COLLABORATIONS

Partnerships in unusual places

Places of worship, prisons, the beach, and canoes

Best practices, strategies, and resources for local partnerships

Created by Aldric Rodriguez from Noun Project

Created by Cristiano Zoucas from Noun Project

Created by ProSymbols from Noun Project

Created by Chrystina Angeline from Noun Project

NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

NISE Network Partner Meeting
Tempe, Arizona February 2019

www.nisenet.org

EXPLORE SCIENCE
Earth & Space

Presenters

- **Catherine McCarthy,**
  Science Museum of Minnesota, Saint Paul, MN
- **Alan Brown,**
  Sci-Port Discovery Center, Shreveport, LA
- **Derrick Pitts,**
  The Franklin Institute, Philadelphia, PA
- **Samantha Sands,**
  Denver Museum of Nature & Science, Denver, CO
- **Charlie Gibson,**
  Michigan Science Center, Detroit, MI

NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

NISE Network Tools for Collaboration and Community Partnerships

Created by priyanka
from Noun Project

Catherine McCarthy
Project Leader
Science Museum of Minnesota
Saint Paul, Minnesota
cmccarthy@smm.org

Science Museum of Minnesota

NISE Network Partner Meeting
Tempe, Arizona February 2019

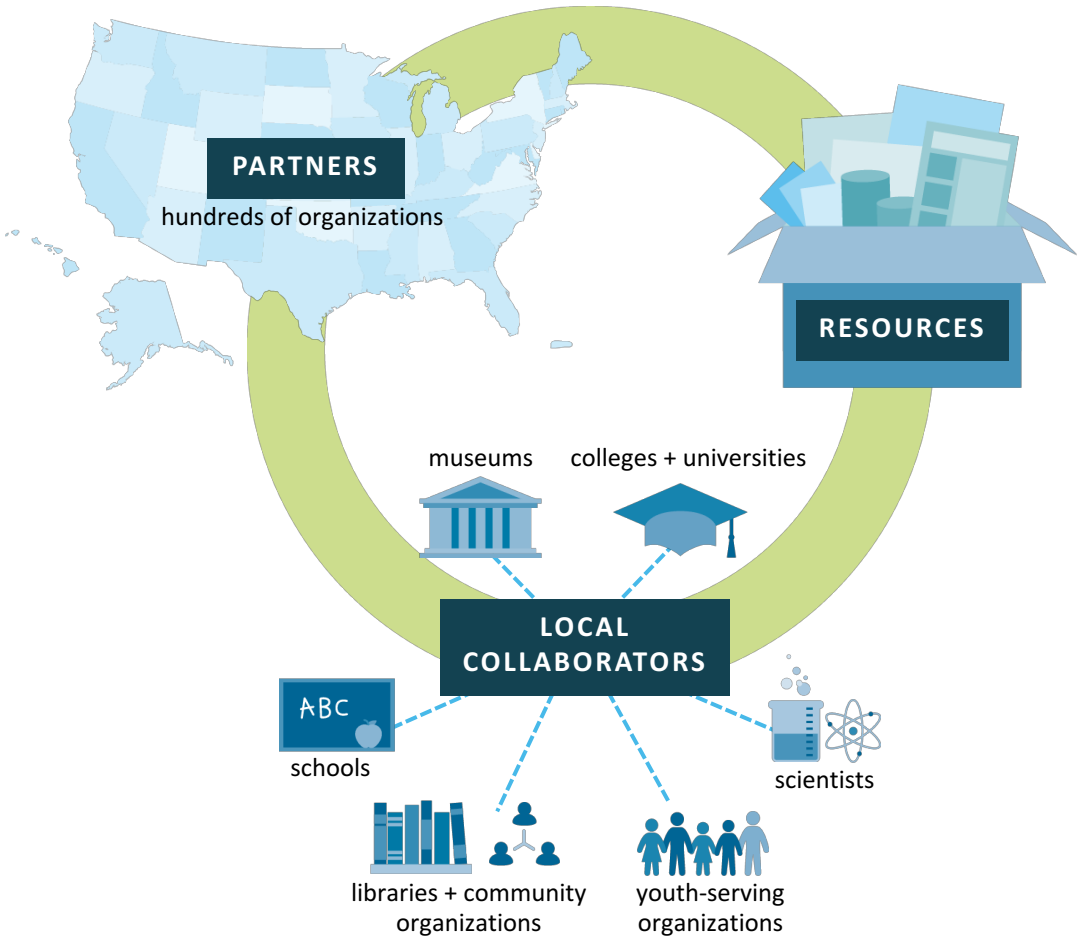
www.nisenet.org

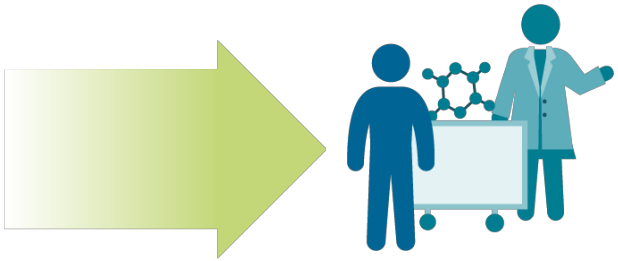
How NISE Network Works

Through our national collaborative **NETWORK**

We create, refine, and disseminate **EDUCATIONAL PRODUCTS** and **PROFESSIONAL DEVELOPMENT RESOURCES**

In order to **INCREASE THE CAPACITY of informal educators**





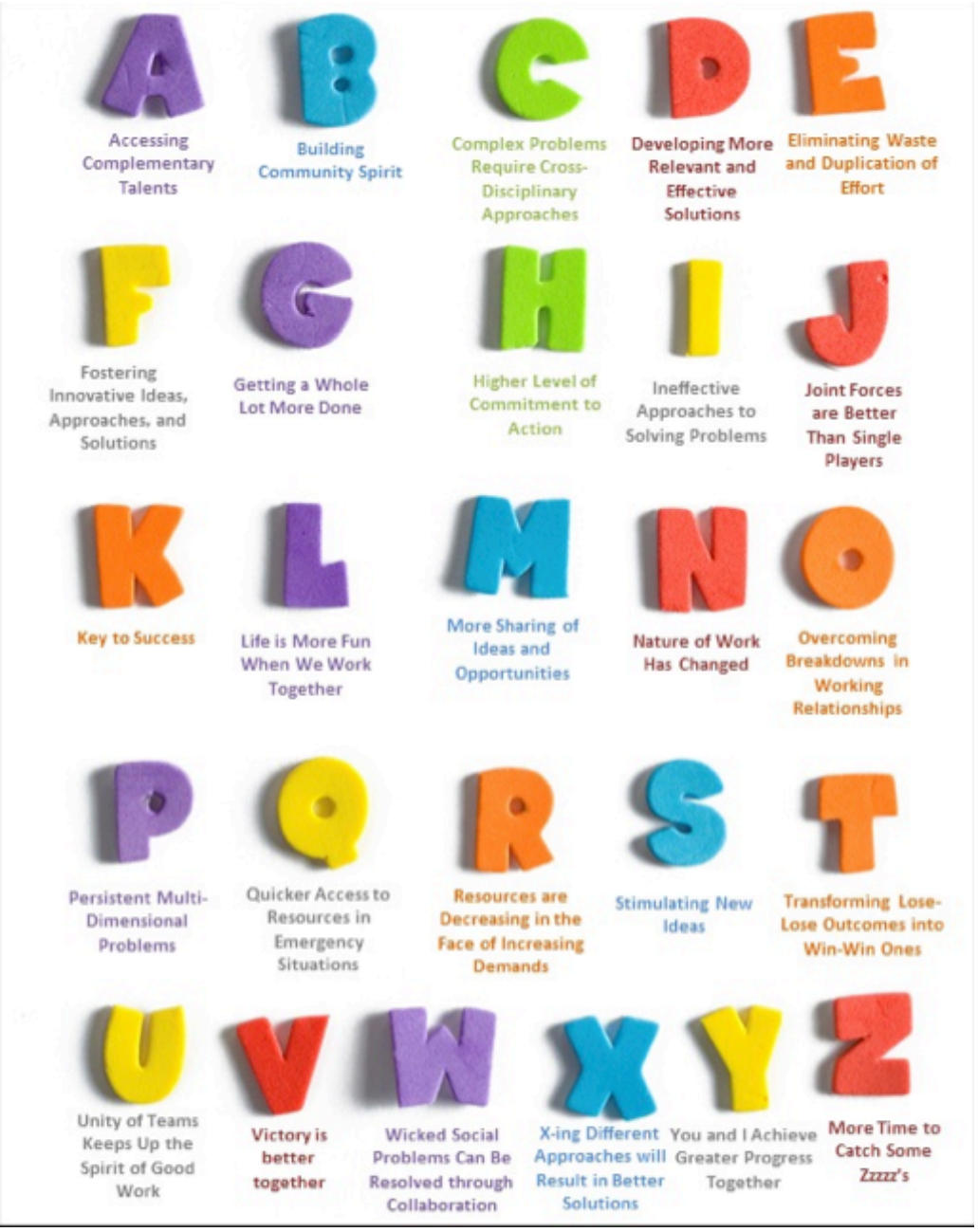
to **ENGAGE PUBLIC AUDIENCES** in STEM learning

NISE NATIONAL INFORMAL STEM EDUCATION NETWORK

Local Collaborations

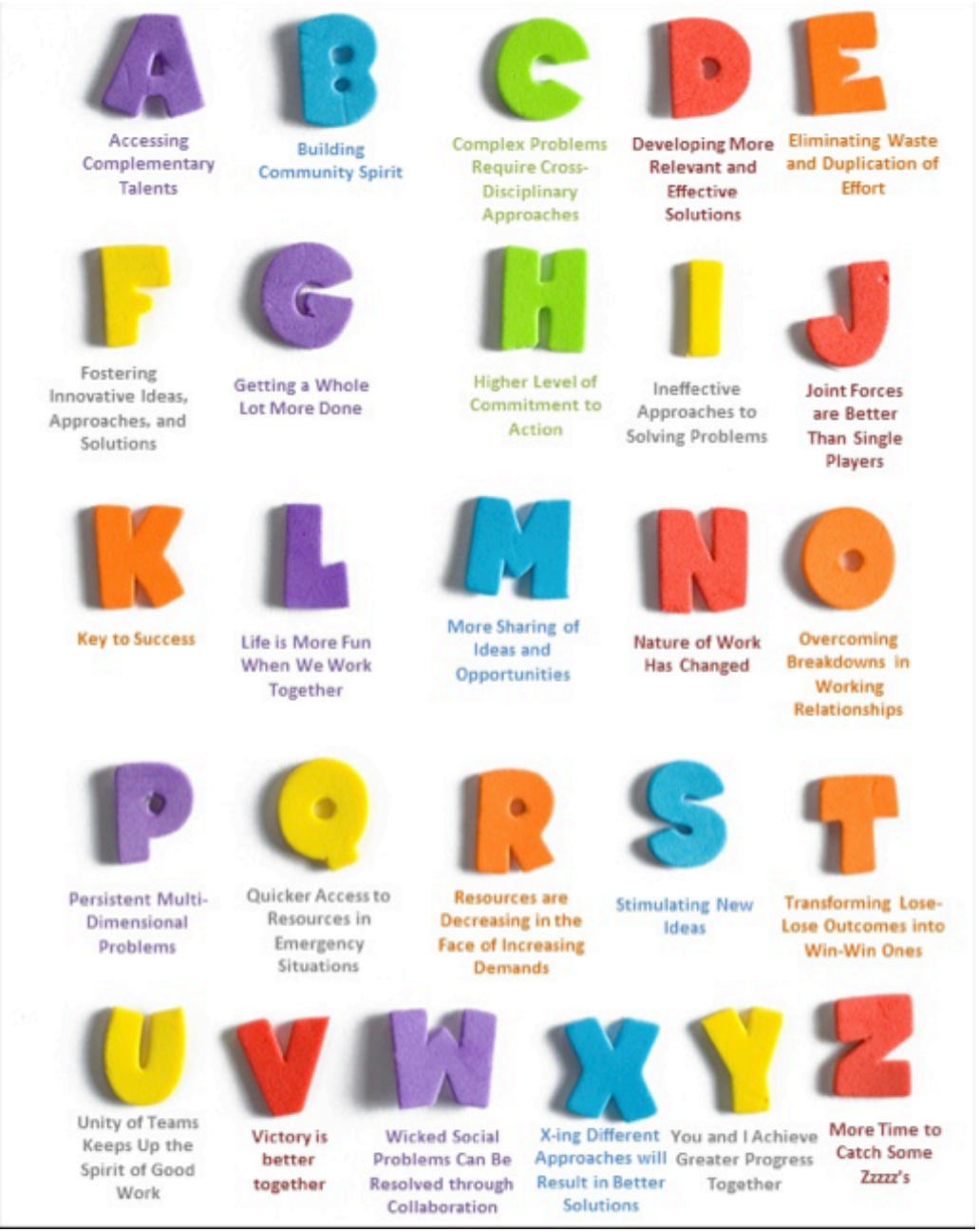
We encourage our partners to collaborate locally in their communities to engage their audiences.

NISE NATIONAL INFORMAL STEM EDUCATION NETWORK



Why Collaborate?

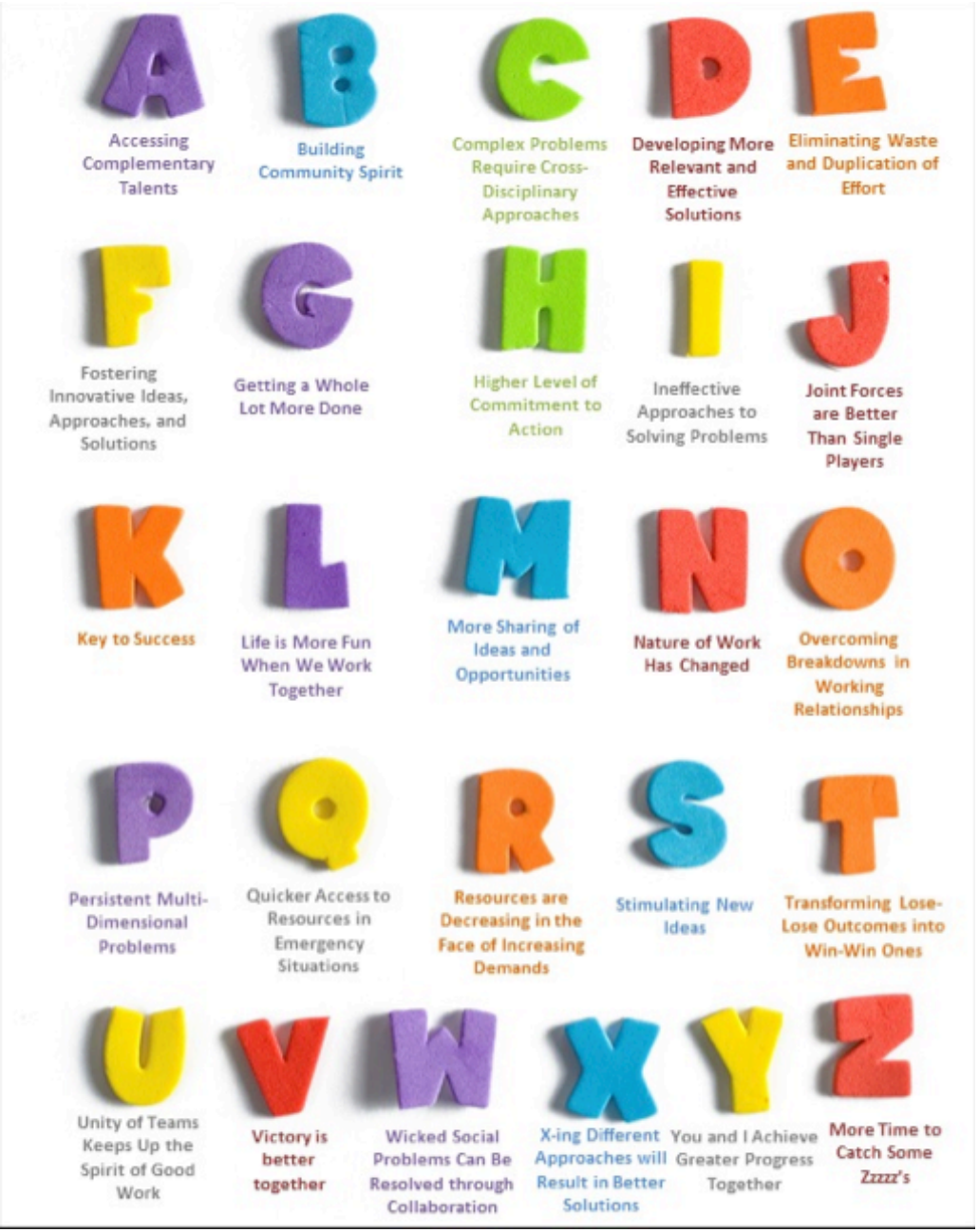
Image Courtesy of Michael Sampson and Plantronics in collaboration with Philippe Creytens, Sebastien Thielke, and Olivier Berard



Why Collaborate?

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

Image Courtesy of Michael Sampson and Plantronics in collaboration with Philippe Creytens, Sebastien Thielke, and Olivier Berard



Why Collaborate?

1. **To share resources, expertise, and connections**

2. **To build upon existing strengths**

3. **To reach new audiences**

Image Courtesy of Michael Sampson and Plantronics in collaboration with Philippe Creytens, Sebastien Thielke, and Olivier Berard

Guide

Available at www.nisenet.org/collaboration-guide

NISE NATIONAL INFORMAL STEM EDUCATION NETWORK

Companion Video

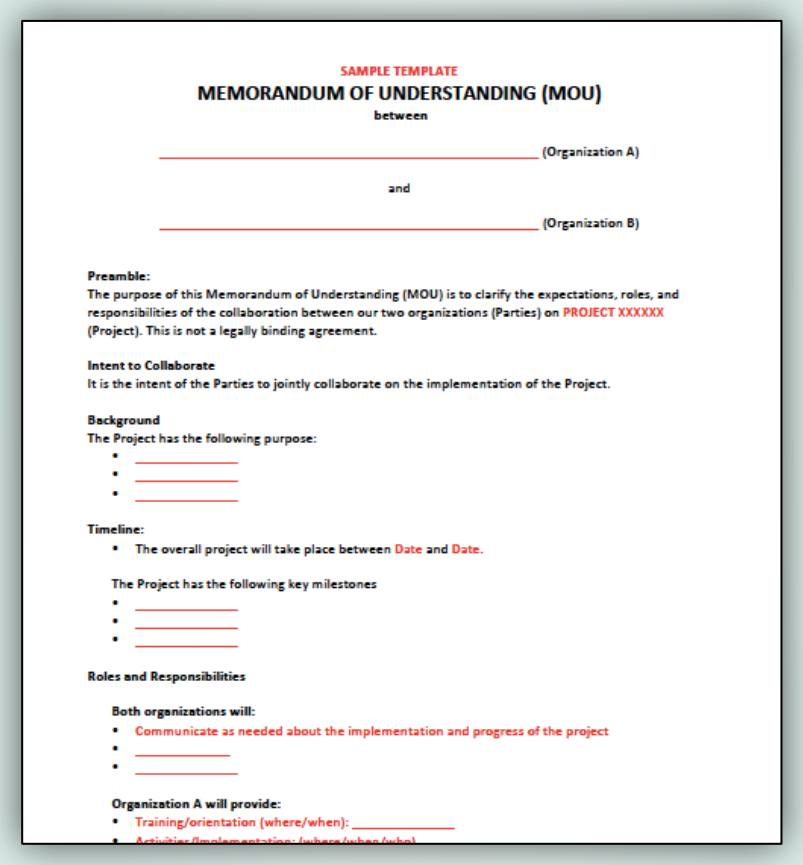
Creating Successful Collaborations: Museum and Community Partnerships

Available at www.nisenet.org/collaboration-guide

https://vimeo.com/139256428

Tools and Templates

Template MOUs & emails



SAMPLE TEMPLATE

MEMORANDUM OF UNDERSTANDING (MOU)

between

_____ (Organization A)

and

_____ (Organization B)

Preamble:
The purpose of this Memorandum of Understanding (MOU) is to clarify the expectations, roles, and responsibilities of the collaboration between our two organizations (Parties) on PROJECT XXXXXX (Project). This is not a legally binding agreement.

Intent to Collaborate
It is the intent of the Parties to jointly collaborate on the implementation of the Project.

Background
The Project has the following purpose:

- _____
- _____
- _____

Timeline:

- The overall project will take place between Date and Date.

The Project has the following key milestones

- _____
- _____
- _____

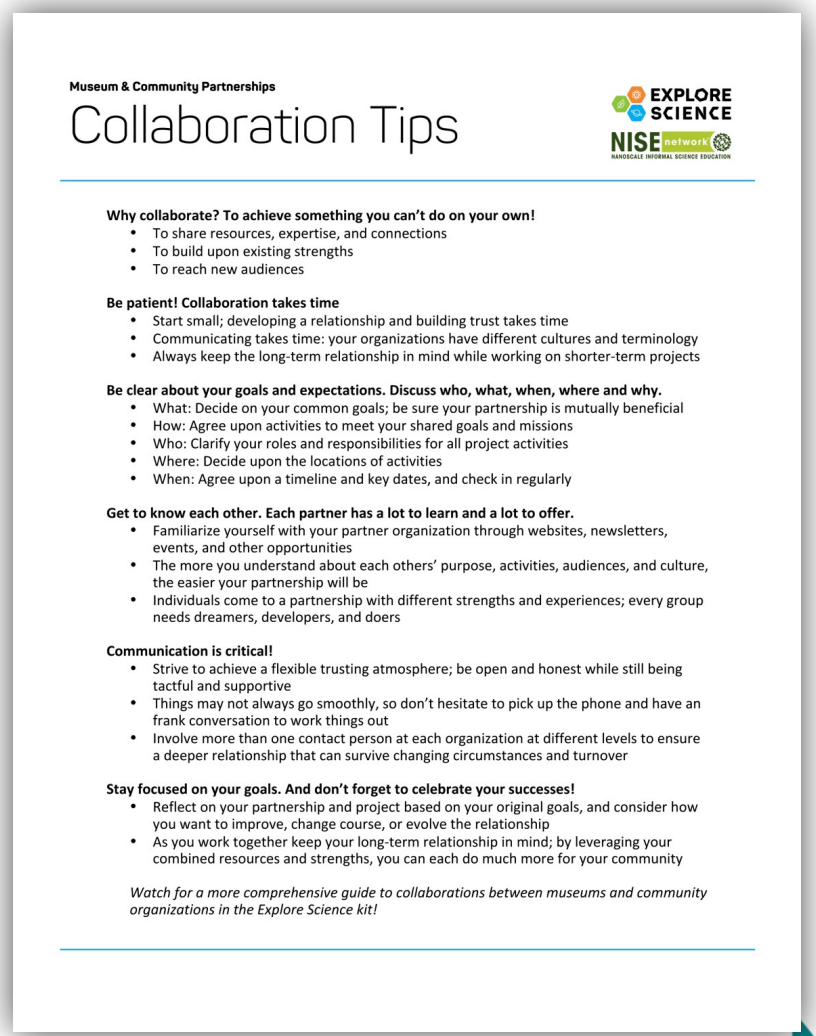
Roles and Responsibilities

Both organizations will:

- Communicate as needed about the implementation and progress of the project
- _____
- _____

Organization A will provide:

- Training/orientation (where/when): _____
- Activities/Implementation: (where/when/who)



Museum & Community Partnerships

Collaboration Tips

EXPLORE SCIENCE

NISE network

NANOSCALE INFORMAL SCIENCE EDUCATION

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

- To share resources, expertise, and connections
- To build upon existing strengths
- To reach new audiences

Be patient! Collaboration takes time

- Start small; developing a relationship and building trust takes time
- Communicating takes time: your organizations have different cultures and terminology
- Always keep the long-term relationship in mind while working on shorter-term projects

Be clear about your goals and expectations. Discuss who, what, when, where and why.

- What: Decide on your common goals; be sure your partnership is mutually beneficial
- How: Agree upon activities to meet your shared goals and missions
- Who: Clarify your roles and responsibilities for all project activities
- Where: Decide upon the locations of activities
- When: Agree upon a timeline and key dates, and check in regularly

Get to know each other. Each partner has a lot to learn and a lot to offer.

- Familiarize yourself with your partner organization through websites, newsletters, events, and other opportunities
- The more you understand about each others' purpose, activities, audiences, and culture, the easier your partnership will be
- Individuals come to a partnership with different strengths and experiences; every group needs dreamers, developers, and doers

Communication is critical!

- Strive to achieve a flexible trusting atmosphere; be open and honest while still being tactful and supportive
- Things may not always go smoothly, so don't hesitate to pick up the phone and have an frank conversation to work things out
- Involve more than one contact person at each organization at different levels to ensure a deeper relationship that can survive changing circumstances and turnover

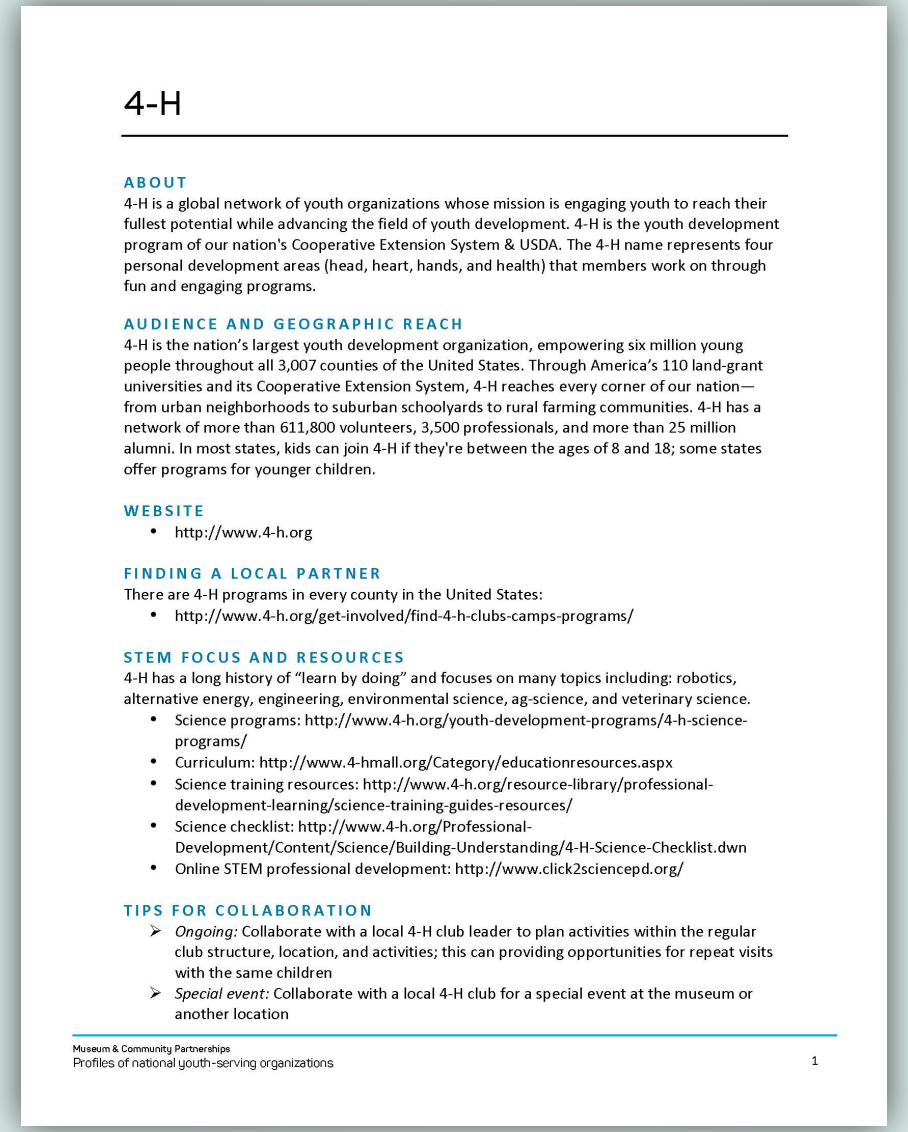
Stay focused on your goals. And don't forget to celebrate your successes!

- Reflect on your partnership and project based on your original goals, and consider how you want to improve, change course, or evolve the relationship
- As you work together keep your long-term relationship in mind; by leveraging your combined resources and strengths, you can each do much more for your community

Watch for a more comprehensive guide to collaborations between museums and community organizations in the Explore Science kit!

NISE NATIONAL INFORMAL STEM EDUCATION NETWORK

Profiles of Youth Serving Organizations



4-H

ABOUT

4-H is a global network of youth organizations whose mission is engaging youth to reach their fullest potential while advancing the field of youth development. 4-H is the youth development program of our nation's Cooperative Extension System & USDA. The 4-H name represents four personal development areas (head, heart, hands, and health) that members work on through fun and engaging programs.

AUDIENCE AND GEOGRAPHIC REACH

4-H is the nation's largest youth development organization, empowering six million young people throughout all 3,007 counties of the United States. Through America's 110 land-grant universities and its Cooperative Extension System, 4-H reaches every corner of our nation—from urban neighborhoods to suburban schoolyards to rural farming communities. 4-H has a network of more than 611,800 volunteers, 3,500 professionals, and more than 25 million alumni. In most states, kids can join 4-H if they're between the ages of 8 and 18; some states offer programs for younger children.

WEBSITE

- http://www.4-h.org

FINDING A LOCAL PARTNER

There are 4-H programs in every county in the United States:

- http://www.4-h.org/get-involved/find-4-h-clubs-camps-programs/

STEM FOCUS AND RESOURCES

4-H has a long history of "learn by doing" and focuses on many topics including: robotics, alternative energy, engineering, environmental science, ag-science, and veterinary science.

- Science programs: http://www.4-h.org/youth-development-programs/4-h-science-programs/
- Curriculum: http://www.4-hmall.org/Category/educationresources.aspx
- Science training resources: http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/
- Science checklist: http://www.4-h.org/Professional-Development/Content/Science/Building-Understanding/4-H-Science-Checklist.dwn
- Online STEM professional development: http://www.click2sciencepd.org/

TIPS FOR COLLABORATION

- *Ongoing:* Collaborate with a local 4-H club leader to plan activities within the regular club structure, location, and activities; this can providing opportunities for repeat visits with the same children
- *Special event:* Collaborate with a local 4-H club for a special event at the museum or another location

National Youth Serving Organizations

1. 4-H
2. Afterschool Alliance
3. Boys & Girls Clubs of America
4. Boy Scouts of America
5. Girls Inc.
6. Girl Scouts
7. Libraries
8. National Girls Collaborative Project
9. Parent Teacher Association (PTA)
10. Y (YMCA)
11. YWCA

NISE NATIONAL INFORMAL STEM EDUCATION NETWORK

Illustrative Stories and Advice

"Community organizations and museums have a common interest, they both want to make their cities a better place. Science is an essential part of that."

- Jayatri Das, Chief Bioscientist, The Franklin Institute, Philadelphia, PA

"You always have to be open about what is working, what is not working, why it didn't work, and why is it successful. Communication is the key to making a good partnership work."

- Dorothy McCargo Freeman, Associate Dean and State 4-H Director, University of Minnesota Extension Center for Youth Development, Saint Paul, MN

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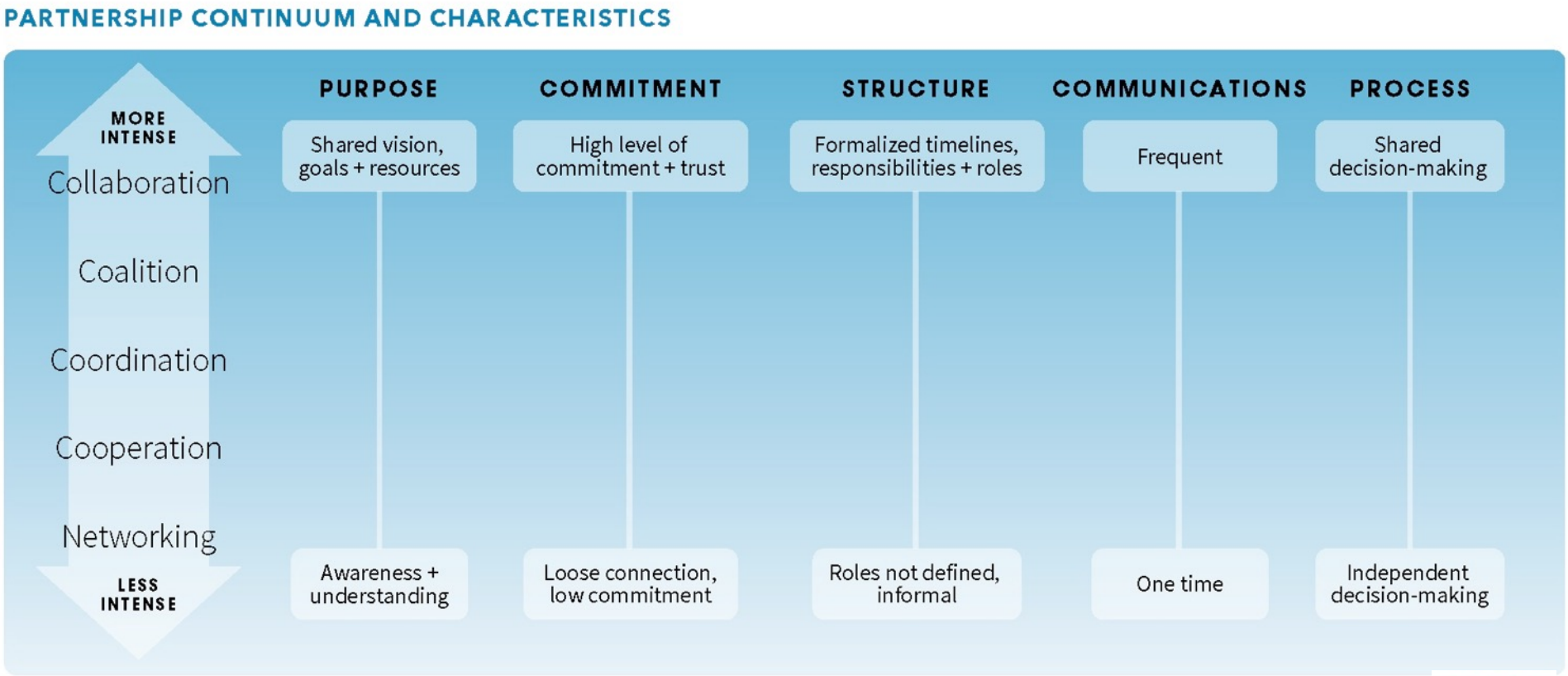
Levels of Partnerships - Continuum

Different intensity at different times



NISE NATIONAL INFORMAL STEM EDUCATION NETWORK

Tips for Successful Partnerships

Be patient! Collaboration takes time

- Start small; developing a relationship and building trust takes time
- Communicating takes time: your organizations have different cultures and terminology
- Always keep the long-term relationship in mind while working on shorter-term projects
- Start early; your partner's schedule will vary from your own, so be sure to include enough lead time so that you both can be prepared for the work of the collaboration

NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

Tips for Successful Partnerships

Setting goals and expectations

- **What:** Decide on your common goals; be sure your partnership is mutually beneficial
- **How:** Agree upon activities to meet your shared goals and missions
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Each partner has a lot to learn and a lot to offer

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NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

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NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

Tips for Successful Partnerships

Stay focused on your goals
Be prepared to change

- Reflect on the original goals of your partnership and project, and consider how you want to improve, change course, or evolve the relationship

- As you work together, keep your long-term relationship in mind; by leveraging your combined resources and strengths, you can each do much more for your community

NISE
NATIONAL INFORMAL STEM EDUCATION NETWORK

Barriers to Success

- Lack of time and capacity to sustain the relationship
- Lack of clear purpose or common vision
- Lack of understanding roles or responsibilities
- Lack of commitment or buy-in by key individuals
- Major differences in philosophies and styles of working
- Unacceptable balance of power and control
- Staff turnover
- Failure to communicate
- Lack of feedback
- Failure to respond to feedback and evaluation
- Financial input and time commitments outweigh potential benefit

Thank You

This material is based upon work supported by NASA under cooperative agreement award numbers NNX16AC67A and 80NSSC18M0061. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the view of the National Aeronautics and Space Administration (NASA).

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.

Alan Brown

Sci-Port Discovery Center

Shreveport, LA

Sci-Port Discovery Center

- 92,000 square feet
- Exhibit galleries covering topics including river geology, native animals, physical sciences, air and space, electricity and magnetism, health and the human body, etc.
- Robust catalog of programs
- Outreach Science Carnivals
- IMAX Dome Theater
- Space Dome Planetarium

Caddo Correctional Center Work Re-entry Facility

- provide job training (Carpentry, Welding, Housekeeping)
- offer elective parenting/life skills classes
- minimum security, non-violent offenders

bars without barriers

Through Bars without Barriers, Sci-Port staff train offenders in simple STEM activities and communication skills.

- discuss the importance of science and math
- provide STEM activities as a tool to reconnect with children

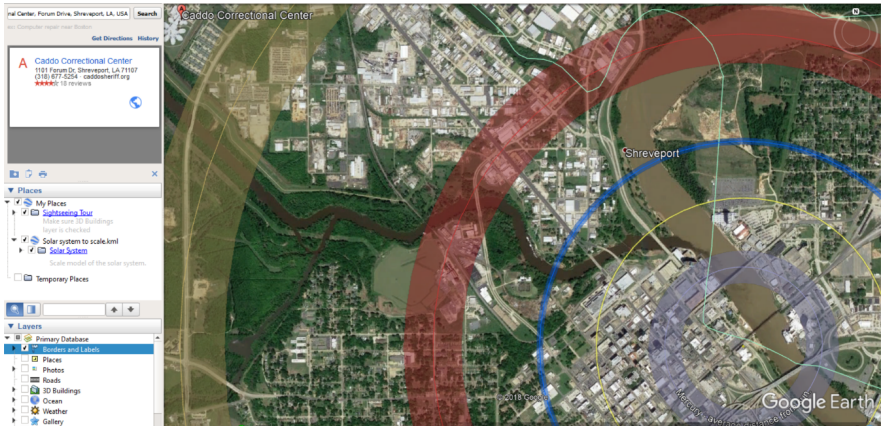
bars without barriers

12 week program (6 training sessions, each followed by a family visit)

What is Science?/The Scientific Method (Ooblek, Gloop, Pop Rockets, etc.) **Science Around the House** (Ice Cream in a Bag, Air & Flight, Straw Flutes, etc.)	**Science in the Yard** (Plant Dissections, Mud Painting, Bird ID Bingo, Bess Bugs, etc.) **Science in the Supermarket** (Plant Tasting, Playdough, Seed Art, etc.)	**Science at Work** (Take-apart activities, citizen science, Hour of Code, kitchen chemistry, etc.) **Science in the City** (travelling exhibits, Nano, guests, etc.)

Used NISE Net materials to recreate a trip to a Planetarium

1. Staff-led presentation introducing the Night Sky using Stellarium.
2. Staff introduced Solar System in your Pocket using “solar system to scale” Google Earth widget. Parents led activity.
3. Parent-led Planetary Bracelets activity station.
4. Treated several NISENet Earth-Space kits as stand-alone exhibits. (Filtered Light, Craters, Hide and Seek Moon, Exoplanet Transits, Stellar Wobble)



Initial funding for Bars without Barriers was provided by the Beaird Family Foundation.

Since 2016, this program has been funded through the Institute of Museum and Library Services **(IMLS MA-20-16-0017-16**).

The views, findings, conclusions or recommendations expressed in this program do not necessarily represent those of the Institute of Museum and Library Services.

Challenges

1. Due both to the audience and the fact that this program is at least as much about parenting as it is about science, it is helpful if educators are well-seasoned and, preferably, parents.
2. Buy-in from correctional center staffing is vital, as is a positive relationship between participating Offenders and deputies handling security and communication for family visits. Activities and lessons often challenge Offenders to go outside of their comfort zone to learn new information, and trust is vital.
3. Children have ranged in age from 15 days to 15 years, and it is not uncommon for offenders to juggle multiple children of differing ages and abilities.

INSTITUTE of Museum and Library SERVICES

Derrick Pitts

The Franklin Institute

Philadelphia, PA

STARS FOR EVERY NEIGHBORHOOD

Per Aspera Ad Astra Civitatem - An Unlikely Alliance

Derrick H. Pitts, Sc.D.
Chief Astronomer
Fels Planetarium Director

The Franklin Institute
Philadelphia

The Franklin Institute Science Museum and Fels Planetarium Philadelphia Since 1824

- 11 Core Exhibits, Traveling Exhibits, Historic Collections -IMAX, Planetarium, Musser Theater, Franklin Theater

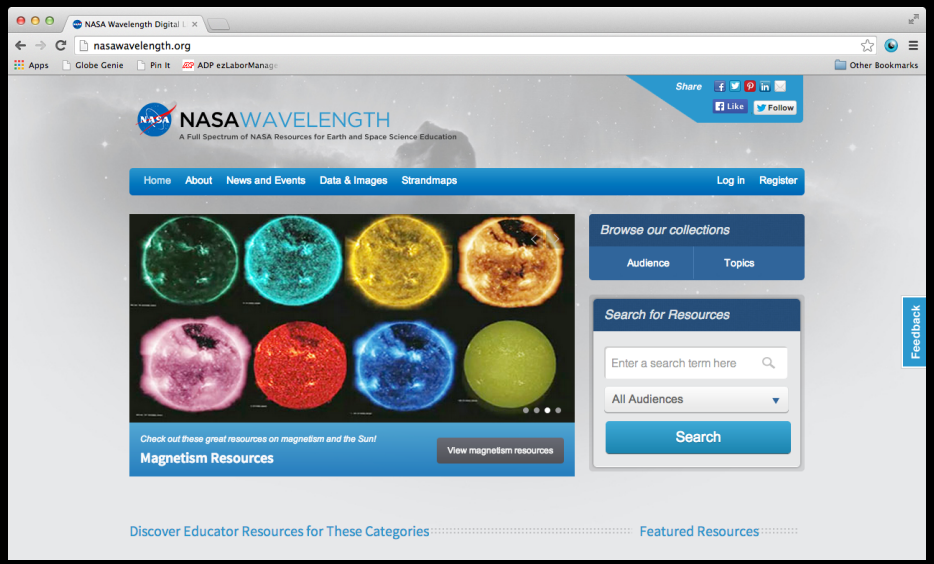
- Demos, workshops, Speakers' Series, special events, outreach, professional development, NSO, SAH, PSF.

TFI Size: 453K sf.; Annual Attendance: 985k +150K outreach

SKIES FOR EVERYONE

The Program:
"City Skies: Linking Neighborhoods to NASA Through Urban Astronomy"

- City Skies' Mission:
- To help develop the understanding that the night sky is available to everyone, everywhere without special equipment, even in an urban environment.
- Our project paired with NASA's web resources makes YOU the expert in your neighborhood.



SKIES FOR EVERYONE

City Skies Target Audience

- Community-based organization program facilitators who engage families
- Middle-school teachers in partnership with neighborhood CBO's
- 'Underserved' in several different ways.

SKIES FOR EVERYONE

Unlikely Alliances:

- Franklin Institute and faith-based community.

- Inner-city CBOs and mostly suburban amateur astronomy community.
- City night lighting and novice sky observers.
- NASA, faith-based community and deeply underserved CBO's.
- Science as the bonding agent for a multi-community alliance.

SKIES FOR EVERYONE

Hunting Park
Community
Science
Network

SKIES FOR EVERYONE

With some guidance, practice, and hand-holding…

SKIES FOR EVERYONE

Success! A convert at last!

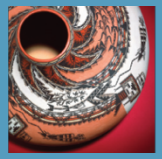
SKIES FOR EVERYONE

Successful?

Here's one example of the program's impact:

"I get a great sense of satisfaction from seeing the sense of wonder in the children and adults when they look through the telescopes", "Star parties in the community have impacted the children and their families in positive ways, [allowing] them to see the city sky for the first time".

Samantha Sands
Denver Museum of Nature & Science Denver, CO



Activities by Canoe

Samantha Sands

DENVER MUSEUM OF NATURE & SCIENCE

DENVER MUSEUM OF NATURE & SCIENCE

OUR MISSION

Be a catalyst! Ignite our community's passion for nature and science.

OUR VISION

The Denver Museum of Nature & Science envisions an empowered community that loves, understands, and protects our natural world.

OUR VALUES

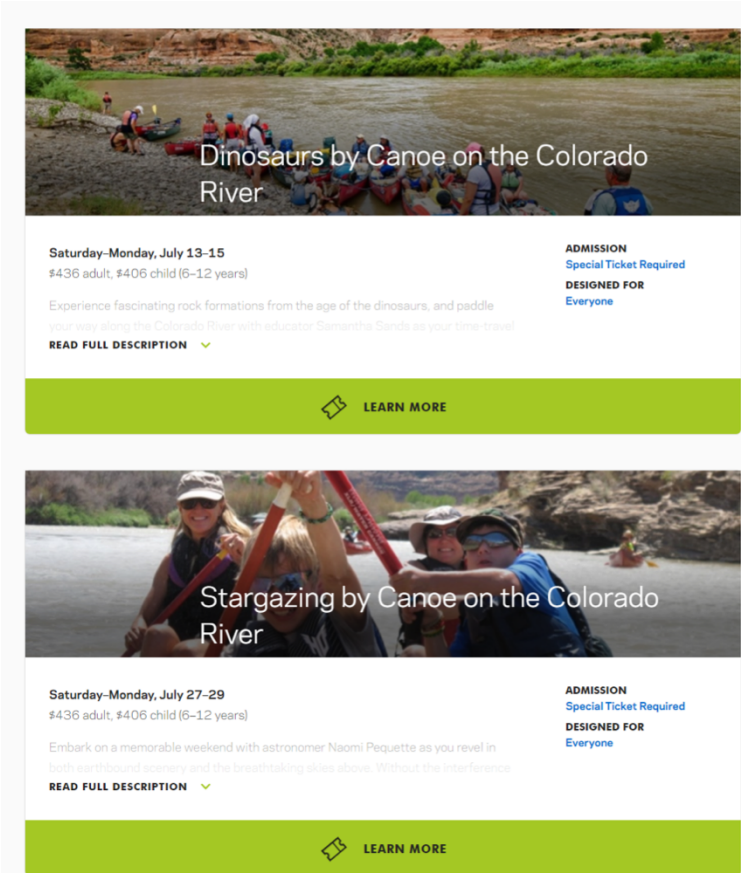
- We love science.
- We are curious, creative, and playful.
- We cultivate relationships: with each other, diverse communities, the environment, and for our future.
- We think critically and act with empathy.

OUR STRATEGIC OBJECTIVE

Increase the number and diversity of people who connect with the Museum around nature and science in ways that are meaningful to them.


HIGHLIGHTS FROM
2017
9,090
SHEEP HEARTS & LUNGS DISSECTED IN HEALTH LABS
61,610 MEMBER HOUSEHOLDS
25,560 ECLIPSE GLASSES SOLD IN THE SHOP
62,550 GUESTS RECEIVED BUS FUEL FUNDS
1,720 VOLUNTEERS GAVE 227,875 HOURS
1/3 ONSITE GUESTS VISITED FOR FREE
HIRED 1 CHIEF CURATOR DR. GABRIELA CHAVARRIA
92% OF OUR SCHOOL AUDIENCE = FREE OR AT REDUCED COST
ALMOST 4,000 ROCKETS LAUNCHED FOR ROCKET WORKS
SERVED MORE THAN 1.8 MILLION PEOPLE ONSITE & OFFSITE
12,970 USED $1 SNAP ADMISSION
SNAP
117,670 AT EDUCATION PROGRAMS/LECTURES
+
288,000 AT DINOSAUR GULCH IN CHERRY CREEK SHOPPING CENTER
=
405,670 OFFSITE
VIRTUAL SCIENCE ACADEMY
REACHED 33 STATES & CANADA
SCFD FREE DAYS
100,920 ATTENDED SCFD COMMUNITY FREE DAYS
9,440 EDUCATORS ATTENDED PROFESSIONAL EVENTS
12,670 GUESTS BEHIND THE SCENES IN THE COLLECTIONS
212,350 OBJECTS ENTERED THE COLLECTIONS
305,460 GUESTS IN SCHOOLS & ORGANIZED YOUTH GROUPS SERVED ONSITE & OFFSITE
SCHOLARSHIPS FOR FACILITATED EDUCATION PROGRAMS 79,060
45 RESEARCH FIELD EXCURSIONS OVER 300 DAYS
100% OF GEOLOGY & PALEOBOTANY MOVED TO AVENIR COLLECTIONS CENTER
28 TEEN SCIENCE SCHOLARS FROM ACROSS METRO DENVER
32 SCIENTIFIC PUBLICATIONS AUTHORED BY RESEARCH STAFF
DENVER MUSEUM OF NATURE & SCIENCE

Science by Canoe



Gunnison River Itinerary 3-day Escalante Bridge Put-In

Gunnison River 3-Day Itinerary.

- **Day 1:** Meet your guide staff at the designated put-in at Escalante Canyon Bridge, located 35 miles south of Grand Junction, CO and start packing your dry bags and loading the gear in the canoes.
- After breakfast, each car owner will drive his vehicle to our private parking location at the Whitewater take-out. Centennial Canoe will shuttle all drivers back to the put-in meeting point. This generally takes approximately one hour. While the shuttle is being run, everyone else will be packing gear and preparing to paddle when the drivers return. Upon their arrival to the put-in our guides will demonstrate paddling instructions and safety issues before launching. Shortly after launching, you will begin paddling past the towering red sandstone walls of Escalante Canyon.
- Enjoy the thrill of paddling through Hail Mary's Rapid (or you can choose to skirt around the side). Paddle downriver until approximately noon and enjoy lunch on the river's edge, maybe catching a glimpse of an eagle or a desert sheep.
- After lunch, continue paddling and having water fights (optional) until roughly 3 p.m. You will make camp near the ancient red sandstone walls of Dominguez Canyon (depending on campsite availability).
- Late afternoon on the first day is devoted to setting up your tent and possibly taking a short hike, relaxing, playing, or floating in the river.
- Happy Hour begins at 5:30 p.m. where hors d'oeuvres and wine will be served.
- Dinner is served around 7 p.m. followed by campfire activities that may include games, singing, western tall tales, or guitar playing.
- **Day 2:** The middle day will often be a layover day devoted to hiking the Dominguez Canyon Wilderness Area (depending on campsite availability). Here you can discover ancient Indian petroglyphs and waterfalls, cool off and play in the water pools, and see wildlife. Many times lunches will be packed for the hike so you can explore this multi-million year old canyon to your heart's content. Other activities during the day may include playing in the river, floating through a stretch of rippling water, and/or relaxing in camp. However, your guides may choose to move downriver on the second day. Factors that influence this decision are weather, pace of the group, campsite availability, etc.
- **Day 3:** You will break down camp after a hearty breakfast and paddle out of the majestic Dominguez Canyon where the scenery begins to turn much greener with vegetation.
- After numerous water fights, river barging, joke telling, and just having good fun, you typically reach the Whitewater takeout between 2-4 p.m. after lunch on the last day of the trip. It takes about an hour to unpack gear, and then you're on your way home.

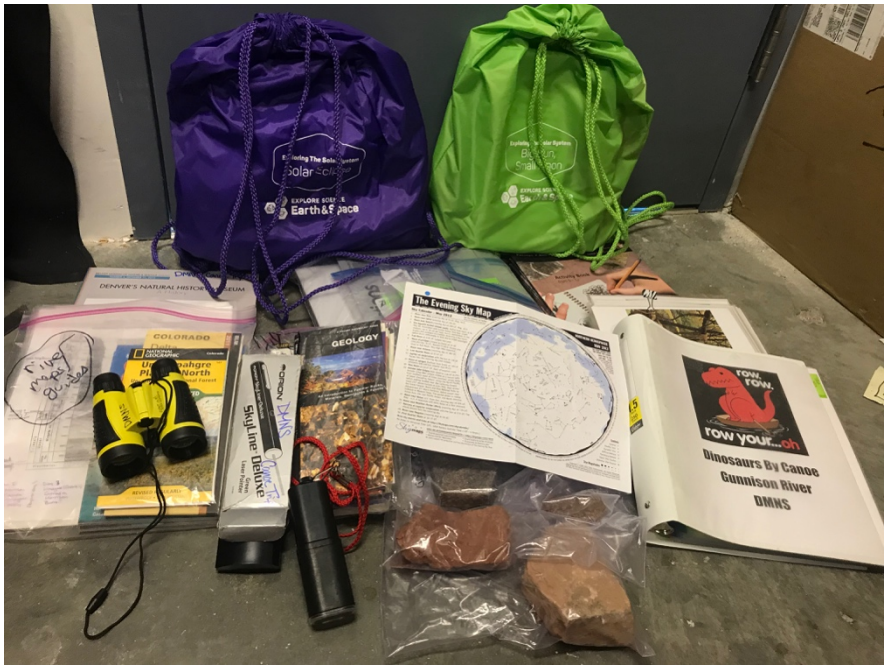

Earth&Space
COLORADO
GEOLOGY
The Evening Sky Map
row, row,
row your...oh
Dinosaurs By Canoe
Gunnison River
DMNS

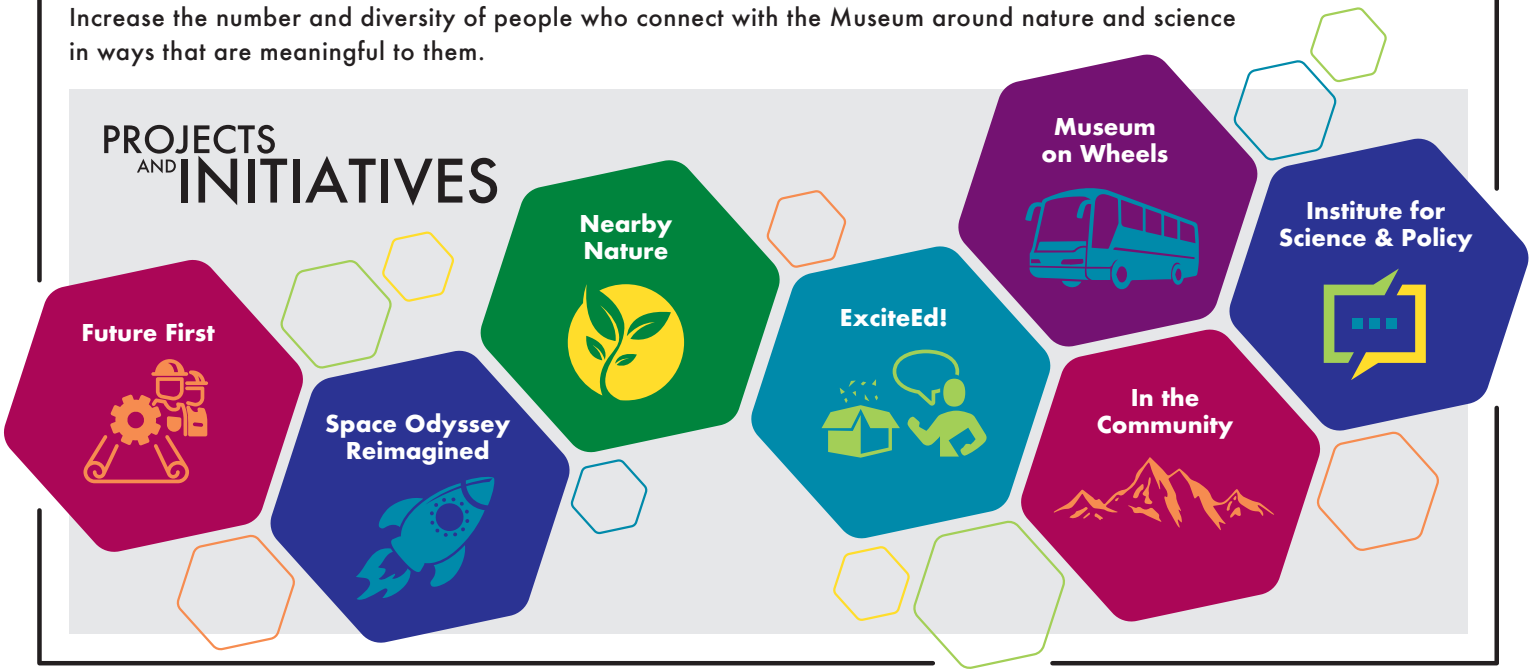
Photo Credit: Centennial Canoe

everyone, everywhere.

OUR OBJECTIVE

Increase the number and diversity of people who connect with the Museum around nature and science in ways that are meaningful to them.

PROJECTS AND INITIATIVES



Charlie Gibson

Michigan Science Center

Detroit, MI

ASTRONOMY AT THE BEACH

Michigan Science Center (MiSci), Detroit, MI

Charles Gibson

Director Of Outreach

About MiSci

- The mission of the Michigan Science Center is to inspire curious minds of all ages to discover, explore and appreciate science, technology, engineering and math in a creative, dynamic learning environment.
- 190,000+ Annual Attendance
- 75,000+ Annual Outreach Impact

MICHIGAN Science CENTER

Traveling Science and ECHO

- 83 County Initiative
- Workshops, Presentations, Science Festivals, virtual visits and webinars
- Schools, Libraries, Community Events
- STARLAB

MICHIGAN Science CENTER

Earth & Space Toolkits

- Space / Astronomy Days
- Yuri's Night – World Space Party (21+)
- Red Planet Pioneers (after school)
- Astronomy Events (Astronomy at the Beach - Milford, MI)

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ASTRONOMY AT THE BEACH

- Annual 2-night Star Gazing Event
- AATB started in 1996 to view the comets Hyakutake and Hale-Bopp
- Great Lakes Association of Astronomy Clubs (GLAAC)
  - 13 members – clubs, universities, science centers
- Michigan Department of Natural Resources (DNR)
- Located in Milford, MI

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ASTRONOMY AT THE BEACH

- Event runs from 6pm-midnight
- Michigan Science Center is the Presenting Sponsor
  - We bring all the A/V equipment
  - Activities
  - STARLAB
  - Lots of staff/volunteers

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ASTRONOMY AT THE BEACH

- Attendance has grown from 200 (1995) to 6,000 (2018)
- Marketing done mostly through GLAAC
- MiSci shares on Facebook, general member/public e-blasts

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ASTRONOMY AT THE BEACH

- Challenges:
  - Weather – wind, rain, you name it
  - Diverse audience
  - Lots of opinions ☺
  - Location
  - Parking

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WHAT'S NEXT?

Scopes in the City

- Michigan Space Grant Consortium

Astronomy on the Isle

- City star gazing event on Belle Isle

Apollo-themed outreach programs

- Libraries; funded by Community Telecommunications Network

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Questions and Discussion

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Thank You

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