

ENGAGING ALL LEARNERS:

Partnerships and programs



Session overview



MUSEUM & COMMUNITY PARTNERSHIPS

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Q&A

DISCUSSION

NISE NETWORK

NISE

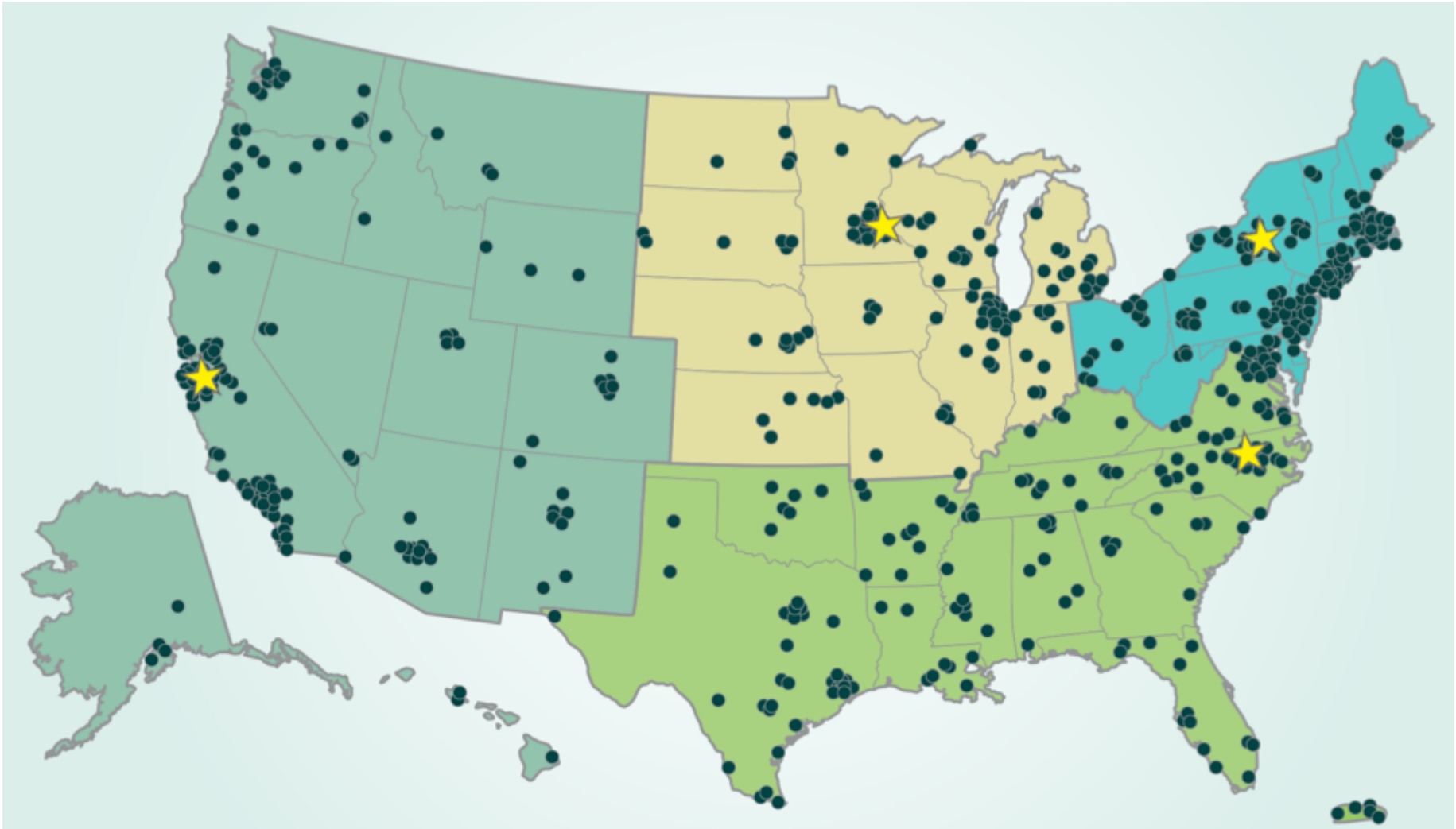
NATIONAL INFORMAL
STEM EDUCATION
NETWORK



*NISE Net supports **informal learning about STEM** in communities across the United States.*



Over **600 organizations** regularly participate in Network activities.



Together, we reach **millions of people** each year!



*NISE Net engages **all audiences** in learning about STEM in ways that are fun and easy to understand.*



We seek to ***broaden participation*** in STEM learning—at school, at home, and in the community.



MUSEUM & COMMUNITY PARTNERSHIPS

Project strategy – Collaboration!

Museums
collaborating with
local chapters of
national youth-serving
organizations and
community groups



Why collaborate?

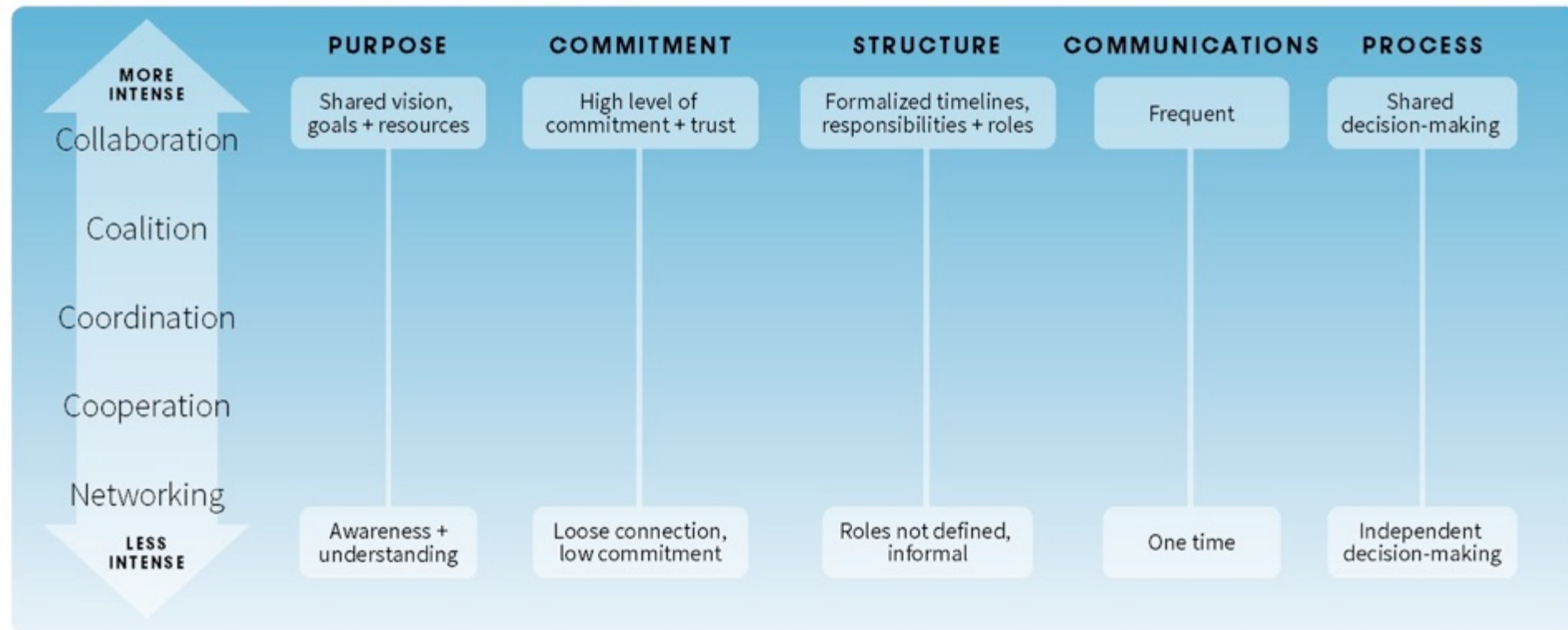
To achieve something you can't do on your own!

Collaboration occurs when organizations and individuals make a commitment to work together and contribute resources and expertise to achieve a common, long-term goal.

1. To share resources, expertise, and connections
2. To build upon existing strengths
3. To reach new audiences

Levels of partnerships

PARTNERSHIP CONTINUUM AND CHARACTERISTICS



Project goals

1. **Broader reach** to multiple and diverse audiences
2. **Mutually-beneficial relationships** among NISE Network partners and community organizations
3. **New knowledge and models** for reaching new audiences and creating successful collaborations



National partners

CORE PARTNERS

Afterschool Alliance
Boys & Girls Clubs of America
Girls Inc.
National Girls Collaborative
Project
4-H

ADDITIONAL PARTICIPATION

American Library Association
Arizona State Library
Boy Scouts of America
Girl Scouts
Parent Teacher Association (PTA)
Y (YMCA)
YWCA



Project overview



Professional audience

- Museum educators and professionals
- Youth organization educators and professionals

Public audience

- Elementary school age children
- Traditionally underserved and underrepresented

Process

- Existing and new partnerships
- NISE Net partners take lead responsibility
- Partnership is defined and managed locally

Products

Zoom into Nano kits

EDUCATIONAL PRODUCTS

- Over a dozen hands-on activities for “classroom” and “event” use
- Training videos and supporting materials

PROFESSIONAL RESOURCES

- Planning and promotional materials
- Training videos, slides, and guides
- Collaboration guide and tools



Educational products



Zoom into Nano



Labs and Tools



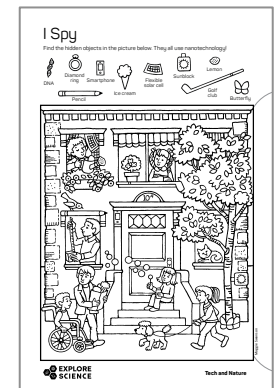
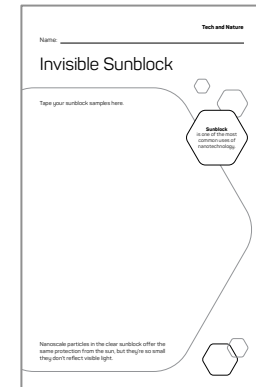
Nano and Our Lives



Small and
Surprising



Tech and Nature



Training resources



EXPLORE SCIENCE
TRAINING MATERIAL

Zoom into Nano
Activity Overview



EXPLORE SCIENCE
TRAINING MATERIAL

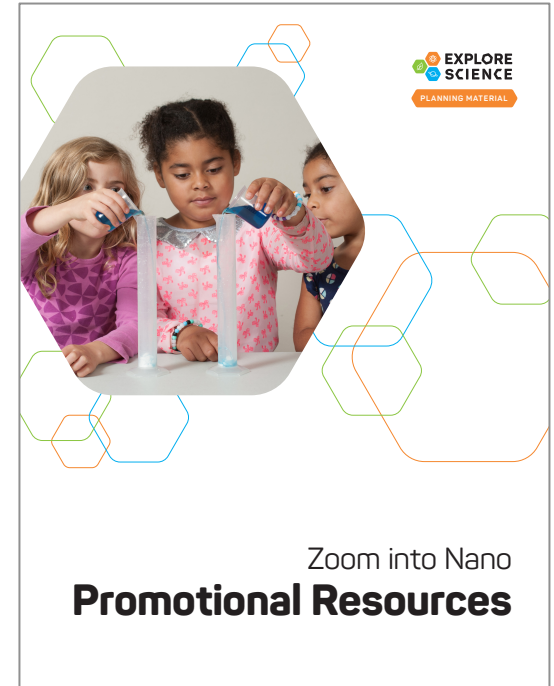
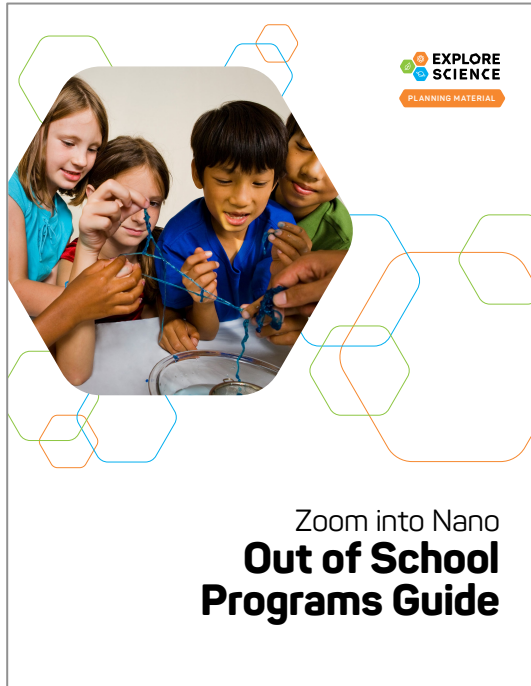
Zoom into Nano
Intro to Nanotechnology



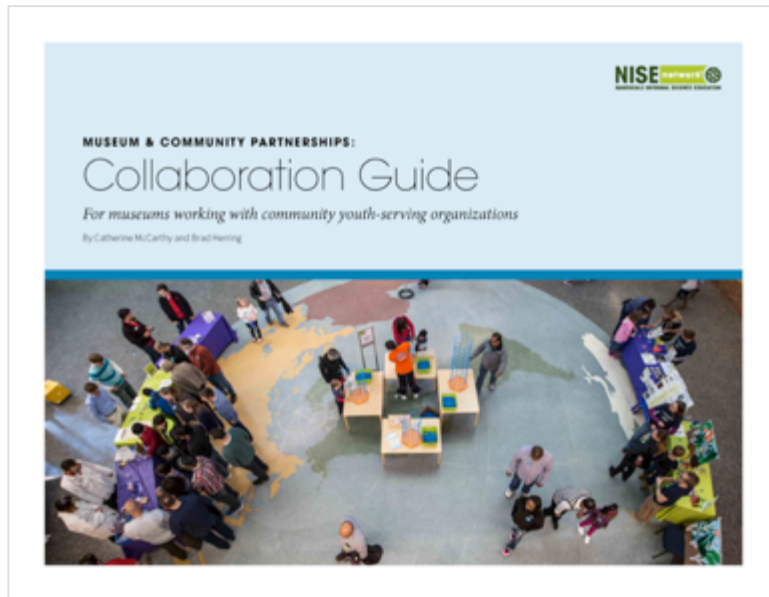
EXPLORE SCIENCE
TRAINING MATERIAL

Zoom into Nano
Science Outside of School

Planning resources



Collaboration resources



Available at www.nisenet.org/collaboration-guide

Evaluation

Audiences

Questions

Methods

Findings



Methods

Data were gathered in three ways:

1. **Pre- and post-surveys** of participating professionals from museums and community organizations (N=254)
2. **Activity surveys** about kit materials collected from professionals who facilitated activities (N=119)
3. **Administrative records** including project applications (N=84)

Evaluation Qs for professionals

1. To what extent does participation impact **the value professionals place on local collaborations** among NISE Net partners and community organizations?
2. To what extent does participation impact professionals' **awareness of key concepts in nano**?
3. To what extent does participation impact professionals' **use of professional resources and educational products** for creating partnerships and engaging diverse public audiences in nano?
4. To what extent does participation impact professionals' **awareness of theories, methods, and practices** for forming partnerships and engaging diverse public audiences in nano?

Value of partnership

Professionals **valued partnership** between museums and community organizations and reported being **more likely to engage in future collaboration**.

AFTER participating in *Explore Science—Zoom into Nano*, how much do you value fostering local partnerships between museums and community organizations? ($n=72$)



■ I value it A GREAT DEAL

■ I value it A LOT

■ I value it A LITTLE

■ I DON'T VALUE it at all

After the project,

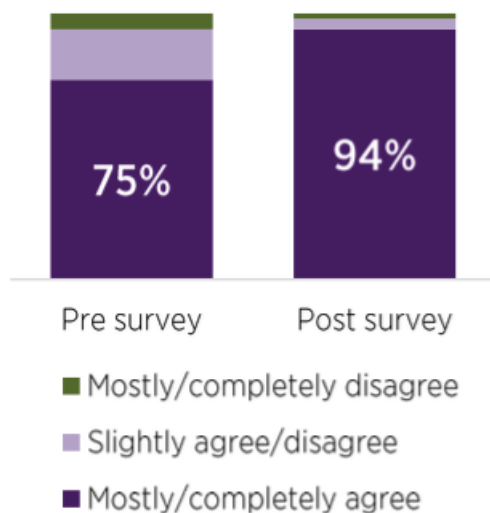
78%

of respondents ($n=70$) were
**"MUCH MORE LIKELY" TO ENGAGE IN
FUTURE COLLABORATION**
with a museum and community
organization.

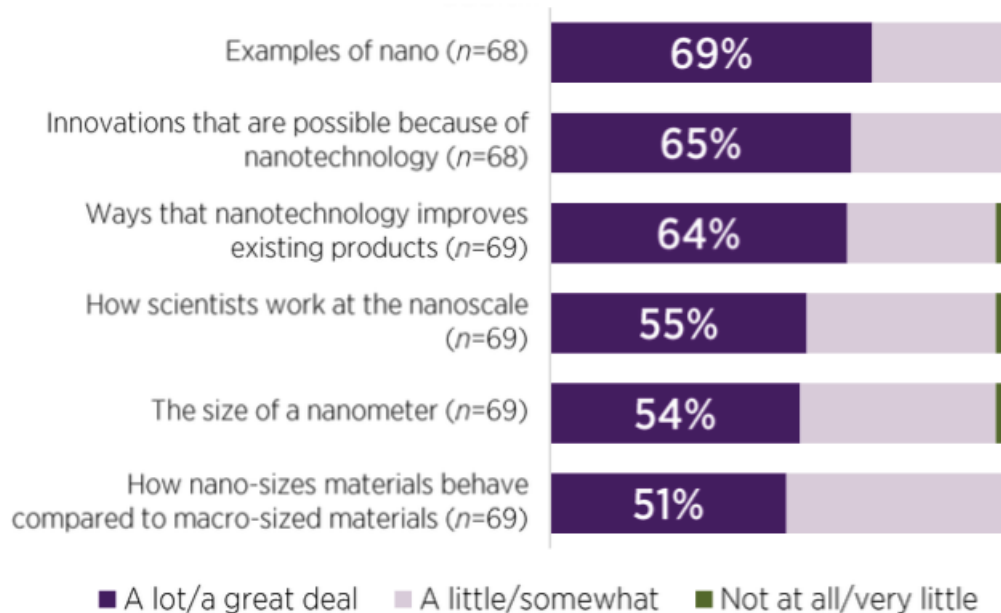
Learning nano concepts

Professionals **gained confidence explaining nano** concepts and **attributed those gains to the project**.

I feel confident in my ability to explain examples of nano to another adult. (n=47)*



How much has *Explore Science—Zoom into Nano* affected your confidence in explaining to another adult...

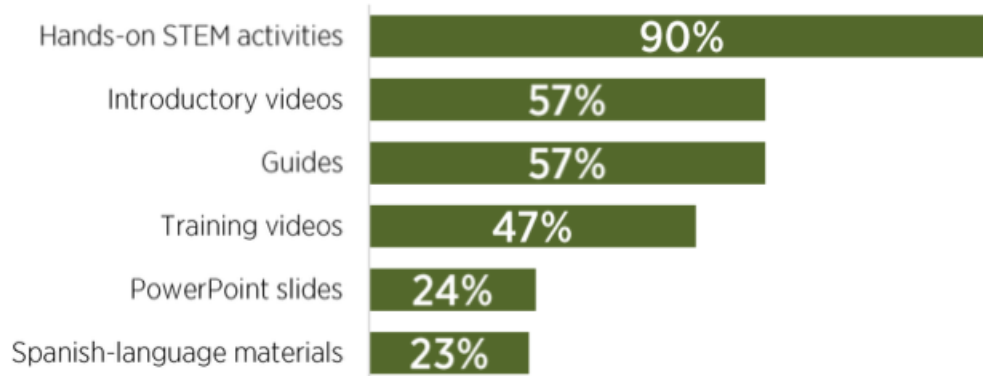


Note: See report to learn about other nano concepts.

Use of kit materials

All **project resources were used**, especially the hands-on STEM activities, introductory videos, and guides. Many respondents—especially those from museums—had personally used kit materials in different ways **beyond project requirements**.

Which of the following *Explore Science—Zoom into Nano* materials have YOU PERSONALLY used as part of your *Explore Science—Zoom into Nano* partnership? (n=70)



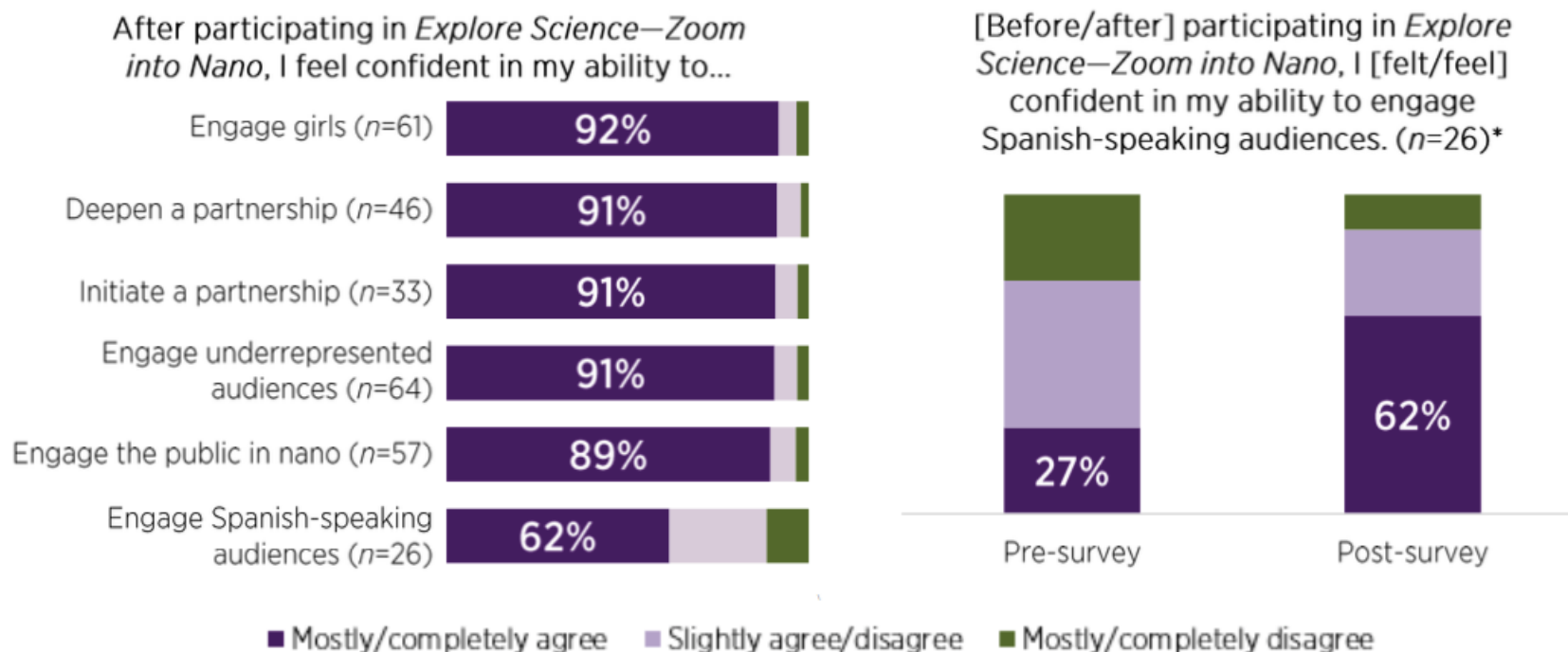
67%

of respondents (n=64) had used kit materials to engage the public in content areas **OTHER THAN NANO.**

Note: This is what each individual respondent used, not what whole organizations used.

Confidence with practices

Professionals had **high levels of confidence** for implementing professional practices, and **confidence for engaging Spanish-speaking audiences grew**.



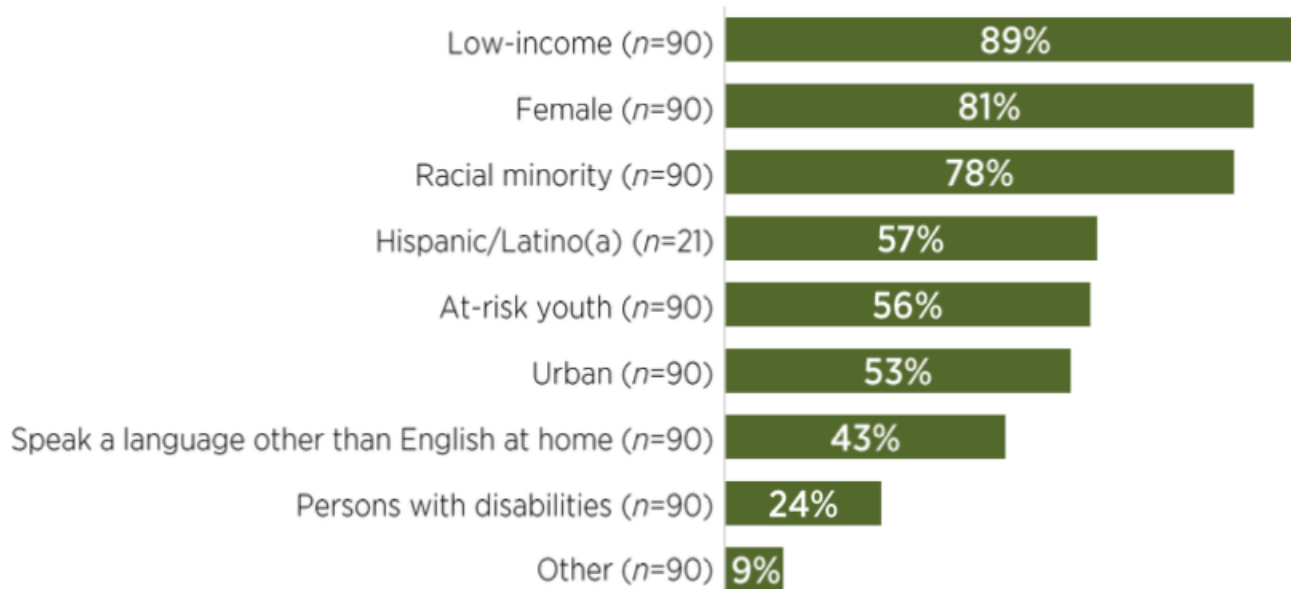
Evaluation Qs for publics

1. To what extent does the project **reach its target audience** of children, youth, and families from demographic groups that are underrepresented in STEM fields?
2. To what extent do the educational materials **facilitate engagement and learning** among public participants?

Public reach

Partners' self-reported estimates of underrepresented audiences indicated that the project activities most often reached participants who were **low-income, female, and people of color**.

Which of the following demographic categories apply to [the participants] in *Explore Science—Zoom into Nano* activities?



Learning, engagement + relevance

Facilitators felt the **activities were educational, engaging, and relevant** for the public, though there is an **opportunity to increase the activities' relevance**.

92%

of respondents ($n=118$) thought the activities were **ENGAGING** or **VERY ENGAGING** for the public.

85%

of respondents ($n=117$) thought participants **LEARNED SOME** or **A LOT** from the activities.

68%

of respondents ($n=118$) thought the activities were **RELEVANT** or **VERY RELEVANT**.

PARTNERSHIP PROGRAMS

Children's Museum of Houston







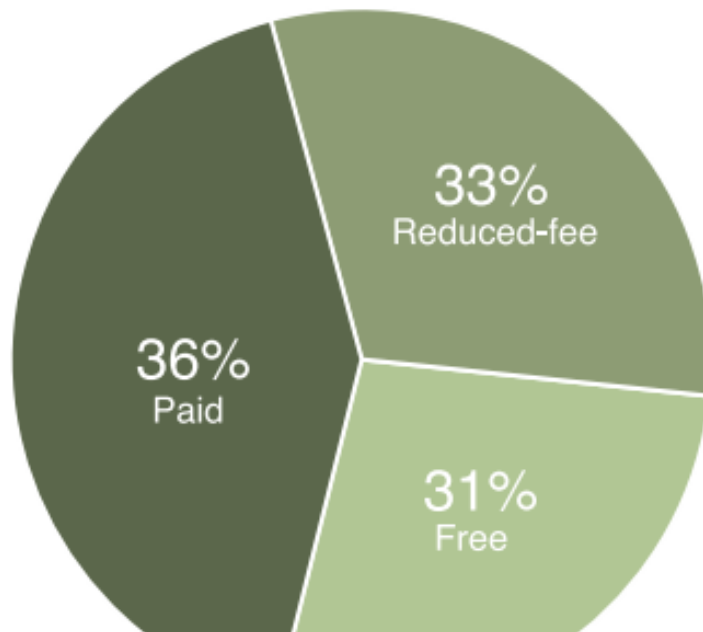
Mission:
To transform communities through
innovative, child-centered learning



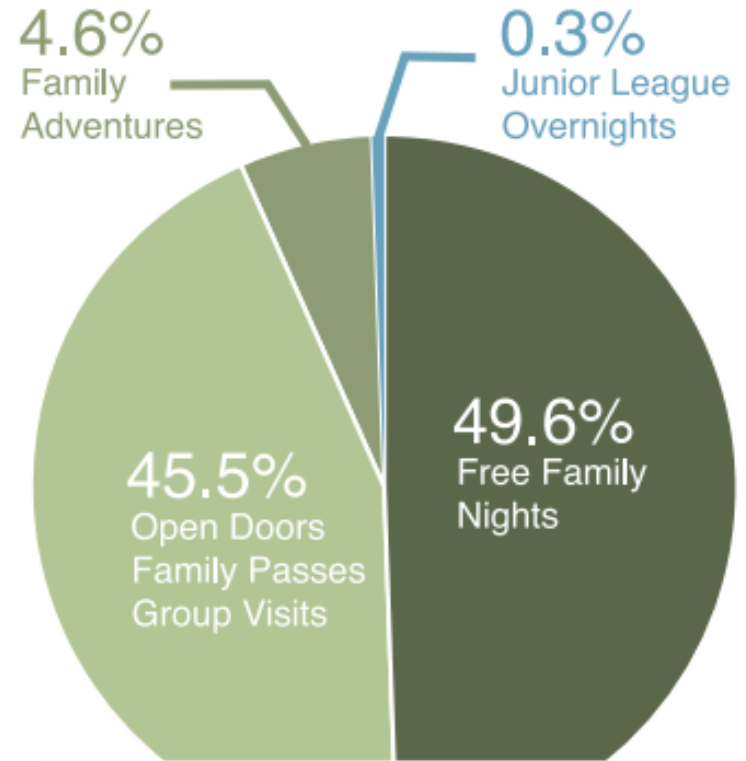
Serve children age 0-12 years and their
parents and caregivers



817,000 annual visitors
+ 329,000 through outreach
programming



64% of visitors receive free or reduced admissions

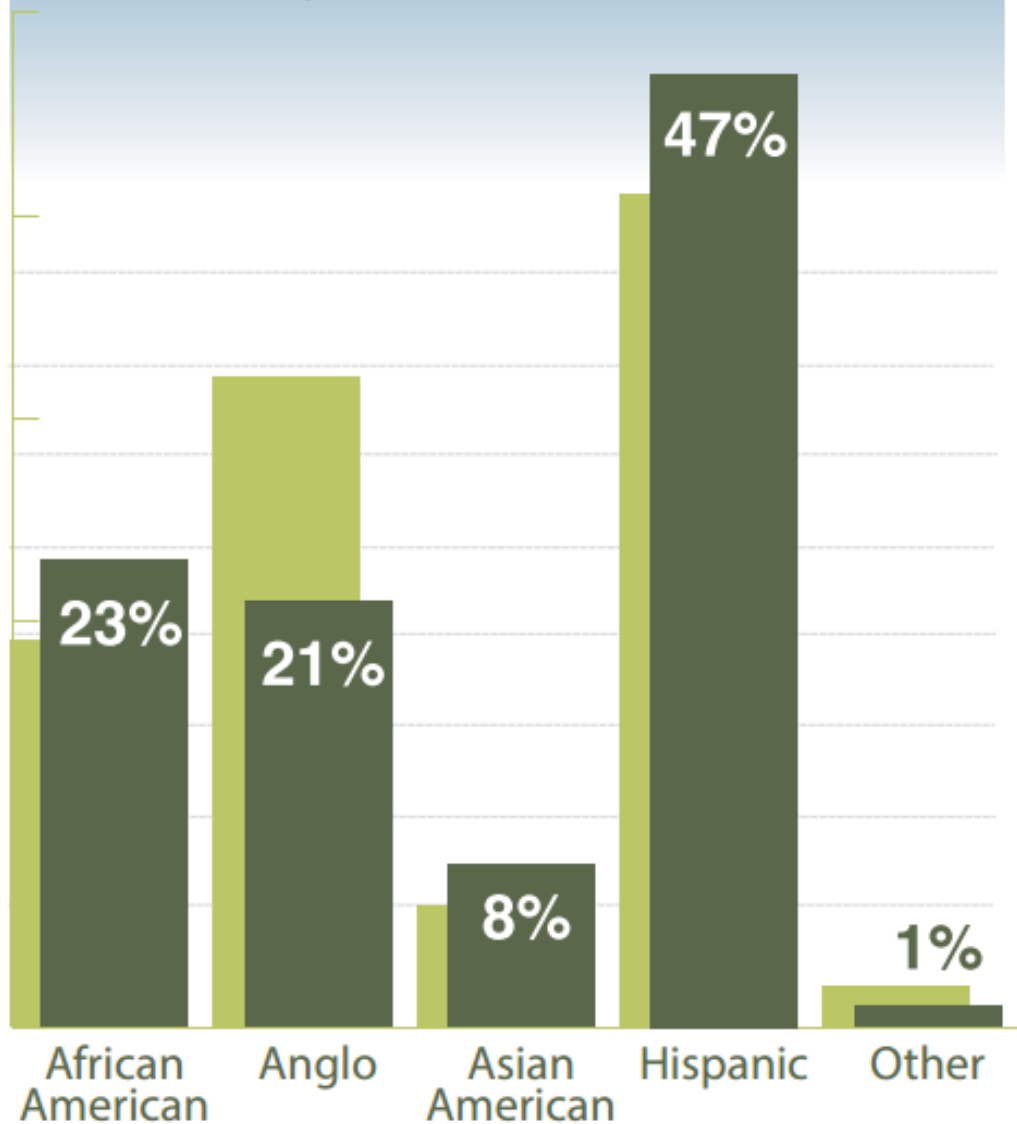


Source of free admission by program

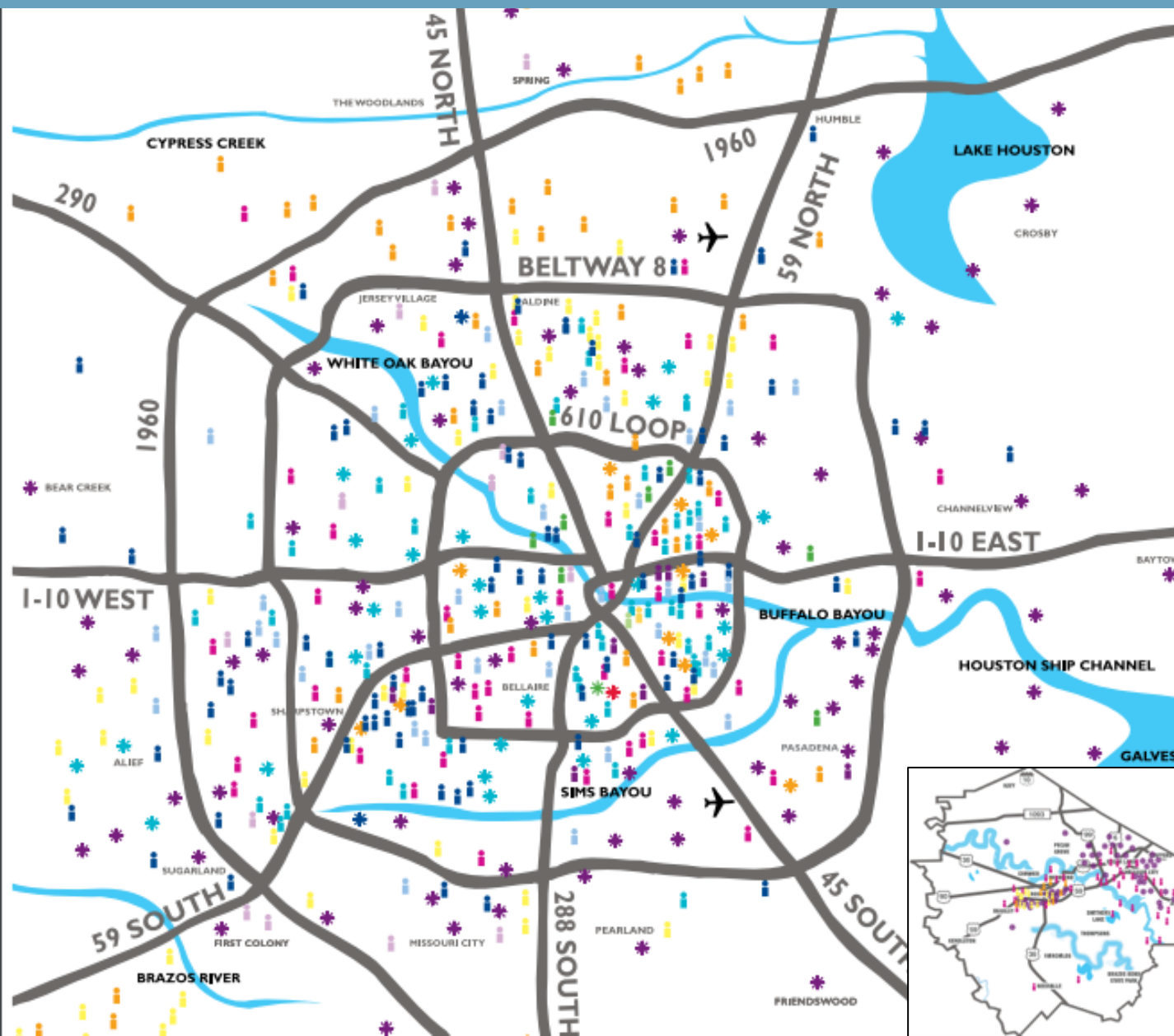
Visitor Demographics

▲ CMH

▲ Harris Co



CMH Open Doors Partners distribute Free Family Passes and/or host one of the Museum's outreach programs within 2 miles of any family living inside Beltway 8.



Museum Field Experiences

- Family Adventures
- Overnight Adventures
- Student Parent Tours

After School Programs

- Professional Development
- ExxonMobil Magnificent Math Moments
- A'STEAM and Kit-Based
- After-School Programming Science Workshop

Family Learning Programs

- Para los Niños
- Parent Star
- Family Literacy Involvement Program (FLIP)

Open Doors Partners

- 1-4 Partners
- 5-9 Partners
- 10-19 Partners
- 20-29 Partners
- 30+ Partners

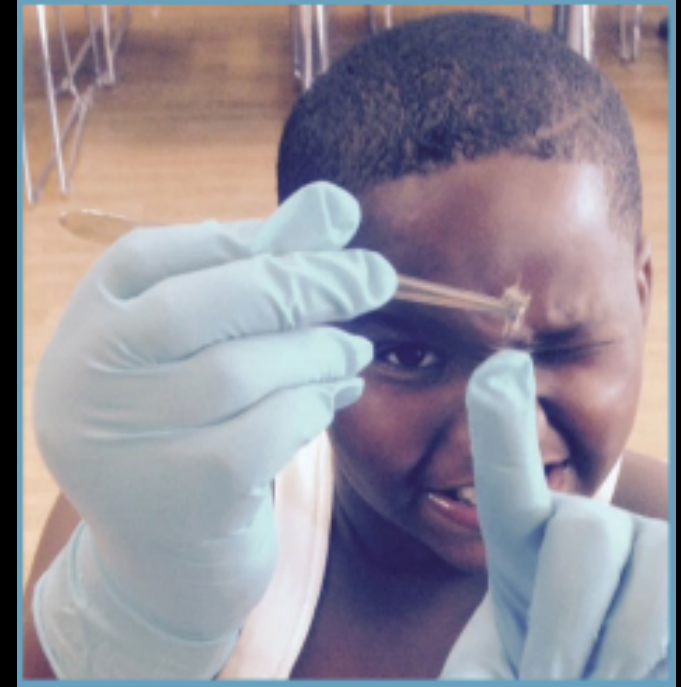
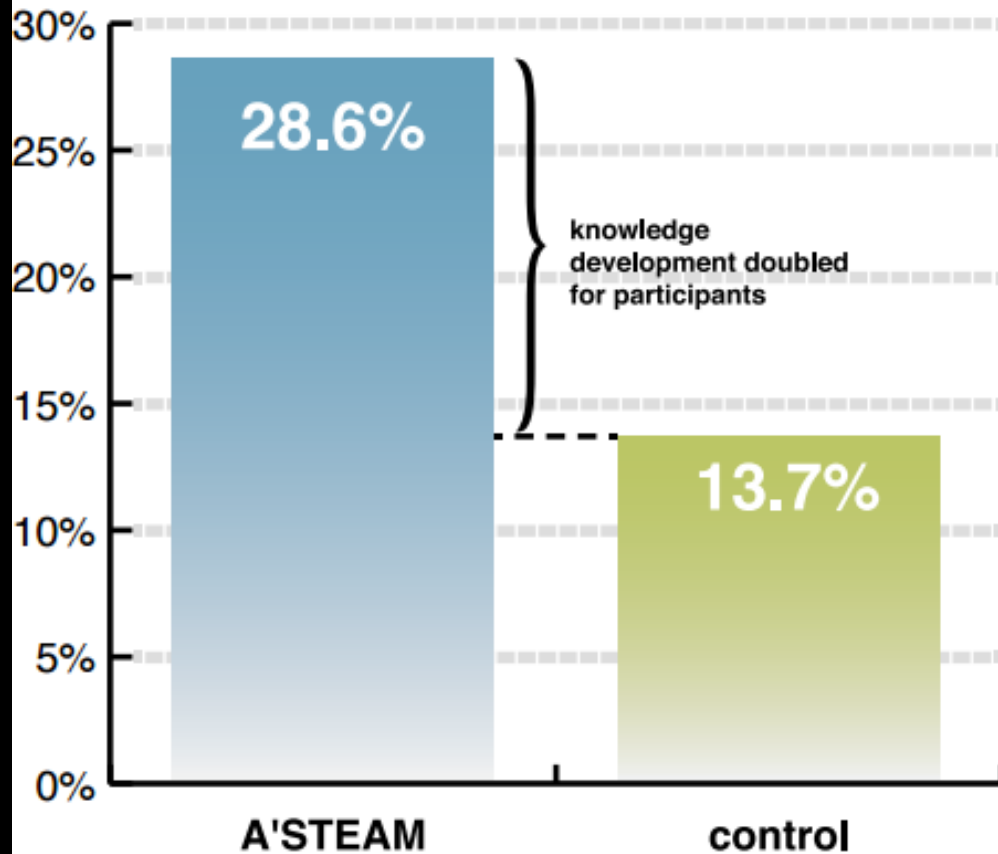
A'STEAM Program

After-school Science, Technology, Engineering, Arts (Design), and Mathematics





Pre to Post Change in STEM Knowledge



During one of our focus groups with students, a little girl said “I love the science we do here; we actually get to DO science. At school the only science we ever do is on paper...”

Bethune Elementary (Aldine ISD)

Children's Museum of Indianapolis





STEM Scouts Partnership

Don Riefler

The Children's Museum of
Indianapolis

Museum Info

Mission

To create extraordinary learning experiences across the arts, sciences and humanities that have the power to transform the lives of children and families.



Partner

STEM Scouts



BOY SCOUTS OF AMERICA®
CROSSROADS OF AMERICA COUNCIL



**STEM
SCOUTS®**
SCIENCE
TECHNOLOGY
ENGINEERING
MATH



Audience

- STEM Scouts – upper elementary and middle school aged students
- Families – designed event to be a family program for STEM Scouts

The Project





Outcomes

- ❌ New Audience!
- ❌ Opened two new STEM exhibits, have more capacity to offer programs to new types of groups
- ❌ Staff experience

Port Discovery Children's Museum



Port Discovery Children's Museum



Explore Science: Bringing Nano to a New Audience



Babcock Presbyterian Church

A+ Care

- ▶ Located in Towson, Maryland
- ▶ Before and after care for a low fee
- ▶ Partnership:
 - ▶ Began in spring 2015
 - ▶ Provided NASA's BEST curriculum through grant with NASA Goddard
 - ▶ Chosen for this project to further engage the faith based community



Audience Served

- ▶ Faith based partner
- ▶ After school program
- ▶ 28 children Kindergarten through 5th grade
- ▶ Services students from two local Title I schools
- ▶ Very diverse group of students!



Nanoscience Exposed



Rainbow Film

Gravity Fail



Stained Glass Art

Nanoscience Exposed

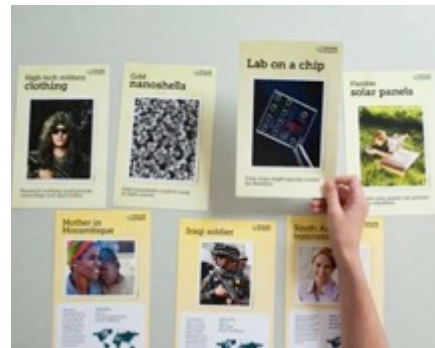


Smelly Balloons

Ready, Set, Fizz!



You Decide!



Successes and Challenges

▶ Successes

- ▶ A+ Care at Babcock Presbyterian was a pleasure to work with.
- ▶ Site coordinator and the children were very enthusiastic to have us there. They do not typically receive these types of enrichment programs.
- ▶ Staff was plentiful and very hands-on.
- ▶ Parents were supportive, said their kids didn't want to go home! They would pick up their children later on Port Discovery days so their kids could complete the program.

▶ Challenges

- ▶ Due to the after school program location, there is a lot of ethnic, economic, and ability diversity within the group of students. Many children have varying learning disabilities.
- ▶ All students, Kindergarten through 5th grade were in one group.

Best Outcomes

▶ Continued Partnership

- ▶ With NISE Net support of the Explore Science kit, Nanoscience Exposed was provided to A+ Care free of charge.
- ▶ In the 2016/2017 school year, two new after school programs were provided free of charge with support from Baltimore County.

▶ New grant from local foundation!

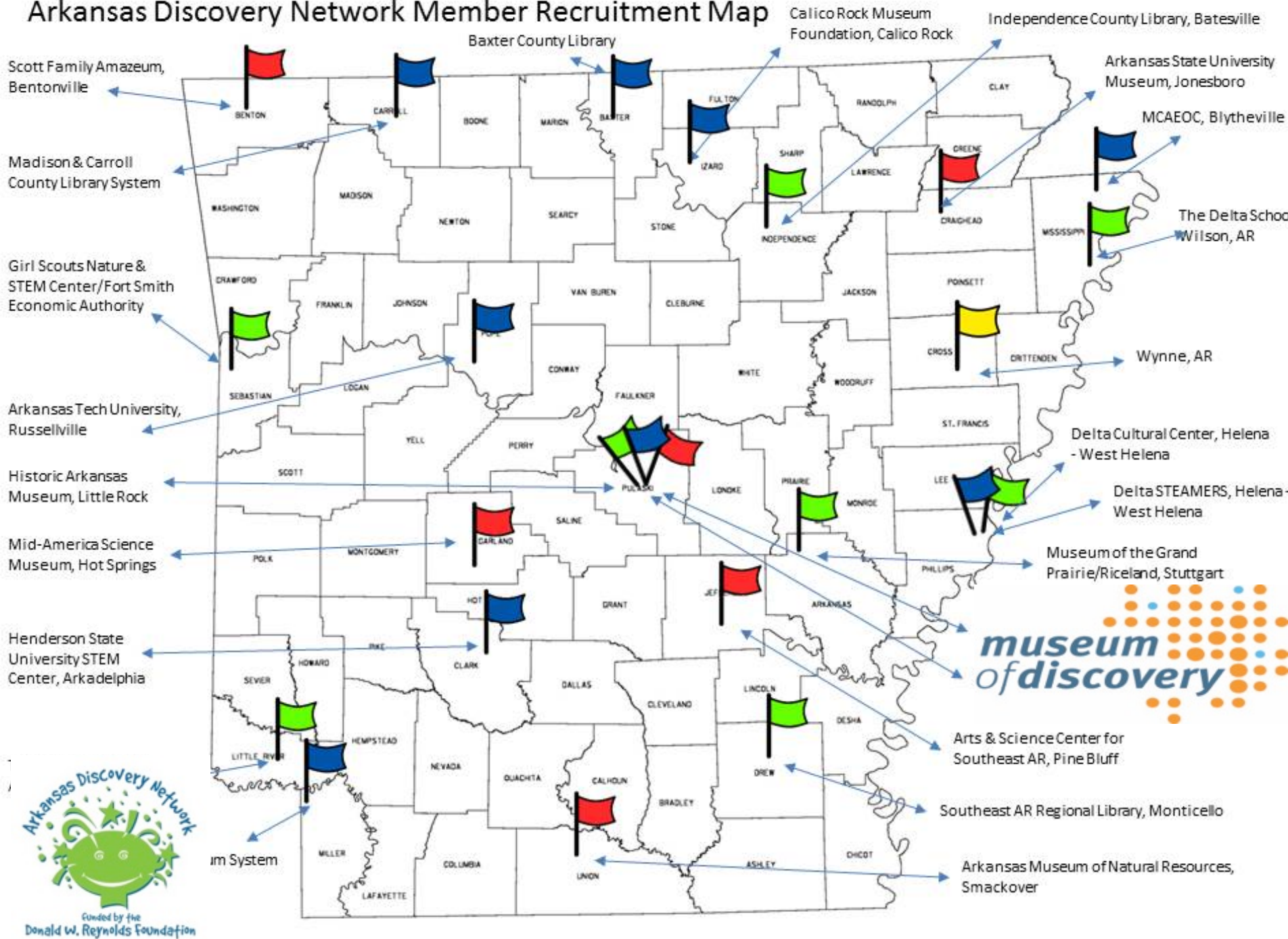
- ▶ Provide after school enrichment to 4 Catholic Schools in Baltimore City in 2017



Arkansas Discovery Network



Arkansas Discovery Network Member Recruitment Map



Berryville Public Library

Audience: Rural, North Central Arkansas

Five Towns Served, Ranging in Population from 291 to Just over
5,000

25% of Families are Living in Poverty

Training, Co-Presenting, Left Kit for Future Use

“The kit really represents a bit of a paradigm shift in terms of library programming in our two counties. We know in theory that more and more it will be important for libraries to embrace the promotion of invention literacy/ STEM topics along with more traditional forms of literacy. But **in small towns it is still easy to say that is for big city libraries with more funding, staff, space, etc. This allowed us to see what we really can do with relatively simple supplies even in the small spaces we have for such programming.**” – Director, Berryville Public Library



Q&A

DISCUSSION

Questions for our presenters?



Discussion

What collaboration challenges have you experienced?

Let's discuss strategies for working through them!

For example:

- Identifying the right partnership, right now
- Dealing with changes in personnel
- Addressing changing organizational priorities (on either side)
- Fostering organizational buy-in

Thank you



The Nanoscale Informal Science Education Network is supported by the National Science Foundation under award numbers 0532536 and 0940143. **Multi-Site Public Engagement in Science** is supported by the National Science Foundation under award number 1421179. **Transmedia Museum** is supported by the National Science Foundation under award number 1516684. **ChemAttitudes** is supported by the National Science Foundation under award number 1612482. Any opinions, findings, and conclusions or recommendations expressed in this presentation are those of the authors and do not necessarily reflect the views of the Foundation.



Sustainability in Science Museums is supported by the Walton Sustainability Solutions Initiatives at Arizona State University (ASU) and is a collaboration with the Center for Engagement and Training in Science and Society at ASU.



Space and Earth Informal STEM Education is supported by NASA under cooperative agreement number NNX16AC67A. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the view of the National Aeronautics and Space Administration (NASA).