Tools for Life: Exploring Assistive Technology Strategies & Solutions

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With contributions from the Tools for Life Team and Network

Tools for Life
AMAC Accessibility Solutions and Research Center
College of Architecture | Georgia Institute of Technology

www.gatfl.gatech.edu
Session Description

- 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.

- Tools for Life, Georgia's Assistive Technology Act Program, at Georgia Tech is federal legislation that promotes access to and acquisition of assistive technology devices and services that allow Georgians of all ages and disabilities to live, learn, work, and play in the communities of their choice. Join us to learn more about the TFL Network and how assistive technology is a catalyst for positive life-changing opportunities for individuals living with disabilities.

- This presentation is available on the TFL wiki.
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](http://www.amacusg.org)
Tools for Life Mission

We’re here to help Georgians with disabilities gain access to and acquisition of assistive technology devices and assistive technology services so they can live, learn, work, and play independently in the communities of their choice.
Tools for Life & TFL Network

• 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 Centers/Outreach Sites
  • Lending Libraries
  • Training and Demonstrations
  • AT Reuse
  • AT Funding Education and Resources
• Online Resources
  • www.gatfl.gatech.edu
The TFL Network is Growing!
Join us for Webinars and Visit our Archives!

Tools for Life Online Professional Development

• Tools for Life offers online professional development to help you learn more about assistive technology strategies and solutions as well as the most recent information on AT devices and disability related issues and trends.

• Webinar content and materials are developed and presented by one of the Tools for Life team members along with other regional and national leaders in the assistive technology community.

• To join the TFL mailing list to receive our email announcements, visit www.gatfl.gatech.edu
Upcoming Conferences

• **GATE Seminar**
  • Friday, December 4, 2015
  • Georgia Tech Student Center
  • Workshops and educational sessions
  • Interactive Exhibit Hall! Experience hands-on AT demos
  • Student volunteers needed!
  • Registration is $10 and can be accessed on the TFL website

• **IDEAS Conference**
  • Monday, June 6 - Friday, June 10, 2016
  • St. Simons Island, Epworth by the Sea
  • Over 120 workshops and educational sessions
  • Interactive Exhibit Hall! Experience hands-on AT demos
  • Student volunteers needed!
  • More info coming soon!

For more information visit the TFL website: [www.gatfl.gatech.edu](http://www.gatfl.gatech.edu)
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...
Defining Assistive Technology

Assistive technology – “Any item, piece of equipment, product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.”

Public Law 108-364
Who are We Serving

- Over 54,000,000 individuals in the United States have disabilities that affect their ability to:
  - see
  - hear
  - communicate
  - reason
  - walk
  - perform other basic life functions

Public Law 108-364
Guiding Principle

- DisAbility is a natural part of the human experience and in no way diminishes the right of individuals to:
  
  (A) live independently;
  (B) enjoy self-determination and make choices;
  (C) benefit from an education;
  (D) pursue meaningful careers; and
  (E) enjoy full inclusion and integration in the economic, political, social, cultural, and educational mainstream of society in the United States.

Public Law 108-364
• People with disabilities are the largest minority group in America.

• This group cuts across racial, ethnic, religious, gender and age boundaries.

• Anyone can become a member of this minority group at any time.
Value-Laden Language

What does the word "Handicapped" mean?
"Handicapped" is an archaic term (it's no longer used in any federal legislation) that evokes negative images of pity, fear, and more.

A legendary origin of the "H-word" refers to a person with a disability begging with his "cap in his hand."
Why Assistive Technology?

• For a person without a disability, technology makes things Life easier.

• For a person with a disability, technology makes things Life possible.
AT Helps!

• Assistive Technology strategies and solutions can help support those living with disabilities, the aging population and those who have difficulties with:
  – speaking
  – hearing
  – seeing
  – moving around
  – getting places
  – memory
  – cognition (thought processes and understanding)
  – daily living activities, such as dressing and preparing meals
  – socializing.
Assistive Technology Services

• Any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device.

• Includes:
  – Evaluating
  – Providing devices
  – Selecting, Designing, Customizing
  – Maintaining, Repairing
  – Coordinating
  – Training/Technical Assistance – student, family and school service providers

• Public Law 105-394 [29 USC 2201]
Effective AT Assessment

- Uses a feature-match approach
- Incorporates on-going educational/life planning
- Hanging out with Intent
- Targets natural environments
- Utilizes the competencies of multiple team member
- Demands meaningful follow-through
Staying off the “FAST” Track

- Frustration
- Anxiety
- Stress
- Tension
Human Activity Technology (HAAT) Model

- **Human**: represents the skills and abilities of the person with a disability
- **Activity**: a set of tasks to be performed by the person with a disability
- **Context**: the setting or social, cultural and physical contexts that surround the environment in which the activity must be completed
- **Assistive Technology**: devices or strategies used to bridge the gap between the person’s abilities and the demands of the environment

• Developed by Cook & Hussey
Assistive Technology Matching: A Team Approach

- The Person with the disability
- Circle of Support – Family of Choice
- Case Managers
- Technologist
- Occupational Therapist
- Speech & Language Pathologist
- Physical Therapist
- Engineer
Hope

Hope begins in the dark, the stubborn hope that if you just show up and try to do the right thing the dawn will come.

Anne Lamott
TFL AT Demo Lab

- Tablets
- Vision & Hearing
- DME
- Communication
- Games
- Software
- Switches
- Keyboards
- More!
AT Funding
Education and
Resources
Dollars & Sense

• Web-based Funding Guide

• A resource for locating funding sources for AT devices and services.

• This guide was developed to make the funding process easier and to assist consumers in getting the assistive technology they need.

• New resources added frequently!
Dollars & Sense: Getting Started

Getting Started

What is Dollars and Sense? How do I use it?

Learn about the key features of the Dollars & Sense Funding Guide and how to use it to find assistive technology funding sources and service providers.

What is assistive technology?

Learn about what assistive technology is, including the different types of assistive technology that are available.

How can I learn more about assistive technology?

Find out about Internet resources for learning more about assistive technology; includes links to key Web sites.
gTRADE – Equipment Exchange

- FREE resource for finding and exchanging assistive technology (AT) devices online
- Place an ad requesting items for sale, donation, or needed
- gTRADE encourages members to offer AT devices and information for sale or by donation to others who may benefit from using technology and equipment no longer in need by others

- [www.gtradeonline.org](http://www.gtradeonline.org)
Credit-Able

• Georgia’s Alternative Financing Program
• To receive a Credit-Able Loan you must be:
  • A resident of Georgia and;
  • An individual with a disability or;
  • A family member or legal guardian of an individual with a disability or;
  • An employer of an individual with a disability
• Able to pay back the loan
• Using the loan to buy assistive technology equipment and services
FODAC

• FODAC (Friends of Disabled Adults and Children) is a statewide provider of Durable medical equipment through donations and reuse.

• FODAC’s programs include:
  • Durable medical equipment - wheelchairs and mobility aids
  • Ramps for Champs – home access ramps and modifications
  • ReMount – wheelchair and scooter lifts for vehicles
  • Disposable medical equipment – catheters, braces, liquid nutrition, etc.
  • www.fodac.org
Tracking Trends
Points of Excellence

- Our research advances both science and practice
- We aim to improve quality of life for adults of all ages
- Students graduating from our lab are very successful

Overview of the Human Factors and Aging Laboratory

Resources

Senior-to-Senior Brochure
acceptance. Contexts for the discussion will include aging-in-place and health care.

**Presentation 2: Human-Robot Interaction: The Potential to Support Successful Aging**

There is much potential for robots to support older adults in their goal of independent aging. However, for human-robot interactions to be successful, the robots must be designed with user needs in mind.

In the Human Factors and Aging Laboratory, Roger's lab is conducting research in the nascent field of older adult—robot interactions. In this presentation, Rogers will provide an overview of the needs, capabilities, preferences, and limitations of older adults. She will then discuss our current and planned research on the design of robots to support older adults and health care providers. Our focus is on understanding the interactions among user characteristics, robot characteristics, and the context of the interactions (e.g., task demands).

**Presentation 3: Aware Home Technology to Support Aging-in-Place**

Imagine if your home were “aware” of your activities so that it might help you remember what it was you went into the kitchen for or whether the visitor at the front door is someone you know or even what the proper procedure is for performing a recently learned home medical procedure. An aware home is not from the world of science fiction—it is within the realm of science. Such technological developments have the potential to enable older adults to maintain their functional independence and to “age-in-place.” They also have the potential to support families caring for children with developmental disabilities or individuals recovering from illness or injury. An innovative research program at Georgia Institute of Technology is focused on developing psychological and computer science to support home activities.
“Exploring New Ideas with Advanced Social Robotics”
— an extension of humankind. RoboKind.
Robo Kind Features
Meet NAO!
Tongue Drive System

- Wireless device that enables people with high-level spinal cord injuries to operate a computer and maneuver an electrically powered wheelchair simply by moving their tongues
- Dental retainer embedded with sensors
- Detect movement of a tiny magnet attached to the tongue
- Testing with iPods and iPhones
- GA Tech
- Shepherd Center and Rehab Institute of Chicago
GT Tongue Drive System
Nod by Nod, Inc

- Controls devices remotely
- Change presentation slides
- Type notes
- Environmental Control Units
- $149, Early 2015

https://hellonod.com/
Amazon Echo

- Speech-controlled speaker system
- Voice recognition - further distances
- Timers, news, information
- Invitation only
- $199, $99 Prime members
Google Glass

- Wearable Technology
- Bluetooth Connection
- Navigate
- Make a Call
- Send a Message
- Take a Picture or Video
- Get the News
- Search
- Google Play Music
- Google Now
- Be Social
- Internal Compass

$1500
Mealtime Partner Feeder

- Variety of mounts
- Battery operated
- Control amount of food
- Control pause time between spoonful
- Adjustability of the spoon
• Xpadder is a free program for Windows that allows you to configure the inputs on most videogame controller any way that you like.

• You can have media controls assigned to different buttons so you can easily pause or control volume.

• The mouse as well as the keyboard are easily emulated on the controller as well.
MOGAnywhere

• Enables you to play video games on your Apple or Android phone.
• Great for gamers with limited mobility
• $29.99 to $99.99
Playstation 4 Media Console

• The PS4 isn’t just a gaming console. It is a multimedia center.
  – Apps
  – Internet Browser
  – Social Network
  – Voice Control
  – Controller Input vs Keyboard and Mouse
VGo Telepresence Robot

- Enables a person 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
People with Disabilities in the Work Place

Sector: Business

VGo increases productivity and effectiveness while lowering costs by enabling a person to get to a location instantly and easily. VGo is not designed as a replacement for in-person interaction but rather as the next best alternative to “being” in the workplace. VGo also eliminates the deficiencies associated with other video solutions that are locked to a TV or computer monitor by providing 100% remote controlled mobility.

In addition to “being” at work from home, VGo can help people who can get to the workplace, but who cannot practically move about the facility or campus. A VGo can be used to enable a person to move around in one part of the facility while they are physically in another.

The benefits of using VGo in the workplace include:

- Getting to places previously inaccessible increases opportunities
- Freedom of movement increases personal interaction with others
- Quality of life improvements by expanding the work and social environments
- Costs can be reduced by lowering or eliminating select transportation expenses, and by communications and speeding decision making
Kubi

- Dock your tablet for remote pan and tilt controls
- See and interact with people during a conference call
- Use any Video Client: Skype, FaceTime, Google Hangout, etc.
- Cloud Control
YOUR NEW ASSISTANT

HOME CONTROL DOESN'T HAVE TO BE COMPLICATED OR EXPENSIVE, SO WE CAME UP WITH THE VERALITE SMART CONTROLLER WHICH IS SIMPLE AND INEXPENSIVE, IT MAY BE SMALL, BUT IT'S CAPABLE OF BIG THINGS!

- Easily manages up to 70 devices
- Plug and play with your Internet connection
- Controls over 750 smart products of all kinds
- Custom text and email alerts for any situation

VeraLite gives you easy control over lights, cameras, thermostats, door locks, alarm systems and more. Plus you easily can add intelligence to almost anything electronic in your home, and VeraLite can control them too. All the smart home benefits you've been looking for are right here in this easy, inexpensive add-on to your home network.

AN AMAZING AMOUNT OF SMART TECHNOLOGY THAT FITS IN THE PALM OF YOUR HAND.

VeraLite gives you easy control over lights, cameras, thermostats, door locks, alarm systems and more.

ONLY $179.95
Tasker

Tasker is a phone automation application that allows you to really unleash your android device’s capabilities.

Tasker in a nutshell is a program that tells your device “When this happens, do this!”

• “When something is plugged into the headphone jack, open my music app”
• “When I open the navigation app, turn GPS on”
• “When my phone is connected to this cell tower, turn on wifi and connect to my home wifi”
Castle OS and Castle Hub

- Chris Ciccitelli has been a fan of Star Trek and was fascinated by the idea of a computer listening to you and taking any action requested. Sometimes it was just retrieving information, other times it controlled different ship functions.
- Chris worked for years creating a system for home automation/control that emulated the computer on Star Trek.
- Castle OS and Castle Hub are able to control all other EC devices regardless of what protocol it uses.
- This system operates using the microphone array in the Kinect camera to listen to you from anywhere in the room.
Google 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.

Assistance around the clock
Exploring Assistive Technology
Power Fish’n and Trigger Finger

- Electronic power assist fishing reel
- Attaches to a fishing pole
- One finger push

- Straightens out trigger finger so that an individual can shoot
DXT Fingertip Vertical Wireless Mouse

• Ergonomic relaxed neutral wrist and hand position
• Precision grip for accurate navigation
  • Small muscles and joints of the fingers have higher processing abilities
• Instantly switch between right and left hand
Video Screen Microscope

- Digital Microscope that captures videos and pictures
- Internal Memory and SD Card Slot
- LED Lighting
- 3.5 inch color screen
LED Handheld Magnifier

- Handheld
- LED light provides natural bright lights
- Easy storage
- Reading
- Sewing
Transformer

- Portable video magnifier
- Moveable camera to see items far away
- USB port connects to a laptop
- Great for students and employees with low vision
- Change background colors
LOMAK – Light Operated Mouse and Keyboard

• Hand or head pointer controls a beam of light that enters, then confirms, function
• Confirmation of keys reduces errors and increases the speed of operation
• Keyboard can be operated with small movements and does not require a lot of energy

• www.lomak.co.nz
Logitech Wireless Touch Keyboard

- Wireless control
- Low-profile keys
- Range of up to 33 ft
- 3.5 inch multi-touch/gesture touchpad
Eyegaze Edge

- Eyegaze system
- Control computer and tablet using your eyes
- Environmental controls
- Communication
Roomba

- Robot vacuum cleaner
- Cleans hardwoods and carpet
- Set schedule
- Home base for charging
- Built in sensors to avoid stairs
- Great for those who cannot use a handheld vacuum
Automatic Feeder

- Mealtime Partner
- Different mounts
- Battery operated
- Bowl top controls amount of food
- Control pause time between each spoonful
- Adjustability of the spoon
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....
Switch Access
Communication
Tongue Drive System

- Wireless device that enables people with high-level spinal cord injuries to operate a computer and maneuver an electrically powered wheelchair simply by moving their tongues
- Dental retainer embedded with sensors
- Detect movement of a tiny magnet attached to the tongue
- Testing with iPods and iPhones
- GA Tech
- Shepherd Center and Rehab Institute of Chicago
Live Scribe Pen

- Records what it hears and what you write
- Uses specific paper for playback
- Connects to computer by USB for saving
- Tap on note and playback from there
- Jump forward and back in notes
- Dictionary
- Translation Apps
- Purchase Apps online
Claro Software

- ClaroRead - customizable toolbar, reads what is highlighted, change speed and tone, built in writing solutions
- ClaroView - customizable colors, acts as an overlay on PC screen, makes browsing and reading much easier
- ClaroSpeak - text to speech, important documents, customize font and color, visual tracking, save text as audio file
- ClaroPDF - PDF reader/viewer with text-to-speech, 40 different voices with human quality, adjust background color
Dolphin Easy Reader

• Digital talking book player.
• Reads DAISY files including MathML XML files.
• Content is easy to navigate
• Skip through sentences, headings, pages and bookmarks to highlight areas of interest.
• Control the speed, volume and pitch of the reading voice
Welcome to Dolphin EasyReader

Get started with the options below or use the menus to begin reading.

- **Open a new book** (press Ctrl+O)
- **Open recent books** (press Ctrl+Shift+O)
- **EasyReader Help** (press F1)

To read some free sample books, visit the [Dolphin website](http://dolphin.com).

For more information about EasyReader and other Dolphin software, visit the [Dolphin website](http://dolphin.com).

Premier Software

• [www.readingmadeez.com](http://www.readingmadeez.com)

• Read documents in standard file formats such as Microsoft Word, Rich Text, text file format, HTML, and PDF

• Converted to audio files for use on a CD or MP3 player

• Scan and read documents

• Look up a word or definition in the integrated dictionary

• Create study notes and much more!
Premier Features

- PDF Equalizer
- E-Text Reader
- Universal Reader Plus
- Scan and Read Pro
- Talking Word Processor

- PDF Magic Pro
- Text-to-Audio
- Ultimate Talking Dictionary
- Talking Calculator
- Premier Predictor Pro
Learning Ally

- **DAISY**
- Membership required
- over 75,000 audiobooks, audio textbooks, and other recorded books
- Free Trial
TFL AppFinder, Mobile Technology and Apps
Know Your Tablets!

Consider Accessibility
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
Locabulary

- Uses GPS to track user location and suggests appropriate vocabulary based on location—ie: McDonald’s, 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
EyeNote

- Uses built in camera to scan dollar bills
- Speaks out loud
  - Distinguished btw front and back of bill
- Free
- Supports English and Spanish
- Privacy mode
  - Pulses or beeps
BrailleTouch

- Prototype app for touchscreen mobile devices
- FREE Open Source app
- 32 words per minute with 92% accuracy with the prototype app for the iPhone
- Use of the six-key configuration so that the keyboard fits on the screen and users keep their fingers in a relatively fixed position while texting
- GA Tech Researchers

- Type with screen facing away
- Braille like typing
HearPlanet (Lite): Audio Guide to the World

- Speaks aloud what is around out you
- Learn about monuments. Historic sites, etc.
- FREE
- Upgrade to a paid version
TextMinder

- Create SMS text reminders
- Specify exact date and time; choose a repeat schedule for each reminder
- Multiple reminders can remain in popup notification summary, even when followed by other messages (push notifications only show your most recent alert)
- Unread reminders show as a number badge on your standard SMS/Messages app, and remain until removed to ensure they are noticed
Cozi

- Free
- You can access from a computer, smartphone or tablet
- Manage a family calendar and set reminders.
  - Add an appointment and it uploads to your Cozi account so everyone can see it.
- Get your grocery shopping lists when you're at the store, even when offline.
- Add a to do list item right when you think of it and have it right there in your pocket to remind yourself.
- Jot down a memory as it happens in the journal.
  - Add a photo from your library to capture the moment.
- Add and edit non-repeating calendar appointments, shopping lists, and to do lists while offline.
Wunderlist

- List management
- Create recurring to-dos
- Create subtasks
- Set due dates
- Reminders
- Notifications
- Cloud sync
- Email directly
- Collaborate with anyone
- Access on all devices including web
- Free

https://www.wunderlist.com/en/
Reading Apps

• Learning Ally
  – DAISY
  – Membership required
  – over 75,000 audiobooks, audio textbooks, and other recorded books

• Audible.com
  – Over 100,000 titles
  – Works on both Android and Apple
  – $7.00-$22.00 per month
Perfect OCR

• $3.99
• Uses the built in camera to scan documents
• Edit, copy, store, email documents
• Upload to online storage (Evernote)
• Does take practice for picture
Dragon Dictation

- Voice Recognition
- Free
- Dictate notes, emails, Twitter, and Facebook
- Supports many languages
- Cut, Copy, Paste
- Android
  - Dragon Go!
  - Dragon Hands Free Assistant
Say it & Mail it Pro

- Email voice memos
- Attach pictures
- Set preference to start recording as soon as app opens
- Add location
iWriteRead

- TextHelp
- No internet needed to use
- Text-to-speech
- Word Prediction
- Phonetic Spell Checker
- Homophone and Confusables Checker
- Dictionary
- Picture Dictionary
- Customizable Background and Text Colors
- Choice of Voices and Fonts
- Importing and Sharing documents
MyMedSchedule

- Keep track of medication
- Reminders
- Refill Reminders
- Healthcare Provider Profiles
- Insurance Information
- Allergies
- Works across Platforms
- Free
- www.mymedschedule.com
Grocery IQ

• Pictorial shopping list
• Customize different lists for different users using pictures on camera roll
• Add your own items and categories
• Assign item prices
• Assign item locations (for example, aisle numbers)
• Several accessibility options
  – text-to-speech
  – uses large easy-to-see images
  – item prices automatically totaled
• $4.99
ICE - In Case of Emergency

- Emergency contact list
- Central place for you to record any medications
- List allergies or medical conditions
- Pre-loaded medical information to choose from
- Free

www.ice-app.net
SkyGrid

• Personalize news events by categories
• Simple interface
• Free
• www.skygrid.com
iZen Garden

- Choose from 100s of objects, plants and creatures to place in your garden
- Rake the sand and share your creations
- Helps you to center your mind, relax your psyche and relieve your stress
Our Question to You:
What have You Learned today?
The Tools for Life Team

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