

# Welcome NISE Network Partners !



# NISE Network South Hub Regional Meeting

Fall 2013



# Regional Meeting Goals



1. Nurture and deepen **relationships** with existing partners in the NISE Network.
2. Provide valuable **networking opportunities** among workshop attendees, focusing on museum educators and outreach coordinators.
3. Create **opportunities for sharing** experiences with using NISE Net products.
4. Discuss ways to **sustain the benefits** of the NISE Network **after Year 10**.
5. Present an **update of NISE Net's resources**, including new programs, tools and guides, mini-exhibition, and mini-grants.

# Regional Meeting Agenda – Day 1



- 9:00 Welcome and introductions
- 9:15 Improv Activity 1: *I Say Hi*
- 9:45 NISE Network update
- 10:30 Break
- 10:45 Mini-Grants: New Ideas for Doing Nano
  
- 12:00 Lunch and museum visit time
  
- 2:00 Improv Activity 2: *Nano Around the World*
- 2:15 Nano & Society Conversations
- 3:15 Break
- 3:30 Making the Most of Your NanoDays Kit
- 4:30 Inclusive Audiences Bilingual and Universal Design
- 5:30 Break
- 6:30 Group Dinner

# Regional Meeting Agenda – Day 2

- 9:00 Improv Activity #3: *Red Ball*
- 9:15 Getting Nano into your building  
(exhibitions, signage, partnerships)
- 10:15 Beyond Year 10 Discussion Part 1
- 11:00 Break/List completion
- 11:15 Beyond Year 10 Discussion Part 2
- 11:45 Meeting wrap-up

# Regional Meeting Welcome




## Introductions

## Logistics

- restrooms
- handouts
- getting a copy of slides
- reimbursement forms
- luggage
- airport rides
- dinner tonight

## Swap Table

# Regional Meeting Agenda – Day 1

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# Improv Exercise – *I Say Hi!*

*Jill Kary*



**More info:** [nisenet.org/catalog/tools\\_guides/improv\\_exercises](https://nisenet.org/catalog/tools_guides/improv_exercises)



# Why implement improv exercises ?




Incorporating improv exercises into staff and volunteer training helps create a supportive and upbeat environment for educators to practice and strengthen essential skills.

- **Warm up skills** required for interacting with visitors
- **Encourage conversations:** with visitors (rather than reciting scripts)
- **Be better listeners:** think on your feet and respond in the moment
- **Be responsive:** better tailor content to visitors responses and integrate visitor feedback
- **Be positioned as equals** with visitors not “the expert”
- **Foster teamwork & creativity:** create a fun, supportive, positive work environment to practice skills



**More info:** [nisenet.org/catalog/tools\\_guides/improv\\_exercises](https://nisenet.org/catalog/tools_guides/improv_exercises)

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Where can you

# find nano?



## NISE Network Overview

- Introduction
- Network Community
- Educational Products
- Professional Tools and Guides
- Upcoming Opportunities



# NISE Network

## Nanoscale Informal Science Education Network

The NISE 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.



# What is Nano?



## **1. Nano is small and different**

Nanometer-sized things are very small, and often behave differently than larger things do.

## **2. Nano is studying and making tiny things**

Scientists and engineers have formed the interdisciplinary field of nanotechnology by investigating properties and manipulating matter at the nanoscale.

## **3. Nano is new technologies**

Nanoscience, nanotechnology, and nanoengineering lead to new knowledge and innovations that weren't possible before.

## **4. Nano is part of our society and our future**

Nanotechnologies—and their costs, utility, risks, and benefits—are closely interconnected with society and with our values.

# Year 6-10 Focus



## **Years 1-5: (2005-2010)**

- Building the network

## **Years 6-10: (2010-2015)**

- Engaging the public through the network

# NISE Network: Goals



**Network community:** increase capacity in the field

- Support partners in engaging the public in nanoscale science, engineering, and technology
- Form partnerships among Informal Science Education institutions and research centers

**Educational products:** engage the public

- Develop and distribute educational products
- Raise public awareness and understanding of nano

**Knowledge:** inform the field and future projects

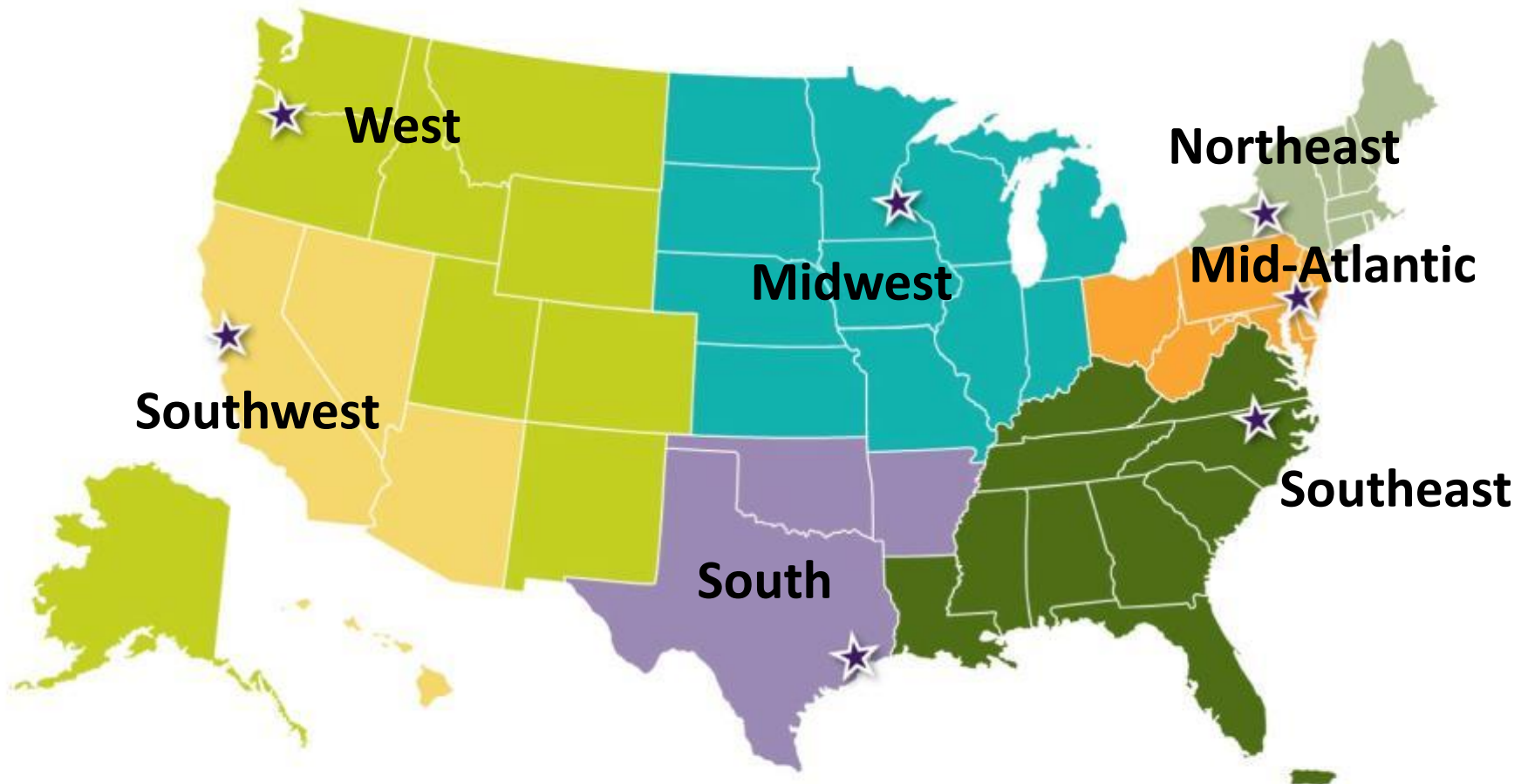
- Generate and document learning through evaluation and research
- Communicate broadly in ISE and research fields



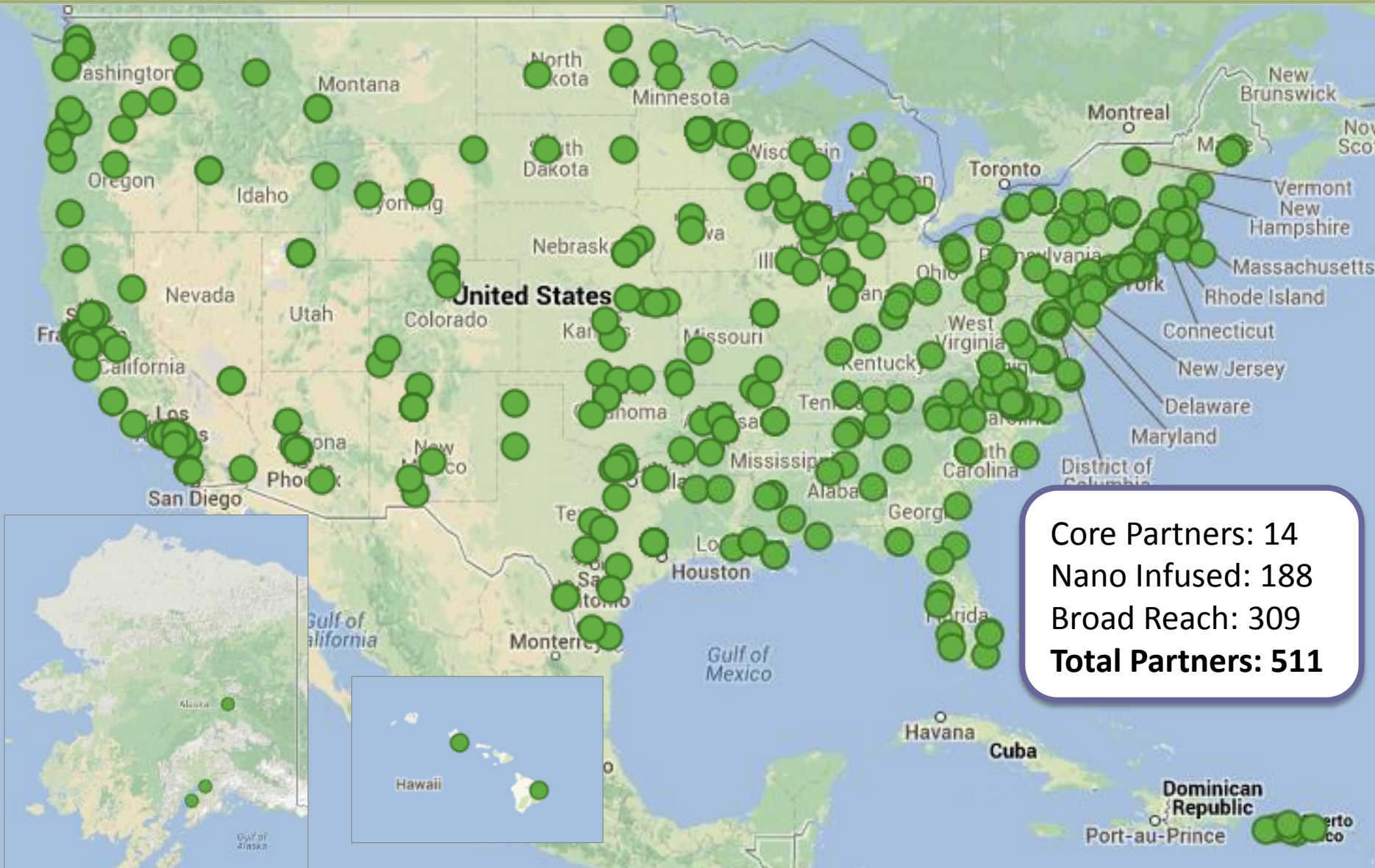
# Network Community



# NISE Net Regional Hub Structure



# Partner Reach





# Educational Products

- Product Development Process
- Website
- DIY Nano App
- *Nano* mini-exhibition
- New in catalog

# Product Development Process



## **Iterative, collaborative development process:**

- ✓ Scientist review
- ✓ Peer review
- ✓ Visitor evaluation

## **Audiences and Content**

- Content Map as a guide
- Inclusive audience approach

## **Designed for sharing**

- Easily edited and adapted
- Creative Commons license



**More info:** [/nisenet.org/programs](https://nisenet.org/programs)

# Content Map

1.

Nano is  
small and different

2.

Nano is studying  
and making  
tiny things

3.

Nano is  
new technologies

4.

Nano is part of  
our society  
and our future

# Inclusive Audiences Approach



## Spanish Bilingual materials:

- NanoDays materials and exhibits are available in both English and Spanish

## Tools and Guides:

- Universal Design guidelines for programs and exhibits
- Bilingual graphic design
- Translation process guide

**More info:** [/nisenet.org/inclusive\\_audiences](https://nisenet.org/inclusive_audiences)

# Website for educators - nisenet.org

The screenshot shows the NISE network website homepage. At the top left is the NISE network logo with the tagline 'NANOSCALE INFORMAL SCIENCE EDUCATION'. A search bar and navigation links for 'Site', 'People', and 'Catalog' are in the top right. The main navigation bar includes 'HOME', 'COMMUNITY', 'CATALOG', 'ABOUT', and 'WHAT IS NANO'. A central banner for 'NanoDays' (March 30 - April 7, 2013) is prominent. Below this, there are sections for 'Image Collection' (featuring a scanning electron micrograph of red blood cells), 'NISE Net News' (with a headline about NanoDays 2012 winners), 'New in the Catalog' (highlighting a 'DIY Nano App'), and 'MRS Call for Papers- Deadline Approaching!'. The page layout is clean and professional, with a mix of text, images, and interactive elements.



nisenet.org

- Catalog of educational products
- News and events
- Member directory
- Social networking links



# Website for educators - nisenet.org

## 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.

Become a partner of the NISE Network. Learn how to **get involved** or **sign up now**.

## Catalog

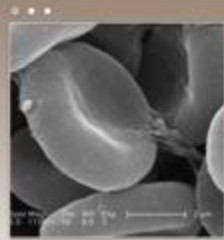
- Programs
- Exhibits
- Tools and guides
- Media
- Image Gallery
- Evaluation & Research

**NanoDays**  
The Biggest Event for the Smallest Science!

**MARCH 30 - APRIL 7, 2013**  
The NanoDays 2013 physical kit application is now available - [Apply today!](#)



### Image Collection



#### Human Red Blood Cells (SEM)

Red blood cells carry a protein called hemoglobin which has a molecular structure adapted to transport oxygen to body tissues. This scanning electron micrograph shows the cells' characteristic donut-like shapes.

### NISE Net News

Blog Newsletter

Blog

#### NanoDays 2013 kit applications - due December 1, 2012

By Catherine McCarthy on September 24, 2012 | 0 comments

Apply now for a NanoDays 2013 physical kit!  
[Read more](#)



Blog

#### Annual Partner Survey to launch in late October 2012

By Catherine McCarthy on September 24, 2012 | 0 comments

We are excited to announce that the NISE Net Annual Partner Survey will be launched in late October!

[Read more](#)



### New in the Catalog

Catalog



Select NISE Network educational products are now available in Spanish!

Programs

#### Nano Future Tellers

Nano Future Tellers are origami-folded, interactive pocket game to educate visitors ages 7-12 about future nano products! Everyone's favorite fortune telling game brings potential future nano products to life! [Read more](#)

Programs

#### Scientist Speed Dating

Scientist Speed Dating is a facilitated, yet informal and high-energy, social activity to encourage a large group of people to speak with one another, ask questions, and learn about specific areas of research and practice within the field of nanoscale science and engineering, as well as the related societal and ethical implications of work in this field. [Read more](#)

Tools and Guides



# Search the Catalog

Search the catalog by audience, topic, or season

The screenshot shows the NISE Network Catalog website. The header includes the NISE network logo and navigation links: HOME, COMMUNITY, CATALOG, ABOUT, WHAT IS NANO. A search bar is located in the top right. The main content area is divided into several sections: 'Explore by topic' with icons for Art and nature (71), Information Technology (47), Bio and medicine (74), Materials, tools, and applications (149), Energy and environment (50), and Society, policy, and economics (64); 'Catalog' with a description of the online catalog; 'Support' with contact information; 'Activity' with a list of featured items; and 'Browse by' with two columns of categories: Audience (All ages (109), 7 and up (39), 11 and up (38), 15 and up (17), 19 and up (3)), Nano topics (Art and nature (71), Bio and medicine (73), Energy and environment (50), Fundamentals (132), Information Technology (47), Materials, tools, and applications (148), Society, policy, and economics (64)), Programs (Cart demonstration (25), Classroom activity (25), Display (2), Facilitated activity (46), Game (4), Museum theater (4), Stage presentation (16)), and Available translations (Spanish (61)).

## Browse by

### Audience

All ages (109)  
7 and up (39)  
11 and up (38)  
15 and up (17)  
19 and up (3)  
Informal science educators (25)  
scientists (14)

### Nano topics

Art and nature (71)  
Bio and medicine (73)  
Energy and environment (50)  
Fundamentals (132)  
Information Technology (47)  
Materials, tools, and applications (148)  
Society, policy, and economics (64)

### Programs

Cart demonstration (25)  
Classroom activity (25)  
Display (2)  
Facilitated activity (46)  
Game (4)  
Museum theater (4)  
Stage presentation (16)

### Available translations

Spanish (61)



Nano throughout the year!  
Browse products by season.



Select NISE Network educational products are now available in Spanish!  
Find answers to your questions about the catalog on our [FAQ page](#).

# Products in Catalog

NISE NET PRODUCT 

## NISE Net Products

- Created with NISE Network funding
- Development process:
  - scientist review, peer review, & visitor evaluation
  - content map as a guide
  - inclusive audiences approach
- Designed to be easily edited and adapted under a Creative Commons license



LINKED RESOURCE ►

## Linked resources

- Created with other funding
- Different vetting process
- Different rights ownership/attribution

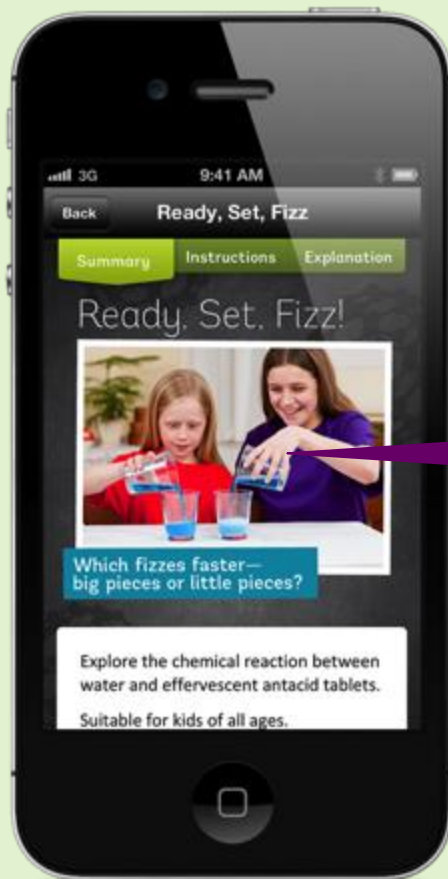
# Website for the Public

The screenshot shows the homepage of whatisnano.org. At the top left is the logo 'whatisnano.org' and 'English Español' on the right. Below the logo are navigation links: 'Home | NanoDays | Nano Exhibition'. A large banner features a young girl with a blue butterfly on her chest and the text 'Nano is all around us— in nature and in technology.' Below the banner are three main sections: 'NanoDays' with a photo of children and a description of the festival; 'NanoBuzz' with a list of recent news items like 'Bio Flash Mob' and 'Itty-bitty Art'; and 'K-12 Teachers' with a photo of a teacher and a link to curriculum resources. At the bottom, there is a 'Resources' section with tabs for 'Introductions', 'Video', 'Audio', 'Games', 'Products & Society', and 'Diff Nano'. Below these tabs are five featured activity cards: 'DIY Nano App', 'Invisible Sunblock', 'Rainbow Film', 'Mystery Sand', and 'Mitten Challenge', each with a small image and a brief description.

- Videos, podcasts, activities, links
- NanoDays locations
- List of mini-exhibition locations
- Audio Description in English and Spanish

whatisnano.org

# DIY Nano App for iPhone and iPad



Activities to try at home



**More info:** [whatisnano.org/diy-nano-app](http://whatisnano.org/diy-nano-app)  
[nisenet.org/catalog/media/diy\\_nano](http://nisenet.org/catalog/media/diy_nano)

# Nano Mini-exhibition



- Comprehensive content
- Small footprint: 400 square feet
- Flexible configurations, modular
- Bilingual – English & Spanish, accessible
- Making > 90 copies
  - Batch 1 = 49 copies (shipped in 2012-2013)
  - Batch 2 = 21 copies (will ship April – August 2014)
  - Batch 3 = 23 copies invitation process (ship 2015)

Waiting list for used copies  
and possible sharing



# Mini-exhibition around the country



Buffalo Museum of Science  
Buffalo, NY



National Museum of Nuclear Science  
and History, Albuquerque, NM



Da Vinci Science Center  
Allentown, PA



Miami Science Center  
Miami, FL



Saint Louis Science Center  
Saint Louis, MO



Children's Museum of Houston  
Houston, TX

# *Nano* Mini-exhibition Public Impact



## **Summative Study Findings:**

1. Reach is sizable and broad
2. Successful in:
  - Engaging visitors
  - Promoting learning
3. Successful for:
  - Different types of institutions
  - Small sample of Spanish-speaking visitors
  - Small sample of visitors with disabilities
4. Catalyzing new and enhanced programming





# *Nano* Mini-exhibition Partner Impact



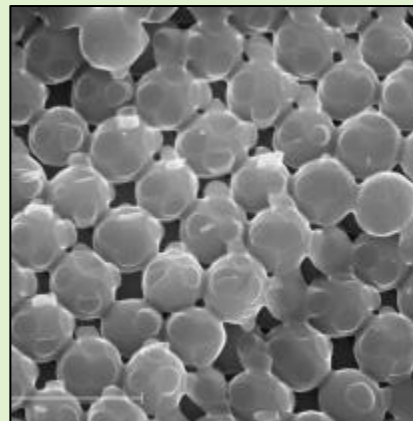
- 87% implementing new or expanded **public programming**
- 62% reported new and expanded **partnerships**
- Almost all partners have implemented new or expanded **staff and/or volunteer training**
- All plan to keep or share Nano **beyond the one-year commitment**, 52% said indefinitely
- Wide range of **impacts** described on visitors, staff, collaborations, and organizational

**More info:** [nisenet.org/catalog/exhibits/nano\\_mini-exhibition](http://nisenet.org/catalog/exhibits/nano_mini-exhibition)

# Programs - New in the Catalog



**Liquid Body  
Armor**  
Cart demo



**Colors at the  
NanoScale:  
Butterflies,  
Beetles, and  
Opals**  
program



**Making  
Molecular  
Movies with  
QSTORM**  
Public  
presentation



**More  
coming soon –  
watch the  
Nano Bite**

# Media – for the public in the Catalog



**Mr. O video –  
A Little bit of  
Sunshine**



**Invisibility  
Cloak**



**Mr. O video– Liquid  
Armor**



**What's Nano  
about that  
series  
(coming soon)**

# Media – tools for educators



**NanoDays  
Training Videos  
2013**



**America's Next  
Top Presenter  
(coming soon)**



**NanoDays  
Training Videos  
2014  
(coming soon)**



**Speed-Ucate  
Visitor  
Conversations  
Video  
(coming soon)**



# Professional Tools and Guides

- Museum-Scientist Collaborations
- Team Based Inquiry

## Later on agenda:

- Inclusive Audiences
  - Bilingual Audiences
  - Universal Design
- Nano and Society

# Museum-Scientist Collaboration Tools



## **RISE: Research Center – Informal Science Education Partnerships**

Encouragement, knowledge, and tools to support collaborations

### **Why Collaborate?**

- Bring current science to museum audiences
- Connect scientists and students with the public
- Share resources and tools
- Mutual learning between scientists, museum educators, and the public

**More info:** [nisenet.org/rise](http://nisenet.org/rise)

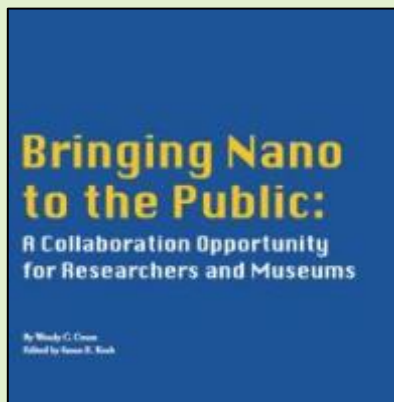
# Museum-Scientist Collaboration Tools



**Guide to Building Partnerships between Science Museums and University-Based Research Centers**



**National Chemistry Week collaborations**  
Oct 20-26, 2013



**Bringing Nano to the Public**  
collaboration introduction

**More info:** [nisenet.org/rise](http://nisenet.org/rise)

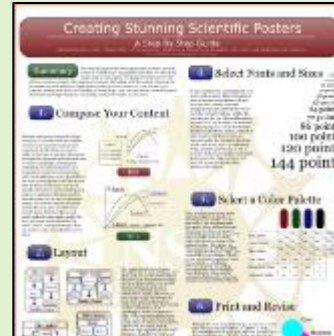
# Science Communication Tools for scientists



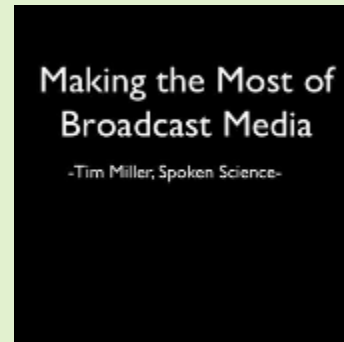
**Science Communication Workshop** designed for Research Experiences for Undergraduates (REU) programs



**Sharing Science Workshop and Practicum** designed for scientists and students



**Creating Stunning Scientific Posters Seminar**



**Making the Most of Broadcast Media Workshop**



**Mastering Science and Public Presentations Video**





# Upcoming Opportunities

- NanoDays
- Mini-grants
- Team-Based Inquiry Training
- Annual Partner Surveys
- And more!

# NanoDays

NanoDays Applications  
due **December 1, 2013**

- Annual event introducing the public to nanoscale science, engineering, and technology
- Involves hundreds of museums and universities over one week



# NanoDays Reach and Impact



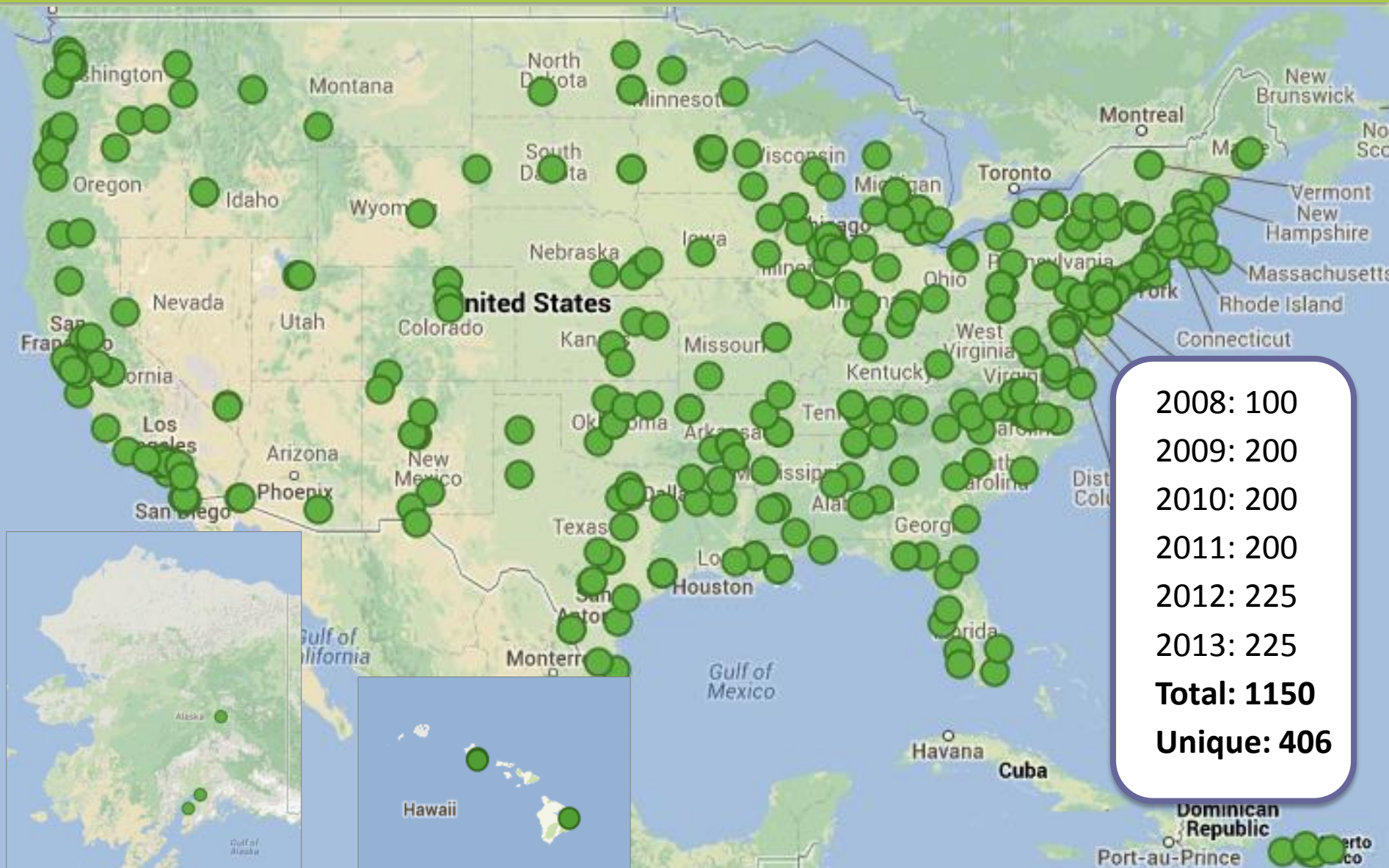
## Reach:

- 225 physical kits in 2013
- 250 kits in 2014 and 2015
- Digital kit and materials available free online

## Impacts:

- Local collaborations: over 60%
- Year round use of kits: 100%
- Audience: nearly 100% family audiences

# NanoDays Reach



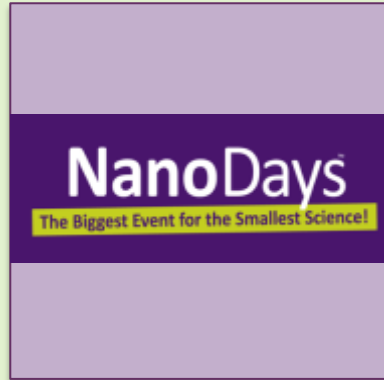
# NanoDays 2014 kit

Applications are due  
**December 1, 2013**



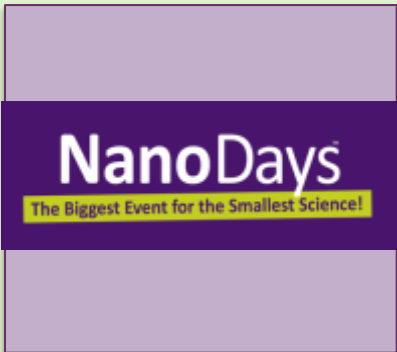
## Training Videos for visitors & staff

- for each activity
- visitor conversations



## Volunteer Survey

We'll be inviting all NanoDays volunteers across the nation to participate in a short online survey to learn about their volunteer experience



## New activities

- Capillary Action
- Oobleck
- Piezoelectricity
- Electroplating

## New Videos

- Invisibility Cloak
- more!



## Online Brown-Bags

- What's Coming in the NanoDays kit
- Hosting a Bilingual NanoDays
- Science Behind NanoDays

# NanoDays after 2015



## Sustainability Plans

- Planning to create and distribute a compendium of all NanoDays activities (hard copy and digital)
- Continue to make NanoDays materials available online

# Mini-Grants

Applications are due  
**November 1, 2013**



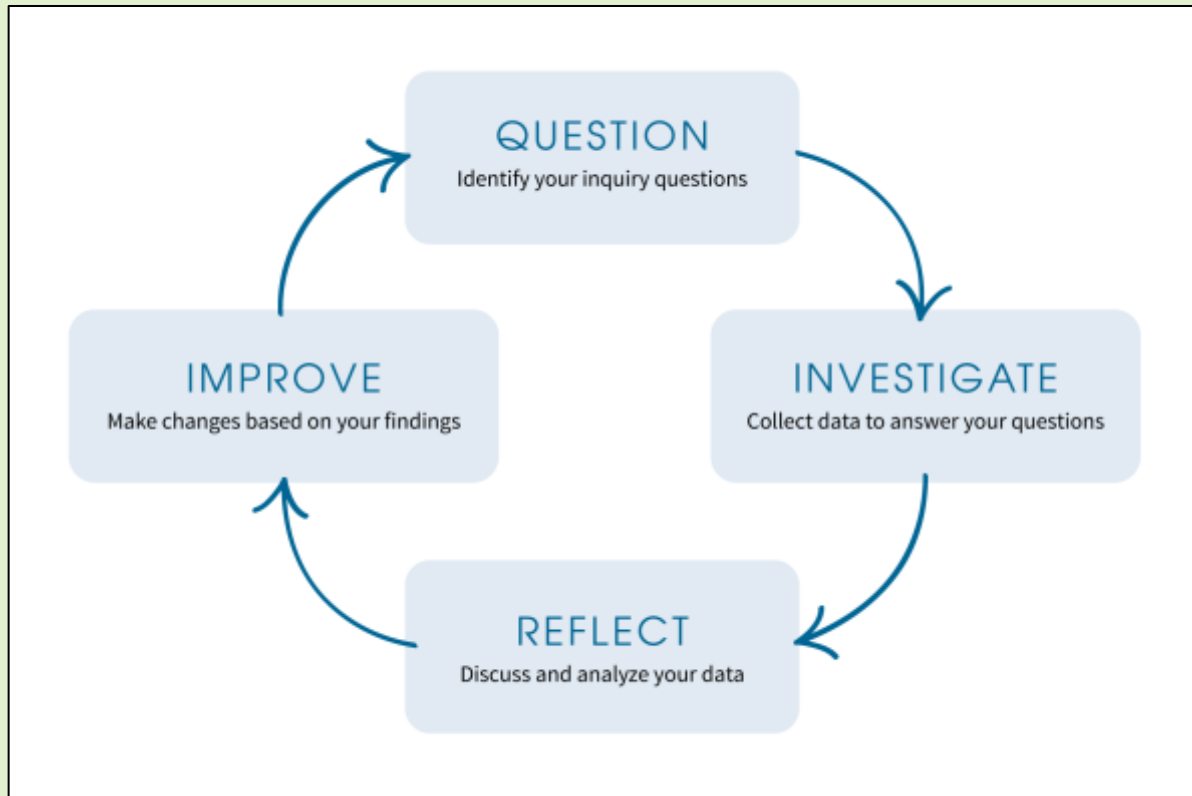
- 27 awards in 2011, 42 in 2012, 42 in 2013 anticipate 40 in 2014
- \$3,000 maximum
- Eligible activities:
  1. New efforts to integrate nano into existing programming
  1. New efforts to reach new audiences with nano programming (including traditionally under-served or under-represented audiences)
  1. New partnerships between museums and nano researchers, community--based organizations, or diversity serving organizations





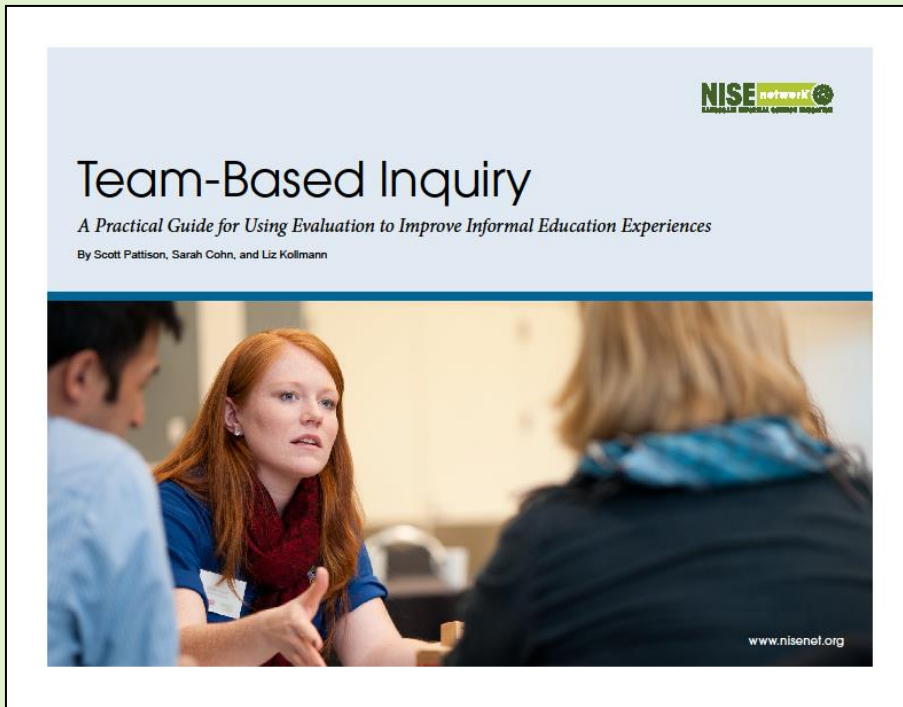
# Team-Based Inquiry

TBI is an approach to empowering professionals to get the data they need, when they need it, in order to improve their products and practices and create successful educational experiences.



**More info:** [nisenet.org/evaluation](http://nisenet.org/evaluation)

# Team-Based Inquiry Tools



**Team-Based Inquiry Guide** includes:

- Templates
- Observation forms
- Interview forms
- Worksheets
- Concrete examples

The guide will be included in the NanoDays 2014 physical kit

# Team-Based Inquiry Professional Development



## New Professional Development Opportunity

*What?* NISE Network is inviting a small number of partner institutions to participate in an intensive, seven-month professional development experience focused on team-based inquiry (TBI).

# Team-Based Inquiry Professional Development



## New Professional Development Opportunity

*Why?* The professional development will help institutions use TBI to incorporate evaluation and data-based decision-making into their nano education work.

# Team-Based Inquiry Professional Development

**The experience is offered at no charge but will require significant time from two staff January-July 2014:**

- 1.5 hour phone call every two weeks
- 2 to 4 hours per month on professional development
- One-day workshop in Portland, OR, April 2014 (travel, lodging, & food covered by the NISE Net)

**Participating will also impact the timeline of your mini-grant project:**

- January-March 2014, participants learn about TBI and prepare for shared inquiry experience during NanoDays 2014
- April-July 2014, participants work on TBI studies at their own institutions specific to their mini-grant projects

*Participation will **NOT** affect selection process for mini-grant applications!*



**More info:** [nisenet.org/community/mini-grants](http://nisenet.org/community/mini-grants)

# Team-Based Inquiry Professional Development

## *How do I apply?*

- Participants will be recruited through the **mini-grant application**.
- Indicate your organization's interest at the end of the application.
- Invitation e-mails will be sent out in January.

This opportunity is described in more detail in the **2014 Mini-Grants Program Overview**. Before indicating below if your organization is interested in participating, please read more about the opportunity and consider the timeline and required staff time commitment.

**12. Would your organization like to be considered for this team-based inquiry professional development opportunity?** *Your response to this question will NOT affect the selection and review process of your mini-grant application. \**

Yes

No

Participation will **NOT** affect selection process for mini-grant applications!

Mini-grant application  
due **November 1, 2013**

# Evaluation and Research



**Evaluation** measures professional learning and practice, public learning, and Network growth.

- Professional Impacts
- Public impacts

**Research studies** provide the field with new knowledge and understanding

- Public Decision Making and Learning
  - Organizational Change
  - Museum – Scientist Partnerships
  - Nano in Traditional and Social media
- 
- Find out what we have learned so far by visiting [nisenet.org](http://nisenet.org)

**More info:** [nisenet.org/evaluation](http://nisenet.org/evaluation)

**More info:** [nisenet.org/research](http://nisenet.org/research)

# Help Us Learn – Annual Partner Survey



Help us to advance NISE Network and the field by participating in the Annual Partner Survey

Please fill out the survey when you receive an invitation

- even if you filled it out last year
- even if more than one person at your institution is filling out the survey

Survey invitation  
via email in  
October 2013



# Professional Development Opportunities



- **ASTC (Association of Science-Technology Centers)**  
October 2013 in Albuquerque  
Sessions, booth, breakfast  
pre-conference workshop on Team-Based Inquiry
- **Association of Children's Museums (ACM)**  
May 2013 in Phoenix - sessions, booth
- **Materials Research Society (MRS)**  
November 2013 in Boston & April 2014 in San Francisco
- **Online Brown-Bag conversations**  
All year round, averaging one a month  
Recorded and available to view online

**More info:** [nisenet.org/community/events](http://nisenet.org/community/events)

# Online Brown-Bag Conversations



*All past  
brown-bags  
are recorded  
and available  
online.*

## **This Fall:**

- Nano for School Groups – October 1
- Universal Design Program Workshop Follow-up – October 28
- Nano in Food – November 13

## **Coming Up Winter/Spring 2014:**

- For NanoDays:
  - What's Coming in the NanoDays kit
  - Hosting a Bilingual NanoDays
  - Science Behind NanoDays
- Nano for Summer Camps
- Nano and Society

**More info:** [nisenet.org/community/events](http://nisenet.org/community/events)

# Stay in Touch

## Website networking tools



- Update your profile on the website  
[nisenet.org/faq](http://nisenet.org/faq)
- Sign up for the monthly  
*Nano Bite* newsletter  
[nisenet.org/community/nanobite](http://nisenet.org/community/nanobite)
- Join our social networking sites  
[nisenet.org/community](http://nisenet.org/community)

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

The LinkedIn logo, consisting of the word "Linked" in black and "in" in white lowercase letters on a blue square background.

The Twitter logo, consisting of the word "twitter" in a light blue, lowercase, sans-serif font.

# Thank you!

To all our partners - we could not do this work without you!




This presentation is based on work supported by the National Science Foundation under Grant No. 0940143. Any opinions, findings, and conclusions or recommendations expressed in this presentation are those of the authors and do not necessarily reflect the views of the Foundation.

# Questions & Discussion



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- 6:30 Group Dinner



# Mini-Grant Presenters

- Joel Gordon  
Arkansas Discovery Network
- Alysha Herrera  
Sci-Tech Discovery Center
- Ennio Tasciotti  
Houston Methodist Research Institute
- Jessica Escamilla  
San Antonio Children's Museum

Applications are due  
**November 1, 2013**



San Antonio  
Children's Museum  
NISE Mini-Grant  
2013



# mission

- Through joyful learning and discovery, the San Antonio Children's Museum grows minds, connects families and transforms communities



# vision

- As a premier educational resource, we develop innovative thinkers capable of meeting the challenges of the 21st century.



# Museum History and Purpose

- Founded in 1995 by a group of dedicated volunteers who were committed to building a community space devoted to early childhood development, the SACM continues to grow.
- Since its founding, SACM has provided engaging hands-on experiences for young children and the adults in their lives to actively learn through creative play.
- In that time, the museum has become an epicenter for more than 2 million people to connect, play and learn together.



# H-E-B Free Family Night = Nano Night!

- H-E-B is one of our biggest supporters; their funding covers the cost of the free family nights
- We host the free family nights on the 3<sup>rd</sup> Tuesday of the month in conjunction with free parking downtown & the city's traditional free museum night
- Largest attendance to date – over 1,000
- Our proposal for the mini-grant was to provide the nano science demos during these nights in our Science City exhibit – Nano Nights!



## Nano Night – Needs Met

- Local school children need supplementary, developmentally appropriate, learning opportunities in the sciences
- Need to increase student interest in STEM curriculum, preparing them for 21<sup>st</sup> Century challenges

## Nano Night – Goals

- Target Audience – underserved children ages 6-10 who typically attend the H-E-B Free Family Night events
- Introduce these students to Nanoscience
- Help students understand nanotechnology in their every day lives through real-life examples and hands-on activities
- Explain the impact of nanoscience on future technology
- Guest surveys were conducted to measure and assess these goals



## Nano Night – Activities

The following activities were used of our Nano demos:

- I-Spy
- Butterfly Blues Wings Investigation
- Big Blocks Puzzle
- Memory Game
- Pencil Shaving Activity
- Worm Goo



## Nano Night – Conclusions

Bilingual demos – we will work to provide more demos in Spanish; the Spanish language resources (web-site, handouts) are helpful, but we do realize a need to instruct in Spanish, as per the demographics of our guests. One opportunity to explore this will be our new partnership with Ser Padres – a Spanish language parenting magazine.

They sponsored a new event which will become part of our annual events, and a perfect venue to introduce more Spanish demos as per our NISE net bilingual training.



**KIDCATION WEEK**  
★ **CELEBRATE** ★  
**SER PADRES DAY**  
AT THE  
**SAN ANTONIO CHILDREN'S MUSEUM**  
AUGUST 17, 2013 • 1:30 P.M. – 6:00 P.M.

**FREE ADMISSION**

Mariachi Performances  
Storytelling with Miss Anastasia  
Book Signing with Author Carmen Tafolla

Arts & Crafts and Face Painting  
Healthy Lifestyles Program  
Ser Padres Cover Photo Shoot

305 Houston Street San Antonio, TX 78205

The poster is for "Ser Padres Day" at the San Antonio Children's Museum. It features a red background with a yellow sunburst pattern. The text is in various colors and fonts, including a purple starburst for "FREE ADMISSION". The event is part of "KIDCATION WEEK" and is scheduled for August 17, 2013, from 1:30 P.M. to 6:00 P.M. The poster lists several activities: Mariachi Performances, Storytelling with Miss Anastasia, Book Signing with Author Carmen Tafolla, Arts & Crafts and Face Painting, Healthy Lifestyles Program, and Ser Padres Cover Photo Shoot. The address is 305 Houston Street, San Antonio, TX 78205.



# *Arkansas Discovery Network*

 *Joel Gordon*

*Director of  
Visitor Experience*

*JGordon@museumofdiscovery.org*

*Arkansas Discovery Network*



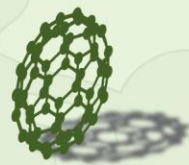
*Funded by the  
Donald W. Reynolds Foundation*

*[www.arkansasdiscoverynetwork.org](http://www.arkansasdiscoverynetwork.org)*

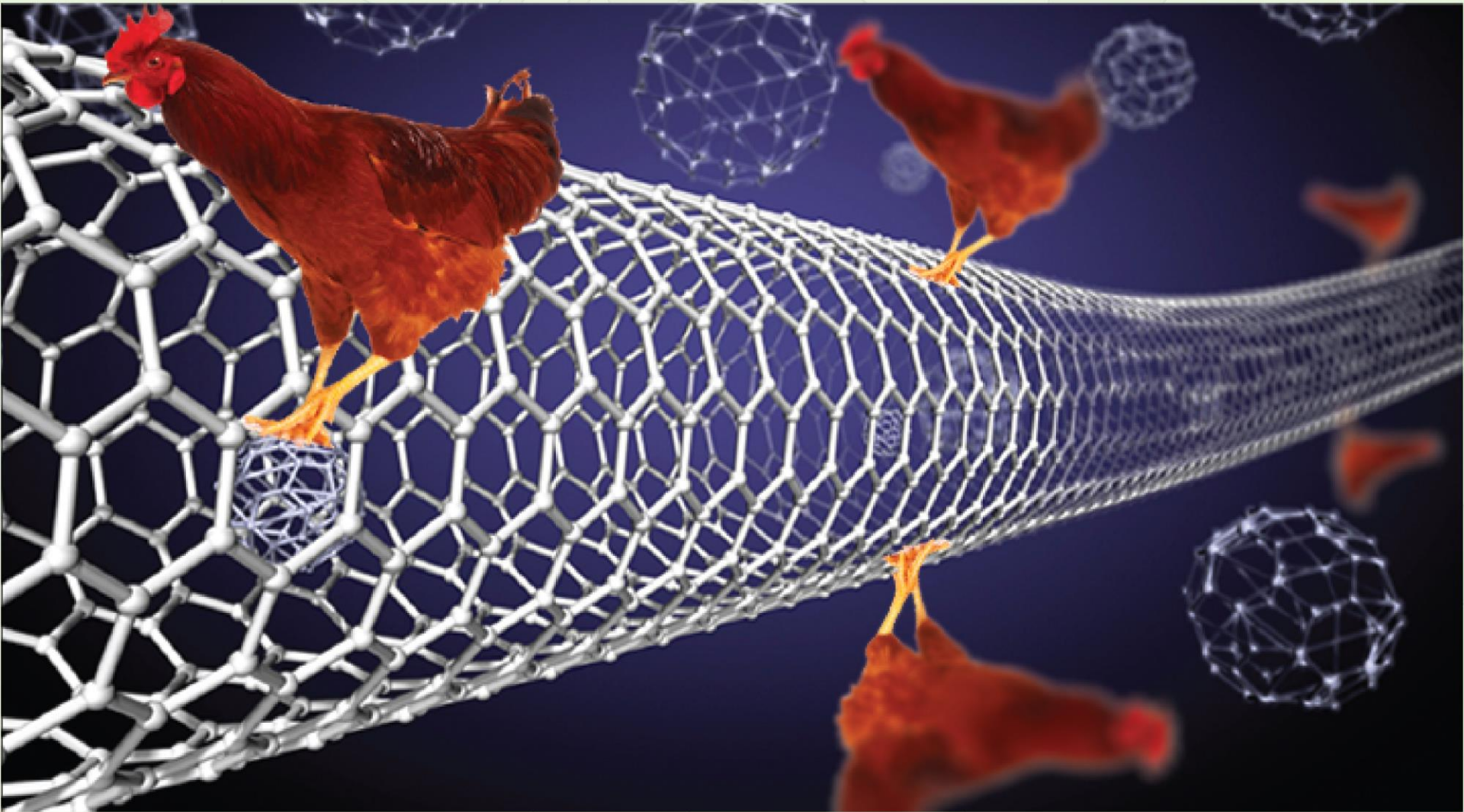
# ***UALR Nanotechnology Center***



*Chicken*



*Nanotube*



# OoGoo not Grey Goo



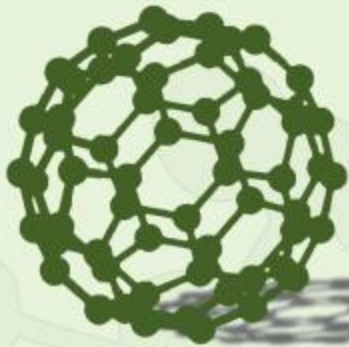
#1 NEW YORK TIMES BESTSELLER

**MICHAEL  
CRICHTON**

**PREY**

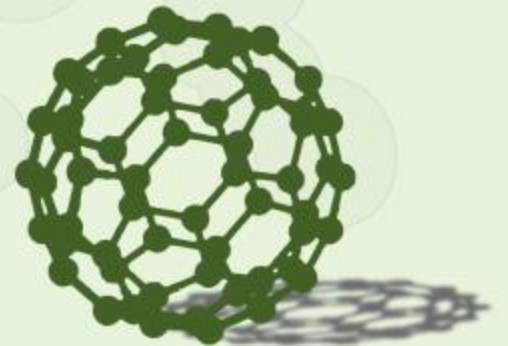
"TERRIFYING . . . IRRESISTIBLY SUSPENSEFUL."  
*New York Times Book Review*



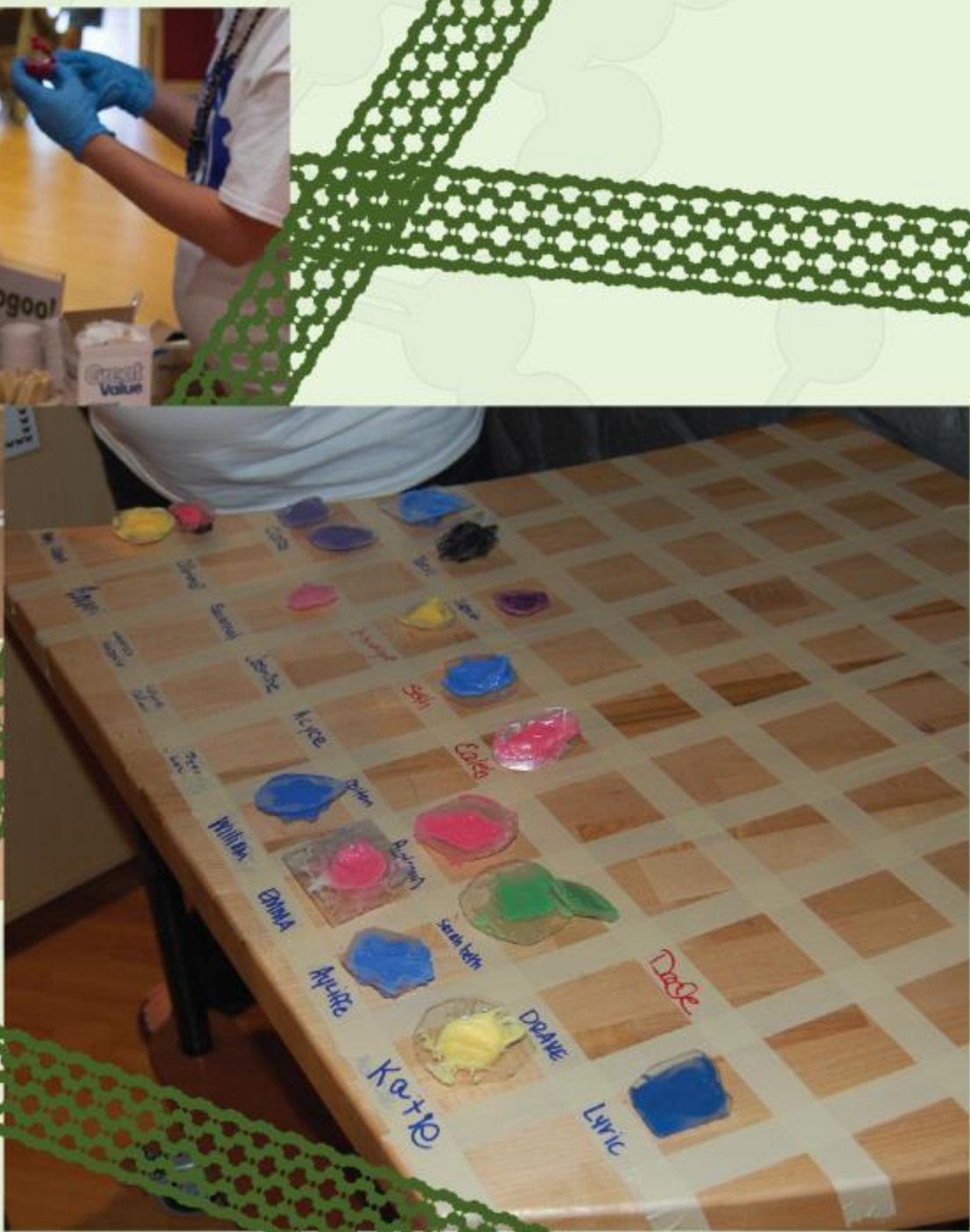


Well-Being  
of Southeast Arkansas

The focus of our permanent collection  
is to collect, exhibit, interpret, and  
preserve works of art  
unique  
to the southern region of the  
United States  
with an emphasis on  
Arkansas Artists,  
and American Artists.









# amazing YOU!

Explore the incredibly complex machine that is your body. See what makes it work, how it powers it up, and how to keep it strong.

# NISE network™

NANOSCALE  
INFORMAL  
SCIENCE  
EDUCATION



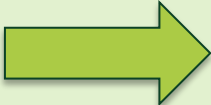
Arkansas Discovery Network




Funded by the  
Donald W. Reynolds Foundation



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# Game – *Nano Around the World* *Erik Smith*



**More info:**

[nisenet.org/catalog/programs/nano\\_around\\_world](http://nisenet.org/catalog/programs/nano_around_world)

# Why implement improv exercises ?



Incorporating improv exercises into staff and volunteer training helps create a supportive and upbeat environment for educators to practice and strengthen essential skills.

- **Warm up skills** required for interacting with visitors
- **Encourage conversations:** with visitors (rather than reciting scripts)
- **Be better listeners:** think on your feet and respond in the moment
- **Be responsive:** better tailor content to visitors responses and integrate visitor feedback
- **Be positioned as equals** with visitors not “the expert”
- **Foster teamwork & creativity:** create a fun, supportive, positive work environment to practice skills



**More info:** [nisenet.org/catalog/tools\\_guides/improv\\_exercises](https://nisenet.org/catalog/tools_guides/improv_exercises)

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# Nano & Society Workshops - Share-outs

- Alana Baliga  
Science Spectrum
- Kevin Delaney  
Museum of Discovery
- Joyce Fales  
Leonardo's Discovery Center
- Jill Kary  
Arkansas State University Museum
- Adam Nye  
The Thinkery (formerly The Austin Children's Museum)
- Debbie Williams  
Oklahoma WONDERtorium

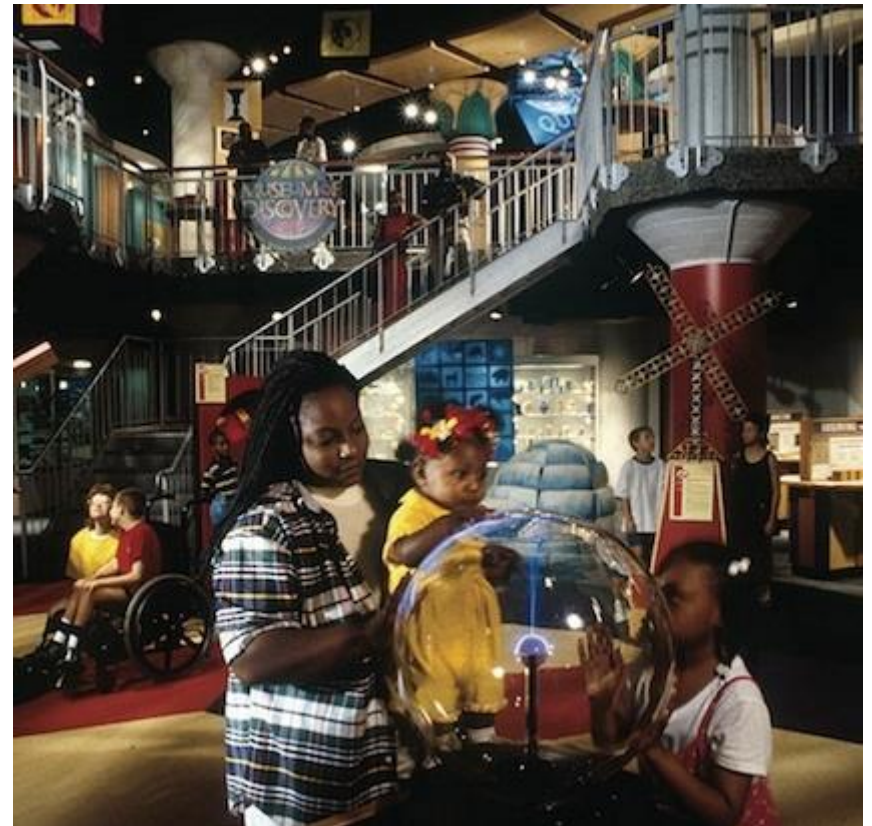


# Partner Training/Nano

## Arkansas State University Museum



## Museum of Discovery in Little Rock



# Improv Activity

My name is Jill and I say...



Discuss how improv can improve performance and morale.



# Working Lunch and Nano Discussion



# Nano and Society



A screenshot of the NISE Net website. The page features a navigation bar at the top with links for HOME, COMMUNITY, CATALOG, ABOUT, and WHAT IS NANO. The main content area includes a header for the Nanoscale Informal Science Education Network, a banner for NanoDays (March 29-April 6, 2014), and several news items. One news item is titled "Human Red Blood Cells (SEM)" and another is "Common Sense Media features DIY Nano as their 'iPhone App of the Week'!". The website also has a sidebar with a search bar and a "New in the Catalog" section. The footer includes a "Partner Highlight: University of California".

What is Nano?

What is NISE Net?

# Nano Technology and How it Impacts Us

Relationships

Values

Systems

Oh  
my!



# Role Play Improv



Discuss Customer Service

# Nano Activity in the Tinkering Studio

How Nano can be Integrated into Tinkering Projects



**Flying Cars**

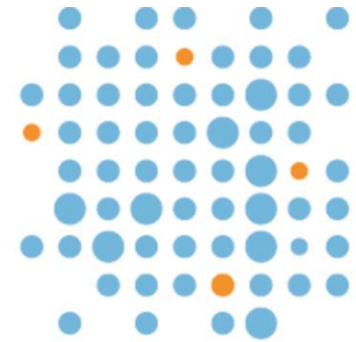


# *What's in the Kit?*



# Oogoo! A NanoDays and/or Tinkerfest Possibility





*museum of discovery*

[www.museumofdiscovery.org](http://www.museumofdiscovery.org)

Kevin Delaney

kdelaney@museumofdiscovery.org



# How We used Team Based Inquiry (TBI)

Whitney  
Tidwell



Flying  
Cars



Thomas  
Lipham



# How we got started

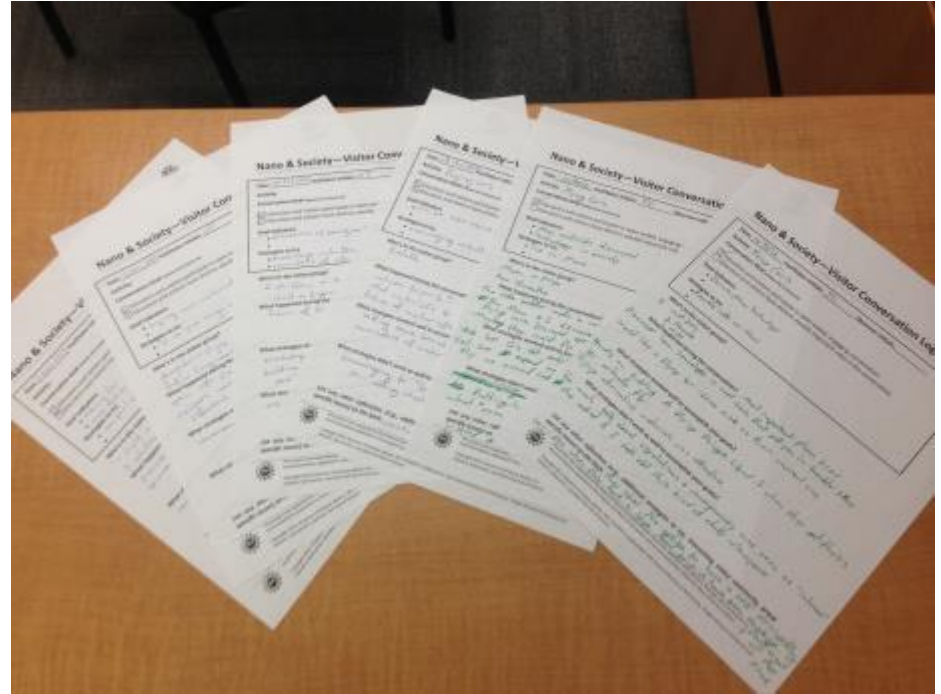
- Flying Cars activity in Tinkering Studio.



- Started with provided materials.

# What we noticed through TBI observation

- The Visitor Conversation Log encouraged staff to write detailed observations and quotes.



- From this, we realized early on that we needed to modify the activity.

# How we adjusted the activity

- Blended the Flying Cars activity with our “Flying Machines” activity.



- The goal of “Flying Machines” is to get hands-on with various materials and see how they behave in the wind tube (aerodynamics, physics, etc.).



# Results

- Engaged visitors from a wider age range.
- Increased confidence of staff.



- Using the foam car plus a variety of materials provided a more natural segue to the topic of Nano in society.



# Questions about how we used TBI? Contact Thomas!



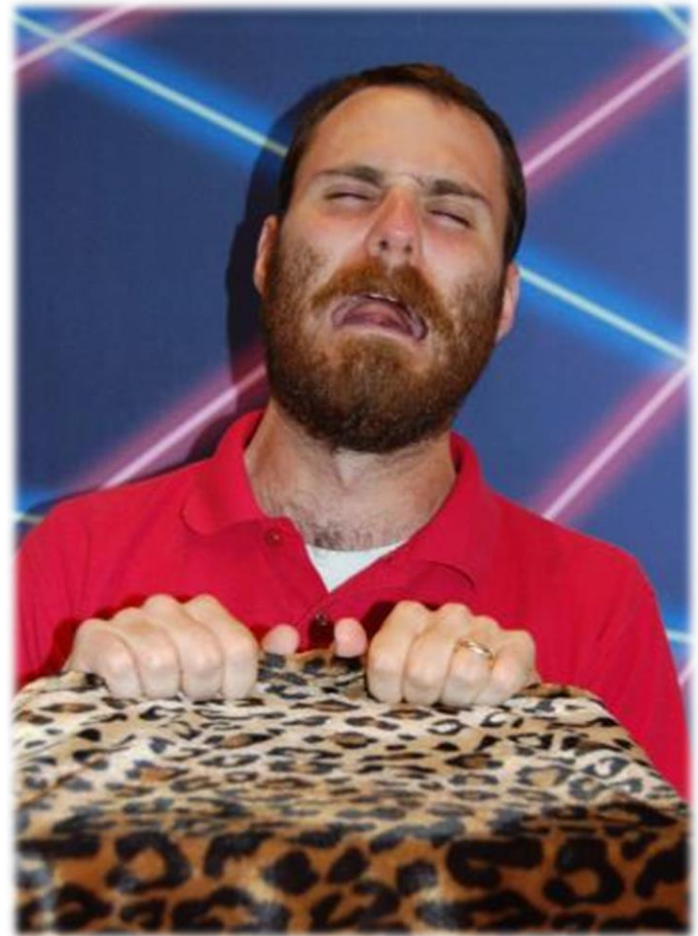
Thomas Lipham

Program Director

[tlipham@museumofdiscovery.org](mailto:tlipham@museumofdiscovery.org)

501-537-3072

[www.museumofdiscovery.org](http://www.museumofdiscovery.org)



# Nano & Society Workshops

Set of four workshops in Fall 2012 focused on preparing museum educators to engage the public in conversations about the relationship between nanotechnology and society.



## Nano & Society Three Big Ideas:

- Values shape technologies
- Technologies affect social relationships.
- Technologies work because they are part of larger systems.

## Methods and practices for engaging The public:

- Conversational techniques for facilitating interactions with visitors.
- Team-based inquiry approaches to improving and learning from professional practice.

**More info:** [www.nisenet.org/catalog/tools\\_guides/nano\\_society\\_training\\_materials](http://www.nisenet.org/catalog/tools_guides/nano_society_training_materials)

# Nano & Society Activities



**Nano Around the World card game**



**Exploring Nano & Society – Invisibility Cloak**



**Exploring Nano & Society – Flying Cars**



**Exploring Nano & Society – Space Elevator**



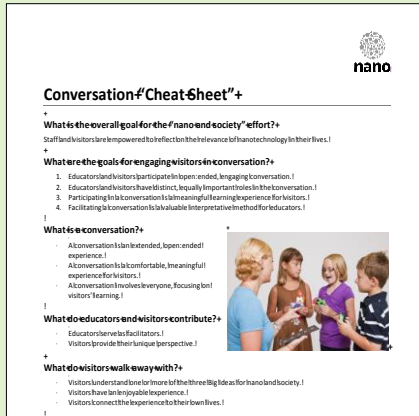
**Exploring Nano & Society – Tippy Table**



**Exploring Nano & Society – You Decide!**

**More info:** [www.nisenet.org/catalog/tools\\_guides/nano\\_society\\_training\\_materials](http://www.nisenet.org/catalog/tools_guides/nano_society_training_materials)

# Nano & Society Tools

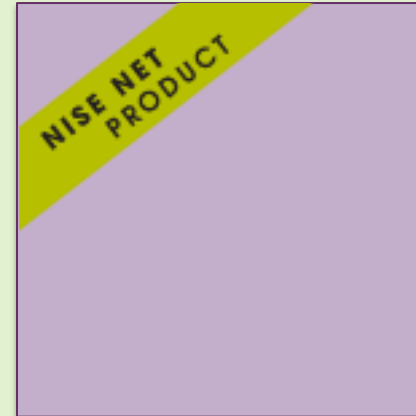


## Nano & Society training materials

- slideshows
- videos
- tip sheets
- team-based inquiry sheets



## Improv Exercises for staff and volunteers



Technology & Society Guide  
(coming in NanoDays 2014 kit)

More info: [www.nisenet.org/catalog/tools\\_guides/nano\\_society\\_training\\_materials](http://www.nisenet.org/catalog/tools_guides/nano_society_training_materials)

# More Nano & Society Programs & Activities



**Would you buy that?**  
Public program



**Societal and Ethical Implications**  
Posters



**Wonders and Worries of Nanotechnology**  
Video episodes



**Forums:**

- Nanomedicine
- Energy
- Privacy
- Who Decides?
- Cognitive Enhancement

**More info:** [nisenet.org/catalog](http://nisenet.org/catalog)

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# Making the most of your NanoDays Kit - Share-outs

- Carrie Grove  
Oklahoma WONDERTorium
- Casey Wiley  
Mid America Science Museum
- Lynne Hehr  
University of Arkansas, Center for Math & Science Education
- Kristi Trampus  
Discovery Science Place
- Ginny Whitaker  
The Richard E. Smalley Institute for Nanoscale Science and Technology
- Jennifer Williams  
Imaginarium of South Texas
- Kevin Delaney  
Museum of Discovery
- Aaron Guerrero (on behalf of Sandra Cavazos)  
Imaginarium of South Texas

NanoDays Applications  
due **December 1, 2013**

# Are YOU a Nano-Newbie?

Carrie McKenzie

Oklahoma WONDERTorium  
Assistant Programs  
Coordinator

[carrie.mckenzie@okwondertorium.org](mailto:carrie.mckenzie@okwondertorium.org)



[www.okwondertorium.org](http://www.okwondertorium.org)





## NanoDays Activities

- 4 Science Tuesday Nano Themes
  - 3:00-5:00
  - Staffed
- Weeklong Nano Focus at Discovery Diner
  - Tues-Sun, 10-5
  - Not Staffed
- A NanoDay Saturday at Discovery Diner
  - 11:00-3:00
  - Staffed

# What Did We Do?

- **Science Tuesdays**

- Come & go demonstrations/ experiments at DD
  - What is Nano?
  - Nano is Different
  - Nano in Nature
  - Nano in Tech.

- **Nano Week**

- Child-led exploration of kits at Discovery Diner and Education Room

- **NanoDay**

- Staffed exploration of more “sensitive” kits
- Timed Demonstrations
  - Nano Sand
  - Hydrogel
  - Gummy Capsules
  - Surface Tension





## Nano Summer Camp

- Tues-Wed, 10-3
- 8-12 yr. olds
- Based off of kits
- Supplemented with trips to a Functional Nanomaterials Lab and to a herpetologist to learn about geckos

## Nano Science Day

- 6 days serving 4 schools
- Rotated through specials
- Interactive presentation/performance
  - Horton Hears a Who (pre-k/K)
  - Mad Scientist from the future (1<sup>st</sup>/2<sup>nd</sup>)
  - Game Show (3<sup>rd</sup> - 5<sup>th</sup>)

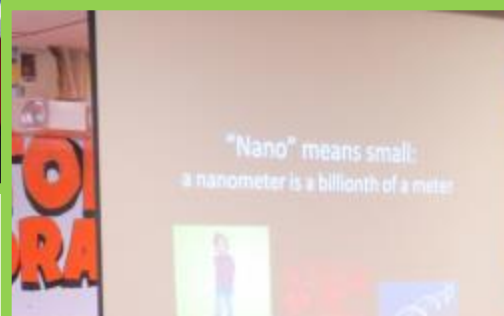


## Numbers Served

- Science Tuesdays
  - 60 Children
- Nano Week (w/ Sat.)
  - 352 Visitors
- Summer Camp
  - 24 Students
- Science Days
  - 1,381 Students
  - 44 classrooms

## Total Served

- 1,817



# Mid-America Science Museum



Casey Wylie

MASM Educational Programs Coordinator

[caseyw@midamericamuseum.org](mailto:caseyw@midamericamuseum.org)

[www.midamericamuseum.org](http://www.midamericamuseum.org)

# Nano Days @ MASM



- Stations
- Themed Member Night





# Everyday Nano



- HomeSchool labs
- Outreach (@ GCL)
- “What is Nano?”
- Other events (HomeSchool Day, Cub Scout Day, etc.)



# Children's Museum of Brownsville



**Jennifer Williams, Education Director**

**Aracely Araiza, Event Coordinator**

# Event Staff

- Thania Gonzalez
- Ashlee Sanchez
- James Maxwell
- Jessica Zuniga
- Rosa Serafin
- Jarixel Cordova

# Set-Up and Schedules



Pictures and Video: Aracely 10-12/2-4, Rosa 11-12/3-4

## Table 1 (English)

10:00 UV Bracelets  
11:00 3D Imaging  
12:00 Hydrogel  
1:00 LCD  
2:00 Invisibility  
3:00 Moving Molecules

Jennifer 10-4

## Table 2 (Spanish)

10:00 Graphene  
11:00 Computer Hard  
Drive  
12:00 Invisibility  
1:00 Ball Order  
2:00 Sunblock  
3:00 Butterfly

Thania 10-12  
Jarixel 12-1  
Thania 1-4

## Front Desk

James 10-12  
Aracely 12-1  
Jessica 1-2  
Ashlee 2-5

## Table 3 (English)

10:00 Sunblock  
11:00 Butterfly  
12:00 Computer Hard  
Drive  
1:00 Graphene  
2:00 Ball Order  
3:00 Nano Sand

## Lunch

Jarixel 11-12  
James/Jessica 12-1  
Aracely/Ashlee 1-2  
Rosa 2-3

Ashlee 10-1  
James 1-4

## Table 4 (Spanish)

10:00 Moving Molecules  
11:00 Nano Sand  
12:00 UV Bracelets  
1:00 Hydrogel  
2:00 3D Imaging  
3:00 LCD

Jessica 10-12  
Rosa 12-2  
Jessica 2-4

# Our Goals

- To gather data on how the community responds to Nano Day and the experiments, as well as the best ways to incorporate Spanish into the presentations
- Track how many people attend each experiment
- See if what we are presenting is understood by the children
  - *Note: Children's Museum of Brownsville target audience is 0-8 years of age*

# Preparation



- Choosing Nano Experiments that were most age appropriate
- Created Master Schedules
- Established 2 staff meetings to review
  - Meeting #1: Presented training videos of proper and improper ways to present a Nano experiment. Followed by Discussion
    - Staff tried each experiment themselves in order to become familiar with Nano and/or re-familiarize themselves
  - Meeting #2: Each staff member received their assignments and practiced their experiments and explanations in English and/or Spanish.
    - We had to make sure that everyone understood the concepts and how to introduce them so that they were understandable to children between the ages of 3-8(+).

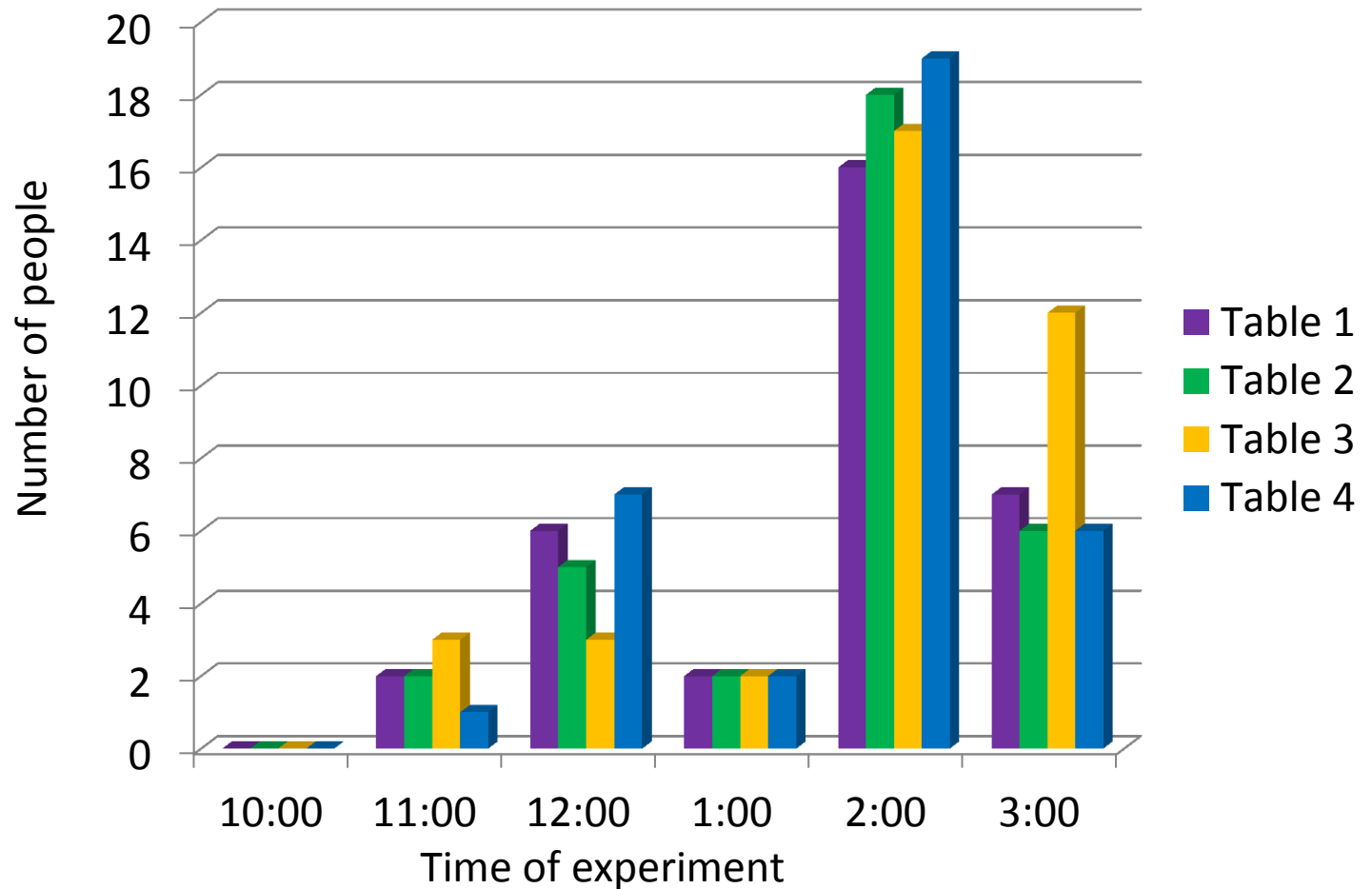


# Launch Nano Days!





# The Data



# Cassandra, Age 11 (Video)





**Los  
Bloqueadores  
Solares**



**Ball Order**

# Conclusions

- Saturday mornings at the museum take time to ramp up. Our next Nano event will be scheduled for noon to 4pm.
- The older children, ages 7+, were more interested in the Nano experiments and were more able to communicate understanding of at least some of the concepts being presented. We recommend Nano Outreach Programs be created and taken out to the local schools for 2<sup>nd</sup>-8<sup>th</sup> grade students.
- Although we had originally set up each table and the schedule as Spanish or English, people went to all tables regardless of language. We didn't discourage anyone, and our presentations truly became bilingual.

# Jessica, age 9 Connor, age 5 (Video)

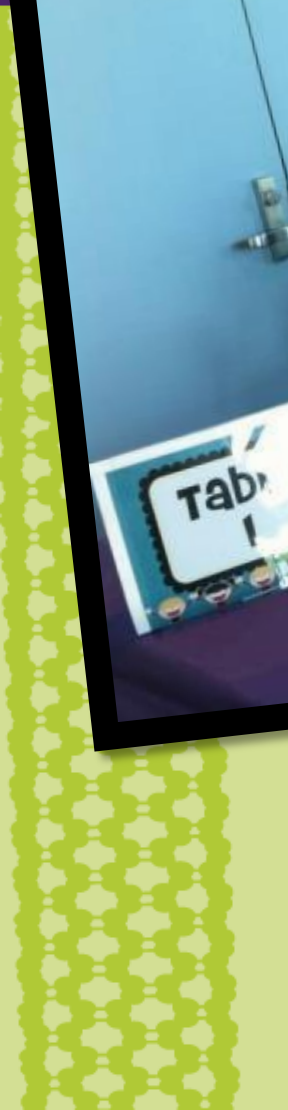




Hydrogel



Mariposa





UV Bracelets



Moving  
Molecules



Invisibilidad

# Shock and Aww... (Video)



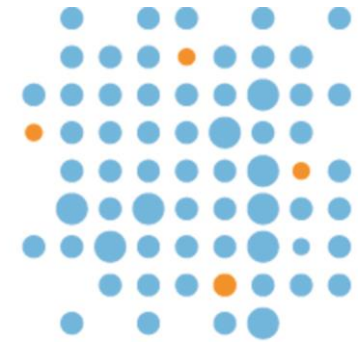


# Fully Integrated



## Brite Minds Summer Enrichment Program After School Science Club





*museum of discovery*

[www.museumofdiscovery.org](http://www.museumofdiscovery.org)

Kevin Delaney

kdelaney@museumofdiscovery.org



# Attack of the Nano Scientist + Spin-a-Prize



- Theater format.
- Projector and slideshow for Spin-a-Prize.
- Used as effective intro to Nano.

# SMALLEY INSTITUTE



RICE UNIVERSITY

---

NANOSCALE SCIENCE  
AND TECHNOLOGY

Ginny Whitaker

Development Coordinator,  
Smalley Institute,  
Rice University

[ginny.w@rice.edu](mailto:ginny.w@rice.edu)

## NanoDays 2013 Activities

- Helping kids make their own buckyball and telling the story of the Nobel Prize winning discovery
- Recruiting a real nano scientist for the play
- Coordinating graduate students to volunteer
- Advising for museum signage related to nano research in Houston

# Rice University

- Independent & Private
- 667 full-time faculty
- 148 part-time faculty
- 3810 undergraduates –
  - 58% do research during their time at Rice
  - 60% plus are in Engineering or Natural Science
- 2543 graduate students



Schools of Engineering, Natural Sciences, Humanities,  
Social Sciences, Business, Music, and Architecture

# Professor Richard E. Smalley 1943 - 2005

## Nobel Prize in Chemistry 1996

11-day  
project in  
Sept 1985

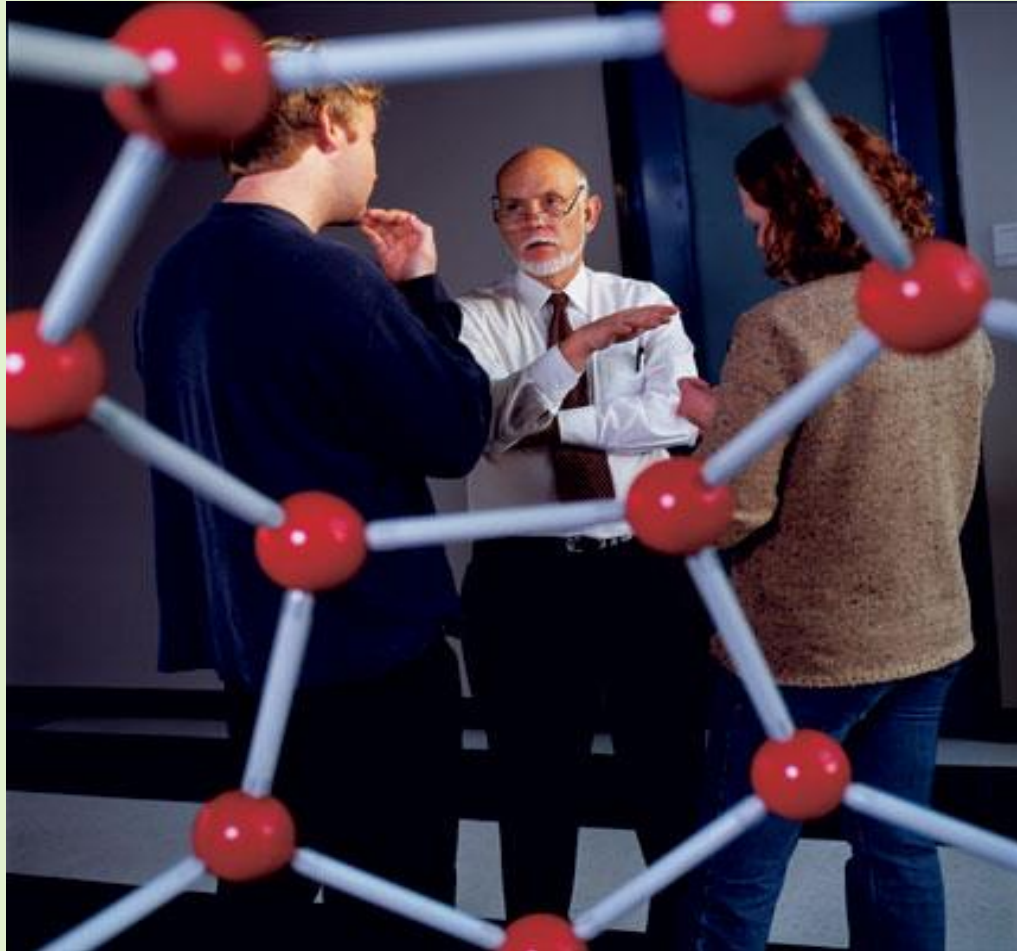
2-page  
paper in  
*Nature*

- with -

Robert F.  
Curl

- and -

Harold  
Kroto



**Carbon-60 Molecule**

**A.K.A.**

- **C-60**
- **Buckminsterfullerene**
- **Buckyball**

# Smalley Institute Vision

We lead the world in solving  
humanity's most pressing  
problems through the application  
of nanotechnology.





Kids love making their own Buckyball to take home!  
3 to 5 minutes with each child



# Recruiting a Faculty Member to participate in the “Attack of the Nanoscientist” play

The image shows a screenshot of a news article on the Rice University News & Media website. The article is titled "Rice guy is good guy at Children's Museum's 'NanoDays'" and is dated March 22, 2013. The author is Mike Williams. The article features a photo of Jacob Robinson, a Rice assistant professor of electrical and computer engineering, who is playing a role in the play "Attack of the Nanoscientist" at the Children's Museum of Houston's NanoDays Bash on March 30. The article also mentions that the festival will celebrate the science of very small things with a full day of exhibits, activities, and educational programs. A sidebar on the right contains a "RICE NEWS" header and a list of pages including Contact Us, National Media Relations, Photo Gallery, Subscribe, and Video Gallery and Playlists. At the bottom of the article, there are social media sharing buttons for Facebook, Twitter, Google+, Pinterest, LinkedIn, and Digg.

**RICE**  
Unconventional Wisdom

RICE UNIVERSITY NEWS & MEDIA

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## Rice guy is good guy at Children's Museum's 'NanoDays'


MIKE WILLIAMS – MARCH 22, 2013  
POSTED IN: CURRENT NEWS

Tweet 2 +1 0 Like 0

Rice's [Richard E. Smalley Institute for Nanoscale Science and Technology](#) will play a role in the Children's Museum of Houston's [NanoDays Bash](#) on March 30.

The sixth annual festival at 1500 Binz St. will celebrate the science of very small things with a full day of exhibits, activities and educational programs.

It will also feature a "nano play" starring [Jacob Robinson](#), a Rice assistant professor of electrical and computer engineering, at 1 p.m. In the play, "Attack of the Nanoscientist," Robinson's character foils a villain from the future who attempts to conquer the audience using nanoscience.



Jacob Robinson

NanoDays events organized by the [Nanoscale Informal Science Education](#) network will be held at institutions nationwide through April 5.


Like 0 Tweet +1 Pin it Share Digg +

## RICE NEWS

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- [Photo Gallery](#)
- [Subscribe](#)
- [Video Gallery and Playlists](#)

Other Stories

 Rice students build state-of-the-art laser cutter  
17 September 2013 3:50 PM Like Comments

# Aaron and Jacob in “Attack of the Nanoscientist”



# Aaron and Jacob in “Attack of the Nanoscientist”

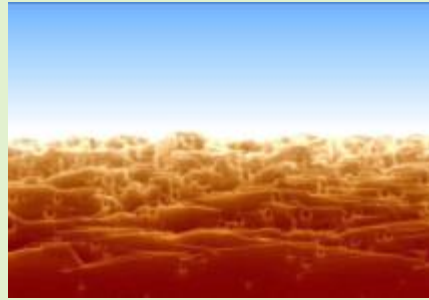


# Smalley Institute – What we Do

- Outreach
  - Public – K-infinity
  - Government – elected and agency
- Corporate Engagement
  - Technology
  - Hiring
- Foster collaboration
  - Universities, consortia, foreign governments
- Pursue research funding
  - Help especially with cross-discipline proposals

# Smalley Institute Outreach – Examples

- Nano Art



- Presentations, tours – especially HS and MS



- With HMNS – co-developed Discovery Dome



- Smalley Institute Distinguished Lectures

*– and, of course –*

- **Nano-Days at Houston Children’s Museum**

A satellite-style image of Earth showing the Americas and surrounding oceans. The text "BE A SCIENTIST -- SAVE THE WORLD" is overlaid in green, bold, serif font across the center of the image.

BE A SCIENTIST -- SAVE THE WORLD

A satellite view of Earth showing the Americas and surrounding oceans. The text "BE AN ENGINEER -- SAVE THE WORLD" is overlaid in green, bold, sans-serif font across the center of the image.

BE AN ENGINEER -- SAVE THE WORLD



# Contact Information

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Development Coordinator

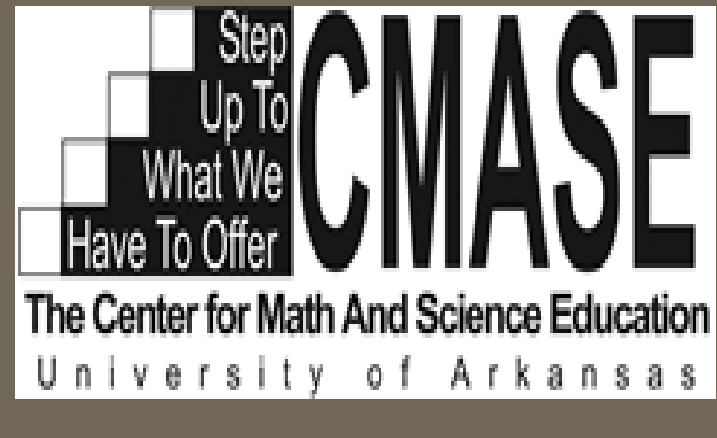
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Director of Operations, Smalley Institute

(713) 348-2980

[jfm3@rice.edu](mailto:jfm3@rice.edu)

(713) 348-2117



# University of Arkansas Center for Math & Science Education (CMASE)

changing to UA STEM Education Center

- Lynne Hehr, Director
- Lesley Merritt, K-12 Science Specialist
- Cathy Jones, K-12 Math Specialist

- NWA Regional Science and Engineering Fair  
Nano Days Event
- March 15, 2012 from noon to 3:30pm
- 1000+ 5<sup>th</sup> – 12<sup>th</sup> grade competitors, parents, teachers, UA personnel and general public



Disclaimer – We have no idea who these little girls are or where this event was held....but it gives an idea of what we did....we are soooooo bad!



## Macro, Micro, Nano: What's the Big Deal?

WHAT: An informal gathering for topical discussion

WHEN: Tuesday, February 12 from 6:30 to 8:00pm

WHERE: Powerhouse Restaurant (back room)

Free and Open to the Public.

At the ultra-tiny nanoscale, common materials often behave in unusual ways. UA scientists are working to understand these phenomena as well as the ethical applications of nanotechnology in everyday life. Join Fayetteville's 'town and gown' community in the University's award\* winning Science Café: Food For Thought!

75 University faculty, students & general public.

\*2012 Sigma Xi Chapter Program Award 1 of 7 out of 523 chapters.



- Two hour session at Arkansas Curriculum Conference “Nanotechnology: What’s the Big Deal?”
- Shared with science specialist from Ozarks Unlimited Educational Coop who presented at the OUR Science Fair to over 300 participants, teachers, and parents.
- Nanokit made available for teacher checkout for periods of 2 weeks.



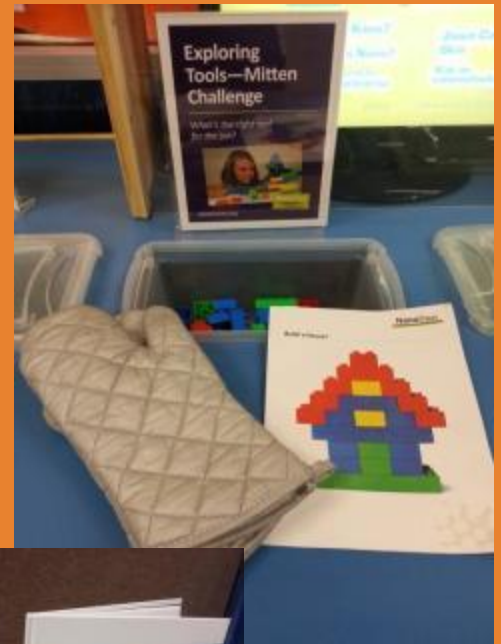
5300 San Dario, Ste. 505  
Mall Del Norte  
Laredo, Texas 78041



# Local Demographics

- Laredo = Mostly Hispanic (95.6%)
- Other ethnic groups include: Indian, Middle Eastern, Asian, African American and Caucasian
- Memberships total to 400
- Open 5 days a week to the public (Mon & Tues exclusively for Field Trips)
- 39,000 Yearly visitors to the museum





# NanoDays Exhibit

# NanoDays Program



# Nano Science Kits



# Partnerships

- Closely partnered with local both Laredo & United Independent School Districts (L.I.S.D & U.I.S.D)
- Example: Imaginarium staff facilitated a U.I.S.D staff development training on Nano Technology
- Partnered with Health and Human Services Commission, Border Affairs Office's Regional Coordinator Mr. Jaime Arizpe
- Example: With Mr. Arizpe's coordination, Imaginarium staff have outreaches to the "colonials" or rural living areas



# Future Aspirations

- Applying for Nano Mini-Grant:  
Plans include outreaches and field trips specifically designed to reach bilingual students both locally and in our surrounding “colonials” or rural out-of-town areas.





# Thanks!!



**Imaginarium of South Texas**

5300 San Dario, Ste 505

Laredo, Tx 78041

Visit us on Facebook: Imaginarium of South  
Texas 2012

Visit our website: [www.imaginariumstx.org](http://www.imaginariumstx.org)

Phone: (956) 728-0404 or (956) 728-0418

Fax: (956) 725-7776



# Regional Meeting Agenda – Day 1

- 9:00 Welcome and introductions
- 9:15 Improv Activity 1: *I Say Hi*
- 9:45 NISE Network update
- 10:30 Break
- 10:45 Mini-Grants: New Ideas for Doing Nano
  
- 12:00 Lunch and museum visit time
  
- 2:00 Improv Activity 2: *Nano Around the World*
- 2:15 Nano & Society Conversations
- 3:15 Break
- 3:30 Making the Most of Your NanoDays Kit
- 4:30 Inclusive Audiences Bilingual and Universal Design
- 5:30 Break
- 6:30 Group Dinner



# Reaching Diverse Audiences



## **Inclusive Audiences**

Raising our capacity to effectively engage underserved and underrepresented audiences

### **Why use an Inclusive Audiences approach?**

- Museums are uniquely situated to educate the public, inspire youth, and provide access to learning experiences.
- Inclusive approaches help reach all audiences more effectively.
- It allows us to go beyond education and inspiration to empowerment and social justice.



# Inclusive Audiences - Bilingual Audience Workshop



## Workshop held in June 2013 in Houston

- Explored importance of engaging bilingual audiences in nanoscale science, engineering and technology
- Strategies to better engage Spanish speakers by building capacity, using techniques like:
  - sheltered instruction
  - team-based inquiry
  - marketing strategies

### More info:

[nisenet.org/catalog/spanish](http://nisenet.org/catalog/spanish)

[nisenet.org/catalog/tools\\_guides/bilingual\\_audience\\_workshop\\_resources](http://nisenet.org/catalog/tools_guides/bilingual_audience_workshop_resources)

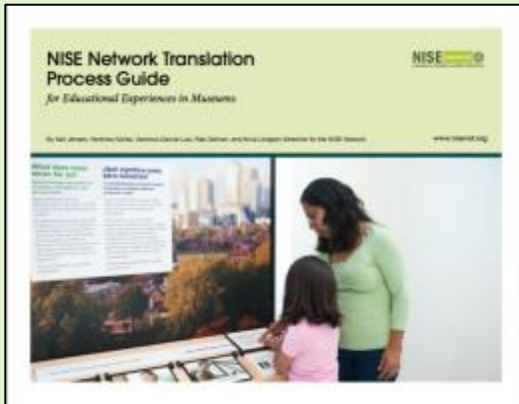
# Inclusive Audiences - Bilingual Audience Tools



**Bilingual  
Design  
Guide**



**Spanish  
Language  
Translations  
for many  
educational  
materials**



**Translation  
Process  
Guide**



**Bilingual  
Audience  
Workshop  
Resources**

**More info:** [nisenet.org/catalog/spanish](http://nisenet.org/catalog/spanish)

[nisenet.org/catalog/tools\\_guides/bilingual\\_audience\\_workshop\\_resources](http://nisenet.org/catalog/tools_guides/bilingual_audience_workshop_resources)

# Inclusive Audiences - Bilingual Audience Tools

## Spanish Language Translations

Email Print

Select NISE Network educational products are now available in Spanish!



Based on input from NISE Network partners, we have adapted our most popular programs for Spanish-speaking audiences! Follow the links below to explore Spanish versions of several NISE Network public programs, as well as other selected resources. We have placed the highest priority on translating products that directly serve public audiences. Professional resources, such as instructional materials and educator's guides are only available in English at this time.

Below are a set of products with Spanish translations of public materials

- Click on the **RESOURCE** tab
- Scroll down to the **SPANISH** files

### Tools

- [Translation Process Guide](#)
- [Bilingual Design Guide](#)
- [NISE Net Bilingual Audiences Workshop](#)

### Website

- Public website [Whatisnano.org](#)

### Videos

- [Intro to Nano Video: "Nanotechnology: What's the Big Deal?"](#)
- [NanoLab Video: "How Small Is Nano?"](#)
- [NanoLab Video: "What Happens in a NanoLab?"](#)
- ["Nano and Me" videos: Aluminum, Gold, Gravity, Latex, Pants, and Silver](#)

### Programs and Activities

- [Intro to Nano Cart Demo](#)
- [Sizing Things Down](#)

### Browse by

#### Audience

All ages (109)  
7 and up (39)  
11 and up (38)  
15 and up (17)  
19 and up (3)  
informal science educators (25)  
scientists (14)

#### Nano topics

Art and nature (71)  
Bio and medicine (73)  
Energy and environment (50)  
Fundamentals (132)  
Information Technology (47)  
Materials, tools, and applications (148)  
Society, policy, and economics (64)

#### Programs

Classroom activity (1)  
Display (2)  
Facilitated activity (46)  
Game (4)  
Museum theater (4)  
Stage presentation (16)

Available translations  
Spanish (61)



Nano throughout the year!  
Browse products by season.



Select NISE Network educational products are now available in Spanish!

Find answers to your questions about the catalog on our [FAQ page](#).

More info: [nisenet.org/catalog/spanish](http://nisenet.org/catalog/spanish)

# Bilingual Audience Workshop – Share-outs

- Aaron Guerrero (on behalf of Aracely Ariza)  
Children's Museum of Brownsville
- Alejandra Ovando  
Imaginarium of South Texas
- Jason Treadway  
Perot Museum

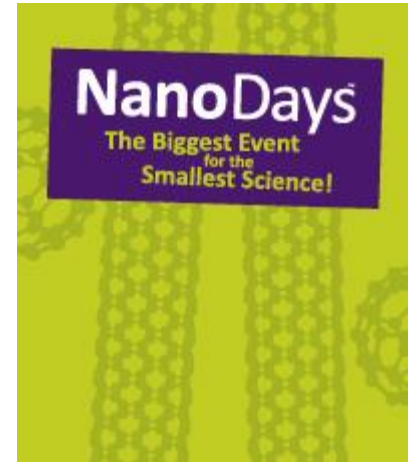


Dr. Jason Treadway  
*Lead Educator – Applied Science*

Per[]t  
Museum of Nature and Science

# Nano Days

- 3/30-4/7
- Approximately 3500 visitors/day
- Engineering Lab
- Facilitated by Educators and Gallery Presenters
- Favorite activities
  - Memory Wire
  - UV Beads
  - Invisibility – incorporated into Super Hero Science
- Marketed via website



# Integrating Bilingual Content

## *Amo Ciencia!*

- Benefits of bilingual workshop
  - Strategies that work
  - More than Google translator
- Pathway to integration
  - Baby steps
    - Family programming
    - Special events
    - Science nights
  - Bilingual staff
  - Spanish lessons at the Perot



5300 San Dario, Ste. 505  
Mall Del Norte  
Laredo, Texas 78041



# Bilingual Audience



# Sheltered Instruction

- The Imaginarium has two exclusive programs designated for children who have not entered school
- **Bright Sparks:** promotes literacy, basic instruction (shapes, colors, numbers) all in an informal “school” setting



- **Kiddo Art:** focuses on promoting the art through family interaction and communication



# Pros vs. Cons of Sheltered Instruction



Image on the left shows Sheltered Instruction for the Lesson “Square Art.” While this type of instruction allows for the reinforcement of the lesson to take place, the creativity of the project or work may suffer.

Therefore, a follow-up activity, as shown on the right, will allow for the parent and child to be able to express their own ideas while still allowing for teachable moments by the parents themselves.



# Thanks!!



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# Inclusive Audiences: Universal Design Workshop



## What is Universal Design?

The design of products and environments to be usable **by all people**, to the greatest extent possible, **without the need for adaptation** or specialized design.

**More info:** [nisenet.org/inclusive\\_audiences](http://nisenet.org/inclusive_audiences)

# Inclusive Audiences: Universal Design Workshop



**July 2013 at Museum of Science, Boston**

Audience: Museum Educators

Hands-on opportunity to apply Universal Design guidelines:

- Gathered feedback on NanoDays activities from experts with disabilities
- Used Team-Based Inquiry (TBI) approach
- Identified barriers & modified activities

# Inclusive Audiences: Universal Design Tools



**Universal Design Guidelines**  
for programs



**Universal Design Workshop Resources**



**Universal Design Guidelines**  
for exhibits

**More info:** [nisenet.org/inclusive\\_audiences](http://nisenet.org/inclusive_audiences)

# Universal Design Workshop– Share-outs

- Jacie Hood  
Science Spectrum
- Gianfranco Herrera  
Sci-Tech Discovery Center





**Gianfranco Herrera**

Programs Manager

[franco.herrera@scitechdiscovery.org](mailto:franco.herrera@scitechdiscovery.org)

[www.mindstretchingfun.org](http://www.mindstretchingfun.org)






**Jacie Hood**

Special Projects Coordinator


[jacie@sciencespectrum.org](mailto:jacie@sciencespectrum.org)

[www.sciencespectrum.org](http://www.sciencespectrum.org)





**Part 1: What is Universal Design?**



**Part 2: How does Universal Design help?**



**Part 3: How do we apply Universal Design?**

# Part 1: What is Universal Design?

---

## Quick Summary:

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” (Center for Universal Design, 2002)

# Part 1: What is Universal Design?

---

## Types of Inclusion

### Physical

- Touch/Tactile
- Visual
- Audio
- Smell
- Taste

### Mental

- Different Types of Learners
- Cognitive Inclusion
- Social Inclusion

# Part 1: What is Universal Design?

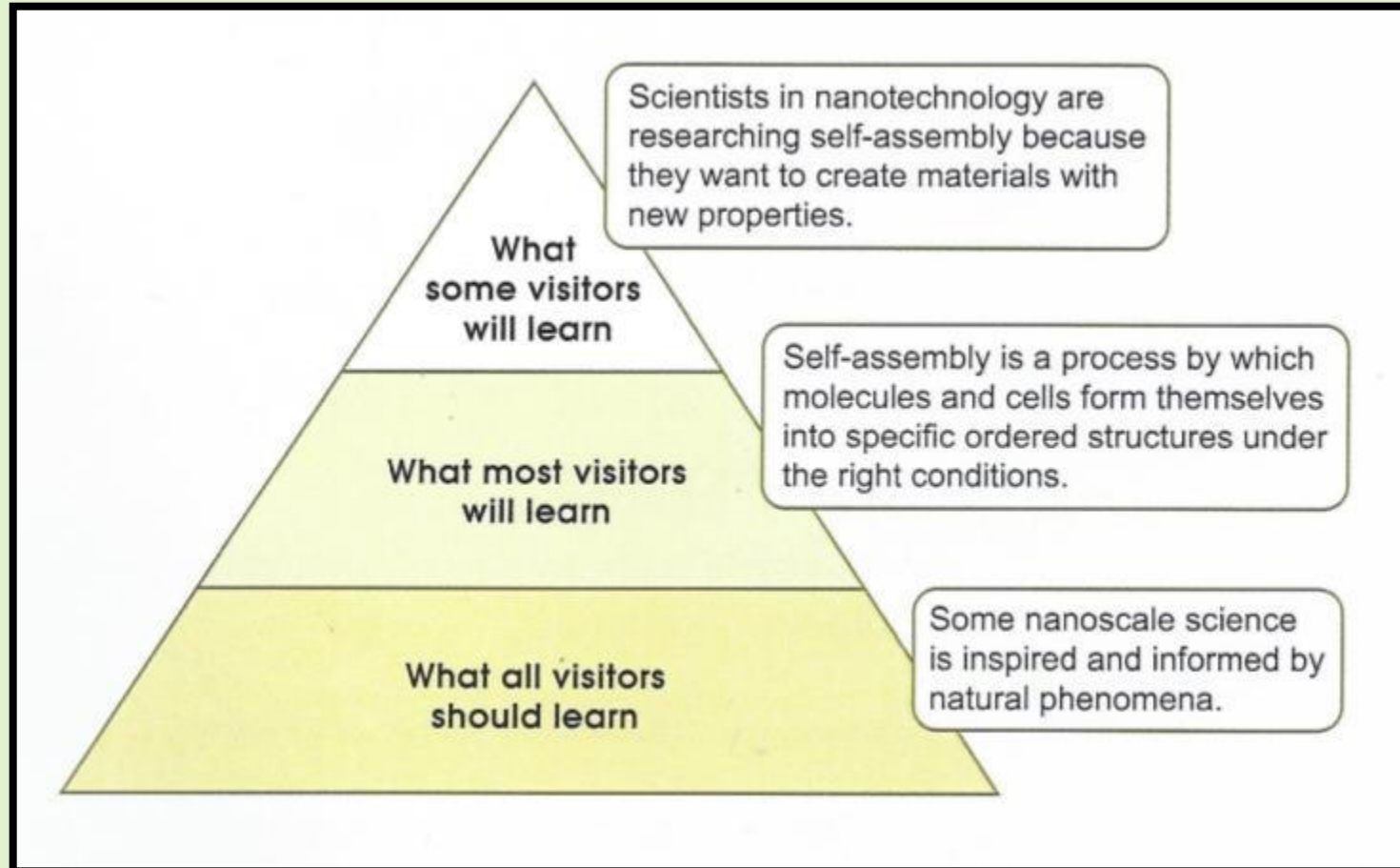


- There is no such thing as a “typical” museum visitor.
- By making your designs more inclusive of people with disabilities, it benefits everyone, including those without disabilities as well!

(Danford, 2003, 2004; Davidson, 1991; Reich, 2006)

# Part 2: How does Universal Design help?

## Multiple Entry Points



# Part 2: How does Universal Design help?

## Multiple Ways of Engagement

**Physical/Kinesthetic**

**Auditory**

**Visual**





# Part 3: How do we apply Universal Design?

---

- Repeat & Reinforce Main Concepts & Ideas
  - Communicate the message through multiple media
  - Represent ideas in different ways.
- Make Multiple Entry Points & Multiple Ways of Engagement Available
  - Provide physical & sensory access to ALL aspects of the program

# Part 3: How do we apply Universal Design?

## Notes from Inclusion Panel:

- **Listen to your visitors; they know best what they need.**
- Be aware of invisible disabilities.
- **Your interactions with the visitors are more important than if all the exhibits are actively accessible to everyone.**
- Acknowledge the disability, but don't dramatize it.
- Put accessibility accommodations on your website.
- Have a training with your staff about how to best communicate and interact with those of differing abilities.
- If possible, have "sensory friendly" time at your museum for those children & families who cannot visit at other times because of sight/sound/smell overstimulation.

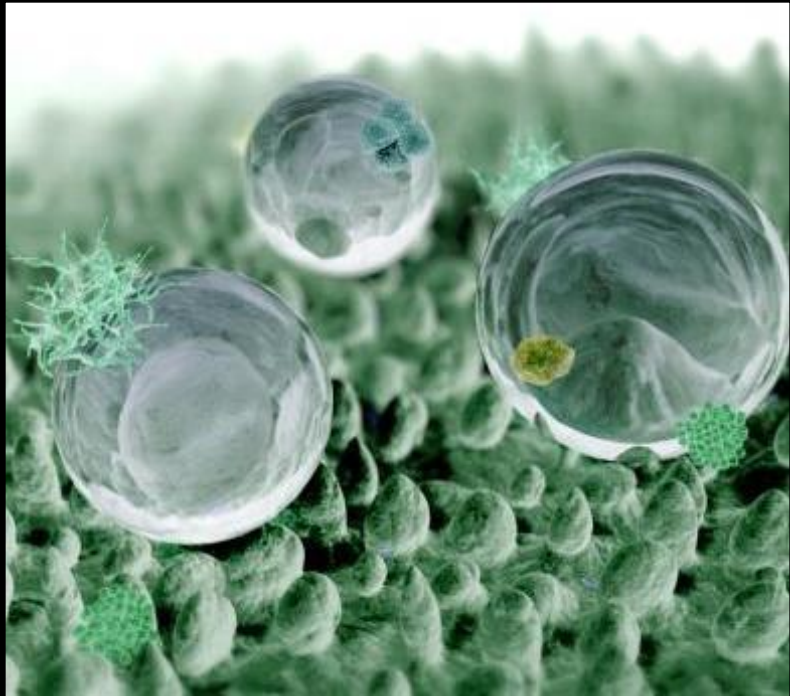


# Part 3: How do we apply Universal Design?

## Nano Pants!



# Visual



# Tactile/Physical

---



# Auditory



I am repeating main concepts & giving multiple examples to present ideas in different ways!

# Part 3: How do we apply Universal Design?

---

- Incorporate UD into your personal projects
- Share your ideas with others in the museum
  - Brown Bags
  - Invite others to see your work and participate with you
- Partner with local organizations
- Work with administration at your museum to bring in experts

# Recap of UD Workshop

---

- **What is Universal Design?**
  - Making programs and exhibits accessible to people of all abilities
- **How does Universal Design help?**
  - UD benefits ALL visitors, not just those with disabilities!
- **How do we apply Universal Design?**
  - Repeat & Reinforce Main Concepts & Ideas
  - Provide Multiple Entry Points and Multiple Ways of Engagement



# Regional Meeting Agenda – Day 1

- 9:00 Welcome and introductions
- 9:15 Improv Activity 1: *I Say Hi*
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- 3:15 Break
- 3:30 Making the Most of Your NanoDays Kit
- 4:30 Inclusive Audiences Bilingual and Universal Design
- 5:30 Break
- 6:30 Group Dinner



# Regional Meeting Agenda – Day 2



- 9:00    Improv Activity #3: *Red Ball*
- 9:15    Getting Nano into your building  
(exhibitions, signage, partnerships)
- 10:15   Beyond Year 10 Discussion Part 1
- 11:00   Break/List completion
- 11:15   Beyond Year 10 Discussion Part 2
- 11:45   Meeting wrap-up

# Improv Exercise – *Red Ball*

*Debbie Williams*



**More info:** [nisenet.org/catalog/tools\\_guides/improv\\_exercises](http://nisenet.org/catalog/tools_guides/improv_exercises)

# Why implement improv exercises ?



Incorporating improv exercises into staff and volunteer training helps create a supportive and upbeat environment for educators to practice and strengthen essential skills.

- **Warm up skills** required for interacting with visitors
- **Encourage conversations:** with visitors (rather than reciting scripts)
- **Be better listeners:** think on your feet and respond in the moment
- **Be responsive:** better tailor content to visitors responses and integrate visitor feedback
- **Be positioned as equals** with visitors not “the expert”
- **Foster teamwork & creativity:** create a fun, supportive, positive work environment to practice skills



**More info:** [nisenet.org/catalog/tools\\_guides/improv\\_exercises](https://nisenet.org/catalog/tools_guides/improv_exercises)

# Regional Meeting Agenda – Day 2

9:00 Improv Activity #3: *Red Ball*



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(exhibitions, signage, partnerships)

10:15 Beyond Year 10 Discussion Part 1

11:00 Break/List completion

11:15 Beyond Year 10 Discussion Part 2

11:45 Meeting wrap-up

# Getting Nano in Your Buidling – Share-outs

- Joyce Fales  
Leonardo's Discovery Center
- Alysha Herrera  
Sci-Tech Discovery Center
- Jacie Hood  
Science Spectrum
- Adam Nye  
The Thinkery (Formerly the Austin Children's Museum)



**thinkery**<sup>TM</sup>  
where science smiles

**Adam Nye**  
**Associate Director of**  
**Education**

# Think • Do • Make





# Discovery Time



# Youth Development Trainings







**The Thinkery** is an evolution of the Austin Children's Museum. It's Austin's sparkling new home for "why" and "how." A place where science and families play side by side. Where people connect with ideas by doing, making and experiencing. It's a foundry for a new generation of innovators and creative problem solvers. And it's a heck of a good time.



SCIENCE SPECTRUM

Lubbock, TX



# PROMOTING YOUR MINI-EXHIBIT IN AND OUT OF THE MUSEUM

## Marketing

- Social Media
  - Photos
  - Articles/Videos
- Newsletters
  - Photos
  - Description

## Programming

- Inreach
  - Nano Around the Museum
  - Integration into Current Programming
- Outreach
  - School Programming
  - Other Local Children's Nonprofits



# INTRODUCE PEOPLE TO THE EXHIBIT DIGITALLY



**CLEAR TITLE:**

**(NEW)**

**(NAME)**

**(EXHIBIT)**

**WHERE IS  
IT LOCATED?**

**SHOW  
PEOPLE**

**INTERACTING**

**INDIVIDUAL  
CLOSE-UPS**





# INTEGRATE INTO CURRENT MARKETING EFFORTS



**NANO** Small Science, BIG Fun!

Be sure to check out the Science Spectrum's newest exhibit on the lower level! Even though we may not be able to see it, nanoscience & technology is all around us in the world. This exciting new exhibit teaches patrons of all ages about where we can find nano-sized things in nature, technology, and beyond. Visitors can also learn about the future of nanoscience and how it can help us make the world a better place!

For more information on the exhibit, visit <http://www.whatisnano.org/nano-exhibit>.

- Clear Title
- What is it?
- Where is it located?
- What is “nano”?
- What is in the exhibit?
- What can I learn from the exhibit?
- Where can I find more information on my own?



**NANO** Small Science, BIG Fun!

**Spookley the Square Pumpkin**

**Spookley the Square Pumpkin** is returning to the Science Spectrum September 14th through October 21st.

**Spookley the Square Pumpkin** is based on a story by Bob Barlow. Spookley is a unique square pumpkin who is teased by other pumpkins because of his unusual shape. Spookley has a true love for his kind but he's not afraid to stand up for himself and his friends.

**Did you know?**

The Science Spectrum is proud to be a program partner in the 20th Century Community Learning Center Grant with activities for all ages and all abilities. Through Science Spectrum's (SS) Outreach to Schools, technology, science and other educational activities are available to students in the community. For more information on the grant, visit [www.whatisnano.org](http://www.whatisnano.org).

**OMNI THEATER**

**RESCUE** - NOW SHOWING

**The Last Reef** - Now Showing through Winter 2012

**FLYING MONSTERS** - Now Showing through Fall 2012

**Panhandle South Plains Fair** - September 20th-29th

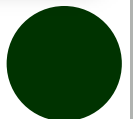
**Silly Science Carnival** - Tuesday, October 23rd, 10 AM - 12 PM

**Spooky Science Carnival** - Wednesday, October 24th, 4:30 PM to 8 PM

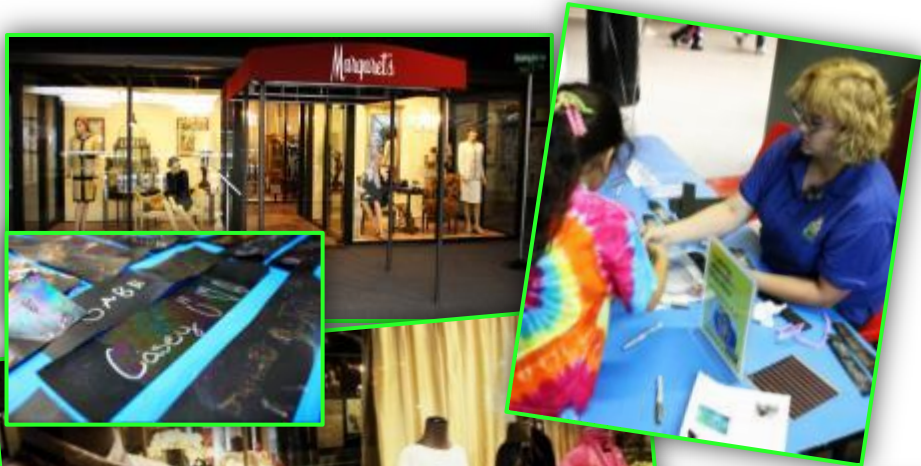


# GET PEOPLE EXCITED ABOUT NANO

- What is “nano”?
- Where can I find nano around me?
- What’s happening in nanoscience today?
- How can I experiment with nano?



# LOOK OUTSIDE THE EXHIBIT FOR PROGRAMMING OPPORTUNITIES



## ○ Other Exhibits:

- Find other exhibits around the museum with nano ties

## ○ Free Samples:

- Get people intrigued at another exhibit, and they will seek out the nano exhibit

## ○ Special Events:

- BubbleFest

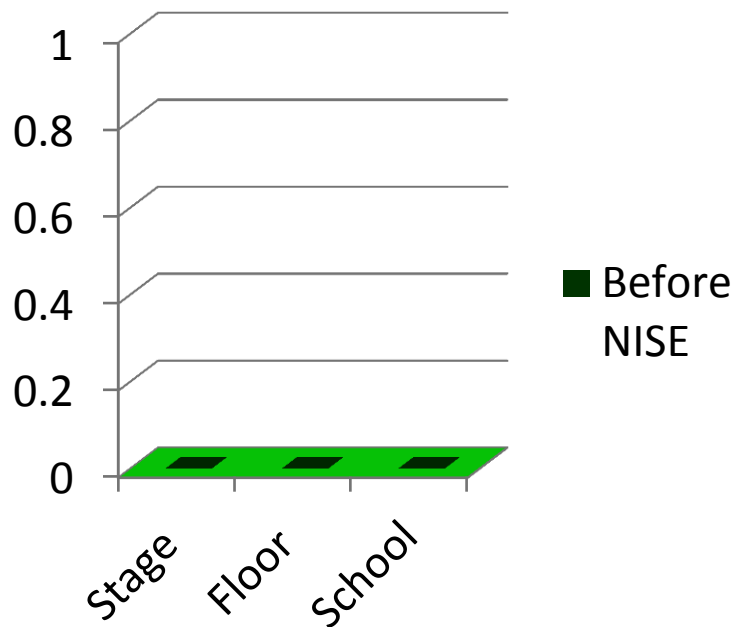


# TAKE THE EXHIBIT OUTSIDE THE MUSEUM

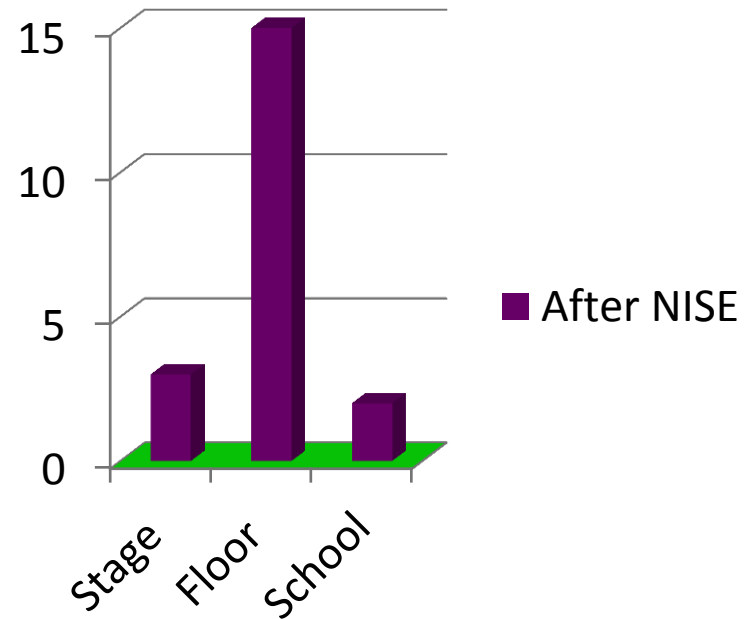
Before NISE Net

After NISE Net

Before NISE



After NISE



# TAKE THE EXHIBIT OUTSIDE THE MUSEUM



**PARTNER WITH  
OTHER  
NONPROFITS  
OR SCHOOLS**



**GET PORTABLE!**



**ITV/DISTANCE  
LEARNING  
FIELD TRIPS**



# RECAP!

## Marketing

- Social Media
  - Photos
  - Articles/Videos
- Newsletters
  - Photos
  - Description

## Programming

- Inreach
  - Nano Around the Museum
  - Integration into Current Programming
- Outreach
  - School Programming
  - Other Local Children's Nonprofits



# Sci-Tech Discovery Center

Alysha Herrera

Sales Manager

[rsvp@scitechdiscovery.org](mailto:rsvp@scitechdiscovery.org)



[www.mindstretchingfun.org](http://www.mindstretchingfun.org)

# The Nano Exhibit at Sci-Tech

Opened September 2012

150+ School & Summer  
Group Visits



***Over 51,000  
Visitors!***



# Exhibit Location

- Wall opposite ST entrance
- Shares walls with party room & water table
  - Approx. 412 ft<sup>2</sup>



# Exhibit Uses

General Visitor Experience

Field Trip Supplement

HAM Radio

Scout Program Component

i-Science

Camp Integration

NanoDays & Other Special Events



# Visitor Impact



Approx. 10% Improvement on  
Multiple Choice STEM Survey

**56.9%**

Teachers with Nano as #1  
(next closest, 25%)






## Closer Look at What Comes Next...

- Community Partnerships
- Connections to “Maker”
  - “Gray Matters” Link

# Regional Meeting Agenda – Day 2

9:00 Improv Activity #3: *Red Ball*

9:15 Getting Nano into your building  
(exhibitions, signage, partnerships)

 10:15 Beyond Year 10 Discussion Part 1

11:00 Break/List completion

11:15 Beyond Year 10 Discussion Part 2

11:45 Meeting wrap-up



# Future: Beyond Year 10

Project funding  
ends in ~ 2 years  
(August 2015)

# Future: What remains after Year 10



## What remains after the funding ends?

- Field-wide capacity to engage the public in nanoscience, engineering, and technology
- Relationships, including collaborations between scientists and museums
- Ongoing use of NanoDays and program materials
- Mini-exhibition copies on museum floors
- Website - online catalog
- Evaluation and research knowledge
- Network lessons shared with field

# Future:



How can we sustain  
the benefits of the  
NISE Network?



# Future - Funding Scenarios After Year 10



## Range of Scenarios

### Scenario 1:

No additional funding

### Scenario 2:

Some additional funding  
for a core of activities

### Scenario 3:

Funding for a new topic

# Future – Individual Reflection & Share out

## Scenario 1. No additional funding

- In the absence of any more funding, what would your institution be able to keep doing?
  - Are you taking any actions or pursuing any resources in the next two years to be able to continue nano education work in the years beyond the grant?
- 
- How could the partners in this regional hub support each other's work moving forward? Which collaborations do you plan to initiate/continue and how will you sustain them?

# What interest you the most?

## Snacks & sticky dots

### Scenario 2: Some additional funding for a core of activities

- If there was limited funding to support the NISE Network in the future, what activities would be most valuable to you?

- NanoDays physical kits
- NanoDays digital materials
- mini-grants
- exhibits
- regional hub structure
- in-person professional development
- online professional development
- new programs and media
- website with online catalog
- newsletter
- social networking (Facebook, LinkedIn, Twitter)
- other: \_\_\_\_\_

# What interest you the most?


## Snacks & sticky dots

### Scenario 3: Funding for a new topic

- If we could repurpose the network for another topic, what topics interest you the most?

- engineering
- climate change
- energy
- synthetic biology
- big data
- computer science
- convergent technologies (nano-bio-info-cogno )
- new emerging technologies
- societal and ethical implications
- nano is the only topic that interests me
- brain and neuroscience
- maker spaces
- other: \_\_\_\_\_

# Regional Meeting Agenda – Day 2

- 9:00 Improv Activity #3: *Red Ball*
- 9:15 Getting Nano into your building  
(exhibitions, signage, partnerships)
- 10:15 Beyond Year 10 Discussion Part 1
- 11:00 Break/List completion
-  11:15 Beyond Year 10 Discussion Part 2
- 11:45 Meeting wrap-up

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# Last Minute Logistics



## Logistics

- reimbursement forms
- luggage
- airport rides
- swap table

# THANK YOU!

To all our partners - we could not do this work without you!

