Equal Access: Computer Labs

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As increasing numbers of people with disabilities pursue educational opportunities that require computer use, accessibility of computing facilities becomes even more critical. The key is simply equal access. Everyone who needs to use your lab should be able to do so comfortably.

To make your lab accessible, employ principles of universal design. Universal design means that rather than design your facility for the average user, you design it for people with a broad range of abilities. Keep in mind that individuals using your lab may have learning disabilities or visual, speech, hearing, and mobility impairments.

As you plan services in your computing facility, consider all of your potential users, including those with disabilities. Make sure visitors can:

• get to the facility and maneuver within it.
• access materials and electronic resources.
• make use of equipment and software.

Also make sure that staff are trained to support people with disabilities and have a plan in place to respond to specific requests in a timely manner. With these key issues in mind, you can make your lab accessible to everyone.

The following general access questions can help guide you in making your facility universally accessible.

### Building Access

- Are parking areas, pathways, and entrances to the building wheelchair-accessible?
- Are doorway openings at least 32 inches wide and doorway thresholds no higher than 1/2 inch?
- Are ramps and/or elevators provided as alternatives to stairs?
- Are elevator controls accessible from a sitting position?
- Do the elevators have both auditory and visual signals for floors? Are elevator controls marked in large print and Braille or raised notation?
- Have protruding objects been removed or minimized for the safety of users who are visually impaired?
- Are wheelchair-accessible restrooms near the lab marked with high visibility signs?
- Are there ample high-contrast, large print directional signs to the lab?
- Are telecommunication devices for the deaf (TTYs) available?

### Lab Staff

- Are staff members familiar with the adaptive technology and alternative document formats available in the lab?
- Do staff members know how to respond to requests for disability-related accommodations?
- Are staff members aware of disability issues? (See Helpful Communication Hints)

### Physical Space and Printed Materials

- Are large print, high-contrast signs used in the lab?
- Are computers with accessible features labeled in large print and Braille?
- Are aisles kept wide and clear for wheelchair users?
- Is at least one table for each type of workstation adjustable so that a person in a wheelchair or a person of short stature can achieve a comfortable position? Can the adjustment controls be reached by wheelchair users?
- Are document holders available to help position documentation so that it can be easily read?
- Is all documentation available (or available in a timely manner) in alternate formats such as Braille, large text, audio, and electronic text? Are printed materials within easy reach from a variety of heights without furniture blocking access? Is a CCTV or large magnifying glass available to enlarge printed materials?
- Are hearing protectors available for users who are distracted by noise in the facility?
Computers and Software

- Do some keyboards have large print key labels, Braille labels, or home-row key indicators to help users with visual impairments locate keys?
- Is screen enlargement software available for users with low vision? Are large monitors available so that a larger amount of screen can be viewed while magnified?
- Is speech output available for visually impaired and learning disabled users? Are headphones and volume adjustment available?
- Are mouse alternatives such as trackballs, keyboard control of the mouse, or other pointing devices available for those who have difficulty controlling a mouse?
- Are keyboard guards available to assist users with impairments that limit fine motor control?
- Are wrist rests and forearm rests available for those who require extra wrist/arm support while typing?
- Is equipment marked with large print and Braille labels?
- Is software available to modify keyboard response such as sticky keys, repeat rate, and keystroke delay?
- Are alternative keyboards such as a mini-keyboards or extended keyboards available for users with mobility impairments?
- Are alternatives to keyboards such as a head pointing system, switch based interface, or voice dictation software available for users who cannot use keyboards?
- Is word prediction software available to reduce the number of keystrokes needed for text entry?
- Are one-handed keyboards or “keyboard layout” software available?
- Are audio warning signals available visually?

More information about adaptive technology can be found in the DO-IT videotape and brochure titled Working Together: People with Disabilities and Computer Technology.

Electronic Resources

- Are text alternatives provided for graphic images?
- Is standard HTML used for Web resources so that they can be accessed with a text-based browser?
- Do electronic resources, including Web pages adhere to accessibility guidelines or standards adopted by the institution or the lab? (e.g., WAI guidelines, Section 508 standards)

More information about universal design of electronic resources can be found in the DO-IT videotape and brochure titled World Wide Access: Accessible Web Design.

First Steps

1. Develop policies and procedures that assure access to lab facilities, computers and electronic resources for people with disabilities and demand that accessibility be considered in the procurement process.

2. Although a lab cannot be expected to have specialized equipment for every type of disability on hand, staff should make equipment available that they anticipate will be used and/or is available at relatively low cost. Provide:

   - printed resources in a location that can be reached by a wheelchair user;
   - an adjustable table for each type of workstation in your lab;
   - wrist rest, and forearm rest;
   - trackball, joystick, or other mouse alternative;
   - signs with high contrast and large print;
   - large print keytop labels, screen enlargement software, and a large monitor;
   - screen reading software and speech synthesizer;
   - key documents available in formats accessible to those who have low vision or who are blind;
   - in key lab documents a statement about your commitment to access and procedures for requesting disability-related accommodations; and
   - lab resources on the World Wide Web that employ principles of universal design and adhere to selected accessibility standards or guidelines adopted by the lab. (e.g., WAI guidelines, Section 508 standards).
3. Once a lab is established or has greater requirements, consider adding:

- Scanner and Optical Character Recognition (OCR) software;
- CCTV;
- Braille printer and Braille translation software;
- word prediction software;
- alternative keyboards; and
- voice input software.

4. Develop a procedure to assure a quick response to requests for adaptive technology that you do not currently have available or other disability-related accommodations.

5. Train staff on available accessible products in the lab, or appropriate communication, and on procedures to address requests for accommodation.

**Videotape**

An 11-minute videotape, *Equal Access: Computer Labs*, demonstrates key points summarized in this handout. It may be ordered by sending a check for $25 to DO-IT. Contact DO-IT for a list of over 20 other videotapes that may be of interest. Permission is granted to reproduce DO-IT videotapes for educational, non-commercial purposes as long as the source is acknowledged.

**Internet Resources**


**About DO-IT**

DO-IT (Disabilities, Opportunities, Internetworking, and Technology) serves to increase the successful participation of individuals with disabilities in challenging academic programs and careers. Primary funding for DO-IT is provided by the National Science Foundation, the U.S. Department of Education, and the State of Washington. This handout and accompanying videotape are based upon work supported by the National Science Foundation under Grant No. 9550003. Any questions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation. For more information, to be placed on the DO-IT mailing list, or to request materials in an alternate format, contact:

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Helpful Communication Hints

There are no strict rules when it comes to relating to people with disabilities. However, here are some helpful hints.

General

• Treat people with disabilities with the same respect and consideration that you do with others.

• Ask a person with a disability if he/she needs help before helping.

• Talk directly to the person with a disability, not through the person’s companion.

• Refer to a person’s disability only if it is relevant to the conversation.

• Avoid negative descriptions of a person’s disability. For example, “a person who uses a wheelchair” is more appropriate than “a person confined to a wheelchair.”

• Refer to the person first and then the disability. “A man who is blind” is better than “a blind man” because it emphasizes the person first.

Visual Impairments

• Be descriptive for people with visual impairments. Say, “The computer is about three feet to your left,” rather than, “The computer is over there.”

• When guiding people with visual impairments, offer them your arm rather than grabbing or pushing them.

• Always ask permission before you interact with a person’s guide or service dog.

Learning Disabilities

• If asked, read instructions to users with a specific learning disability.

Mobility Impairments

• Try sitting or crouching to the approximate height of people in wheelchairs when you interact.

Speech Impairments

• Listen carefully and ask people with speech impairments to repeat what they have said if you don’t understand.

Hearing Impairments

• Face people with hearing impairments and speak clearly when you talk to them so they can see your lips.