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PRACTICAL ADVICE ABOUT DISABILITY INCLUSION IN STEM

Student Disability Services

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The following is a short commentary on the practicalities of dealing with disabilities when beginning a PhD in STEM. It first frames the issue and what I believe are some common misconceptions, then there is some practical advice for both students and faculty. It represents only the author's opinions, and does not represent a statement by any organization or employer.

Each of us exists on a spectrum of ability. We are good at some things and not so good at others. We find ways of exploiting our strengths, muddling along where we are merely adequate, and working around our weaknesses. Similarly, we learn to use heuristics (rules of thumb) to recognize strengths and weaknesses in others, to best work with them.

The same things go for people with disabilities, with two particular differences.

First, and more obviously, those of us with disabilities may have unusual strengths and weaknesses. Almost by definition, our weaknesses are uncommon and ones most others have never thought about working around. Disability is a very broad category, and limitations can vary wildly: challenges in performing a 'simple' two-handed task, squeezing into a narrow space behind equipment, taking a couple of steps up or down into a particular area, seeing a microscope slide, hearing what is going on in a meeting, or being able to reliably get out of bed five days a week. In many cases, this can also lead to uncommon strengths: the ability to generate a wide range of solutions, patience and perseverance, visual or auditory focus, a knack for three-dimensional design, intuition about physiology, or empathy in working with a wide range of people. These strengths can be just as striking as the challenges.

“Different people may approach the same task in different ways, so explore the options.”



Matt Kaufman, Ph.D

Universal Design Resources

- <https://www.washington.edu/doiit/>
- <http://www.cast.org/>
- <http://www.nccsdonline.org/>



Second, and more subtle, is that disabilities subvert the heuristics we use to assess others. Particularly in lab sciences, where a high priority may be placed on having “good hands,” it can be damning to appear clumsy. A person who uses a wheelchair may appear physically incapable yet be excellent at microdissection, and someone with one hand may be brilliant at configuring clamps to act as a second (or third) hand. Similarly, someone with severe social anxiety can seem unable to think clearly but may have developed exquisite abilities to communicate in writing. The methods we use to estimate whether someone will be good at a job are always fallible, but can fail especially badly when applied to people with disabilities.

The point is, both students and faculty want the student to be able to “do the work.” The goal, then, is to identify a good lab fit, figure out exactly what “the work” should be, and decide how to accommodate disabilities when accommodation is possible. Some pairings simply won’t work, of course — no reasonable accommodation will allow someone who cannot use their limbs to be a firefighter, just as no reasonable accommodation will allow someone who struggles with math to do string theory. But many times, it may be possible to enable someone with disabilities to do fantastic work.

So, what “should” be accommodated? This topic is mostly beyond the scope of this short document, but here are a few quick points. Some barriers are completely incidental, such as an inaccessible door for someone with a mobility impairment. Obviously, such barriers can and should be fixed when they arise. (This is both a good idea, and the law.) Or, there may be duties usually associated with a job that act as barriers to a given individual but are not actually priorities. For example, pipetting may be 10% of what a student in the lab typically does, but isn’t possible for *this* student. One option would be to investigate ergonomics. It may be possible to do the task like a champion with a bit more space and an arm brace. Alternatively, a shuffling of responsibilities may be in order, such as swapping this duty with someone else in the lab for another duty that is possible. In either of these cases, this individual has every right to proper accommodation — again, both ethically and legally.

“The methods we use to estimate whether someone will be good at a job are always fallible, but can fail especially badly when applied to people with disabilities.”





Note to Faculty:

“Fortunately, most people with disabilities have strong self-awareness — that person knows better than anyone what they can and can’t do, and will typically have vast experience working around their disability.”

Having an unproductive student does not do anyone any favors. Fortunately, most people with disabilities have strong self-awareness — that person knows better than anyone what they can and can’t do, and will typically have vast experience working around their disability. If someone with a disability is interested in your lab, consider giving them an idea of what people do in your lab: what experiments involve, and how much time is spent on various experimental tasks, analysis, writing, etc. They may be undaunted at some tasks that seem to you to be impossible for them, or they may just need a couple of hours with the equipment and no one staring at them to figure out how to make it work out. Some routine tasks may be infeasible for them, but they may be able to exchange time with a technician for who does which grunt work. Accommodation may end up no real inconvenience at all, in exchange for that person’s unique skills and perspective. **Many people with disabilities are used to working very, very hard in daily life**, and if they have made it this far there is a good chance they are something special.

Talking about disability makes many people feel awkward, but it is a normal part of that student’s life. I would recommend addressing the topic gently but directly, **let the student know that they should tell you what they need**, and tell them you are happy to help them figure out how to make things work if it is possible. Ask questions if helpful. You may occasionally use an unfortunate turn of phrase, but as long as it is coming from the right place, making a big deal of it is unnecessary and counterproductive. In the end, you will still need to decide whether the student is a good fit for the lab, so having an open channel of communication and letting the student give their best demonstration of their abilities is helpful.

Note to Students:

You (mostly) know what you can and can't do, but you probably don't know what the work in a given lab actually requires. An excellent way to find out is with a combination of an informational interview and shadowing. Start by identifying a student in the lab (if there are any), and ask them what their day-to-day work is like. If possible, shadow them for a few hours, maybe on different days. Once you have a decent idea of what they do, figure out what you can readily do, what you may be able to adapt with some thought and effort, and whether there are things you think are likely to remain out of reach. Remember that it is common, in many labs, that not every student in the lab can do every task; whether it's some challenging physical task, difficult math, electronics, whatever, we all have limitations. (You might be surprised.) Remember that different students also often do different things: one student may spend 90% of the time pipetting or doing surgeries, while another in the same lab may spend 100% of their time at a computer. Moreover, different people may approach the same task different ways, so explore the options for tasks that seem problematic. If you're still interested in the lab at this point, try to imagine what some of your roles in the lab might be, and if there are any barriers, how you would overcome them.

As an aside, before you approach the PI (the prof), you should read **at least** one or two of their papers and have thoughts on them. This is true for every student, but you'd be surprised how many students don't do this and only read the lab website. This will give you a boost already.

Now it's time to talk to the PI. Remember, PIs are busy but everyone likes discussing their own work. So, start off with a brief statement of your interests, then ask some questions about the papers of theirs that you've read. This will give them a rough idea of your scientific thinking. Next, tell them briefly about the time you've already invested in their lab and what you think would be your strengths. If you feel it appropriate to disclose (or if your disability is highly visible), briefly describe your limitations and that you've thought through how your disability would be likely to affect your work. Finally, depending on the program and circumstances, you either ask to rotate or to go to the next interview stage. Alternatively, if you need to find out whether something is possible for you or not, consider asking for the time and space to determine this. Doing so will further demonstrate that you're serious about getting the work done, and that's what we're all here for.

Finally, in case no one has told you yet: a PhD isn't easy for anyone, but you can do this!

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