

Campus Accessibility Spotlight Series

Expanding Disability Access in STEM

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Introduction: The Institutional Challenge

This Campus Accessibility Spotlight focuses on early efforts at The University of Texas at Austin to build a more accessible Science, Technology, Engineering, and Math (STEM) pipeline for all students, including students with disabilities. STEM fields are in high demand for skilled graduates, making them both an essential talent pool for US businesses and an attractive career path for college students.

Disabled students remain a great untapped resource in STEM fields. Interviews with multiple campus partners indicated that there are significant resources and training available to support students, but that greater awareness is needed for a systematic impact.

The Pain Points

- Variability in disability means that one size does not fit all for accommodations or access considerations.
- Rigid degree requirements and course sequences means that needing to delay one component of the degree has significant domino effects on degree completion.
- Many students do not disclose and receive accommodations, particularly in their early years as undergraduates. This is at the same time as students enroll in high stakes prerequisite courses, meaning that they miss out on the support that accommodations might give them in these essential gateway courses.
- Some STEM faculty pride themselves on “weeding out” students, which has an impact on flexibility and willingness to implement accommodations and accessibility strategies. This also fosters a “cut throat” culture and high levels of competition – not cooperation – between students.
- The specialized tools and equipment needed for STEM research and training are often not built with disability and accessibility in mind. This includes software, hardware, and learning materials. Specific to STEM are features such as equations, graphs, and diagrams that convey critical information.

- Lab work and other activities prevalent in STEM often require long hours in succession, following verbal instructions, and are seen as unable to be flexible or accommodating to achieve lab goals.
- The task of finding accessible tools, software, or applications often falls on the disabled student instead of the instructor or institution. This can be a long and burdensome process that can include research about accessible options, figuring out how in-class accommodations work with additional technology, and managing communication between multiple parties.
- High reliance on teaching assistants, particularly for large courses or lab sessions, leads to higher levels of variability in knowing how to respond to accommodations requests. Large class sizes in general can lead to greater restrictions in flexibility.
- Disabled students may not be encouraged to enter STEM fields due to ableist views about what disabled people can and cannot do in technical settings.



Meet the People

Students and leaders involved in various campus resources at UT Austin were extensively interviewed by the National Disability Center about their work to support Disability Cultural Centers. Those leaders interviewed were:



Nicole Garcia

Undergraduate Student | Cockrell School of Engineering

Student Fellow | National Disability Center for Student Success

Role: Studies rehabilitation engineering, disability advocacy and creating accessible environments through innovative design.



Desirée Lama, MA

Doctoral Student | College of Education

Coordinator of Student Partnerships | National Disability Center for Student Success

Role: Doctoral student researching the effects of ableism on students with disabilities to develop inclusive educational practices. She also leads and supports the Center's Student Fellows.



Earl Huff, Jr., PhD

Assistant Professor | School of Information

Faculty Cadre Member | National Disability Center for Student Success

Role: Focuses on the intersection of human-computer interaction and accessibility, with a particular emphasis on improving the digital learning experiences of disabled students. He brings expertise in accessible design and the use of technology to reduce barriers in education.



Maura Borrego, PhD

Professor | College of Education and Cockrell
School of Engineering

Director | Center for Engineering Education and
Professor of Mechanical Engineering and STEM
Education

Faculty Cadre Member | National Disability Center
for Student Success

Role: Studies engineering and STEM higher
education, including faculty, graduate students
and undergraduates. Research leader in barriers
that affect disabled students in STEM fields.



Jen Moon, PhD

Professor of Instruction | College of Natural
Sciences

Vice Provost for Professional-Track Faculty |
Faculty Affairs

Faculty Cadre Member | National Disability Center
for Student Success

Role: Studies engineering and STEM higher
education, including faculty, graduate students
and undergraduates. Research leader in barriers
that affect disabled students in STEM fields.



Michael Marder, PhD

Professor | Department of Physics

Executive Director | UTeach Natural Sciences

Director | Center for Nonlinear Dynamics

Role: One of the original designers of UTeach, a university-based secondary STEM teacher preparation program. Out of this original program, a number of STEM education initiatives have grown, including creation of UTeach programs at universities across the nation.

Implementation Steps and Milestones

- **Examine** where structural rigidity can be addressed.
- **Improve** accessibility of course tools and Learning Management Systems.
- **Collaborate** with libraries, educational and assistive technology resources, accommodations offices, and Disability Cultural Centers.
- **Train faculty and teaching assistants** on accessibility mindsets and practical strategies.
- **Bring disability to research teams** as a specific knowledge base and skillset, instead of only viewing disabled people as clients.
- **Invite conversations** about disability and accessibility into department meetings.
- **Spotlight news stories and profiles** of students and faculty with disabilities to help normalize accessibility as part of STEM degrees.
- **Connect Disabled STEM students** with peer and faculty mentors.



By The Numbers

25%

Disabled college students
declare a STEM major

24%

U.S. workforce is in
computer, engineering,
and science careers

18%

Published research on
STEM and disability include
disabled authors

Sources: Borrego et al. (2025). *IJ STEM Ed*, 12(2); U.S. Census Bureau (2022), *ACS 2021-Year Public-Use File*; HigherEd Today (2018), *STEM Climate for Students with Disabilities*.

Fresh Insights

STEM culture is very ‘pull yourself up by your bootstraps’...
not as considerate as other fields.

Nicole Garcia



Common STEM content (such as math equations) are so
complex to make accessible that they had to ask the
institution to find software, which led to collaboration with
other universities to find solutions.



Desirée Lama, MA

A lot of code editors and tools used in STEM disciplines are not accessible... PDFs are notoriously not very accessible.

Earl Huff, Jr., PhD



Some faculty go into STEM fields because they prefer topics and tasks that are not related to interacting with people, which contributes to lack of empathy.



Maura Borrego, PhD

Some professors think flexibility will make them seem weak or less academic. Faculty fear not being seen as tough... and that any accommodation is a compromise in rigor.

Jen Moon, PhD



Empathy matters. Giving even a small amount of support can make an impactful difference for a student.



Michael Marder, PhD

An Unexpected Revelation



STEM is both part of the problem and part of the solution, because the same field that makes things inaccessible is also the one inventing tech to fix it.



University learning centers don't have many staff who understand disabilities and close to none have training with assistive technology. So, they have difficulty combining learning strategies with how these can work with assistive tech because they don't know about assistive tech or disability.



Flexibility after COVID-19 pandemic showed how much support professors could offer when they weren't restricted by bureaucracy. Faculty and staff were given license to help struggling students without always needing authorization from an office.

Strategies For Success on Your Campus

1. Start with Flexibility

Build flexibility into the class from the start so you don't have to scramble later on to make exceptions. These approaches help all students, not just disabled students.

2. Plan Ahead

Record your lectures and lab demo videos, preschedule exams with alternate dates at testing centers, build in flexibility in your syllabus so you don't need to pivot at each accommodation request.

3. Check Material Accessibility

Learn how to check for accessibility in course materials, such as the presence of alt text for all graphics and visual elements. If needed, learn how to convert documents to an open or editable format such as Microsoft Word so that students can adjust fonts and make them usable with their assistive technologies.

4. Adapt Lab Practices

Add accessible lab practices such as making sure your setup, materials, and PPE are compatible with assistive technology and mobility aids. Pay special attention to emergency protocols and evacuation procedures. Consider alternate modes of participation such as analyzing data off-site if physical manipulation is not accessible.

5. Include Student Voices

Invite students to attend faculty meetings to share their experiences and perspectives.

6. Communicate Early

Communicate with students early and often about accessibility and options in learning format, timing, and location.

7. Prepare Your TA

If you have a teaching assistant, have conversations early in the semester about requirements and expectations around accommodations requests. Make sure they have the training they need to make your class format accessible.

Additional Resources and References

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