



Tracking Trends and Transferring Knowledge: Exploring Innovative Technologies

Maria T. Kelley, WATAP | Martha Rust & Carolyn Phillips, Tools for Life
With contributions from the Tools for Life Team

www.gatfl.org

For Handouts: <http://www.gatfl.gatech.edu/tflwiki>

www.amacusg.org

Session Description



At the end of today's session, you will understand:

The world around is evolving at an astounding rate. Assistive Technology, or AT, has been foundational in this evolution and a catalyst for positive life-changing results for individuals with disabilities.

Beginning a path that leads to college or technical school can be an overwhelming experience. Students need independent access to the curriculum to become life-long learners. AT can increase opportunities for education, social interactions, and employment especially when there is a focus on technology like tablets, apps, wearables and robotics. With such a wide range of assistive technology solutions, how does one include their choices into transition planning?

This presentation will provide a brief overview of the AT consideration process including hands-on demonstration of cutting-edge technology aligned to postsecondary and transition planning. Join presenters for a discussion on what's new in AT, in the AT community and explore where we were, where we are, and where we are going.

Accessibility Made Smart



AMAC creates practical solutions that work, with a focus on utility, ease of use, and high quality.

- **Accessibility Consulting** focuses on organizational accessibility needs with evaluation, technical assistance, customer support, and website accessibility solutions.
- **Braille Services** produces customized projects from both print materials and electronic text including partial books and chapters or graphics only using cutting-edge technology.
- **Captioning Services** makes classrooms, meetings, labs and other audio environments fully accessible for deaf or hard-of-hearing.
- **Professional E-Text Producers** provide high-quality e-text in many formats such as PDF, DOC, DAISY, and HTML.
- **Certified Assistive Technology team** provides on-site and remote assessments, demonstrations, training and technical assistance for education, work, and daily living environments.
- For more information, please visit our website at www.amacusg.org

Mission



To help Georgians with disabilities gain **access to and acquisition of** assistive technology devices services so they can **live, learn, work, and play independently** in the communities of their choice.



Tools for Life, Georgia's Federal AT Act Program



- **TFL developed Georgia's Plan for AT**
 - We serve individuals of all ages & all disabilities in Georgia
 - Over 50,000+ thru various activities throughout the year
- **TFL Network**
 - Assistive Technology Resource & Outreach Centers
 - AT Lending Libraries
 - Training and Demonstrations
 - AT Reuse
 - AT Funding Education/Assistance and Resources
- **Online Resources**
 - www.gatfl.gatech.edu - 5,000 unique visitors a month

Get to Know Your AT Act Program



Screenshot of the RESNA Catalyst Project website (http://resnaprojects.org/).

RESNA Catalyst Project
Providing Technical Assistance to AT Act Entities

[Skip to Content](#)

[About Us](#) | [Grantees Only](#) | [AFP](#) | [Statewide](#) | [PAATs](#) [What's New](#) | [Contact Us](#)

Follow us on Twitter!

Follow @ResnaCatalyst

CATALYST PROJECT @ResnaCatalyst 20m
A new sensor development could aid those suffering from Alzheimer's: ecnmag.com/blogs/2014/09/...

CATALYST @ResnaCatalyst 21h
Tweet to @ResnaCatalyst

#assistivetech

Sensory Guru @sensoryguru 16m
Register now! Sensory Guru Study Day Programme 2014 - eepurl.com/3BQ49 #StudyDay #SEN

The **RESNA Catalyst Project** provides aid and resources for:

- [Statewide Programs](#)
- [Financial Loan Programs](#)
- [Protection and Advocacy for Assistive Technology \(PAATs\)](#)
- [AT Entity Grantees](#)

Quick Catalyst Project Resources:

- [Quick Contacts](#) (PDF)
- [Webinars](#)
- [Highlights Monthly Newsletter](#)

Catalyst Project Hubs

- [Transition to the Community](#)
- [AT for Employment](#)

Links

- [RESNA](#)
- [AT Connects](#)
- [Pass It On Center](#)
- [Center for Assistive Technology Act Data Assistance \(CATADA\)](#)

Upcoming Events

Thu, Sep 25
[Loan Directors New Directors Series](#) (2 pm - 3 pm EST)
[New AFP Grantee Call](#) (4 pm - 5 pm EST)

Fri, Sep 26
[AT for Employment Work Group call](#) (3 pm - 4 pm EST)

Tue, Sep 30
[Deadline for obligation of RSA FY13 funds](#) (All Day)

Wed, Oct 8
[AT & Education Series Webinar Two](#) (3 pm - 4 pm EST)

Online Calendar powered by [localendar.com](#)

- <http://resnaprojects.org/>

TRAINING

FUNDING

PUBLICATIONS

TFL WIKI

MEET THE TFL TEAM

MEET THE
ADVISORY COUNCIL

DIRECTIONS/MAP

JOIN OUR
MAILING LIST

SCHEDULE A TOUR

Welcome AT Services Try AT Get AT AT Guides Research

Learn More about AT through



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

ROOM TOWN HALL MEETING

MAR
19

Goodwill of North Georgia
154 Hicks Drive, Rome, Georgia
30161

WEBINARS

MAR
19

[Assistive Technology Solutions
for Writing](#)

MAR
26

[Diving Beneath the Surface:
Selecting Tablets, Apps and
Accessibility Features](#)

APR
2

[Creating Accessible Documents
for Individuals with Learning
Disabilities](#)

- Current Webinar Schedule
- Webinar Archives

TOOLS FOR LIFE APPFINDER



...for Living, Learning, Working, and Playing.

AT ONLINE EXCHANGE



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.



Defining Universal Design



- **Universal Design makes things *safer, easier* and *more convenient* for everyone.**
- Universal Design involves designing products and spaces so that they can be used by the widest range of people possible.

In the Shadows - Mainstream



- Tim Cook, Apple Chief Executive
- 2013 speech at Auburn University
 - ...people with disabilities are "in a struggle to have their human dignity acknowledged."
 - "They're frequently left in the shadows of technological advancements that are a source of empowerment and attainment for others."

Mainstream Example: Mobile/Smart Phones



- iPhone - mobile phone in the mainstream market.
- Apple included a screen reader in the IOS for every iPhone.
- Increased Access for everyone – especially individuals with disabilities
- Decreased Cost – not as costly as it would be for a company specializing on screen readers
- Moved us Out of the Shadows, Into the Light!

iOS 9 2015- More Powerful Siri



Meet your proactive assistant.

Based on the apps you commonly use and the time of day you use them, you'll get intelligent suggestions for what you might want to do next — even before you ask.



iOS 8 – released in 2014

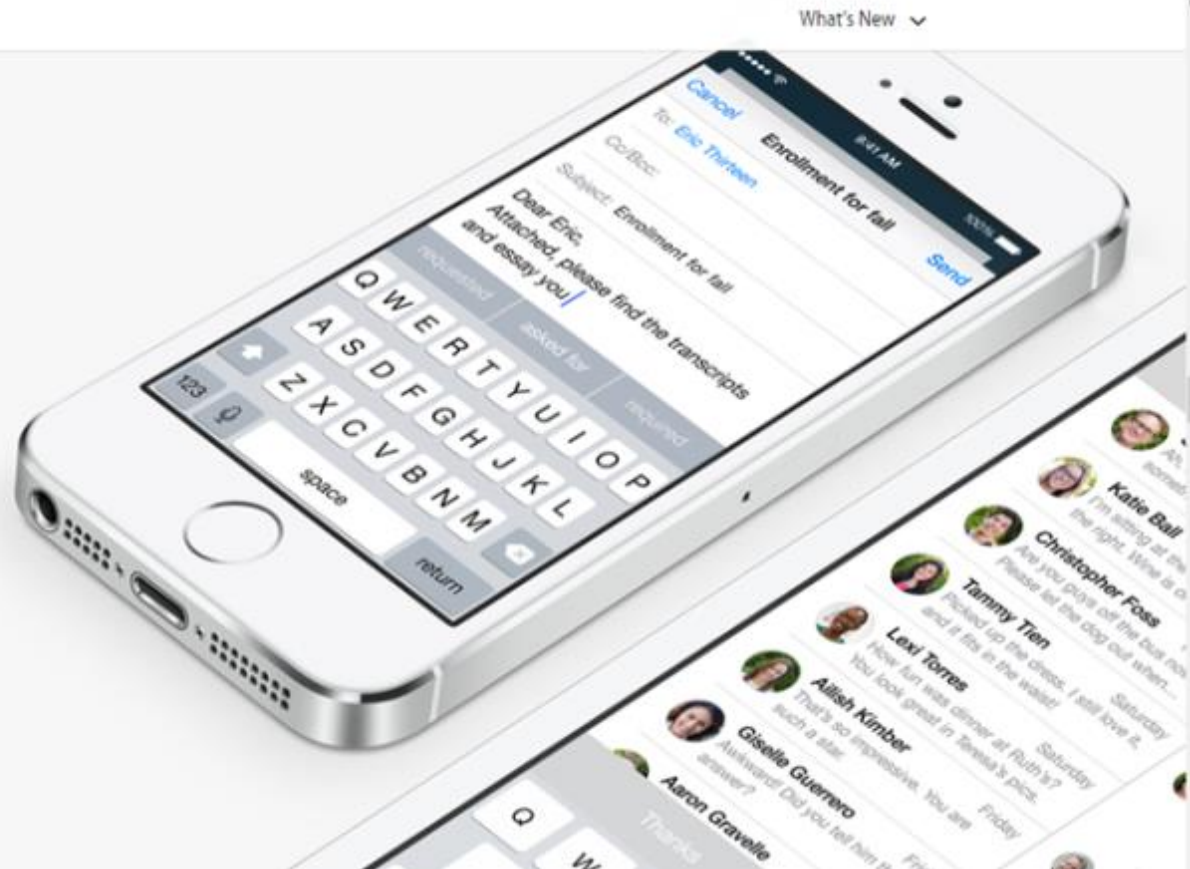
iOS 8 Preview



Our smartest keyboard ever.

iOS 8 makes typing easier by suggesting contextually appropriate words to complete your sentences. It even recognizes to whom you're typing and whether you're in Mail or Messages. Because your tone in an email may be different from your tone in a message.

[Learn more >](#)



Why Assistive Technology?

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



Assistive Technology



Assistive Technology Device

...any item, piece of equipment or product that is used to increase, maintain or improve functional capabilities of individuals with disabilities.

- Public Law 105-394 [29 USC 2201]

Low/No-tech

- pencil grip
- adapted books
- slant board
- highlighters, tape
- magnifiers
- color coding
- read to out loud
- picture schedule
- strategies for memory
- colored transparencies
- Proof readers
- note taker

Mid-Tech

- word prediction
- text to speech
- speech to text
- spell checkers
- talking calculators
- digital recorders
- organizers
- e-books
- adapted keyboard
- adapted mouse
- adapted toys
- CCTV
- apps under \$100

High-Tech

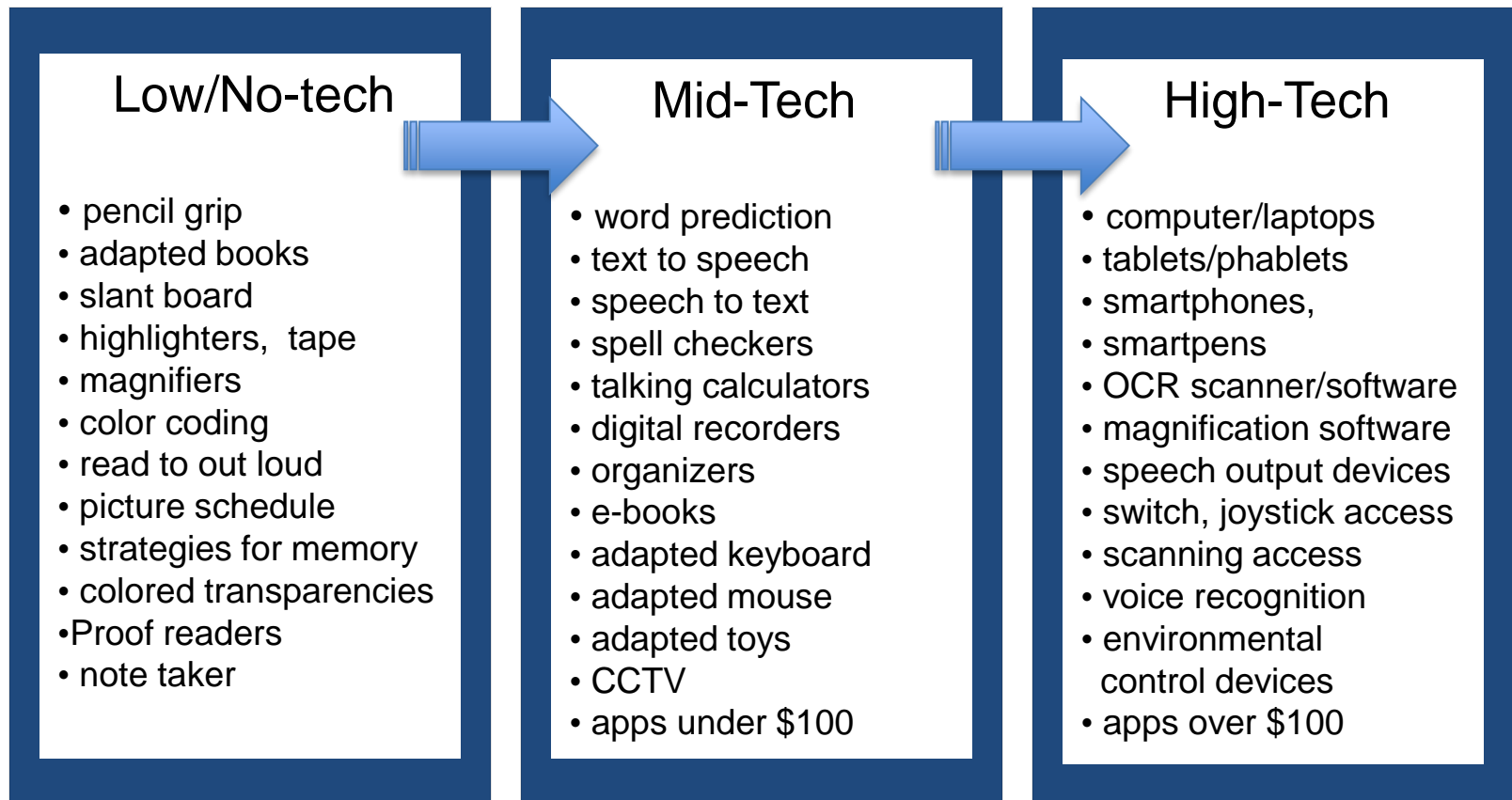
- computer/laptops
- tablets/phablets
- smartphones,
- smartpens
- OCR scanner/software
- magnification software
- speech output devices
- switch, joystick access
- scanning access
- voice recognition
- environmental control devices
- apps over \$100

Assistive Technology Continuum



Observations & “Hanging out with Intent”

Assistive Technology is a **continuum of tools, strategies, and services** that match a person’s needs, abilities and tasks.



The “FAST” Track



- ✓ Frustration
- ✓ Anxiety
- ✓ Stress
- ✓ Tension

AT Helps!



- Assistive Technology strategies and solutions can help support individuals with a variety of disabilities in all areas of life. AT helps to bridge the gap and provide solutions to problems with:
 - speaking
 - hearing
 - seeing
 - moving around
 - getting places
 - memory
 - cognition (thought processes and understanding)
 - daily living activities, such as dressing and preparing meals
 - socializing

Visit the TFL AppFinder



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

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

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

Welcome AT Services Try AT Get AT AT Guides Research

Learn More about AT through Hands-On Demonstrations

• • • • •

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:

IDEAS CONFERENCE

JUN 2 Edworth by the Sea, St Simons Island

WEBINARS

MAY 28 Georgia's Leadership Model for Increasing Accessible ICT in State Government

JUN 25 Learn More and Do More: Explore Accessibility and Apps for Android

JUL 30 Position for Work: A Closer Look at Workplace Accommodations & Assessments

- Current Webinar Schedule
- Webinar Archives

TOOLS FOR LIFE APPFINDER

...for Living, Learning, Working, and Playing

AT ONLINE EXCHANGE

gTRADE

TFL AppFinder



Search by:

✓ **App Name**

✓ **Categories**

- Book
- Education
- Environmental Adaptations
- Hearing
- Cognition, Learning, Developmental
- Navigation
- Personal Care and Safety
- Productivity
- Communication
- Therapeutic Aids
- Vision

Common AT Solutions for ICT Access



- Text-to-Speech
- Speech Input
- Display Solutions
 - Magnification
 - Contrast
- Writing Solutions
 - Word Prediction
 - Grammar Check
- Alternative Access

Text-to-Speech



- Often assist with:
 - reading, studying, and writing,
 - may include optical character recognition (OCR),
 - word prediction,
 - tools to highlight, extract, and organize text, and
 - homophone checkers.

Screen Readers



- Screen readers are a form of AT useful to individuals who are blind, vision-related disabilities, mobility-related disabilities, print-related disabilities or learning disabled.

Kurzweil 3000



- Text-to-Speech software
- Helps improve reading speed and comprehension
- Note taking capabilities
 - Different color highlighters
- firefly
 - Access many features of Kurzweil through the internet
 - firefly demo
- Free download trial
 - www.kurzweilededu.com
 - Kurzweil 3000 Demo



Kurzweil
EDUCATIONAL SYSTEMS®

TextHelp



- Text-to- Speech software
- Helps improves reading skills
- Built in text and picture dictionaries
- Study skills highlighter
- Has a Google Chrome version
- www.texthelp.com



Ginger

- Online grammar and spell checker
- Can see corrections as you type or use Ginger Proofreader to scan the entire document for mistakes
- Will read corrections out loud
- Has an mobile Android app
- Works inside Word and emails
- Text to Speech
 - Read emails and docs
 - Can choose voice and accent
- [Ginger Demo](#)

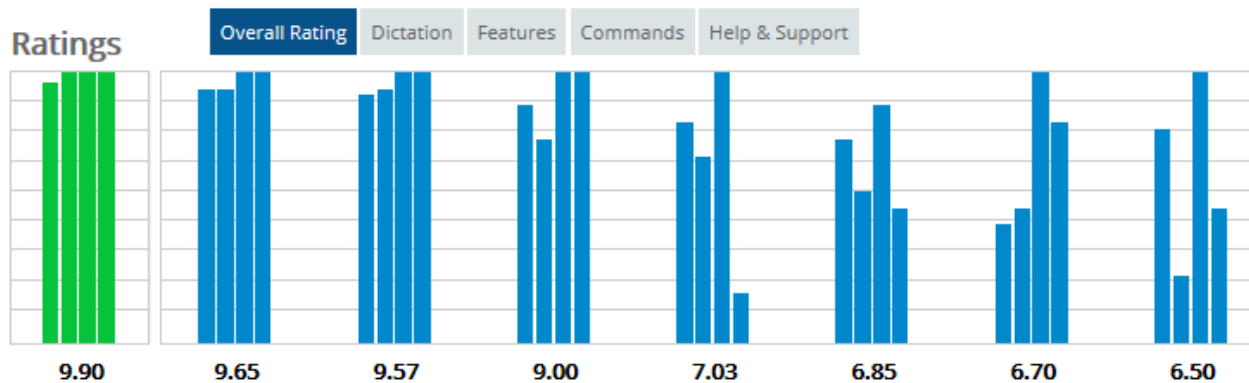
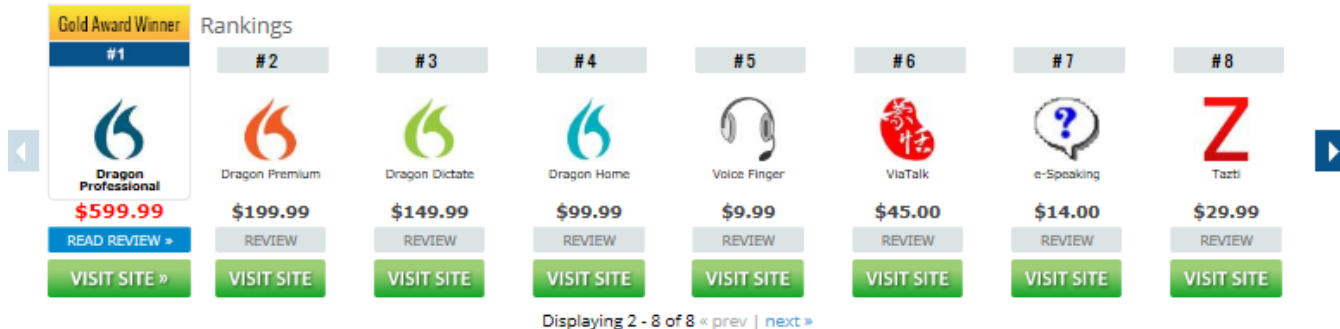


2015 Software Review



2015 BEST Voice Recognition Software Review

REVIEWS AND COMPARISONS



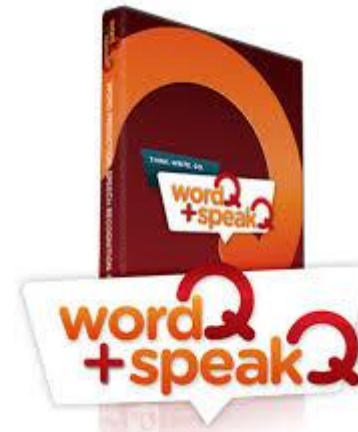
Speech Recognition Software

- Turn spoken words into text
- Connect with the timing of your thoughts
- Dictation speed 70 to 100 words per minute



Word Q/ Speech Q

- Software that has built-in word prediction
 - Suggests words
 - Spoken feedback to hear what was written
 - Speech Q is a plugin for Speech Recognition
- 30 day free trial
<http://www.goqsoftware.com/trial/>



Features of Access Solutions



- Keyboard options
- Mice options
- Switch Access
- Alternative Input methods

ASL Switch Labs



Products / New Products

ASL brings innovative products to our clients! We are here to help each client reach their full potential – our team creates products and designs as a direct result of the needs of those we serve. Our goal has always been independence and equal rights for those we work with...

Driver Control Packages

ASL 138 Extremity Control Joystick



100 Series

Electronic Switches

ASL 215 Round Proximity Sensor with Mono Port and 24 Volt Connector



200 Series

Electronic Switches

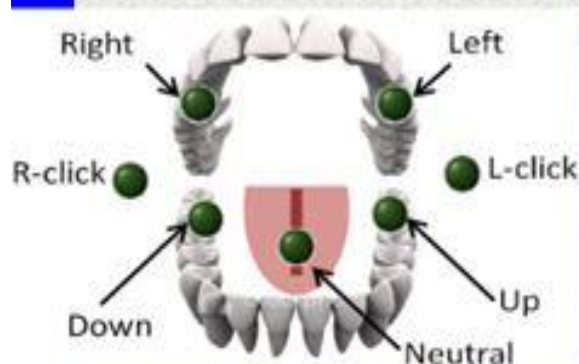
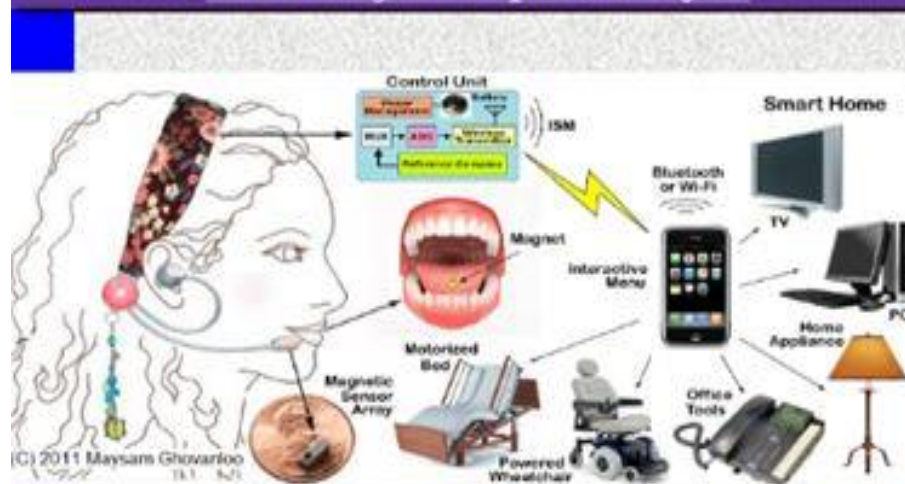
ASL 215 Round Proximity Sensor 3 Pin



200 Series

Tongue Drive System

Tongue Drive System (TDS): A Brain-Tongue-Computer Interface



[Intraoral Tongue Drive System \(iTDS\) Technical info](#)

Tracking Trends

- Increase in Universal Design in Mainstream
- Schools incorporate “Bring Your Own Technology”
- Customized reading levels
- Convergence
- The Future is Contextual
 - GPS in technology
 - Ads on Internet
 - Social Media



Apple Watch

- Voiceover
- Zoom
- Haptic Feedback
- “Hey Siri”
- Apple Pay
- Built in Microphone and Speaker
- “Raise to Speak”
- Health App
 - Hourly reminders to stand
 - Heart rate
 - Steps



Pixie

- Maps all of the digital things in your life
- Place a pixie chip on any device and map will tell you it's precise location
- <https://www.getpixie.com/>



iBeacon Technology

- Estimote Beacons
 - Wireless sensors that attached to any location or object
 - Broadcasts radio signals to smartphone



FitBit

- Fitness tracker
- Variety of styles and colors
- Track Activity
- Track Food
- Track Sleep
- Track Heart rate
- Works with other Apps
- New Smartwatch



 fitbit.
Discover a whole
new world of fitness.



Microsoft Band

- Works across all platforms
- Receives calls and texts
- Uses Cortana
- Keep tracks of steps
- Keeps track of Sleep
- Keeps track of UV
- Keeps track of heart rate
- Choose apps
 - Facebook
- \$199



AT for Calming

T. Jacket by T. Ware

- Wearable technology
 - Provides deep touch pressure to calm/soothe individual who is anxious or stressed
 - Pressure controlled via smartphone iOS or Android
 - Child/Adult sizes; \$599



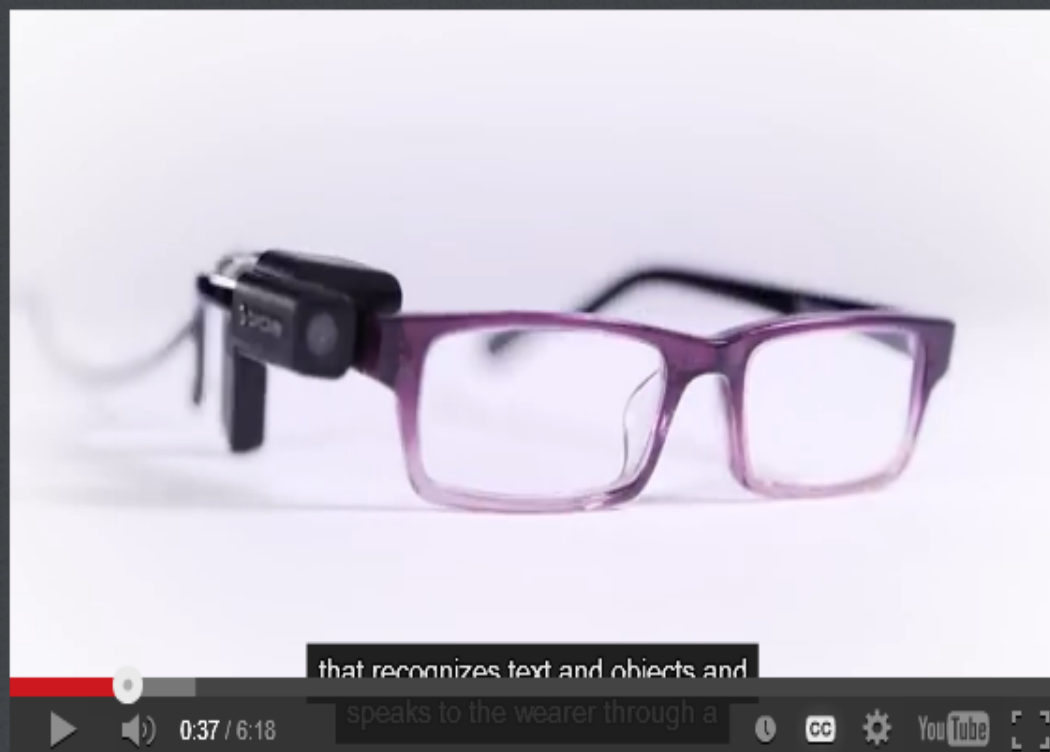
[Home](#)[Order](#)[Q&A](#)[In the News](#)[About](#)[Contact](#)

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.



Toyota: Project BLAID



- Worn around the shoulders and aims to fill in the everyday gaps visually impaired users experience using canes, dogs and GPS devices
- U-Shaped
- help them identify everyday indoor items such as escalators, stairs and bathrooms
- built-in cameras will detect the user's surroundings and the device will communicate information using speakers and vibration motors
- be able to interact with the device using voice recognition technology and buttons
- eventually add mapping, object identification and facial recognition technology

Project BLAID Video

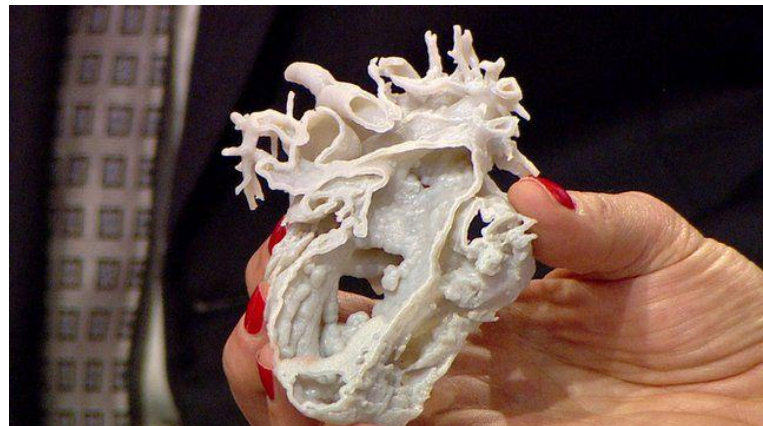


- <https://www.youtube.com/watch?v=sNoPV0epfHA>



3D Printers

- Coming down in price
- Creating assistive technology for lower cost
- In classrooms
- Ability to feel how something looks
- Prosthetics
- Medical Advances



Ergonomics

- Inhibits blood flow
- Creates muscle shortening
- Stresses back muscles and compresses spine
- Can inhibit learning
- Compresses diaphragm
 - Affects breathing
 - Voice quality



Lumo Lift

- Lumo for back and head/shoulders
- Sends gentle vibration alert when posture needs to be corrected



Amazon Echo

amazon echo

Always ready, connected, and fast. Just ask.



- Speech-controlled speaker system
- Voice recognition - further distances
- All functions are server side
- Compatible with many EC Brands
- \$179.99

Luna Lights

- Unique pressure pad that turns on small portable lights when someone gets out of bed
- Turn lights off when returns to bed
- Monitors- tell how often someone is getting up in the night
- Created to prevent and detect falls
- <http://www.lunalights.org/>



Halo Smart Labs



- Combined smoke/carbon monoxide alarm
- Embedded weather radio gives alerts on tornadoes, floods and hurricanes
 - Will continue to provide alerts up 7 days after power failure
- Uses a ring of light and voice alerts to tell you exactly what is wrong
- Receive notifications to your smartphone
- <http://halosmartlabs.com>



SleepSense

- Easily slip the flat, disk-like device under mattress
- When it detects you've fallen asleep, it can turn off lights and TV and lower air conditioning
- Will monitor heart rate, breathing and movement during sleep with 97% accuracy
- Information is transmitted to your smartphone app which gives you an "individual sleep score"
- App will provide advice on how to improve sleep



Mobile Payment Applications

- Examples of these applications include:
 - Google Wallet (for Android, will be replaced by Android Pay soon)
 - Apple Pay (for iPhone 6, iPhone 6 Plus, & Apple Watch)
- Paying with NFC is A LOT more secure than paying with a normal credit card.
- In the future, I hope to see more stores accept NFC as a payment method and to see NFC technology included in more wearable devices.



Wikipedia

- Crowdsourced speech engine in an effort to make Wikipedia more accessible to the visually impaired
- Engine for Swedish, English, and Arabic, which they aim to complete by September 2017
- Hope is that the speech engine will be able to communicate content on Wikipedia for those who have difficulty reading text
- Estimated 25 percent of Wikipedia users — 125 million users per month — need or prefer speech to text.
- <http://www.theverge.com/2016/3/11/11200734/wikipedia-speech-engine-visually-impaired-accessible>



CARROT Hungry

- Free
- Sarcastic!
- Works well with Voiceover
- Keeps track of calories
- Lets you know how much exercise you will need to do



TapTapSee

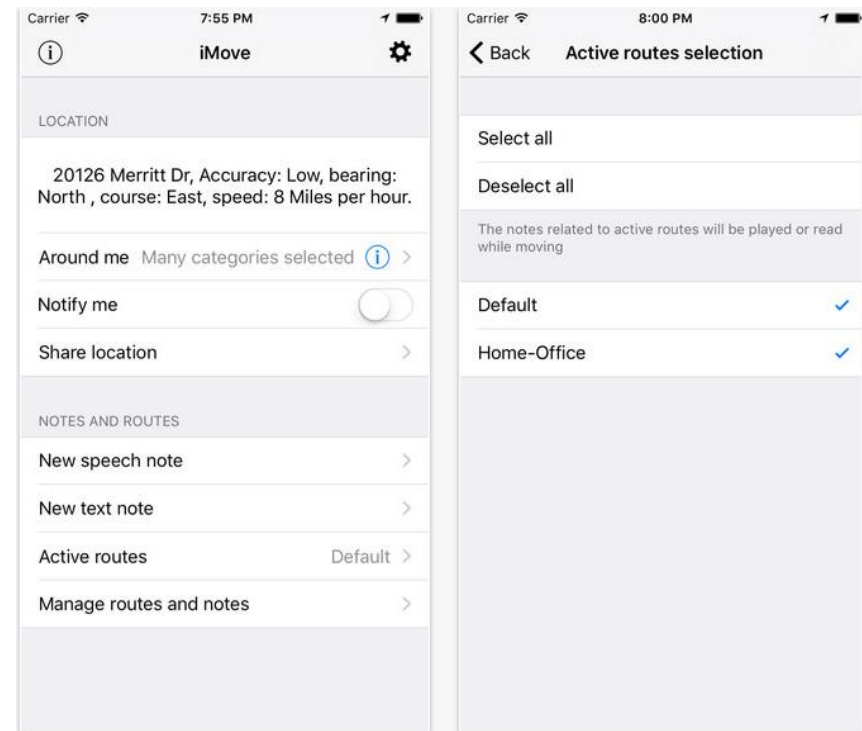
- Designed to help people with low vision identify objects they encounter in their daily lives.
- Double tap the screen to take a photo of anything, at any angle, and hear the app speak the identification back to you.
- Requires VoiceOver to be turned on.



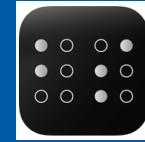
iMove



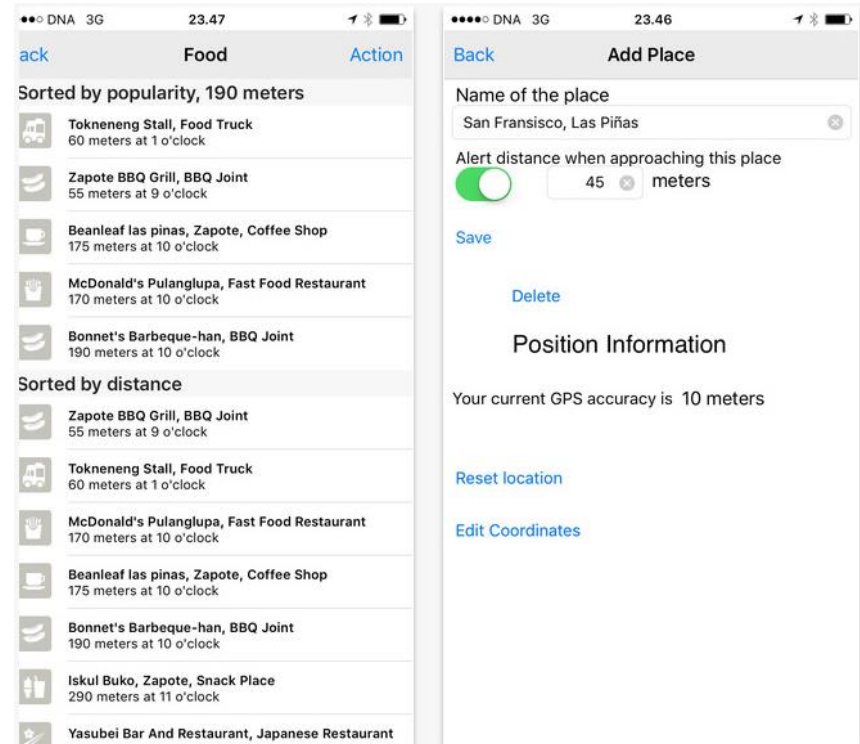
- can read the details of a point of interest and then: you can open the system navigator to reach the point of interest, call it or visit the website (where available);
- you can share your current location via text message;
- you can group notes in routes;
- text notes are available (in addition to speech notes);
- you can share your text notes with your contacts;
- you can import text notes created by your contacts



BlindSquare



- uses GPS and the compass to locate you; gathers information about the surrounding environment from FourSquare
- aware of when you travel by car, bus or train and starts to report interesting places in front of you (for example, the next stops) and street crossings when you are passing them
- when you are in a place, you can check in by shaking your device
- \$29.99



Google Now




Google now What is it How to get it Cards [Get it now](#)

Introducing Google Now

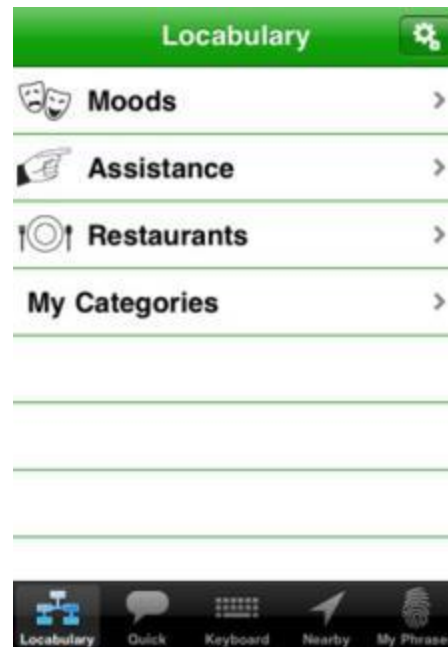
The right information at just the right time

From knowing the weather before you start your day, to planning the best route to avoid traffic, or even checking your favorite team's score while they're playing, Google Now brings you the information you want, when you need it.

A smartphone screen displays the Google Now interface. At the top, it says "Google" with a search bar. Below that is a scenic mountain landscape. The main section shows "Venice" with a large "70°" and a yellow sun icon. At the bottom, there's a row of weather forecasts for "TUE", "WED", "THU", and "FRI", each with a small weather icon and temperature range.

Assistance around the clock

Locabulary



- Uses GPS to track user location and suggests appropriate vocabulary based on location
 - ie: Starbucks
- A keyboard to type for text-to-speech
- User can tag their own locations and create vocabulary for each location
- Lite version Free; Pro version \$130

LEAP Computer Input

LEAP
MOTION

[OUR DEVICE](#)

[APPS](#)

[DEVS](#)

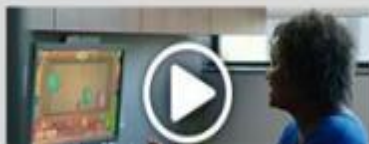
[BLOG](#)

[SETUP](#)

[SUPPORT](#)

[BUY](#)

[STAY INFORMED ▾](#)



Reading Finger Device

MIT Finger Device Reads to the Blind in Real Time



By RODRIQUE NGOWI
Associated Press

JULY 8, 2014 1:28 AM

In this Thursday, June 26, 2014 photo, a model wears a FingerReader ring at the Massachusetts Institute of Technology's Media Lab in Cambridge, Mass. Researchers designed and developed the instrument, which enables people with visual disabilities to read text printed on paper or electronic devices. (AP Photo/Stephen Saville) AP

Nod



- Controls devices remotely
- Change presentation slides
- Type notes
- Environmental Control Units

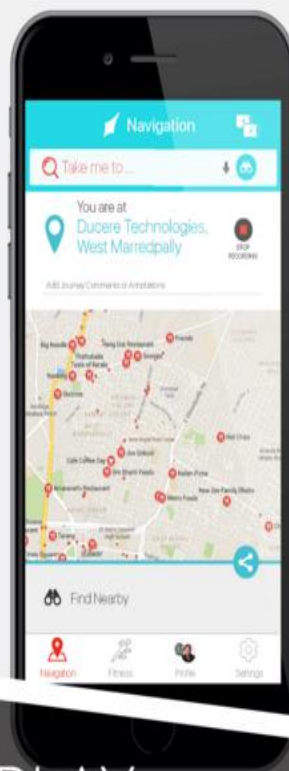
\$149, Early 2015

<https://hellonod.com/>

Lechal

- Haptic Footwear
- Uses GPS to let you know where you are
- Connects with app
- www.lechal.com

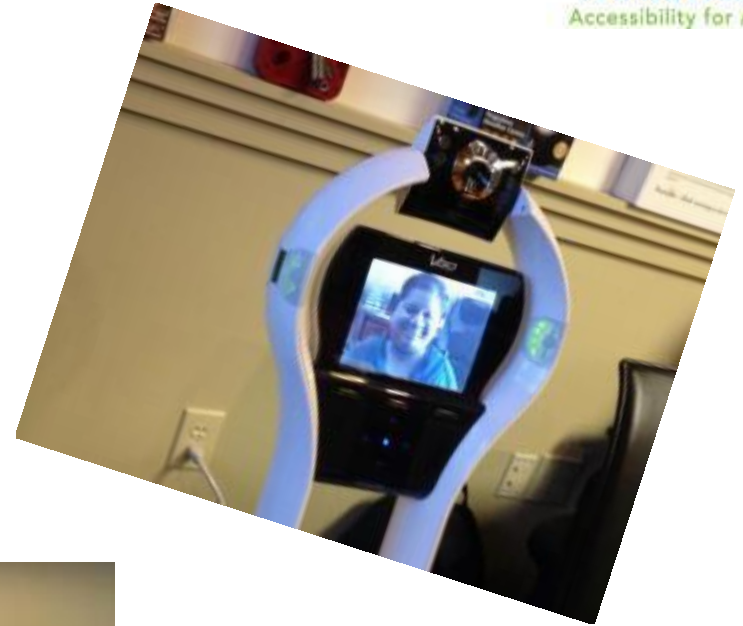




PLUG 'N PLAY

VGo Telepresence Robot

- Enables individuals to replicate themselves in a distant location and have the freedom to move around as if they were physically there
- Reduces travel costs
- School
- Hospital
- Work from home



Driverless Cars and Smart Technologies



- Driverless Cars
- Internet
- Capture data
 - See how car is driven
 - Turn down music until seat belt is buckled
- Hands free/ Cameras
- Parallel park
- Ability to sense when to slow down

Ford plans 2 smart-car projects at Georgia Tech

7 January 2015 in [Cars](#), [TRANSPORT](#) by Ken Edelstein



If a golf cart whizzed by you recently on the Georgia Tech campus without a driver, don't worry — you weren't seeing things. An it wasn't being driven by a ghost, either.

It probably was part of a smart-car initiative announced Tuesday by Ford Motor Co. CEO Mark Fields. The company plans to engage in "25 mobility experiments across the globe" to advance its "Ford Smart Mobility" initiative, Fields told an audience at the [Consumer Electronics Show](#) in Las Vegas.



Google unveiled a prototype for its autonomous car in advance of the Consumer Electronics Show. Photo courtesy of Google.

Two of those experiments will take place at Georgia Tech. The first is described as "Remote Repositioning."

"It involves an operator that is able to remotely drive real vehicles from the comfort of their office in Atlanta," Ford Chief Technical Officer Raj Nair said in a co-presentation with Fields. "Using available technology including video cameras and sensors, streamed over a public 4g/LTE network, we used golf carts as a proof of concept. These low-speed golf carts are used on campus at Georgia Tech for [transportation](#) for administrators and faculty. If successful, this could help change car-sharing forever."

Nair described the second initiative at Tech as "Parking Spotter."



**Our Question to You:
What have You Learned today?**

The TFL Team



Carolyn Phillips

Director, Tools for Life

Carolyn.Phillips@gatfl.gatech.edu



Liz Persaud

Training and Outreach Coordinator

Liz.Persaud@gatfl.gatech.edu



Danny Housley

AT Funding & Resource Specialist

Danny.Housley@gatfl.gatech.edu



Martha Rust

AT Specialist

Martha.Rust@gatfl.gatech.edu



Ben Jacobs

Accommodations Specialist

Ben.Jacobs@gatfl.gatech.edu



Rachel Wilson

Tech Match Specialist

Rachel.Wilson@gatfl.gatech.edu

Disclaimer

This presentation is produced by Tools for Life which is a result of the Assistive Technology Act of 1998, as amended in 2004. It is a program of the Georgia Institute of Technology, College of Architecture, AMAC Accessibility Solutions and Research Center and was made possible by Grant Number H224C030009 from the Administration for Community Living. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HHS.