

LEARNING & RESEARCH

2023

YEAR IN REVIEW

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# INTRODUCTION

Children’s Museum of Pittsburgh’s Learning and Research Department provides valuable research and evaluation services to support the Museum’s work and advance the broader museum field. Internally, the Department allows the Museum to not only deliver outstanding experiences but to inform those experiences with data and to understand what makes them work, and why--all with the focus on meeting the Museum’s mission and vision:

## MISSION

To provide innovative and inclusive museum experiences that inspire kindness, joy, creativity, and curiosity for all learners. We forge connections with artists, community partners, and neighbors to work on behalf of children, youth, and families.

## VISION

To transform education.

Externally, as the largest research and evaluation group housed within a children’s museum, the Department generates and shares insights that span across museums, informal learning institutions, schools, and beyond.

The Claude Worthington Benedum Foundation and PNC Foundation provided foundational gifts to ignite the Department’s work in 2021 with an explicit focus on the intersections of in-school and out-of-school learning and a research agenda framed by practices of equity, racial justice, and antiracist education.

This document summarizes the Department’s activities in 2023. Highlights from the year include growing the team to expand its capacity to work with the Museum’s Exhibits and Education Departments; securing over \$1M of federal grant funding to conduct a field-leading research agenda around justice, equity, diversity, accessibility, and inclusion (JEDAI); building new knowledge through a wide range of studies; and creating and disseminating tools that practitioners can use to enhance accessible and humanizing approaches to informal learning.

## Founding funders:

**CLAUDE  
WORTHINGTON  
BENEDUM  
FOUNDATION**



# MEET THE TEAM

The heart of the Learning and Research Department is its highly passionate, curious, and creative people. This diverse team brings a range of technical expertise and personal experiences that give us a breadth of wisdom for pursuing the Department's research agenda and the Museum's mission. In 2023, the Museum invested in expanding the team by adding an additional position in order to grow the Department's ability to support the Museum with data that enhances our work.



Danielle Linzer is the Senior Director for Education, Learning, and Research. She has an extensive expertise in museum education and accessibility. Her initiatives have been honored with awards from the Kennedy Center, Museums and the Web, the American Alliance of Museums, the Jodi Mattes Trust, and more. Ms. Linzer served as a Senior Fellow for the American Alliance of Museums and was Co-Chair of the Museum Access Consortium.



Dr. KT Todd is the Director of Learning and Research. Dr. Todd brings more than 15 years of experience conducting social science research with a focus on equitable learning in out-of-school time. They are an advocate for culturally responsive and transformative research and evaluation practice, infusing creativity as they use data as a tool for change.



Zainab Adisa or "Z" is a Learning and Research Associate. Adisa is a Nigerian-American researcher who works to advance justice, equity, diversity, and inclusion within informal and formal education. She collaborates with various stakeholders from students to community partners to create programming and conversation that amplifies youth voices and uplifts their intersectional identities.



Nour al-Zaghloul is a Palestinian transfeminine Learning & Research Associate. Prior to the Museum, they worked in schools and research labs with a focus on the systems of childhood development and how systems interact to create changes over time. She is passionate about using research as a method to identify areas of improvement and pragmatically circumvent systemic barriers.



Angelica Miller is a Learning & Research Associate who ensures the Museum's programs, activities, and exhibits meet the mission and focus on justice, equity, diversity, and inclusion. Angelica has worked in informal education for her whole career. No matter what position she holds, she strives to connect museums to their communities and make them welcoming spaces for all.

# UNDERSTANDING AUDIENCE

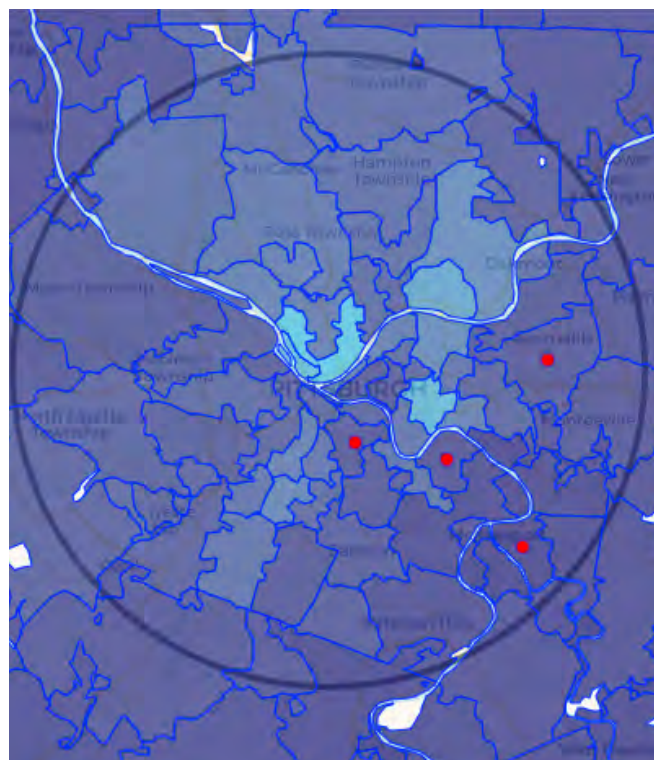
Thousands of people visit the Museum each week, generating large amounts of data. This data—from ticket sales, surveying, and more—can help the Museum better understand our audience and make wise decisions.

## Visitor Experience

In spring 2023, the Department’s ongoing visitor experience survey gathered its 1,000th response. This survey provides valuable data about who the Museum’s audience is, why they visit, what they do at the Museum, how they perceive their visit, and what could be improved. In 2023, the survey helped us understand how the visitor experience correlated with factors such as increased crowding (overall satisfaction dipped but mission metrics held steady) and demonstrated our audience’s diversification during our free month of August. The survey also showed a slight increase in overall visitor experience in 2023 as compared to 2022.

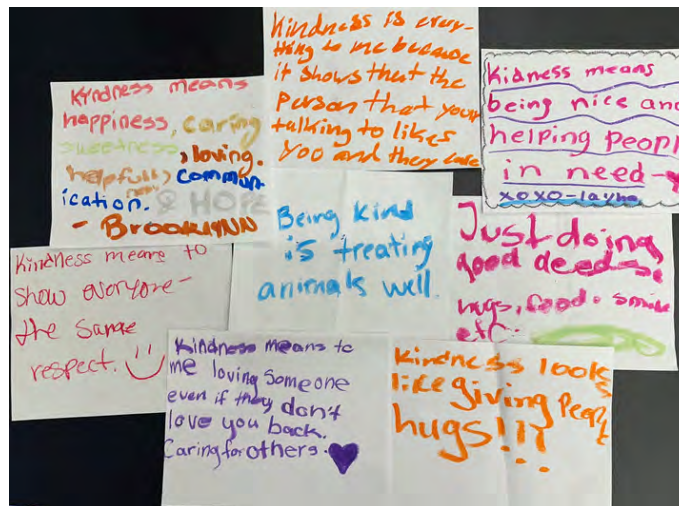
## Zip Code Analysis

In 2023, the Learning & Research Department engaged with the Visitor Services, Marketing and Communications, and Membership teams to conduct an in-depth analysis of the zip codes where the Museum’s visitors come from. Learning & Research compiled data from multiple Museum sources with public Census information to develop an interactive dashboard that maps and sorts data based on various metrics. This work identified several key zip codes that have high populations of children but low attendance rates; the Marketing team is now able to provide targeted communication and the Museum can engage in focused community engagement in these areas.



# MISSION HIGHLIGHT: KINDNESS

Kindness is part of Children's Museum of Pittsburgh's mission. In pursuit of this mission, the Department led a series of connected studies about the Museum's newest exhibition, the Kindness Gallery.



## Observing the Kindness Gallery

Our focus on kindness began when the Exhibits team wanted to know how people were using the Kindness Gallery and what they understood kindness to be. We observed visitors using a timing and tracking method that assessed which exhibits people used, in what order, for how long, and in what ways. This highlighted how the Package Delivery System and Gravity Room were the most commonly used, and that there were two distinct groups of visitors: those who used many components but spent little time at each one and those who spent long amounts of time at just one or two activities.

## Defining Kindness

The second phase of our initiative involved interviewing 63 visitors, 21 Museum staff, and more than 75 community members about how they define kindness. Across all three groups (visitors, staff, and community partners), there were similar definitions of kindness. Consistently, people noted that kindness involved helping and sharing; being nice, loving, and respectful; and making physical displays of kindness such as hugs or smiles. Interviewees shared deep and memorable stories of kindness (and unkindness!) and we are currently working to create an artistic means of sharing this data back with our community.

## Prototyping: How to Enhance Kindness

Embracing the Museum’s commitment to ongoing learning and innovation, the third element of our kindness initiative involved developing and testing a prototype that aimed to promote kind behavior in the Kindness Gallery. This prototype arose from an increased incidence of rough behavior in the Gravity Room (a space in the Kindness Gallery with a slanted floor) that resulted in several injuries. Working with the Exhibits and Education Departments, Learning & Research developed a spinning wheel that suggests different kind behaviors visitors can take while waiting for and then entering the Gravity Room. Researchers prototyped this wheel with field trip groups and community partners and got their input about what kind behaviors could be added to the wheel.



# PROTOTYPING + ART AND EXHIBITS

Art and data don't always seem like they belong in the same sentence. Yet, at Children's Museum of Pittsburgh we find that prototyping can be a powerful way to develop art for a museum environment where pieces need to not only be beautiful but also accessible, understandable, robust, and fun.

## Tough Art

The Museum's Tough Art residency challenges artists to make pieces that are engaging, beautiful, and able to withstand the use of thousands of children, youth, and families who visit the Museum each year. In 2023, Learning & Research team members became resources to the artists, attending their orientation and consulting with each artist about how they could test components of their pieces with visitors before investing too much time and energy on an idea that might not ultimately work.



## Work it out Wombats

As part of a National Science Foundation grant, Children's Museum of Pittsburgh worked with WGBH Boston to create an exhibit designed to support young children's computational thinking skills by engaging in STEM learning about the "Work it out Wombats" television program. The Learning & Research Department collaborated with WGBH's researchers to prototype the materials before they were distributed to radio stations all around the country. Our team members conducted observations and gathered surveys about the activities, doing several rounds of iterative testing and comparing how the activities performed in both indoor and outdoor environments.



# ENGAGING WITH EDUCATION

The Learning and Research Department regularly conducts evaluations for the Education Department, aiming to understand what people get out of their experiences, what contributes to those positive outcomes, and how the programs could be further improved. In addition to the highlighted projects below, in 2023 the Department led evaluation studies about summer camps, story time programming, workshops, and field trips.

## Arconic Fusion

Multi-year support from the Arconic Foundation enables the Museum to provide innovative metal-working and maker education programs. In 2023, the Learning and Research and Maker Education teams collaborated to gather data from over 100 students as well as their teachers and chaperones. The student data informed the ways educators presented instructions, and teacher data showed evidence of educators extending maker education into their classrooms after their visit. In 2024, Learning & Research will conduct a focused study on the upcoming youth residency program and explore how to support safe risk-taking.

## MACS Electives

Manchester Academic Charter School's (MACS) middle school shares a campus with the Museum, and the two organizations maintain an ongoing partnership. In 2023, the Museum began to offer elective courses to MACS students, and the Learning & Research team gathered data to study this new initiative. In spring 2023, we worked with students to assess their experience and led a focus group with elective teachers. The findings led to changing how the electives are structured for fall 2023, when Learning & Research gathered pre- and post-data that demonstrated students' increased sense of connection with MuseumLab.



# ADVANCING JEDAI

Although a commitment to justice, equity, diversity, accessibility, and inclusion (JEDAI) is present in all of the Museum's work, several Learning and Research efforts stand out.

## Accessible Art & Making

Thanks to funding from Remake Learning, the Department worked with youth with disabilities to provide and enhance accessibility in art and making activities. First, the project collaborated with Pittsburgh Pioneer Education Center and Pressley Ridge's School for Autism and School for the Deaf, engaging in mutual professional development. Then, students enjoyed outreach visits, field trips, and a culminating event where they shared feedback about what makes art and making experiences fully engaging, joyful, and empowering for disabled youth. Through this project, the Department developed a suite of tools for planning and evaluating programming to embrace a range of abilities and disabilities. These tools will be highlighted nationally in 2024 at the SXSW EDU Conference.

## Wayfinding

Thanks to a grant from the Allegheny Regional Asset District, the Museum engaged in a project to enhance wayfinding, particularly to support people with disabilities. Learning and Research invited more than 20 individuals and families with disabilities to visit the Museum and give feedback to inform wayfinding enhancement. The results led to changes to the Museum's map, Braille guides, a new touch graphic that orients visitors to MuseumLab, enhancements to the Museum's social narrative (a booklet that describes what to expect during a visit), and supported the development of a new video orientation to the campus.





## Communities of Belonging

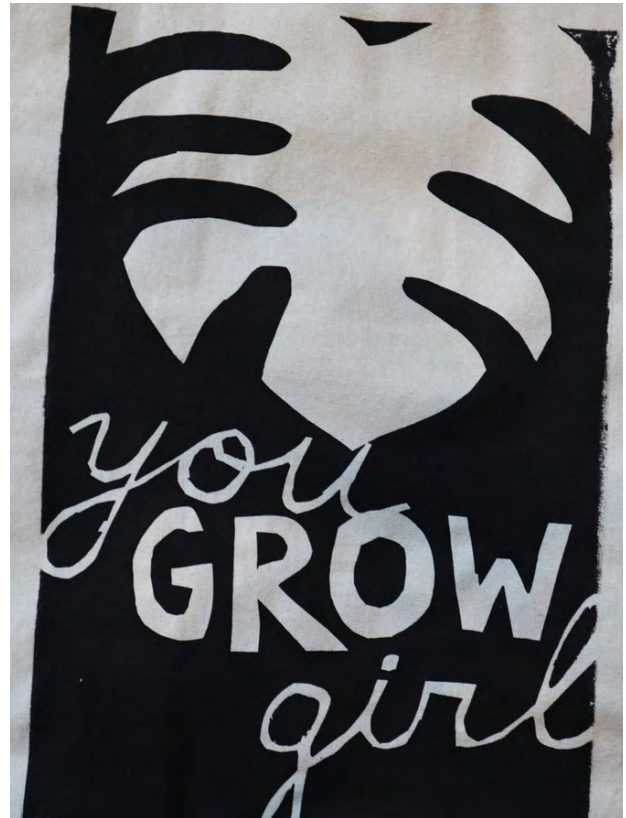
This project, funded by the Institute of Museum and Library Services and working in collaboration with the Madison Children's Museum, University of Wisconsin, and Fred Rogers Institute, is using a participatory design research approach to identify and reinvent educational practices that influence a sense of belonging for marginalized visitors and staff. A working group of more than 20 Museum staff used research processes to explore belonging in their own work and to work with guests and community members to understand broader views of what it means to belong and what supports that belonging. Using what they learned through this process, the Learning and Research Department and the working group developed a preliminary framework of practices that support belonging.

Now, staff are conducting try-it-out projects through which they are testing, evaluating, and refining the framework. "Try It-Out Projects" support staff agency by asking them to reflect on their practice and think of ways they might creatively use research to take steps to increase or support belonging for other staff or guests. The project team will share preliminary insights at the Association of Children's Museums conference in 2024 and will ultimately disseminate a toolkit of research activities that others can use to collaboratively define learning practices that help more learners to thrive.

# AIDING PROFESSIONAL LEARNING

## Genius, Joy, and Love

In partnership with the University of Pittsburgh's School of Education, in 2023 the Department hosted the second annual Genius, Joy, and Love teacher institute. A cohort of educators engaged with research about racial justice and equity as they reflected on their identities, lives, and literacies; centered their hopes, desires, dreams, and themselves as significant in our movement toward freedom; critically examined meanings of equity in learning; and came to value the role of their own creativities—through poetry, making, art, and song. Learning and Research Department led sessions, supported program coordination, and gathered data—including surveys, observations, artifacts, and focus groups—that illustrate the deep impact this program is making. There are plans to continue gathering data and to publish a longitudinal study of the outcomes of joyful, justice-based education.



## Simple Interactions

2023 marked the end of one of the Museum's Institute of Museum and Library Services grants, which enabled a multi-year professional development program that nurtured informal learning professionals' human interactions. Working in collaboration with Fred Rogers Institute, the project centered around the Simple Interactions tool, a resource that helps professionals describe and enhance the ways they interact with others in developmental settings. In 2023, the Learning & Research Department shared about Simple Interactions at the Association of Children's Museums and the American Alliance of Museums conferences and developed a robust toolkit of resources for professionals—including a written guidebook, a research brief, a dice game, an interactive spinner activity that supports brainstorming about how to improve interactions, and more. The toolkit will be distributed in both physical and digital form to informal educators around the country and the world.



### MuseumLab for Museum Professionals

In 2023, the Museum partnered with the Association of Children's Museums to launch a pilot program designed to reinvigorate the children's museum field's capacity for developing innovative and creative experiences. Following a highly competitive application process, twelve participants were selected from around the world to attend two in-person, week-long learning experiences along with a hybrid curriculum spanning nine months. To support improvement and embrace the pilot program's ability to nimbly adapt to change, the Learning and Research Department gathered evaluation data from the in-person weeks. That data led to changes in the program design for the second week. The data was influential in strengthening a grant proposal to the Institute of Museum and Library Services that would provide ongoing support to expand and extend the program in the future.



# INFORMING THE FIELD

In addition to work within the Museum, the Department is committed to sharing its insights to inform broader fields of practice. Highlights from 2023 include:

## Professional Conferences

In 2023, the members of the Learning and Research Department delivered six presentations at professional conferences, including the annual conferences for the American Alliance of Museums, Association of Children's Museums, Association of Science-Technology Centers, and the Visitor Studies Association. Presentations shared research about a range of topics, including the ways museums can use arts-based and creative data collection approaches, support accessibility, enhance inclusion through human interactions, and more.

## Research Briefs

The Association of Children's Museums hired Children's Museum of Pittsburgh's Learning and Research Department to write two research briefs, which they shared internationally through their network. The first brief summarized the ways children's museums could support mental health among children, youth, and families. The second brief provided an overview of research about the importance of play and how children's museums can nurture positive development through play.

## Practical Tools

In addition to sharing findings, the Department aims to create and disseminate tools that others can use to advance their work. In 2023, the Department created two major toolkits: one that provides resources about accessible art and making practices in informal learning environments, and one that shares the Simple Interactions tool and related materials to enhance human interactions in museums, libraries, and other informal learning spaces.

## Journal Articles

In 2023, department members submitted two peer-reviewed journal articles that are currently in review. Two additional manuscripts are currently in progress.



# SECURING THE FUTURE

One of the Department's greatest successes this year came in securing over one million dollars of federal funding to support ongoing research that advances JEDAI in museums and beyond. This included three new grants, to supplement additional, ongoing funding. The Department also has two large, pending Federal grants awaiting decisions in 2024.



## Genius, Joy, and Love

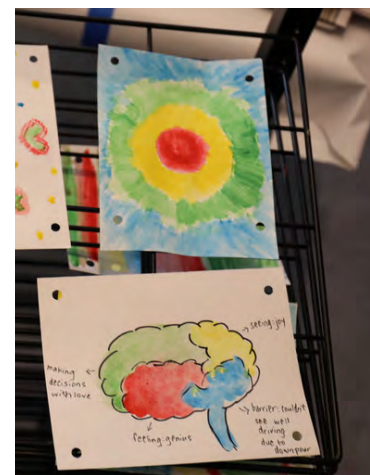
As mentioned above, Genius, Joy, and Love is a professional learning program that infuses art and creativity with racial justice in education. We received a grant to expand and evaluate this program. A major innovation will be implementing a youth-adult partnership approach; youth will join our program and learn alongside adults. Together, all ages will reflect on research and engage in arts-based activities that deepen their learning and support them to make actionable plans that will prioritize justice in their educational experiences.

## A Synthesis of Equity and Belonging in Museums and Makerspaces

This grant from the National Science Foundation (NSF) marks the first NSF grant to Children's Museum of Pittsburgh as the prime recipient in nearly 20 years. The project will conduct a systematic review of literature and projects about equity, belonging, and broadening participation in informal learning spaces over the last decade. The goal is to understand how informal learning institutions talk about JEDAI work, what they do to make change, how these things vary over time and context, and what the field can do next to integrate learning from distinct areas to support intersectional and anti-oppressive practice.

## Neurodiversity-Affirming Engineering Programs

This project, led by the New York Hall of Science, involves a subaward to Children's Museum of Pittsburgh. The three-year NSF grant will involve collaboration among the Museum's Maker Education, JEDAI, and Learning and Research teams, who will engage in co-design with autistic youth to learn about how to make maker education more neurodiversity-friendly. In fall 2023, the team began by attending trainings on Universal Design for Learning and met with project partners to plan. The co-design work with youth will begin in early 2024.



# THANKS TO OUR FUNDERS & PARTNERS

