

*The Greatest Inflection Point*

# The Cloud and People with Cognitive Disabilities

*Bill Coleman*  
*The Coleman Institute for Cognitive Disabilities*



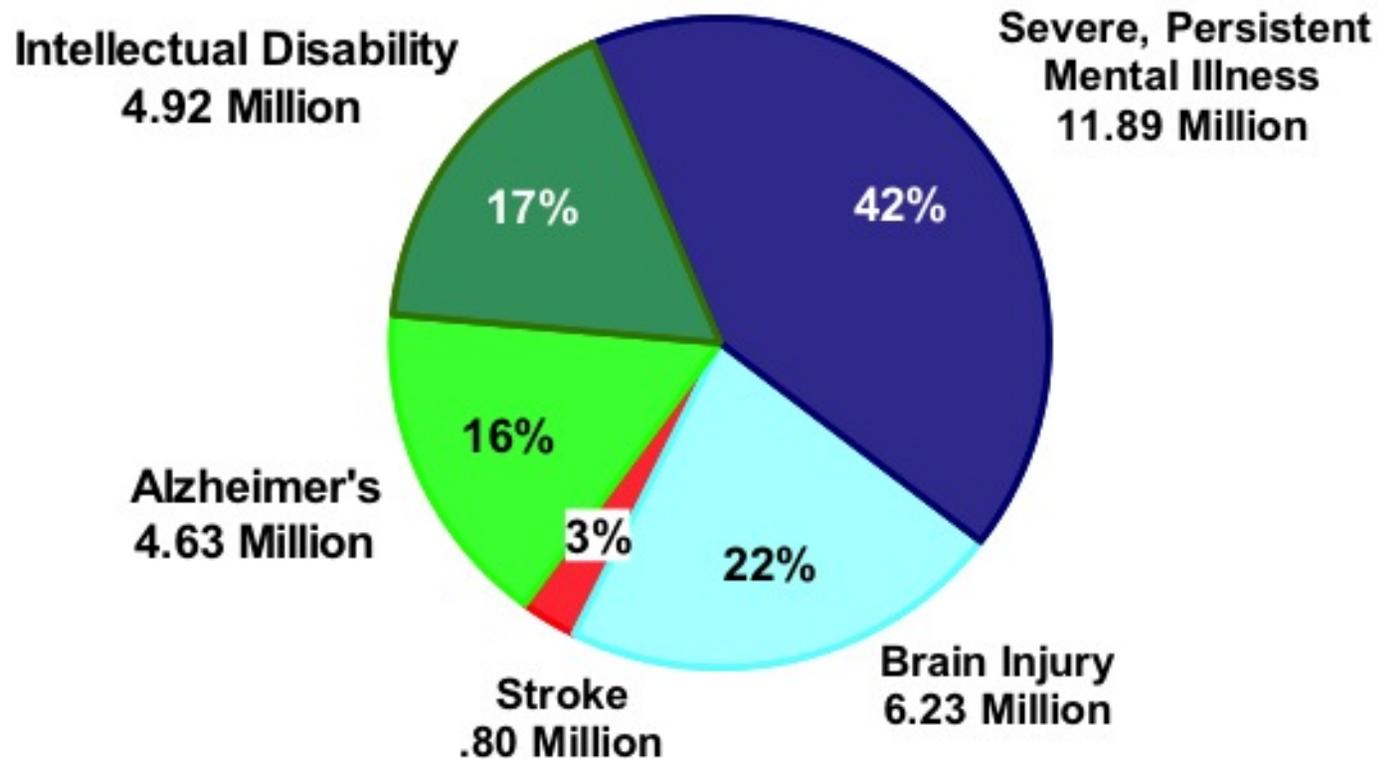
*The Coleman Institute for Cognitive Disabilities*

**Mission**

To catalyze and integrate advances in science, engineering and technology to promote the quality of life and independent living of people with cognitive disabilities.

[www.ColemanInstitute.org](http://www.ColemanInstitute.org)

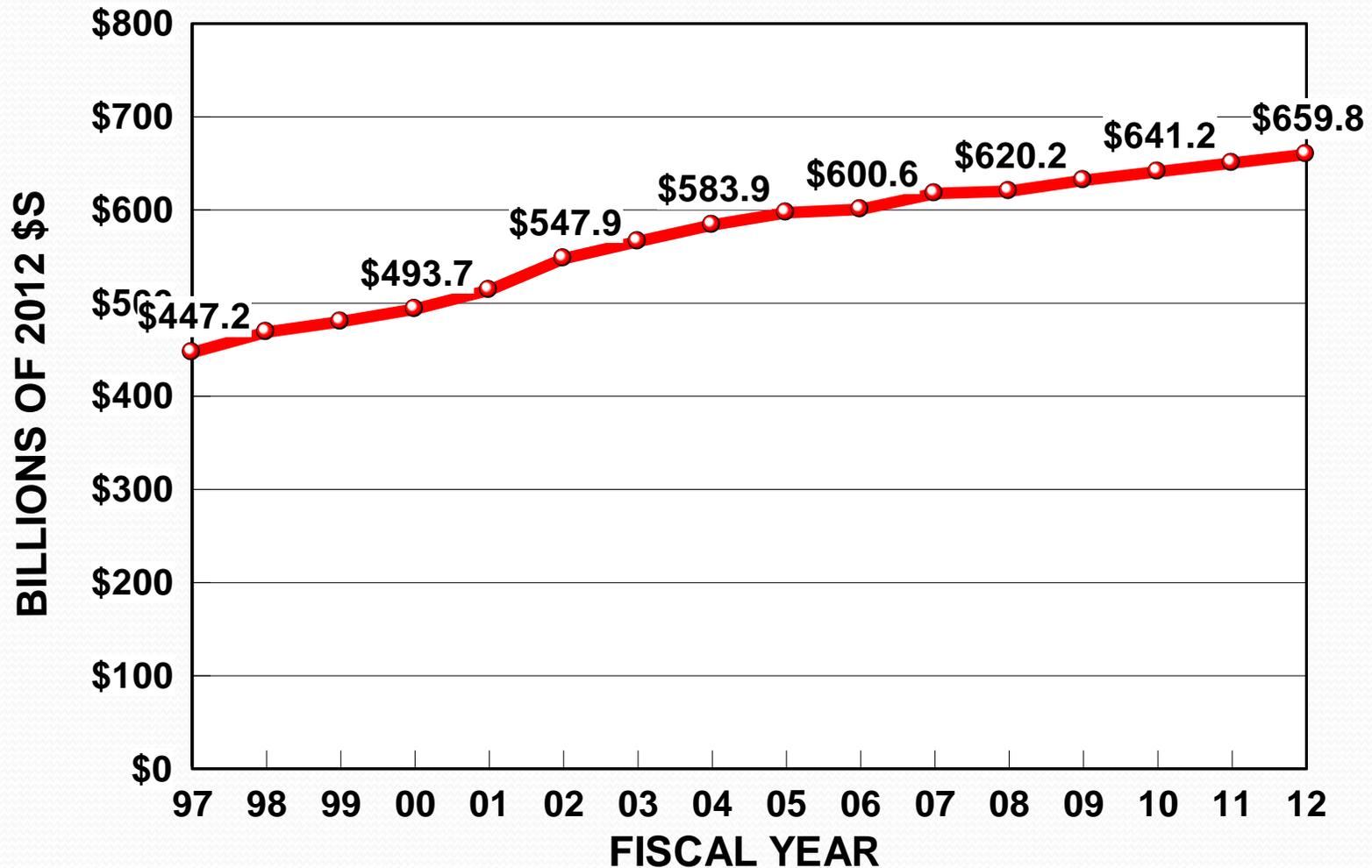
## PREVALENCE OF COGNITIVE DISABILITY IN THE U.S., 2012



**Total: 28.48 Million Persons**

*Source:* D. Braddock. (2012). Boulder, CO: University of Colorado, Coleman Institute for Cognitive Disabilities.

## U.S. DISABILITY SPENDING:



**Source:** Braddock, D. (2010). *Public spending for services to persons with disabilities in the United States*. Boston: Federal Reserve Bank of Boston. NOTE: 2009-12 projected based on 2004-08 trend.



# Inflection Points in Human History

*Represents exponential increases in the quantity and quality of communication and the rate of knowledge creation.*

1. *Invention of **Language**, based on the spoken word.*
2. *Invention of **Writing**, based on the printed word.*
3. *Invention of the **Web** based on the digital word.*

*... and we are now at the Inflection Point:*

*The buildout of the Web and the commoditization of ICT by the Cloud!*



# Drivers At The Inflection Point: 2010 - 2020

## Cloud 2.0: Build Out - The Cloud becomes a Utility

- Proliferation of devices & Consumerization of IT
- The Network of Things
- Big data, Analytics,
- Security with Trust (Identity)
- Convergence of our mobile and online lives
- Commoditization of ICT

## Web 3.0: Commoditization - Monetization of Social/Mobile

- A customizable Platform (“Invented” in 2007 by Facebook & Apple)
- Interactive Digital Media, Contextualization, Digital Exhaust
- Identity and the emergence of context aware personal proxy services
- Build out of the “Pull Economy”
- Convergence of our virtual and real lives



# What Does This Mean For People With Cognitive Disabilities?

**The Opportunity:** For a dramatically better quality of life!

- Trusted Identity (Including Capabilities Profile)
- Augment abilities and Compensate for disabilities
- A Digital Prosthesis for life
- Reduce dependency of public services and increase tax revenue

**The Challenge:** To make it work for the Cognitively Disabled!

- Inclusion in emerging standards: Mobility, Identity, OS, Device and Application User Interface and Interaction
- Creation of an ecosphere: Adaptive applications and services, support structure eventually through free market economics.

# What Does This Mean For People With Cognitive Disabilities?

- **A Prosthesis for life:**
  - Our Motivation for the Coleman Institute
  - The promise of independence
  - The promise of a productive and rewarding life
  - The possibility of economic independence for many
- **Market Economics will drive a lot:**
  - Ubiquity and societal dependence
  - Device and service costs
  - Security and Identity
- **BUT NOT ENOUGH!**



# What Does This Mean For People With Cognitive Disabilities?

- **Time:** Cloud, Mobile, Social and the Internet of Things are moving ahead of accessibility.
- **Access Solutions:**
  - Don't exist or are too complex
  - Are nonstandard and not extensible
  - Are too expensive
- **Policy and Legal:**
  - Need to change Medicaid income limitations to be progressive
  - Market economics do not support enough innovation - yet
  - Section 508 does not include people with cognitive disabilities



# So What Can We Do?

- Identity, Security and Privacy tied to a personal profile
- Abstraction by design: The basis for advancement
- Personalization: Extend it to capabilities profile
- Incent and fund innovation in accessible solutions
- Free Market Economics: Free the disabled to work and the abled to work and live better.
- Adopt 2006 UN Convention on Disability Rights
- Expand Section 508 to people with cognitive disabilities

# Some Basic Concepts

*Coleman's Accessibility Axiom: A network capable of intelligently adapting to our abilities and disabilities in context to the situation will increase everyone's safety, security, productivity and quality of life.*

- Secure Identity Accessibility Profile (NSTIC v2.0?)
- Accessibility Functionality Standards (Section 508 v2.0?)
  - Software has advanced through levels of abstraction
  - Operating Systems
  - Web Browsers
- Interfaces: Automatically adapt to accessibility profile.
- Content: Automatically adapts to accessibility profile.



# What Else Am I Working On?

- Declaration of Rights for People with Cognitive Disabilities, Coleman Institute, October 2013
- Advisory Board: Global Public Inclusive Infrastructure: [www.gpii.net](http://www.gpii.net), Gregg Vanderheiden: gv@trace.wisc.edu
- Resilient Network Systems: Identity, Security, Privacy.
- National Strategy for Trusted Identities in Cyberspace



# THE RIGHTS OF PEOPLE WITH COGNITIVE DISABILITIES TO TECHNOLOGY AND INFORMATION ACCESS

## Initial Board Endorsements: April, 2013

- The Arc United States
- American Association on Intellectual and Developmental Disabilities
- American Network of Community Options and Resources
- Self Advocates Becoming Empowered
- Sibling Leadership Network
- Beach Center on Disability, University of Kansas
- Burton Blatt Institute, Syracuse University
- Coleman Colorado Foundation
- Coleman Institute for Cognitive Disabilities, University of Colorado
- Kansas University Center on Developmental Disabilities
- Institute on Disability and Human Development, University of Illinois at Chicago

# *The 13<sup>th</sup> Annual Coleman Institute Conference*

*October 2, 2013, Broomfield, Colorado*

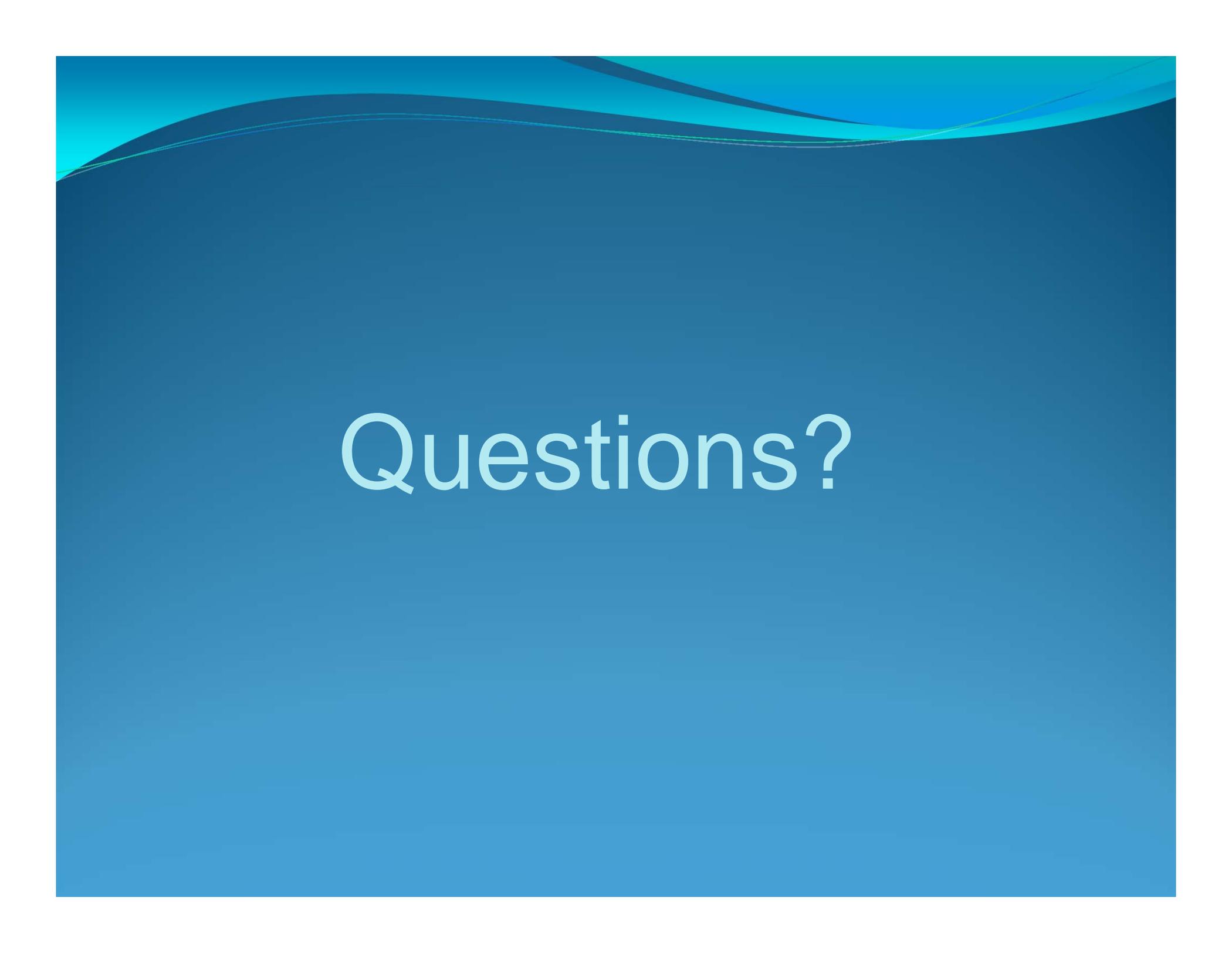
## **THE STATE OF THE STATES IN COGNITIVE DISABILITY AND TECHNOLOGY: 2013 ANNUAL REVIEW AND FORECAST**

### **Speakers:**

- DAVID BRADDOCK, PhD, Chair of Conference, Associate VP, University of Colorado
- BILL COLEMAN, Silicon Valley Entrepreneur, Founding Donor, Coleman Institute; Partner, Alsop-Louie, CEO Resilient Network Systems: *Cloud Computing and its Implications for Disability*
- PETER BLANCK, PhD, JD, Chairman, Burton Blatt Institute, Syracuse University: *Is There a Right to Technology Access for People with I/DD?*
- JAMES RIMMER, PhD. Director, National Center on Health, Physical Activity and Disability (NCHPAD), Professor and Lakeshore Foundation Endowed Chair in Health Promotion and Rehabilitation Sciences, University of Alabama at Birmingham
- RENEE PIETRANGELO (ANCOR); ANN CAMERON WILLIAMS (The Arc); DAVID O'HARA (Westchester Institute on Human Development)
- MIKE WEHMEYER, PhD, Director, Center of Excellence in Intellectual Disability, Univ. of Kansas
- SUE SWENSON, Deputy Assistant Secretary, Office of Special Education and Rehabilitative Services, U.S. Department of Human Services (Invited)

**Event:** No Charge, Oct 2<sup>nd</sup> all day, Oct 1<sup>st</sup> afternoon invitation only workshop on the declaration

**You Are Invited, Registration:** [www.ColemanInstitute.org](http://www.ColemanInstitute.org)

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Questions?