIKI, MEET THE TFL TEAM, MEET THE ADVISORY COUNCIL, DIRECTIONS/MAP, JOIN OUR MAILING LIST, and SCHEDULE A TOUR. The main content area has a 'Welcome' section with a photo of a training session and a text block about the program's mission. Below this is a 'Welcome to Tools for Life' section with a brief description of the program and a list of services: AT Demonstration, AT Evaluations and Assessments, and AT Funding Options & Education. On the right, there are sections for GATE 2016, WEBINARS, TOOLS FOR LIFE APPFINDER, AT ONLINE EXCHANGE (gTRADE), and AT FUNDING GUIDE (DOLLARS & SENSE).

Georgia Tech **TOOLS for LIFE**
Georgia's Assistive Technology Act Program

HOME ASSISTIVE TECHNOLOGY TFL NETWORK CALENDAR OF EVENTS Search our Site Go

TRAINING
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TFL WIKI
MEET THE TFL TEAM
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DIRECTIONS/MAP
JOIN OUR MAILING LIST
SCHEDULE A TOUR

Welcome AT Services Try AT Get AT AT Outlook Research

Stay up-to-date on the latest assistive technology strategies and solutions with customized individual and group trainings.

Welcome to Tools for Life

Tools for Life, Georgia's Assistive Technology Act Program, is dedicated to increasing access to and acquisition of assistive technology (AT) devices and services for Georgians of all ages and disabilities so they can live, learn, work and play independently and with greater freedom in communities of their choice.

Tools for Life and the TFL Network work collaboratively together to accomplish our mission through:

- AT Demonstration
- AT Evaluations and Assessments
- AT Funding Options & Education

GATE 2016
Georgia Tech Student Center

DEC 9

WEBINARS
Current Webinar Schedule
Webinar Archives

TOOLS FOR LIFE APPFINDER
For Living, Learning, Working, and Playing

AT ONLINE EXCHANGE
gTRADE

AT FUNDING GUIDE
DOLLARS & SENSE
Sponsoring the AT Funding Stream

What is Assistive Technology?

Assistive Technology (AT) is any item or piece of equipment that is used to increase, maintain or improve the functional capabilities of individuals with disabilities in all aspects of life, including at school, at work, at home and in the community.

- Assistive Technology ranges from no/low/light tech to high tech devices or equipment.



Why Assistive Technology?

- For a person without a disability, assistive technology makes life easier.
- For a person with a disability, assistive technology makes life possible.

Tip: USE AT! I have yet to meet a successful student with disabilities who doesn't use any AT.



Wearable Facts

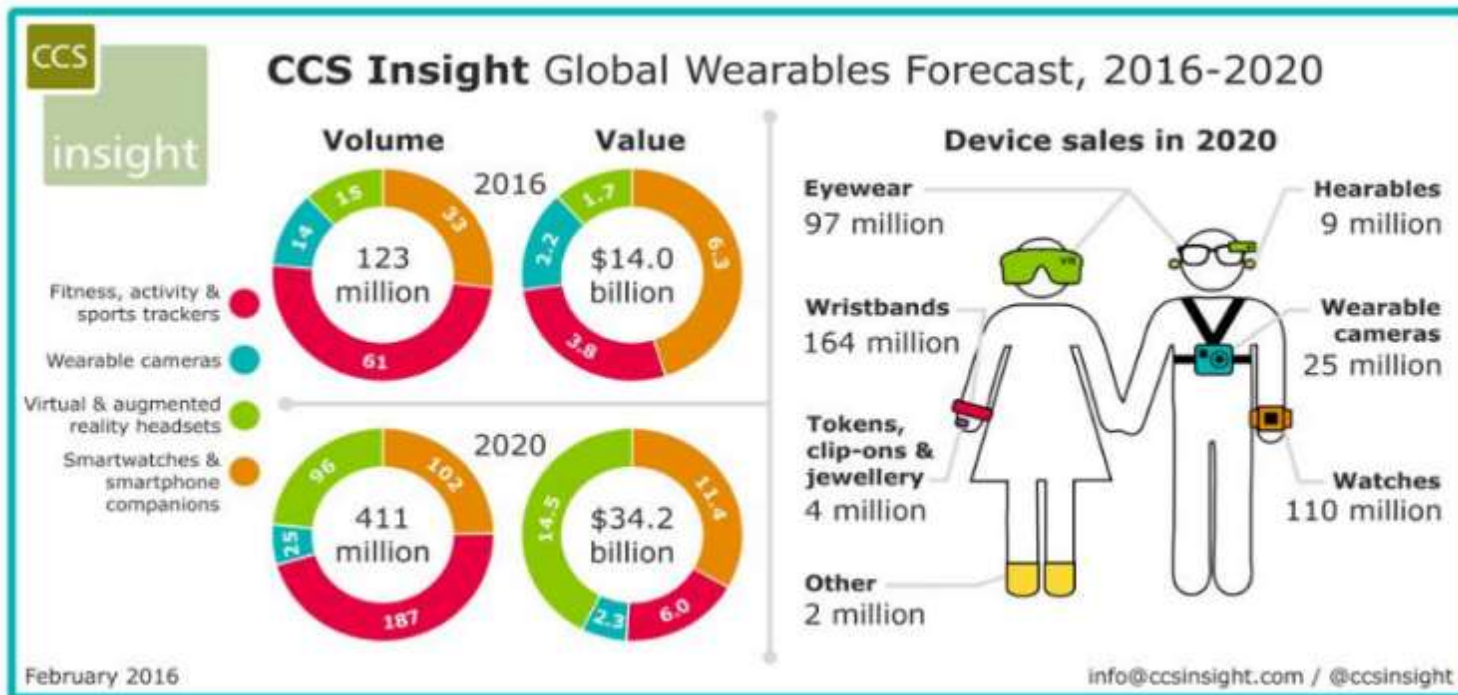
- Invention of the first wearable device can be traced to the creation of the portable watch in the 16th century
- In 1979 Sony invented the Walkman
- In 2000, the first Bluetooth headset was sold
- 2004, the first GoPro was launched
- Google Glass released in 2013
- ABI Research estimates the global market for wearables in health and fitness could reach **170 million devices** by 2017
- Global wearables market is expected to reach a value of **19 billion U.S. dollars in 2018**



Wearables!

- Nokia has been developing magnetic or vibrating tattoos that can alert the user when there is an incoming call or a warning alert for a dead battery from a mobile phone
- Remote Brain Machine Interface (RBMI) can be defined as a means to control a machine that is in a different geographical location than the user
- Increase of using wearable in the aging population
- Increase of using wearable technologies for people with disabilities

CCS Wearables Forecast



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See for Yourself

What is OrCam?

OrCam is an intuitive portable device with a smart camera designed to assist people who are visually impaired.

OrCam gives independence.



- <https://nueyes.com/>
- Pro Coming End of Summer 2017- \$6,195
- Variable Magnification from 1x-12x
- Various contrast and color changes
- Voice Activated
- Wireless
- Lightweight Design
- 2 Year Warranty
- Text-to-Speech (OCR)
- Stream TV and Movies to the Glasses
- Full Android Computer
- Internet Browser
- Email
- Barcode and QR Scanner
- Social Media Applications



Apple Watch 3

- Cellular
 - Leave phone behind
 - Stream Music
- “Hey Siri”
- Can be used for fitness
 - Heart Rate Monitor
 - GPS
 - Accelerometer
- Haptic feed back
- Breathe App
- From \$329+



Embrace Watch

- Monitors Nervous System
- Monitors Physical Activity
- Monitors Sleep
- Around \$249
- Works on iOS and Android
- <https://www.empatica.com>



How it works: Embrace Alert System



1. Event Detection

The Embrace watch is linked to the wearer's mobile device with a Bluetooth® connection. This connection allows our systems to analyze the information and detect unusual events like convulsive seizures in real-time.

2. Alert Dispatching

The Alert app will be automatically activated when an event is detected by the Embrace watch. The App will send an alert notification to your caregivers using their mobile device via data or Wi-Fi connections.

3. Caregiver Notification

The Empatica systems will notify your caregivers one after the other to communicate the alert and ask if they can help. They only need a mobile phone with cellular signal to receive the notification, no smartphone required.

4. Caregiver Alert

Your caregivers will be notified through an automated call and sms. You can add multiple caregivers into the App so that there is always someone who can help you.

Watchminder

- Rechargeable battery
- 65 pre-programmed messages to chose from
- 30 daily recurring alarms
- Create your own personalized messages
- Helpful training and reminder modes
- Vibrating alert
- Countdown timer



Octopus by Joy

- Smartwatch for Kids
- Icon Friendly
- Watch, Scheduler, and Assistant
- Visual Reminders
- [Octopus by Joy](#)



GPS Tracking Devices

- Find My iPhone
- Find My Friends

10 Tracking Devices that Keep Loved Ones with Dementia Safe

Wandering adds more confusion to the lives of those already dealing with a disorienting disease, and leads many people with Alzheimer's or dementia into unsafe situations. Location and elderly GPS tracking devices for dementia are an increasing option for families and caregivers trying to reduce wandering.

Here are 10 location devices that are being used to keep loved ones with the disease safe:

1. iTraq

A new cellular tracking device that came out this year, iTraq is the "world's first global location device that can find anyone." It uses cellular towers to determine location, allowing it to be used anywhere there is service around the world. The device itself is as small as a credit card, and its location is reported to you through a mobile application which allows you to view a map of locations and timestamps. iTraq also features a "Guard Mode" where users can specify a radius on a map, then receive alerts if/when the iTraq goes beyond your pre-set radius. This means that you could receive notification if a loved one wandered from home, and also be able to track where they are with accuracy.

2. Project Lifesaver

Fulfilling their mission to "provide a timely response to save lives and reduce potential injury for adults and children who wander due to Alzheimer's, autism and other related condition or disorders," Project Lifesaver's GPS tracking program has helped rescue 2,983 people. We spoke with Gene Saunders, Chief Executive Officer and Founder of Project Lifesaver, who shares more about the technology – a small PAL (Protect and Locate) tracker worn around the wrist – that has saved so many from wandering. "Citizens enrolled in Project Lifesaver wear a small personal transmitter around the wrist or ankle that emits an individualized tracking signal. If an enrolled client goes missing, the caregiver notifies their local Project Lifesaver agency, and a trained emergency team responds to the wanderer's area. Most who wander are found within a few miles from home, and search times have been reduced from hours and days to minutes. Recovery times for PLI clients average 30 minutes, 95% less time than standard operations," Saunders adds. "Recently, Project Lifesaver has added a new technology... that can also provide a radio frequency safe zone around them that notifies the caregiver in the event an at-risk individual breaches this established safe zone."

3. Mindme

Mindme offers assistance to families dealing with dementia and wandering in the form of both an alarm and

B-Calm

- “acoustic shield”, allowing the individual to have control of the sound environment
- helps reduce off task behaviors and irritability
- disturbing noises are blocked and replaced with familiar and soothing sounds



Snug Vest

- inflates to provide adjustable and evenly-distributed pressure to the torso for a comforting hug-like squeeze without pressure placed on the stomach or chest.
- promotes independence as the user can self-inflate their vest in a discrete way to get the exact amount of safe pressure they need. Snug Vest enables the user to complete daily tasks with ease anywhere they go!



snug vest™

- Denim weighted vest
- Adults and Children
- Can improve balance
- Trunk stability
- Motor Coordination
- Stress Reduction
- Attention
- Autism
- <http://otvest.com/>



The Welt

- Kickstarter
- Smart Belt
- Starts at \$69
- Keeps track of:
 - Steps
 - How long you sit
 - Waist



Nike FLYEASE Shoes

- Created for both Children and Adults
- Type of zipper that goes around the heel that makes it easier to put shoes on and off
- Lots of styles and colors
- \$58 +



The Bruise Suit

- Smart injury detection suit for athletes with loss of sensation.
- It applies a recyclable pressure-sensitive film to indicate the severity of injuries. High risk areas are covered with disposable, made-to-fit film sheet inserts.
- If an area is excessively stressed during an accident, the film will irreversibly change color. After training or competing, injured areas can be easily spotted and effectively treated.”



Disabled Athletes Using Smart Injury Detection Suit to Find Injuries

■ Fitness, Sports Science | December 3, 2014 | Jesus Salas



SHARING

f Facebook

Twitter

The creative minds at the Royal College of Arts have designed **The Bruise**, a new smart injury detection suit that helps treat injuries quickly and efficiently for disabled athletes. What is amazing about the Bruise is that it is designed to change colors on impact using a recyclable pressure sensitive film to indicate the severity of an injury.



Sponsored by Axon Sports.



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■ Daily News

Rheo Knee

- Auto adaptive real-time stance and swing control.
- Dependable and easy swing initiation on all surfaces.
- Automatic stumble recovery.
- Weatherproof design allows exposure to fresh water splashes
- Accompanying Össur Logic app for iOS devices provides
- Smart Extension makes raising from a squatted position easier with less resistance.
- Facilitates stepping over obstacles and stepping backwards.



- Makes it easy to track, manage and live with epilepsy
- App for Smart Watches
- Useful for:
 - Medication Management
 - Care Circle
 - Health Insights
 - Log Seizures

Reveal

- Measures and tracks anxiety to help you better understand behavior and prevent meltdowns.



- Helps people control electronics without using their hands.
- Based on your head movements, it moves the cursor onscreen. You bite on a blue extension to click, and it can go a week without charging.”
- <https://vimeo.com/158593763>



Muse: The Brain Sensing Headband

- Put on the Muse headband, put on your earbuds, start the app, and close your eyes. Immerse yourself within the sounds of a beach or rainforest.
- While you meditate, it measures whether your mind is calm or active, and translates that data into weather sounds.
- When you're calm, you'll hear peaceful weather sounds. When your mind wanders, the weather will intensify, guiding you back to a calm state.



- Converts any TV Audio output into an infrared light beam for wireless transmission to a receiver
- Dramatically broadens the acoustic sweet spot of your living room.
- Be able to clearly hear all dialogues and stereo sounds in your movie or TV program.



BuzzClip

- small and discreet wearable for people that are blind or partially sighted
- uses ultrasound to detect obstacles that may lie directly in one's path
- offers essential head level obstacle detection
- \$149
- [BuzzClip](#)



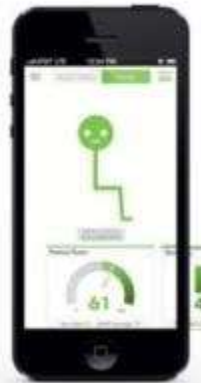
Fidget Ring

- Similar to fidget toys; except you can wear them!
- Helps for people who are anxious or have trouble focusing on the something.



Lumo Lift

- Lumo Lift is a tiny posture coach and activity tracker that works with a free iOS and Android app to help you sit straighter, stand taller, and look better.
- Sends gentle vibration alert when posture needs to be corrected



UPRIGHT- Posture Trainer

- Short term training, with long term results; by training with Upright only 15 - 60 minutes a day, you will have improved core strength & muscle memory to maintain a lifelong habit of good posture.



e-Handle

- * Handle/grip for e-readers, tablets and iPad Minis
- Safe way to hold devices with better grip, control and functionality
- Rotates 360 Degrees; Easy to use; Adjustable; Detachable



Wearable tech for all phones
and cases

Great for larger phones

Safe way to hold and use
phones

Solves dexterity issues Rotates;
adjustable; detachable



PopSocket

- A grip, a stand, a wrap, and more for phones and tablets.
- They make holding tablets and e-readers more comfortable and secure.
- With the PopSockets Mount companion product, they attach to nearly any vertical surface, including dashboards, mirrors, bed posts, refrigerators, and walls, for convenient hands-free viewing.

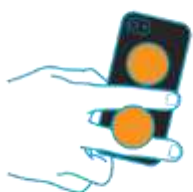


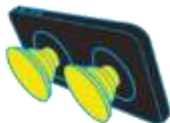
PHOTO GRIP



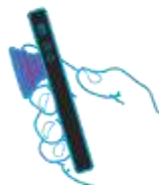
VIDEO CHAT



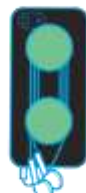
TABLET GRIP



MEDIA STAND



TEXTING GRIP



CORD WRAP



Modular hose -tabX Tablet Holder and Plate

- This solution is great for situations when there is no surface to attach to hold up your tablet.
- Whether lying on the sofa or sitting in a chair/wheelchair, the adjustable straps help hold it in place for hands free operation.]
- Attach this tablet holder to your leg



Virtual Reality

- Market is Growing!
- Education
- Gaming
- Opportunity to experience an experience without being there



LVL: Hydration Monitor

- Fitness Tracker that will track hydration
- Aims to improve overall health
- Created by medical student at University of TX who had a stroke due to dehydration
- BSX Athletics
- Shipping 2017



VivaLnk Fever Scout

- eSkin technology
- Monitor body temperature
- Worn near the armpit
- Works with app to track data
- 59.99
- <https://feverscout.com/>



Vital Scout

- Wireless Patch
 - Worn over heart
- Monitors Stress and Physical Health
 - Gives Alerts
- Body Temperature
- Respiration Rate
- Sleep Status
- Heart Rate
- Stress Levels
- Activity/Training
- <http://vivalnk.com/vitalscout/>



- Stylish smart glasses
 - Prescription
- Will track your activity,
- Subtly send you notifications
- Use bone conduction audio tech to provide music without earbuds
- Touch interface right on the frames
- <https://www.enjoyvue.com/>





My Question to You:
What have you learned today?

Resources



<https://www.statista.com/topics/1556/wearable-technology/>

<http://www.forbes.com/sites/paullamkin/2016/02/17/wearable-tech-market-to-be-worth-34-billion-by-2020/#18d3ae9f3fe3>

<http://dl.acm.org/citation.cfm?id=1358913>

<https://static1.squarespace.com/static/516c369de4b00b44ca2bcdce/t/527fee38e4b0217581602d6e/1384115768724/wearable-computing-the-next-big-thing-in-tech.pdf>

<http://www.scientific.net/AST.85.11.pdf>

<http://thirdwavefashion.com/2016/06/wearable-tech-for-the-disabled/>

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

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

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

<http://www.modularhose.com/Assistive-Technology/mh-Tablet-and-Device-Solutions/130701>

<http://www.dudeiwanthatt.com/style/jewelry/fidget-rings.asp>

<http://www.sereneinnovations.com/tvdirect-private-tv-listening-headset>

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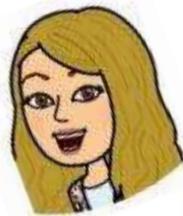
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TOOLS *for* LIFE

Georgia's Assistive Technology Act Program



thank
you



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