

Plain Language Summary

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An Exploratory Investigation of the Postsecondary STEM Opportunities for People with Intellectual and Developmental Disabilities in the United States

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Why This Study Matters: ■ The percentage of people with disabilities working in technical careers is low. However, there is a search for employees for Science, Technology, Engineering, and Math (STEM) fields, because there are not enough skilled workers able to meet the growing need for jobs in STEM.

There is also a shift from traditional four-year degree pathways to gain technical skills to different paths that offer industry credentials and apprenticeships. But this path is still not creating enough workers to meet the demands.

This condition creates opportunities for people with intellectual and developmental disabilities (IDD), who are underrepresented in STEM, to gain the skills and experiences for STEM jobs. It also creates opportunities for postsecondary education (PSE) programs to consider new ways to prepare students with IDD to meet STEM industry needs.

This study explores STEM career pathways and credentials available through PSE programs in the United States.

Research Goals: ■ This study explored PSE programs offering STEM to better understand the:

- type of STEM opportunities available to students with IDD enrolled in PSE programs
- number of students enrolled or have graduated from these programs
- Factors that influence STEM opportunities
- Supports available to students

Study Design: ■ This study used a mixed methods design to explore PSE programs offering STEM career pathways and credentials to postsecondary students with IDD. The researchers used a national survey of PSE staff (n=56) and interviews (n = 3) to collect data in two phases.

Phase 1 (National Survey) (n=56)

- A survey of staff representing PSE programs for students with IDD explored which PSE programs provide people with IDD opportunities in STEM, including enrollment numbers and credentials awarded.
- Disseminated to 300+ PSE programs for students with IDD.
- Eligible survey participants were identified and recruited for Phase 2

Phase 2 (Interviews) (n=3)

- A three-part semi-structured interview to deepen understanding:
 - How programs define STEM
 - What STEM opportunities entail
 - How participants perceived survey results
 - What specified details relate to PSE programs

What to Look for in the Future: ■ This study shows how PSE programs for people with IDD are quickly changing to respond to an increase in career and tech ed opportunities with impacts on future research and practice to:

- Research:
- Understand the role of K-12 predictors of postsecondary success within PSE programs
 - Explore how the application of predictors and practices in STEM are being applied to specific career pathways
- Practice:
- Ensure K-12 educators' and PSE program staff awareness and knowledge of STEM opportunities
 - Provide learning experiences that prepare and support students to access these opportunities

Findings: ■ Identified Programs Offering STEM Pathways for Individuals with IDD

The following types of formal and informal STEM opportunities are described below.

Formal STEM Credentials Being Offered (n=7)

- Automotive Collision Technology Technician (engineering)
- Amazon Web Services (computer sciences)
- Computer Graphic Arts (computer sciences)
- Digital Engagement (computer sciences)
- Building trades and Construction Design Technology (engineering)

Informal STEM Opportunities Being Offered (n=7)

- Course audits
- Informal learning experiences
- Work-based learning

STEM PSE Program Interview Themes: The researchers identified 4 themes from interviews to describe factors that influence the implementation of and the supports available for students with IDD.

1. Limited Access to STEM Opportunities
 - “A vast majority of our students who come into the program were excluded from science coursework in K-12 or had, at the most, kind of minimal exposure to science, and the math coursework that they received was very much on a kind of life skills functional curriculum”
2. Learning Experiences to Support STEM Skills and Knowledge
 - Technical Skills Instruction
 - Work-Based Learning
3. The Critical Role of Supports to Increase STEM Access
 - “If they have a good support network, or like, somebody who works with them, that could be a little bit more of a mentorship situation.”
4. Influence of Expectation on Developing STEM Education and Employment
 - Many people have a “limited viewpoint of what adults with IDD can do,” but that their attitudes change when they see people being successful.

Learn More: <https://idd.vcurrtrc.org/research/rs3.cfm>

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