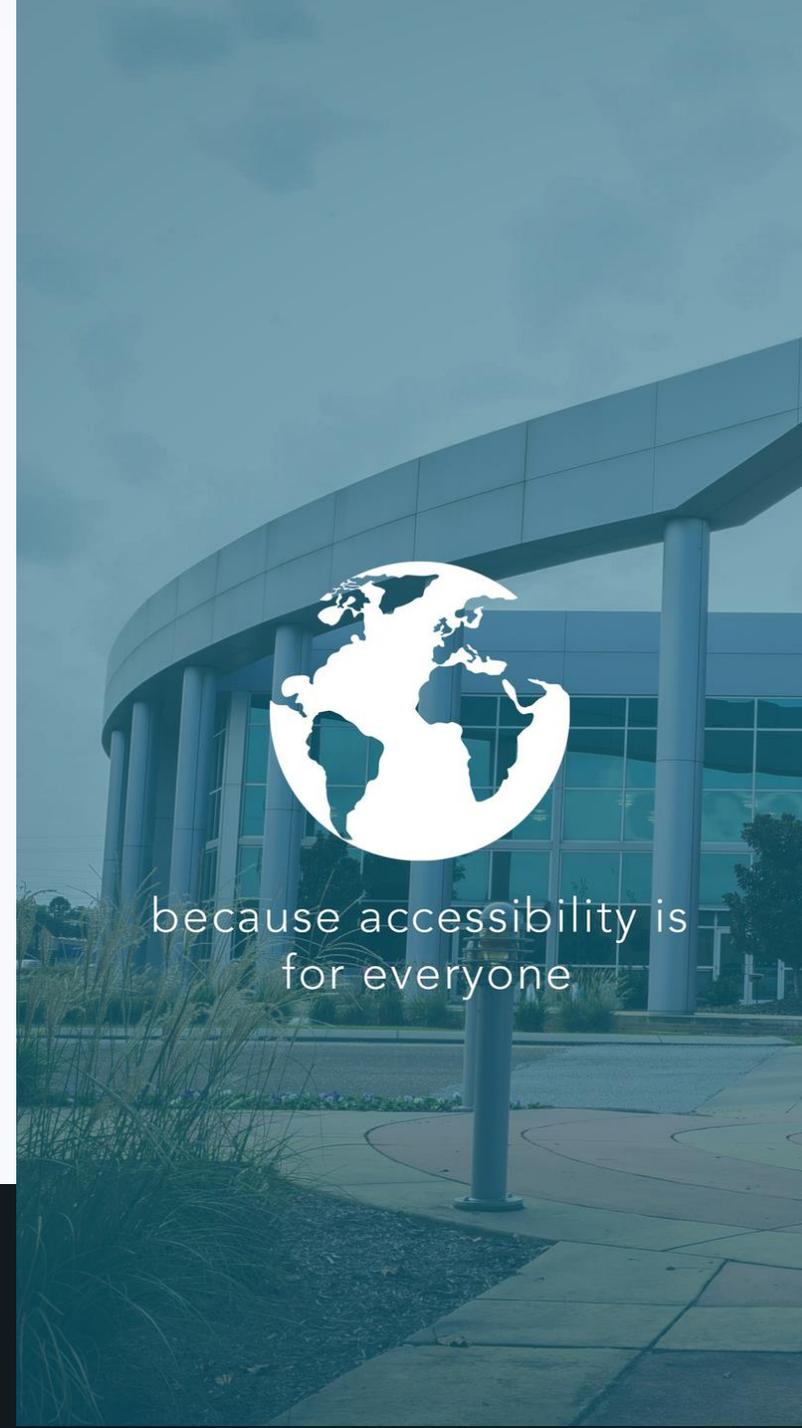


Hosted by Chattanooga State  
Community College

# Technology in the Workplace



because accessibility is  
for everyone



of Tennessee



**Liz Persaud**

Tools for Life,  
Georgia's Assistive Technology Act Program



# Today's Session



- Assistive Technology, also known as AT, allows more options for greater independence in all areas of life, but especially in the workplace.
- As a professional with personal experience of using AT that has structured everyday living and working, Liz will spend this time to reflect back, look forward, and share anecdotes along with some valuable lessons learned.
- AT provides opportunities for independence through environmental and computer access, self-advocacy, socialization and more.
- Let's explore specific AT strategies and solutions!

# Georgia Tech: CIDI and TFL



The Center for Inclusive Design and Innovation (CIDI) focuses on services and research in the world of accessibility. Research initiatives focus on accessible education, accessibility in the workplace, assistive technology, technology and aging, and much more. Services include Braille production, captioning and described media, digital accessibility, E-text, and assistive technology services (TFL).

Tools for Life (TFL), Georgia's Assistive Technology Act Program, increases access to acquisition of assistive technology devices and services so Georgians of all ages and disabilities can live, learn, work, and play in the communities of their choice.

The screenshot shows the homepage of the Georgia Tech Center for Inclusive Design and Innovation (CIDI). The header includes the Georgia Tech logo and the text "Center for Inclusive Design and Innovation COLLEGE OF DESIGN". Below the header is a navigation menu with links for "About", "Research", "Services", "Education", "Portfolio", "News & Events", "Contact", and "Member Log In". The main content area features a large photograph of a diverse group of people sitting around a long table in a meeting room. A man in a wheelchair is seated at the end of the table, facing the other participants. Below the photo is a white banner with the text "We Are Contributing to an Inclusive World". At the bottom of the page, there is a paragraph of text: "CIDI is recognized as a leader for services and research in accessibility. We are dedicated to an inclusive society through innovations in assistive and universally designed technologies, with a goal of addressing the full range of needs for accessibility. We are committed to the promotion of technological innovation and development of user-centered research, products, and services for individuals with disabilities."

The screenshot shows the homepage of the Georgia Tech Tools for Life website. The header includes the Georgia Tech logo and the "TOOLS for LIFE" logo. Below the header is a navigation menu with links for "HOME", "ASSISTIVE TECHNOLOGY", "TFL NETWORK", "CALENDAR OF EVENTS", and social media icons for YouTube, Facebook, and Twitter. The main content area features a large banner with the text "Tools for Life and COVID-19" and a background image of a virus particle. To the right of the banner is a sidebar with a "COVID-19 RESOURCES FOR PEOPLE WITH DISABILITIES" section, which includes a "WEBINARS" section with dates and topics. Below the sidebar is a "TOOLS FOR LIFE APPFINDER" section with a grid of icons for various assistive technologies. At the bottom of the page, there is a "Welcome to Tools for Life" section with a paragraph of text: "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." Below this is a "Tools for Life and the TFL Network work collaboratively together to accomplish our mission through:" section.

# AT Helps

Assistive Technology (AT) strategies and solutions can help support individuals with a variety of disabilities in the workplace. 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



# Understanding Disability

- Spinal Muscular Atrophy Type 2 ("ALS in children")
- Official diagnosis, December 1979
- Life Expectancy (Age 2, 7, 11, 17 and now 41)
- Progressive Muscle Weakness
- Chronic Pain & Fatigue
- Respiratory Complications

- My Parents were advised to put me in a school for individuals with developmental disabilities.
- They took me out the next day when they realized that system was not designed for me.



# Disability is Natural

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



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of Tennessee

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Council on  
Developmental Disabilities



# Start at the Beginning

disability is often a  
consequence of the  
environment

# Assistive Technology

Assistive Technology (AT) has been the key instrument in my many successes throughout my life.

As technology continues to evolve and social and physical barriers are removed, my journeys are becoming endless while I increase my never-ending quest for independence.



# Accessible Technology

Accessible technology includes any mainstream technology that has been designed with the needs of various users in mind and generally incorporates assistive technology solutions.

Today, tech companies like Apple, Microsoft, and Google are garnering much recognition for designing their products and services with built-in customization features that allow people with disabilities to individualize their experiences.



# Embracing Built-in Accessibility Features



Many assistive technologies are built into products most of your employees likely already use.

Large tech companies such as Apple, Google, Dell and Microsoft offer customizable, built-in accessibility options like voiceover, display accommodations, speech recognition, automatic subtitles, screen magnification, and keyboard adjustments with their products and services.

Microsoft Office, for example, has the Accessibility Checker, which ensures all documents can be easily read by people with disabilities by checking for missing descriptive hyperlinks, extra whitespace, improper page breaks and other discrepancies that can interrupt comprehension.

# Flexible Work Practices



Studies show that employees are more satisfied and effective when they get to decide when, where, and how they work.

**Technology is the fuel that enables these trends to grow.**

Mobile devices, the cloud, collaborative software, and other advances allow for greater flexibility outside of the physical office space. (And inside it, too.)

# Efficiency Through Automation

Technology allows for the automation and streamlining of many operational processes and day-to-day tasks.

While these changes certainly require adjustments, automation improves overall business efficiency.

At the individual level, automation can give workers the time to focus on other, more creative and thoughtful aspects of their jobs.

For individuals with disabilities, streamlining repetitive processes eliminates time wasted and levels out the playing field.



# Types of Environmental Control

- ✓ Switch - the user activates an accessible switch to control the environmental control unit, generally done through menu scanning.
- ✓ Voice - the user speaks the commands to the environmental control unit " turn on bedroom light."
- ✓ Both

- The more options available (switch, voice, and/or both) the more independence can be gained.
- Look for the ability to customize or combine the control (input) devices to meet needs. While a voice-activated system can give the most independence, one's voice can become weak by the end of the day, so an ECU that can be controlled by both voice and switch may be very beneficial.



# Ultra Light Switch

- The ASL 314 Ultra Light Switch has a very light activation force and low profile.
- Ideal for people with limited movement or weakness.
- Enables easy access to multiple wheelchair functions (tilt, recline, power legs, elevate, etc.)

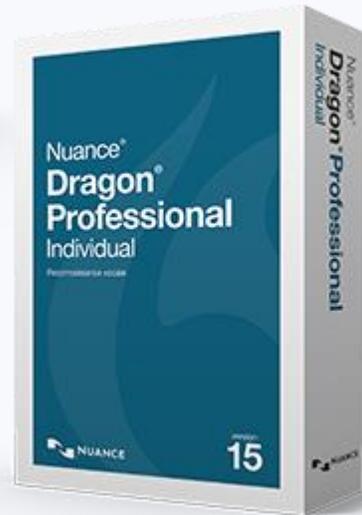


# Open Sesame



- Nominated for Best Accessibility App Google I/O 2018
- Control your phone using minor head movements
- Tap, swipe, drag and drop
- Easy to configure
- ~~7 day trial, \$19.99/month-Free!~~
- <https://sesame-enable.com/>

# Dragon NaturallySpeaking



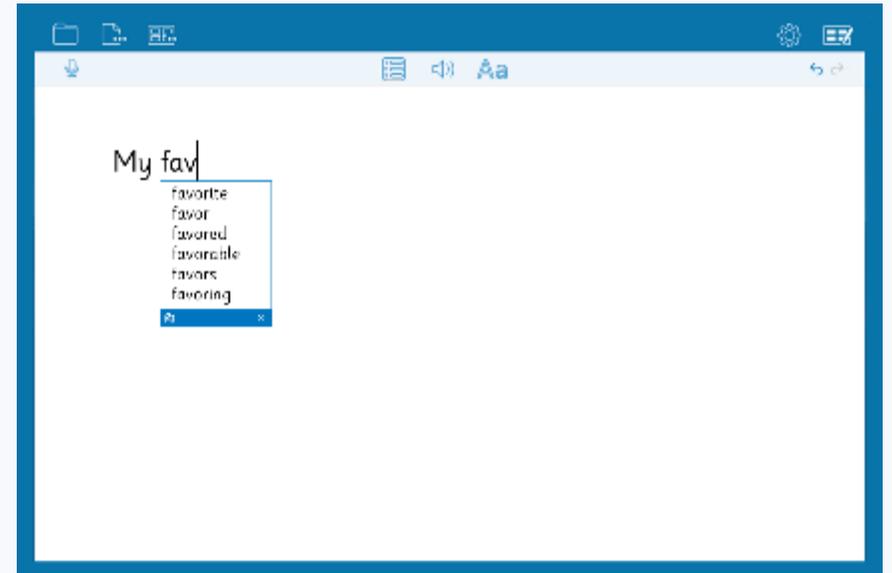
- Speech recognition software
- Speech to Text
- Use your computer with your voice
- Send emails
- Open files
- Dictate documents
- Search the web
- Mouse functions
- Precise and quick training
- Works fast, 99% accuracy

# Word Prediction

Word prediction is an "intelligent" word processing feature that can alleviate writing breakdowns by simply by reducing the number of keystrokes necessary for typing words.

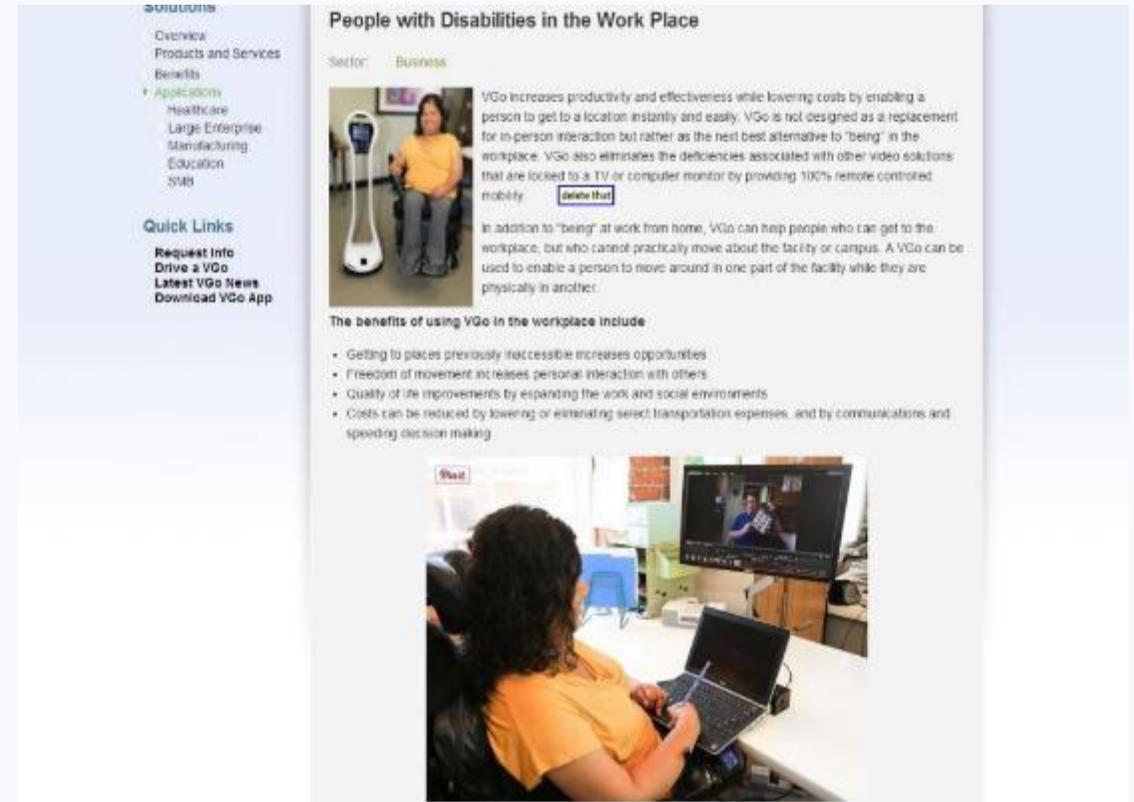
As you type, the software monitors the input letter-by-letter, and produces a list of words beginning with the letter sequence recorded. Each time a letter is added, the list is updated. When the target word appears in the list, it can be chosen and inserted into the ongoing text with a single keystroke. (Typically word lists are numbered and words can be chosen by typing the corresponding number).

For those who cannot use the standard keyboard, alternate methods for selecting letters - switches, trackballs, head and mouthsticks - can sometimes be slow. Word prediction can reduce this gap simply by reducing the number of selections necessary for encoding words.



# Telepresence Robot

- Stay in one location while visiting another
- The freedom to move around as if you were actually there!
- Reduces travel expenses
- School
- Hospital and other medical settings
- Work remotely



The screenshot shows a webpage with a navigation menu on the left and a main content area. The navigation menu includes: Overview, Products and Services, Benefits, Applications (with sub-items: Healthcare, Large Enterprise, Manufacturing, Education, SMB), and Quick Links (Request Info, Drive a VGo, Latest VGo News, Download VGo App). The main content area is titled "People with Disabilities in the Work Place" and is categorized under "Sector: Business". It features a photograph of a woman sitting in a white telepresence robot. The text describes how VGo increases productivity and effectiveness while lowering costs by enabling a person to get to a location instantly and easily. It also mentions that VGo is not designed as a replacement for in-person interaction but rather as the next best alternative to "being" in the workplace. A "Write that" button is visible next to the text. Below the text, there is a section titled "The benefits of using VGo in the workplace include" with a bulleted list: 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; and Costs can be reduced by lowering or eliminating select transportation expenses, and by communications and speeding decision making. At the bottom of the page, there is a photograph of a woman sitting at a desk, using a laptop, with a large monitor displaying a video conference.

# Smart Speakers



- ✓ Internet connected
- ✓ Always listening for a hotword
- ✓ Embedded assistant
  - Answers simple questions
- ✓ Internet of Things compatible
- ✓ Make phone calls

# Smart Lights and Plugs

## Smart Lights

- Phillips Hue Light Bulbs
- Lix
- TP Link
  - Turning lights on and off in the office independently



## Smart Plugs

- Make “dumb” devices smart
  - Electric Blanket/Throw
  - Space Heater
  - Coffee Pot
  - Crock Pot
- Samsung Smart Plug
- TP Link Smart Wifi Mini
- TP Link Kasa Smart Power Strip

# Fire TV Cube

- Works like an Amazon Echo Speaker
- Control TV, Soundbar, Cable Box, and select other devices
- Native Voice Control
  - “Watch Animal Planet”
- Fire TV Capabilities
  - “Watch Stranger Things”



# Building Access

It is important to not only think of environmental control as a short distance radius around you, but as your true environment/surroundings.

Building and infrastructure access is equally as important. Getting inside the building is one of the initial steps to controlling your environment!

Example: in 1997 Georgia State University teamed up with Georgia Tech to create an innovative environmental control system that was easily accessed with a small remote and minimal movement. This enabled me to exit the MARTA bus, access the elevator up to the student common area, access the post office, access to student community center, open my building door, access the elevator up to my floor, open my apartment door, and lock it behind me. I hear that students are still accessing and using this technology successfully today!



# Schlage Z-Wave Home Keypad

- Control access to your home independently
- Single Use or Permanent PIN
- Hardware Key
- Z Wave through SmartThings Hub
- Use a smart speaker/assistant to unlock/lock your door by voice



# Preparation for the Future



- Ready for the Workplace
- Ready for Life
- All of the solutions, helpful tools and strategies that I've learned to use over the years are helping me to be successful today.
- Let your environment work for you!

# Life is Possible



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



For a person with a disability, technology makes Life possible.



# Contact Me



Liz Persaud is a nationally recognized keynote, public speaker, and advocate addressing the need to build bridges and solidify the gaps between individuals living with and without disabilities. Liz currently serves as the Program and Outreach Manager for Tools for Life (Georgia's Assistive Technology Act Program) and the Pass It On Center (The National Assistive Technology Device Reutilization Coordination and Technical Assistance Center) at the Center for Inclusive Design and Innovation within the College of Design at the Georgia Institute of Technology. Additionally, Liz provides online and in person training and public awareness for TechSAge 2, the Rehabilitation Engineering Research Center focused on successful aging with a disability. She is a sought-after guest lecturer at numerous universities speaking on the power of assistive technology. Liz is an active advocate with the Muscular Dystrophy Association of Atlanta as well as the nonprofit group Living United with NMD, providing outreach and raising awareness to numerous groups and organizations across the globe. Her passion lies within education about generations of adults growing up and living independently and successfully with childhood neuromuscular diseases. She is also the proud two-time recipient of the Muscular Dystrophy Association Personal Achievement Award in Georgia. Liz has dedicated her life to increasing independence for individuals with disabilities by educating on self-determination and advocacy with a focus on technology and disabilities. She is a graduate of Georgia State University and lives in Alpharetta, Georgia with her hero of a husband and supportive family.

If you would like to connect with Liz directly, please send an email to:

[lizpersaud@gatech.edu](mailto:lizpersaud@gatech.edu).