

Introduction

Zoos and aquariums have been offering programming, events, and visit accommodations to neurodivergent individuals for a number of years. While these efforts can provide great experiences, they are focused more on accommodation (and in some cases, tolerance of sensory inputs) than inclusion and, with a few exceptions, focus only outward on the guest experience.

There is an opportunity to build a stronger, research-informed evidence base to guide these efforts moving forward. To that end, the [Modeling Zoos and Aquariums as Inclusive Communities of Science \(MoZAICS\) for Autistic Individuals \(NSF DRL Award #2116026\)](#) project focused on developing an evidence-based framework of inclusive practices for zoos & aquariums and building a community of practice around inclusion broadly as one of its activities. This project represents one of the first of its kind on neurodivergent audiences within the zoo/aquarium context, and is the first to look at the full experience of neurodivergent individuals (specifically autistic individuals) within zoos and aquariums across programs/events, exhibits, volunteering, internship and employment opportunities.

Over the four-year project duration, MoZAICS developed a research-informed framework, tools and strategic vision for zoo/aquarium practitioners and institutions to support autistic individuals across the full spectrum of the zoo/aquarium experience including the general visit; exhibits; programs and events; and volunteer, internship and employment opportunities.

This framework was informed through an autism community study with autistic individuals and their family members/caregivers, a state of the field study across the zoo/aquarium field, as well as a review of literature that synthesizes existing research across disciplines for developing inclusive practices for autistic individuals in zoos and aquariums.

Purpose of Toolkit

This toolkit is intended to help zoos and aquariums understand inclusive practices and gain tools for supporting autistic and neurodivergent individuals who are visitors, volunteers, or employees. **It is not intended to be an exhaustive review of everything an organization needs to know or do related to inclusion.**

Rather, this toolkit may serve as a jumping-off point, offering a foundation and framework for zoos and aquariums to support science learning for individuals with autism across the full aquarium and zoo experience including the general visit, programs, exhibits, internships, volunteering, and employment opportunities.

There are four main chapters in this toolkit:

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Chapter One: Context and Importance of Inclusion
- Chapter Two: Getting Started
- Chapter Three: Example Accessibility/Inclusion Practices
- Chapter Four: Next Steps

Chapter One: Context and Importance of Inclusion will cover:

- the basics of neurodiversity
- an introduction to the MoZAICS accessibility and inclusion framework
- an overview of current/existing practices informed by research
- a summary of feedback from the autistic community

Chapter Two: Getting Started will cover:

- how to get buy-in and involvement from leadership (managers/board).
- how to conduct a self-assessment of current Diversity, Equity, Access & Inclusion (DEAI) program.
- how to form a DEAI committee.
- information about AZA's DEAI program

Chapter Three: Example Accessibility and Inclusion Practices will cover the following inclusive practices and supports:

- website accessibility
- visual supports
- accessible spaces/space modifications
- staff training
- community engagement
- media involvement
- programming
- inclusive hiring

Chapter Four: Next Steps will cover:

- Learn about how AZA can support your organization
- Join a community of practice
- Get information about AZA accreditation
- Read case studies from organizations that have used inclusive practices highlighted in this toolkit

This toolkit can be used by anyone interested in learning more about inclusive practices at community organizations, with a specific focus on zoos and aquariums. Whether you are an employee, volunteer, board member, or guest, this information will be relevant and beneficial.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

This toolkit is a flexible resource that can be utilized many different ways to support inclusion efforts. Below are a few ideas:

- Assign to new staff/volunteers to complete individually as part of onboarding and training.
- Integrate with facilitated training sessions for staff/volunteers. Participants can be asked to complete some sections ahead of time. Use reflection questions and training ideas in the toolkit for interactive components/discussion at the training.
- Use as a resource when championing inclusion efforts at your organization.

Chapter One: Context and Importance of Inclusion

The inclusion journey is complex and challenging. Not sure where to start? In this section, we'll introduce the MoZAICS accessibility and inclusion framework. This framework helps organizations better understand where they are on the pathway from accessibility to full inclusion. You'll also learn about neurodiversity and its impacts to consider across general visit experiences, programming, and staff/volunteer/internship policies and practices.

Neurodiversity

Neurodiversity refers to the variation in brain functioning and behavioral traits and recognizes and respects these variations as a normal human difference.

The concept of neurodiversity considers neurodivergence in terms of strengths as well as challenges.

Neurodiversity commonly refers to people with:

- Autism spectrum disorders (ASD)
- Dyslexia
- Attention deficit hyperactivity disorder (ADHD)
- Tourette's
- Intellectual Disabilities
- Anxiety
- Depression
- Obsessive-compulsive disorder (OCD)
- Sensory processing disorder

Please note: These are examples and not intended to be an exhaustive list.

Neurodivergent visitors in public spaces have unique support needs that are not immediately apparent. Aspects of participation in public spaces that might be challenging for neurodivergent people include:

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Loud or sudden noises
- Flashing lights
- Focusing or staying still
- Crowds
- Certain smells or odors
- Dealing with the unexpected
- Dealing with change

Different interests, skills, and perspectives also increase creativity and promote innovative ways to learn and approach situations. Keep in mind: inclusive supports for neurodivergent visitors do not deter the experiences of non-neurodivergent/neurotypical persons. In fact, many supports will only enhance the experiences of every visitor.

Person-First vs. Identity-First Language

The way we talk about disabilities is important. Currently there are two main ways that society talks about disabilities. Some individuals prefer person-first language, while others would rather use identity-first language.

Person-First Language	Identity-First Language
Way to recognize the child or adult as a person before defining them or labeling them with a diagnosis or developmental difference.	Places the disability-related word first in a phrase
Person-first language says what a person "has" rather than what a person "is": <ul style="list-style-type: none"> • "Person with autism" • "Person has cerebral palsy" 	The disability is seen as part of the person's identity that cannot be separated from who that individual is: <ul style="list-style-type: none"> • "Autistic person" • "Deaf person"
This is a common way of talking about and to someone with a disability, and often the approach used by providers and professionals.	Some individuals prefer to identify using first language because they feel the disability is an important part of who they are, or that they would not be the same person without it.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Strategies for Navigating Person-First vs. Identity-First Language:

- Listen to person's preferences
- Ask individuals how they talk about themselves
- Mirror similar language
- Lean towards person-first language as a default; however, if you hear the parent or individual use identity-first language, following their lead is the most respectful thing you can do

Accessibility and Inclusion Framework

Inclusion should be considered in all aspects of an organization, from the general visit experience to programs to internships, volunteering, and staffing. The MoZAICS team has developed a framework to help organizations understand the path from accessibility to inclusion.

We've identified three levels marking progress towards inclusion. As organizations progress from tolerance to inclusion, neurodivergent individuals transition from being merely present to becoming valued contributors within the community space. We've included examples of what each level looks in practice at zoos and aquariums.

- Level 1: Sensory Tolerance/Not Accessible. The opportunity to be in the physical space but not offered the opportunity to physically or socially engage in a way that benefits the individual or the experience of others.
 - General visit experience: An autistic individual visits a zoo/aquarium and has access to a quiet room in the aquarium, if needed. No other changes are made and no additional supports are offered for families visiting as part of the sensory friendly hours. *(no physical/social participation or contribution)*
 - Programs: The zoo/aquarium hosts a summer camp program where an autistic child who participates is provided with a backpack that includes headphones and fidget toys that they can use when needed during camp activities to tolerate sensory inputs. No additional modifications to the program are made and no other supports are provided to the child. *(no physical/social participation or contribution)*
 - Volunteer/internship/employment: The zoo/aquarium does not hire for neurodiversity but autistic staff are masking attributes associated with autism because they are uncomfortable identifying as autistic due to concerns about discrimination. *(no physical/social participation or contribution)*
- Level 2: Accessible. The opportunity to physically or socially engage in a way that applies a patch to an existing problem but does not address the entire problem. You are

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

primarily reducing or adjusting the barrier, but not addressing the full breadth of the issue.

- General visit experience: The zoo/aquarium offers visual schedules that families use to discuss what exhibits to visit, what path to take, and what programs to see. (*Social participation but not contribution*)
- Programs: Creating an environment where a non-vocal child can interact with program activities and respond to camp questions using a speech generating device, such as an iPad. (*Social participation but not social contribution*)
- Volunteer/internship/employment: A zoo/aquarium hires an autistic staff member. The hiring practices and training for staff remains the same. The autistic staff member listens at staff meetings but is not invited or supported to contribute to the discussions. (*Physical participation*)
- Level 3: Inclusive. The opportunity to physically and socially engage in a way that is valued and benefits others' experiences, ideally in alignment with the mission of the organization.
 - General visit experience: An autistic zoo guest is selected as one of several participants to showcase animals to other guests at a special zoo program. He is able to download a social story specific to the program ahead of time to successfully be included in the show.
 - Programs: Autistic teenager serves as a camp counselor helping younger campers complete camp activities. Teen is provided accommodations to take sensory breaks during camp lunch and is provided an agenda with detailed instructions to share with campers.
 - Volunteer/internship/employment: Develop full employee lifecycle support structure. Considering the recruitment, onboarding, and retention of that employee. Providing applicants with access, accommodations during the hiring process and then a system of support for that employee during their employment (*physical and social contribution*)

Take a minute! Before moving on to Chapter Two, reflect on the questions below:

- What were the most important things I learned in this chapter relevant to my role?
- What parts of this chapter most resonated with me or challenged me?
- What is one action step I can take based on what I learned in this chapter?

Chapter Two: Getting Started

DEAI initiatives are designed to address diversity, equity, accessibility, and inclusion at organizations. Effective DEAI programs extend far beyond statements on social media or websites expressing support for diversity and inclusion. Building an effective DEAI program is one of the first steps that should be prioritized to ensure that inclusive policies and practices permeate at all levels of an organization. In this section, you'll learn how to get buy-in from

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

senior leadership, how to conduct a self-assessment of current DEAI initiatives, and tips to consider when forming a DEAI committee.

Leadership Involvement

Leadership buy-in needs to be 2-sided. This means senior leadership is not only aware of the work being done to increase inclusion and progress all DEAI work, but also supports the work and is *committed* to supporting those advancing the work. Senior leadership should have on-going check-ins with DEAI committee at the organization and ensure the committee has tools (effort, supplies, personnel, re-tooling job descriptions, etc.) to advance work.

If there is no DEAI committee, senior leadership needs to consider an operational structure that considers accessibility. Ensure accessibility is built into work-streams and there are dedicated personnel to manage accessibility/DEAI efforts. Leaders should keep in mind that each neurodivergent individual is different so the solutions that work for one individual won't necessarily work for another.

Self-Assessment of Current DEAI

We've created an organizational assessment to be used as an internal perspective to gauge where an organization is at on the journey to creating a more inclusive zoo/aquarium. Download the [Organizational Assessment](#).

DEAI Committee

Starting a committee, especially one that is brand new to an organization, can be a very daunting task. Here are a few tips to consider when starting a new committee:

- Find out who is interested in joining the committee.
- Ensure you have diverse representation.
- Ensure you have representation from all departments.
- Decentralize the committee. One person should not be completely in charge of DEAI work.
- Be transparent with staff, community, leadership, etc.
- One size fits all communication does not work. Consider the methods in which you communicate with the community or internally with staff.
- Ensure the committee is flexible.

Take a minute! Before moving on to Chapter Three, reflect on the questions below:

- What were the most important things I learned in this chapter relevant to my role?
- What parts of this chapter most resonated with me or challenged me?
- What is one action step I can take based on what I learned in this chapter?

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Chapter 3: Example Accessibility/Inclusion Practices

This section dives into the nuts and bolts of example accessibility/inclusion practices. Keep in mind: this is not intended to be an exhaustive overview. Every organization has unique needs and will need to adapt these practices and supports. Use the examples provided as inspiration for visual supports, space modifications, and programming modifications. Learn how to make your website more accessible. Get ideas on how to engage the community and media in inclusive efforts. The section on inclusive hiring provides an overview of how to support neurodivergent employees and utilize their unique sets of skills and perspectives.

Website Accessibility

The World Wide Web Consortium (W3C) develops the Web Content Accessibility Guidelines (WCAG), an iterative set of guidelines for developers of web content, authoring tools, and accessibility evaluation tools. Web developers and others interested in web accessibility can review the WCAG guidelines through [this link](#).

Because of the extensiveness of the WCAG guidelines, we acknowledge that equipping folks with condensed lists of tips and checklists may be helpful when starting with web accessibility. Here are some tips:

- Color Contrast
 - Use sufficient color contrast for text and important graphics. Use a [color contrast checker](#).
 - Don't use color alone to convey information. About 1 in 12 men are colorblind and may not be able to use color-coded information.
- Links
 - Links should consist of meaningful text, not URLs, and not "click here."
 - Links should be underlined. (Text that isn't a link should not be.) It is possible to differentiate links from surrounding text using color, but you must have a color contrast ratio of 3:1 with surrounding text and 4.5:1 with the background.
- Text
 - Use plain language. [Learn more](#).
 - Use headings in order. Each web page or document should have a single Heading 1 (or H1) applied to the title. Use Heading 2 for sub-headings, then Heading 3.
 - Use correct styles. All text should be identified as a heading level, paragraph text, list, etc. Use built-in list formatting for lists, not dashes.
 - Keep text formatting simple:
 - Use simple sans serif fonts.
 - Avoid using ALL CAPS.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Minimize use of italics.
 - Do not use underlined text unless it's an active hyperlink.
 - Use left-justified (not centered) text in paragraphs. (Centered titles and headings are okay.)
 - Text should be resizable to at least 200% and reflow. You can check for this using Ctrl (+) and Ctrl (-). If you reduce the size of your window or view the page on a smaller device, does the text adapt to the width? Users should not have to scroll horizontally and vertically to read content.
 - Make sure the reading order is correct and logical. This is more likely to be an issue in complex documents with 2-3 columns or in PDF forms. To check, tab or arrow through content. Make sure:
 - When text reflows, it's in the correct order.
 - A screen reader reads the text in the correct order.
- Images and Graphics
 - Avoid text in images. If images contain text, the same information should also be provided in the alternative text or body text.
 - Use alternative text (alt text) for all images and graphics. The only exception is for images or graphics that are purely decorative, which should use null alternative text when possible (in html: alt="").
- Forms
 - Required fields should be identified. An asterisk is acceptable.
 - Webform fields must have (non-visible) labels in the code that are associated with the field.
 - Error messages must tell users where the error is and how to fix it. Error messages must be recognized by screen reader software.
 - PDF forms must have editable fields, tags, and tooltips. To create an accessible PDF form, you will need to remediate it.
 - Alternatives to handwritten signatures should be available.
 - Consider the submission process. When we require users to print, complete by hand, and mail forms, this results in barriers, both the person submitting the form and the person processing it.
- Tables
 - Consider presenting the information without a table. If the same information can be presented simply using headings and lists, this is preferable.
 - Designate row headers and column headers (when possible).
 - Avoid empty cells. Use "no data", "no value", "blank", "none", or "not applicable."
 - Avoid merged cells.
 - Keep tables simple. Two simple tables is better than one complex table.
 - Never use tables for layout.
- Other Features

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Ensure there are no keyboard traps. You should be able to Tab into all interactive elements using the keyboard and not get stuck anywhere.
- No flashing content.
- Don't use animated content that can't be turned off.
- Video recordings must have accurate captions.
- Audio recordings (podcasts) must have transcripts.

Additional website accessibility resources include:

- [Web Accessibility Tips](#)
- [Digital Accessibility: Checklist for Manual Review](#)

Visual Supports

Now let's discuss some tools that can help establish predictability and clarify expectations for community members who might be neurodivergent:

- Social narratives
- Visual schedules
- Modified maps
- Visual rules

Social narratives are an important support. The goal of a social narrative is to describe a situation, event, or social rule to help the reader understand what to expect. This predictability and understanding can help reduce anxiety and increase engagement during a visit to your organization. Since social narratives are most effective when used prior to an experience, consider posting the social narratives on your organization's website for people, school groups, and families to review in the days leading up to their visit. You can also have some available for visitors to use on site. Social narratives are a great tool to help visitors feel welcome, know what to expect, and promote a successful visit!

When composing a social narrative, keep these components in mind:

- Answer "wh" questions – what is it? Who will be there? What will I see? Hear? Smell? Do? Where can I go if I need a break or help? How long will the performance last? How long will I need to wait?
- Explain any rules or expectations – I will try to...(keep my hands away from the displays, walk when I am in the building, stay in my seat, etc.)
- Clarify what supports are in place – is there a quiet area? Someone I can ask for help? Are there maps or visual schedules available? Where are they found?
- Remember: the idea is to simply describe what the person can expect to happen, not direct or change behavior. The tone is reassuring and positive and focuses on what to do, rather than what NOT to do.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Example social narratives:

- [Santa Barbara Zoo Social Narrative](#)
- [Woodland Park Zoo Social Narrative](#)
- [Nashville Zoo Social Narrative \(Boo at the Zoo Event\)](#)
- [Tennessee Aquarium Social Narrative](#)

The benefits of **visual schedules** include:

- Increasing and clarifying communication. Schedules utilize the individual's visual strengths and therefore provide a receptive communication system to increase understanding.
- Promoting successful transitions. Visual schedules increase the predictability of upcoming events.
- Increasing independence. Visitors can use the schedule as a prompt to move from one activity to the next independently rather than relying on another person to lead them or verbally prompt them to the next area or activity.
- Encouraging flexibility. When a person knows that the schedule will tell them what is happening next, they may be less rigid about how they engage with the exhibits or activities.

Example visual schedules:

- [Country Music Hall of Fame Visual Schedule](#)
- [Nashville Zoo Visual Schedule](#)

A simple map shows important locations like quiet spaces, entrance/exit, bathroom, etc. A **modified map** shows areas that might be noisy, smelly, have wait times, options for quiet spaces, and other useful information.

Visual rules:

- Can show expectations during the day, a portion of the day, or during a specific activity.
- Makes expectations clear.
- Increases understanding.

Other visual support examples:

- [Nashville Zoo Scavenger Hunt](#)
- [Nashville Zoo Sensory Tour](#)

Space Modifications and Accessible Spaces

How can my organization make our space more accessible? View the tips below:

- Flexible seating
 - Allows autonomy as guests get to pick where they would like to sit.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Encourages guests to select a seat they are most comfortable with which increases likelihood they can successfully remain in seat for entire performance/program/activity/etc.
- Lighting
 - Many neurodivergent people have adverse reactions to harsh or erratic lights (i.e., strobe lights). Consider removing or avoiding strobe lights at your organization to create a more welcoming environment. If you have a display during a season (i.e., Halloween, Chinese New Year, etc.) that utilizes flashing lights, be sure to alert the public where these lights are by using maps, social narratives, signs, etc.
- Sounds
 - Many exhibits have music or sound effects that cannot be turned off or lowered. Have signs about sounds prior to exhibit. Include a marker for exhibits with sounds on a map and/or in a social narrative.
- Calm/quiet areas
 - Cool down spaces:
 - a space for guests to cool off if needed. Have space clearly marked and easily accessible.
 - Sensory room:
 - a space for guests to decompress and/or re-regulate after period of high emotion/stress. Should be a separate, easily identifiable space. Consider access of space and consistency of it truly being a sensory (quiet) space. For example do not assign a restroom as a sensory space.
- Specific boundaries
 - Clearly mark areas where guests should stay (i.e., paved area, unpaved trails, employee only spaces, etc.).
- Increase structure using activities
 - Scavenger Hunt
 - Crafts
- Eating areas
 - If possible, have a space within cafeteria/food court that is designed to reduce sound (noise reducing pads on walls, carpeting, etc.) for guests to eat at.
 - Allow outside food and drinks
 - Have food options listed on website for families to plan for food prior to visit. This also allows them to plan for potential contact with food sensitives

Staff Training

Organizational staff are not always familiar with how to best support neurodivergent people and are afraid to do something wrong. This can sometimes lead staff to do nothing which can limit accessibility and inclusion, as well as the culture among staff and visitors. For this reason and many others, it is important to prioritize providing training to staff to ensure they feel

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

empowered to support all people, including autistic people. Below are considerations an organization needs to consider when planning staff training:

Who to train?

- All staff, departments (e.g. Human Resources, Education, Guest Services, Grounds, Admissions, Exhibits, Security Teams, etc.), specific programming (camps, family programming), volunteers, Board of Directors

When to train?

- Consider staff turnover – will you include this as part of your onboarding process?
- Training can be difficult if staff work different shifts. Consider having multiple training opportunities.
- How often will autism or neurodiversity be included in training plan? Information regarding autism, as well as accessibility and inclusion of autistic people continues to evolve.
- Offer flexible training, along with a variety of ways to engage with the content (audio, visual, and action-based modeling).
- Employ the UDL principles in creating your trainings for staff.

Modality

- Synchronous, in person training – can allow for hands-on application of training content
- Synchronous, virtual trainings can allow staff at different locations to participate
- Asynchronous, virtual trainings- allow for more staff to have access

Content topics

- Defining accessibility and inclusion
- How inclusion matches the mission of the organization
- Overview of neurodiversity
- Autism and symbols
- Showing support to a visitor in distress
- Respectful communication
- Accessibility supports
 - Visual schedule
 - Social narrative
 - Modified map
 - Visual rules
- Inclusive employment

Identifying collaborators for training

- Credibility check:
 - Do they have training related to accessibility and inclusion?

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Can the training be customized for your organization?
- Do they have training or conduct research on autism?
- Do they have research cited on their website?
- Do they partner with autistic collaborators?
- Red Flags:
 - Do they offer a simple one and done workshop?
 - Do they offer a certification? Or recertification program?

Activity Ideas:

- [Defining Accessibility and Inclusion Training Activity](#)
- Accessibility Supports Training Activity
 - [Part 1: Identifying Existing Supports](#)
 - [Part 2: Building on Existing Supports](#)
- [Practice Using a Social Narrative Training Activity](#)
- [Supporting Visitors Training Activity](#)
- [Inclusive Hiring Practices Training Activity](#)
- Effective Communication Training Activity
 - [Using Concise Language](#)
 - [Using TO DO Statement](#)
- [Autism and Symbols Training Activity](#)
- [Defining Neurodiversity Training Activity](#)
- [Identifying Organization Strategy Around Neurodiversity Training Activity](#)
- [Putting It All Together Training Activity](#)

Community Engagement

While it is incredibly important to familiarize yourself with strategies for creating accessible and inclusive spaces for autistic individuals, it's equally important to maintain active and ongoing relationships with your local autistic communities.

Finding ways to engage your community doesn't have to be daunting. For tips on building relationships and facilitating community conversations, check out the community engagement toolkits linked below.

How deeply you engage your community can vary according to your financial resources, the time you have, and the needs of your organization or community; but regardless, you should be intentional about including the voices of autistic communities when choosing strategies or designing spaces. Remember that "engagement" can take many forms and involve different levels of involvement.

When choosing how to engage local autism communities for a particular project, ask yourself...

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

1. Why are you choosing that part of the spectrum as your approach?
2. Are there any aspects of "Shared Power" that you can involve in this project, in ways big or small?
3. What supports or resources do you need to engage communities in the ways you want?
4. Who do you know that can either champion your cause, or help you to access the resources you need?

Community engagement resources:

- [Creative Museum Toolkit Connecting to Communities](#)
- [Engaging Your Community: A Toolkit for Museums](#)

Media Involvement

Media and particularly, social media, are unavoidable elements of our lives today.

It is a key tool for the public to learn about what your organization is doing to expand inclusion and accessibility at your organization.

Different types of media dissemination include:

- Press release
- Social media
- Radio interview
- Podcasts

You will want to showcase what your organization is doing to increase inclusion and accessibility for the disability community. This means finding the right balance of what and how you share information to avoid exploiting disabled guests (even if it was not your intention!).

There is no definitive list of what to do and what not to do to avoid "inspiration porn," but the following should be taken into consideration as you share your organization's inclusion journey.

What to Do:

- Stories/images/videos should always include the perspective (quotes, ideas, impressions) of a disabled person.
- Any media posted of a disabled person should have their fully informed consent.
- If sharing a story of someone overcoming a difficult circumstance, be sure to identify what made it difficult and give readers/viewers concrete next steps of how to correct the depicted circumstance so that others do not have to experience the same thing.
- Highlight lived experience from the voice of the individuals.

What NOT To Do:

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Do not discuss any disability as a burden or a tragedy.
- Do not refer to disabled adults as children or allude to someone having a different “mental age” than their actual age.

Programming

Creating inclusive programs at your zoo or aquarium is an important step in ensuring your organization is truly inclusive. This can be done by modifying existing programs or creating brand new programs with inclusive supports implemented at inception. Consider the following steps when modifying and creating inclusive programs.

When creating a new or modifying an existing program, consider the following:

- Determine who the program is for: age, skill level needed to be successful, level of independence required
- Determine if space can be modified: remove unnecessary items, adjust lighting, adjust sound, add signs, define the space.
- Consider the type of program: informal, classroom-based, scripted presentation. Each has its own challenge and barriers that are created and need to be considered when modifying the program.
- Implement supports throughout: social narratives, task analysis, modified map, cue cards, visual schedules.
- Create a buddy program.
- Include questionnaire with registration: likes/dislikes, triggers, calming strategies, preferred activities, supports, assistive devices needed.

Inclusive Hiring

Consider these modifications to your hiring process to make it more inclusive:

- Inclusive verbiage on the job posting page
- Flexibility within job descriptions
- Modify screening process and reduce prerequisites for positions.
- Adapt interview format to meet the needs of applicants.
- Consider alternative formats for the interview.

Many companies are unsure how to handle disclosure of a disability. This is a personal decision of the employee or job candidate, but if you demonstrate an openness to flexibility and accommodations throughout the recruitment and hiring process, a person may feel more comfortable disclosing not only their disability, but what types of supports and accommodations might be helpful in making them successful, which benefits both the employee and the employer.

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Visual Supports

Visual supports are a key strategy to consider implementing in the workplace. These visuals provide structure and predictability, while clarifying expectations:

- **Work Schedule: To-Do List.** Similar to a simple “to-do list” this work schedule clarifies the tasks that an individual is to complete during the workday. It clarifies when the employee can take a break and for how long. It also includes the reminder of who to check in and out with at the beginning and end of the shift.
- **Calendar.** For employees who work different hours each day or week, a visual that clearly indicates the days and times that they are expected can be a helpful tool. Other employees may prefer to use a calendar app to clarify a work schedule. Helping your colleague find the right system that will work with their strengths can ensure that even a varying schedule can become more concrete and predictable. The key is implementing a schedule or system that the individual can set up, read, and manipulate independently.
- **Task Analysis.** A breakdown of certain tasks or skills to clarify the steps. These may be in the form of written lists or include photos or line drawings. Employees can reference the task analyses as necessary while they are performing their job. Task analyses can use photos to visually represent each step.

In addition to visual supports, consider implementing these other simple accommodations to encourage the success of employees:

- **Breaks.** You may want to supply a timer to clarify and structure break times. To set an employee up for success, discuss their needs and what type of break schedule may work best for them before they start on the job – fixed or flexible, frequent short breaks or fewer long breaks, etc.
- **Go-to person.** It is important to identify a “go-to person” for an employee to reach out to with questions or issues. Having a known “safe” person to turn to will reduce on the job anxiety and increase the likelihood that questions will get asked and answered.
- **Frequent check-ins and reflections.** Consistently meeting with an employee can establish effective communication. This time can also focus on employee goal setting and progress checks and provides a natural opportunity for employees to bring any concerns or needs to a supervisor.
- **Consider sensory needs.** Discuss the environmental conditions that could impact their work and set them up for success by accommodating those needs and preferences.
- **Use electronic organizational systems.** Work with your organization's IT team to implement tools like MS Planner, MS Loop, or other systems like Notion, Trello etc.

Take a minute! Before moving on to Tools, Templates, and Resources, reflect on the questions below:

- What were the most important things I learned in this chapter relevant to my role?
- What parts of this chapter most resonated with me or challenged me?

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- What two or three resources shared will I use in my work?
- In what ways can my organization improve our hiring practices to be more inclusive?

Tools, Templates, and Resources

- [Explore relevant articles and websites shared in this toolkit.](#)
- [Download the organizational self-assessment tool.](#)
- MoZAICS Project State of the Field Study Findings
 - [Overview of Study Findings](#)
 - [Survey #1: Current Practices](#)
 - [Survey #2: Sources of Info & Recommendations](#)
 - [Survey #3: Individual & Organizational Readiness](#)

Contributors, Advisors, & Research Participants

- Contributing Organizations:
 - Oregon State University
 - Reimagine Research Group
 - Vanderbilt Kennedy Center Treatment and Research Institute for Autism Spectrum Disorders (TRIAD)
 - Association of Zoos and Aquariums (AZA)
- Co-Principal Investigators
 - Kelly Riedinger, Ph.D. – Senior Research & Program Lead in Informal, K-12 and Connected Learning, STEM Research Center at Oregon State University
 - Lauren Weaver, M.S., BCBA, LBA-TN – Director of Community Engagement, Vanderbilt Kennedy Center’s TRIAD
 - Kari Hart, M.Ed. - Director, Professional Development and Education, AZA
- Project Team
 - Victoria Bonebrake, M.A. – Research and Evaluation Assistant, Oregon State University
 - Blaire Donnelly-Mason, CTRS, MSRLS – Program Manager, Vanderbilt Kennedy Center’s TRIAD
 - Rachael Jenkins, M.A. – Educational Consultant, Vanderbilt Kennedy Center’s TRIAD
 - Brian Johnson, Ph.D. – Co-founder/Partner, Inform & Research
 - Joy Kubarek, Ph.D. – Co-founder/Partner, Inform & Research
 - Zachary Williams, B.S. – MD/Ph.D. Candidate in Neuroscience and Hearing & Speech Sciences, Vanderbilt University
 - Ashley Neybert – Contributor, Oregon State University

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- RoJamie Oyenuga- Contributor, Reimagine Research
- Jenni Garcia - Community of Practice Coordinator
- Victoria Sellers, Ph.D. - Researcher, Oregon State University
- Project Advisors
 - Emelyne Bingham, DMA – Principal Senior Lecturer in Music Theory and Cognition, Blair School of Music at Vanderbilt University
 - Louise Bradshaw – Director of Education, Saint Louis Zoo
 - Karen Burns – Guest Engagement Supervisor, Virginia Aquarium & Marine Science Center
 - Chad Fifer – President and CEO, Aquarium of Niagara
 - Dr. Kaite Gotham – Assistant Professor, Rowan University
 - Dana Murphy – VP Learning & Community Engagement, Lincoln Park Zoo
 - Dr. Kristie Patten – Vice Dean of Academic Affairs; Professor of Occupational Therapy, New York University
 - Grayson Ponti – Consultant
 - Dr. Christine Reich, Ph.D. – Chief Learning Officer, Museum of Science
 - Dr. Mandy Rispoli, Ph.D., BCBA-D – Quantitative Foundation Bicentennial Professor, University of Virginia
 - Amy Rutherford – Vice President of Learning & Engagement, Audobon Nature Institute
 - Dr. Zachary Warren – Executive Director, Vanderbilt Kennedy Center’s TRIAD
 - Keith Winsten – Executive Director, Brevard Zoo
- Research Participants
 - Akron Zoological Park
 - Albuquerque Biological Park
 - Aquarium of the Pacific
 - Birch Aquarium at Scripps Institution of Oceanography
 - Birmingham Zoo
 - Blank Park Zoo
 - Boonshoft Museum of Discovery
 - Brevard Zoo
 - Buttonwood Park Zoo
 - Central Florida Zoological Park
 - Central Park Zoo
 - Cheyenne Mountain Zoological Park
 - Dallas Zoo
 - Denver Zoological Gardens
 - Disney's Animal Kingdom
 - Franklin Park Zoo
 - Great Plains Zoo and Delbridge Museum of Natural History
 - Henry Vilas Zoo

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- Houston Zoo
- Indianapolis Zoological Society, Inc.
- International Crane Foundation
- Jacksonville Zoo and Gardens
- Jenkinson's Aquarium
- Kansas City Zoo
- Lee Richardson Zoo
- Lincoln Park Zoological Gardens
- Lion Country Safari
- Little Ray's Nature Center - Syracuse
- Little Rock Zoological Gardens
- Los Angeles Zoo
- Memphis Zoological Garden and Aquarium
- Milwaukee County Zoological Gardens
- Minnesota Zoological Garden
- Mote Marine Laboratory and Aquarium
- Mystic Aquarium
- National Aquarium
- National Aviary
- National Mississippi River Museum & Aquarium
- New England Aquarium
- Newport Aquarium
- New York Aquarium
- North Carolina Aquarium at Fort Fisher
- North Carolina Aquarium at Pine Knoll Shores
- North Carolina Aquarium on Roanoke Island
- North Carolina Zoo
- Oregon Coast Aquarium
- Oregon Zoo
- Potawatomi Zoo
- Potter Park Zoological Gardens
- Prospect Park Zoo
- Queens Zoo
- Racine Zoo
- Reid Park Zoo
- Ripley's Aquarium of Myrtle Beach
- Riverbanks Zoo and Garden
- Roger Williams Park Zoo
- Saint Louis Zoo
- San Diego Zoo
- Santa Barbara Zoological Gardens

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- SEA LIFE Orlando Aquarium
- Seattle Aquarium
- Sedgewick County Zoo
- South Carolina Aquarium
- Sunset Zoological Park
- Tennessee Aquarium
- The Florida Aquarium
- The Living Desert
- Tulsa Zoo
- Utah's Hogle Zoo
- Virginia Aquarium & Marine Science Center
- Virginia Living Museum
- Walter D. Stone Memorial Zoo
- Western North Carolina Nature Center
- Woodland Park Zoo
- Zoo America
- Zoo Atlanta
- Zoo Boise
- Zoo Knoxville
- Zoo Miami
- Zoo Tampa

Thank you to the following people for their contributions in making this toolkit richer by sharing their lived experiences:

- Alexander Jones, Woodland Park Zoo
- Chad Fifer, Aquarium of Niagara,
- Caitlin Mack (working on affiliations)
- Wrylie Guffey (working on affiliations)

This material is based upon work supported by the National Science Foundation under Grant No. 2116026. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.