



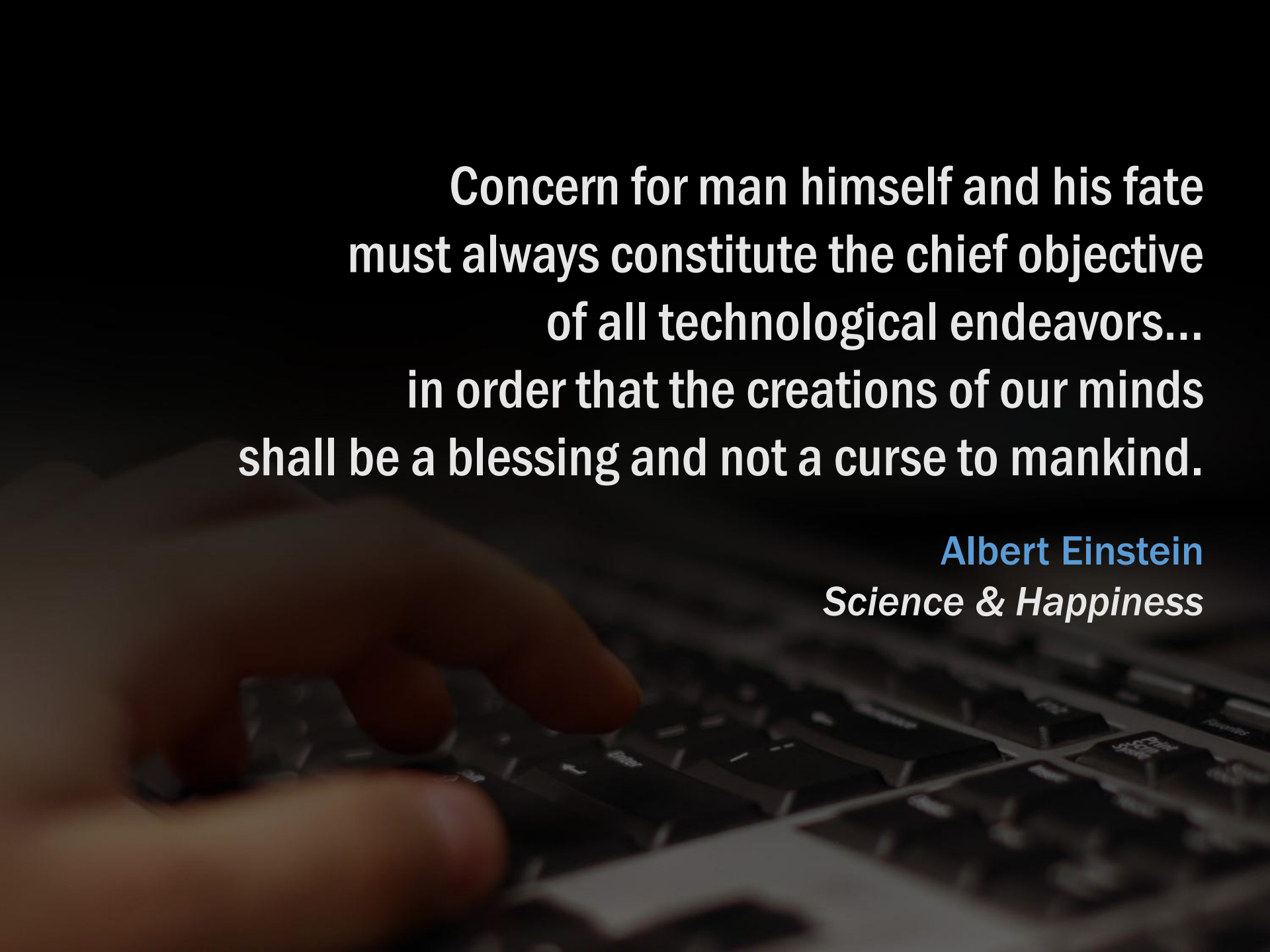
# *Putting Technology in the Hands, Home or Community of People with IDD to Improve Their Quality of Life*

Tuesday, October 21<sup>st</sup>, 2014

Steven E. Stock  
AbleLink Technologies  
Colorado Springs, CO

ABLELINK  
TECHNOLOGIES

Sandy Henry  
Sengistix, LLC  
Mendota Heights, MN



**Concern for man himself and his fate  
must always constitute the chief objective  
of all technological endeavors...  
in order that the creations of our minds  
shall be a blessing and not a curse to mankind.**

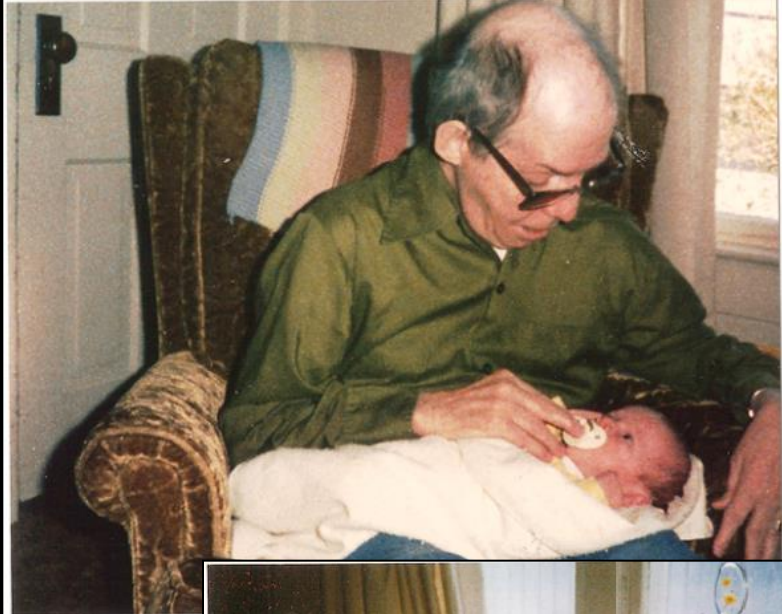
**Albert Einstein**  
*Science & Happiness*

# Background

- **Began Research Specifically on Using Technology for Individuals with Cognitive Disabilities in 1991**
- **AbleLink Technologies founded in 1997**
- **AbleLink's Mission:**  
**Research, Develop, and Deliver Cognitive Technology addressing the Specific Needs of Individuals with Cognitive Disabilities**

# Francis Gauthier

1929-1994



# AbleLink's Cognitive Technology Research and Development

## Small Business Innovation Research Funding – ED, NIH, DARPA

- 60+ Phase I Concept Validation Studies Completed, 3 more in progress (6 months – 1 year)
- 20+ Phase II Development Projects Completed, 1 in progress (2 year projects)



- 30+ peer-reviewed journal articles and book chapters on technology for persons with cognitive disabilities
- 15+ commercially available cognitive support technologies (computer access, personal scheduling, accessible email, simplified web-browsing, task prompting as well as other products for independent living)

# AbleLink's Cognitive Technology Research and Development

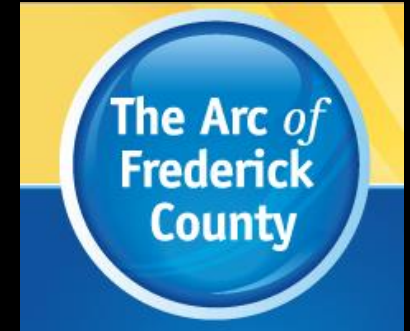
## Collaboration with Universities and Other Disability Organizations

- partnered on DRRP on Technology and Intellectual Disability
- partnered with RERC on Advancing Cognitive Technologies
- partnered with Westchester Institute for Human Development's Center on Health, Disability and Technology
- partnered with CU and WIHD on two Joseph P. Kennedy, Jr. Foundation Technology Projects





# Increasingly Service Agencies and Organizations Are Using Technology to Improve Programs & Services

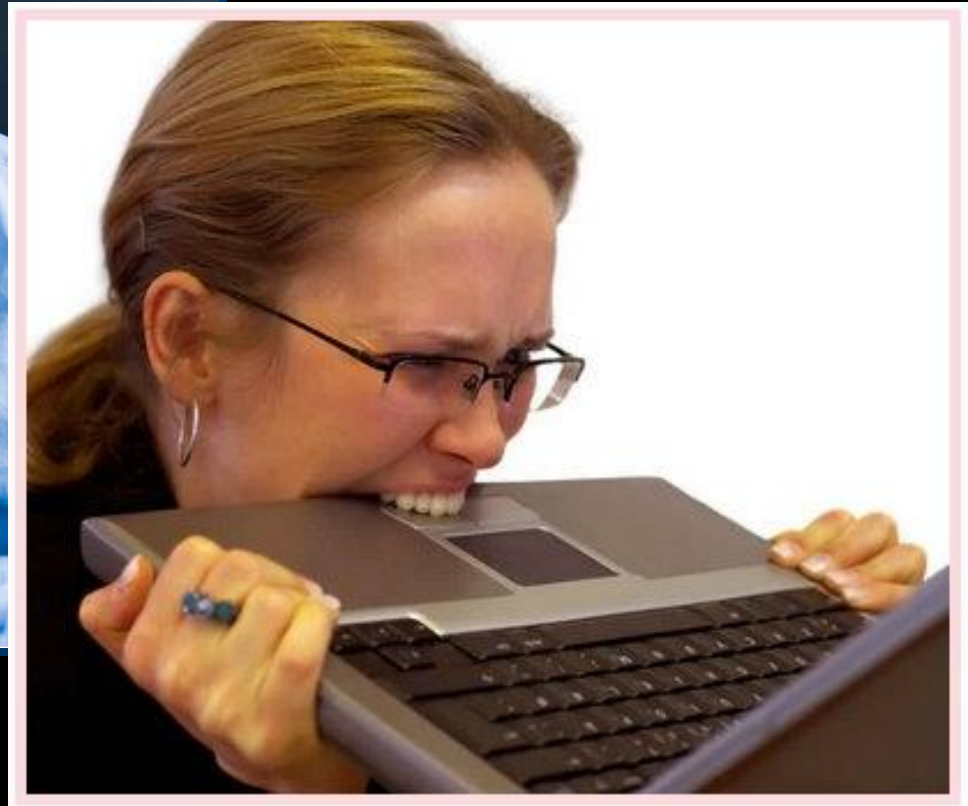


# The Basic Purpose of Technology

*the application  
of scientific advances  
to benefit humanity*

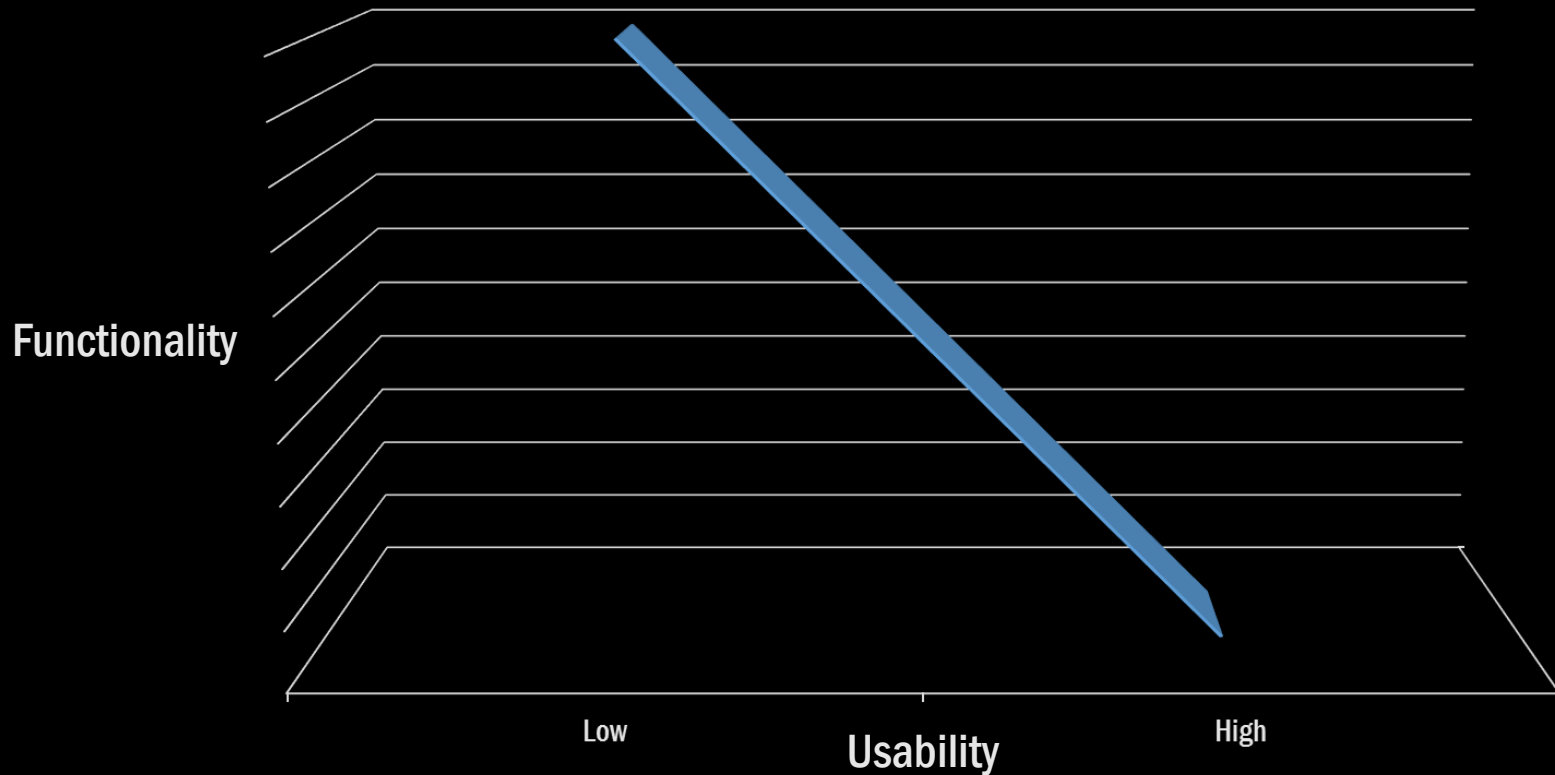
(The Franklin Institute - <http://fi.edu/franklin.glossary.html>)





# Technology Paradox

## Functionality versus Usability



“...the same technology that simplifies life by providing more functionality ... also complicates life by making it hard to learn. This paradox of technology is often used by people as an excuse for poor design...”

Donald A. Norman - The Design of Everyday Things, 1988 (pp. 30-31)

# Technology Paradox

Example: **Microwave Ovens**



# Technology Paradox

## Example: Mobile Phones

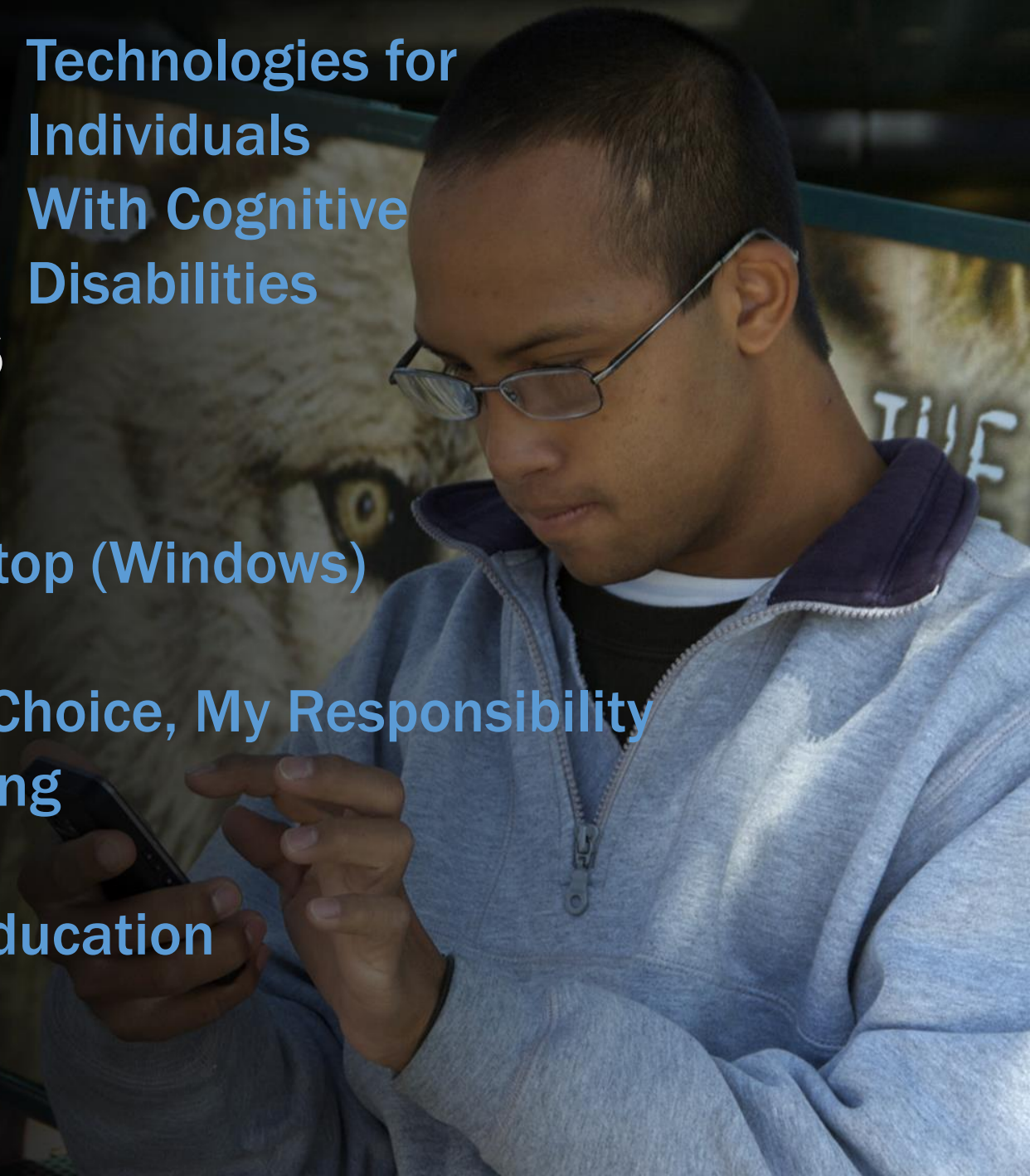


# Applied Cognitive Technologies

Technologies for  
Individuals  
With Cognitive  
Disabilities

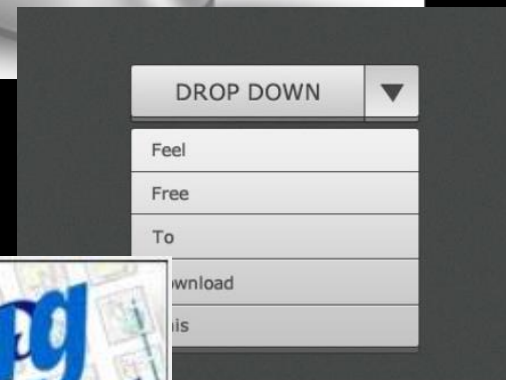
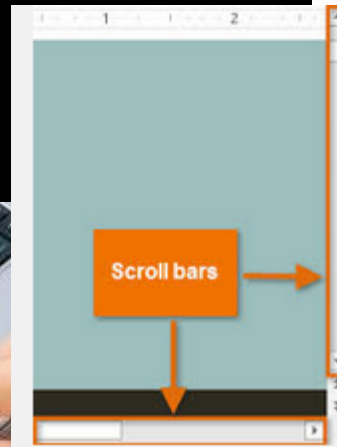
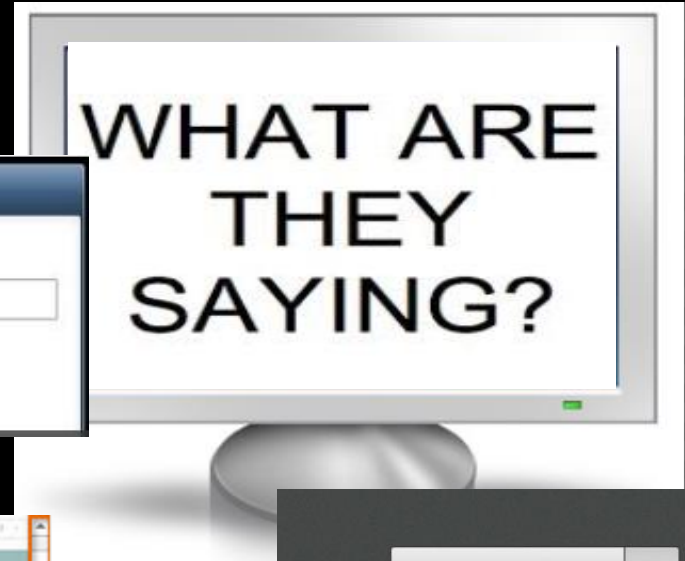
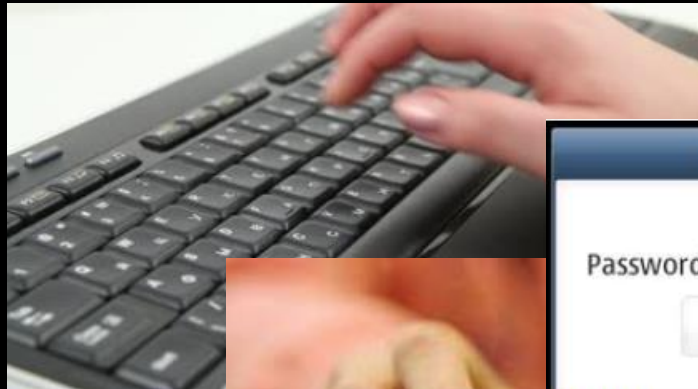
## Hands:

- Endeavor Desktop (Windows)
- It's My Future!
- My Health, My Choice, My Responsibility
- Everyday Cooking
- Living Safely
- Intro to Voter Education

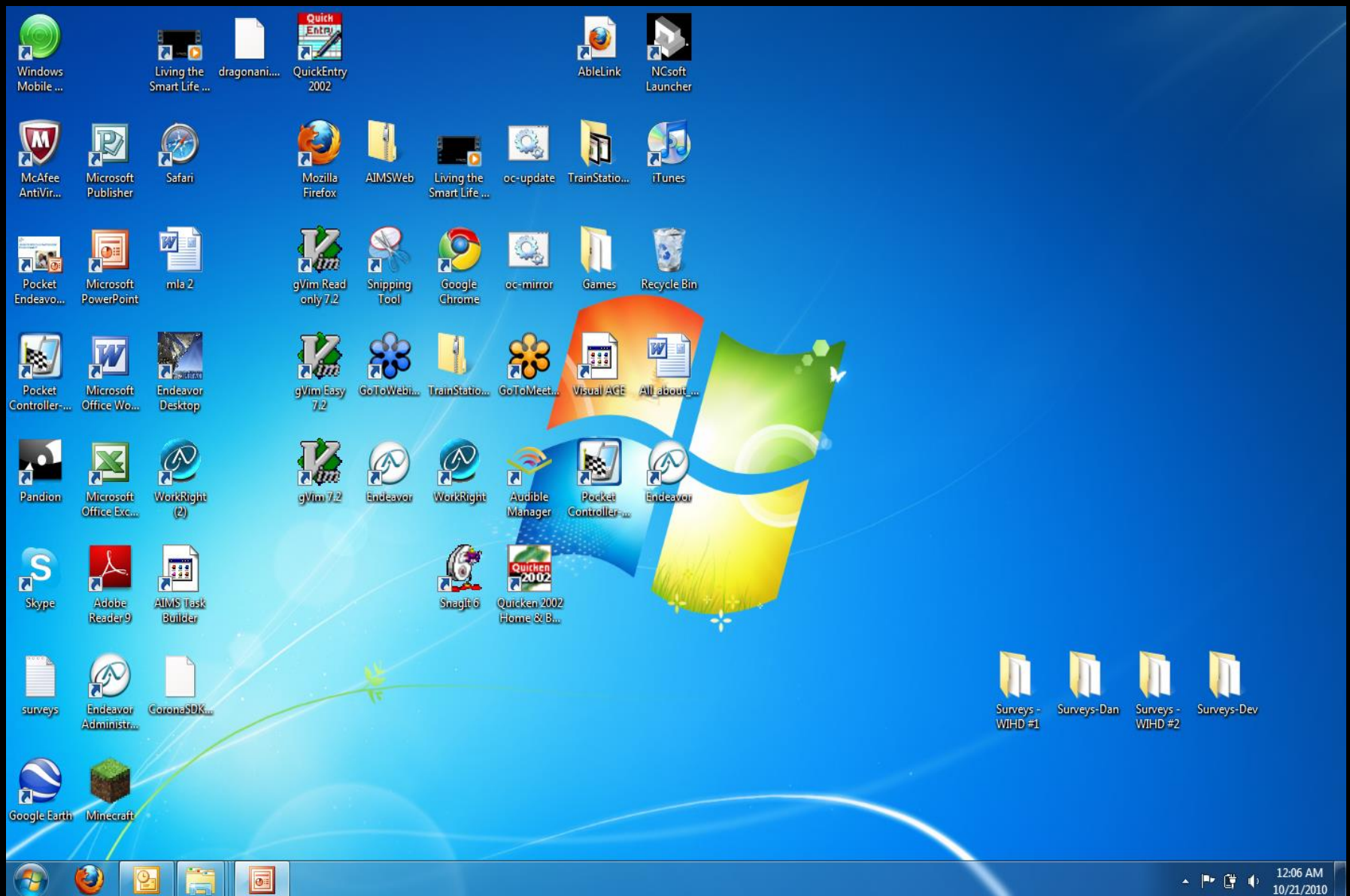




# Access Barriers for Cognitive Disability







# Barriers to Access Begin at the Operating System

# Endeavor Desktop

The Endeavor Desktop Environment brings everyday technologies such as social networking, online access/communication, and productivity to individuals who have been excluded from full participation in the technology revolution due to barriers imposed by the complexity of everyday technologies.

[Click to find out more...](#)



## Cognitively Accessible Operating System



# Endeavor Desktop

Cognitively Accessible Windows  
or Macintosh Computing Environment

ENDEAVOR DESKTOP 1.2 11:04 AM JULY 30



Robin's Email



Weather Feed  
for Weyzata



Zealand Picasa  
Web Site



Funny Stuff



Movie Trailers



You Tube



Hammer Travel



Kmart Web Site



Living Safely



Everyday Skills



My Health, My  
Choice, My  
Responsibility




Reading and Writing



EXIT

# Endeavor Desktop

Admin: User/Desktop Mgmt.




Rusty (user) :: SmartLiving-Steves


**Rusty**


[New Browser](#)[Exit](#)


DesktopContactsSettings


Choose Palette

Web


Social


Talker

Media


Surveys


Tasks


Toolbox


System


Button View

Home


  
Games


  
Lifelong Learning


  
Elvis Videos

  
Buddy Holly Videos


  
Old Time Radio


  
Vocational Training

  
Pictures and Videos

  
Cooking Instructions

  
My Chore Instructions

  
Internet Content

  
Ventilator

  
Endeavor Email



Open Learning Library


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OptionsBackground


# Endeavor Desktop


Web Trek simplified web browser



EXIT


## National Park Service


National Park Service  
U.S. Department of the Interior



Search  
 **GO»**

Find a Park  
by State...  
Advanced Search Tool and Map

Text Sizes 

 View all »

[Find a Park](#) [Discover History](#) [Explore Nature](#) [Working with Communities](#) [Get Involved](#) [Teachers](#) [Kids](#) [About Us](#)

### News

[More News »](#)

**Green and Seasoned at Once**  
Energy-efficient historic buildings »

**John Muir Still Helps Yosemite**  
New edition of book published »

**On an Even Keel**  
Replica of 16th-century ship begun »

### Events


[More Events »](#)

**Syngonium's Worst Nightmare**  
Arbor Day at Everglades »

**Paws in the Park**  
Prince Wm. Forest goes to the dogs »

**Take Part in Art**  
Weir Farm National Historic Site »

### The Civil War: 150 Years



### Photos and Multimedia

[More Photos and Multimedia »](#)



# Endeavor Desktop

Simplified Video Player





# Endeavor Desktop

Video Player Test Session



# Endeavor Desktop

## Simplified Email Program



### Inbox

4 messages



#### Learn Cleaning Validation from the Industry Experts!

FROM: Training & Professional Development DATE: Today at 03:25 PM



#### Pictures of the Reunion

FROM: Mr. Williams DATE: Today at 02:55 PM



#### Bowling Saturday

FROM: Brian DATE: Today at 02:43 PM



#### conference call today

FROM: Rich Herold DATE: Today at 12:07 PM



EXIT

# Jake's Endeavor Email Story



“A resident who has a very hard time expressing himself and verbalizing his feelings started using audio email through Endeavor, and his social skills have begun to blossom. He was hesitant at first to give it a try. For several weeks his mom would send him emails and he would listen to them, but wouldn’t respond. Eventually staff was able to walk him through the process and he began by deciding ahead of time with staff’s assistance what he wanted to say in his email. He would send the email message by repeating after the staff what he would like to say. Once he got over the hump of sending the first couple of messages, he began doing them on his own. Slowly, staff stopped sitting with him and after a couple of weeks he began sending emails completely independently.

This same resident had never said ‘I love you’ to his mom. One day, he was sending emails in the dining room and staff was around the corner in the kitchen. The staff person overheard him signing off from his email by saying, “I love you, mom.” This was a new development for him. Within 24 hours, his mom called the staff in tears to express just how much that sentiment from him touched her. She continued to go on about how much his communication skills had improved over the short time since he had begun emailing with her.”



### ENDEAVOR LIVE NEWS

ABLELINK TECHNOLOGIES, INC.

WEDNESDAY, JULY 30, 2014

#### Minnesota Vikings : News

07/30/2014 10:07 AM  
Lunch Break, July 30: Bridgewater  
on the Fast Track?

07/30/2014 03:07 AM  
**Infographic: Training Camp Facts  
and Figures**

07/29/2014 12:07 PM  
Vikings Retain Roberta Kaplan and  
Ted Wells

07/29/2014 12:07 PM  
Vikings Announce Changes To  
Morning Practice Schedule on  
Wednesday, July 30

07/29/2014 11:07 AM  
Lunch Break, July 29: Praise For  
Barr, Bridgewater Staying 'Under The  
Radar'

07/29/2014 08:07 AM  
Vikings Crank Up Intensity in Camp's  
First Night Practice

07/28/2014 02:07 PM  
With New Deal, Rudolph Ready For  
Bigger Year

07/28/2014 02:07 PM  
Zimmer, Priefer and Rudolph  
Address The Media on Monday

07/28/2014 10:07 AM  
Lunch Break, July 28: Middle LB  
Competition, Peterson Pass  
Protecting and More

07/28/2014 12:07 AM  
Monday Morning Mailbag: Barr  
Looking The Part So Far

07/27/2014 08:07 PM  
Vikings Sign Kyle Rudolph To  
Contract Extension

#### Infographic: Training Camp Facts and **Figures**

Check out the infographic below that outlines several facts  
and figures related to Verizon Vikings Training Camp.

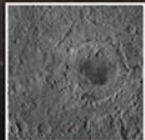


# Endeavor Desktop

## RSS Picture Feed Reader

### AE Aurigae and the Flaming Star Nebula

Explanation: AE Aurigae is the bright star below and left of center in this evocative portrait of IC 405, also known as the Flaming Star Nebula. Embedded in the cosmic cloud, the hot, variable O-type star energizes the glow of hydrogen along convoluted filaments of atomic gas, its blue starlight scattered by interstellar dust. But AE Aurigae wasn't formed in the nebula it illuminates.







## Brian Brown

Works at AbleLink Technologies, Inc.  
Lives in Colorado Springs, CO  
Married to Beth Berland Brown



### Mike Linz

Check out the cool new pictures from our trip to Epcot Center!



2 people like this.



**Tom Tindell** - Looks like a blast! Wish we were there with you!  
1 hour ago



**Larry King** - The world's largest golf ball! Here's the world's largest golf course...



3 hours ago



### Brian Brown

Check out what my daughter bought for me this morning!



# Endeavor Connect: Cognitive access to Facebook



## Endeavor Connect

AbleLinkTechnologies



Subscribe

7 videos ▾



Like



Add to

Share



28 views



Published on Jun 22, 2012 by [AbleLinkTechnologies](#)

Improving social connectedness and access to Facebook for individuals with special needs using AbleLink's Endeavor Connect.

0 likes, 0 dislikes

# Easier Access to Facebook-Testing Session

# Endeavor Desktop

## Step-by-Step Task Prompting



# Tina's Target Story



**“Tina is a transition student who had been working at Target for a few months. With the help of a job coach, she had learned how to do each of the nine separate tasks that comprise her warehouse support job. However, even though she new *how* to do her work tasks, she routinely forgot to complete one or more on any given day. About a month before her annual meeting, we were informed that she was in danger of losing her job due to the missed work tasks. We consulted with AbleLink and they suggested the audio prompting system called Pocket Coach. Tina caught on quickly and three weeks later at her staffing she repeated each of the nine audio prompts word for word and announced “I don’t need my Pocket Coach anymore! Her boss was so pleased with her progress that instead of letting her go he gave her a raise!!”**



# Where do you start?

## Technology Pilot Project



### Smart Living | Technology Pilot Project

**The Smart Living Technology Pilot Project provides your agency a complete turnkey Smart Living Technology Laboratory for three months. During this project, AbleLink staff will guide your team to explore the full potential of person-centered technology. You will experience first hand the power of Smart Living Technology for enhancing quality of life for the people you serve, while improving efficiency of services and reducing agency costs.**

#### Smart Living Technology Pilot Project Summary

- Complete 3-month technology immersion
- Personalized on-site installation and training by AbleLink staff
- Full range of AbleLink's person-centered Smart Living Technologies available for duration of project
- Learning Library provided for 24/7 web-based training and technical support
- Customized *Smart Living Technology Implementation Roadmap* detailing next steps for your organization



# Cognitive Support Technologies

Technologies for  
Individuals  
With Cognitive  
Disabilities

## Home:

- Endeavor 3 – scheduling/tracking (iPad)
- Endeavor Console –local or remote multimedia schedule management
- ATLAS – Consumer surveys

# Evolution of Mobile Cognitive Support Technologies

Pocket Coach: Pre-PDA “PDA” for individuals with intellectual disabilities, providing step-by-step verbal task prompting.



1993

Concept Prototype



1995

R&D Prototype



1995

Original Dedicated  
Hardware



2000 - 2010

1st Smart Phone  
Implementation



# Visual Prompting – Tablets and the Cloud

Visual Impact: Task prompting using the latest tablet devices with cloud supported delivery of content and notifications



# Visual Prompting – Tablets and the Cloud

Visual Impact: Using the iPad digital picture/video camera and voice recorder to create step-by-step multimedia instruction sets (“Tasks”)

CancelTask Details - Work Tasks for Today▶

✓

Task Name:

Work Tasks for Today

Please enter a name for your task. An example of this would be "Make a Ham Sandwich."

Button Talk Audio:


RECORD

PLAY

The Button Talk audio plays when you tap the button on the selection page. An example of this would be "Tap this button again to make a ham sandwich."

✓

Task Image:



Take Photo

Open Library

The Task Image displays on the selection page button, as well as the first screen of the task when playback has started. The purpose of this image is to introduce the task.

Task Audio:

RECORD

PLAY

The Task Audio plays on the first page of the task playback and, like the Task Image, is designed to introduce the task.

Add Step +

Finish Task ✓

# Visual Prompting – Tablets and the Cloud

Visual Impact: Using the iPad digital picture/video camera and voice recorder to create step-by-step multimedia instruction sets (“Tasks”)











**Roses for Autism -  
Story of the Farm**



**Packaging  
Farmer's Market  
Roses**



**Weeding Roses**





## Packaging Farmer's Market Roses



**START**





Prepare your work space

# GET READY!



**NEXT**







1. Make sure area is dry



**BACK**

**NEXT**







## 2. Get rubber bands



**BACK**

**NEXT**





3. Collect two buckets



**BACK**









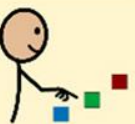








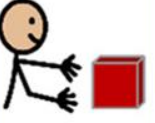
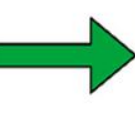





**NEXT**



# Endeavor Talker: Communication System

ENDEAVOR TALKER 12:00 PM NOVEMBER 08

Home icon, EXIT button, Play button

 I/Me...	 hi	 how are you?	 bye, see you later	 yes	 no	 thanks	 You...
 Wanting/Needing	 maybe	 ok	 I don't know	 awesome	 whatever	 haha!	 Responses
 Conversation Starters	 I want	 to go	 I like that	 that's enough	 please stop	 ask me a yes or no question	 Wrap Ups

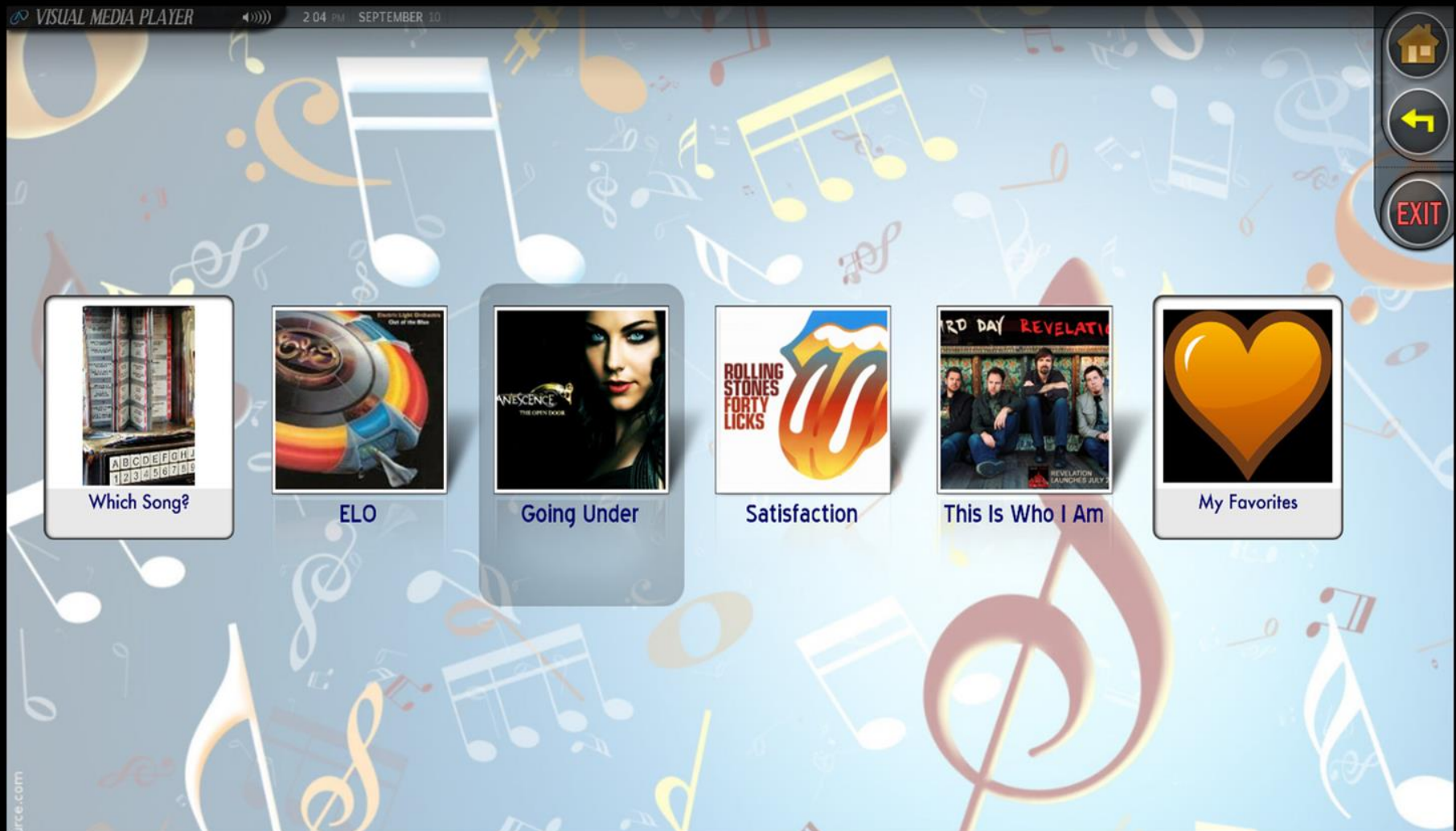


# Endeavor Talker: Communication System





# Endeavor Talker: Communication System



# Chantelle's Talker Story



**Chantelle, who has autism, was 8 when we first got the Endeavor Talker program. As her mom my goal was simply to get her to use it to order a hamburger from her favorite fast food restaurant. At first she became easily distracted but eventually she began to get more motivated by being able to play her favorite music videos after practicing with the Talker program. She has since come a long way. Recently we were traveling to a conference together on her first airplane trip. As we got to our seats and began organizing our things she insisted on digging her tablet computer out of her back pack. I wasn't sure what she was doing, but she got it out, opened Talker, navigated down a few levels and tapped the button to say "THIS IS COOL!" It was really one of those 'wow' moments...**

# Accessible Testing – ATLAS for iPad and Android Tablets

Self-directed, survey tools , such as consumer satisfaction surveys, using multi-modal presentation and accessible design can increase independence and reduce staff time interviewing and entering/ aggregating data.

A Gateway to Self-Determination

The NTI Self-Determination Survey

Where do you live?



☐ In my own house or apartment

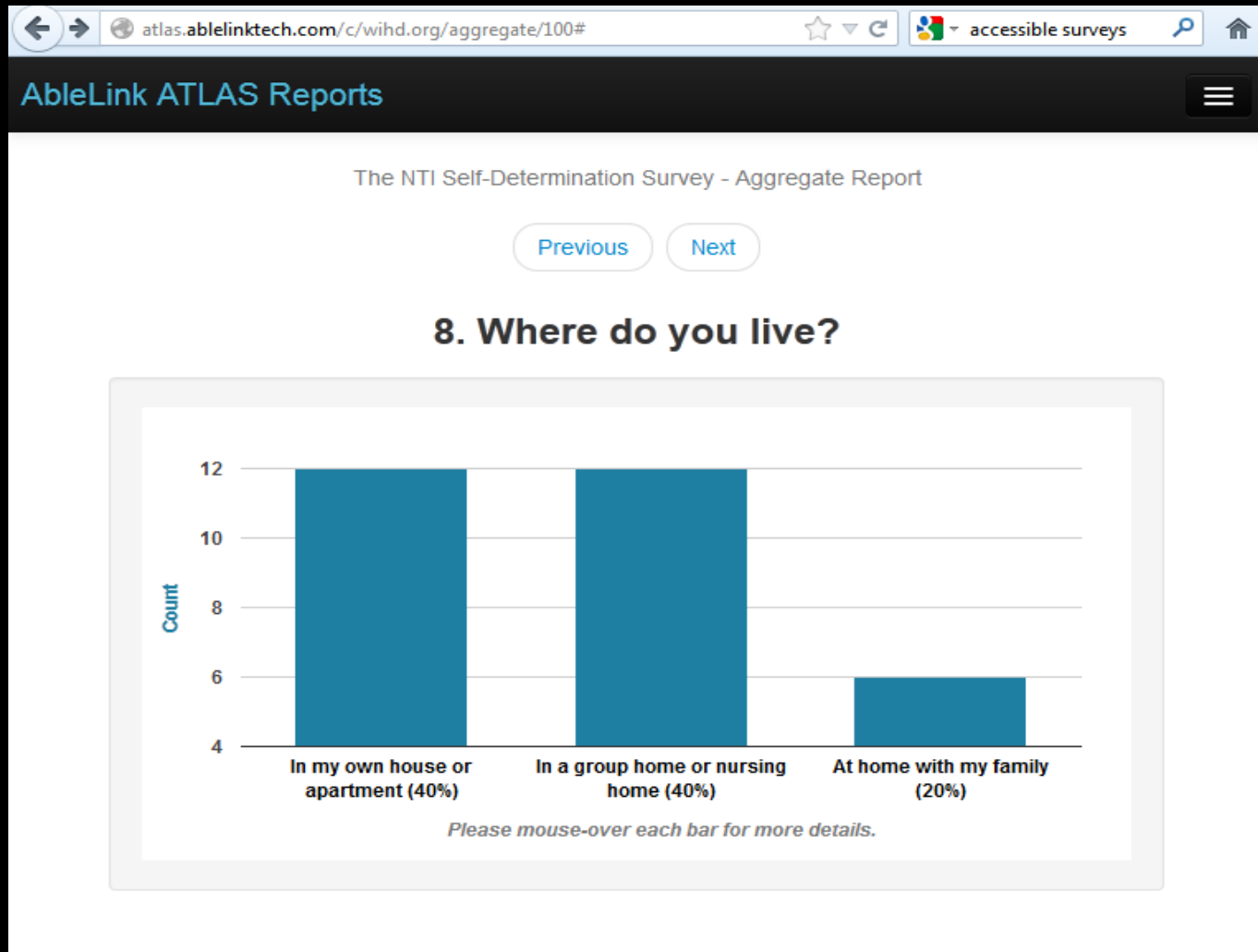
☒ At home with my family

☐ In a group home or nursing home

**Back** **Next**



# Accessible Testing – ATLAS for iPad and Android Tablets





# Example: Health Care Visit Satisfaction Survey



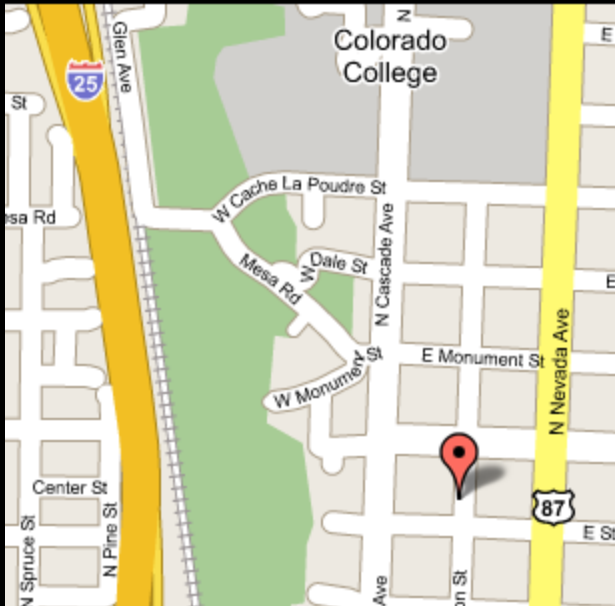
# Cognitive Support Technology

## Community:

- Wayfinder
- Community Sidekick
- Location tracking
- Vocational Supports

# Cognitive Technologies for Community Access

- **WayFinder:** An accessible Smart Phone program for providing multimedia prompts to individuals with cognitive disabilities for navigating public transit systems.
- **Community Sidekick:** “Peace of Mind” Technology for Community Travelers





# Cognitive Technologies for Community Access

**You Tube** wayfinder ablelink  Browse Movies

 We're changing our privacy policy. This stuff matters. [Learn more](#) [Dismiss](#)

## Riding the Bus Independently using AbleLink's WayFinder

AbleLinkTechnologies  Subscribe 6 videos ▾



0:40 / 1:23   

 Like  + Add to ▾ Share 

252 views 

Uploaded by [AbleLinkTechnologies](#) on Apr 22, 2011

Short video showing a study participant getting training and then riding the bus alone using a cognitively accessible GPS program (WayFinder) during a Pilot Study conducted by AbleLink Technologies. WayFinder uses GPS

0 likes, 0 dislikes



# Location-aware and GPS Applications – WayFinder

**WAYFINDER** by AbleLink Technologies

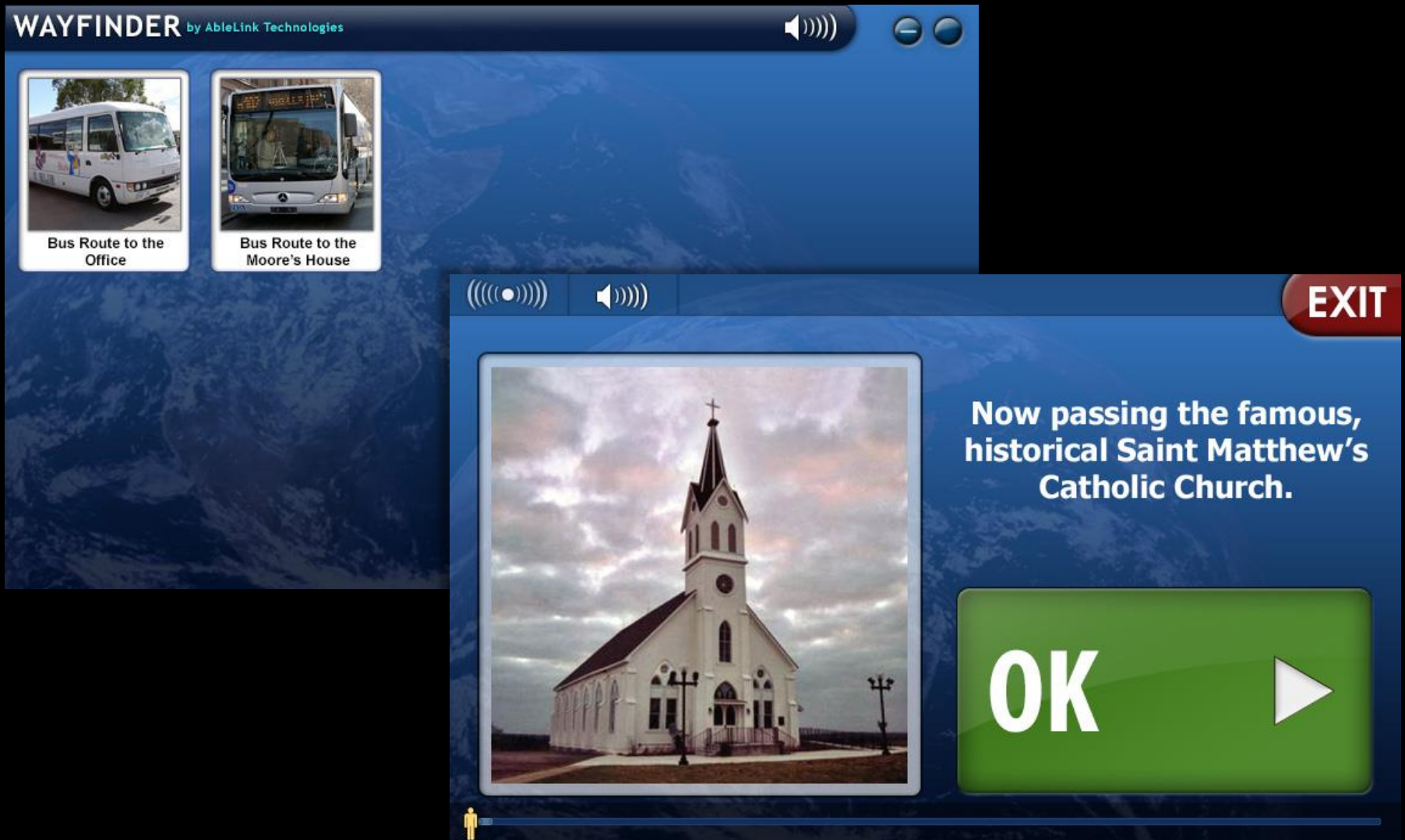
Bus Route to the Office

Bus Route to the Moore's House

Now passing the famous, historical Saint Matthew's Catholic Church.

**OK**

**EXIT**



The image displays the WayFinder application interface. At the top, the title 'WAYFINDER by AbleLink Technologies' is shown. Below the title, there are two buttons: 'Bus Route to the Office' and 'Bus Route to the Moore's House'. The main area features a large image of Saint Matthew's Catholic Church. To the right of the church image, the text 'Now passing the famous, historical Saint Matthew's Catholic Church.' is displayed. Below this text is a large green button with the text 'OK' and a right-pointing arrow. In the top right corner, there is a red button labeled 'EXIT'. The interface also includes a volume control icon and a speaker icon in the top right, and a small yellow figure icon in the bottom left corner.

## Location-aware and GPS Applications – **WayFinder**

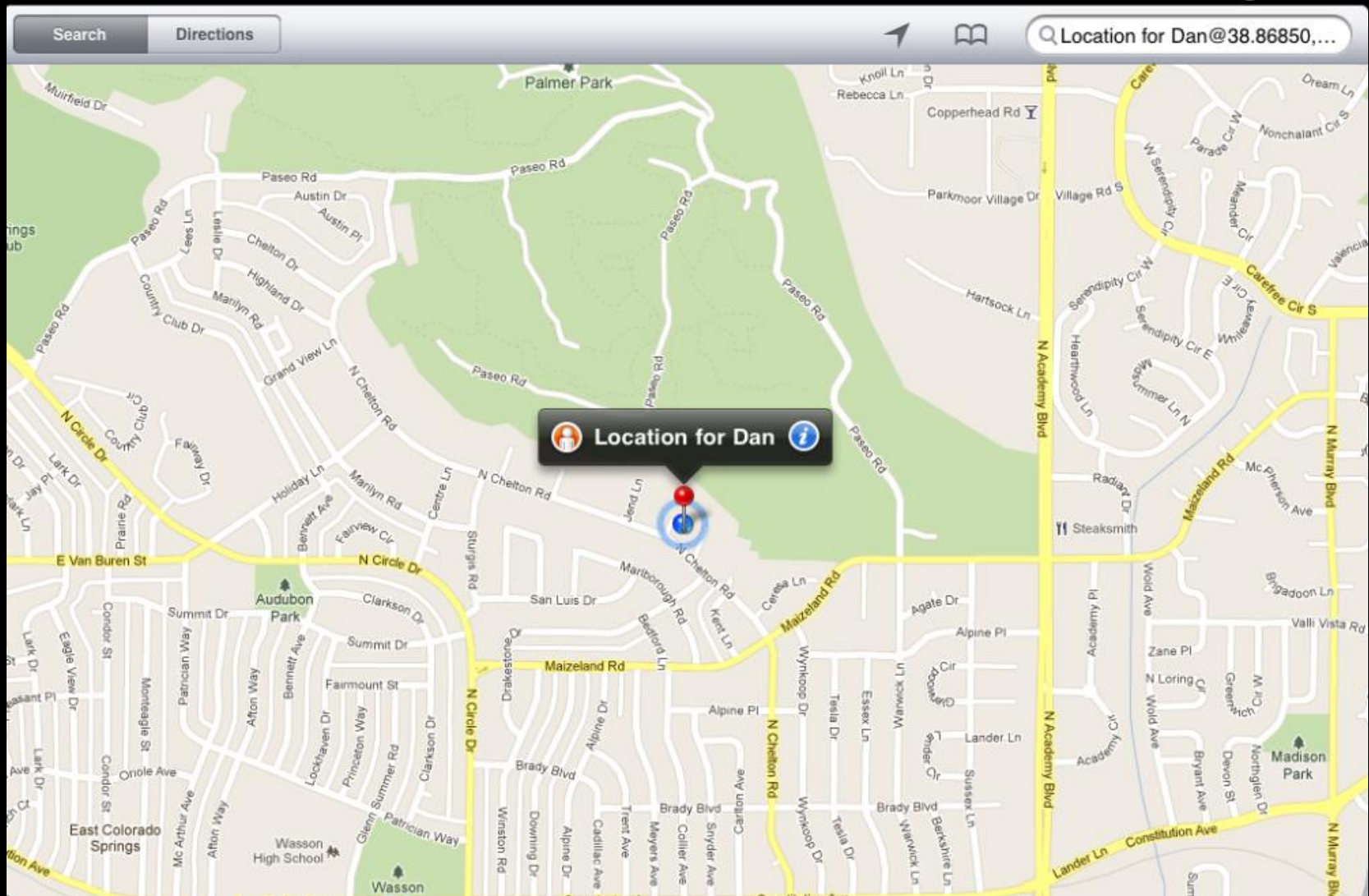


**“The STP program is wildly successful. We trained two groups of ten individuals in the first year of collaborations with our governmental partners. The first group increased their public rides by 110% and the second group increased their rides by 84%.”**

# Location-aware and GPS Applications – WayFinder



# Location-aware and GPS Applications – Community Sidekick





# ABLELINK TECHNOLOGIES

## **AbleLink Technologies**

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