EXECUTIVE SUMMARY

This document is an executive summary of the NISE Net Museum & Community Partnerships Project Evaluation Report (Todd, King, Cardiel, Ramos-Montañez, & Kollmann, 2017). The sections below share some of the key points from the main findings in the report. Additional findings and information can be found in the full report.

Background of the NISE Network

The Nanoscale Informal Science Education Network (NISE Net, nisenet.org) is a national community of researchers and informal science educators dedicated to fostering public awareness, engagement, and understanding of nanoscale science, engineering, and technology (nano). NISE Net is one of the largest informal science education initiatives ever undertaken in the United States.

Background of the Museum & Community Partnerships Project

NISE Net received funding from the National Science Foundation for the Museum and Community Partnerships project, an initiative to build professionals’ capacity to reach underserved audiences by fostering collaborations between museums and local community organizations. The Network distributed 100 Explore Science—Zoom into Nano outreach kits of professional resources and educational materials for partnerships (a museum paired with a local community organization) to use to reach underrepresented children, youth, or families. This document summarizes the summative evaluation findings from this project.

Evaluation Methods and Audiences

The data described in this report 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 hands-on STEM activities (N=119)
3. Administrative records including project applications (N=100) and reports (N=84)

This executive summary and the associated report are structured to correspond to findings about the evaluation’s two key target audiences:

1. **Professionals:** The staff and volunteers who participated in the project, consisting of those from:
   - Museums: NISE Net organizations including science centers, children’s museums, universities, and more
   - Community organizations: Independent organizations or local branches of national youth-serving organizations
2. **Publics:** The children, youth, and families who were participants in project activities, many of whom were underserved by STEM institutions and/or underrepresented in the STEM fields.


This report was based on work supported by the National Science Foundation under Grant No. DRL-0940143. Any opinions, findings, and conclusions or recommendations expressed in this report are those of the authors and do not necessarily reflect the views of the Foundation.
The 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 78%
- I value it A LOT 21%
- I value it A LITTLE
- I DON’T VALUE it at all

78% of respondents (n=70) were “MUCH MORE LIKELY” TO ENGAGE IN FUTURE COLLABORATION with a museum and community organization.

Learning about 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)*

- Mostly/completely disagree
- Slightly agree/disagree
- Mostly/completely agree

Pre survey 75% 94% Post survey

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

- Examples of nano (n=68) 69%
- Innovations that are possible because of nanotechnology (n=68) 65%
- Ways that nanotechnology improves existing products (n=69) 64%
- How scientists work at the nanoscale (n=69) 55%
- The size of a nanometer (n=69) 54%
- How nano-sizes materials behave compared to macro-sized materials (n=69) 51%

A lot/a great deal A little/somewhat Not at all/very little

Note: See report to learn about other nano concepts.
**PROFESSIONAL IMPACTS FINDINGS, CONTINUED**

**Usage of Project 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)

<table>
<thead>
<tr>
<th>Material</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on STEM activities</td>
<td>90%</td>
</tr>
<tr>
<td>Introductory videos</td>
<td>57%</td>
</tr>
<tr>
<td>Guides</td>
<td>57%</td>
</tr>
<tr>
<td>Training videos</td>
<td>47%</td>
</tr>
<tr>
<td>PowerPoint slides</td>
<td>24%</td>
</tr>
<tr>
<td>Spanish-language materials</td>
<td>23%</td>
</tr>
</tbody>
</table>

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

67% of respondents (n=64) had used kit materials to engage the public in content areas OTHER THAN NANO.

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

After participating in *Explore Science—Zoom into Nano*, I feel confident in my ability to...

- Engage girls (n=61) 92%
- Deepen a partnership (n=46) 91%
- Initiate a partnership (n=33) 91%
- Engage underrepresented audiences (n=64) 91%
- Engage the public in nano (n=57) 89%
- Engage Spanish-speaking audiences (n=26) 62%

[Before/after] participating in *Explore Science—Zoom into Nano*, I [felt/feel] confident in my ability to engage Spanish-speaking audiences. (n=26)∗

- Mostly/completely agree
- Slightly agree/disagree
- Mostly/completely disagree

Pre-survey: 27%
Post-survey: 62%
PUBLIC IMPACTS FINDINGS

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?

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-income (n=90)</td>
<td>89%</td>
</tr>
<tr>
<td>Female (n=90)</td>
<td>81%</td>
</tr>
<tr>
<td>Racial minority (n=90)</td>
<td>78%</td>
</tr>
<tr>
<td>Hispanic/Latino(a) (n=21)</td>
<td>57%</td>
</tr>
<tr>
<td>At-risk youth (n=90)</td>
<td>56%</td>
</tr>
<tr>
<td>Urban (n=90)</td>
<td>53%</td>
</tr>
<tr>
<td>Speak a language other than English at home (n=90)</td>
<td>43%</td>
</tr>
<tr>
<td>Persons with disabilities (n=90)</td>
<td>24%</td>
</tr>
<tr>
<td>Other (n=90)</td>
<td>9%</td>
</tr>
</tbody>
</table>

Education, Engagement, and Relevance of Hands-on STEM Activities
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.