

# Thank You, Sponsors!

## Lunch Sponsor



## Opening Keynote Sponsor



## Silver Sponsors



## Bronze Sponsors





# Smart Technology in the New Era:

Empowering Individuals  
with Traumatic Brain Injury  
(TBI)



[QLIomaha.com](http://QLIomaha.com)

[@QLIrehab](https://www.instagram.com/QLIrehab)

# QLI

Omaha, NE

Post Acute Rehabilitation and  
Outpatient Telerehabilitation

- Traumatic Brain Injury
- Spinal Cord Injury
- Chronic Pain
- Limb Loss
- Stroke



# Raise your hand if you've ever used...

- Siri
- Voice-to-text
- Reminders on your phone
- GPS
- Alexa, Echo Dot
- Subtitles
- ChatGPT



# Disclosures

- We are full-time employees of and receive salaries from Quality Living Inc., in Omaha, NE.
- We have no other financial or nonfinancial conflicts of interest to disclose.
- The products referenced in this presentation are shared based on our professional experience and what we have found to work well in practice. We have no financial relationship with, receive no compensation from, and derive no benefit from the promotion of any specific products, brands, or companies mentioned.
- All names in today's case studies have been altered to ensure confidentiality. Permission has been granted to share these cases for educational purposes.

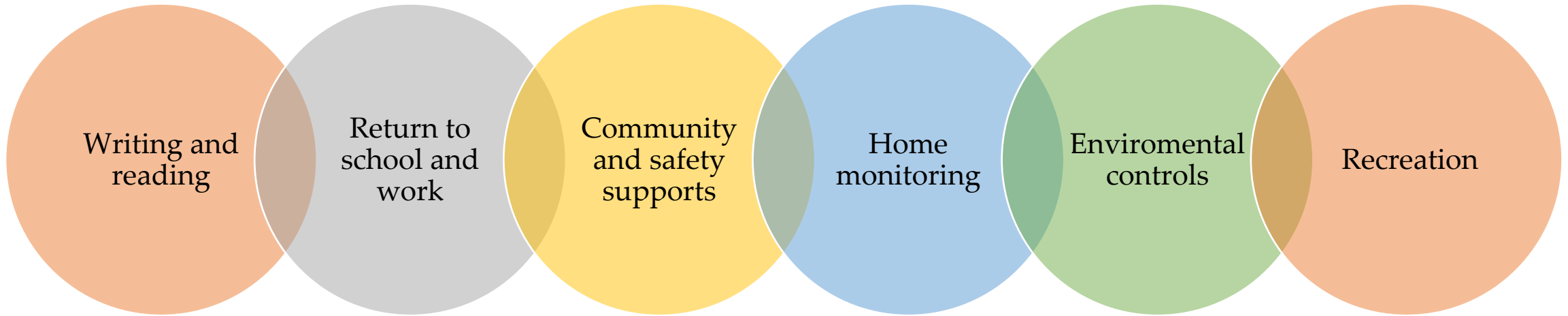
# Objectives

- Examine the role of assistive technology (AT) in supporting individuals with traumatic brain injury (TBI) across functional environments, including writing, return to work or school, home management, community participation, and safety.
- Identify practical, high-usability AT solutions through real-world case examples.
- Implement AT in everyday life for individuals navigating recovery after TBI.

# Assistive Technology



- Any item, equipment, software, or system that helps people increase, maintain, or improve their functional abilities.



# Writing and Reading

## ■ Word Prediction Software

- Built-in accessibility feature
- Supports written expression and spelling
- Reduces typing demand and cognitive load

## ■ Spelling and grammar checkers

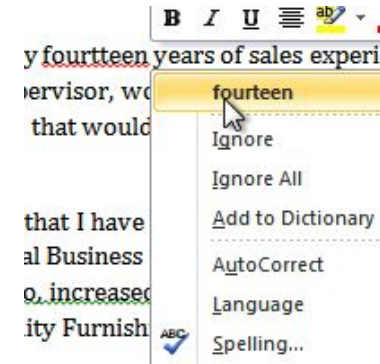
- Provides real-time feedback
- Supports accuracy and independence

## ■ Text-to-speech conversion

- Converts written text into spoken output
- Supports reading comprehension, attention, and fatigue management

## ■ Natural Reader

- AI integrated
- Converts documents, PDFs, books, and web content into audio to support comprehension and accessibility



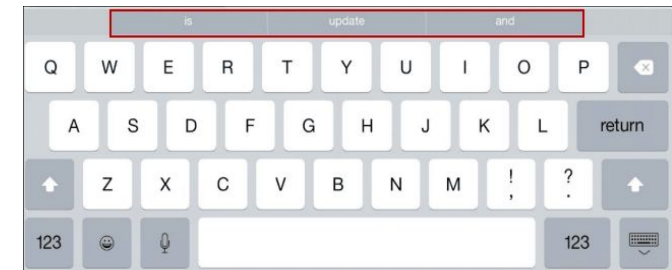
Word prediction software

Spelling and grammar checkers



NaturalReader

Reading and writing support (Free/premium plans)



Text-to-speech conversion

# Computer Access

## Return to Work/School Tools

- Head Tracking
  - Variety of products ranging from ear clips to glasses
  - Hands Free Operation of Devices
  - Bluetooth Connection
  - Switch Integration
- Adaptive Mouses
  - Multiple styles
    - § Vertical Mouse
    - § Roller Mouse
    - § Joystick Mouse
  - Programmable and Customizable



Head Tracking (\$250-1200)



Microsoft Adaptive Mouses (\$15-30)



Kensington ExpertMouse (\$95)

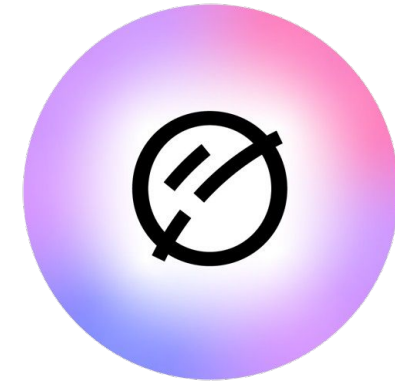
# AI Tools

## Supporting Return to Work & School Settings

- **Genio (formerly Glean)**
  - School focused
  - Transcription, quizzes, summaries, searches, etc.
- **Jamworks**
  - School focused
    - AI integrated
    - Transcriptions, quizzes, summaries, Q&A, etc.
- **ChatGPT**
  - AI integrated
  - Designed to be more conversational
  - A tool to support critical-thinking



Jamworks (\$228/yr)



Genio (\$144/yr)



ChatGPT (Free versions available)

# Case Study: Paul

- Assistive technology supported:
  - Transition back to work-related tasks
  - Integration of technical reading and writing demands
  - Return to meaningful hobbies and leisure activities



Spelling and Grammar checks



Word prediction



Speech to text conversion



NaturalReader

# Community and Safety Supports

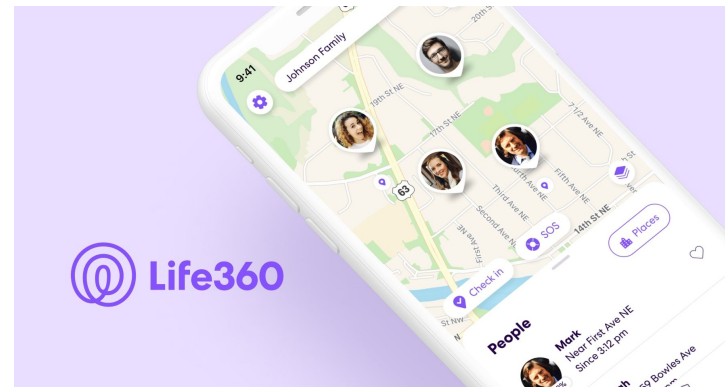
- **Air Tag**
  - Monitors location
  - Uses Apple Find My Network
- **Air Tag Insoles**
  - Footwear tracking
  - Discreet Airtag holder
  - Supports safety and wandering monitoring
- **Life360**
  - Family safety application
  - Real-time location sharing
  - Alerts, location history, check-ins
- **Apple Watch**
  - Wearable safety device
  - GPS, Fall Detection, SOS
  - Health & Location Monitoring



Air Tag Insoles (\$9-\$17)



Air Tag (\$29)



Life 360 (Free and paid plans)



Apple Watch (\$299+)

# Home Monitoring

- **Alexa devices**

- Voice-activated smart technology
- Hands-free control and reminders
- Supports daily reminders and safety

- **Ring Doorbell**

- Smart home security
- Video doorbell with alerts
- Monitors visitors and deliveries

- **Blink Camera (Indoor)**

- Indoor security camera
- Motion detection and live view
- Supports remote home monitoring

- **MyQ**

- Smart garage door system
- Remote open/close and alerts
- Monitors garage door activity



MyQ (\$30)



Alexa devices (\$50+)



Blink Camera Indoor (\$50)



Ring Doorbell (\$50)

# Case Study: Don

- Assistive technology supported:
  - Promote increased independence
  - Reduce caregiver burden
  - Support monitoring and management of impulsivity



Ring Doorbell



MyQ



Life360



AirTag Insoles

# Environmental Controls

## Voice & App Activation Within the Home

- Lighting Controls
  - Smart plugs
  - Smart bulbs
  - Smart switches
- Curtain/Shade Controls
  - Bluetooth
- Door Operators
- Voice and/or App controlled
- Climate Controls
  - Voice & App controlled
- TV Controls
  - Voice & App controls



Fire TV Cube (\$140)



Smart Bulb (\$10-\$15)



Curtain/Shade Control (\$100)



Smart Plug (\$15-\$25)

# Case Study: Reid

- Assistive technology supported:
  - Increase independent time within the home
  - Enhance safety awareness
  - Lessen reliance on caregiver support



Apple Watch



Echo Dot



Blink Mini Camera



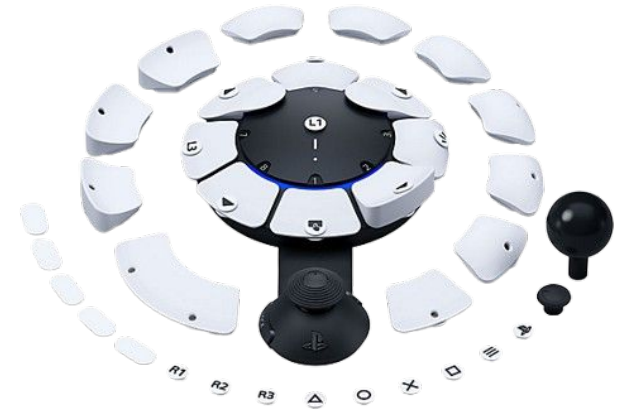
Speech Assistant Application on phone

# Recreation

- Adaptive Video Gaming
  - Xbox Adaptive Controller
  - PlayStation Access Controller
- Kindle with use of Echo Dot
  - Paired for Read-Aloud via Echo Dot



Xbox Adaptive Controller (~\$200 total)



PlayStation Access Controller (\$89)



Amazon Kindle (Starting at \$90)

# Kitchen

- **Non-slip mats**
  - Adaptive safety aid
  - Prevents sliding
  - Supports independence in eating and ADLs
- **Nosey cups**
  - Adaptive drinking cup
  - Designed for limited head tilt
  - Promotes safe, independent drinking
- **Rocker knives**
  - One-handed cutting design
  - Meal preparation
- **IGuardStove**
  - Safety technology
  - Automatic stove shut-off
  - Prevents fire and burn risks



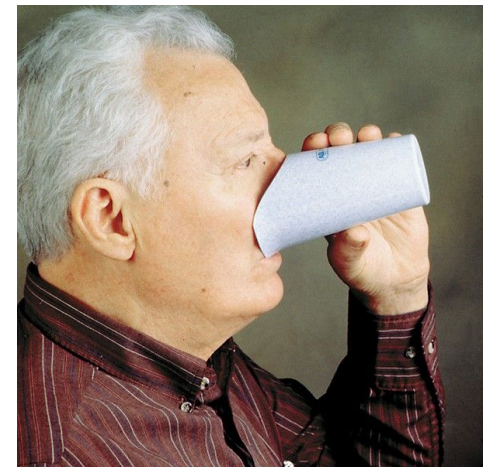
Rocker Knife (\$17)



Non-slip mat (starting at \$15)



IGuardStove (TBD)



Nosey Cup (starting at \$11)

# Recreation

| Xbox                       | PlayStation             |
|----------------------------|-------------------------|
| Flexibility in Layout      | Dual Button Assignments |
| Switch Ports               | Switch Ports            |
| Joystick Purchase Options  | Joystick Included       |
| Copilot Mode               | Co-controller Options   |
| Cross Compatible w/adapter | PS5 Compatible          |



# Environmental Controls

## Voice & App Activation Within the Home

- Fire TV Cube
  - Voice & App Controlled
- Roku
  - App Controlled
- Apple TV
  - Voice & App Controlled



Smart Thermostat (\$70+)



Roku (\$25-\$80)



Apple TV (\$180)



Fire TV Cube (\$140)

# Xbox



Adaptive  
Controller (\$99)



Adaptive Joystick  
(\$30)



Logitech Adaptive  
Switches (\$99)



# PlayStation Adaptive Controller



Access Controller (\$90)

# Nintendo Switch

## Adaptation Options

- Remapping Options
- Adapters
- 3D Print Controller Adaptations



3D Print Adaptation (\$0.50)



8BitDo USB Adapter (\$20)

# Applying What We've Learned



Select the most appropriate assistive technology for the following case study.

# Case Study: Wyatt



Concerns:



Forgets to turn off the oven after preparing a meal



History of falls but has been cleared by physical therapist to walk around his property



Exhibits impulsive behaviors, such as leaving the house without informing anyone



IGuardStove (TBD)



Apple Watch (\$299+)



Air Tag Insoles (\$9-\$17)

# Thank you!



**Olivia Ollis, MOT, OTR/L**  
Occupational Therapist  
Assistive Technology Specialist



**Kelsey Wagner, M.S., CCC-SLP**  
Speech-Language Pathologist



# Resources

