

# NISE Network Professional Impacts Summative Evaluation

Executive Summary and Appendix D: Instrument Appendix

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# Nanoscale Informal Science Education Network Professional Impacts Summative Evaluation

This document is an executive summary of the Nanoscale Informal Science Education Network (NISE Net) Professional Impacts Summative Evaluation. **Sections 1-4 below correspond to the points in the report's *Summary of Findings and Discussion*** (Goss et al., 2016, pp. 86-100). The icons displayed to the left of each finding indicate the related section(s) in the report. This page includes a description of the study, and the final two pages include graphs and quotes that are meant to highlight major findings; much more detail is included in the complete report.

## Background of the NISE Network

The Nanoscale Informal Science Education Network 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). Funded by the National Science Foundation through two consecutive grants totaling over \$40 million that extended over 10+ years, NISE Net is one of the largest informal science education initiatives ever undertaken in the United States.

### NISE Net Goals for Professionals

- Identify with a broader community that includes scientists and museums
- Value local research-ISE collaborations
- Understand and appreciate key concepts in nanoscale science, engineering, and technology and its relationship with our lives, society, and environment
- Understand theories, methods, and practices for effectively engaging diverse public audiences in nano
- Utilize professional resources and educational products for engaging diverse public audiences in nano

## Background of this Study

This study was a longitudinal examination of individual professionals over the final three years of the NISE Network (Goss et al., 2016). Based on the NISE Network's goals for professionals, this study explored how involvement with NISE Net impacted an individual professional's sense of community, learning about nano, and use of nano educational products and practices.

This evaluation primarily included professional partners who were:

**Informal Science Educators (ISE):** Professionals from science museums and children's museums implementing informal science education

**University professionals:** Individuals from large and small universities and colleges throughout the United States including researchers, scientists, education outreach coordinators, and others

### Methods

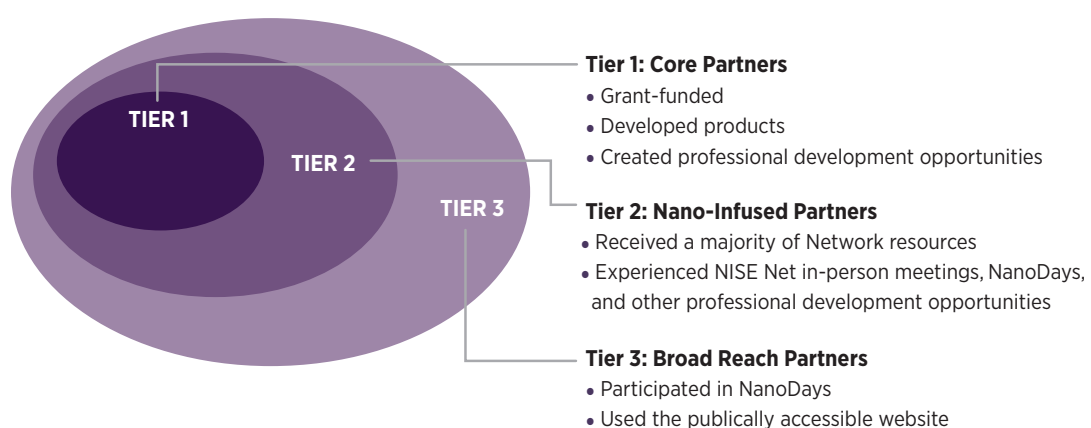
This study employed two data collection methods over three years:

- An **Annual Partner Survey** which involved a total of 597 professionals in Tiers 1-3
- **Yearly interviews** with a representative subset of 21 professionals from Tiers 2 and 3

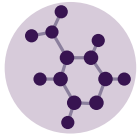
The survey presented a broad view of how professionals were impacted by participating in the NISE Net as well as how their sense of community, learning about nano, and use of nano educational products and practices changed over time. Interviews provided a deeper understanding of professional involvement in the Network.

## NISE Network Tiers of Involvement

NISE Network partners were categorized into tiers based on the roles and responsibilities of the partner institutions, their level of involvement in the Network, and the amount of NISE Net support they received. Descriptions of typical involvement are below.



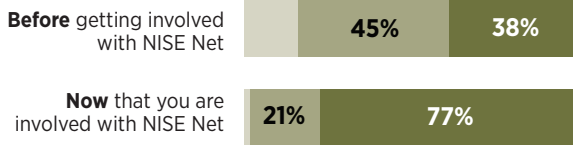
# NISE Network Professional Impacts Summative Evaluation



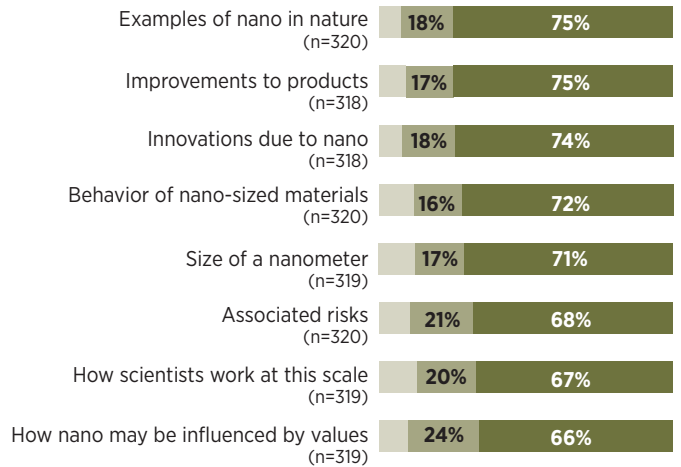
COMMUNITY & COLLABORATION      UNDERSTANDING NANO

## 1 NISE Net professional partners reported that their **sense of community increased** after they became involved with the Network and that **NISE Net affected their understanding of nano**.

To what extent did you identify with a broader community that includes both scientists and museum professionals? (n=321)



How much has NISE Net affected your confidence in explaining the following nano concepts to another adult?



Not at all/Very little      A little/Somewhat      A lot/A great deal

“I think what it’s done is kind of give a catalyst to come together. Like this new person in engineering—I never would have met him. We actually put out a little news brief on campus that just said, ‘Hey, are you into nano?’ and he came out of the woodwork because he saw that [flyer].”

–Tier 2 University professional, Year 8 interview

“I didn’t even know what nano was. Pretty much everything I know about nano, I know from NISE Net. And if you look at those concepts, I’m certainly able to talk about those concepts, but it is pretty much solely because of NISE Net.”

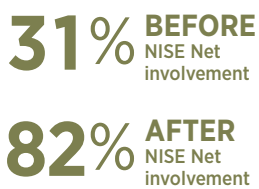
–Tier 2 ISE professional, Year 10 interview



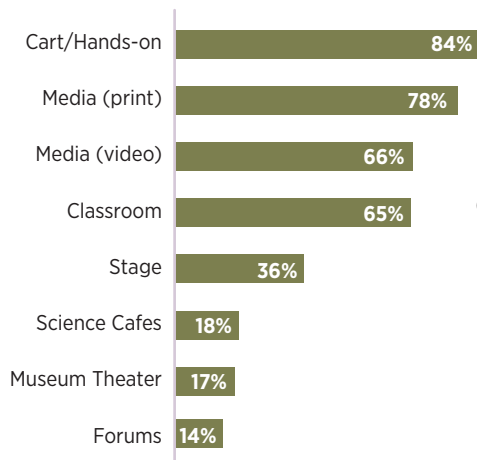
PRODUCTS      PRACTICES

## 2 NISE Net professional partners reported **engaging the public with all types of Network products and practices**, though some were used less than others.

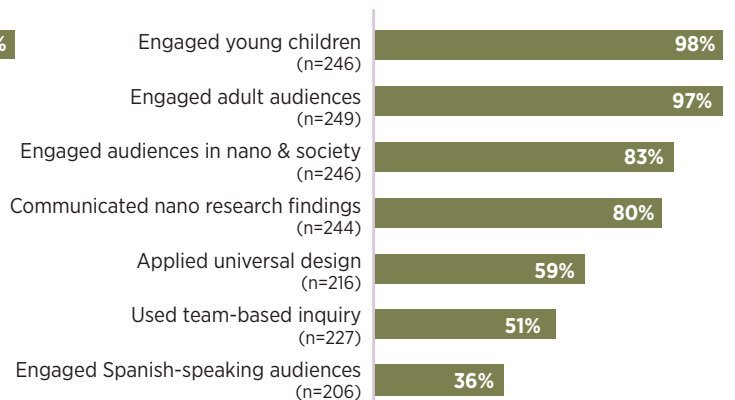
What percent of NISE Net professional partners engaged the public in nano? (n=320)



Did you personally implement any of the following NISE Net educational products with the public? (n=264)



As part of your nano education efforts, have you done any of the following?



“I think one of the things that’s really great about NISE Net is that they have different iterations [of activities] with different lengths of times, different set ups, for different aged people... we were just so impressed that [the kit] had everything, including the little plastic standup stand and the tablecloth!”

–Tier 3 University professional, Year 8 interview

“[W]hen we’re thinking about signage or something big or small, we have focused on [universal design]... I think [in] the 2012 kit there was a nice guide to universal design [and] we’ve used that.”

–Tier 3 ISE professional, Year 8 interview

# NISE Network Professional Impacts Summative Evaluation



PRODUCTS

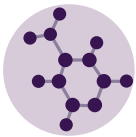


PRACTICES

**3** While the majority of NISE Net professional partners reported gains related to the Network’s goals, **Tier 2 and ISE professionals specifically reported positive change over time from their NISE Net involvement**, especially concerning nano and society content.



COMMUNITY & COLLABORATION

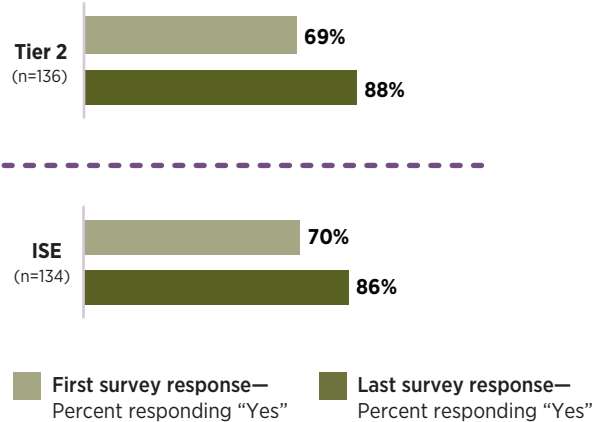


UNDERSTANDING NANO

As of Year 10, what percent of NISE Net professional partners engaged the public in nano and society content? (n=246)

**83% OF ALL PARTNERS**

Across Years 8–10, as a part of your nano education efforts, have you engaged audiences with nano and society content?



“I think that the activities and kits help create a broader understanding of how it’s affecting society and what research is being done in the field.”

–Tier 2 ISE professional, Year 9 interview

“It’s just my go-to place for knowledge... if I want to talk about nano and society, science and society, [NISE Net is] the first place I’m going to go.”

–Tier 2 ISE professional, Year 10 interview



BEYOND NANO

**4** Evidence indicates that a range of NISE Net professional partners **integrated aspects of NISE Net into their work that is unrelated to nano.**

To what extent has NISE Net increased the amount of ANY partnerships or collaborations between your organization and another? (n=248)



To what extent has NISE Net helped you communicate ANY science, technology, engineering, and math with the public? (n=274)



Legend: Not at all/Very little (lightest green), A little/Somewhat (medium green), A lot/A great deal (darkest green)

“I don’t know if I’d be working with the library [if it wasn’t] for the mini-exhibit and NanoDays. [These opportunities have] probably opened the door [for us] and that’s [going to] be a fruitful partnership I see for years to come.”

–Tier 2 University professional, Year 10 interview

“[NISE Net materials have] guided the amount and kind of information that we give to the public because I think NISE Net resources are very good at giving the facilitators an appropriate amount of background information and then boiling that down to the appropriate amount of information to share with the public.”

–Tier 2 ISE professional, Year 10 interview

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## **Appendix D: Overview of Instrument Appendix**

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This Appendix includes survey and interview instruments used as part of the *NISE Network Professional Impacts Summative Evaluation*. All of the questions and scales used in the final Annual Partner Survey as well as the three yearly interview instruments are provided below.

The Annual Partner Survey was organized by the Evaluation Team as a way to consolidate the number of times partners received requests for information throughout the year. The Annual Partner Survey contained a series of longitudinal questions related to the professional impacts summative evaluation as well as questions submitted by other NISE Net stakeholder groups. While the longitudinal questions remained constant over the three years, the other questions changed according to stakeholder needs.

For the interviews, participants were asked about several areas where NISE Net may have influenced their work including their sense of community, partnerships, learning of nano concepts and practices, and use of NISE Net products. Although these areas of questioning were consistent over the three years, a major emphasis of the interviews was to learn about changes in professionals' work. Thus, during the second and third interviews, evaluators referred to participants' previous responses and asked them to explain any changes.

More information about the methods used for this study can be found on page 8 of the report. For each of the graphs in the report, the notes below the graph indicate the corresponding survey question number included in this appendix.

## **Year 10 Annual Partner Survey Instrument**

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### **Welcome to the 2014 NISE Net Annual Partner Survey!**

The purpose of this survey is to learn more about the experiences of participants in the Nanoscale Informal Science Education Network (NISE Net) and how the Network might better support their activities.

We are interested in hearing from people who participated in last year's survey as well as new respondents. Because the survey is in many ways about the individual experience in the Network, we would like to hear from everyone invited, not just one contact per organization.

**Please complete this survey by Friday, November 14.**

### **How long will it take?**

- The survey should take approximately 20 to 30 minutes to complete.
- You will have the option to save your progress and return to finish at another time by clicking the link available at the bottom of every page.

### **What's in it for you?**

- Individuals who submit their survey by the deadline will automatically be entered into a drawing to win one of twenty \$100 Amazon.com gift cards.

### **Information about your participation:**

- Your participation should not make you uncomfortable. However, the survey is optional and you can quit at any time without any consequences.
- Your survey response will initially be linked to your e-mail address, but only trained research or evaluation staff will have access to this information.
- Your responses will remain confidential and disseminated only in non-identifiable and aggregate formats.
- This information will be used to evaluate the impact of the Network as part of the Network-wide evaluation efforts.

*Thank you for your willingness to participate and your efforts to improve the NISE Network!*

If you have any questions regarding the survey, please contact Liz Rosino at [lrosino@omsi.edu](mailto:lrosino@omsi.edu).



## INVOLVEMENT

**1. (Ask only if new respondent and organization type is a college/university)**

**While we understand that you may have many responsibilities as a part of your job, which of the following best describes you?**

- a. I am primarily a researcher/scientist.
- b. I am primarily a college/university instructor.
- c. I am both a researcher/scientist AND college/university instructor.
- d. I am primarily an education outreach coordinator.
- e. I am primarily something else.
  - a. Please describe...

**2. (For new respondents only)**

**Approximately when did you first become involved in the NISE Network?** This could have been by using NISE Net educational products, attending a NISE Net meeting, or some other means.

*{format: drop-down list of years 2005 through 2014}*

**3. In the past 12 months, how many times have you...**

- a. Visited [www.nisenet.org](http://www.nisenet.org)
- b. Contacted or replied to your Regional Hub Leader
- c. Read the Nano Bite monthly e-newsletter

*{format: drop down response options for each}*

- a. Never, and I am not aware of this resource
- b. Never, but I am aware of this resource
- c. 1-2 times a year
- d. 3-6 times a year
- e. 7-12 times a year
- f. More than 12 times a year

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**4. How often does your organization use the following media to promote scientific events and programming that includes NISE Net-related activities (e.g., NanoDays or Nano mini-exhibition)?**

Response Options	I don't know	Never	Rarely	Occasionally	Often	Always
a. Facebook						
b. Twitter						
c. Instagram						
d. Mailing List						
e. Contact local journalist						

**5. How often, if ever, do you do each of the following activities?**

Response Options	I don't know	Never	Rarely	Occasionally	Often	Always
a. Write for a blog about science						
b. Read a blog about science						
c. Talk with reporters about new research findings						
d. Talk with non-scientists about science or research findings						
e. Post or share new research findings or science news on Facebook						
f. Comment on new research findings or science news on Facebook						
g. Tweet or retweet about new research findings or science news on Twitter						

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**6. (For new respondents) In the past five years, (For repeat respondents) In the past 12 months, which of the following professional organizations have you engaged with through membership or attending events?** Please select all that apply.

- a. Association of Science-Technology Centers (ASTC)
- b. American Association of Museums / American Alliance of Museums (AAM)
- c. Association of Children's Museums (ACM)
- d. Visitor Studies Association (VSA)
- e. National Science Teachers Association (NSTA)
- f. American Association for the Advancement of Science (AAAS)
- g. Materials Research Society (MRS)
- h. American Chemical Society (ACS)
- i. American Physical Society (APS)
- j. Other science or education-related professional organization(s) \_\_\_\_\_
- k. None of the above

*{If 'k. none of the above' selected, skip Q7 and Q8 and go directly to Q9}*

**7. (For new respondents) In the past five years, (For repeat respondents) In the past 12 months, have you attended a conference for one or more of the professional organizations listed previously?**

- a. Yes
- b. No

*{If 'b. no' selected, skip Q8 and go directly to Q9}*

**8. At the conference(s), have you attended a session or event about or by NISE Net?** This could also include serving as a session presenter or visiting a NISE Net booth or happy hour.

- a. Yes
- b. No

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## VALUE

**Please note that throughout the survey we will be using the abbreviation “nano” to represent “nanoscale science, engineering, and technology.”**

Please rate the extent to which you agree. Select “Not applicable to my job” if this opportunity is not relevant to your work.

### 9. The NISE Net gives me the opportunity to...

Response Options	Not applicable to my job	Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree
a. Receive new educational materials for engaging the public in nano							
b. Meet professionals outside my organization							
c. Learn from professionals outside my organization							
d. Share with other professionals how I engage the public in nano							
e. Foster local partnerships to engage the public in nano							

### 10. Thinking beyond NISE Net, how much do you value the following opportunities in general?

Response Options	Not applicable to my job	Not at All	Very Little	A Little	Somewhat	A Lot	A Great Deal
a. Receiving new educational materials for engaging the public							
b. Meeting professionals outside my organization							
c. Learning from professionals outside my organization							
d. Sharing with other professionals how I engage the public							
e. Fostering local partnerships to engage the public							

**11. Before getting involved with NISE Net, to what extent did you identify with a broader community that includes both scientists and museum professionals?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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**12. Now that you are involved with NISE Net, to what extent do you identify with a broader community that includes both scientists and museum professionals?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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## EVALUATION AND CAPACITY BUILDING

**13. Think for a minute about your use of evaluation findings as part of your work, both before and after you joined the NISE Net.**

**To what extent has the NISE Net affected your use of any kind of evaluation or evaluation findings, including team-based inquiry?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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**14. Please describe some of the ways the NISE Net has influenced your use of evaluation and evaluation findings.**

*{format: essay box}*

**15. In your opinion, how important is using evaluation or evaluation processes...**

Response Options	Not at all important	Not really important	I am not sure	Important	Very Important
To you?					
To your organization?					
To the field of informal learning?					

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## **PARTNERSHIPS**

**16. Has your organization partnered or collaborated with another around engaging the public in nano?** This could include other organizations involved with NISE Net.

- a. Yes
- b. No
- c. I don't know

*{If 'b. No' or 'c. I don't know' selected, skip Q17–Q19 and proceed directly to Q20}*

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**17. In the past 12 months, about how many partners or collaborators has your organization had around engaging the public in nano?**

- a. 1 to 2
- b. 3 to 5
- c. 6 to 10
- d. 11 to 20
- e. 21 to 40
- f. More than 40
- g. I don't know

**18. In the past 12 months, which types of partners or collaborators has your organization had around engaging the public in nano?** Please select all that apply.

- a. University or College
- b. Museum or Science Center
- c. Industry
- d. K-12 school
- e. Community organization
- f. Other \_\_\_\_\_

**19. To what extent has NISE Net increased the amount of ANY partnerships or collaborations between your organization and another?** These could be about nano or other topics.

Not at all	Very little	A little	Somewhat	A lot	A great deal
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## NANO CONTENT

Please rate the extent to which you agree.

**20. I feel confident in my ability to explain to another adult...**

Response Options	Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree
a. The size of a nanometer						
b. How nano-sized materials behave compared to macro-sized materials						
c. How scientists work at the nanoscale						
d. Examples of nano in nature						
e. Innovations that are possible because of nanotechnology						
f. Ways that nanotechnology improves existing products						
g. Risks or potential risks of nanotechnology						
h. How the future of nanotechnology may be influenced by political, economic, and personal values						

**21. How much has NISE Net affected your confidence in explaining to another adult...**

Response Options	Not at All	Very Little	A Little	Somewhat	A Lot	A Great Deal
a. The size of a nanometer						
b. How nano-sized materials behave compared to macro-sized materials						
c. How scientists work at the nanoscale						
d. Examples of nano in nature						
e. Innovations that are possible because of nanotechnology						
f. Ways that nanotechnology improves existing products						
g. Risks or potential risks of nanotechnology						
h. How the future of nanotechnology may be influenced by political, economic, and personal values						

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## PUBLIC ENGAGEMENT

**22. Before getting involved with NISE Net, did you personally engage any public audience in nano at any time of the year?** This could include developing or implementing nano educational programming or exhibits (but does not include college/university classroom instruction).

- a. Yes
- b. No



**23. In your current role at your organization, do you personally engage any public audience in nano at any time of the year?** This could include developing or implementing nano educational programming or exhibits (but does not include college/university classroom instruction).

- a. Yes
- b. No

**{Note: A MAJOR BRANCH}**

*{If 'b. no' is selected and organization is 'college/university,' go to Q24, skip to Q30, and then skip to Q38}*

*{If 'b. no' is selected and organization is 'museum' or 'other,' go to Q24 and then skip directly to Q39}*

**24. In the past 12 months, approximately how many staff members and volunteers in your organization (including yourself, if applicable) implemented NISE Net educational products with the public?** This could include NanoDays as well as other times of the year.

- a. None
- b. 1-5
- c. 6-10
- d. 11-20
- e. 21-40
- f. More than 40
- g. I don't know

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## PRACTICES

**25. Please rate the extent to which you agree with the following. Please answer about yourself rather than your organization. Select “Not applicable to my job” if this practice is not part of your job.**

As part of my nano education efforts, I feel confident in my ability to...

Response Options	Not applicable to my job	Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree
a. Engage young children							
b. Engage adult audiences							
c. Engage Spanish-speaking audiences							
d. Apply principles of universal design							
e. Engage audiences with nano and society content							
f. Use team-based inquiry to incorporate evaluation into my work							
g. Communicate to a public audience findings from the field of nano research							
h. Initiate a partnership with an informal learning or research organization							

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**26. As a part of your nano education efforts, have you done any of the following? (For repeat responders add) over the past 12 months?** Select “Not Applicable to my job” if this practice is not part of your job.

Response Options	Yes	No	Not applicable to my job
a. Engage young children			
b. Engage adult audiences			
c. Engage Spanish-speaking audiences			
d. Apply principles of universal design			
e. Engage audiences with nano and society content			
f. Use team-based inquiry to incorporate evaluation into my work			
g. Communicate to a public audience findings from the field of nano research			
h. Initiate a partnership with an informal learning or research organization			

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**27. You answered that you have done the following item(s) as a part of your nano education efforts (for repeat responders add) over the past 12 months.**

**Did you use NISE Net resources about this topic?**

Response Options <i>{list only shows items selected as 'Yes' in Q26}</i>	Yes	No
a. Engage young children		
b. Engage adult audiences		
c. Engage Spanish-speaking audiences		
d. Apply principles of universal design		
e. Engage audiences with nano and society content		
f. Use team-based inquiry to incorporate evaluation into my work		
g. Communicate to a public audience findings from the field of nano research		
h. Initiate a partnership with an informal learning or research organization		

**28. You answered that you have not done the following item(s) as a part of your nano education efforts (for repeat responders add) over the past 12 months.**

**Are you aware of NISE Net's resources about this topic?**

Response Options {list only shows items selected as 'No' in Q26}	Yes	No
a. Engage young children		
b. Engage adult audiences		
c. Engage Spanish-speaking audiences		
d. Apply principles of universal design		
e. Engage audiences with nano and society content		
f. Use team-based inquiry to incorporate evaluation into my work		
g. Communicate to a public audience findings from the field of nano research		
h. Initiate a partnership with an informal learning or research organization		

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**29. (For repeat respondents) In the past 12 months, (For new respondents) have you drawn on NISE Net information to do any of the following with content areas other than nano? Select "Not Applicable to my job" if this practice is not part of your job.**

Response Options	Yes	No	Not applicable to my job
a. Engage young children			
b. Engage adult audiences			
c. Engage Spanish-speaking audiences			
d. Apply principles of universal design			
e. Engage audiences with nano and society content			
f. Use team-based inquiry to incorporate evaluation into my work			
g. Communicate to a public audience findings from the field of nano research			
h. Initiate a partnership with an informal learning or research organization			

**30.** (Ask only if Yes to Q23 or org type is a college/university)

**To what extent has NISE Net helped you communicate any science, technology, engineering, and math with the public?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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## PRODUCT / RESOURCE USE

**31.** (For repeat respondents) **Over the past 12 months,** (for new respondents) **To what extent have you personally implemented any of the following NISE Net educational products with the public?** Please answer about yourself rather than your organization.

Response Options	No, I have NOT used this type of NISE Net product...			Yes, I HAVE used this type of NISE Net product...		
	and I did not know NISE Net offered this product	and I knew NISE Net offered this product, but have not seen it used in person	but I have seen this product used in person	only during NanoDays	only outside of NanoDays	during and outside of NanoDays
a. Cart demonstrations and hands-on activities						
b. Stage presentations						
c. Museum theater						
d. Classroom activities						
e. Forums						
f. Science cafes						
g. Media (videos, multimedia, images)						
h. Media (print, posters)						

**32.** (If participant indicates that they use any of the above products outside of NanoDays- the last 2 columns) **In which of the following settings do you personally use NISE Net materials outside of NanoDays?** Please select all that apply.

- a. Cart demonstrations/ brief table top activities
- b. Longer museum programs (e.g. forums, classes, labs, science club)
- c. Longer term display of materials in public spaces (e.g. within exhibits, on the museum floor, on a table)
- d. K-12 School outreach activities (e.g. classes, after school programs, field trips, science fair)
- e. Lesson activities within college courses
- f. Science camps (daily, weekly, seasonal)
- g. Special events (e.g. family events, chemistry events, nano-related events other than NanoDays, family nights, festivals)
- h. Outreach activities with ongoing community partners (e.g. libraries, scouts, Boys & Girls club...)
- i. Professional development (for museum staff, school teachers, college students)
- j. Other \_\_\_\_\_

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**33. Across all of your efforts to engage the public in nano (for repeat responders add: over the past 12 months), to what extent do you typically cover the following topic area?** Please answer about yourself rather than your organization.

Response Options	Never (I don't cover this content)	Rarely (less than 25% of the time)	Sometimes (between 25-50% of the time)	Often (between 51-75% of the time)	Very Often (more than 75% of the time)	Always (all of my efforts cover this content)
a. The size of a nanometer						
b. How nano-sized materials behave compared to macro-sized materials						
c. How scientists work at the nanoscale						
d. Examples of nano in nature						
e. Innovations that are possible because of nanotechnology						
f. Ways that nanotechnology improves existing products						
g. Risks or potential risks of nanotechnology						
h. How the future of nanotechnology will be influenced by political, economic, and personal values						

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**34. Please indicate if you have made any of the following modifications to any NISE Net product in the past 12 months. Please select all that apply.**

- a. I have incorporated a NISE Net product into an existing program.
- b. I have adapted a NISE Net product for a different audience (e.g. modified a product to engage younger or Spanish-speaking audiences).
- c. I have combined a few of the NISE Net products to make a longer program.
- d. I have changed a NISE Net product's format (e.g. modified a stage presentation to be a cart demonstration).
- e. I have changed the educational messages of a NISE Net product.
- f. I have **NOT** made any modifications to any NISE Net product.
- g. I have made a modification not listed. \_\_\_\_\_

**35. Please rate the extent to which you agree.**

**As part of my efforts to engage the public in nano, I feel confident in my ability to modify and adapt programs for my audiences.**

Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree
---------------------	-----------------	-------------------	----------------	--------------	------------------

**36. (For new responders) Have you developed any new nano educational products on your own?**

- a. Yes, I developed my own nano educational products before joining the NISE Network.
- b. Yes, I have developed new nano educational products since joining the NISE Network.
- c. Yes, I have developed new nano educational products both before and since joining the NISE Network.
- d. No, I have not developed a new nano educational product.

**37. (For repeat responders) Have you developed any new nano educational products on your own in the last 12 months?**

- a. Yes
- b. No

**38. In the past 12 months, which of the following, if any, have occurred?**

Check all that apply.

- a. I have applied for funding from a source other than NISE Net to support my nano education efforts.
- b. I have received funding from a source other than NISE Net to support my nano education efforts.
- c. I have received non-monetary resources from a source other than NISE Net to support my nano education efforts.
- d. I have shared NISE Net educational materials with professionals in my own organization.
- e. I have shared NISE Net educational materials with professionals in a different organization.
- f. I have started engaging the public in nano in a new way in my organization.
- g. None of these have occurred.

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## **BROWN BAG AVAILABILITY**

**Over the past few years, the NISE Network has hosted a number of free one-hour online brown-bag conversations open to all partners. They covered topics such as programming around your *Nano* mini-exhibition and the science behind NanoDays.**

**39. What days of the week would work best for you to attend a future online brown-bag session?** Please check all that apply.

- a. Monday
- b. Tuesday
- c. Wednesday
- d. Thursday
- e. Friday

**40. What times of day would work best for you to attend a future online brown-bag session?** Please consider which time zone is most appropriate to you and then check all timing options that apply.

- a. (9 - 11 am ET) (8 - 10 am CT) (7 - 9 am MT) (6 - 8 am PT)
- b. (11 am - 1 pm ET) (10 - noon CT) (9 - 11 am MT) (8 - 10 am PT)
- c. (1 - 3 pm ET) (noon - 2 pm CT) (11 am - 1 pm MT) (10 am - noon PT)
- d. (3 - 5 pm ET) (2 - 4 pm CT) (1 - 3 pm MT) (noon - 2 pm PT)
- e. (5 - 7 pm ET) (4 - 6 pm CT) (3 - 5 pm MT) (2 - 4 pm PT)



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## CLOSING QUESTIONS

**For these final questions, please think about your experience with NISE Net overall.**

**41. How valuable has the NISE Network been to your organization?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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**42. How valuable has the NISE Network been to you individually?**

Not at all	Very little	A little	Somewhat	A lot	A great deal
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**43. Do you have any additional comments or questions you would like to share about NISE Net?**

*{format: essay box}*

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## THANK YOU PAGE

**Thank you for completing the NISE Net Annual Partner Survey.**

We appreciate the time you have just spent in providing us with more information about your experience as a partner and how the Network can better support your efforts.

Individuals who submit their survey by the deadline (November 14) will automatically be entered into a drawing to win one of twenty \$100 Amazon.com gift cards.

Winners will be notified by email no later than November 24.

If you have any questions regarding the survey, please contact Liz Rosino at [lrosino@omsi.edu](mailto:lrosino@omsi.edu).

## Year 8 Interview Instrument

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### I. OPENING

- **Thanks** so much for agreeing to this conversation. Introduce yourself – name, institution, NISE Net evaluation.
- **Prof Impacts:** As was mentioned in the email, we're conducting these interviews as part of the NISE Network Professional Impacts evaluation. This work is being led by the Museum of Science, which is why you've heard from several of us who are on the team.
- **Process:** I'd like to go over some of the details of our study to make sure you're aware of the full process since it will span the next three years.
  - This year you completed the Annual Partner Survey in the fall and are taking part in this interview. The same process will happen for the next two years, meaning that there is a survey in the fall followed by an interview in early 2014 and early 2015.
  - **Incentive:** As mentioned in the email, we'll be providing incentives for your participation in the form of Amazon.com gift cards (\$25 for this year; \$50 for year 2; and \$75 for year 3). Although the interview process will be similar each year, we are offering a higher gift card amount to encourage long-term commitment. Even if you leave your current position in that time, we would still like to interview you each year.
- **Background:** Through these interviews, we're interested in learning more about the different experiences that partners have within NISE Net. So we're talking to individuals with a range of involvement.
  - Our study hopes to look at the impact of NISE Net on individual professionals so we'll be asking questions about your perspective within NISE Net. At times, I might ask you to elaborate on your perspective within your organization, but I'm mostly interested in you as an individual.
- So – **in this interview**, I'll start off asking you some general questions about your involvement with the Network, to get a little context, and then ask about potential partnerships, your understanding of nano, several NISE Net practices, and what kinds of NISE Net materials you tend to use with the public.
  - I emailed you a short document that I'll use as a reference for a couple of questions.
- The interview will last approximately 1 hour.

- You can stop participating in the interview at any time. You can also choose not to answer any of the questions I ask.
- Audio Recording:
  - You said in the email that you agreed to be audio recorded. We'll be using this for transcription purposes only because we want to make sure we can understand exactly what you mean. Are you still ok with being audio recorded?
  - [If not being audio recorded]: I have another member of our team here taking notes so we can better analyze your responses. Are you ok with that?
  - The audio recording of/notes from this this interview will only be shared with staff working on the project.
- What you say in this interview is **confidential**, which means that:
  - Every reasonable effort will be made to ensure that your ideas and feedback are kept confidential, and pseudonyms (made-up names) will be used.
  - Quotes from these audio recordings may also appear in publications, although your name will never be associated with any comment that might appear in such publications.
  - Of course, I ask you to also help us keep this discussion confidential by not sharing any details with others.
- **Any questions** so far about the process over the next three years or our discussion today?

**[Interviewer: TURN ON AUDIO RECORDING!]**

*The following information refers to content in the rest of the Y8 interview.*

**Blue** highlight = refers to something the interviewee said previously

**Green** highlight = refers to other interviewee data, e.g. survey response or QuickBase, (QB)

## II. GENERAL AND COMMUNITY

The purpose of these interviews is to better understand your experience with NISE Net – how you first became involved, and how that might change over the next three years. I'd like to start by asking about your current role in your institution.

### Q1. What is your current job and how does nano fit within your role?

[Verify job title from QuickBase]

#### **REQUIRED PROBES:**

- Is **all of your work** nano-related or do you work on **other topics** as well?
- Do you work with **others in your institution** on nano? If so, who?
  - [Suggested probe: train front-line staff? Work with other educators?]
- Have you **always done this level** of nano-related work or has that changed with your involvement with nano?

### Q2. You mentioned on the survey that you first became involved with NISE Net in [XX year]. What first drew you to the NISE Network?

**REDIRECT/REFOCUS (if needed):** Was it a product? NanoDays? – How did you hear about NanoDays/that product?

#### **REQUIRED PROBES:**

- Was there a **certain person** who got you excited about the Network?
- Were they **internal or external** to your institution?

### Q3. What were you, personally, hoping to get out of NISE Net when you first got involved?

[Refer to survey Q2 if necessary]

**REDIRECT/REFOCUS (if needed):** As a professional, is there something you were hoping to gain from NISE Net involvement?

**PROBE:** new content to share with visitors; future partnerships with local researchers; new methods for engaging visitors?

**Q4. [potential to cut if you feel like you got enough out of interview Q1]  
How would you describe your involvement in NISE Net since that first experience?**

***REDIRECT/REFOCUS (if needed):*** Has your involvement in NISE Net changed at all or has it stayed the same?

**REQUIRED PROBES:**

- How has it changed? What were the reasons for that change?
- Was there something that happened as an individual or at your institution that prompted you to seek additional resources [attend a meeting/apply for a grant]?
- [If it stayed the same], do you think it will change over the next three years?

**Q5. What has been the most valuable part to you as being a part of the Network? What about it has been valuable?**

***[Look to survey question 7/8 and goals Q2 for background information]***

***PROBE:*** e.g. receiving materials; meeting people; new content; new partnerships; attending meetings?

**REQUIRED PROBE:**

- Did you find value in that because it aided your organization, professionally, or personally?

**Q6. In your involvement with NISE Net overall, do you feel like you are a part of a larger community of professionals engaging the public in nano?**

**REQUIRED PROBE:**

**IF YES**

- How would you describe this community?
- Was there something that NISE Net did or made that encouraged this feeling you have about [the NISE Net] community?
- How would you describe your role in this community?
- Was there an instance with the NISE Net that was less welcoming?

**IF NO**

- Is that community something that would interest you?
- What aspects of a community would interest you?
- Was there an instance with the NISE Net that was less welcoming?

**Q7. Earlier, you mentioned that one thing you were hoping to get out of NISE Net was [insert info from interview Q3]. What other avenues or outlets have you used to accomplish [that goal]?**

**REQUIRED PROBES:**

- Do you still use [the other avenue mentioned]?
- Is that a resource you used before NISE Net?

***Example for nano activities:*** Before NISE Net, what other avenues or outlets did you use to receive nano educational materials/resources?

### III. PARTNERSHIPS

Now I have a few questions about partnership and collaboration and how you work with others outside of your institutions. This could be formal or less formal one-time things. We're interested in a broad view of this, so please consider potential partnerships with local researchers or scientists as well as partnerships with other museums or community organizations. This could include inviting local students to volunteer for NanoDays, on-going projects, or working with someone to talk with your staff about nano.

Pre-interview: check to see if **survey question 23h (partnership) says "not applicable to my job."**

**Q8 A:** If respondent answered N/A:

**I noticed that you said on the survey that initiating partnerships was not applicable to your job, but have you been involved in even a small way with any partnerships that are nano-related?**

**OR**

**Q8 B:** If respondent DID NOT answer N/A:

**Have you been involved with any partnerships that are nano-related?**

*[If 'yes' to partnerships, skip to Q11 on the next page]*

**IF NO:**

**Q9. Have you considered partnering with another institution or researcher to deliver nano to the public?**

**REQUIRED PROBES:**

- Is there a particular reason or barrier that kept you from partnering around nano?
- In your education programs that are not nano-related, does your institution typically partner with outside organizations?
- **[If they mention a failed partnership]** What made that partnership unsuccessful?

**Q10. How, if at all, could NISE Net help you facilitate potential partnerships?**

**REQUIRED PROBES:**

**IF YES**

- *Is this something that is ongoing? Is this something that has ended?*
- *What is your role in these partnerships?*

**Q11. Would you describe these as successful or unsuccessful partnerships?**

**REQUIRED PROBES:** [Probe for at least one of each kind]

- *What made them **successful**?*
- *Was there anything about them that was **unsuccessful**?*

**Q12. How, if at all, has the NISE Network helped to facilitate or strengthen this/these partnerships?**

**REQUIRED PROBE:**

- ***What could NISE Net have offered to help you in partnering with local researchers or organizations?***

**Q13. In your education programs that are not nano-related, does your institution typically partner with outside organizations?**

**REQUIRED PROBE:**

- *Do you think there is **something in particular about nano** or NISE Net resources that encouraged this type of partnership?*

**IV. LEARNING CONCEPTS**

**Concepts**

Nano concepts used in this study
a. The size of a nanometer
b. How nano-sized materials behave compared to macro-sized materials
c. How scientists work at the nanoscale
d. Examples of nano in nature
e. Innovations that are possible because of nanotechnology
f. Ways that nanotechnology improves existing products
g. Risks or potential risks of nanotechnology
h. How the future of nanotechnology will be influenced by political, economic, and personal values

The next few questions I have are about your own understanding of nano.

**Q14. How would you describe your understanding of nano before being involved in NISE Net?**

***REDIRECT/REFOCUS (if needed):***

- *Had you heard about it before?*
- *Was it one of the topics you were implementing with the public before NISE Net?*

**Q15. How would you describe your understanding of nano today?**

**Transition language:** NISE Net has identified several nano concepts in the NISE Net content map that they use to develop educational products. Were you able to open the **document** I sent? This next question is about the information on the first page. **On the survey, we asked about your confidence in explaining several areas of nano.**

**Q16.**

If there is one that is rated lower:

[You responded with fairly high confidence in all the areas, but rated “xxx” as the lowest.]

**How, if at all, could the NISE Net provide information related to this topic to help you with your work?**

***REQUIRED PROBE:***

- *Is that something you would be interested in? Is this a topic that interests you?*

If they are all rated the same:

You responded with fairly high confidence in all the areas, but **is there an area of nano that you feel like you still want to learn more about?**

***REQUIRED PROBE:***

- *How, if at all, could the NISE Net provide information related to this topic to help you with your work?*

**Q17. What NISE Net resource or professional development offering has been the most useful for your learning about nano concepts?**

[Could refer to **interview Q15 answer** in necessary]

***PROBE:*** ...*Your understanding of what nano is, or its properties*



## V. PRACTICES

### Practices

Practices used in this study
a. Engaged young children
b. Engaged adult audiences
c. Engaged Spanish-speaking audiences
d. Applied principles of universal design
e. Engaged audiences with nano and society content
f. Used team-based inquiry to incorporate evaluation into my work
g. Communicated to a public audience findings from the field of nano research
h. Initiated a partnership with an informal learning or research organization

There are also several practices NISE Net has been interested in engaging partners about. We asked you about these on our Annual Partner Survey and whether you implemented these as a part of your nano-related work and whether you engaged in any of these with your work on other topics that are not nano.

This next question also refers to the **document** that I sent – the information on the second page.

**Interviewer: Look at clock – how many can you probe on? Try to get to 3 if possible.**

[Refer to survey or interview visual]

**If Yes nano/no non-nano [1/0]:**

I'd like to ask you a couple questions about a practice that you were doing as a part of your nano-related work, but not with other topics:

**Q18. Have you considered [doing this practice] as a part of your work that is not nano-related?**

**Q19. Is there something in particular about nano or NISE Net resources that encouraged you to do this?**

**If No nano/no non-nano [0/0]**

I'd like to ask you a couple questions about a practice that you were not doing with nano or other topics in general...

**Q20. Is this a practice that you are familiar with? Is this something you have considered doing?**

**Q21. Is there anything NISE Net could offer that would help you integrate this practice into your work?**

**REQUIRED PROBE:**

- Is there anything in your institution that stands in your way of doing this work?

**All**

**Q22. Just to finish up, of those practices that we haven't discussed, is there any resource (product or person) that NISE Net has offered that has changed the way you're doing that work at your institution?**

## VI. USING PRODUCTS

Now I have a couple of questions about NISE Net products that you might use. This could include activities from the NanoDays kits as well as those from the online catalog of products.

**Q23. What NISE Net products do you (personally) use most often to engage the public with nano?**

**PROBE:** *Was it NanoDays? Was it from the catalog? Did this build off of non-NISE Net usage? How did you find out about this product?*

- *Volunteers: how do they find out about new products?*

**Q24. Are you the person who makes product decisions?  
What has motivated you to use these specific NISE Net products?**

**PROBE:** *e.g. format, content, etc.*

**Q25. Have you ever come across a NISE Net educational product or practice that you didn't want to use?**

**PROBE:** *For example, perhaps it didn't meet your educational philosophy or your institution's goals or you didn't consider high quality.*

**Q26. How, if at all, do you feel encouraged by the Network to modify/adapt materials?**

***PROBE IF THERE IS TIME:*** I see on the survey that you [insert info from survey Q29], could you tell me a little more about that?

## VII. GENERAL ENDING

**Q27. Overall, through all the products and practices we've discussed, how regularly is your institution engaging the public in nano?**

**REQUIRED PROBE:**

- *Is that amount **different than before** you became involved in NISE Net?*
- *After NISE Net is over, do you think that level of engaging the public will **stay the same, be less, or occur more** than it does right now?*

**Transition language:** My final two questions are referring to your involvement in the Network in the whole. Thinking about your involvement, I'm interested in knowing about any frustrations with the Network as well as anything that has been particularly positive.

**Q28. So, first. Have you had any frustrations with the Network – this could include products, individuals, meetings, the way it functions, etc.?**

**Q29. Is there anything else that has occurred in your professional work that you feel has happened because of your involvement with NISE Net?**

**Q30. Thank you so much! Of everything we've discussed today, do you have any further questions or is there anything else you'd like to add?**

**Thank you so much [name] for talking with me today. We really appreciate you agreeing to participate in our study!**

## Year 9 Interview Instrument

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### PRE-INTERVIEW

Refer to Y8 interview recap form.

- What should be followed-up on? Are there areas where change is expected?

How do we expect their involvement with NISE Net to have changed since last year?

- Participated in a meeting or online brownbag?
- Received new product like mini-exhibition?
- Received or applied for mini-grant?
- Survey response change for practice or product use (the two T-chart questions)?

#### Pre-email to interviewee

- Send list of nano concepts and list of practices
- Tell the interviewee more info about what this interview is about so that they can prepare. Tell them to think about anything they're doing differently this year than when we spoke last year.

### I. INTRODUCTION

- **Thanks** so much for agreeing to this conversation. Introduce yourself – name, institution, NISE Net evaluation
- **Prof Impacts:** As you may remember from last year, we're conducting these interviews as part of the NISE Network Professional Impacts evaluation. This work is being led by the Museum of Science, which is why you've heard from several of us who are on the team.
- **Process:** We are now in Year 2 of this 3-year study.
  - You recently completed the Annual Partner Survey for 2013 and are now taking part in this interview. The same process will happen next year, meaning that there will be a survey in the fall followed by an interview in early 2015.
  - **Incentive:** We'll be providing incentives for your participation in the form of Amazon.com gift cards (\$25 for last year; \$50 for this year; and \$75 for next year). Although the interview process will be similar each year, we are offering a higher gift card amount to encourage long-term commitment. Even if you leave your current position in that time, we would still like to interview you each year.

- **Background:** Through these interviews, we're interested in learning more about the different experiences that partners have within NISE Net. So we're talking to individuals with a range of involvement.
- The purpose of these interviews is to further understand your experience with NISE Net and **see how that changes over the final three years of NSF funding.**
  - At times, I might ask you to elaborate on your perspective within your organization, but I'm mostly interested in you as an individual.
  - In the last email you received from me, I included a list of NISE Net concepts and practices. Hopefully you've had a brief moment to look at them. We'll be referencing these items for a couple of questions.
- The interview will last approximately 1 hour.
- You can stop participating in the interview at any time. You can also choose not to answer any of the questions I ask.
- Audio Recording:
  - [If being audio recorded]: Last year you agreed to be audio recorded, I wanted to make sure that you are still ok with this. We'll be using this for transcription purposes only because we want to make sure we can understand exactly what you mean. Are you still ok with being audio recorded?
  - [If not being audio recorded]: I have another member of our team here taking notes so we can better analyze your responses. Are you ok with that?
  - The audio recording of/notes from this this interview will only be shared with staff working on the project.
- What you say in this interview is **confidential**, which means that:
  - Every reasonable effort will be made to ensure that your ideas and feedback are kept confidential, and pseudonyms (made-up names) will be used.
  - Quotes from these audio recordings may also appear in publications, although your name will never be associated with any comment that might appear in such publications.
  - Of course, I ask you to also help us keep this discussion confidential by not sharing any details with others.
- **Any questions** so far about the process over the next three years or our discussion today?

**[Interviewer: TURN ON AUDIO RECORDING!]**

*The following information refers to content in the rest of the Y9 interview.*

**Blue** highlight = refers to Y8 interview

## II. GENERAL AND COMMUNITY

**Q1. I'd like to start by asking about your current role in your institution. Last year you described your job as [insert info]. Has your job changed at all since we spoke last [January/February/March]?**

**Reference Y8 interview Q1** [*probe about their job in the museum in general and their nano-related work specifically*]

**SUGGESTED PROBES:**

- *Has your level of nano-related work stayed the same?*
- *Do you still work with others in your institution on nano? [Are you working with others in your institution on nano?]*

**Q2. Has your involvement in NISE Net changed in the last year? How has it changed?** [*your connection with the Network; your participation in the Network*]

**SUGGESTED PROBES:**

- *Have you been to any meetings? Did you go to any conference sessions or events associated with NISE Net?*

**REQUIRED PROBES:**

**a. [If NO meetings/mini-grants/mini-exhibitions]** Have you met anyone new in the past year because of NISE Net? [Affiliated with NISE Net?]

*Have you met any other professionals through NISE Net that you've stayed in touch with? [Not just in the last 12 months]*

- *Where did you meet?*
- *When you communicate now, is it mostly about nano?*

**b. [If attended a meeting]** I noticed that you attended the [regional meeting in the fall], did that change your involvement with the NISE Net?

*Have you met any other professionals through NISE Net that you've stayed in touch with? [Not just in the last 12 months]*

- *Where did you meet?*
- *When you communicate now, is it mostly about nano?*

**c. [If mini-grant/mini-exhibition]** I noticed that you received a [xxx] in the last year, was there something that happened that prompted you to seek additional resources?

*[Probe for their role in the process. Did you write the application? Did you talk with anyone else in the Network before submitting your application?]*

### III. PARTNERSHIPS

Read Y8 interview section on partnerships.

Now I have a few questions about partnership and collaboration and how you work with others outside of your institutions. This could be formal or less formal one-time things. We're interested in a broad view of this, so please consider potential partnerships with local researchers or scientists as well as partnerships with other museums or community organizations. This could include inviting local students to volunteer for NanoDays, on-going projects, or working with someone to talk with your staff about nano.

**Q3. Since we spoke last year, have you started any new partnerships, even in this broad sense of the word?**

**REDIRECT/REFOCUS**

- *Have you met with any new individuals about nano (e.g. nano researcher or other museum/community organization)?*
- *Have you shared nano materials with anyone new in the last year?*

**If there is a partnership to follow up on**

**Q4. Last year you said [insert info]. Did [xx] end up happening?**

**REQUIRED PROBES:** *Probe for why or why not – What were the conditions that helped it happen?*

- *[If failed] Why do you think this partnership didn't work out this time?*
- *Was there something that happened between you and the partner or between your institutions that [made that possible/led to it not happening]?*
- *What are your future plans for partnering with this organization?*

**Q5. Have any of your nano partnerships expanded to include any other topics? For example, after partnering about nano, have you started doing something else together not related to nano?**

**REQUIRED PROBES:**

**IF YES**

- *What other topics?*
- *Is nano still part of your collaboration?*

## IV. LEARNING CONCEPTS

### Concepts

Nano concepts used in this study
a. The size of a nanometer
b. How nano-sized materials behave compared to macro-sized materials
c. How scientists work at the nanoscale
d. Examples of nano in nature
e. Innovations that are possible because of nanotechnology
f. Ways that nanotechnology improves existing products
g. Risks or potential risks of nanotechnology
h. How the future of nanotechnology will be influenced by political, economic, and personal values

Read over Y8 nano understanding.

**Q6. How do you feel your understanding of nano has changed in the last year?**

[direct interviewee to look over the nano concepts which were emailed]

**Q6a. Looking at that list of nano concepts, do you feel like you know anything new about any of these that you didn't know a year ago?**

**REDIRECT/REFOCUS**

- *Are there any that you feel differently about compared to last year?*

**REQUIRED PROBES:**

- *How did you learn about that?*
- **[Probe to clarify** if that is related to NISE Net or their other work] *Is this something you learned from a NISE Net resource or from somewhere else?*

**[BROADEN:** If partner has trouble with this, expand beyond NISE Net concepts.]

**Q6b. Thinking beyond these individual concepts and thinking of nanotechnology in general, do you feel like you know anything about nano in general that you didn't know a year ago?**



## VI. USING PRODUCTS

[Become familiar with whether this person makes the product decisions, what products do they say they're doing (Y8 interview), which nano content areas do they cover (Y9 survey Q35)]

[sentence about shifting topics. *Now I have a few questions about your nano education efforts in general.*]

**Q7. Has your institution started doing nano in a different way in the last year? e.g. using products differently? Doing nano on the floors more often? Covering different nano content?**

**REQUIRED PROBES:**

**IF YES:** What has your **role** been in this shift?

**IF NO:** What about you, in particular? Is your **role** in the nano education efforts any different?

- *Are you using any new products more/less often?*
- *Are you covering certain content areas more/less often?*

## V. PRACTICES

### Practices

Practices used in this study
a. Engaged young children
b. Engaged adult audiences
c. Engaged Spanish-speaking audiences
d. Applied principles of universal design
e. Engaged audiences with nano and society content
f. Used team-based inquiry to incorporate evaluation into my work
g. Communicated to a public audience findings from the field of nano research
h. Initiated a partnership with an informal learning or research organization

**Q8. What about audiences. Have you started engaging any new audiences with nano in the last year?**

*[Probe as necessary if Y8 response suggests change]*

**REQUIRED PROBE:**

- *Have you used any NISE Net resources to engage that audience?*

**Q9. Looking at the list of practices that I emailed you, has anything changed in the last year related to any of these?**

[Probe as necessary if Y8 response suggests change]

**REQUIRED PROBE:**

- *Have you used any NISE Net resources to [do that practice]?*

**VII. ENDING**

**Q10. Is there anything that you're particularly excited about in the coming year?**

[Can be overall, just nano related]

**Q11. How, if at all, do you think that will impact your nano education efforts?**

**Q12. The NISE Network is currently grant funded through August 2015. After NISE Net's funding is over, do you think your level of engaging the public with nano will stay the same, be less, or occur more than it does right now?**

## Year 10 Interview Instrument

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### PRE-INTERVIEW

Update the Y9 prep form and revisit their Y9 memo paragraph

- What should be followed-up on? Are there areas where change is expected?

How do we expect their involvement with NISE Net to have changed since last year?

- Participated in a meeting or online brownbag?
- Received new product like mini-exhibition?
- Received or applied for mini-grant?
- Survey response change

#### Pre-email to interviewee

- Final reminder of time and phone number
- Include:
  - List of nano concepts and practices
  - Think about anything you're doing differently this year than when we spoke last February.
  - Think about your future plans for nano education and using NISE Net materials.

### I. INTRODUCTION

- **Thanks** so much for agreeing to this conversation. Introduce yourself – name, institution, NISE Net evaluation
- **Prof Impacts:** As you may remember from the last two years, we're conducting these interviews as part of the NISE Network Professional Impacts evaluation. This work is being led by the Museum of Science, which is why you've heard from several of us who are on the team.
- **Process:** We are now in the final year of this 3-year study.
  - [if applicable – 4 people did not take the survey] You recently completed the Annual Partner Survey for 2014 and are now taking part in this final, follow-up interview.
  - **Incentive:** As a “thank you” for your participation in this interview, we'll be sending you a \$75 Amazon.com gift card.
- **Background:** Through these interviews, we're interested in learning more about the different experiences that partners have within NISE Net. So we're talking to individuals with a range of involvement.

- The purpose of these interviews is to further understand your experience with NISE Net and **see how that changes over the final three years of NSF funding.**
  - At times, I might ask you to elaborate on your perspective within your organization, but I'm mostly interested in you as an individual.
  - In the last email you received from me, I included a list of NISE Net concepts and practices. Hopefully you've had a brief moment to look at them. We'll be referencing these items for a couple of questions.
  - I know we've heard over the past two years what you've been doing, but I want to remind you can talk about positive and negative things. If anything does not apply, it's okay to say that. Or mention areas where NISE Net hasn't affected your work.
- The interview will last approximately 1 hour.
- You can stop participating in the interview at any time. You can also choose not to answer any of the questions I ask.
- Audio Recording:
  - I have another member of my department here taking notes so we can better analyze your responses. Are you ok with that?
  - [*If agreed to audio recording*] Last year you also agreed to be audio recorded. The purpose of recording this interview is so that any quotes can be accurately portrayed in the final report. Is this still ok with you?
  - The audio recording of/notes from this this interview will only be shared with staff working on the project.
- What you say in this interview is **confidential**, which means that:
  - Every reasonable effort will be made to ensure that your ideas and feedback are kept confidential, and pseudonyms (made-up names) will be used.
  - Quotes from these audio recordings may also appear in publications, although your name will never be associated with any comment that might appear in such publications.
  - Of course, I ask you to also help us keep this discussion confidential by not sharing any details with others.
- **Any questions** so far about the process over the past three years or our discussion today?

**[Interviewer: TURN ON AUDIO RECORDING!]**

*The following information refers to content in the rest of the Y10 interview.*

**Blue** highlight = refers to Y9 interview

## II. GENERAL AND COMMUNITY

**Q1. I'd like to start by asking about your current role in your institution. Last year you described your job as [insert info]. Has your job changed at all since we spoke last [January/February]?**

**Reference Y9 interview Q1.** [*Probe about their job in the museum in general and their nano-related work specifically*]

**PROBES:**

- *Has your level of nano-related work stayed the same?*
- *Do you still work with others in your institution on nano? [Are you working with others in your institution on nano?]*
- *How long have you been [in the museum field?] or [in the field of nano research?]*

**Q1a (for University only). What percentage of your time is dedicated to outreach, as opposed to research or teaching college courses?**

Note: If this seems very low when compared to the amount of nano education they talk about, revisit this percentage at the end of interview. For example: "You said at the beginning of the interview that about X% of your job was dedicated to outreach, but you mentioned many activities. Are all of the activities part of that X%?"

**Q2. Has your involvement in NISE Net changed in the last year? How has it changed?**

***PROBES:***

- *Have you been to any online brown-bags?*
- *Did you go to any conference sessions or events associated with NISE Net?*
- *Visited the website any more or less?*

**REQUIRED PROBES:**

- a. [If no]** Have you met anyone new in the past year because of NISE Net? [Affiliated with NISE Net?]
- *Where did you meet?*
  - *When you communicate now, is it mostly about nano?*
- b. [If yes, meeting-related]** Did attending [the xxx] affect anything you are doing at your organization? How?

**Have you met any other professionals through NISE Net that you've stayed in touch with?** [Not just in the last 12 months]

- *Where did you meet?*
- *When you communicate now, is it mostly about nano?*

**Q3. [If mini-grant]**

**NEW mini-grant: I noticed that you received a mini-grant in the last year, what was your role in that process?**

**SUGGESTED PROBES:**

- *Was there something that happened that prompted you to seek additional resources?*
- *Did you write the application?*
- *Did you talk with anyone else in the Network before submitting your application?*

**Follow-up from last year mini-grant: Last year we talked about your plans for your mini-grant. Has anything changed in your work since receiving the mini-grant? Has that project continued?**

**Q4. [Survey question 11 and 12] On our recent survey, we asked if you identified with a broader community of scientists and museum professionals before getting involved in NISE Net and now.**

**For survey non-responders:**

- *On a scale of 1 to 6, before getting involved with NISE Net, to what extent did you identify with a broader community that includes both scientists and museum professionals?*
  - *Now that you are involved with NISE Net, on a scale of 1 to 6, to what extent do you identify with a broader community that includes both scientists and museum professionals?*
- a. **If rating increased:** Based on your responses, it seems like you identify with a broader community **more now than before** getting involved in NISE Net.
- *Talk to me about how you see yourself identifying with a community of scientists and museums more now than before.*
    - i. *What makes you feel like this has increased?*
    - ii. *Has any change occurred that led to this increased identity?*
  - *Before getting involved in NISE Net, what was your community of scientists and museum professionals?*
- b. **If rating stays the same:** You rated these the same meaning that you identified with a broader community **both now and before** NISE Net.
- *Talk to me about how you see yourself identifying with a community of scientists and museums. What makes you feel like this has remained steady?*
  - *Before getting involved in NISE Net, what was your community of scientists and museum professionals?*
  - *To make sure I understand correctly, you had a similar sense of community before NISE Net and now, and NISE Net has not added or expanded to that sense of community. Is there anything NISE Net could have done to increase your sense of community?*

### III. PARTNERSHIPS

**Read Y9 interview section on partnerships.**

Now I have a few questions about partnership and collaboration and how you work with others outside of your institutions. This could be formal or informal one-time things with local researchers or scientists, as well as partnerships with other museums or community organizations. This could include inviting local students to volunteer for NanoDays, on-going projects, or working with someone to talk with your staff about nano.

**Q5. We've talked about your past partnerships related to nano. Do you have any examples of a partnership that has lasted for more than one year? If yes, explain what the purpose of the partnership was and who it was with.**

**REQUIRED PROBES:**

- *Is there a particular reason or factor that made it easier to extend this partnership beyond one year?*
- *What are your future plans for partnering with this organization?*

**Q6. Have there been any partnerships that haven't been sustained more than one year?**

**REQUIRED PROBES:**

- *Is there a particular reason this partnership didn't work out this time?*

**Q7. Have you shared nano materials with anyone new in the last year?**

**Q8. [Probe as necessary based on previous years.] Last year you said [insert info]. Did [xx] end up happening?**

**Q9. Have any of your nano partnerships expanded to include any other topics? For example, after partnering about nano, have you started doing something else together not related to nano?**

**REQUIRED PROBES:**

**IF YES**

- What other topics?
- Is nano still part of your collaboration?

**Q11. [For NON-university only here, if they are partnering with universities. Ask university in USE section]**

**We know that some university partners are using NISE Net materials and outreach partnerships to fulfill broader impacts requirements for grants. Do you know if your university partners are fulfilling broader impacts requirements through their NISE Network with you?**



## IV. LEARNING CONCEPTS

### Concepts

Nano concepts used in this study
a. The size of a nanometer
b. How nano-sized materials behave compared to macro-sized materials
c. How scientists work at the nanoscale
d. Examples of nano in nature
e. Innovations that are possible because of nanotechnology
f. Ways that nanotechnology improves existing products
g. Risks or potential risks of nanotechnology
h. How the future of nanotechnology will be influenced by political, economic, and personal values

Read over Y9 nano understanding.

Refer to list of concepts. Interviewer should look at Y8 and Y9 interview to see beginning knowledge.

**Q12. For the past two years, we've asked about your understanding of nano, including the concepts that I emailed you. We don't have to go through all of these individually, but overall, since you got involved with NISE Net, how has NISE Net affected your understanding of nano?**

**Q13. Have you learned anything about nano in the last year, even beyond this list of concepts?**

*[Probe as necessary based on Y8 and Y9.]*

*If science communication strategies are mentioned:*

**Q18. You just mentioned something related to communicating science. We also asked you about this on the recent survey. We asked you about communicating any STEM topic--not just nano--and the extent to which NISE Net has helped you. On a six-point scale from “not at all” to “a great deal,” you responded [insert survey Q30 response e.g. a level 4 or “somewhat”]. Can you tell me more about your rating or how NISE Net has impacted your science communication in general?**

**For survey non-responders:**

- *On a scale of 1 to 6, to what extent has NISE Net helped you communicate any science, technology, engineering, and math with the public?*
- *Can you tell me more about your rating or how NISE Net has impacted your science communication?*

**SUGGESTED PROBES:** *affected how you facilitate, activities you do, how much in-depth information you provide, or the types of content.*

## VI. USING PRODUCTS

**Become familiar** *with whether this person makes the product decisions, what products does s/he say s/he's doing (Y9 interview), which products s/he uses (Y10 survey Q31) which nano content areas does s/he cover? (Y10 survey Q33). Think about new product use in 2014 and follow-up from previous years.]*

**Now I have a few questions about your nano education efforts in general.**

*Note: Here and throughout, if the individual says something about receiving free stuff, you should probe about how that stuff impacted them as an individual.*

**Q14. Has your institution started doing nano in a different way in the last year? e.g. Using products differently? Doing nano on the floors more often? Covering different nano content?**

**REQUIRED PROBES:**

**IF YES:** What has your **role** been in this shift?

**IF NO:** What about you, in particular, is your **role** in the nano education efforts any different?

- *Are you using any new products more/less often?*
- *Are you covering certain content areas more/less often?*

**Q15. [If mini-exhibition]**

**NEW: I noticed that you received a mini-exhibition in the last year...**  
*[Probe for their role in the process.]*

**SUGGESTED PROBES:**

- *What, if any, programming are you doing around the exhibit?*
- *Has the exhibition related to other work/exhibits at their institution?*

**Follow-up from last year: Last year we talked about your plans for your mini-exhibition. Has anything changed in your work since receiving the mini-exhibition?**

**Q16. You've shared how you've used NISE Net in a variety of contexts** [restate from previous answer]. Has any part of your programming or overall education efforts changed as a result of NISE Net?

*[Rerword: Do you feel that your involvement with NISE Net has pushed your programming in a new direction?]*

**PROBE:**

- *Has any part of NISE Net affected how you train or manage the staff you oversee?*

**Q17. [For UNIVERSITY only]**

**Some university partners are using NISE Net materials and outreach partnerships to fulfill broader impacts requirements for grants. Is that something that you are doing?**

**PROBES:**

- *Do you use only NISE Net materials or do you integrate them with other resources?*
- *Why NISE Net materials and not others?*

## V. PRACTICES

### Practices

Practices used in this study
a. Engaged young children
b. Engaged adult audiences
c. Engaged Spanish-speaking audiences
d. Applied principles of universal design
e. Engaged audiences with nano and society content
f. Used team-based inquiry to incorporate evaluation into my work
g. Communicated to a public audience findings from the field of nano research
h. Initiated a partnership with an informal learning or research organization

*[If not asked above]*

**Q18. On the recent survey, we asked you about your communication of any STEM topic: the extent to which NISE Net has helped you communicate any STEM topic with the public. On a six-point scale from “not at all” to “a great deal,” you responded [insert survey Q30 response e.g. a level 4 or “somewhat”]. Can you tell me more about your rating or how NISE Net has impacted your science communication?**

**For survey non-responders:**

- *On a scale of 1 to 6, to what extent has NISE Net helped you communicate any science, technology, engineering, and math with the public?*
- *Can you tell me more about your rating or how NISE Net has impacted your science communication?*

***SUGGESTED PROBE:*** *affected how you facilitate, activities you do, how much in-depth information you provide, or the types of content.*

**Q19. Looking at the list of practices that I emailed you, have you started doing more or less in the last year related to any of these?**

*[Probe as necessary if Y9 response suggests change. “Last year you mentioned you had started [reaching out to XX audience”]*

**REQUIRED PROBE:**

- *Have you used any NISE Net resources to [do that practice]?*

**Q20. Are there any areas beyond this list where NISE Net could have helped you more?**

**Q21. Is there something you were personally hoping to get out of your involvement with NISE Net that you didn’t?**

*[For example, maybe you were hoping to learn about something or get a specific resource or meet a type of person?]*

## VII. ENDING

**Q22. The NISE Network is currently grant funded through August 2015. After NISE Net’s funding is over, do you think your level of engaging the public with nano will stay the same, be less, or occur more than it does right now?**

**Q23. On our recent survey, we asked how valuable the NISE Net has been overall to both you and your organization. First, let’s talk about your organization. You responded that the NISE Net has been valuable to your organization. We had a 6 point scale ranging from “not at all” to “a great deal” and you answered [insert Q41 survey response. E.g. “a lot” or 5]. What about the NISE Net has been valuable to your organization?**

**Q24. Now let’s talk about you as an individual. You responded that the NISE Net has been valuable to you individually. We had a 6 point scale ranging from “not at all” to “a great deal” and you answered [insert Q42 survey response, e.g. “a lot” or 5]. What about the NISE Net has been valuable to you as an individual?**

**Q25. What would you say is the most important thing you’ve gained from participation in the NISE Network?**

*[Probe/reword: From your participation in the Network, is there any big takeaway you can think of?]*

*[Note: Here and throughout, if the individual says something about receiving free stuff, you should probe about how that stuff impacted them as an individual.]*

**Q26. Is there anything else related to NISE Net that has impacted you professionally or personally that we haven't talked about?**

**University Outreach % Revisit**

Note: If this seems very low when compared to the amount of nano education they talk about, revisit this percentage at the end of interview. For example: "You said at the beginning of the interview that about X% of your job was dedicated to outreach, but you mentioned many activities. Are all of the activities part of that X%?"