Making Evaluation Design Decisions: When Basic Evaluation Methods Meet the Real World

Monday, September 21st - Today's presenters are:

Liz Kollmann from the Museum of Science, Boston

Liz Rosino from the Oregon Museum of Science and Industry (OMSI)

Gina Svarovsky from the University of Notre Dame

As we wait to get started with today's discussion, please:

Introduce yourself! Type your name and institution into the chat box.

Call into the phone line (optional) at (877) 898-0037 (if using the phone line please make sure to mute your phone when not talking and also your computer's microphone).

Questions? Feel free to type your questions or comments into the chat box at any time.

Today's discussion will be recorded and shared on nisenet.org at:
http://nisenet.org/events/online-workshop

NISE network
NANOSCALE INFORMAL SCIENCE EDUCATION

Making Evaluation Design Decisions: When Basic Evaluation Methods Meet the Real World

NISE network
NANOSCALE INFORMAL SCIENCE EDUCATION

Museum of Science

UNIVERSITY OF NOTRE DAME
Center *for* STEM Education

OMSI
OREGON MUSEUM OF SCIENCE AND INDUSTRY
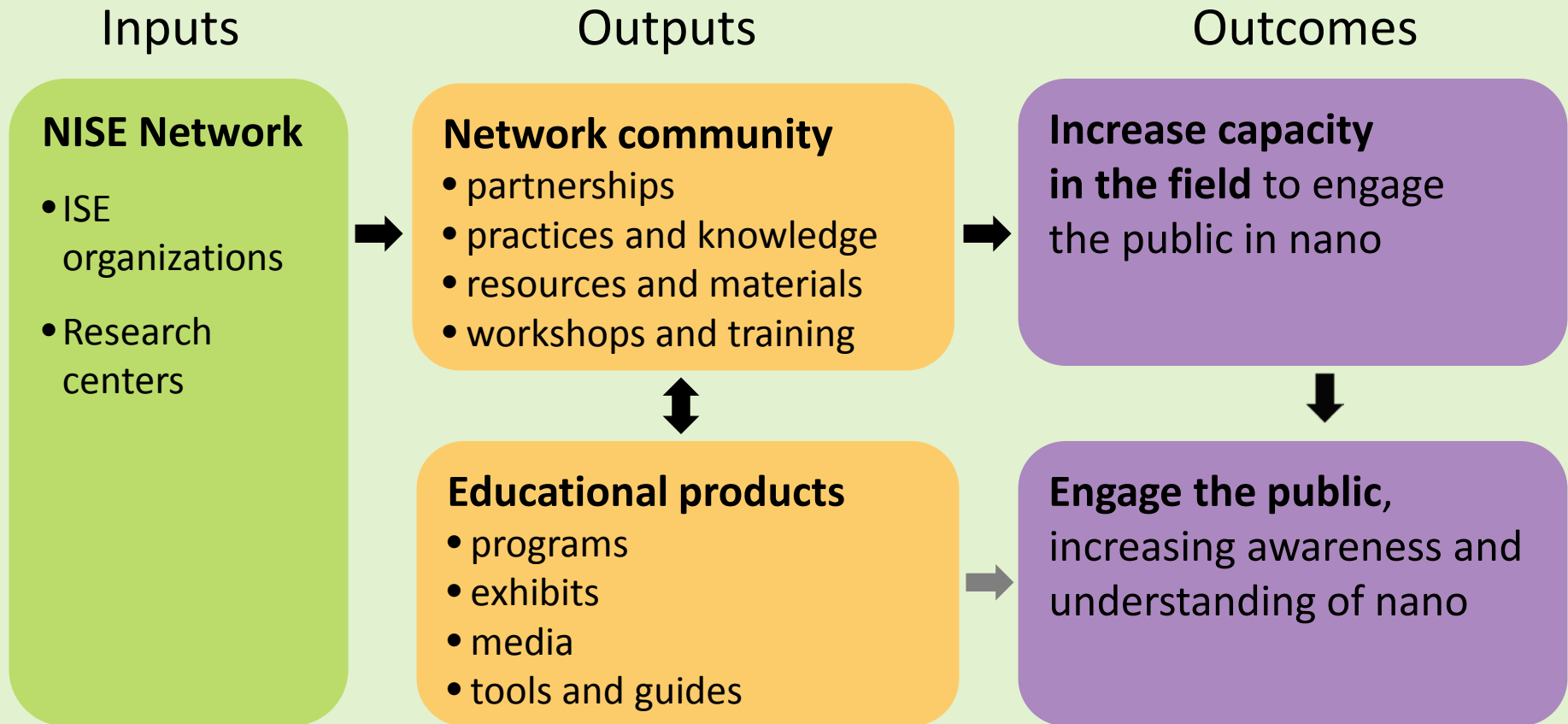
Science Museum *of* Minnesota

NSF

Nanoscale Informal Science Education Network

The NISE Net is a national community of researchers and informal science educators dedicated to fostering public awareness, engagement, and understanding of nanoscale science, engineering, and technology.

NISE Network Logic Model

Inputs

Outputs

Outcomes

NISE Network

- ISE organizations
- Research centers

Network community

- partnerships
- practices and knowledge
- resources and materials
- workshops and training

Educational products

- programs
- exhibits
- media
- tools and guides

Increase capacity in the field to engage the public in nano

Engage the public, increasing awareness and understanding of nano

Unique Characteristics of NISE Net

- Size

- Timeline

- Content

- Open-source philosophy

NISE Network Partners

2005-2014
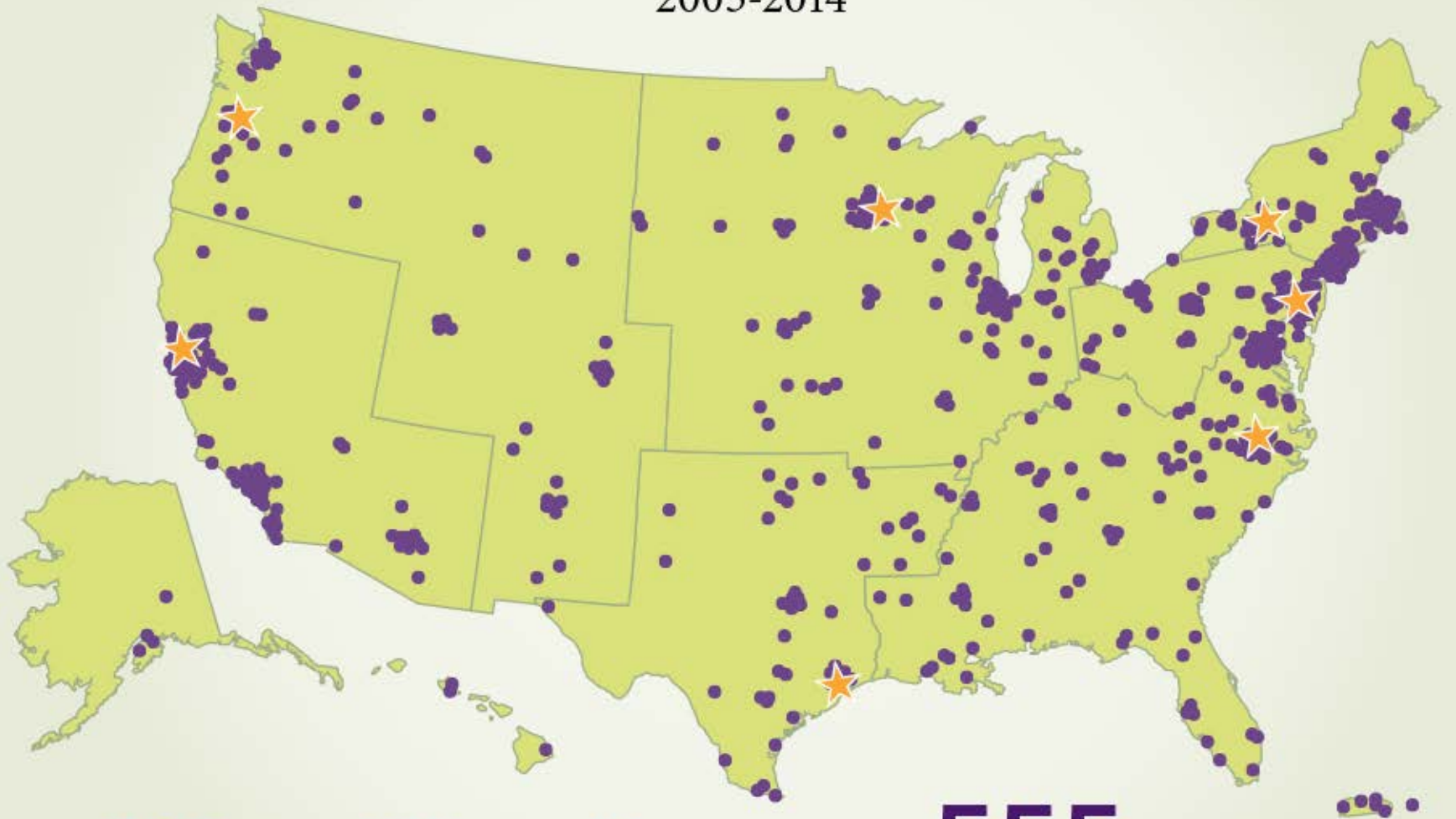
322 MUSEUMS **192** UNIVERSITIES **41** OTHER

555 PARTNERS

Unique Characteristics of NISE Net

- Size

- Timeline

- Content

- Open-source philosophy

NISE Net Timeline

Years 1-5: (2005-2010)

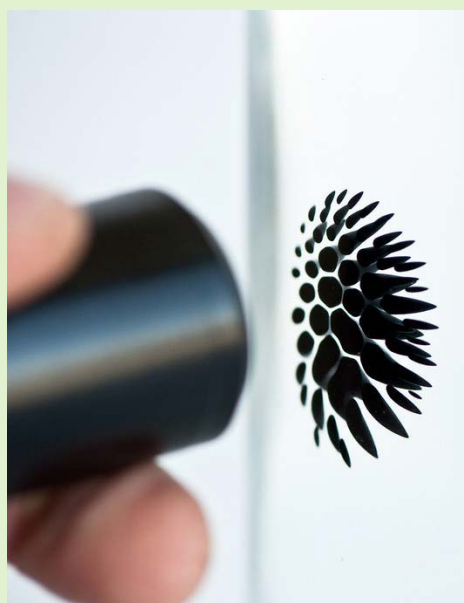- Building the network

Years 6-10: (2010-2015)

- Engaging the public through the network

Unique Characteristics of NISE Net

- Size

- Timeline

- Content

- Open-source philosophy

NISE Net Content

Unique Characteristics of NISE Net

- Size

- Timeline

- Content

- **Open-source philosophy**

NISE Net Open-Source Philosophy

Brown Bag Agenda

- Presentations
  - Estimating project reach
  - Collecting data at one-day events
  - Creating multi-stakeholder surveys
- Questions & answers

When methods meet the real world…

Poll #1: Imagine…

When methods meet the real world…

- Choosing and tailoring methods for a specific study can be overwhelming and challenging.

- Our goals for today:

  - Outline a process
  - Provide you with examples
  - Give you a place to start

A Method to Applying Your Methods

1. Define the problem
2. Define the objective
3. Seek information
4. Brainstorm and weigh possible solutions
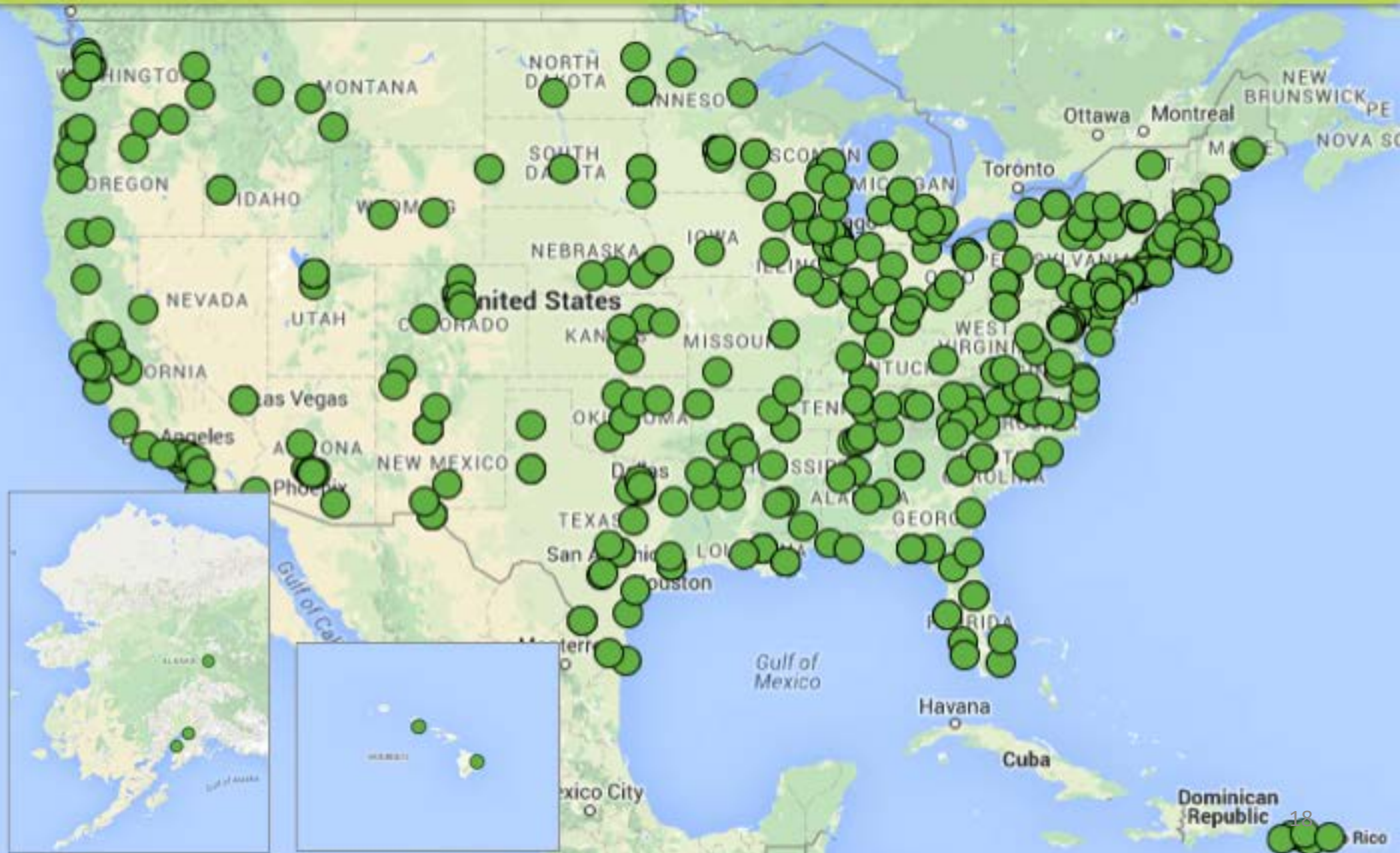5. Develop and implement a plan
6. Reflect and improve

NanoDays™

The Biggest Event for the Smallest Science!

NanoDays
2008-2015

NanoDays in 2014 and 2015

- 250+ unique events

- NanoDays kits were all the same; customization always encouraged

- Public Impacts to explore:
  - Reach
  - Learning

Exploring Public Reach

How many people are we *actually* reaching?

1. Define the problem:

- NISE Net materials are used to engage the public in various ways across the nation

- We needed to know more about this reach
  - NSF & reporting
  - NISE Net leadership

NISE
network.

21

2. Define the objective:

- Estimate the number of people reached by NISE Net offerings

- Avoid over-estimation

3. Seek information:

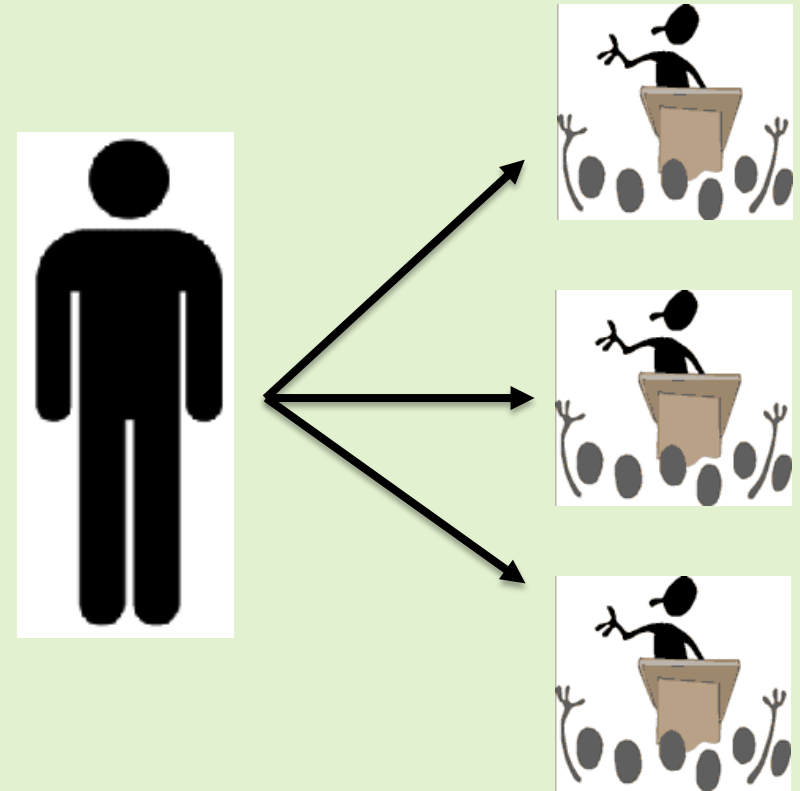**Potential challenges and important considerations:**

- Duplicated vs. Unduplicated

Unduplicated Count | # Duplicated Count
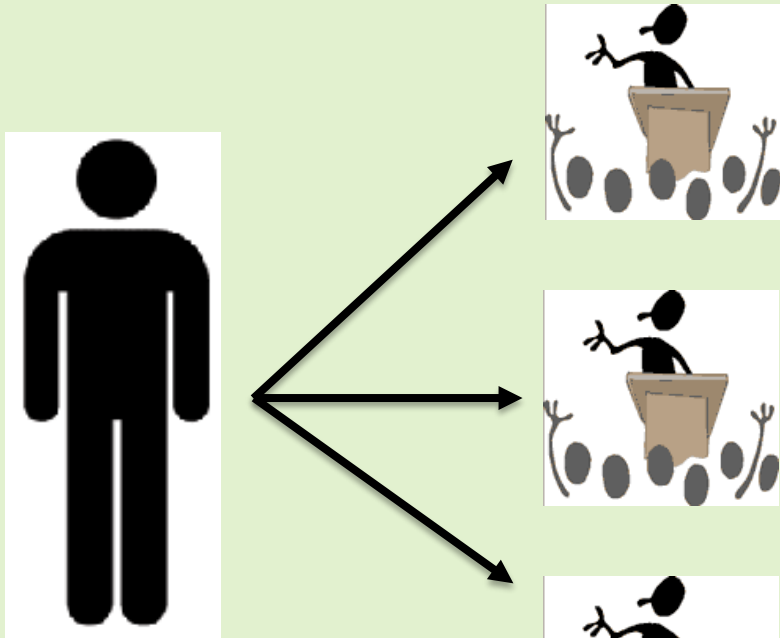
= 1

= 3

Adapted from NSF Online Project Monitoring System

3. Seek information:

Potential challenges and important considerations:

- Duplicated vs. Unduplicated

- What do we know about…
  - last year's event?
  - the types of activities?
  - our own events?

3. Seek information:

What resources are available?

- Network Partners

4. Brainstorm and weigh possible solutions:

- Ways to count

- How much can we ask of our partners?

- Strategic sampling

5. Develop and implement a plan:

NanoDays
- Sample sites: Determined # of people reached by each activity

- All sites reporting: Asked which activities included in each NanoDays

- All non-reporting sites: Applied median of the reporting sites based on institution size and type

28

6. Reflect and improve:

- It's better than gate revenue…but still an estimation

- Some types of estimations are easier to convey

- Estimation factors used to update reach numbers in 2014

Exploring Learning

So much awesomeness, so little time...

1. Define the problem:

- 250+ unique events…

- What does public learning look like at a NanoDays event?

- Need for high-volume, simultaneous data collection

2. Define the objective:

- Explore public learning at NanoDays events

- Representative sample

- Optimize event-day data collection

3. Seek information:

Potential challenges and important considerations:

- What data did we already have?

- Breadth vs. depth

- Who is considered "public"?

3. Seek information:

What resources are available?

- Evaluation team

- Network Partners

- Previously collected data and analysis

4. Brainstorm and weigh possible solutions:
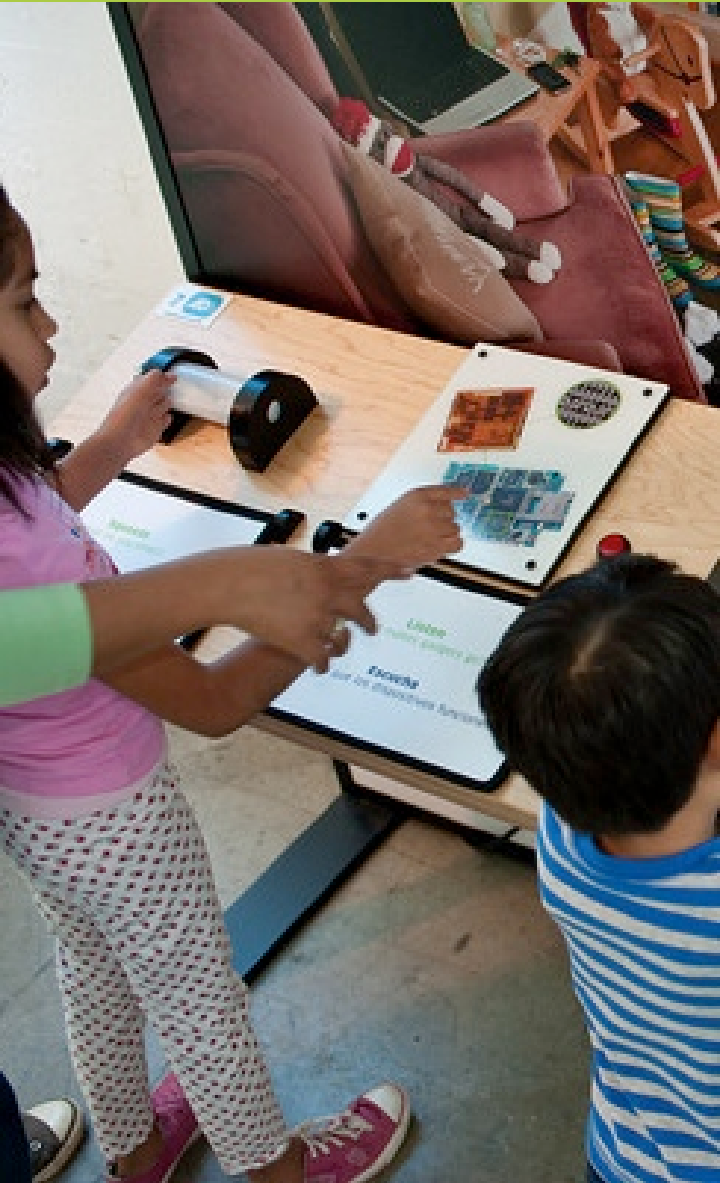
- Focus sample on "mature" NanoDays events

- Leverage resources and deploying staff strategically

- Explore *two* public audiences through different data collection techniques

5. Develop and implement a plan:

- Data collection sites identified

- Protocols developed & piloted (3-person teams, paper survey, different and specific roles)

- Online survey for volunteers (no paper)

6. Reflect and improve:

- Importance of sampling of NanoDays event sites

- Analysis in aggregate only – not by site

- More depth to be mined in Volunteer study data

Let's Pause for Questions!

What questions
do you have?

Surveying partners... but how often?

Poll #2

Poll #3

1. Define the problem:

Respondent Fatigue

2. Define the objective:

- Reduce and consolidate requests

- Stakeholders still get the data they need

3. Seek information:
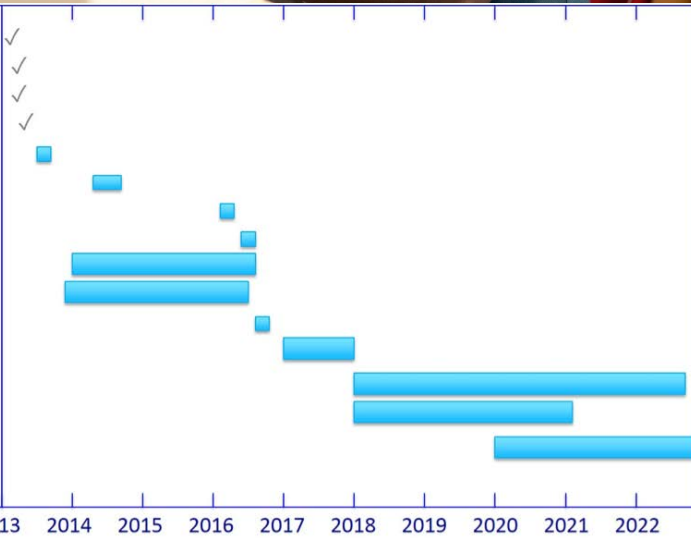
Potential challenges and important considerations:

- Timelines

- Stakeholder diversity

- Best methods?

- Coordination?

- Data priority?

3. Seek information:

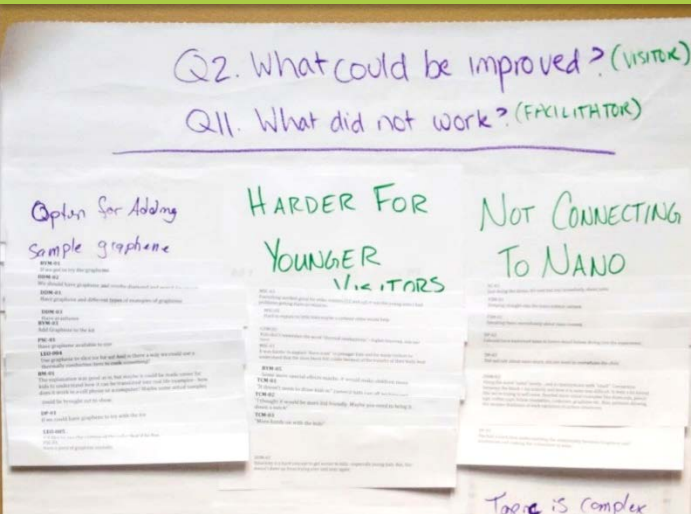## What resources are available?

4. Brainstorm and weigh possible solutions:

- Improve communication

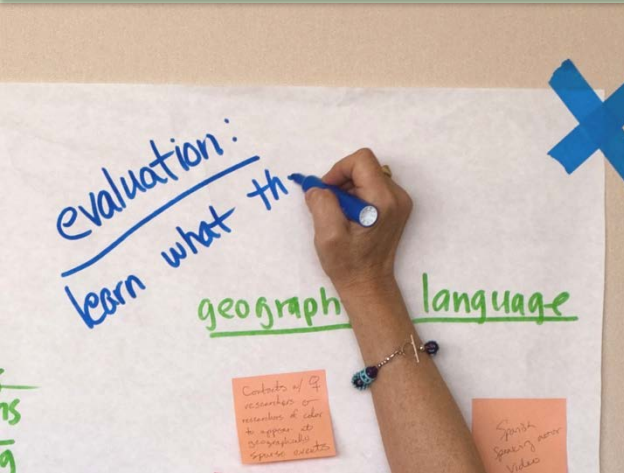- Tracking participants

- Consolidate into one

5. Develop and implement a plan:

The Annual Partner Survey

- Survey team created

- Compile, refine, and negotiate

- Promotion and recruitment

- Clean and share data

6. Reflect and improve:

- Gathered feedback to improve

- Still doesn't collect all of the data for Network!

A Method to Applying Your Methods

1. Define the problem
2. Define the objective
3. Seek information
4. Brainstorm and weigh possible solutions
5. Develop and implement a plan
6. Reflect and improve

More Time for Questions & Answers!

What questions
do you have?

Thank you!

NISE network
NANOSCALE INFORMAL SCIENCE EDUCATION

Thanks for joining us!

Upcoming Online Brown-Bag Conversations:

Findings from the Professional Impacts Summative Evaluation

Monday, September 28, 2015

2:00 – 3:00PM Eastern

Planning a Museum and Community Partnerships Project

Wednesday, September 30, 2015

2:00 – 3:00PM Eastern

Findings from NISE Net's Public Impact Studies

Monday, October 5, 2015

2:00 – 3:00PM Eastern

All brown-bags are archived online at http://www.nisenet.org/events/online-workshop