

syracuse

GO

go!

BABY



building mobility in
syracuse and beyond!

About

Community Engagement: In October 2022 an interdisciplinary group of students and faculty at Upstate Medical University in Syracuse, New York hosted a GoBabyGo! workshop to activate our community around the theme of mobility and inclusion. We partnered with Arise Adaptive Design to plan and host the event, which took place on the campus of Upstate Medical University. Arise Adaptive Design is a grassroots, co-creation maker space that designs and builds tools for inclusion, access, and independence. It is located at Arise Inc., which is our regional Independent Living Center, and is staffed by community volunteers, including students and faculty with Upstate's Center for Civic Engagement. The following student groups at Upstate Medical University helped plan and participate in our GoBabyGo! workshop:

- Upstate Accessibility Club
- Upstate Art Alliance
- Upstate Innovation and Entrepreneurship Group
- Upstate Ainsley's Angels Volunteers
- Upstate Public Health Interest Group
- Upstate Physical Therapy Club

Interprofessional Education: The GoBabyGo! event described in this guidebook provided a hands-on interdisciplinary learning opportunity for students at SUNY Upstate Medical University's Norton College of Medicine, the College of Health Professions, the College of Nursing, and the College of Graduate Studies. Graduate students at Syracuse University's School of Design and High School students with an interest in health careers at Syracuse's Henninger High School's P-Tech program were also invited to participate.

The high school students worked alongside Upstate students in order to adapt toy cars into power mobility devices for toddlers who have mobility impairments. Afterwards the interdisciplinary teams participated in a celebration as the toddlers rode their GoBabyGo! cars for the first time. It was a great way to introduce Henninger students to disability advocacy, to meet families, to experience team work, and to discover career opportunities in engineering, design, health care, and habilitation services. The Upstate students enjoyed the half-day event as well. It was an opportunity for interprofessional collaboration, mentoring, and shared celebration.

This guidebook summarizes students' hands-on experience with adapting GoBabyGo! toy cars into power mobility devices for children with disabilities. This guidebook also includes follow-up projects for making the community more accessible to kids with disabilities. The goal is to help students across disciplines and in various stages of education and clinical training to think about how and where the GoBabyGo! cars will be used, and what they can do to drive advocacy for inclusion in our community.





building mobility in syracuse and beyond! project based learning

how to build a mobility device so that a child can access the world AND
how to make the world more accessible for that child.



“ The same joy and excitement experienced by every dancer or musician, astronaut or athlete can be seen in newly mobile children ”

GoBabyGo! was founded by neuroscientist and physical therapist Cole Galloway PT, Ph.D., FAPTA, Hon. EIEIO, at the Pediatric Mobility Lab and Design Studio at the University of Delaware.

Learn more about his work by viewing his TedTalk:

<https://www.tedmed.com/speakers/show?id=292992>

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Go Baby Go!

About

GoBabyGo! is a national, community-based research, design and outreach program that provides modified ride-on cars to toddlers and preschoolers who experience limited mobility. Built from commercial ride-on toy cars, the DIY modifications cost less than \$400. GoBabyGo! cars thus are an affordable alternative to powered wheelchairs, which are very expensive, quickly outgrown, and can be hard to obtain via insurance reimbursement. GoBabyGo! began in 2012 with founder Cole Galloway at the University of Delaware. There are now more than 150 GoBabyGo chapters worldwide, each bringing together families, clinicians, robotics teams, universities, and other innovators. The goal is to reduce the impact of disability by allowing independence and enabling exploration.

Why

Toddlers learn about the world by reaching, grasping, crawling, rolling, walking, running, and playing. Experiencing cause and effect by moving independently is critical to early brain development. Mobility is important to peer interaction, cognitive development, and motor skill development. Exploration sets the stage for lifelong learning and socializing.

How

The GoBabyGo! workshops are half-day events that combine DIY innovation with clinical expertise and community engagement. Toy cars are adapted for toddlers who have mobility impairments due to conditions such as cerebral palsy and spina bifida. Teams of volunteers work together with clinicians and the family of each child to create a custom ride-on car. They learn how to wire an access switch and how to develop custom solutions for adaptive seating. Afterwards teams participate in a celebration as toddlers ride their GoBabyGo! cars for the first time. It's a great way to introduce STEM students to disability advocacy, to meet families and experience team work, and to discover career opportunities in engineering, design, health care, and habilitation services.

Building Mobility in Syracuse and Beyond! documents a GoBabyGo! event that was held at Upstate Medical University in October 2022 with STEM students from Henninger High School in Syracuse, New York. This guidebook also includes activities to help STEM students understand how the GoBabyGo! cars will be used in the community. Building

The projects in this guidebook show STEM students how to build a mobility device so that a child can access the world AND how to make the world more accessible for that child.

Step by Step Guide

Supply List

1. Activation Switch
2. On/Off Toggle
3. Power Drill & bits
4. Wire connectors
5. Wire Cutters & Strip
6. Wire - 12 or 14 Gauge

Before You Start



First:

Assemble the car according to the manufacturer's instructions. DO NOT put the windscreen on until the car is wired.

Then:

Before the build, charge the car battery per the manufacturer's recommendations.

Don't Forget:

Check that you have the tools and supplies you need

Step by Step

Step 1:

On the back-right portion of the car (just above the tail lights) drill a 1/2" hole that will accommodate the toggle switch.

**you can also place the cut-off switch on the front quarter panel, closer to the car battery, depending on the parent's wishes.

Step 2:

Cut 2 wires long enough to reach from the toggle switch to the car battery.

Step 3:

Connect two wires to the bottom of the screw of the toggle switch.

(if your toggle switch doesnot have screws you will have to connect the 2 wires according to the specific toggle design).

Step 4:

Take 2 free ends of the wires you attached and insert into wire connectors. Use two holes on the same side.

Step 5:

DO NOT cut the black wire from the battery. Locate the white wire that comes out of the batter and cut it in the middle so that both ends are at least 2 inches long.

Strip each end and put it into the other end of the wire.connector. Use two holes on the other side.

Step 6:

Remove the gas pedal from the vehicle. You will see a black box connected to a white box, separate these using little force.

DO NOT alter any of the wires on the white box. There is a white, red, and orange wire on one side and empty slots on the other side.

Step 7:

Take the activation switch and cut off the end of it (about 3 inches from the jack end). You will notice the wire coming from the button is two thin wires running side by side, separate those 2 wires using your fingers for approximately 2 inches.

Step 8:

Strip both ends and insert the end into the metal connector.

**It helps to twist and fold the exposed wire so that its width increased making it easiest to crimp and hold in place.

Step 9:

Insert wires from the activation switch into the gas pedal.

Place 2 metal connectors into the slots with the white and red wire (nothing goes into the slot with the orange wire).

Crimp the wire around metal inserts that fit into the plastic piece. Cover with electrical tape to hold in place.

Step 10:

Place the button on top of the steering wheel and run the black wires from the button through the steering column hole.

Secure the button with zip ties.

Links

GoBabyGo! Manuals and How-to Videos:

<https://www.gbgconnect.com/c/manuals-and-guides/5>

Go baby go!

Go Brinley!



Team Brinley:

left to right: Henninger High School students (x2), Physical Therapy Student, Brinley's Preschool Therapists (x2), Brinley's Dad.

Planning Our Event

Kids!

Children with mobility impairments who participated in our workshop were identified by clinicians at Golisano Children's Hospital and by physical therapists and occupational therapists from Onondaga County Early Intervention and Jowonio and Mainstreet Preschools. Parents were invited to help build the GoBabyGo! car for their child. Thus at least two people familiar with each child's unique personality and mobility needs participated in each build. Next, an interdisciplinary mix of students from Henninger High School, Syracuse University School of Design, and Upstate Medical University were assigned to each child's team. We identified four kids and assembled four cars at our GoBabyGo! event.

Personnel

Coordinator: It was helpful to have one person keep track of the teams, order supplies, arrange refreshments for the celebration, and share updates and follow up information with clinicians, students, and families. The coordinator also communicated with Henninger High School to arrange transportation and collect consent forms for the high school students. The coordinator organized monthly zoom calls to keep our planning activities on track.

Clinicians: We made sure to have at least one experienced clinician assigned to each team. Clinicians also helped to recruit the kids and families.

Build Instructors: We made sure to have at least one experienced builder from Arise Adaptive Design assigned to each team.

Photographer/Videographer: Two volunteers were assigned to document the builds and the celebration event. Another volunteer was assigned to collect the photography consent forms.

Space



For the Build: Each team required a large table to gather around. Work tables were well lit and had ready access to a power outlet. Our GoBabyGo! event included four teams, so a classroom space worked well. We set up several extra tables for supplies and instruction materials.



For the Celebration: A large open area, such as a gymnasium, is best. It can be helpful to arrange seating in a semi-circle, so that kids have plenty of room to ride their cars. We used the atrium at Upstate's Institute for Human Performance. An added bonus with this space was that employees and patients entering the building stopped by and celebrated with us.

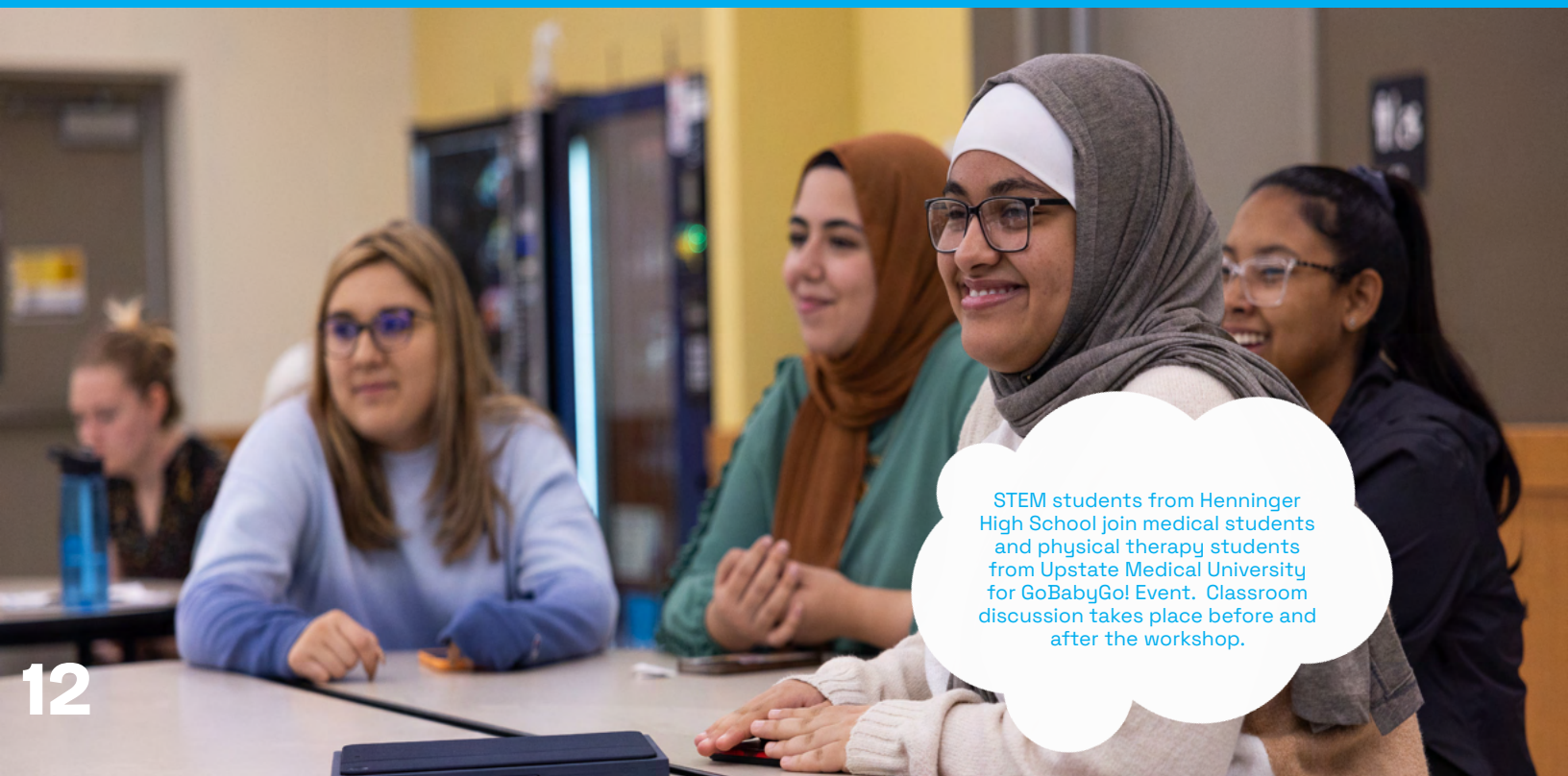
Timeline

- **6 months prior:** Clinicians identified kids and families. The coordinator reserved space, created a “save the date” and reached out to students.
- **3 months prior:** The coordinator confirmed participants, ordered supplies, and worked with Henninger High School to arrange transportation for students.
- **1 month prior:** Coordinator worked with clinicians to create and circulate 1-page orientation sheet for each team. Coordinator confirmed receipt of supplies and that the transportation and consent process for high school students had been arranged. Coordinator ordered refreshments for the celebration event and identified volunteers.
- **1 week prior:** Coordinator confirmed teams and volunteers and visited the venue to take care of last minute details. Builders pre-assembled the cars, charged car batteries, and confirmed supplies and manuals were available for each station.
- **1 day prior:** Coordinator, Arise Adaptive Design builders, and volunteers visited the venue to confirm details of the event. Cole Galloway and the Arise Adaptive Design team visited Henninger High School to orient students to GoBabyGo!

Day of Event:

- **11 am:** Coordinator and volunteers arrived to set up workstations, sign-in areas, refreshment table, and photo-op backdrop for the celebration event. Builders and clinicians assembled cars and supplies at the work stations.
- **12 Noon:** Students arrived for lunch and informal introductions
- **1-2:30:** Teams gathered at pre-assigned work stations to build the four GoBabyGo! cars.
- **2:30-3:00:** Kids arrived and final adjustments were made to their GoBabyGo! cars
- **3:00-4:00:** Celebration event took place with the entire group plus invited guests. Cole Galloway and the Arise Adaptive Design team shared remarks. Four kids drove their GoBabyGo! cars for the very first time!
- **4:00-5:00:** Volunteers cleaned up and helped families to take the GoBabyGo cars home. Students were bussed back to their school. A week later our Arise Adaptive Design team visited Henninger High School to debrief and share photos and videos from the event.

GoBabyGo!



STEM students from Henninger High School join medical students and physical therapy students from Upstate Medical University for GoBabyGo! Event. Classroom discussion takes place before and after the workshop.

Follow Up With Families

Discuss

Who was on your GoBabyGo team? What it was like to build the car together?
What was it like to see the kids ride their GoBabyGo cars for the first time?
Where and how will the GoBabyGo car you made be used?
What do you think should happen to a GoBabyGo car when a child outgrows it?

Project

The GoBabyGo workshop was just the beginning. Create a follow up letter with questions you would like to ask about the child and family who received the car you built. What would you like to know about how the GoBabyGo car is being used? Do they have advice on how to improve the car? What else would they like to build for their child? Have they already created other design solutions for their child?

“ Growing up in a power wheelchair, I found it difficult to keep up with my peers on the playground or in gym class. After countless adaptations to backyard games, I finally found power soccer. This is a sport for individuals in power chairs who have a thirst for competition. As I got deeper into the sport, I found myself representing my country on the US National Team. I cannot express how much power soccer means to me but I can see how important having a sense of freedom and camaraderie is. I hope to spread adaptive sport and inclusive recreation as much as I can to bolster communities and strengthen individuals.

”

- Peyton



More Info

GoBabyGo Connect is a forum designed to connect chapters, families, robotics teams, universities, and other innovators that are all working toward a common goal. Let's share our ideas, inspirations, manuals, pictures, questions, and success stories to learn from one another's work in order to help as many children in need as possible.

<https://www.gbgconnect.com/>

GoBabyGo Delaware:

<https://sites.udel.edu/gobabygo/>

GoBabyGo Oregon:

<https://health.oregonstate.edu/gobabygo>

GoBabyGo! Manuals and How-to Videos:

<https://www.gbgconnect.com/c/manuals-and-guides/5>

evaluate inclusion



Evaluate Inclusion

Discuss

Think about a park, gym, or playground in your neighborhood:
Do you see people of all abilities there?
Do you think it is welcoming to people who have disabilities?

What would make a park, gym, or playground feel inclusive and welcoming?
How would you evaluate whether a park, gym, or playground is inclusive?
Why is evaluation important?

Project

Evaluate a park or recreation site in your neighborhood for its physical and social inclusion. Inclusive U is an online training where you learn the foundations of inclusion. It was developed by the New York State Inclusive Recreation Resource Center at SUNY Cortland. It consists of nine video modules that you complete online at your own pace. It takes about ten hours to become a Certified Inclusivity Assessor (CIA). The training gives you the skills you need to assess a recreation site for its physical and social inclusion. Assessments are entered into a searchable database with descriptive information so that people with disabilities can better plan their recreation.

“ Mobility is very important. It affects you to move freely throughout your day to day activities. It is the foundation for living a healthy and independent life. ”

- Jay



More Info

Inclusive Recreation Resource Center:

<https://inclusiverec.org/>

Inclusion U Online:

<http://inclusiverec.org/inclusion-u-online>



Inclusive Recreation
Resource Center

create a virtual tour



Create a Virtual Tour

Discuss

What makes a park or nature area welcoming? What additional features would make a park or nature area welcoming to someone who uses a wheelchair? What additional features would make it welcoming to someone who is blind or deaf? And what features would make it welcoming to a neurodivergent person with sensory sensitivities?

Knowing ahead of time what to expect at a park or nature area is important for practical reasons. For example, for someone who uses a power wheelchair it's important to know that roads are paved and that power charging stations are available. Parks that provide signage and information about sensory-friendly spaces are welcoming to neurodiverse visitors. Knowing what to expect at a park by viewing a video or seeing photos is also an important way to make neurodiverse visitors welcome.

Project

Use a smartphone to make a brief (1-2 minute) video of a park or nature area to highlight accessibility features (or barriers). Partner with a disabled friend to record their experience and perspective. Pay attention to park entrance, amenities, pathways, and signage.

“ Parks are very good for everyone, but being inclusive is so much better. ”
- Stephanie



More Info

Virtual First Mile Erie Canalway:

<https://eriecanalway.org/explore/challenge/virtual>

AbleEyes:

<http://ableeyes.org/>



Experience Unified Sport

Discuss

Unified teams include athletes with and without disabilities on the same team.

Have you ever participated on a Unified Sports team?

1. If yes, how did you get involved and describe your experience with unified sport.
2. If not, discuss possible reasons why you have not had the opportunity to participate in unified sport

Project

1. Research unified sports opportunities in your area by talking with your School District's Athletic Director, your local Parks and Recreation Department, your local YMCA, or by contacting Special Olympics.
2. Join a team or host a unified sport event with local para or disabled athletes organizations.

“ It was awesome to run the race and wave at all the people!! I had happy tears!! ”
- Georgia



More Info

Ainsley's Angels is an organization that pairs endurance runners with individuals who have disabilities. The runners push athlete-riders in specially adapted chairs during events so that those with disabilities can also have the opportunity to run in local races.

<https://ainsleysangels.org/>

Camp Abilities empowers children and teens with visual impairments to be physically active and productive members of their schools, towns, cities, and communities, as well as to improve the health and well-being of people with sensory impairments.

<https://www.campabilities.org/>

Special New York State Public High School Athletics Association and Special Olympics New York:

<https://nysphsaa.org/sports/2021/6/8/unified-sports.aspx>

CNY Adaptive Sports:

<https://cnyadaptivesports.org/about>

National Center for Health Physical Activity and Disability:

<https://www.nchpad.org/>

experience unified sport



"Inclusion means we are immersed in activities that are accessible and social scenes of our choosing."
-Peyton Sefick



"Inclusion means "abilities" and how we share them together."
-Joy Papazides-Hanlon



"Inclusion means having the same choices as others when pursuing interests and new experiences. In the realm of Parks and Recreation, all members of a community will have the same opportunities to fully participate in, and indeed realize the many benefits of, recreational activities."
-Chris Abbot



"Inclusion means everybody knowing they have a place to be comfortable being themselves"
-Sophie Nash

Inclusion means eliminating barriers to participation. There is a way and we can figure this out together"
- Lisa Neville

Commit to Inclusion

Discuss

“What is inclusion? Inclusion is not a strategy to help people fit into the systems and structures which exist in our societies; it is about transforming those systems and structures to make it better for everyone. Inclusion is about creating a better world for everyone.” - Inclusion International

Think about a time when you felt included. What or who made you feel that way?

Describe a situation when you helped someone to feel included. What did you do or say?

How would you complete this sentence?

“Inclusion means.....”

Project

Create awareness about disability and inclusion with a media campaign. Collect images that demonstrate inclusion and people’s responses to the “Inclusion means...” prompt. Combine the photos and text to create a poster campaign and/or social media posts.

“ There are a lot of people that don’t know that much about disabilities and therefore don’t know how to interact with or include people with disabilities. We have to educate as many people as we can so that we can make a difference. ”

- Helena



More Info

Commit to Inclusion is a global campaign to end the exclusion of people with disability from physical activity and all associated areas.

<http://committoinclusion.org/>

activate your community



Activate Your Community

Discuss

The American with Disabilities Act (ADA), enacted on July 26, 1990, provides comprehensive civil rights protections to persons with disabilities, including state and local government services, and access to public accommodations and transportation. Title II, Article 8 requires that each town or city create an “ADA Transition Plan” to achieve compliance with ADA. Transition Plans include:

1. A list of the physical barriers and their locations in a public entity’s facilities that limit the accessibility of its programs, activities, or services to individuals with disabilities.
2. A detailed outline of the methods to be utilized to remove these barriers and make the facilities accessible.
3. The schedule for taking the necessary steps to achieve compliance with Title II.
4. Public complaint/grievance procedure.
5. The name/position of the ADA Coordinator and/or official responsible for the plan’s implementation.

ADA will celebrate its 35th anniversary in 2025. Think local: What has been achieved since 1990 and what more can still be done to build mobility and accessibility in your community?

Project

Go to the website of your city or town to locate its “ADA Transition Plan”. If it is not posted on the website, you can call city hall or ask a librarian to help you find it. Review the 5 sections of your city or town’s “ADA Transition Plan.” Attend municipal meetings to stay informed and to advocate.

“ Disability does not discriminate, so by providing access to parks, buildings, transportation, etc. within a community you are inviting in and including one of the most diverse and eclectic populations within the community. Better yet, by creating an accessible environment, you are not only allowing this segment of the population to now better experience the rest of the community, but you’re also providing them the opportunity for engagement and the chance to contribute back to the community. ”

- Connor



More Info

The ADA National Network

<http://adata.org/>

ARISE Adaptive Design

What is Adaptive Design?

ARISE Adaptive Design is a grassroots, co-creation community, designing and building tools for inclusion, access and independence. The ARISE Adaptive Design (AAD) program uses highly customizable building techniques along with low-cost everyday building materials to create practical solutions that are unique to the device user. These adaptive devices are typically built from the ground up to a participant's specific measurements, needs, interests and abilities.

The ARISE Adaptive Design maker space is located at Arise Inc., which is our regional Independent Living Center in Syracuse, New York. ARISE Adaptive Design got started in 2016 at a 3-day workshop that was hosted by the Syracuse University School of Design and led by Alex Truesdell, founder of New York City's Adaptive Design Association. Childrens from Jowonio Preschool and the Golisano Children's Hospital participated in the first workshop. Since that initial workshop ARISE Adaptive Design has expanded and become a positive force in our community.

ARISE Adaptive Design partners with local schools and universities so that students have an opportunity for hands-on learning while serving others living in their community. In addition to the GoBabyGo! workshops, ARISE Adaptive Design also offers a summer camp program with Syracuse Parks and Recreation at the Fire Barn building at Onondaga Park. ARISE Adaptive Design collaborates with the Central New York Robotics Club and local engineering firms to develop custom mobility solutions for kids and families and a variety of STEM programs at area schools.



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Acknowledgments

Building Mobility in Syracuse and Beyond!

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Invited Speakers

Dr. James "Cole" Galloway, PhD, PT, FAPTA, Founder Go Baby Go
Andrina Sabet PT, National Projects Coordinator Go Baby Go
Jean Minkel, PT, Senior VP at Independence Care Systems

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This guidebook was written by Nienke Dosa, MD, MPH
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And Thank You to the kids!

Brinley, Maura, Robert & Juelz



left to right: Bobbi Heard, Designer, BREKY Apparel and Syracuse City School District Graduate with Jean Minkel, Cole Galloway and Andrina Sabet at Henninger High School.



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