

Advancing Research on Students with Disabilities in Postsecondary Education

Technical Working Group Summary | December 9, 2021

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Advancing Research on Students with Disabilities in Postsecondary Education

Technical Working Group (TWG) Meeting

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This meeting summary was prepared by Akilah Swinton Nelson and Jacquelyn Buckley of the National Center for Special Education Research (NCSEER), Institute of Education Sciences (IES), drawing upon presentation slides and one-page summaries from presenters, prepared notes from Robin Pu Yigh (under JDC Events' contract ED-IES-D-0003), handwritten notes from Sarah Brasiel and Katherine Taylor of NCSEER, and revisions from Joan McLaughlin, Commissioner of NCSEER. The views expressed in this document reflect individual and collective opinions and judgments of the presenters and participants at the meeting and are not necessarily those of the Institute of Education Sciences or the U.S. Department of Education.

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Technical Working Group Members

Jamie Axelrod, Director of Disability Resources; Northern Arizona University

Jeff Edelstein, Student Coordinator; DREAM (Disability Rights, Education, Activism, and Mentoring)

Lawrence Fung, Director of the Stanford Neurodiversity Project; Stanford University

Meg Grigal, Senior Research Fellow at the Institute for Community Inclusion; University of Massachusetts Boston

Allison Lombardi, Associate Professor, Special Education; University of Connecticut

Joseph Madaus, Director of the Collaborative on Postsecondary Education and Disability; University of Connecticut

Lynn Newman, Principal Education Researcher; SRI International, Education Division

Lissa Ramirez-Stapleton, Associate Professor, Deaf Studies; California State University Northridge

Ryan Wells, Director of the Center for Student Success Research, University of Massachusetts Amherst

John Zilvinskis, Assistant Professor, Student Affairs Administration; Binghamton University

Institute of Education Sciences Staff

Mark Schneider, Director
Institute of Education Sciences

Joan McLaughlin, Commissioner
National Center for Special Education Research

Jacquelyn Buckley, Program Officer
National Center for Special Education Research

Akilah Swinton Nelson, Program Officer
National Center for Special Education Research

Katherine Taylor, Program Officer
National Center for Special Education Research

Introduction and Motivation for the Meeting

Young adults with disabilities are pursuing postsecondary education at increasing rates. According to the National Center of Education Statistics, 19% of undergraduates in 2015-2016 reported having a disability compared to 11% of undergraduates in 2007-2008 (NCES, 2018). There has been great progress over the past few decades regarding access to postsecondary education; however, students with disabilities continue to face challenges persisting in the college environment. Although the body of research in the field of higher education and disability is growing and continues to evolve, there is still little research being conducted on evidence-based practices for supporting postsecondary education for students with disabilities.

The Institute of Education Sciences (IES) recognizes the need to improve the experiences and outcomes of postsecondary students with disabilities by further improving secondary transition services as well as developing a rich portfolio of research at the postsecondary level to support students and the systems that serve them. The National Center of Special Education Research (NCSER) has supported research on postsecondary students and outcomes since 2020. Prior to 2020, postsecondary research was funded through the National Center for Education Research (NCER) and could only be funded by NCSER if the intention was to inform practices and policies at the secondary level.

On December 9, 2021, NCSER convened a technical working group (TWG) of 10 experts representing advocates, educators, researchers, and disability service professionals, to discuss priorities for research and data collected on students with disabilities in postsecondary education. The decision to convene the TWG reflects IES's commitment to investing in research that will identify effective supports and programs that improve the experiences and outcomes of students with disabilities as they progress through postsecondary education.

Opening Remarks

IES leadership opened the meeting by sharing the motivation for convening the TWG. IES Director Mark Schneider stated that students with disabilities are often invisible or ignored in postsecondary education institutions, even though they comprise a significant percent of the student population. Dr. Schneider expressed that it is critically important to support students with disabilities in succeeding in postsecondary education and welcomed TWG input on how to do so. NCSER Commissioner Joan McLaughlin noted that IES is seeking to define its role and ways it can contribute to relevant research on students with disabilities in postsecondary education. Dr. McLaughlin invited input on how NCSER should prioritize research and build capacity for conducting research in this important area.

Organization of the Meeting

The TWG meeting centered on five topic areas:

1. National data on postsecondary students with disabilities: summary of what is currently known from national datasets about postsecondary students with disabilities.
2. The postsecondary experience of students with disabilities: discussion of the lived experiences of postsecondary students with disabilities.
3. Supporting postsecondary students with disabilities: programs and various supports currently being implemented.
4. Research and data priorities: discussion of the state of the field of research and recommendations for research and data priorities.
5. Increasing research capacity: strategies to support researchers who are interested in conducting research on postsecondary students with disabilities.

Each session began with invited presentations from TWG members on results from current postsecondary research and practices followed by an open panel discussion. The meeting concluded with each participant offering his or her primary recommendations to IES. This document summarizes each session within the meeting and intends to accurately chronicle the presentations and discussion points without gauging the extent of consensus or disagreement on each point. Each of the presenters as well as IES staff in attendance have reviewed the document for accuracy.

Session 1: A National Perspective of Postsecondary Students with Disabilities

Guiding Question:

What does national data tell us about postsecondary education for student with disabilities?

Introductory Presentation: A National Perspective of Postsecondary Students with Disabilities

Lynn Newman, SRI Education

Dr. Newman provided an overview of the National Longitudinal Transition Studies (NLTS) funded by the U.S. Department of Education. These studies began in the mid-1980s because of an interest in exploring the transition and post-school outcomes for the first group of students with disabilities to graduate from high school since the passage of the Individuals with Disabilities Education Act (IDEA). IDEA mandated that students with disabilities have access to public schools. Congress wanted to understand the impact of that law, especially on high school graduation rates and on students' rates of postsecondary education enrollment, which led to the Department of Education's implementation of the National Longitudinal Transition Studies (NLTS) between 1985 and 1990, and the follow-up study, NLTS2, from 2001-2011. Additionally, IES began the currently active NLTS 2012 study to provide an updated national picture of students' paths through high school and beyond, as well as measure the progress youth with an individualized education program (IEP) have made since the most recent reauthorization of IDEA in 2004. For each study, data are collected from nationally representative samples of thousands of students with disabilities from across the United States. Participants represent all 13 categories of disability defined by IDEA. NLTS and NLTS2 focused exclusively on youth with disabilities. The NLTS 2012 study expands this work by providing the first direct comparisons of the in-school experiences and outcomes of high-school aged youth with and without an IEP.

The suite of NLTS data reflect enrollment in higher education, as well as perseverance and graduation. The NLTS2 interviews also focused on higher education experiences, including whether students disclosed their disabilities, what types of support they received, and their reactions to these supports. The NLTS 2012 will collect data from administrative data sets, including the National Student Clearinghouse and National Student Loan datasets to further understand the educational trajectory of students.

Dr. Newman noted that between the NLTS study in 1990 and the NLTS2 study in 2005, enrollment of students with disabilities in postsecondary education almost doubled. Less than one-fourth of students with disabilities enrolled in postsecondary education during the 1990s; nearly half of students with disabilities did so in 2005. Enrollment in all types of postsecondary education steadily increased during the NLTS2 data collection period, but the largest growth was enrollment in 2-year community colleges. Completion rates however were low and static throughout this time. This highlights the need to focus on how to help students be successful in postsecondary settings and graduate.

Dr. Newman discussed additional key outcomes from the last data collection for NLTS2 in 2009, which examined outcomes for students up to 8 years post-high school.

- Overall, differences between postsecondary enrollment of students with and without disabilities diminished over time, with 60 percent of students with disabilities now indicating they had enrolled in postsecondary education. This rate was nearly the same rate of postsecondary enrollment as general education students. In addition, students with disabilities enrolled in 2-year community colleges at twice the rate of their peers without disabilities. However, there is still a large gap in enrollment in 4-year colleges – students with disabilities were about half as likely as their peers in the general population to enroll in 4-year colleges. One-third of students with disabilities enroll in career or technical education, yet little research has been conducted on their experiences in CTE. Most research on postsecondary education focuses on 2- or 4-year colleges.
- The postsecondary enrollment rates differ by type of disability. For example, approximately 75% of students with visual or hearing impairments pursue higher education, whereas only 30% of students with intellectual or multiple disabilities pursue higher education. Difference by disability category is important to consider in efforts to improve postsecondary experiences of students with disabilities.
- Only 40% of students with disabilities who enroll in postsecondary education complete the program in which they enroll, compared to a 52% completion rate for their peers without disabilities. Postsecondary students with disabilities are most likely to complete career and technical education programs and least likely to complete 4-year college programs.
- Of students identified with a disability in high school who enroll in postsecondary education, only 28% disclosed that disability to their postsecondary institution, and disclosure rate varied by disability category. Students whose disabilities are more apparent are more likely to disclose. Between 71 and 76 percent of students with multiple, visual, or orthopedic disabilities disclose their disability status to their school, compared to only 24% of students with one or more learning disabilities who disclose their status to their school. This means that samples of students with disabilities in postsecondary research studies are not representative of different disability categories, and likely exclude a large number of students with disabilities.
- Dr. Newman indicated that we need strategies for ensuring postsecondary research samples are representative of students with disabilities, and this could include conducting longitudinal studies that track students from secondary settings to postsecondary school to ensure the postsecondary sample is inclusive of all students with disabilities, not just those who chose to disclose their disability. Dr. Newman also recommended raising awareness among college administrators, so they understand that in their student populations, there are many more students

with disabilities than they may think are enrolled because students choose not to disclose their disability.

- In addition, she noted the importance of encouraging administrators to consider how best to serve these students through approaches such as universal design, where classroom instruction is designed in a way to meet the needs of a variety of learners.
- Partly as a result of not disclosing their status, only 24% of postsecondary students with disabilities receive supports or accommodations, even though 98% of these same students received such supports or accommodations while they were in high school. One way to improve the use of accommodations and supports is to make available and encourage the use of supports available to all students. Overall, approximately 43% of college students with disabilities access universally available supports such as learning centers, study centers, math and writing centers, and tutors. These services and supports are available to all college students, regardless of disability status, so could prove useful for improving college success for students with disabilities without requiring disability disclosure.
- Drs. Newman and Madaus conducted a quasi-experimental propensity model study to assess the effects of universally available supports on completion and perseverance among students with disabilities in career and technical education, 2-year colleges, and 4-year colleges. Results showed that 2- and 4-year college students with disabilities who access universal supports are more likely to succeed than students who do not. This points to the need for professional development for staff providing these services to better understand and meet the needs of students with a range of disabilities, as this may be the way many students with disabilities are accessing support. Researchers must also consider how best to disseminate this type of research information to college administrators and staff, who typically do not read academic journals about supporting students with disabilities.
- This study by Drs. Newman and Madaus also used propensity modeling to assess the effect of transition planning during high school, when the disability status of students is known. Results indicated that when the students' transition plans directly identified the types of supports and services that the student might need in postsecondary education, students were more likely to access, and benefit from, these supports.

Panel Discussion

To open the discussion, a participant asked whether there has been research on wages and labor market participation for students with disabilities after they leave postsecondary education, and indicated that these data are available, but difficult for researchers to access. Can these outcomes be explored in relation to the NLTS data? Dr. Newman noted that the NLTS 2012 team is trying to gain access to employment data and connect this to

NLTS data, but it is challenging. Another TWG member noted that the Americans with Disabilities Act (ADA) Amendments Act passed in 2008, and the Act may have resulted in an increased number of students with mental health disabilities who disclose their status to their schools, as well as increased awareness among faculty and staff of students with mental health needs. It was acknowledged that this may impact some of the later NLTS 2012 findings, as the data Dr. Newman discussed today were collected before this Act took effect. Dr Newman noted that as NLTS 2012 data become available, they will be compared to earlier data to explore changes since the Amendments Act passage.

Session 2: The Postsecondary Experiences of Students with Disabilities

Guiding Questions:

- What are the lived experiences of students with disabilities as they adjust to and progress through postsecondary education?
- What does current research tell us about the lived experiences of postsecondary students with disabilities and what additional research is needed?

Introductory Presentation #1: DREAM and NCCSD: Disabled Postsecondary Student Advocacy, Support, and Research

Jeff Edelstein, DREAM

Mr. Edelstein provided an overview of DREAM (Disability Rights, Education, Activism, and Mentoring), the student advocacy branch of the National Center for College Students with Disabilities (NCCSD). The NCCSD is funded through a grant from the Office of Postsecondary Education within the U.S. Department of Education. DREAM is composed of a Student Coordinator, the role currently held by Mr. Edelstein, and a board of students with disabilities, both undergraduate and graduate, and recent alumni with disabilities. DREAM's role is to provide direction to NCCSD's student-facing work based on student experiences and to craft educational events and resources for students with disabilities. DREAM reaches students through a chapter and affiliate system that connects disabled student advocacy groups on individual campuses with DREAM's resources. As DREAM Coordinator, Mr. Edelstein is responsible for coordinating board activities and fielding student requests for resources and information related to advocacy.

Mr. Edelstein discussed that NCCSD is working to develop the Campus Disability Resource Database, which will be a searchable database on support services for learners with disabilities who are interested in attending college. In addition, NCCSD has published briefs summarizing research results on topics such as campus climate and sense of belonging and participation in higher education. Mr. Edelstein specifically highlighted a recent brief which found that graduate and professional students with disabilities were more likely than their peers without disabilities to experience financial hardships, such as food and housing insecurity, during the COVID-19 pandemic. Previous research has shown this has also been an issue among undergraduate students with disabilities and many disability service professionals are unaware of this. Finally, Mr. Edelstein noted that it is important to understand these issues through a holistic, intersectional approach to research on the disabled student experience.

Introductory Presentation #2: Historically Black Colleges and Universities and Black Deaf Education

Lissa Ramirez-Stapleton, California State University Northridge

Dr. Ramirez-Stapleton presented research about the experiences of Black deaf postsecondary students. She first discussed findings from the National Deaf Center on Postsecondary Outcomes report, *Postsecondary Achievement of Black Deaf People in the*

United States-2019, which was developed by analyzing 2008-2017 data from the American Community Survey. Results show that Black deaf students completed high school or college degrees at lower rates than White deaf people. A higher percentage of White than Black deaf people are enrolled in college, with higher rates for Black deaf women than Black deaf men. Black deaf students are less likely than people with hearing disabilities from other racial/ethnic groups to receive vocational rehabilitation services and are often underemployed and underpaid.

Dr. Ramirez-Stapleton also discussed her current research related to Black deaf students attending Historically Black Colleges and Universities (HBCUs) and how HBCUs contribute to Black Deaf education. She has recruited a sample of Black deaf students and alumni for a study, most of whom attend(ed) HBCUs or a deaf-serving institution. Based on preliminary findings, several students who attended a deaf-serving institution discussed experiencing racism on campus, with some transferring to HBCUs in response. Participants report a sense of belonging, safety and support at HBCUs, with many saying the challenges of being Black and deaf at HBCUs are less difficult than the challenges of being Black at a deaf-serving institution.

Dr. Ramirez-Stapleton concluded her presentation by sharing considerations for funding research on postsecondary students with disabilities.

- It is important to support an intersectional approach to disability research to understand how multiple identities impact the lived experiences of students with disabilities. Related, it is important to acknowledge how heterogeneity within disability groups impacts lived experiences.
- This scholarship can take more time to build rapport with communities, recruit racially diverse participant pools, and conduct participant-centered and qualitative scholarship. Calls for proposals should incorporate flexibility in research timelines to account for this.
- Conducting accessible research can be expensive. The funding process should accommodate budget requests that include additional factors such as sign language interpreters, translation, transcription, compensating participants for visual member checks, technology support, etc., that may take up a large portion of one's budget.
- IES should communicate that having researchers with disabilities on project teams is valued.

Introductory Presentation #3: Engagement of Students with Disabilities

John Zilvinskis, Binghamton University

Dr. Zilvinskis presented his research on the engagement of postsecondary students with disabilities. He defined student engagement as “time and energy students devote to educationally sound activities inside and outside the classroom and policies and practices used to encourage students to participate in these activities.” This research on student engagement has relied on analyzing National Survey of Student Engagement (NSSE) data. The NSSE collects data annually on freshman and senior student engagement from

hundreds of 4-year colleges and universities. Dr. Zilvinskis' research focuses on disaggregating data on students with disabilities to understand the unique experiences associated with different disability types and identities.

His research suggests that certain indicators of engagement such as student-faculty interaction, effective teaching practices, supportive campus environment, and the quality of interactions with peers, advisors, faculty, and staff, significantly predicted GPA, satisfaction, and self-reported learning for students with disabilities. Results from another study showed that students with disabilities are less satisfied with academic advising compared to students without disabilities. An analysis of the engagement of students of color with disabilities found that there are differential engagement patterns for students of color with disabilities. For example, White, Latino, and biracial students experienced more supportive environments than other respondents. American Indian or Alaska Native students with disabilities reported more positive student-faculty interaction compared to their peers. Dr. Zilvinskis also discussed results from analysis of Community College Survey of Student Engagement (CCSSE) data on first-generation and transfer students with disabilities and found that career counseling increased engagement among first-generation students, but not transfer students.

Dr. Zilvinskis concluded his presentation by sharing recommendations for additional research that is needed to advance the field. He suggested two types of studies – measurement and exploration. He has been working with a team of scholars to update NSSE items that measure disability and future research should take advantage of these new NSSE items.

- A measurement study could examine the following: test the empirical validity of the new NSSE disability measure using item response theory and cluster analysis; analyze survey meta-data, such as completion time and mode of completion; and merge NSSE data with Integrated Postsecondary Education Data System (IPEDS) to compare how disabilities are represented in each dataset.
- An exploratory study could examine how engagement in the first-year can improve retention, academic success, STEM major attrition, graduation, and job preparation by merging NSSE, institutional, and Federal data to create a longitudinal dataset combining paired first-year and senior responses.

Panel Discussion

The presentations were followed by a brief discussion where attendees asked for additional information about the datasets that were used in the presentations by Drs. Ramirez-Stapleton and Zilvinskis. A participant asked where Dr. Ramirez-Stapleton had obtained longitudinal data on students' employment outcomes. Dr. Ramirez-Stapleton explained that the employment data she presented was from a National Deaf Center brief which used data from the American Community Survey. The American Community Survey, which collects education, employment, race, gender, and disability type data on a sample of people in the United States, is administered by the Census Bureau.

Dr. Zilvinskis was asked how NSSE is funded and whether NSSE assesses how many students disclose their disabilities to the institutions they attend, and the degree to which disclosure is linked to whether a disability is visible. Participating institutions fund the NSSE in return for merged data and comparisons with peer institutions. The survey does not ask respondents whether they have disclosed their disability status. Institutions could administer an experimental item set that includes this question. Dr. Zilvinskis notes that institutional data are routinely linked to IPEDS data; therefore, it could be useful to link individual student-level data with institutional and clearinghouse data to identify paths to success.

Session 3: Supporting Students with Disabilities in Postsecondary Education

Guiding Questions:

- What supports are offered to postsecondary students with disabilities?
- What does current research tell us about the support students with disabilities need in postsecondary education?
- What are the challenges and/or barriers in providing supports to students with disabilities in postsecondary education?
- What are the challenges and/or barriers to conducting research on supports for students with disabilities in postsecondary education?

Introductory Presentation #1: What supports are offered to postsecondary students with disabilities?

Jamie Axelrod, Northern Arizona University

Mr. Axelrod discussed the need for and challenge of providing supports in postsecondary settings to students with disabilities. The challenges start with the definition of supports and accommodations. He noted that most institutions consider supports to mean “reasonable accommodations” for academic access, which are based on individual need and determined by designated school staff in collaboration with students and families. “Reasonable accommodation” is interpreted by some institutions as meeting only “legally satisfactory” standards.

Accommodations should be designed to overcome barriers related to disabilities that interfere with access to academic resources and the campus environment. Accommodations should allow students with disabilities the same opportunities to meet institutional academic or technical requirements as students without disabilities. The ADA requires modifications to academic requirements “as are necessary to ensure that such requirements do not discriminate.” ADA Section 504 defines modifications and adjustments as either academic adjustments or auxiliary aids and services. The ADA Amendment Act defines accommodations as modifications to policies, processes, and procedures.

Some institutions have dedicated offices to assist with accommodation requests, and others may have a single staff member dedicated to supporting students with disabilities. Institutions also vary in who they target for accommodations and support, with some institutions offering supports specifically for students with disabilities, whereas others may provide universal supports for all students who may need them.

Mr. Axelrod discussed many examples of allowable accommodations and the challenges in providing those. For example, audio recording of lectures is a reasonable accommodation, but many faculty do not like having their classes recorded. He also stressed the role of technology and assistive technology to ensure that students are being appropriately assessed on their learning. Sometimes institution and federal policies can also conflict with

recommended accommodations. Reducing course loads could be critical for some students with disabilities, allowing them to slow down and take a smaller number of classes at a given time. If that student receives financial aid however, there are minimum course load requirements to fully benefit from federal student aid.

Mr. Axelrod noted that nothing a student requests, with the possible exception of personal services, is inherently exempt from an institution's duty to accommodate. When a requested accommodation would result in a fundamental alteration, educators have a responsibility to identify alternative accommodations and to provide them if possible.

Introductory Presentation #2: Overview of Research on Postsecondary Education for Students with Intellectual Disability

Meg Grigal, University of Massachusetts Boston

Dr. Grigal began by noting the need to acknowledge the impact of the Higher Education Act of 2008 for increasing access to higher education for people with intellectual disabilities (ID), including increasing access to federal financial aid. The Act also funded the Transition Postsecondary Programs for Students with Intellectual Disabilities (TPSID) model demonstration projects, in which students receive IDEA special education services for two to three years in a college-based setting. Furthermore, the Act required the development of model accreditation standards and required collection of program- and student-level data, resulting in one of the first longitudinal data sets on college students with ID.

Currently, 309 postsecondary programs in the United States enroll students with ID. As of June 2021, 5,754 students were enrolled in 239 of these programs. TPSID programs comprise approximately one-third of postsecondary opportunities for students with disabilities in the United States. Funded programs are predominantly located on the East Coast and in the Midwest and most grantees are 4-year institutions. Data from students in TPSID programs are therefore not necessarily nationally representative and this needs to be considered when interpreting research based on TPSID data.

TPSID programs have promising results thus far. Rates of student employment for students with ID have steadily increased since the programs began, with the latest cohort of students reaching 62% employment rates. Nationally, less than 20% of adults with ID participate in paid employment but employment of students in TIPSID continues to climb. Unfortunately, the COVID-19 pandemic caused employment rates to drop to low levels, which shows how precarious employment can be for people with ID. Enrollment in inclusive courses in postsecondary settings has also increased steadily. Available research indicates that access to inclusive courses and services predicts positive student outcomes for students with ID. More than 1,900 students in TPSID have completed their program and earned a credential. This counters assumptions that people with ID are not employable and cannot succeed in higher education. TPSID data show that postsecondary education is a path to employment for people with ID. The majority of students participating in TPSID programs have retained paid employment at one, two, and three years after exiting the program.

Overall however, rigorous research on persons with ID in postsecondary education is sparse. Reviews of the literature conducted by Dr. Grigal and her colleagues as well as others indicated that for recent decades, only between approximately one to two studies were published per year on this population of students, and most of the studies were program descriptions, position papers, or descriptive studies. These reviews were conducted when the field was emerging and there was no legislative support or funding for postsecondary education for people with ID. More recent reviews are promising, as a recent review of literature published between 2010 and 2016 conducted by Dr. Grigal and a colleague, resulted in 60 eligible articles. Published articles cited TPSID more than any other research funding source, even though the TPSID funding was not allocated directly to support research and publication efforts by the grantees. A challenge for the field is a lack of focus on disability research in higher education journals. Most of this work is published in disability journals, which may limit its reach for higher education professionals.

Dr. Grigal also noted that there is a strong need for more correlational studies and examination of longer-term outcomes. One emerging research area is assessing impact of postsecondary education on employment for people with ID using Rehabilitation Services Administration (RSA)-911 data, including vocational rehabilitation closure data. Research has found that vocational rehabilitation support for postsecondary students with ID is cost-effective and cost-efficient. Research also has found that vocational rehabilitation clients with ID who participated in postsecondary education are more likely to be employed and earn higher incomes than those who do not participate in postsecondary education.

Introductory Presentation #3: Faculty Supporting Postsecondary Students with Disabilities

Allison Lombardi, University of Connecticut

Dr. Lombardi discussed the role of college faculty as a mechanism to support students with disabilities. She discussed research that shows faculty are a major influence on the quality of experiences for postsecondary students with disabilities. Often college faculty are the main lifeline to students with disabilities by giving them direct support. However, researchers don't tend to focus much on this group in their research. Dr. Lombardi discussed her work developing trainings to prepare faculty to serve students with disabilities. Her experience developing these programs shows that training should be available in multiple modes, require little time, and offer suggestions that are easy for faculty to integrate into curricula. Faculty are particularly responsive to approaches that include students' descriptions of their own experiences, so incorporating student voice in trainings for faculty is critical.

Dr. Lombardi also emphasized that system-level initiatives and efforts are necessary to achieve large-scale changes in teaching practice. Possible levers of change include:

- *Mandating faculty training.* Most of the trainings Dr. Lombardi has conducted have been considered supplemental, and faculty are not required to attend. It is challenging to encourage faculty participation as it is rare to have this type of training be prioritized and mandated by administration. She noted the importance

of gaining administration buy-in to incentivize these inclusive and accessible teaching methods, like universal design. For instance, it would be important for these efforts to be worked into the promotion and tenure process.

- *Focus on improved outcomes.* This work needs to be prioritized with an emphasis on showing faculty that these types of trainings are making a difference for their instruction, improving how they teach a range of students, and ultimately, that their change in instruction is leading to improved student outcomes.

Introductory Presentation #4: Self-Determination Based Interventions in Postsecondary Education and the Stanford Neurodiversity Project

Lawrence Fung, Stanford University

Dr. Fung discussed his background conducting research on education for neurodiverse students, with a focus on self-determination, using a causal agency theory framework. According to this framework, the essential characteristics of self-determined actions are divided into action control beliefs, volitional action, and agentic action. Action control beliefs include self-realization, psychological empowerment, and control expectancy. Volitional action is characterized by autonomy and initiation. Agentic action includes pathways thinking and self-direction. This theory has been used to develop programs for student with disabilities, which have led to positive results. In particular, these programs have improved self-determination skills in college students. Self-advocacy training and mentoring programs with college students also has good results. Very few of these programs have been scaled however, so their reach is limited.

Dr. Fung discussed how his work at the Stanford Neurodiversity Project has been informed by this framework. The Stanford Neurodiversity Project aims to educate people about neurodiversity, including teaching acceptance of neurodiversity as normal variation of human development. He has worked to develop a strengths-based model of neurodiversity which in addition to self-determination theory, focuses on positive psychology, positive psychiatry, Gardner's theory of multiple intelligences, and Chickering's seven vectors of development.

He acknowledged that neurodiverse students face a variety of challenges and barriers in their pursuit of postsecondary education. Dr. Fung's team applies an eco-system approach to encourage family, friends, mentors, therapists, and education institution staff to make the postsecondary education setting more friendly to neurodiverse students. Support is provided in multiple areas (e.g., career development support, independent living skills, social life, accommodations support) via multiple people in the student's education setting including teachers, family, disability services staff, as well as staff in job settings. Currently, the team is implementing three major initiatives, including the Neurodiverse Student Support Program, which trains peer mentors and residential assistants to support neurodiverse students. The team collaborates with all student affairs groups to develop accommodations and provide support for mental health, learning and career development. The program offers online modular brief training videos on transitioning to college,

independent living skills, and social life. This type of online training lends itself to being a scalable program.

Panel Discussion

The discussion began with TWG members noting the data challenges in conducting research across institutions. The type and quality of data available varies widely. For example, sometimes data on disability is readily available and easily accessed and other times institutions are still using paper files and it can take a while to gather this data. The quality and consistency in how things are categorized or coded also varies and is often limited. When studying accommodations, researchers may only know whether students are getting accommodations (e.g., yes/no) without any indication of the kind or quality of accommodations they are receiving. It was noted that there is also variability in institutions' willingness to share data.

Panel members suggested that the federal government support efforts to systematize data collection in a way that data can be used to inform program and policy planning at the national level.

There was also a discussion about the challenges of research with students with ID. It was noted that the data on this population of students are not up to date, and not always accurate. Many of the existing postsecondary datasets do not include data on students with ID. Engagement of college administrators in efforts to improve data collection and availability is critical.

When thinking about improving the access to and quality of postsecondary data available to researchers, TWG members also discussed the challenges of determining what types of data, including institution-level data, are needed. Grade point averages for example, have limited usefulness because of potential grade inflation. Researchers should assess which indicators or outcomes would be more useful, such as course completion, or credits completed per semester or year. What data should we be collecting? What are the key indicators and outcomes? These questions need to be addressed when engaging in any national effort to improve data collection across postsecondary settings.

Session 4: Research and Data Priorities for Advancing Research on Students with Disabilities in Postsecondary Education

Guiding Questions:

- How can IES help to improve the research and data collected on students with disabilities enrolled in postsecondary education?
- What research is needed to inform postsecondary education practice for students with disabilities?
- How can IES effectively encourage and support research on students with disabilities in postsecondary education?

Introductory Presentation #1: Overview of Research in Postsecondary Education: What Factors Predict Success?

Joseph Madaus, University of Connecticut

Dr. Madaus discussed two review papers he and colleagues published on students with disabilities in postsecondary education. In the first paper, the research team conducted a review of the literature on disability and higher education. The research team reviewed 1,036 articles published between 1954 and 2012 which met the inclusion criterion that the article had to be primarily about postsecondary education for students with disabilities. Results from the review indicate that there has been an increase in research publications on postsecondary students with disabilities, with the number of articles published increasing steadily over time each year. Articles were published in 233 unique journals, with *Journal of Postsecondary Education and Disability* being the most common. Articles were categorized as addressing one of four domains: student-focused support, program and institution-level support, faculty and staff-focused support staff, and systems development. The majority of the studies reviewed were descriptive quantitative or qualitative studies and most of the studies did not test interventions, with only a few studies using group or single-subject designs. Therefore, there was only a small pool of rigorous data-based articles. There was limited research related to students in community or technical colleges which is troubling given that many students with disabilities attend 2-year institutions. Finally, the research team found that the descriptions of methodologies, samples, and results in the reviewed publications were often inconsistent or incomplete.

In the second review paper, Dr. Madaus and colleagues conducted a follow-up study reviewing 28 studies that examined institutional and student-specific factors that support student success. Based on the review, several significant predictors of grade point average were identified, including learning and study strategies, self-advocacy, self-efficacy, social relationships, receiving specific accommodations, having a visual impairment, and having multiple disabilities. Significant predictors of college graduation were receiving learning strategy instruction, obtaining certain academic accommodations, school connectedness, and participating in a college preparatory curriculum in high school. Significant predictors of college retention included having an invisible disability (e.g., learning disability), friends' intentions to go to college, living off campus or with parents, full-time status, and receiving accommodations and supports. Although the 28 studies reviewed showed promising

evidence on predictors of college outcomes, there are an insufficient number of studies available to validate a core set of evidence-based practices. Thus, the results from the review demonstrated the need for additional research on evidence-based predictors of postsecondary outcomes for students with disabilities. The study yielded promising implications for malleable factors, such as the use of learning and study strategies and self-advocacy, that can be taught to students as they prepare to transition to college.

Based on these review papers, Dr. Madaus shared his recommendations for advancing the research on postsecondary students with disabilities:

- There is limited funding for research in this area. It is critical to the advancement of the field that consistent funding for those conducting research on postsecondary students with disabilities is available.
- There is a great need for rigorous research on evidence-based predictors of postsecondary outcomes for students with disabilities.
- The field would benefit from a clear, current, and continually updated set of data on postsecondary students with disabilities including, but not limited to data on enrollment numbers, disclosure decisions and rationale, accommodations/services used, transition preparation, college outcomes, and post-college outcomes such as employment rates and salary.
- Consistent research guidelines for clearly describing samples, settings, and methodologies employed when conducting research on postsecondary students with disabilities are needed.
- Translating research into practice for those who support postsecondary students with disabilities (e.g., faculty, disability services staff) should be a high priority.

Introductory Presentation #2: Research and Data Priorities for Advancing Research on Students with Disabilities in Postsecondary Education

Ryan Wells, University of Massachusetts Amherst

Dr. Wells shared his recommendations on important priorities for future research and data collected on students with disabilities in postsecondary education. From his perspective as the co-editor of the *Journal of Postsecondary Education and Disability*, research published in the journal has primarily focused on students' attitudes, perceptions, and experiences; program and service descriptions; and construct development. Little experimental and quasi-experimental research has been done. Recent submissions have included more quantitative studies. Current popular topics include universal design, disability service utilization, program and intervention descriptions, and descriptions of students' perceptions and experiences. In line with Dr. Madaus' aforementioned literature review, most studies published in the *Journal of Postsecondary Education and Disability* used qualitative methods, while most published quantitative findings have been descriptive or correlational.

Based on his own expertise, Dr. Wells offered the following recommendations for future research and data priorities:

- More research that supports causal inferences is needed to determine what works, for whom, and where (i.e., type of postsecondary institution). There are few researchers interested in disability and postsecondary education who also are skilled in experimental methods and causal modeling. It is important to increase the number of people qualified to conduct this type of research.
- More research is needed on students with disabilities in career and technical education settings, for-profit institutions, and minority serving institutions.
- Additional research is needed on the effects of gender, race/ethnicity, class, sexuality, and other demographic and identity factors and how they intersect with disability to influence education access and outcomes. Disaggregated data that support analysis of the unique effects of these factors are needed. This must be balanced with the need for adequate sample sizes to allow statistical inference.
- Other important research topics include: the effects of supports and accommodations and assistive technology; predictors and effects of self-determination and self-advocacy; legal and policy changes relevant to disability; and effects of remedial/developmental education, financial aid, and online remote instruction.
- The field would benefit from more secondary data and better-quality data. This could include extending and expanding current data collection efforts, such as NLTS, and oversampling students with disabilities.
- Researchers should engage in discussions about the advantages and disadvantages of various definitions of disability. More work needs to be done to understand how best to categorize and study students with multiple disabilities.
- Strategies for encouraging and supporting research on postsecondary students with disabilities include:
 - collaboration between disability and science, technology, engineering, and mathematics (STEM) education researchers to respond to National Science Foundation's call for representation of people with disabilities in STEM,
 - offering training in causal methods,
 - training higher education researchers in methods typically used in special education such as single case design,
 - publishing research briefs that describe what research is needed in postsecondary education for students with disabilities, and
 - clearly identifying research priorities in requests for proposals and ensuring language included in requests for proposals are inclusive of postsecondary researchers.

Panel Discussion

TWG members provided comments about priorities for supporting students with disabilities in postsecondary education and advancing research in this area.

More evidence needed for practice

TWG members agreed that there is a great need for rigorous research to increase the knowledge of evidence-based practices and predictors that have been identified for postsecondary students with disabilities. Higher education administrators often require evidence that a practice works for postsecondary students with disabilities before they support implementation. In addition, sometimes students do not request accommodations or supports that may be beneficial to them because they are unsure if the supports would be helpful. Research could play an integral role in providing evidence about what works to inform decisions made by administrators about practice as well as decisions made by students with disabilities about which accommodations they want to receive.

Addressing lack of disclosure

Several TWG members discussed the challenges with conducting research on postsecondary students with disabilities when many do not disclose their disability. As shared by Dr. Newman in an earlier session, data from NLTS2 shows that only 28% of students who identified as having a disability while they were in high school disclosed their disability in a postsecondary setting. Postsecondary students with disabilities may not disclose their disability because they do not feel safe doing so. However, they will use disability cultural centers or join alliances or advocacy groups to have a sense of belonging and the opportunity to discuss their disabilities openly. Researchers could benefit from recruiting students with disabilities from settings where they feel safe disclosing their status.

Research design and timeline considerations

TWG panelists discussed the factors that affect research study designs and the resources needed to conduct a study that funders should consider when evaluating proposals. The time and resources needed to conduct research vary according to research setting (e.g., transitioning from high school or conducted in the postsecondary setting), size of the sample, and the disability(ies) being studied. In addition, researchers with disabilities may need more flexibility in their project timelines as disability is not predictable and there may be times when they are not able to adhere to timelines if they are experiencing challenges due to their disability.

Funding more single-case design studies conducted in a postsecondary setting would contribute to building the evidence base about what works for students with disabilities. Community-based participatory research and qualitative research that provides details about context and student experiences is important, but this work is also time-consuming and rarely includes a large sample size. IES should prioritize research on students with intellectual disabilities, transitioning students, and other groups underrepresented in disability research; studies with smaller samples of these priority populations; and more qualitative research.

Measurement and data needs

Another research priority identified by TWG members is the need for more measurement work and improved data on disability and higher education. Recommendations offered by the TWG panelists included the following:

- Measures used in postsecondary education research should be validated for students with disabilities.
- Disability is fluid and it would be valuable to have measures that reflect this.
- Research is needed on how legal and medical definitions of disability align with definitions developed by people with disabilities, and the implications for students when the definitions do not align.
- IES should support work to compare data sets that collect disability data and to create databases that follow transitioning students to postsecondary education.
- It would be valuable to measure education setting climate and ableism and to support research on the implications of acquiring or identifying disability later in life, which will involve developing measures of these students' experiences.

Session 5: Increasing Research Capacity

Guiding Questions:

- What steps can IES take to build the capacity of researchers interested in conducting rigorous research in postsecondary education for students with disabilities?
- What are the training needs for researchers interested in this topic, and what are the best ways for delivering this training?

Introductory Presentation: IES Research Training Programs

Katherine Taylor, NCSEER Program Officer

To provide context for the discussion on increasing research capacity, Dr. Taylor presented an overview of research training programs funded by IES. The overarching goal of these programs is to prepare individuals to conduct research that advances the field and addresses issues that are important to education stakeholders. NCSEER training programs include the Postdoctoral Research Training in Special Education and Early Intervention, Early Career Development and Mentoring, and Methods Training for Special Education Research programs. NCER has parallel programs in addition to the Pathways to Education program which funds training at minority serving institutions to prepare undergraduate students, recent graduates, and master's degree students for doctoral training. NCER also supports predoctoral training in education research.

The purpose of NCSEER's Postdoctoral Training program is to provide support for programs that prepare doctoral-level researchers to conduct high-quality special education and early intervention research that advances knowledge within the field and addresses issues important to policymakers and practitioners. The core features include mentoring from experienced researchers with active special education research projects, opportunities to work on these special education research projects, participation in trainings related to research methods or content areas, experience working with practitioners and policymakers and disseminating research, opportunities to publish, and support for transitioning to careers after the fellowship ends. The focus is determined by the applicant and aligns with the topics and types of research supported under the Special Education Research Grants program. Programs have focused on autism spectrum disorder, social and behavioral outcomes, early intervention, reading, educators and other service providers, and systems-level interventions (e.g., MTSS). Since 2008, NCSEER has funded 20 postdoctoral grants across 13 institutions. A total of 79 fellows have received training or are currently receiving training.

The NCSEER Early Career program provides support for new investigators to conduct an integrated research and training plan that addresses the needs of learners with or at risk for disabilities. The purpose is to jumpstart these researchers' careers and prepare them to conduct rigorous and relevant research. These investigators conduct research with the guidance of experienced mentors and participate in training activities that help them conduct the research part of the project. These training activities can include IES-funded methods trainings, grant-writing workshops, advanced statistical workshops or courses.

Funded Early Career research projects have mostly focused on intervention development and testing but a few have done measurement or exploratory research. Topics have included STEM, reading and writing, early intervention, families, educators and other service-providers, social and behavioral outcomes, and transition outcomes. NCSEER has funded 33 Early Career grants across 28 institutions since 2013.

The purpose of the NCSEER Methods Training program is to fund programs to recruit current education researchers and provide intensive training on a method important for research on learners with or at risk for disabilities. The format of these trainings can vary, but the goal is to provide targeted, relevant training that researchers can immediately apply in their work rather than supporting broad methodological education provided by certificate or degree programs. In the past, NCSEER has specified the method to be addressed; however, in recent competitions it has been up to applicants to propose the method. NCSEER does, however, encourage training on certain areas (e.g., mixed methods, open science). Since 2016, NCSEER has funded three methods training grants, two of which were on single-case design and one of which was on adaptive interventions and sequential multiple assignment randomized trials (SMARTs). NCER has funded 13 methods grants on topics including randomized control trials, quasi-experimental designs, cost analysis, implementation science, meta-analyses, and building capacity to use evidence-based practices.

Panel Discussion

TWG panelists shared additional strategies for advancing the field and building the capacity of researchers interested in conducting rigorous research on postsecondary students with disabilities.

Ensuring inclusion of postsecondary education research

NCSEER should offer ample funding opportunities for training for postsecondary research. TWG members noted that postsecondary education, K-12, and disability researchers often use different terminology, and including language in requests for applications (RFAs) that is not inclusive of postsecondary work can discourage researchers who focus on postsecondary education from responding to calls for proposal and applying for training programs. Another TWG member mentioned that while training programs are typically focused on researchers in training and early career researchers, it is important to consider offering training to tenure-track faculty with interest in this research area. This is important because it can be more difficult to get published in high-impact journals for higher education and disability research so there is more incentive to focus on K-12 special education research when preparing for tenure.

Supporting faculty who work with students with disabilities and aspiring faculty with disabilities

A few TWG members agreed that IES should support the training of faculty to understand the unique needs of people with disabilities and communicate to administrators the value

of admitting students with disabilities to their programs. IES could help build the infrastructure in supporting students with disabilities by incentivizing faculty support for students with disabilities and helping to change the perception that teaching students with disabilities is burdensome. TWG members noted that it is not only crucial to encourage more people to pursue research on postsecondary students with disabilities but to also encourage people with disabilities to become researchers. IES should invest in faculty who mentor graduate students and early career researchers with disabilities. While many disabled faculty are advisors, graduate students with disabilities may still struggle to find mentors who can teach them the unspoken rules of the academy as a person with a disability and to help with important professional development activities like the job search and preparing for the tenure process. Prioritizing the mentorship of students with disabilities, particularly from faculty advisors with disabilities, in postdoctoral and early career training programs would be beneficial.

Valuing different types of expertise

TWG members agreed that proposal reviews should consider research team diversity to be an asset as supporting diversity among researchers will serve to advance the field. One TWG member recommended that all proposal review panels should include people with disabilities. Another TWG member noted that IES's definition of "expert" should include people with expertise in the lived experiences of people with disabilities but who may not have academic degrees. Reviewers often have an implicit bias favoring academic training, but people without academic training could be valuable grant proposal reviewers as well as research team members. In addition, IES can require grantees to document how people with disabilities are represented on their teams. Another panel member recommended that IES consider capping indirect cost rates to encourage the use of funds for including greater diversity on research teams. A TWG member recommended the Investing in Innovation (i3) grant program funded by the U.S. Department of Education as a model for encouraging field engagement, building partnership between education partners and researchers, and inclusion of team members with different types of expertise. Highly rated i3 grant proposals are posted publicly, which is a useful training tool. IES should also include mechanisms in their grant programs to facilitate collaboration among grantees and consider supporting methods training in techniques not traditionally supporting by IES such as community-based participatory action research.

Session 6: Moving Forward & Final Thoughts

Based on the discussions from the day, each participant briefly identified their top priority for advancing research on students with disabilities in postsecondary education. TWG members provided the following recommendations to IES:

Encourage the systematic study of pressing issues

- Research is needed to identify which supports, interventions, programs, and practices facilitate student success and positive student experiences, which are more effective for certain students, and which settings are best for implementation.
- The field needs more research on students with intellectual disabilities and other groups underrepresented in disability research.
- It is important that research examine the impact of environment and intersecting identities on the experiences and outcomes of students with disabilities.
- Examine existing institutional policies and practices to understand how higher education institutions and faculty can be better supported in serving students with disabilities.

Strategies to improve research conducted on postsecondary students with disabilities

- Research funded on postsecondary education should support the use of a broad range of methods to address questions from diverse perspectives.
- Develop strategies for attracting people with disabilities to conduct research on students with disabilities in postsecondary education to strengthen the academic pipeline for scholars with disabilities.
- Encourage minority serving institutions to participate in research on postsecondary students with disabilities.
- Determine the best approaches to recruit as many students with disabilities as possible to participate in postsecondary research. It is critical to determine how to best recruit students who have not disclosed their disability status to their institution. Potential strategies include community-based participatory research, recruitment from disability culture centers and advocacy organizations, encouraging students with disabilities to recruit their peers for research participation, and using technology to facilitate recruitment and data collection.
- Provide training in data utilization and interpretation, measurement, and analytic methods.
- Encourage higher education journal editors to publish articles and special editions that focus on disability.

Support the development of high-quality datasets and measurement tools

- Develop clear and consistent terminology for defining disabilities, experiences, and measures of success. Require grantees to document how they define disability, the advantages and disadvantages of their definition, and how their definition compares

to those used by other researchers. Support research on the implications of diverse terminology and measurement approaches.

- Support the development of high-quality national datasets structured to support comparison with analysis of other datasets and consider how to address the issues of lack of disclosure. Ensure these data can be disaggregated by disability type and other key demographics and include representation of all disability groups.
- Encourage researchers to share datasets.
- Support measurement and validation studies, including assessing whether existing education measures are valid for students with disabilities.

Appendix: Meeting Agenda

Technical Working Group (TWG) Meeting Advancing Research on Students with Disabilities in Postsecondary Education

December 9, 2021
11:00 AM – 5:00 PM Eastern Time
Virtual Meeting

11:00-11:20 **Welcome and Meeting Overview**

- Introduction to TWG Meeting and Logistics (Akilah Nelson, NCSEER Program Officer)
- Welcome (Mark Schneider, IES Director and Joan McLaughlin, NCSEER Commissioner)
- Panel Member Introductions

11:20-11:40 **A National Perspective of Postsecondary Students with Disabilities**

Guiding Question:

- *What does national data tell us about postsecondary education for student with disabilities?*

Speaker:

Lynn Newman, SRI Education

11:40-12:30 **The Postsecondary Experiences of Students with Disabilities**

Guiding Questions:

- *What are the lived experiences of students with disabilities as they adjust to and progress through postsecondary education?*
- *What does current research tell us about the lived experiences of postsecondary students with disabilities and what additional research is needed?*

Speakers:

Jeff Edelstein, DREAM

Lissa Ramirez-Stapleton, California State University Northridge

John Zilvinskis, Binghamton University

12:30-1:00 **Break** (Lunch, East Coast)

1:00-2:15 **Supporting Students with Disabilities in Postsecondary Education**

Guiding Questions:

- *What supports are offered to postsecondary students with disabilities?*

- *What does current research tell us about the support students with disabilities need in postsecondary education?*
- *What are the challenges and/or barriers in providing supports to students with disabilities in postsecondary education?*
- *What are the challenges and/or barriers to conducting research on supports for students with disabilities in postsecondary education?*

Speakers:

Jamie Axelrod, Northern Arizona University
 Meg Grigal, University of Massachusetts Boston
 Allison Lombardi, University of Connecticut
 Lawrence Fung, Stanford University

2:15-3:30 **Research and Data Priorities for Advancing Research on Students with Disabilities in Postsecondary Education**

Guiding Questions:

- *How can IES help to improve the research and data collected on students with disabilities enrolled in postsecondary education?*
- *What research is needed to inform postsecondary education practice for students with disabilities?*
- *How can IES effectively encourage and support research on students with disabilities in postsecondary education?*

Speakers:

Joseph Madaus, University of Connecticut
 Ryan Wells, University of Massachusetts Amherst

3:30-4:00 **Break** (Lunch, West Coast)

4:00-4:40 **Increasing Research Capacity**

Guiding Questions:

- *What steps can IES take to build the capacity of researchers interested in conducting rigorous research in postsecondary education for students with disabilities?*
- *What are the training needs for researchers interested in this topic, and what are the best ways for delivering this training?*

Speaker:

Katherine Taylor, NCSEER Program Officer

4:40-5:00 **Moving Forward & Final Thoughts**

- **Lightning Round:** What is each participant's top recommendation for IES?

Based on the discussions from the day, each participant will briefly identify their top priority for advancing research on students with disabilities in postsecondary education.

- Closing Thoughts (Joan McLaughlin, NCSEER Commissioner)

Appendix: Reference List

In preparation for the Technical Working Group meeting, panel members provided presentations and written comments in response to at least one topic in the agenda. This section gathers research publications that were highlighted by panel members as references for the field and additional references that are relevant to the discussions during the meeting. Inclusion of these references does not imply endorsement from the Institute of Education Sciences (IES), and instead are provided as context for the reader.

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