



Equal Access: Universal Design of Your NSF INCLUDES Project

A checklist for helping ensure your NSF INCLUDES project is welcoming and accessible

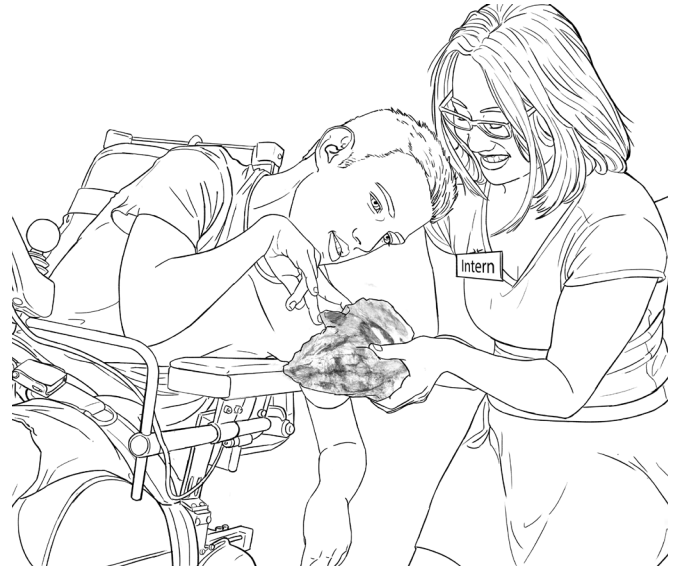
The National Science Foundation's (NSF's) Eddie Bernice Johnson INCLUDES Initiative: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science seeks to "improve collaborative efforts aimed at enhancing the preparation, increasing the participation, and ensuring the contributions of individuals from groups that have been historically underrepresented and underserved in the STEM enterprise such as African Americans, Alaska Natives, Hispanics, Native Americans, Native Hawaiians, Native Pacific Islanders, persons with disabilities, persons from economically disadvantaged backgrounds, and women and girls" ([nsf.gov/pubs/2020/nsf20569/nsf20569.htm](https://www.nsf.gov/pubs/2020/nsf20569/nsf20569.htm)).

One of the three pillars in the vision of the NSF Strategic Plan for Fiscal Years 2022-2026 is "assuring accessibility and inclusivity" in NSF-funded projects ([nsf.gov/news/special_reports/strategic_plan](https://www.nsf.gov/news/special_reports/strategic_plan)). Expanding opportunities for individuals with disabilities and ensuring equal access to all aspects of programming helps NSF INCLUDES leaders further their impact, increase diversity in their activities and research, and further NSF's goal of broadening participation in STEM fields.

This publication offers guidance on creating accessible and inclusive programming. It was created in collaboration by the Alliance for Identity-Inclusive Computing Education, the TAPDINTO-STEM Alliance, and the DO-IT Center.

Legal Issues

Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the Americans with Disabilities Act and its 2008 Amendments mandate that no otherwise qualified person with a disability shall, solely by reason of their disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination in public programs. This means that courses, services, resources, and project activities should be accessible to qualified individuals with disabilities. While we can offer recommendations, this publication does not provide legal advice; for such advice, contact campus resources or the U.S. Office of Education's Office for Civil Rights (OCR).



Universal Design

Universal design (UD) is a proactive approach that makes facilities, information, instruction, activities, and other facets of a project accessible to and usable by a diverse audience, including individuals with disabilities. UD is defined as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design." This means that rather than designing for the average person, you design for people with differing native languages, gender identities, racial and ethnic backgrounds, and abilities. The universal design of your NSF INCLUDES project will make its resources, training sessions, meetings, and other offerings welcoming and accessible to a broad audience that include those with disabilities and minimize the need for accommodations for individual participants.

Guidelines and Examples

Addressing the questions on the following pages provides a good starting point for making your NSF INCLUDES spaces, information technology, resources, and activities accessible to people with disabilities.



Planning, Policies, and Evaluation

Consider diversity issues as you plan and evaluate project activities.

- In your project proposal and implementation, do you ensure there is expertise in disabilities, accommodations, and universal design through a staff member, consultant, or partnership with an organization that specializes in this area? Do you include costs for accommodations and access-related consultations in the proposal?
- If you have an NSF INCLUDES project, have you considered submitting a request for supplemental funding to support access to and engagement in STEM learning, research, and workforce development for students, postdoctoral scholars, or faculty and staff with disabilities? See beta.nsf.gov/funding/opportunities/persons-disabilities-stem-engagement-access-pwd for more information.
- Do project policies and procedures ensure access to facilities, events, and resources for people with disabilities?
- Does a simple, transparent procedure to ensure a timely response to requests for disability-related accommodations exist and are staff and participants made aware of these services?
- Do project policies and procedures that support people with disabilities move beyond minimum levels of compliance and accommodations for individuals to focus more broadly on universal design?
- Are disability-related access issues addressed in research design, data collection, and evaluation instruments? Do you include disability along with other requests for demographics on surveys and present this data in project reports and published articles?

Information Resources and Technology

If your NSF INCLUDES project uses computers for the delivery of activities and/or information resources, ensure digital tools and products employ accessible design, that staff members are aware of accessible design, and systems are in place to make accommodations when requested.

- Do pictures in your publications and websites include people with diverse characteristics that include disability?

- Are all publications designed to be accessible to people with blindness as well as learning and other disabilities? Do project web pages adhere to accessibility guidelines or standards adopted by your institution, such as the Web Content Accessibility Guidelines?
- Do key publications and websites include a statement about commitment to diversity, equity, inclusion, and accessibility, as well as procedures for requesting disability-related accommodations? For example, a project website could include the following statement: “[Project name] values diversity, equity, inclusion, and accessibility and strives to make project facilities, technology, courses, information resources, and services accessible to everyone, including those with disabilities. Please inform [project staff] of accessibility barriers you encounter and request accommodations that will make facilities courses, services, and information resources accessible to you.”
- Do videos developed or used in the project have accurate captions?
- Is the technology used for project communication and collaboration accessible?
- Are there policies that allow participants to attend meetings and activities remotely? Are important meetings recorded, captioned, and shared for those who cannot attend?

For more information, consult *Accessible Technology* at www.uw.edu/doi/resources/popular-resource-collections/accessible-technology.

Project and Activity Facilities

Ensure physical access, comfort, and safety for individuals with disabilities within environments used by your NSF INCLUDES project. Choose facilities that are welcoming to participants with a variety of abilities, racial and ethnic backgrounds, genders, and ages.

- Are all facility floors connected via wheelchair-accessible routes? Are accessible routes of travel easy to find? Do restrooms, entrances, and other commonly used doors have sensors or buttons for automatic opening? Are they regularly inspected to ensure functionality?
- Do elevators have auditory, visual, and tactile signals and controls accessible from a seated position?



- Are there parking areas, pathways, and entrances to the building that are wheelchair accessible and clearly identified?
- Are aisles kept wide and clear of obstructions for the safety of users who have mobility or visual impairments?
- Are wheelchair-accessible and child-friendly restrooms with well-marked signs available in or near the facility?
- Is at least part of a service counter at a height accessible from a seated position?
- Are adjustable-height tables, ergonomic chairs, and adequate/adjustable light available?
- Are there ample high-contrast, large-print directional signs to and throughout facilities? Is braille signage used where appropriate?

Consult the *ADA Checklist for Readily Achievable Barrier Removal* at www.ada.gov/checkweb.htm for more suggestions. For accessibility guidelines for specific facilities (e.g., engineering labs, makerspaces, computer labs), see the collection of DO-IT resources at www.uw.edu/doit/programs/accesscollege/stem-lab/resources/make-physical-environments-accessible-students

Staff

Make sure staff are prepared to work with all project participants.

- Do staff members know how to respond to requests for disability-related accommodations, such as sign language interpreters.
- Are staff and contractors in specific assignment areas (e.g., event management, web page development, video creation) knowledgeable about accessibility requirements and considerations?
- Are staff members aware of issues related to communicating with participants who have disabilities? See Communication Hints at the end of this publication.
- Do staff deliver conference presentations and exhibits that are accessible to all participants (e.g. with captions, accessible handouts, large print and high contrast slides)? See “Making Your Presentation Accessible” (dl.acm.org/doi/10.1145/3085564) and *Universal Design of Projects, Conference Exhibits, Presentations, and Professional Organizations* (uw.edu/doit/programs/center-universal-design-education/universal-design-projects-conference-exhibits) for details.

About AiiCE

The Alliance for Identity-Inclusive Computing Education (AiiCE) was formed to address the systemic inequities and inequalities that have resulted in a lack of diversity, equity, and inclusion in academic and professional computing environments. It creates measurable change by increasing and normalizing course and degree enrollment, retention, and completion rates of students from groups that are historically underrepresented in computing.

About TAPDINTO-STEM

The TAPDINTO-STEM Alliance seeks to enhance academic and social practices of institutions of higher education to widen pathways for students with disabilities with three primary objectives: Increase the number of graduates in STEM disciplines, facilitate the transition into the STEM workforce, and enhance collaboration among institutions of higher education.

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 such as those in science, engineering, mathematics, and technology. To learn more or suggest improvements for this publication, contact us at uw.edu/doit/about/contact-us.

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Communication Hints

Treat people with disabilities with the same respect and consideration with which you treat others. Here are some helpful hints when it comes to delivering a presentation, hosting an exhibit, and otherwise relating to people with disabilities.

General

- Ask a person with a disability if that person needs help before providing assistance.
- Talk directly to the person with a disability, not through their companion or interpreter.
- Refer to a person's disability only if it is relevant to the conversation.
- Avoid derogatory slang or 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." A wheelchair is not confining—it's liberating!
- Provide information in alternate means (e.g., written, spoken, diagrams).
- Do not interact with a person's guide dog or service dog unless you have received permission to do so.
- Do not be afraid to use common terms and phrases, like "see you later" or "let's go for a walk" around people with disabilities.
- Do not touch mobility devices or assistive technology without the owner's consent.
- Do not assume physical contact—like handshakes, high-fives, or hugs—is okay.
- Understand that not everyone makes eye contact.

Blind or Low Vision

- Be descriptive. Say, "The computer is about three feet to your left," rather than "The computer is over there."
- Speak all of the projected content when presenting and describe the content of charts, graphs, and pictures.
- When guiding people with visual impairments, offer them your arm rather than grabbing or pushing them.

Learning Disabilities

- Offer directions or instructions both orally and in writing. If asked, read instructions to individuals who have specific learning disabilities.

Mobility-Related Disabilities

- Consider carrying on a long conversation with an individual who has a mobility impairment from a seated position.

Speech-Related Disabilities

- Listen carefully. Repeat what you think you understand and then ask the person with a speech impairment to clarify or repeat the portion that you did not understand.

Deaf or Hard of Hearing

- Face people with hearing impairments, and avoid covering your mouth, so they can see your lips. Avoid talking while chewing gum or eating.
- Speak clearly at a normal volume. Speak louder only if requested.
- Repeat questions from audience members.
- Use paper and pencil, or type things out on your cell phone, if the person who is deaf does not read lips or if more accurate communication is needed.
- When using an interpreter, speak directly to the person who is deaf; when an interpreter voices what a person who is deaf signs, look at the person who is deaf, not the interpreter.

Mental Health Disabilities

- Provide information in clear, calm, respectful tones.
- Allow opportunities for addressing specific questions.