



Using In-School Predictors to Improve Outcomes for Youth with Autism: What the Research Tells Us

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Agenda

- Introductions
- Project ATTAIN
- Predictors of Postschool Success
- Current Outcomes for Youth with ASD
- ATTAIN Research
- Practitioner Tool
- Conclusion & Next Steps

Our Research Team



Leslie Shaw, PhD



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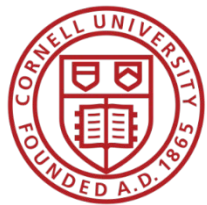
Hassan Enayati, PhD

Our Work

The Autism Transition to Adulthood Initiative [ATTAIN] is a multi-year initiative led by researchers at Cornell University's Yang Tan Institute on Employment and Disability.

Purpose: To help improve post-school outcomes for young adults with autism through identifying which high school experiences (called predictors) increase the likelihood of obtaining a job, pursuing college/university, or living on one's own (or with roommates) after high school.

The logo for ATTAIN is displayed in a bold, blue, sans-serif font. The letters are lowercase, with the 'A's being significantly larger than the other letters. The 'T's are also large and have a slight shadow effect, giving the logo a three-dimensional appearance.



Predictors of Post-School Success

In-school experiences correlated with improved post-school outcomes

23 Predictors

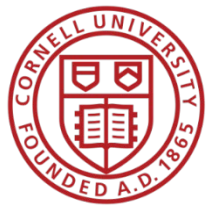
Policy		Career Development	
	Inclusion in Gen Ed		Career Awareness
	Exit Exam Req./ HS Diploma Status		Career Technical Education
	Program of Study		Occupational Courses
Student Skills			Paid Employment/Work Experience
	Community Experiences		Work Study
	Decision-Making	Collaborative Systems	
	Goal Setting		Interagency Collaboration
	Psychological Empowerment		Parent Expectations
	Self-Advocacy/Self-Determination		Parental Involvement
	Self-Care/Independent Living		Student Support
	Self-Realization		Transition Program
	Social Skills		
	Technology Skills		
	Travel Skills		

Why Investigate Predictors?

Predictor research can help inform and strengthen transition programs and practices in secondary education by pinpointing which in-school experiences have been linked to participating in education, employment, independent living, or other desired outcome areas (Rowe et al., 2015)

Frequently Researched Outcomes

- **Higher education:** being enrolled full- or part-time in community college (2-year program) or college/university (4- or more year program), and completing 1 term (IDEA, 2004)
- **Competitive employment:** work for pay at or above the minimum wage for 20 hours a week (90 days in the year since leaving high school), with customary pay rate, benefits, and opportunities for advancement as those without disabilities; the setting is with others who are nondisabled (IDEA, 2004)
- **Independent living *philosophy*:** “emphasizes consumer control... having crucial and valuable perspective to contribute, and deserving of equal opportunity to decide how to live, work, and take part in their communities...” (National Council on Independent Living, 2020, para. 11)



Why does our work focus on predictors of post-school success **for youth with autism?**

The Transition Out of High School...



Many People with Autism Spectrum Disorder (ASD)...

- Experience challenges with communication and behavior associated with their developmental disorder (CDC, 2020)
- Exhibit certain behaviors (avoiding eye contact, having trouble relating to others, etc.; CDC, 2020) that may negatively impact the acquisition of different postsecondary goals (like getting a job)
- Have been associated with several myths and misconceptions about their performance, productivity, safety, etc., which can lead to employers' resistance to hire applicants with ASD (Scott et al., 2017; Solomon 2020; Unger et al., 2002)
- Experience societal stigma (Ortiz, 2020)

Current Outcomes

- People with ASD are **less likely** to live on their own following high school graduation compared to people with other disabilities (Anderson et al., 2013)
- **Only 36%** of high school graduates with ASD have attended any form of postsecondary education before their early 20s (Roux et al., 2015)
- **Less than 60%** of young adults with ASD experience paid employment, outside the household
 - The experienced paid employment is often part-time, with low wages. (Roux et al., 2015)

Impact on low income youth with autism

- 40 to 46% of teens and young adults with autism live in low-income households
- 25% of teens with autism in all households receive one or more forms of public assistance (Shattuck et al., 2018)
- At the same time, the combination of disability and poverty produce a sharp double jeopardy for youth during this transition.
 - Doubly disadvantaged youth with disabilities are less engaged in postsecondary education and employment, respectively 22% and 10% less likely than their peers without disabilities from homes living above the poverty line (Enayati & Karpur, 2019).

Researchers, policy makers, and practitioners have taken greater interest in understanding what in school experiences predict positive transition outcomes.

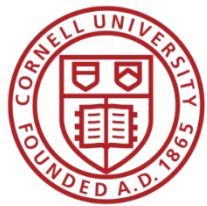


Yet, in spite of this growing body of research targeting youth with disabilities, more generally, little is known about which in school experiences promote better outcomes for those with ASD.

Among the existing research literature on predictors,...

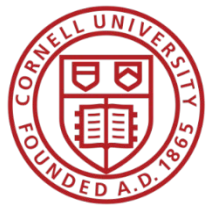
Few studies include samples of youth with ASD

Predictor	Emp	Ed	IL
Career Awareness	X	X	
Career Technical Education	X		
Community Experiences			
Exit Exam Requirements/ High School Diploma Status			
Goal-Setting		X	
Inclusion in General Education		X	
Interagency Collaboration	X		
Occupational Courses			
Paid Employment/ Work Experience	X		
Parent Expectations	X	X	X
Parental Involvement			
Program of Study			
Psychological empowerment		X	
Self-Care/ Independent Living	X	X	
Self-determination/Self-advocacy	X	X	
Self-realization			
Social Skills	X	X	
Student Support			
Technology Skills			
Transition Program	X	X	
Travel Skills	X		
Work Study	X		
Youth Autonomy/Decision-Making	X	X	
Total # of Predictors	12	10	1



ATTain

Autism Transition to Adulthood Initiative



Our Research Question: What We Want to Know...

Do the known predictors of successful transition to adulthood for youth with disabilities also apply to youth with autism?

Our Timeline for Data Collection & Analysis

Year	Project Task	Description
1	Analysis of Existing PROMISE Data	Use rigorous research methods to analyze existing data from New York State PROMISE (Promoting the Readiness of Minors in Supplemental Security Income), a federally sponsored research initiative focused on removing obstacles to adult success for youth who receive Supplemental Security Income.
2	PROMISE Follow-Up Survey	Create and administer a new survey for young adults who participated in PROMISE to better understand what predictors they experienced in high school and their outcomes now. Analyze survey data using rigorous research methods.
3	Longitudinal Nationally-Representative Survey	Create and administer a nationally-representative longitudinal survey to better understand predictors of different outcomes for youth with autism. Analyze survey data using rigorous research methods.

Year 1 & 2 Sample: Where does it come from?

This project uses existing data collected under New York State PROMISE [Promoting the Readiness of Minors in Supplemental Security Income]:

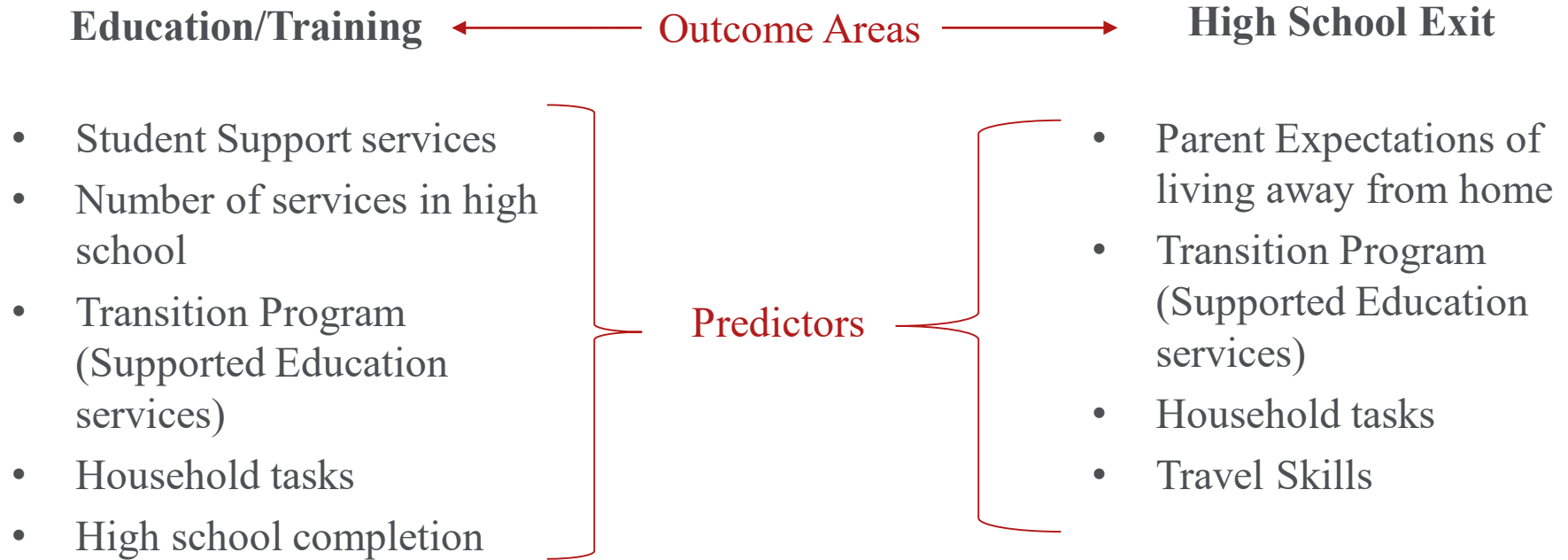
- Funded by the United States Department of Education
 - Included interagency collaborations with Social Security Administration (SSA), United States Department of Health and Human Services (HHS), and the Department of Labor (DOL)
- Recruited social security income (SSI) eligible youth (14-16 years of age) between 2014 and 2016
- Randomized control trial (RCT) used to test interventions to predict positive outcomes for youth with the control group continuing to receive typical services available to them
- Six years of data including administrative, service records, youth surveys, and parent surveys

Year 1: Who was in our study?

Total number of participants: 2,090

- Number of participants with autism: 371 (18%)
- 21% of white students have autism compared to 13% of Black students
- 21% of males have autism compared to 10% of females
- 6% of students in Western New York had autism compared to 23% in New York City

Year 1: What we Found...



Year 2: Who was in our study?

Total number of participants: 371 of 2,090 (17.8%)

- Youth with autism

- Youth with other disabilities

Descriptive data available now

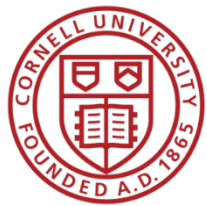
Full results available in weeks to come

Year 2: Current employment

- 28.3% are employed with 23.7% holding 1 job
- Working on average 28.3 hours/week (SD = 13.0) for 1.6 years (SD = 2.8)
- Wage averages \$19.30/hr (SD = 18.89) with median of \$16.00/hr

Year 2: In the last 5 years

- 53.4% applied for a job
- 45.8% worked part-time for pay
- 19.7% worked full-time for pay
- 27.8% volunteered
- 0.8% joined the military/armed forces



A Tool for Transition Program Implementers

Walkthrough of a Tool for Transition Program Implementers

The purpose of our checklist is to provide transition program implementers at the school level (like teachers or related service providers) with a better understanding of the 16 predictors of education/training for youth with autism, as identified in the current research literature.

Important Note: We received input on our checklist from select members of our research team's Subject Matter Expert (SME) Panel. This panel consists of a person with ASD, a family member of a person with ASD, a policy maker with expertise in disability policy, and an employer who often employs neurodiverse people

How do I use this checklist?

This checklist offers example action items that can be embedded into new or existing transition programs or carried out for individual students. In other words, **it describes examples of what school staff can do to help students achieve education/training goals after high school.**

- Action items can be checked off once they are completed, and as appropriate for the individual student.
- Open-ended options are available as well for transition program implementers to write in additional activities related to each predictor.

Note: This checklist can compliment the Predictor Implementation School/ District Self-Assessment, which provides schools and districts "with a framework for determining the degree to which their [transition] program is implementing practices that are likely to lead to more positive post-school outcomes for students with disabilities."

Who completes the checklist?

- Any key collaborator on a youth's transition team can check off action items on this checklist, once they are completed.
- Key collaborators should use this checklist when working with youth with autism desiring to pursue further education/training after high school.
- The youth should always maintain an updated copy of their own checklist.

When should the checklist be completed?

- This checklist should be used as early as possible in the youth's transition process and as action items are completed (once or multiple times, depending upon student need).
- Key collaborators may wish to create new copies of the checklist each academic year, and may record that particular action items are continuously or repeatedly conducted.

Example Predictor & Action Items

Psychological Empowerment

- Work with the student so that they understand the impact their actions will have. For example, if they come to work late every day, they may lose their job.
- Give the student opportunities to reflect on and self-assess their strengths, challenges, and support needs.

Example Predictor & Action Items

Transition Program:

- Include the student and their families in transition planning meetings and in conversations directly impacting the student's life
- Conduct varied transition assessments in multiple settings

Example Predictor & Action Items

Travel Skills:

- Teach the meaning of road signs and how to navigate, while embedding opportunities to make decisions (such as when it would be safe to cross a road)
- Teach how to use public transportation using simulation and field trips

Example Predictor & Action Items

Self-Care/Independent Living Skills

- Instruct students on developing independent living skills, like cooking, cleaning, personal hygiene, and managing money
- Embed opportunities for students to practice independent living skills throughout the school day and at home!

Transition Predictors of Education For Youth with Autism

PROJECT ATTAIN

What are predictors?	Experiences that occur during high school that predict participation in education or training after high school. Predictors of education for youth with autism include: <ul style="list-style-type: none"> • Career awareness • Career and technical education • Exit exam requirement/high school diploma • Goal setting • Inclusion in general education • Paid employment/work experience • Parent expectations • Psychological empowerment • Self-care/independent living • Self-determination/self-advocacy • Social skills • Student support • Transition program • Travel skills • Work study • Youth autonomy/decision-making
Why are predictors useful?	Awareness of which predictors are associated with different outcome areas for specific student subgroups can help inform and strengthen transition programs and practices as well as potentially mitigate challenges often experienced by young adults and their families during the postsecondary transition process (Rowe et al., 2015; Trainor et al., 2020).
How do I use this checklist?	The purpose of this checklist is to provide transition program implementers at the school level (like teachers or related service providers) with a better understanding of the 16 predictors of education/training for youth with autism, as identified in the current research literature (see citations at the end of page 1 and predictor definitions on page 2). This checklist offers example action items that can be embedded into new or existing transition programs or carried out for individual students. In other words, it describes examples of what school staff can do to help students achieve education/training goals after high school. Action items can be checked off once they are completed, and as appropriate for the individual student. Open-ended options are available as well for transition program implementers to write in additional activities related to each predictor. <i>Note:</i> This checklist can compliment the <i>Predictor Implementation School/ District Self-Assessment</i> , which provides schools and districts "with a framework for determining the degree to which their [transition] program is implementing practices that are likely to lead to more positive post-school outcomes for students with disabilities."
Who completes it?	Any key collaborator on a youth's transition team can check off action items on this checklist, once they are completed. Key collaborators should use this checklist when working with youth with autism desiring to pursue further education/training after high school. The youth should always maintain an updated copy of their own checklist.
When should it be completed?	This checklist should be used as early as possible in the youth's transition process and as action items are completed (once or multiple times, depending upon student need). Key collaborators may wish to create new copies of the checklist each academic year, and may record that particular action items are continuously or repeatedly conducted.

Supporting Research for Checklist:

Baer et al. (2003)	Haber et al. (2016)	*Rowe et al. (2015)	Wei et al. (2015)
Benz et al. (1997)	Lombardi et al. (2013)	Shattuck et al. (2012)	Wei et al. (2016)
Berry et al. (2012)	Mazzotti et al. (2016)	Test et al. (2009)	Wei et al. (2017)
Chiang et al. (2012)	*Mazzotti et al. (2020)	Trainor et al. (2020)	
Doren et al. (2012)	Newman & Masdaus (2015)	*Wehmyer (1997)	
*Doren, Gau, & Lindstrom (2012)	Newman et al. (2016)	*Wehmyer & Schwartz (1998)	
	*Pleett-Odle et al. (2016)		

Note: Citations with an asterisk are the sources for direct definitions of predictors provided on page 2. Multiple example characteristics are also adapted from Rowe et al. (2015).

Transition Predictors of Education For Youth with Autism

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Career Awareness	Involves learning about opportunities, education, and skills needed in various occupational pathways to choose a career that matches one's strengths and interests
Career Technical Education	A sequence of courses that prepares students for a specific job or career at various levels from trade or craft positions to technical, business, or professional careers.
Exit Exam Requirement/ High School Diploma	Exit exams are standardized state tests, assessing single content area (e.g., algebra, English) or multiple skill areas, with specified levels of proficiency that students must pass to obtain a high school diploma. Diploma status is achieved by completing the requirements of the state awarding the diploma including the completion of necessary core curriculum credits
Goal Setting	Involves actions that enable a person to reach a specified preferred outcome
Inclusion in General Education	Requires students with disabilities to have access to general education curriculum and be engaged in regular education classes with peers without disabilities.
Paid Employment/ Work Experience	Work experience is any activity that places the student in an authentic workplace and could include work sampling, job shadowing, internships, apprenticeships, and paid employment. Paid employment can include existing standard jobs in a company or organization or customized work assignments negotiated with the employer, but these activities always feature competitive pay (e.g., minimum wage) paid directly to the student by the employer
Parent Expectations	Typically mean having high expectations for their children
Psychological Empowerment	A belief in the relationship between your actions and outcomes experienced
Self-Care/ Independent Living	Skills necessary for management of one's personal self-care and daily independent living, including the personal management skills needed to interact with others, daily living skills, financial management skills, and the self-management of health care/wellness needs.
Self-Determination/ Self-Advocacy	The ability to make choices, solve problems, set goals, evaluate options, take initiative to reach one's goals, and accept consequences of one's actions.
Social Skills	Behaviors and attitudes that facilitate communication and cooperation (e.g., social conventions, social problem solving when engaged in a social interaction, body language, speaking, listening responding, verbal, and written communication).
Student Support	A network of people (e.g., family, friends, educators, and adult service providers) who provide services and resources in multiple environments to prepare students to obtain their annual transition and post-secondary goals aligned with their preferences, interests, and needs.
Transition Program	Prepares students to move from secondary settings (e.g., middle school/high school) to adult life, utilizing comprehensive transition planning and education that creates individualized opportunities, services, and supports to help students achieve their post school goals in education/training, employment, and independent living.
Travel Skills	The ability to get to places outside home independently
Work Study	Allows your student the chance to earn high school credits while exploring their interests and gaining skills through paid and unpaid work experiences.
Youth Autonomy/ Decision-Making	Autonomy occurs when an individual acts in relation to their own interests, preferences, and abilities without the undue influence of others. Decision making is a process of selecting or coming to a conclusion about which set of potential solution is the best by teaching students to utilize problem-solving skills.

Transition Predictors of Education For Youth with Autism

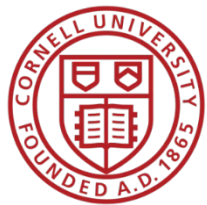
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- Career Awareness**
- Encourage the student and their family members to attend career fairs
 - Find job shadowing, internship, and/or volunteer opportunities in the community for student
- Career Technical Education**
- Conduct research on what the job market is for trades the student is considering so the student does not pick a trade in which there are no opportunities available.
 - Help the student select courses where they can earn career certificates (such as an Automotive Service Excellence (ASE) Entry-Level certification)
- Exit Exam Requirement/ High School Diploma**
- Educate the student on the course requirements/credits needed for graduation
 - Educate the student and their family members about the different diploma options offered and their impact on the student after high school (like getting into college)
- Goal Setting**
- Assist the student in setting their own education/training goal(s) based on their preferences, interests, strengths, and needs
 - Guide the student in setting realistic and attainable goals desirable to the student
- Inclusion in General Education**
- Use universal design for learning strategies to foster learning and engagement in inclusive settings
 - Educate other school staff on disability rights (like the student's rights to reasonable accommodations), as well as the impact of high teacher expectations and stereotypes at school and in the community
- Paid Employment/ Work Experience**
- Help the student identify job placements that offer minimum wage or higher, with benefits, 30+ hours of work per week, and reasonable accommodations.
 - Connect the student with adult services in the community (such as a job coach)
- Parent Expectations**
- Provide families and students with examples of student success stories, where students with different abilities have achieved ranges of education/ training goals
 - Demonstrate to families that you believe in the student and their ability to accomplish their goals
- Psychological Empowerment**
- Work with the student so that they understand the impact their actions will have. For example, if they come to work late every day, they may lose their job.
 - Give the student opportunities to reflect on and self-assess their strengths, challenges, and support needs.

Transition Predictors of Education For Youth with Autism

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- Self-Care/ Independent Living (Household Tasks)**
- Instruct students on developing independent living skills, like cooking, cleaning, personal hygiene, and managing money
 - Embed opportunities for students to practice independent living skills throughout the school day and at home!
- Self-Determination/ Self-Advocacy**
- Encourage the student to participate in and take an active role in their IEP meetings (such as leading with PowerPoint presentation, with support provided as needed)
 - Provide opportunities throughout the school day and at home for the student to make choices, problem solve, and advocate for their needs
- Social Skills**
- Provide family members with resources that support age-appropriate social skill development
 - Embed opportunities (such as through role play) for students to practice solving problems and resolving conflicts
- Student Support**
- Inform the student about different ways that they can become involved with the school and the local community, such as through participating in sports (like unified sports) or in clubs (like Best Buddies)
 - Connect the student with a peer or community mentor
- Transition Program**
- Include the student and their families in transition planning meetings and in conversations directly impacting the student's life
 - Conduct varied transition assessments in multiple settings
- Travel Skills**
- Teach the meaning of road signs and how to navigate, while embedding opportunities to make decisions (such as when it would be safe to cross a road)
 - Teach the student how to use public transportation using simulation and field trips
- Work Study**
- Inform student about how they can get involved in a work study program at school
 - Develop a plan for earning academic credits for paid and unpaid work experiences
- Youth Autonomy/ Decision-Making**
- Embed opportunities for the student to make decisions at school day and at home
 - Encourage the student to take on leadership roles at school, especially in discussion directly impacting their lives (such as when transition planning)



What feedback do you have for us?

How could we improve the tool?

How useful will the tool be for school staff?

What do you like/dislike about it?

Summary

- Youth with autism experience numerous obstacles, especially during the transition process
- There is strong evidence in the research literature supporting use of predictors for youth with disabilities, but less evidence for youth with autism
- Project ATTAIN's research expands the field's knowledge on predictors for youth with autism

Our Team's Next Steps

Year	Project Task	Description
1	Analysis of Existing PROMISE Data	Use rigorous research methods to analyze existing data from New York State PROMISE (Promoting the Readiness of Minors in Supplemental Security Income), a federally sponsored research initiative focused on removing obstacles to adult success for youth who receive Supplemental Security Income.
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3	Longitudinal Nationally-Representative Survey	Create and administer a nationally-representative longitudinal survey to better understand predictors of different outcomes for youth with autism. Analyze survey data using rigorous research methods.



Thank you for time.

If you have any questions, please contact Leslie Shaw at leslie.shaw@cornell.edu

Please visit our social media accounts for updates on our research!

- **Twitter:** <https://twitter.com/AutismATTAIN>
- **Facebook:** ATTAIN-Autism Transition to Adulthood Initiative