

Programming for Audiences with Special Needs

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### **Presenters**

- Max Cawley, Museum of Life and Science, Max.Cawley@LifeandScience.org
- Marta Beyer, Museum of Science, Mbeyer@MOS.org
- Meghan Schiedel, Nevada Discovery Museum, Mschiedel@NVDM.org
- **Carolyn Ng,** NASA Goddard, Carolyn.Y.Ng@NASA.gov
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### NISE Net's Universal Design Approach and Resources





Marta Beyer mbeyer@mos.org February 14, 2019



Museum of Science.

### **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." (Center for Universal Design, 2002)
- Attention to
  - Physical inclusion
  - Cognitive inclusion
  - Social inclusion

(Blamires, 1999)

## Universal Design Guidelines: Public Programs

- Resource to help educators create and implement inclusive programs
- Developed through a design charrette process and input from people with disabilities



Universal Design Guidelines for Public Programs in Science Museums

Produced by the NISE Netwo



### Universal Design Guidelines: Main Concepts

- Repeat and reinforce the main ideas and concepts
- Make multiple entry points and multiple ways of engagement available
- Provide physical and sensory access to all aspects of the program

### Universal Design Guidelines: Applying the Concepts

- Designing props and materials:
  - Repeat and reinforce the main ideas and concepts
    - Use **visual images** to support what you say
    - Use **models** that include concrete representations
    - Have hands-on activities and/or tactile elements that can be passed around that reinforce main ideas and/or engage audience

### Universal Design Guidelines: Applying the Concepts

• Setting up and prepping your presentation:

- Provide physical and sensory access to all aspects of the program
  - Provide good visibility of the presenter's face at all times
  - Make sure there is **enough room to present** without getting in the way of the visitors' view
  - Make sure items can be viewed by people from a range of heights including seated positions

### Universal Design Guidelines: Applying the Concepts

- Delivering your presentation:
  - Make multiple entry points and multiple ways of engagement available
    - Find ways to engage audience members in the program
    - Ask questions that encourage visitors to connect what you are discussing to situations from their everyday lives

## Universal Design of Educational Programs Workshop Resources

• Workshop hosted in 2013 for museum educators

 Intended for those who develop and conduct educational programs or train others



### **Universal Design of Educational Programs Workshop Resources**

- Slides
- Handouts
- Additional resources



#### How to incorporate universal design into your own work and advacate for accessibility in your own institution

NISE

#### al ways to advocate for accessibility at your own institution

- Incorporate universal design into your individual projects Share the importance of this work with others around your institution
- Develop outside sources that you can consult regarding questions and trainings

#### Things to keep in mind about these approaches:

- ings to keep in mind about these approaches: <u>Focus on what you have the spaceh to de now.</u> It's important to choose a method that works the best for you and your institution. You do not have to tackle all of these methods at once. It's alst to start small scale) As you gain comfort or confidence in doing this work on a smaller level, you <u>It is the service connect states</u> are you gain connect or commence in ouring one must be another rever, you can start to think about what next steps would make sense for you and/or your institution. This work is
- There are both informal and formal ways of charing about accessible work with others. This may vary
- aspeniong on your role onion your institution. Un a proression in ere, you may rous an usering a community of interest around you through peer-to-peer sharing and considering what information could community or interest around you shough petr-surper sharing and consering when memano be useful when advocating up to management. On a managerial level, try to think about how to oe userui when aovocaung up to management. Un a managena teret, try to units about now to advocate for this work in a manner that encourages your staff members to embody these practices through their own work.

Beginning on an individual level Brainstorm small scale, accessible changes that can be embedded into your daily work. Make universal design part of your individual practice vanistorm small scale, accessions changes that can be emisesone into your sary work. O Ex: Writing emails without formatting effects (bolding or underlining print) that may be difficult

- So there are provided as a second seco
- Identify a program that you want to modify using universal design resources
- Think about what changes can be made to this program and what you have the capacity to
  - actuary change. O Create goals for yourself as to how these changes can be put into practice.
  - Allows you to get comfortable with doing this work before inviting others into the process.

Benefit of this method:





July 30 - 31, 2013

www.nisenet.org

## Universal Design for Public Programs online workshop recording

- Provides background on different models of disability
  - Reviews the social model of disability and NISE Net's Universal Design approach





## Universal Design for Public Programs online workshop

- Offers examples of why it is important to use the three main ideas from the Public Programs Guide
- Highlights different NISE Net activities and what these suggestions look like in action
  - Designing props: Exploring Size: Powers of Ten Game



### Resources Available on: www.nisenet.org

- Universal Design Guidelines: Programs
  http://www.nisenet.org/catalog/universal-design-guidelines-programs
- Universal Design of Educational Programs Workshop Resources

http://www.nisenet.org/catalog/universal-design-educational-programsworkshop-resources

 Universal Design for Public Programs online workshop recording

http://www.nisenet.org/catalog/universal-design-public-programs-onlineworkshop-recorded

### Thank You







#### MEGHAN SCHIEDEL

SCHOOL AND MUSEUM PROGRAMS MANAGER THE TERRY LEE WELLS NEVADA DISCOVERY MUSEUM









NSTA RENO – Making Space For Making in The Classroom

# THE DISCOVERY'S CORE MISSION

We seek to inspire by reaching more people, more often with exciting ways to experience science.





### **DISCOVER YOUR WAY**

### **Sensory Friendly Hours**

- Used partners for expertise
- Volunteer staffing
- Special training for all staff working this event
- Funding for the establishment of this program and develop a self sustaining program model





#### **CAMP DISCOVERY**

#### **Inclusive Program**

- Leveraged DYW partners to provide training for Camp Staff
- High ratios of adult to students
- Positive Behavior Support Protocol
- Financial aid program for camps





### Universal Design Training Approach

- All trainings incorporate training for diverse learners and abilities





Listening to Our Community

#### Inspired by -

- COSI Invite, Welcome, Engage
- Explora Shared Aspiration Work

By listening to our community we hope to discover shared aspirations







# Thank you!

Meghan Schiedel

School and Museum Program Manager mschiedel@nvdm.org



NSTA RENO – Making Space For Making in The Classroom

## 1AU One Accessible Universe

Usability and Accessibility of NASA Space Science Education Resources

C. Alex Young, Lou Mayo and Carolyn Ng carolyn.y.ng@nasa.gov

One Accessible Universe

### NASA SMD SciAct



NASA has committed to education, especially in space and Earth science education programs.

**The NASA Space Science Education Consortium (NSSEC)** is one of 24 teams funded by NASA's Science Mission Directorate to provide space and Earth science education to the nation.

Our programs emphasize broad partnerships with university, private sector and other government organizations.

### Outline



- Printed products
- Assistive technologies
- STEM Innovation Lab
- Subject Matter Experts and
  - Communications
- Targeted Audiences
- 1AU Conference

### **2017 Total Solar Eclipse**





TOTAL SOLAR ECLIPSE August 21.2017 On Monday, August 21, 2017, all of North America will be treated to an eclipse of the sun. Anyone within the path of totality can see one of nature's most awe inspiring sights - a total solar eclipse. This path, where the moon will completely cover the sun and the sun's tenuous atmosphere - the corona - can be seen, will stretch from Salem, Oregon to Charleston, South Carolina. Observers outside this path will still see a partial solar



### **Educational Technology**

**Design & Fabrication – 3D Printing** 



Many have seen or used the 3D printed pin hole projectors and the tactile map for the 2017 Total Solar Eclipse.

It actually started with design and fabrication in 2015.

Troy Cline was in Woleai, an island in Micronesia, for the 2016 Eclipse and tested the two products.

2/27/19







### **Educational Technology**

#### **Design & Fabrication – Paper Cutting**





2/27/19

http://mms.gsfc.nasa.gov/epo\_mms\_card\_model.html

### **Assistive Technologies**



NASA is ECLIPSE SOUNDSCAPES researching supportive technologies for **BVI** audiences An App using 3D printing, sonification, and VR technologies. 2/27/19

A Tactile Map

GETTING A FEEL FOR

ECLIPSES

### **Assistive Technologies**

#### **Audification - Sonification**



Radio JOVE – build a simple telescope kit to hear radio sounds of the Sun, Jupiter and the Milky Way Galaxy.



#### 2/27/19 radiojove.gsfc.nasa.gov







### **Education Technology**

#### **STEM Innovation Lab**





The STEM Innovation Lab is a modular and dynamic technology think tank that can be replicated in classrooms, museums, libraries, and community centers across the country.





http://www.steminnovationlab.org/

One Accessible Universe

### **Science Communication**



NASA's scientists and engineers play an important role in making space and Earth science discoveries accessible to the public.

They give public talks, presentations at professional societies, interviews, panels, and various media outlets.

Helping NASA's suite of SMEs communicate their messages clearly is an important part of science accessibility. 2/27/19





### **Targeted Audiences**



The NASA SciAct collective is comprised of universities, non-profits, and professional societies, expert in communicating with targeted audiences.

NSSEC works with the Indigenous Education Institute, University of Alaska, National Society of Hispanic Physicists, and Girl and Boy Scouts among many others.



### **1AU Conference**



- Annual Nation-wide event to support accessibility and usability of NASA science education resources.
- 2-3 Day Event to be held at NASA Goddard Space Flight Center
- Emphasizes four major accessibility themes:
  - Science Communication
  - Educational Technologies
  - Assistive Technologies
  - Targeted outreach to unique populations
- Replicated around the country









# A Sensory-Friendly Approach to Everyday Programming

Max Cawley

**Museum of Life and Science** 



### Where Do We Start?



 $\Im$  MUSEUM of LIFE+SCIENCE

### Where Do We Start?



#### WRAL.COM

Awareness and acceptance: Durham family with child on autism spectrum find both at Museum of Life and Science :: WRAL.com





### **ΩDISEUM of LIFE+SCIENCE**

### What Did We Learn?

- Parental Advisory Group
- Ongoing staff training and professional development
- Additional layers to programs and exhibits to make them accessible and enjoyable everyday
- Ongoing evaluation and engagement with stakeholders



C MUSEUM of LIFE + SCIENCE

### What's Next?





#### $\Box$ MUSEUM of LIFE + SCIENCE

COMMUNITY IMPACT PROJECT – MAKING INCLUSION "NATURAL"

> Meagan Downey, Program Manager Robinson Nature Center



#### THE JAMES & ANNE ROBINSON NATURE CENTER MISSION STATEMENT

The mission of the Robinson Nature Center is to facilitate the enjoyment and understanding of our natural resources and to bridge the gap between people and nature. By inspiring sound environmental awareness, we promote responsible stewardship of all of our natural resources and strive to connect people of all ages with nature through experience-based education.



### Who We Are

Mission Accomplished (for some?)

### Over 450 programs a year and over

### 40,000 visitors annually, but....

We are still missing the mark for some

### **Removing Barriers**

#### Everyone should get the chance to feel like this.



### How We Are Doing It

### We CAN do better if...

### We talk to the right people!

**Community Engagement Plan** 

# List of key stakeholders/contacts Survey of stakeholders +List of supporting grants/organizations

### Where We Are



- Datagathering
- Surveying
- Observing
- Collating
  Feedback

### **Preliminary Findings**

Creating New Resources:

- Signage
- Maps
- Planning Sensory-Friendly Visit section on website
- Social Stories



### Questions?

### Meagan Downey

#### Program Manager, Robinson Nature Center

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### Thank You





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