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**Immediate Release**

## **Accessibility-focused research team will study how best to engage students on the autism spectrum in STEM**

BROOKLYN, New York, Wednesday, October 21, 2020 – Many people with autism spectrum disorders (ASDs) are unemployed or underemployed, at least partially because they do not have access to educational opportunities that support them in meeting their potential. The interdisciplinary [Ability Project](#) at [NYU Tandon School of Engineering](#) and the [City University of New York \(CUNY\) College of Staten Island](#) – working with students from the nonprofit [Tech Kids Unlimited](#) (TKU) – are conducting collaborative research to identify effective methods to empower interested adolescents on the autism spectrum to seek out careers related to science, technology, engineering, and math (STEM). The research is being funded by a three-year National Science Foundation (NSF) [Advancing Informal STEM Learning](#) (AISL) award totaling nearly a million dollars.

The researchers aim to:

- Identify effective strategies that educators can use to engage youth on the autism spectrum in informal STEM learning opportunities that are well matched with their attention spans and interests
- Determine whether or not engagement with informal STEM learning opportunities increases young people’s confidence in their technological skills
- Evaluate if engagement in an internship at a technology company helps increase young people’s interest in STEM careers and their belief in their ability to make decisions about their careers

The researchers will invite diverse groups of young people on the autism spectrum to participate in free game design workshops hosted by TKU, which teaches computer science principles and technology skills to students with learning differences. During and after each game-design workshop, students will rate the learning opportunities they experienced at the workshop using a picture-based survey developed in collaboration with autistic students and scholars. That feedback will be used to

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improve subsequent workshops and will help researchers develop “diversity blueprints” or specific and effective instructional strategies that are tailored to the needs of each student. The researchers expect to find that young people on the autism spectrum with more focused attentional styles will be more engaged by instructional strategies that are focused within a single medium (e.g. speech only), while young people who are more easily distracted will prefer more dynamic and varied instructional styles (e.g. a combination of pictures, text, and speech).

After taking part in the workshops, students will be given the opportunity to undertake internships at a tech company, allowing researchers to determine if the engagement strategies identified at TKU generalize to STEM internship sites. Students will use the aforementioned picture-based scales to assess the degree to which learning opportunities available at their internship sites are engaging.

“No one has yet adapted instructional strategies designed to engage neurodivergent students in informal STEM learning guided by a systematic analysis of how the students themselves critique those strategies,” explains co-principal investigator [Amy Hurst](#), an associate professor at NYU Tandon who also heads the Ability Project and has a joint appointment in the Department of Occupational Therapy at NYU Steinhardt. “We are proud to be taking a user-centered approach where we are collaboratively designing assessment strategies *with* our target user group, instead of *for* them.”

“We work with a population of students who have, historically, lacked opportunities readily afforded to those in mainstream educational settings,” says [Beth Rosenberg](#), an NYU Tandon adjunct professor and the founding director of TKU. “While they can greatly benefit from resources like robotics clubs and coding classes, there is often little extra time during the school day, when they are getting occupational therapy, counseling, and the host of other services they need.”

Rosenberg, who serves as senior personnel on the AISL project continues, “The dire problem with this situation is that there is a growing wave of adolescents on the autism spectrum who are aging out of services and have not been adequately prepared to navigate the transition into the workforce. Evidence-based strategies are sorely needed, and that is a niche we hope to fill with our research.”

This research will employ and refine the principles of Universal Design, which calls for proactively meeting the needs of all students by assuming that barriers to learning rest in the design of the learning environment, rather than in the student.

“The pronounced challenges that people on the autism spectrum face obtaining meaningful employment often stand in stark contrast to their abilities and interests,” says [Kristen Gillespie-Lynch](#) of the College of Staten Island, the research project’s co-principal investigator. “By collaborating with neurodivergent students and scholars, we hope to empower students on the autism spectrum to co-create educational and employment preparation opportunities that nurture their talents and allow them to prepare for meaningful careers through which they can further transform society.”

In other recent news, Hurst’s Ability Project, which has an ongoing collaboration with the Intrepid Sea, Air & Space Museum in New York, has co-developed the [Bring Your Own Device](#) (BYOD) Mobile Guide, making the venue accessible during COVID-19 by allowing visitors to access content on their phones.

***About the New York University Tandon School of Engineering***

*The NYU Tandon School of Engineering dates to 1854, the founding date for both the New York University School of Civil Engineering and Architecture and the Brooklyn Collegiate and Polytechnic*

*Institute. A January 2014 merger created a comprehensive school of education and research in engineering and applied sciences as part of a global university, with close connections to engineering programs at NYU Abu Dhabi and NYU Shanghai. NYU Tandon is rooted in a vibrant tradition of entrepreneurship, intellectual curiosity, and innovative solutions to humanity's most pressing global challenges. Research at Tandon focuses on vital intersections between communications/IT, cybersecurity, and data science/AI/robotics systems and tools and critical areas of society that they influence, including emerging media, health, sustainability, and urban living. We believe diversity is integral to excellence, and are creating a vibrant, inclusive, and equitable environment for all of our students, faculty and staff. For more information, visit [engineering.nyu.edu](http://engineering.nyu.edu).*

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