



# State-of-the-Art in Rehabilitation Engineering Research & Application

RESNA 2007

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# Workplace Accommodations

Strategies, environmental modifications or AT that help a person with a disability perform a job task that he/she might not be able to perform otherwise, or might not be able to perform as efficiently



# Who Needs Accommodations?

- Employees: 4.17 million people (3% of the U.S. workforce  $\leq$  65 years) have a disability
- Potential employees: Approx. 70% of people with disabilities (under age 65) are unemployed
- Aging workers: By 2012, 19% of employees will be 55 or older

*Sources: Current Population Survey 2002 and “Labor force projections to 2012: the graying of the U.S. workforce”, Bureau of Labor Statistics*

# Need for Work Accommodations

National survey conducted by the Work RERC:

- 75% could not perform all of their job duties without workplace accommodations
- 15% had been fired or laid off in the past because they had not been able to get the accommodations they needed

## Mission

To identify, develop and promote new assistive and universally designed technologies that maximize independence and participation of people with disabilities in the workplace.

# What We Do

- Focus on research and development, not service delivery
- Focus on broad-based needs rather than needs of one individual
- Multi, not uni-disciplinary efforts to problem solving
- Universal approach to workplace accommodations, not one-of-a-kind designs

# Research Challenge

- There is a lack of research evidence on workplace accommodations
  - Literature review: 19 of the 30 articles were single subject case studies (Butterfield & Ramseur, 2004)

# Work RERC Research

- 1) Develop Body of Knowledge about Workplace Accommodations and User Needs
- 2) Understand Impact of Policies and Practices



# CATEA Consumer Network

- Over 1000 in initial data set
- A need to maintain communication
- Updating contact list; expanding search capabilities

# Work RERC Development Projects

## Assessment Tools

- Remote Assessment Protocol

## Universally Designed Technologies

- Supine Computer Workstation
- AudioMORPH - Screen Reader Customization Tool
- Access to CNC Equipment
- Universal Retail Checkstand



# Development Challenge

- Most accommodation development has focused on the needs of an individual



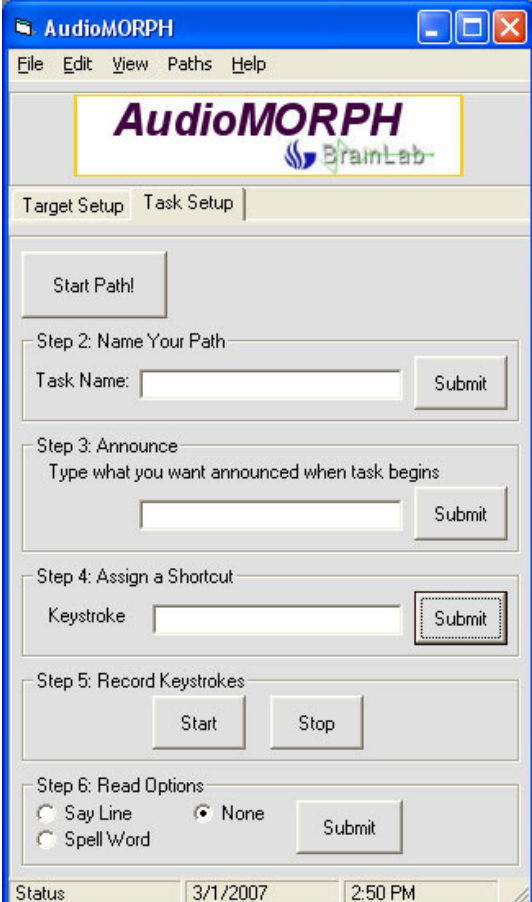
# Supine Computer Workstation



Permits computer use from reclined positions to place less stress on the back and minimize low back pain

# AudioMorph

Software tool that automates the process of customizing screen reading interfaces (e.g., JAWS scripts) for business applications

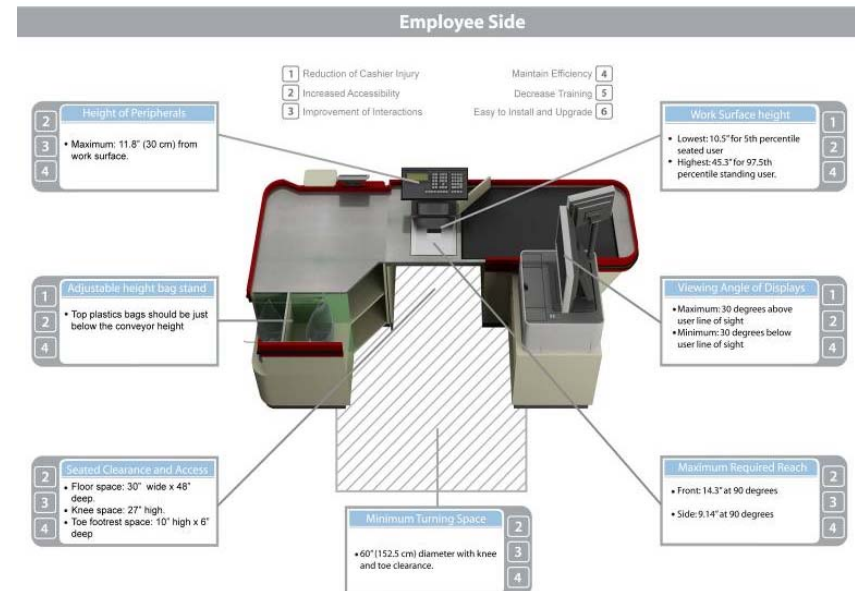
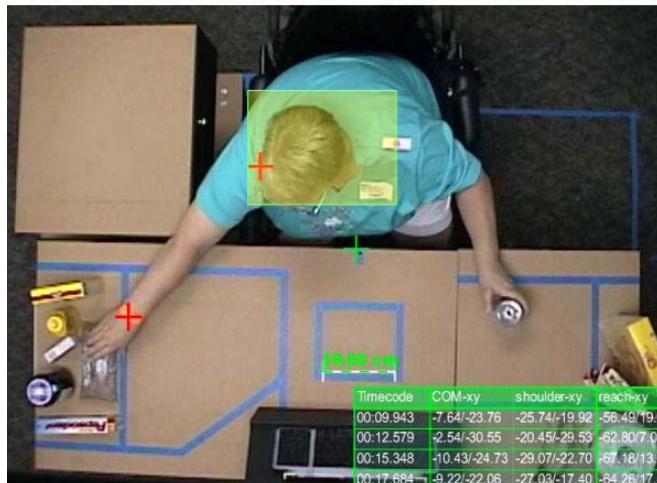


The screenshot shows the AudioMORPH application window with the 'Task Setup' tab selected. The interface includes a menu bar (File, Edit, View, Paths, Help) and a status bar at the bottom showing the date (3/1/2007) and time (2:50 PM). The main content area is divided into several steps for task configuration:

- Start Path!**: A button to initiate the path setup.
- Step 2: Name Your Path**: A text input field for 'Task Name' and a 'Submit' button.
- Step 3: Announce**: A text input field for 'Type what you want announced when task begins' and a 'Submit' button.
- Step 4: Assign a Shortcut**: A text input field for 'Keystroke' and a 'Submit' button.
- Step 5: Record Keystrokes**: 'Start' and 'Stop' buttons.
- Step 6: Read Options**: Radio buttons for 'Say Line' and 'None' (selected), and a 'Spell Word' option, with a 'Submit' button.

# Universal Retail Checkstand

Designed to accommodate seated users and reduce workplace injury among grocery cashiers





# Future R&D Issues

- Collect more / better evidence upon which to base practice (inc. needs over time; aging workers; impact of accommodations)
- Explore ways to apply new technologies to workplace accommodations
- Address employees with unmet accommodation needs (e.g., cognitive & communication disabilities)
- Apply the expertise of researchers and service providers from other focus areas to workplace accommodations



**Thank you for your  
attention**

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

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