Objectives

• Participants will understand the importance of evidence-based decision making & be able to determine if a practice is evidence-based

• Participants will be able to describe the important elements of choosing, implementing & evaluating the effectiveness of evidence-based practices to meet individual needs

• Participants will be able to use evidence-based decision making to develop exemplary antecedent based interventions for individuals with ASD
The Golden Circle
Simon Sinek

WHY
motivation

HOW
process

WHAT
product
Evidence-Based Practice (EBP)

"evidence based practice is the integration of the best available research with clinical expertise in the context of patient characteristics, culture and preferences"
(American Psychological Association, 2005)

Isn’t this already being done?
Scurvy – A Case for EBP

- Described since 5th century BC
- Two million deaths from 1500-1800
- Attributed to lack of citrus fruit – 1593, 1601, 1614, 1636, 1747
- Scurvy “killed” by use of citrus fruit in 1795 and treatment was widely published
- Went on to kill thousands more - WHY?
SCURVY OBLITERATED IN 1795!!!

- Cases rose dramatically in next decades
  - Fleets used cheap and easy to obtain substitutes for fruits that had been identified as effective
  - Food was prepared in ways that decreased quality of Vitamin C
  - People began to doubt effectiveness of treatment and did not implement with fidelity
  - Steam engines resulted in shorter voyages and fewer deaths from scurvy which reduced urgency
Benefits of Adopting Routine Use of EBPs

• Contributes to informed decision making
• Increases likelihood of intended outcome
• Increases efficiency and effectiveness
• Long-term cost effectiveness
• It’s the law

EBPs increase the likelihood that students will experience positive, life-long growth
Why Professionals May Not Routinely Use EBPs

- Information overload
- Inertial decision making
- Inconsistent adoption
- Tradition, expert opinion and/or culture
- Overreliance on informal observation
- Intentional or unintentional bias
Evidence-Based Decision Making: Considerations

• Best available evidence-based resources
• Practitioner expertise
• Knowledge of individual characteristics, needs, values and preferences
• Contextual considerations
• Meaningful data to monitor progress
Best Available Evidence-Based Resources

- Skills, strategies and programs that have resulted in consistent positive results when experimentally tested
- Describes core intervention components that have been shown to be reliable in producing desirable effects
- Research results are based on a specific population

Mesibov & Shea, 2011
What Makes a Practice Evidence-Based?

- Practices that have met
  - rigorous peer review
  - have been replicated multiple times by trustworthy groups
  - and when systematically, consistently and reliably applied with fidelity have a history of yielding positive results

Adapted from Simpson, LaCava & Grancer, 2004
EBPs and ASD

• No single Nationally accepted definition or set of EBPs for ASD
• Several projects have defined them
  – National Professional Development Center on ASD (2014)
  – National Standards Project (2009 with a new publication due in 2015)
  – National Research Council (2001)
National Professional Development Center on ASD

- Multi-university center to promote use of evidence-based practices for children with ASD
  - UC Davis/MIND Institute
  - FPG Child Development Institute/UNC at Chapel Hill
  - Waisman Center/UW at Madison

http://autismmpdc.fpg.unc.edu/
Goals of NPDC-ASD

- Promote optimal learning for children with ASD and support families through EBPs
- Increase capacity to implement EBPs in early identification, intervention, and public education
- Increase number of highly qualified personnel to work with children with ASD

http://autismmpdc.fpg.unc.edu/
NPDC-ASD Resources

• EBP Report – 2014
  – Developed in same timeframe as NSP with similar findings but categorized differently
  – Includes 24 evidence-based practices
• Autism Internet Modules (AIMS)
  – Online modules of EBPs
• Evidence-Based Practice Briefs (BRIEFS)
  – Detailed documents of each evidence-based practice

More information can be found in Resource Guide or at http://autismpdc.fpg.unc.edu/
The Autism – Evidence-Based Technology Relationship

- Portable
- Affordable and reduces workload of teacher and students
- Cool factor
- Multi-purpose
- Assists with communication, processing and executive functioning demands
“Any item, piece of equipment, or product system, whether acquired commercially, off-the-shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities...”
Types of Technology

• Indefinite or temporary
• Low tech
  – Do not require electricity or battery
  – Typically low cost and easy to use
• “Mid” tech
  – Battery operated or simple electronics
• High tech
  – Require complex support
Evidence-Based Assistive Technology (AT) and ASD

- Must distinguish between research of AT and research of AT and ASD
- Growing body of research that AT is effective
  - Area of strength for many individuals with ASD
    - Visual representation
    - Increased motivation
    - Reduced challenging behavior during task
    - Should be used with caution
Technology-Based Treatment

• Most promise shown with technology that supports:
  – Discrete skills
  – Prompting – auditory and tactile
  – Organization
  – Error correction
  – Modeling, Practice, Feedback
  – Reinforcement
Evidence-Based Technology
Computer-Aided Instruction

- The use of computers to teach academic skills and to promote communication and language development and skills
- Determined to be evidence-based by NPDC
- Determined to be emerging practice by NSP
- Evidence-based in domains of communication skills, academics and cognition
- Depending on target skill, can be used for any age
Evidence-Based Technology Sources

• VCU Autism Center for Excellence
  
  – Website resources, apps, fact sheets, videos and trainings

• Wisconsin Assistive Technology Initiative
  
  – Assessments, tools, guidance

• Autism Speaks
  
  – Technology guide, evidence-based apps

• Closing the Gap
  
  – Website resources, apps, fact sheets, buying guides

More information found in Resource Guide
Evidence-Based Decision Making: Considerations

- Best available evidence-based resources
- Practitioner expertise
- Knowledge of individual characteristics, needs, values and preferences
- Contextual considerations
- Meaningful data to monitor progress
Evidence-Based Resources Need Practitioner Expertise

- EBP is not a “cookbook method” of selecting treatment
- Utilizing resources and professional judgment are a critically important part of decision making
- Research is ongoing and best practices evolve beyond current findings
Evidence-Based Decision Making: Considerations

- Best available evidence-based resources
- Practitioner expertise
- Knowledge of individual characteristics, needs, values and preferences
- Contextual considerations
- Meaningful data to monitor progress
Choosing and Implementing Evidence-Based Interventions

1. Assess the student and create measurable goals
2. Select an *appropriate* intervention/strategy
3. Staff preparation
4. Implementation
5. Data collection
6. Monitor progress

Taken from Odom et al., 2010
Step 1: Assess the Student and Create Meaningful Goals

- What are student’s current characteristics?
- What skills need to be developed?
- What are areas of strength?
- Address considerations of instruction
- Collaborate with team members
- Include family input and values
- Create meaningful, measurable goals

Taken from Odom et al., 2010
Considerations for Instruction
National Research Council

- Functional spontaneous communication
- Social skills
- Play (leisure) skills
- Cognitive development
- Functional academic skills
- Proactive interventions to address challenging behavior
Meet Harry

- 13-year old male
- High-functioning ASD; above-average IQ
- Attends fully-integrated middle school
- Has frequent “melt downs” in class
  - Yelling, throwing materials, laying on floor while thrashing and kicking
Step 1. Assess the Student

• Bright, friendly, socially awkward
• Wants to be seen as smart and capable
• Is embarrassed by meltdowns
• Proud of academic success
• Excels in math and science
• Struggles some in social studies and often in English where writing is a challenge
• Loves cooking, cooking shows and wants to be a chef
Step 1. Assess the Student, cont.

• Team FBA suggests that “melt downs” have a two-fold function
  – Avoiding unanticipated class assignment
  – Seeking attention (comfort/assistance) from adults
• Happens mostly in English
• English teacher regularly asks class to do spontaneous writing
• Harry struggles with changes to routine and surprises, particularly in difficult subject areas
Step 1. Create Meaningful Goal

• Harry will remain in general education classes and participate in an age appropriate manner
  – First step – stay in class (no melt downs)
• Harry will express frustrations by speaking in a calm voice and using coping strategies
Step 2: Selecting an Appropriate Intervention

• Identify which EBPs address the skill targeted within the student’s goal
• Some EBPs are more comprehensive
• Contextual variables have to be considered
National Standards Project
11 Established Treatments

- Antecedent Package
- Behavioral Package
- Comprehensive Behavioral Treatment for Young Children
- Joint Attention Intervention
- Modeling
- Naturalistic Teaching Strategies
- Peer Training Package
- Pivotal Response Treatment
- Schedules
- Self-Management
- Story-based Intervention Package
One Size Does NOT Fit All
Even if it is Evidence-Based

<table>
<thead>
<tr>
<th>Skills Increased</th>
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<tbody>
<tr>
<td><strong>Academic</strong></td>
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<tr>
<td>Behavioral Package</td>
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<tr>
<td>Behavioral Package</td>
</tr>
<tr>
<td><strong>Motor</strong></td>
</tr>
<tr>
<td>CBTYC</td>
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<td>CBTYC</td>
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<td>CBTYC</td>
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<td>CBTYC</td>
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<tr>
<td>CBTYC</td>
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<tr>
<td><strong>Behaviors Decreased</strong></td>
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<table>
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<tr>
<th>Ages</th>
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<tbody>
<tr>
<td>0-2</td>
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<tr>
<td>Behavioral CBTYC Joint Attention NTS</td>
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<tr>
<td>3-5</td>
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<tr>
<td>Behavioral CBTYC Joint Attention Modeling NTS Peer Training PRT Schedules Self-management</td>
</tr>
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<td>6-9</td>
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<tr>
<td>Behavioral CBTYC Modeling NTS Peer Training PRT Schedules Self-management Story-based</td>
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<tr>
<td>10-14</td>
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<tr>
<td>Antecedent Behavioral Modeling Peer Training Schedules Self-management Story-based</td>
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<td>15-18</td>
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</tr>
<tr>
<td>19-21</td>
</tr>
<tr>
<td>Behavioral</td>
</tr>
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</table>
Evidence-Based Decision Making: Considerations

- Best available evidence-based resources
- Practitioner expertise
- Knowledge of individual characteristics, needs, values and preferences
- Contextual considerations
- Meaningful data to monitor progress
Contextual Considerations

- Student
- Promotion of practice
- Users
- Institutional context

Fixsen, Naoom, Blase, Friedman, & Wallace, 2005
**Step 2. Select an Appropriate Intervention**

<table>
<thead>
<tr>
<th>Skills Increased</th>
<th>Academic</th>
<th>Communication</th>
<th>Higher Cognitive Functions</th>
<th>Interpersonal</th>
<th>Learning Readiness</th>
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<td>Behavioral Package</td>
<td>CBTYC Modeling</td>
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<td>Modeling</td>
<td>NTS</td>
<td>Peer Training</td>
<td>PRT</td>
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<td>Motor</td>
<td>Personal Responsibility</td>
<td>Placement</td>
<td>Play</td>
<td>Self-Regulation</td>
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</tr>
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<td>CBTYC</td>
<td>Antecedent Package</td>
<td>Behavioral Package</td>
<td>CBTYC</td>
<td>Antecedent Package</td>
<td>Behavioral Package</td>
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<tr>
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<td>CBTYC</td>
<td>Modeling</td>
<td>NTS</td>
<td>Peer Training</td>
<td>PRT</td>
</tr>
<tr>
<td>Problem Behaviors</td>
<td>Restricted, Repetitive, Nonfunctional Behavior, Interests, or Activities</td>
<td>Sensory/Emotional Regulation</td>
<td>General Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antecedent Package</td>
<td>Behavioral Package</td>
<td>Peer Training</td>
<td>Antecedent Package</td>
<td>Behavioral Package</td>
<td></td>
</tr>
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<td>Modeling</td>
<td>NTS</td>
<td>Peer Training</td>
<td>PRT</td>
</tr>
<tr>
<td>Motor</td>
<td>Self-management</td>
<td></td>
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<tr>
<td>CBTYC</td>
<td>Behavioral Package</td>
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</tr>
<tr>
<td>Joint Attention</td>
<td>Modeling</td>
<td></td>
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</tr>
<tr>
<td>NTS</td>
<td>Peer Training</td>
<td>PRT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedules</td>
<td>Self-management</td>
<td>Story-based</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
</tr>
</tbody>
</table>
Step 3. Staff Preparation

- All members of the team working with the child need training in the why and how to implement the intervention
  - Not just verbal instruction/explanation
  - Modeling
  - Practice
  - Feedback/correction
  - Coaching/monitoring
Step 3. Staff Preparation Resources
NPDC BRIEFS

- Developed for all 24 EBPs
- Includes:
  - Overview
  - Evidence-base
  - Step by step for implementation
  - Implementation checklist
  - Data collection forms
  - Evidence-based citations

More information available in the Resource Guide
Step 3. Prepare Staff Reinforcement Package

- **Overview**
- **Evidence-base**
- **Positive Reinforcement Step for Implementation**
- **Token Economy Steps for Implementation**
- **Negative Reinforcement Steps for Implementation**
- Implementation checklist
- Data collection forms
Step 3. Prepare Staff
Autism Internet Modules
Hosted by OCALI

- Registration required – no cost
- 45 online modules available related to evidence-based practices
- Case studies, videos, photos, assessments, and glossary of terms
- Certificates and professional credits available

More information available in the Resource Guide
Picture Exchange Communication System (PECS)
Video Examples: Correction Procedure

Video: Pyramid Educational Products: Four Step Correction Procedure 1
Provided by Pyramid Educational Consultants, Inc. (www.pyramidproducts.com)
Example of video available on the Autism Internet Modules
Step 4: Implementation

• Goal-driven
• Make a written plan
• Practice
• Fidelity
• Social Validity
Step 4: Implementation

Student’s Name: **Harry**  
Date: **10/21**

**BROAD-TERM GOAL:**  
Harry will remain in general education classes and act in an age-appropriate manner.

**HYPOTHESIS STATEMENT** (include detailed definition of behavior):  
When he is asked to write in English without prior notice of the event, topic, or requirements, Harry will yell, throw materials, and/or lay on the floor and thrash and kick. As a result, the assignment is terminated, he is sometimes removed from class, and he gets attention from the teacher or his 1:1 paraprofessional.

<table>
<thead>
<tr>
<th>Materials Needed</th>
<th>Person Responsible</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social narrative</td>
<td>Special Education Teacher</td>
<td>10/21</td>
</tr>
<tr>
<td>Dry-erase “recipe card”</td>
<td>Paraprofessional and English Teacher</td>
<td>10/21</td>
</tr>
<tr>
<td>Prep 1:1 paraprofessional and review priming and prompting procedures on AIM</td>
<td>Special Education Teacher and Paraprofessional</td>
<td>10/21</td>
</tr>
</tbody>
</table>

**Description of how the strategy is implemented:**

1. Talk to Harry about his meltdowns, brainstorm with him on why meltdowns need to stop and how you are going to try and help him.

2. Use social narrative to explain the purpose of the strategies.

3. Each morning in homeroom, Harry and 1:1 Paraprofessional discuss writing topic for English and create “recipe card”, generating topical ideas he can write about if needed.

4. At beginning of English class, teacher will quietly remind Harry to use his “recipe card” and ask his “sous chef” for help if needed.

5. Prompt Harry as needed when writing begins and progresses.

6. Consistently praise Harry for working on writing assignment and using his strategies to complete his work and remain calm.
Evidence-Based Decision Making: Considerations

- Best available evidence-based resources
- Practitioner expertise
- Knowledge of individual characteristics, needs, values and preferences
- Contextual considerations
- Meaningful data to monitor progress
Step 5: Data Collection

• Essential piece to long-term positive change
• Make it useful to your process
  – It is not just recording observations, it provides valuable information
  
  • Frequency
  • Duration
  • Latency
  • Intensity
  • Function

Look for patterns!
Data Collection Methods

• Methods for establishing baseline and collecting intervention and post-intervention data:
  – Simple frequency count
  – Scatterplot
  – Behavior Rating Scale
Scatter Plots

Scatterplot

Name: Greg

Description of behavior of interest: pushing children

Directions: At the end of each time interval, use the code below to fill in the square. Indicate the time and date beneath.

- No challenging behavior observed
- Challenging behavior observed

<table>
<thead>
<tr>
<th>Time</th>
<th>11/3</th>
<th>11/4</th>
<th>11/5</th>
<th>11/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 - 9:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00 - 9:45</td>
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<tr>
<td>9:45 - 10:30</td>
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<tr>
<td>10:30 - 11:30</td>
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<tr>
<td>11:30 - 12:00</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Date:    

---
Behavior: On task behavior

Behavior Definition: Looking at the teacher while she is talking; talking to the teacher; or looking at assignment

Total Observation Time: 10 minutes
Length of Interval: 1 minute

<table>
<thead>
<tr>
<th>Date</th>
<th>Interval Number</th>
<th>Total Intervals Behavior Occurred (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
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<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
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<td></td>
<td>4</td>
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<td>6</td>
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<td>+</td>
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<tr>
<td></td>
<td>10</td>
<td>-</td>
</tr>
</tbody>
</table>

Summary: The student was on task 6 out of 10 intervals, or 60% of the time

<table>
<thead>
<tr>
<th>Frequency Date:</th>
<th>Behavior: Call Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeroom</td>
<td></td>
</tr>
<tr>
<td>Math</td>
<td>1</td>
</tr>
<tr>
<td>Art</td>
<td></td>
</tr>
<tr>
<td>Gym</td>
<td></td>
</tr>
<tr>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>II</td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
## Behavior Rating Scale

**Modified from Prevent Teach Reinforce Model (Dunlap et. al.)**

### Behavior Rating Scale

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Dimensions Scale With Anchor Points</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>child</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Challenging Behavior:</td>
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<tr>
<td>Pro-Social Behavior:</td>
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</tr>
</tbody>
</table>

The table above represents the Behavior Rating Scale for a child, with columns indicating different behaviors and rows for the dimensions scale with anchor points from 1 to 5. The numbers in the cells represent the ratings for each behavior category during the collection period.
Step 5. Data Collection

Behavior Rating Scale

Child: **Harry**

Collection Period: **10/21 – 11/25**

Challenging Behavior: Yelling, throwing materials and/or progression to laying on the floor while thrashing and kicking (meltdowns) in 40 minute English class.

Pro-Social Behavior:

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Dimensions Scale With Anchor Points</th>
<th>10/21</th>
<th>10/22</th>
<th>10/23</th>
<th>10/24</th>
<th>10/25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meltdowns</td>
<td>2.1+ minutes</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td></td>
<td>1-2 minutes</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td></td>
<td>31 seconds - 1 minute</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1 - 30 seconds</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Step 6: Monitor Progress

• What does data collection show?
  – Behavior change (+ or -)
  – Fidelity
  – Connection to goal

• Outcome drives decisions
  – Adjust intervention
  – Maintenance
  – Generalization
Step 6. Monitor Progress

Behavior Rating Scale

Child: **Harry**

Collection Period: **10/21 – 11/25**

Challenging Behavior: Yelling, throwing materials and/or progression to laying on the floor while thrashing and kicking (meltdowns) in 40 minute English class.

Pro-Social Behavior: Sitting in seat and writing independently, using his recipe card and asking for assistance as needed.

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Meltdowns</td>
<td>2.1+ minutes</td>
<td>5</td>
<td>4</td>
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<td>5</td>
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</tr>
<tr>
<td></td>
<td>1-2 minutes</td>
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<td></td>
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<td></td>
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<td>4</td>
<td>4</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>31 seconds - 1 minute</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
<td>3</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1-30 seconds</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Writing Independently</td>
<td>81 - 100% of writing time</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>61 - 80% of writing time</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41 - 60% of writing time</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21 - 40% of writing time</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
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<td>2</td>
<td>2</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 – 20% of writing time</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Choosing and Implementing Evidence-Based Technology

1. Assess student/create goal/identify target skill that technology will address
2. Identify and acquire appropriate technology support
3. Staff preparation
4. Implementation
5. Data collection
6. Monitor progress
Questions/Comments

• Best available evidence-based resources
• Practitioner expertise
• Knowledge of individual characteristics, needs, values and preferences
• Contextual considerations
• Meaningful data to monitor progress

The links and/or locations to find all resources mentioned are available in the Resource Guide found on the CARD website.
Antecedent-Based Interventions

Definition:

- Arrangement of events that precede the occurrence of an interfering behavior and designed to lead to the reduction of the behavior
Antecedent-Based Interventions

Goal:

- To identify the environmental conditions that reinforce the interfering behavior, and then modify the activity or the environment accordingly.
Antecedent-Based Interventions

Uses:
1) To reduce interfering behaviors, including self-injury, stereotypies, and self-stimulation
2) To increase classroom engagement and on-task behaviors
For whom is ABI effective?

Learners with ASD ranging in age from 3-16 years!
Common ABI Strategies

1) Using highly preferred activities to increase interest
2) Changing the schedule/routine
3) Pre-setting the child before transitions
4) Offering choices
5) Altering the manner of instruction
6) Enriching the environment with sensory stimuli that serve the same function as the interfering behavior

NPDC, 2014
## Examples of ABI Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use highly preferred activities</td>
<td>Escape/Avoid</td>
<td>• Use the iPad to teach math skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Allow the child to hold a stuffed animal during task</td>
</tr>
</tbody>
</table>
Antecedent-Based Intervention
Pudding – Highly Preferred
**Preference Assessment Worksheet: Early Childhood**

**Date:** ____________________________  **Activity:** ____________________________

**Learner:** ____________________________

**Directions:** To identify the preferences of a learner with ASD, observe him/her for at least 30 minutes during a free choice activity time. Every 2 to 5 minutes, circle the material or toy that the learner is interacting with or looking at. If the material/toy is not listed in the following chart, please record in the blank spaces at the bottom of the page. After the observation is complete, identify which material/toy the learner with ASD interacted with the most. Complete at least 3 observations to identify highly preferred materials or toys. Highly preferred materials/toys can then be incorporated into non-preferred activities to increase motivation and engagement.

<table>
<thead>
<tr>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
<th>Animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
<td>Blocks</td>
</tr>
<tr>
<td>Bristle blocks</td>
<td>Bristle blocks</td>
<td>Bristle blocks</td>
<td>Bristle blocks</td>
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<td>Bristle blocks</td>
<td>Bristle blocks</td>
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<td>Cars</td>
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<td>Cars/</td>
<td>Cars</td>
<td>Cars</td>
<td>Cars</td>
<td>Cars</td>
<td>Cars</td>
</tr>
<tr>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
<td>Dolls</td>
</tr>
<tr>
<td>Little people</td>
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<td>little people</td>
<td>little people</td>
<td>little people</td>
<td>little people</td>
<td>little people</td>
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<tr>
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<td>Paint</td>
</tr>
<tr>
<td>Playdough</td>
<td>Playdough</td>
<td>Playdough</td>
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<td>Playdough</td>
<td>Playdough</td>
<td>Playdough</td>
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</tr>
<tr>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
<td>Pop up toy</td>
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<tr>
<td>Put in toy</td>
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<td>Put in toy</td>
<td>Put in toy</td>
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<tr>
<td>Puzzles</td>
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<td>Puzzles</td>
<td>Puzzles</td>
<td>Puzzles</td>
</tr>
<tr>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
<td>Sensory toy</td>
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<tr>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
<td>Sorting toy</td>
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<tr>
<td>Stack toy</td>
<td>Stack toy</td>
<td>Stack toy</td>
<td>Stack toy</td>
<td>Stack toy</td>
<td>Stack toy</td>
<td>Stack toy</td>
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<tr>
<td>Swing</td>
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<td>Swing</td>
<td>Swing</td>
<td>Swing</td>
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<td>Trains</td>
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<td>Trains</td>
<td>Trains</td>
<td>Trains</td>
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</table>

OCALI, 2014
## Examples of ABI Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modifying the schedule/routine</td>
<td>Escape/Avoidance</td>
<td>• Use visual activity schedules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Review assignment with a student before class starts</td>
</tr>
</tbody>
</table>

NPDC, 2014
### Examples of ABI Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-setting the child</td>
<td>Escape/ Avoid</td>
<td>• Place a visual schedule at the child’s desk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provide a ten minute warning before transitions</td>
</tr>
</tbody>
</table>

NPDC, 2014
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering Choices</td>
<td>Escape/Avoidance</td>
<td>• Allow child to choose his seat during a non-preferred activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Choosing which activity to do first</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Choosing which writing utensil to use</td>
</tr>
</tbody>
</table>
Offering Choices

Insufficient

Exemplary
# Examples of ABI Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altering manner of instruction</td>
<td>Escape/Avoid</td>
<td>• Providing written instructions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Providing instructions in a checklist, not paragraph</td>
</tr>
</tbody>
</table>
## Examples of ABI Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Functions Addressed</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enriching the environment</td>
<td>Get/obtain</td>
<td>• Allowing quiet play with clay or silly putty during class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Allowing child to pick at an eraser top instead of his nose</td>
</tr>
</tbody>
</table>
Antecedent-Based Intervention
Change in Instructional Structure
ABIs: Steps for Implementation

**Step 1:** Identify the interfering behavior, and set an intervention goal

**Step 2:** Collect baseline data

**Step 3:** Choose and implement an ABI

**Step 4:** Monitor Learner Progress

NPDC, 2014
How to Implement ABIs

Step 1: Identify the Interfering Behavior

• What, Where, When, How, With Whom
• Create a hypothesis statement

“Leah flaps her hands, rocks back and forth, and yells loudly each time the bell rings to switch classes because she does not like the noise, and she then needs help from a staff member to calm down and leave the room. This often results in Leah missing part of or the entire next class.”
How to Implement ABIs

Identify an Overall Goal of the Intervention

1) Leah will engage in minimal hand-flapping and body rocking when the bell rings at the end of each class period
2) Leah will remain calm and quiet when the bell rings at the end of each class period
3) Leah will walk to class independently when the bell rings at the end of each class period
## How to Implement ABIs

### Step 2: Collect Baseline Data

#### Event Sampling

<table>
<thead>
<tr>
<th>Date</th>
<th>Yelling</th>
<th>Total</th>
<th>Setting Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/01/2014</td>
<td>XXXXXXXXXX</td>
<td>13</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/02/2014</td>
<td>XXXXXXXXXX</td>
<td>16</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/03/2014</td>
<td>XXXXXXXXXX</td>
<td>14</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/04/2014</td>
<td>XXXXXXXXXX</td>
<td>11</td>
<td>Change in teacher</td>
</tr>
<tr>
<td>7/05/2014</td>
<td>XXXXXXXXX</td>
<td>9</td>
<td>Absence of teacher</td>
</tr>
<tr>
<td>7/06/2014</td>
<td>XXXXXXX</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7/07/2014</td>
<td>XXXX</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
How to Implement ABIs

Step 3: Implementing the ABI

• Choose a strategy that directly addresses the function of the interfering behavior

• Create a lesson plan that is followed consistently and with fidelity
  i. Weekly objectives
  ii. Statement of ABI strategy
  iii. Materials needed
Sample ABI Lesson Plan

Date: Week of 11/17/08 - 11/21/08  Classroom: Math class
Teacher: Mrs. Banks
Learner's name: Kenny
Interfering behavior: Banging head on desk when asked to complete an in-class assignment

Objectives for this week:
1. Kenny will complete one in-class assignment with minimal head banging (i.e., less than three times).

Strategy: Altering how instruction is delivered

To implement the strategy, I will:
1. Give Kenny written instructions for assignments rather than providing them verbally.
2. Modify worksheet instructions by providing Kenny with a checklist for completing the task.
3. Ignore Kenny when he bangs his head while also pointing to written instructions again.
4. Let Kenny have 10 minutes of computer time after completing an in-class assignment with minimal head banging (i.e., less than three times).

Materials needed:
1. Sentence strips: “Complete these math problems.” “Finish your work.”
2. Checklists for all worksheets that need to be completed this week.
Kenny’s Language Arts Checklist

- Share one homework answer with the class during homework review
- Check the lesson board for today’s language arts topic
- Raise your hand one time during the lesson to answer a question
- Pick up your new assignment from the desk at the end of class

10 minutes!
How to Implement ABIs

Step 4: Monitor Learner Progress

• Continue Event Sampling Data Collection
ABI Not Working?  TROUBLESHOOT!

• Is the interfering behavior well-defined? (observable and measurable?)
• Are the strategies being implemented consistently and with fidelity?
• Does the strategy directly address the identified function of the behavior?
Let’s try an example!

A good example is more valuable than good advice.
The Process

• Charlie is a third grade student with difficulty adjusting to changes in his routine.
• If met with an unanticipated event, Charlie will become verbally and physically aggressive toward staff.
• After he aggresses, teachers allow him to choose his next activity.
The Process

Step 1: Identify the interfering behavior, and set an intervention goal

Behavior: Charlie’s teacher conducts an FBA and determines that Charlie’s behavior only occurs immediately following unanticipated changes in his schedule.

Immediate Goal: Charlie will reduce his hitting of staff members from 8x/week to < 3x/week within 2 weeks.
The Process

Step 2: Collect Baseline Data

<table>
<thead>
<tr>
<th>Date</th>
<th>Hitting</th>
<th>Total</th>
<th>Setting Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/01/2014</td>
<td>XX</td>
<td>2</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/02/2014</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7/03/2014</td>
<td>X</td>
<td>1</td>
<td>Teacher Absent</td>
</tr>
<tr>
<td>7/04/2014</td>
<td>XX</td>
<td>2</td>
<td>Routine Disrupted</td>
</tr>
<tr>
<td>7/05/2014</td>
<td>XXX</td>
<td>3</td>
<td>Routine Disrupted</td>
</tr>
</tbody>
</table>
The Process

Step 3: Implement the ABI

<table>
<thead>
<tr>
<th>Charlie's Lesson Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interfering Behavior:</strong> Hitting staff members</td>
</tr>
<tr>
<td><strong>Objectives for this week:</strong> 1. Charlie will reduce the number of times he hits staff from 8x/week to &lt; 3x/week</td>
</tr>
<tr>
<td><strong>Strategy:</strong> Pre-set Charlie before changes in his routine.</td>
</tr>
<tr>
<td><strong>To Implement this Strategy, I will:</strong></td>
</tr>
<tr>
<td>1. Reintroduce Charlie's visual schedule each morning</td>
</tr>
<tr>
<td>2. Remind Charlie that changes may occur to his schedule, and that he will be given notice.</td>
</tr>
<tr>
<td>3. Provide as much warning as possible to Charlie, both verbally and visually, that a change will occur in his schedule.</td>
</tr>
<tr>
<td>4. Allow Charlie to have 5 minutes of free time when he behaves appropriately after a change in his schedule.</td>
</tr>
<tr>
<td><strong>Materials Needed:</strong></td>
</tr>
<tr>
<td>1. A laminated visual schedule</td>
</tr>
<tr>
<td>2. Cue card to hand Charlie when a change is going to occur</td>
</tr>
</tbody>
</table>
Sample Visual Schedule
# Step 4: Monitor Learner Progress

<table>
<thead>
<tr>
<th>Date</th>
<th>Hitting</th>
<th>Total</th>
<th>Setting Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/08/2014</td>
<td>X</td>
<td>1</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/09/2014</td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td>7/10/2014</td>
<td>X</td>
<td>1</td>
<td>Routine disrupted</td>
</tr>
<tr>
<td>7/11/2014</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7/12/2014</td>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Matt is a fourth-grader with autism who engages in hand-flapping behavior during class, which routinely disrupts his fellow classmates.

What should we do first?
Let’s Practice

Step 1: Identify the behavior and set an intervention goal

What comes next?
Let’s Practice

Step 2: Collect Baseline Data

Now what do we do?
Let’s Practice

Step 3: Choose and Implement an ABI Strategy

What’s the final step?
Let’s Practice

Step 4: Monitor Learner Progress

Don’t forget to troubleshoot!
Using Technology

Evidence-based Apps
Free of Charge

1) Tantrum-Tracker Lite (Data collection software)

2) Words and Blocks (highly preferred activity)
Using Technology

Evidence-based Apps

Paid

1) Visual Routine (Pre-setting)
2) Visules (Pre-setting, altering instruction)
3) Week Planner for Kids (Pre-setting)
4) Word Magic (highly preferred activity)
CARD Albany is now on Facebook
https://www.facebook.com/cardalbany

Required Coursework for Special Education Professionals now online – “Responding to the Needs of Students with ASD”
http://www.albany.edu/autism/nysed_autism_training.php

Online Distance Learning Training
http://www.albany.edu/autism/33452.php
# New York State Regional Centers for Autism Spectrum Disorders

New York State has established regional centers dedicated to serving individuals with Autism Spectrum Disorders (ASD). These centers aim to provide support, resources, and services to individuals and families affected by ASD. Each center has a specific focus area and offers unique programs and services. Here are the details of the regional centers:

- **Clinton - TBD**
  - **Albany Regional Center for Autism Spectrum Disorders**
    - SUNY Albany • 1535 Western Ave. • Albany, NY 12203
    - Phone: (518) 422-2574
    - [card@albany.edu](mailto:card@albany.edu) • [www.albany.edu/autism](http://www.albany.edu/autism)

- **Hudson Valley Regional Center for Autism Spectrum Disorders**
  - Westchester Institute for Human Development
    - Cedarwood Hall • Valhalla, NY 10595
    - Phone: (917) 493-7373

- **Old Westbury Regional Center for Autism Spectrum Disorders**
  - SUNY Old Westbury • 223 Store Hill Road • Old Westbury, NY 11568
  - Phone: (516) 628-5647
  - [autism@oldwestbury.edu](mailto:autism@oldwestbury.edu) • [http://www.owautism.com](http://www.owautism.com)

- **Rochester Regional Center for Autism Spectrum Disorders**
  - University of Rochester
    - 601 Elmwood Ave. • Box 671 • Rochester, NY 14642
    - Phone: 855-508-8485
    - [rcasd@urmc.rochester.edu](mailto:rcasd@urmc.rochester.edu) • [www.golisano.urmc.edu/rcasd-nyautism](http://www.golisano.urmc.edu/rcasd-nyautism)

- **Western NY Regional Center for Autism Spectrum Disorders**
  - Summit Educational Resources
    - 150 Stahl Road • Getzville, NY 14068
    - Phone: 716-629-3445
    - [www.summitautismcenter.org](http://www.summitautismcenter.org)

For more detailed information, visit the [New York State Regional Centers for Autism Spectrum Disorders](http://www.albany.edu/autism/nysrcasd.php) website.
Questions?

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