Checklist for Making Science Labs Accessible to Students with Disabilities

An activity that can lead to greater awareness and more inclusive science labs

Name and location of science lab reviewed: _____

_____

Reviewer name(s): _____

Lab contact information: _____

Students with disabilities face access challenges to typical science labs in precollege and postsecondary settings, which may prevent students from

- gaining and demonstrating knowledge
- accessing safety equipment as needed
- fully participating in lab activities

Accommodations and Universal Design

There are two approaches for making academic activities accessible to students with disabilities—accommodations and universal design. An accommodation offers an alternative method for accessing the same knowledge (using assistive technology, receiving digital documents, having extended time for assignments). The goal of universal design is to create products and environments that are usable by everyone (including people with disabilities), to the greatest extent possible. For example, if a science lab contains an adjustable-height workstation, an accommodation will not be needed for a student who uses a wheelchair that is too high or low for a standard-height workstations. This workstation may also be comfortable for a student who needs to remain seated because of a health impairment or someone who is very tall or short in stature. Universal design is a proactive process that help minimize the need for reactive accommodations.

Universal Design of Science Labs

The following checklist will help you identify where universal design is already in place or where it could be better implemented. The lefthand column is left blank to indicate if the recommendation is not applicable (n/a), already done, or needs to be done in the future.

Status	Strategy, Planning, Policies, and Evaluation	Comments
not applicable already done needs to be done	Are people with disabilities included in planning and evaluating lab products and services?	
not applicable already done needs to be done	Is accessibility considered when buying lab products, technology, and software?	
not applicable already done needs to be done	Do you have a procedure to ensure a timely response to requests for disability-related accommodations?	
not applicable already done needs to be done	Are disability-related access issues addressed in your evaluation methods?	

Status	Physical Environments	Comments
not applicable already done needs to be done	Are parking areas, pathways, and entrances to the building wheelchair-accessible and clearly marked?	
not applicable already done needs to be done	Are all levels of the facility connected via an accessible route of travel?	
not applicable already done needs to be done	Are there high-contrast, large-print signs to and throughout the lab?	
not applicable already done needs to be done	Is the service counter or front desk at a height accessible from a seated position?	
not applicable already done needs to be done	Are aisles wide and clear of obstructions for wheelchair users?	
not applicable already done needs to be done	Are there quiet work and meeting areas where noise and other distractions are minimized?	
not applicable already done needs to be done	Have you addressed safety procedures for students with hearing impairments (e.g., instructions in print and visual lab warning signals)?	

not applicable already done needs to be done	Have you addressed safety procedures for students with visual impairments (e.g., large print signage)?	
not applicable already done needs to be done	Have you addressed safety procedures for students with mobility impairments (e.g., fire extinguisher, eye wash, gloves, goggles, emergency shower, etc are reachable from a seated position)?	

Status	Lab Staff	Comments
not applicable already done needs to be done	Are staff members familiar with what assistive technology and alternate document formats are available?	
not applicable already done needs to be done	Do staff members know how to respond to requests for disability-related accommodations (e.g. sign language interpreters)?	

Status	Information Resources	Comments
not applicable already done needs to be done	Do pictures in your publications and website include people with disabilities?	
not applicable already done needs to be done	On your website, do you include procedures for requesting disability-related accommodations?	
not applicable already done needs to be done	Are all printed publications available (immediately or in a timely manner) in alternate formats such as braille, large print, electronic text, and languages besides English?	
not applicable already done needs to be done	Can lab publications be reached from a seated position?	
not applicable already done needs to be done	Do electronic resources, including web pages, adhere to accessibility guidelines or standards?	

Status	Equipment	Comments
not applicable already done needs to be done	Is an adjustable-height table available for each type of workstation in the lab? Can the height be adjusted from a seated position?	
not applicable already done needs to be done	Is equipment marked with large-print and/or braille labels?	
not applicable already done needs to be done	Do you buy plastic equipment instead of glass when available?	
not applicable already done needs to be done	Do you provide non-slip mats, beaker and object clamps/stands, beakers and equipment with handles, and/or surgical gloves to handle slippery items?	
not applicable already done needs to be done	Are earplugs or headphones readily available for areas with loud or overwhelming sounds?	
not applicable already done needs to be done	Can controls on lab equipment be reached from a seated position?	
not applicable already done needs to be done	Does the lab stock gloves and other safety equipment in a variety of sizes and materials (e.g., latex and non-latex)	
not applicable already done needs to be done	Are adequate work areas available for both right- and left-handed users?	
not applicable already done needs to be done	Are the lights adjustable upon request?	

Overall, how accessible do you think this facility is for people with the disabilities listed below? Explain your responses. In the second column summarize the most important recommendations for making the facility/program more welcoming and accessible to people with these types of disabilities.

Disability Type and Access Issues	**Accessibility Recommendations**
Blind or low vision	
Deaf or hard of hearing	
Mobility impairment	
Learning or other invisible disability	
Other disability	

Other comments about this checklist, this facility/program, and/or your overall experience:

Adapted from the publication *Making Science Labs Accessible to Students with Disabilities* at *uw.edu/doit/making-science-labs-accessible-students-disabilities*

About TAPDINTO-STEM

The Eddie Bernice Johnson INCLUDES Initiative: The Alliance of Students with Disabilities for Inclusion, Networking, and Transition Opportunities in Science, Technology, Engineering, and Mathematics (TAPDINTO-STEM) is a national collaborative effort involving 29 colleges and universities in 16 states, Washington, D.C., and the Mariana Islands.

TAPDINTO-STEM employs a collective impact approach with dozens of partnering organizations to increase the number of students with disabilities (SWDs) who complete associate, baccalaureate and graduate STEM degrees and enter the STEM workforce.

This National Science Foundation (NSF) INCLUDES Alliance is primarily funded by NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES), a comprehensive national initiative to enhance U.S. leadership in discoveries and innovations by focusing on diversity, inclusion, and broadening participation in STEM at scale. The Alliance is jointly funded by the NSF Established Program to Stimulate Competitive Research (EPSCoR) program.

Acknowledgment

TAPDINTO-STEM and this checklist is supported by the National Science Foundation under NSF Award 2119902. The checklist was originally created by Disabilities, Opportunities, Internetworking, and Technology (DO-IT) under National Science Foundation Cooperative Agreement #HRD-0833504. DO-IT serves to increase the successful participation of individuals with disabilities in challenging academic programs such as those in science, engineering, mathematics, and technology. Primary funding for DO-IT is provided by the National Science Foundation, the State of Washington, and the U.S. Department of Education.

Any opinions, findings, and conclusion or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.