

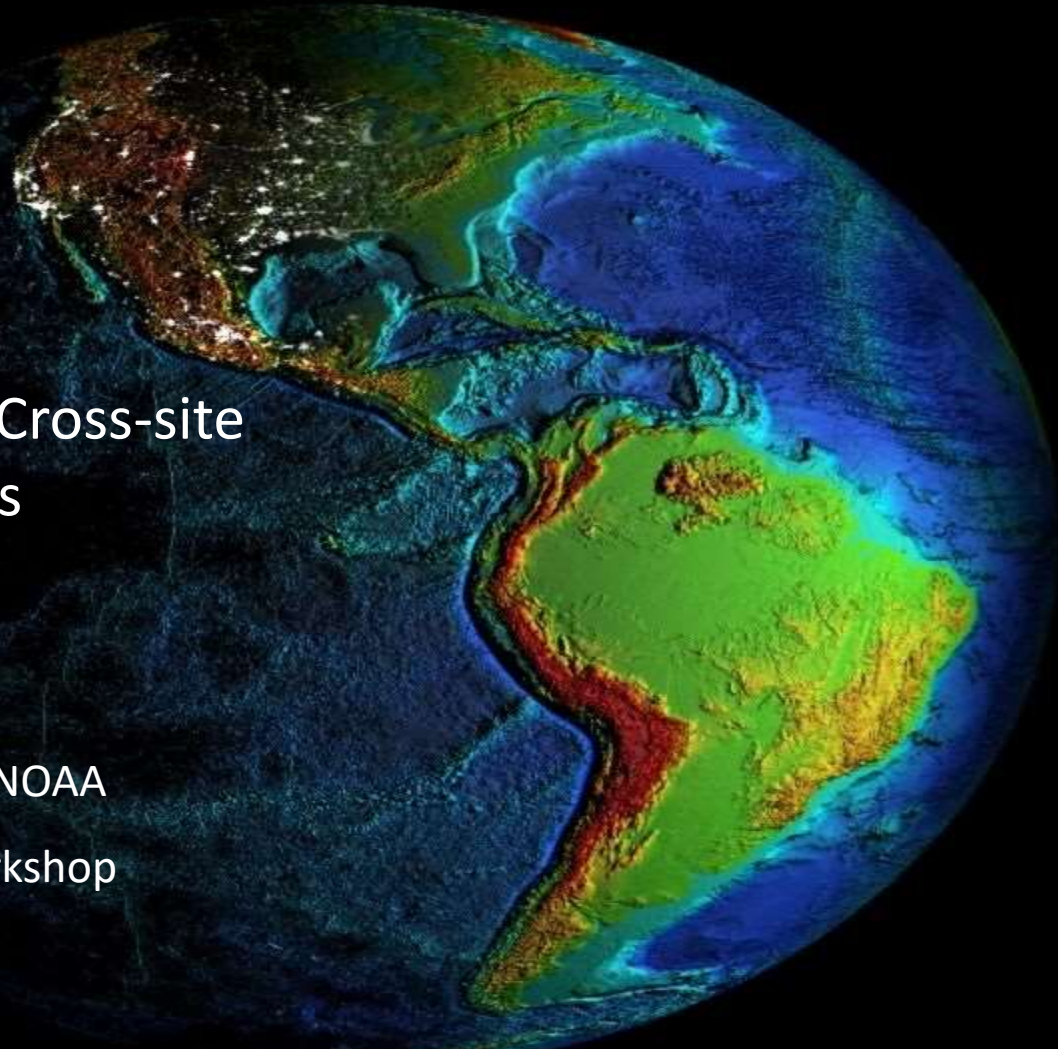


# NOAA's Science On a Sphere Cross-site Summative Evaluation Results

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# 2008-2010 Summative Network Evaluation

**A team from the Institute for Learning Innovation (ILI), led by Kate Haley Goldman, conducted a literature review and cross-site summative evaluation of 16 SOS or Network sites.**

- Bishop Museum
- Boonshoft Museum of Discovery
- Clark Planetarium
- Hatfield Marine Science Center
- `Imiloa Astronomy Center of Hawai`i
- Lawrence Hall of Science
- McWane Science Center
- Maryland Science Center
- Museum of Science and Industry
- North Carolina Aquarium
- National Museum of Natural History
- National Renewable Energy Laboratory
- National Zoological Park
- Science Museum of Minnesota
- The Tech Museum
- The Whitaker Center of Science and the Arts



# Key Overall Findings

When asked if they had learned something new, 71% of interviewees responded they had and were able to provide specific examples of what they had learned.

What did you learn?	Percent	Frequency
Processes	31.7%	165
Specific Events or Human Impact	21.9%	114
Geographic Facts	20.5%	107
Data Awareness	9.8%	51
Unrelated	6.7%	35
Size and Scale	5.6%	29
Sphere Technology	3.5%	18
Stewardship	0.4%	2
<b>Total</b>	<b>100%</b>	<b>521</b>



# Key Overall Findings

**The sphere supports understanding complex processes and phenomena.**

***Visitors were asked to rate a series of statements to choose the top three that best reflected their Sphere experience.***

## **Most common:**

- The realism of the Sphere, how it emphasizes complexity and change in Earth (or other planetary) Systems (>1/3 of visitors)
- The Sphere helped them visualize specific events (~1/3 of visitors)
- Mentioned the beauty of the sphere (~1/4 of visitors)

## **Least common:**

- More affective statements about the Earth or content, such as attachment to the Earth as home, or a religious or spiritual connection with the planet



# Key Overall Findings

**Visitors feel seeing information on the sphere is more realistic and provides more perspective.**

- 82% of visitors stated that seeing information on the sphere changed how they understood the information,
  - 29% commented that the sphere provided additional perspective not available in other ways (most common comment).
- This suggests that the sphere supports deeper exploration, beyond simple fact-based knowledge, of this content matter and that by supporting process-based knowledge, it is specifically well suited for use in the interpretation of Earth system Science.



# Key Overall Findings

## Facilitation correlates with learning.

- 87% of visitors who had a facilitated sphere experience reported learning something new
- 66% of visitors who experienced the other presentation modes (auto run, auto run at intervals, and visitor-initiated) reported learning something new (statistically significant)
- Facilitation also correlates with specific outcomes, including: increased understanding of time and scale, increased understanding of constant change of the Earth and increased perception of the sacredness of the Earth and need to take care of it.



# Key Overall Findings

Percentage that ranked these outcomes 1, 2, or 3

Overall Outcome	Percentage of Visitors
I appreciated how realistic the information appeared when on the sphere.	36.0%
The sphere helped me visualize specific events.	30.9%
It helped me to visualize certain concepts of time and scale.	24.9%
I learned or was reminded that the Earth is always changing and evolving.	22.6%
It made me think about the complex interrelations in Earth Systems.	22.6%
I was amazed at the beauty of what was shown on the sphere.	22.3%
The sphere helped me understand global processes.	21.3%
I felt a sense of the vastness of Earth.	17.9%
I felt a need to take better care of Earth.	17.1%
The sphere helped me better understand geography of Earth or other planetary objects.	15.9%
I felt a sense of how small Earth is compared to the greater universe.	12.9%
I felt a sense of the sacred in regards to Earth.	7.2%
I became interested in where the information on the sphere comes from.	6.8%
I was thinking about how this planet is my home.	6.4%



# Key Overall Findings

Team recommended further exploring the following issues:

- The impact of facilitation
- Two-Dimensional versus Three-Dimensional Presentation Systems
- Controlled Studies on Content
- Perceived versus Actual Learning