Usability and Accessibility Panel

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Goal:
Accessible, Usable Voting Systems

- ■ Universal access
  - ☐ Removing barriers to access
  - ☐ Designed for every voter
- ■ Usability
  - ☐ All voters can easily cast a valid vote the way they intended
  - ☐ Voters: all US citizens eligible to vote
  - ☐ Poll workers and election officials

Today's Objectives

- Focus on accessibility and usability issues from different perspectives
  - Voters, election officials, vendors, researchers
- Discuss how to make progress
  - System design, standards, testing, measurement, research

Human Factors/Usability Perspective on Voting Systems

- Cognitive and physical nature of the voters
- Physical environment
- Psychological environment
- Voting product
- Usability is determined by the demands of the system and the voter's ability to perform under those demands

Some Specific Issues

- Environment, e.g., barriers, privacy
- Voter ability, language, cultural background
- Voter interaction
  - access, errors, speed
- Ballot design
- Quality of support by poll workers
- Documentation and training for election administrators and poll workers
- Setup and shutdown by poll workers

Measuring Accessibility and Usability

- **Accessibility**
  - The degree to which a system is available to and usable by individuals with disabilities
- **Usability**
  - A measure of the effectiveness, efficiency and satisfaction achieved by a specified set of users performing specified tasks with a given product
    - Metrics: errors causing a vote cast not as intended or a vote not cast, (errors prior to success), and time to cast vote
- **Designing and measuring**
  - User-centered design
  - Diagnostic usability evaluation
  - Testing performance—usability testing

Assuring Accessibility and Usability: Voting Standards and The ITA Process

- Current VSS has some accessibility standards, but only a usability appendix
- ITAs currently perform qualification tests
- Can we test for usability and accessibility?
  - Standards must be clear, unambiguous, testable
  - Requires procedures for testing the voting product against the standards (conformance testing)
    - For example, inspection , demonstration, operation

Design and Performance Standards

- Design Standards—how the product is designed
  - For example, font size, ballot instructions
- Performance Standards—how the product functions
  - No overvoting, test by demonstration
  - Time to cast vote, failures in casting vote as intended
    - Requires: measuring with users against benchmarks,
    - Sample ballots of different complexity, and
    - Well-defined test protocols and user groups

This Panel

Jim Dickson, American Association of People with Disabilities

Steven Booth, National Federation for the Blind

Denise Lamb, Director of Elections, State of New Mexico

   Q&A 15 minutes

   Break   10:40-11:10

Paul S. Herrnson, University of Maryland

Sanford Morganstein, Populex Corporation

Whitney Quesenbery, Usability Professionals Association

Ted Selker, Massachusetts Institute of Technology

   Q&A   20 minutes

LUNCH at 12:30!