DEI MOMENT: ACCOMMODATING STUDENTS WITH PHYSICAL DISABILITIES IN A LAB

Ali Lambright October 6th, 2020

What is a Disability?

- "A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions)." (CDC)
- There are many types of disabilities, such as those that affect a person's:
 - Vision
 - Movement
 - Thinking
 - Remembering
 - Learning

- Communicating
 Hearing
- Mental health
- Social relationships
- Scope of today's topic: physical disabilities
 - Other forms of disabilities are also VERY important, but too much content for this time frame! (i.e. learning disabilities, mental illness)

References:

https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html

Why Talk About This?

- Studies have shown that students with disabilities are less likely to pursue STEM fields or ask for accommodations (Lee, 2011)
 - Underrepresented in colleges due to financial strain, increased risk of failure, etc.
- "One misperception is that a physical disability somehow disqualifies a person from a career in science, engineering, or mathematics" (Miner, 2001)
 - Artificial limits are often set on people with disabilities
- Remember that a physical disabilities might be "invisible" to our eye
- Students gain appreciation of chemistry through laboratory experiences
- Chemistry is vital to other non-research fields such as medicine
- Because it's the right thing to do!

References:

A. Lee, 2011, A comparison of postsecondary science, technology, engineering, and mathematics (STEM) enrollment for students with and without disabilities, Career Dev. Exceptional Individ., 34(2), 72-82. Dorothy L. Miner, Ron Nieman, Anne B. Swanson, and Michael Woods, Kelley Carpenter, Teaching Chemistry to Students with Disabilities: A Manual for High Schools, Colleges, and Graduate Programs 4th Edition (2001).

Why Talk About This?

"Let's stop 'tolerating' or 'accepting' difference, as if we're so much better for not being different in the first place. Instead, let's celebrate difference, because in this world it takes a lot of guts to be different." - Kate Bornstein



Reference:

Dorothy L. Miner, Ron Nieman, Anne B. Swanson, and Michael Woods, Kelley Carpenter, Teaching Chemistry to Students with Disabilities: A Manual for High Schools, Colleges, and Graduate Programs 4th Edition (2001).

Laws (United States)

- Section 504 of the Rehabilitation Act of 1973
 - First legislature in USA giving protections to people with disabilities
 - Anywhere receiving federal funding must make programs accessible to people with disabilities
- Title II of the Americans with Disabilities Act of 1990
 - Prohibits discrimination based on a disability (both at work and in school)
 - Requires appropriate accommodations at all schools and workplaces
- Individuals with Disabilities Education Act of 1990 (IDEA)
 - Requires K-12 schools to provide "Free Appropriate Public Education" for all students with disabilities
 - No specific requirements of post-secondary education
- Specific procedures for how students are given accommodations is based on the services at that school or workplace (For IU: https://studentaffairs.indiana.edu/studentsupport/disability-services/index.html)

https://www.pacer.org/transition/resource-library/publications/NPC-42.pdf

Laws (China)

- Law on the Protection of Disabled Persons (1990)
 - *"Family and State share equal responsibility for providing care for disabled"*
 - Specifically regards employment opportunities, educational access, legal liability, and sufficient care
- Regulations on the Education of Persons with Disabilities (1994)
 - Promotes access to education for individuals with disabilities
 - Resulted in little progress in inclusion of students with disabilities incorporated into mainstream schools
- United Nations Convention on the Rights of Persons with Disabilities (2007)
 - Asserts that "inclusive education is a fundamental human right"
 - Outlines increased educational opportunities

Laws (India)

- Persons with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act (1995)
 - Provides for education, employment, creation of barrier-free environment for people with disabilities
- Rights of Persons with Disabilities Act (2016)
 - To fulfill the United Nations Convention on the Rights of Persons with Disabilities (2007) obligation
 - Asserts that "inclusive education is a fundamental human right"
 - Outlines increased educational opportunities

Lingo

"The difference between the right word and the almost-right word is like the difference between lightning and a lightning bug" – Mark Twain

Using correct vocabulary = respectful and inclusive environment

■ Tips:

- 1. Only refer to a person's disability when it has to do with what you're discussing
 - i.e. Do not refer to someone as "that girl in the wheelchair"
- 2. Use "accessible" instead of "handicapped"
 - i.e. "accessible restroom" not "disabled restroom"
- 3. Remove from your vocabulary completely: "differently-abled" "cripple" "victim" "retarded" "challenged"
 - Typically portrayed with negative connotations or condescending

References:

https://adata.org/factsheet/ADANN-writing http://www.aucd.org/docs/add/sa_summits/Language%20Doc.pdf

Lingo cont.

- 4. They are people first.
 - i.e. Use "people with disabilities" not "the disabled"
- 5. Emphasize abilities, not limitations
 - i.e. "person who uses a wheelchair" not "wheelchair-bound"
- 6. Just because someone has a disability does not mean that he/she is "courageous", "brave", or "superhuman". People with disabilities are the same as everyone else and have talents, skills, and abilities.
- 7. If you're not sure, just ask them what they prefer!

References:

https://adata.org/factsheet/ADANN-writing http://www.aucd.org/docs/add/sa_summits/Language%20Doc.pdf

 *Disclaimer: Every student is different and will have different necessary accommodations. These are just general ideas of things you *could* do.

Injury or Disease Requiring Assistance with a Wheelchair



Examples: Short term injury, paralysis, muscular dystrophy

Sample accommodations:



Injury or Disease Requiring Assistance with a Wheelchair (cont)

Sample accommodations:



Also, keep the lab clear of clutter!



People with Low Vision



Braille on all equipment labels Notches on hand equipment

Handheld magnification devices

Allow a partner Use plastic instead of glassware Use different textures in different areas of the lab

Braille device and talking thermometer





People with Low Hearing



People with Low Muscle Tone



Visual warnings (i.e. flashing lights with fire alarm)

People with Service Animals





EHS has the same responsibility to keep animals safe, just like humans



Mentoring

- "encourage and sustain and interest in science and open doors of opportunity" (Miner, 2001)
- Place special emphasis on encouraging students to participate in programs that highlight their abilities
 - Focus on the positive, not the negative!
- Mentor them the same as you'd mentor any student
- Potential to have lower self-confidence or low expectations of themselves
- Typically have strengths in problem-solving, perseverance, and negotiating strategies
- Help find out-of-classroom opportunities for them to succeed and develop their skills



Dorothy L. Miner, Ron Nieman, Anne B. Swanson, and Michael Woods, Kelley Carpenter, Teaching Chemistry to Students with Disabilities: A Manual for High Schools, Colleges, and Graduate Programs 4th Edition (2001).

Resources

- ACS Committee on Chemists with Disabilities
 - <u>https://www.acs.org/content/acs/en/about/gove</u> <u>rnance/committees/cwd.html</u>
- University of Delaware Chemistry
 - <u>https://sites.udel.edu/seli-ud/accommodations/</u>
- Association on Higher Education and Disability (AHEAD)
 - <u>https://www.ahead.org/home</u>
- Journal of Postsecondary Education and Disability (JPED)
 - <u>https://www.ahead.org/professional-</u> <u>resources/publications/jped</u>



NOTHING IS impossid THE WORD ITSELF SAYS 66

- Audrey Hepburn



PEREA

Questions...

- What can we do to make our lab more accessible?
- What is one way you could individually encourage a person with a disability to pursue a career in chemistry?

Henry "Hoby" Wedler

https://en.wikipedia.org/wiki/Henry_Wedler https://www.csuci.edu/news/releases/2018-hoby-wedler.htm https://grad.ucdavis.edu/news/henry-hoby-wedler https://www.youtube.com/watch?v=c1s34g-C8Kw