



Science On a Sphere[®] Users Collaborative Network Workshop 2011



"Earth Revealed", Museum of Science and Industry

*May 3-5
Museum of Science and Industry
Chicago, IL*



NOAA SOS Users Collaborative Network
Workshop 2011
May 3-5, Chicago, IL



Program

Day 1 — Tuesday, May 3

- 8:00 AM** Buses Depart from the Front of Hotel 71 for MSI (Hotel 71 Front)
- 8:30 AM** Breakfast and Registration (food and registration at Museum of Science and Industry)
- 9:00 AM** Welcome and Introduction (Little Theater, plenary)
Andrea Ingram, Vice President Education & Guest Services, Museum of Science and Industry (MSI)
Marlene Kaplan, Deputy Director, NOAA Office of Education
Carrie McDougall and John McLaughlin, NOAA Office of Education
- This session will set the stage for the next three days. It will include a review of the goals and agenda for the workshop. We will also present an overview of the SOS Users Collaborative Network as it stands today.
- 10:15 AM** Introduction to the NOAA SOS Technical Team (Little Theater, plenary)
Bill Bendel, NOAA, Technology Outreach Branch, SOS Technical Team
Bill will introduce the NOAA Science On a Sphere Technical Team.
- 10:30 AM** SOS Technical and Data Catalog Updates (Split Group 1)
The two components of this one session will overview developments for the Science On a Sphere® system being worked on by the SOS Technical Team. Workshop participants will be split in to two groups and each group will rotate through the two components.
- Demo of New iPad/iTouch SOS Controller and New Content** (Earth Revealed, Group A)
Mike Biere and Beth Russell, NOAA SOS Technical Team
- SOS Software Updates** (Little Theater, Group B)
Jon Loptien and Shilpi Gupta, NOAA SOS Technical Team
- 11:05 AM** Break & Networking (refreshments provided, West Pavilion)

- 11:20 AM SOS Technical and Data Catalog Updates (Split Group 2)**
- Demo of New iPad/iTouch SOS Controller and New Content** (Earth Revealed, Group B)
Mike Biere and Beth Russell, NOAA SOS Technical Team
- SOS Software Updates** (Little Theater, Group A)
Jon Loptien and Shilpi Gupta, NOAA SOS Technical Team
- 11:55 AM Future SOS Technical Efforts and Sphercasting Discussion** (Little Theater, plenary)
 This plenary session will feature a discussion of the plans for developments needed for the Science On a Sphere[®] system. Support for sphercasting, and the priority it should be given, will be a special focus of the discussion.
- 12:35 PM Lunch & Networking** (food provided, West Pavilion)
- 1:40 PM New and Pending SOS Installations** (Little Theater, plenary)
Suzy Citek, Bay Education Center
Zeta Strickland, Pacific Science Center
David Ollie, Science Museum of Virginia
Calum Ewing, Nova Scotia Museum of Natural History
Carla Rigsby, Detroit Zoological Society
- This plenary session will consist of a series of presentations given by the institutions that are new to the Network. This will be an opportunity for these institutions to introduce themselves and highlight their efforts with SOS. Presenters will specifically focus on the unique aspects of the work of their institutions.
- 2:30 PM Concurrent Sessions 1**
- Concurrent Session 1a: MSI Showcase of "Earth Revealed"** (Earth Revealed)
Heather Barnes and Brett Nicholas, MSI
- This is MSI's homegrown SOS show with iClickers. The MSI Showcase includes a brief overview of MSI and the *Earth Revealed* exhibit. There will be an introduction to the Facilitators that conduct live science experiences. The team will conduct two 12-15 minute facilitated shows. A brief Q&A session will conclude the showcase. Other shows will be available throughout the duration of the workshop.
- **CO₂ & You** In a live, interactive environment, guests discuss the sources of carbon dioxide in Earth's atmosphere and its connection to global warming and climate change. Using iClickers, guests participate in polling and discuss the results of the group responses. Guests also learn actions individuals and communities can take to reduce the amount of carbon dioxide in the atmosphere.

- Earthquakes: Shakes, Rattles and Rolls In this live facilitated show, guests learn that earthquakes happen at fault lines as a result of plate tectonics movement. Guests explore the connection between tsunamis and earthquakes and how these disasters impact humans. Current science news surrounding recent earthquakes and tsunamis is shared, and ideas about how to minimize human impacts are discussed.

Concurrent Session 1b: Tour of MSI (begin at Information Desk)
Guided and self-guided options available.

3:30 PM Break & Networking (refreshments provided, West Pavilion)

3:45 PM Keynote Presentation (Little Theater, plenary)
National Weather Service Partnerships with Science Museums
Jim Allsopp, Warning Coordination Meteorologist, NOAA National Weather Service

4:05 PM Keynote Presentation (Little Theater, plenary)
Spaceship Earth / Spaceship Planetarium: Coming Home to Science On a Sphere after a Planetarium Experience
Jim Sweitzer, Principal, Science Communications Consultants

5:00 PM Opening Night Reception
This will be an opportunity for workshop participants to network. There will be remarks from leadership from MSI and Marlene Kaplan (Deputy Director, NOAA Office of Education). A few special guests will also be in attendance. Hors d'oeuvres and drinks will be served. Buses back to the hotel will leave at three different times as indicated below.

6:45 PM First Bus Departs MSI for Hotel 71

7:15 PM Second Bus Departs MSI for Hotel 71

8:00 PM Last Bus Departs MSI for Hotel 71

Day 2 — Wednesday, May 4

- 8:00 AM** **Buses Depart from the Front of Hotel 71 for MSI** (Hotel 71 Front)
- 8:30 AM** **Breakfast** (food provided at Museum of Science and Industry)
- 9:00 AM** **Overview of Day's Agenda** (Little Theater, plenary)
In plenary, we will review the activities of the past day and overview the plan for the current day's happenings.
- 9:15 AM** **Concurrent Sessions 2**
- Concurrent Session 2a: MSI Showcase of "Earth Revealed"** (Earth Revealed)
See description on Day 1.
- Concurrent Session 2b: Tour of MSI** (begin at Information Desk)
Guided and self-guided options available.
- 10:15 AM** **Break & Networking** (refreshments provided, West Pavilion)
- 10:30 AM** **Keynote Presentation** (Little Theater, plenary)
City of Chicago: Leadership in Environmental Action
Suzanne Malec-McKenna, Commissioner of the Department of the Environment, City of Chicago
- 11:15 AM** **Panel: Cross-Site Summative Evaluation of SOS Results and Commentary** (Little Theater, plenary)
Carrie McDougall, NOAA Office of Education
Ka Chun Yu, Denver Museum of Nature & Science
Celeste Frazier Barthel, Hatfield Marine Science Center, Oregon State Univ.
Molly Phipps, Science Museum of Minnesota
Sue Guevara, Lawrence Hall of Science
- A brief summary of the results of the Cross-site Summative Evaluation study will be presented followed by a series of presentations in which panelists comment on the study and provide a broader context for the findings and compare the findings with evaluation results from their institutions.
- 12:00 PM** **Lunch & Networking** (food provided, West Pavilion balcony)
Boxed lunches will be provided "to-go" style so that participants can choose to: a) eat outside (weather permitting), b) setup for their expo presentations, or c) eat inside and then walk around MSI.

1:00 PM Panel: Creating Interactivity with Spheres (Little Theater, plenary)

Leon Geschwind, NOAA Pacific Services Center
Heather Barnes, Museum of Science and Industry
Matt Benjamin, Fiske Planetarium
Scott Muller, Maxatrax / B.W. Color

Panelists will describe recent innovations in making spheres more interactive including using iClickers with visitors, Smartphone apps, and online virtual spheres that allow visitors to extend their experience. Each of these innovations will be on display during the Expo or throughout the Workshop.

1:35 PM Panel: Connections to Other Platforms and Networks (Little Theater, plenary)

Ned Gardiner, NOAA Climate Program Office/Worldviews Network
Clay Hooker, The Elumenati
Kevin Ward, NASA Earth Observatory

Panelists will describe recent efforts to utilize assets from other platforms (NASA's Earth Observatory) on SOS and, conversely, utilize SOS assets in other platforms (Worldviewer, a geospatial gaming platform). Also discussed will be a new network that has been formed (WorldViews Network) that uses immersive virtual environments in domes to explore similar datasets and topical areas. Each of these innovations will be on display during the Expo or in other parts of the Workshop.

2:00 PM Expo of Interactives, New Products, and Other Platforms (refreshments provided, West Pavilion and Earth Revealed)

The Expo will provide participants with a chance to view some of the latest developments related to spherical display systems. A complete list of Expo presenters with descriptions is provided at the end of this program. Snacks will also be served in the West Pavilion.

4:30 PM Discussion: Creating Interactivity with Spheres & Connections to Other Platforms and Networks (Little Theater, plenary)

Facilitator: Leon Geschwind, NOAA Pacific Services Center

This plenary discussion will focus on how we can: a) better connect the Network's efforts with SOS to other display systems, and b) advance the ability of audiences to interact with SOS. We will discuss emerging technologies and identify priorities for our efforts in these areas.

5:00 PM Meeting Adjourns for the Day

5:15 PM Buses Depart MSI for Hotel 71

Day 3 — Thursday, May 5

8:00 AM Buses Depart from the Front of Hotel 71 for MSI (Hotel 71 Front)

8:30 AM Breakfast (food provided at Museum of Science and Industry)

9:00 AM **Overview of Day's Agenda** (Little Theater, plenary)
In plenary, we will review the activities of the past day and overview the plan for the current day's happenings.

9:10 AM **Panel: Real-time data and interpretation** (Little Theater, plenary)
Dan Pisut, NOAA Visualization Lab
Laura Allen, American Museum of Natural History
Peter Leighton, Nauticus

Panelists will discuss how relationships have been formed with scientists and scientific organizations to access and ensure accurate interpretations of real-time data, and how these real-time interpreted feeds can be used on spheres. Also, a major new NOAA-funded effort to create a regular stream of interpreted real-time data for spheres will be presented. Each of these projects will be demonstrated during the Workshop.

9:40 AM **Panel: Connections to formal education** (Little Theater, plenary)
John McLaughlin, NOAA Office of Education
Ian MacGregor, Smithsonian Institution National Science Resources Center
Abbey Spargo, Ocean Explorium

Panelists will present different ways of using SOS and, more broadly, spherical display content, with formal education groups, such as the recently translated to SOS GLOBE Program learning activity which emphasizes how to interpret global data visualizations of the earth system. And how groups like the Smithsonian and Ocean Explorium use SOS with teachers in professional development programs. Many of the ideas presented will seed the discussion for the concurrent session held later this day.

10:10 AM **Break & Networking** (refreshments provided, West Pavilion)

10:25 AM

Concurrent Sessions 3 (choose from the following 3 options)

Concurrent Session 3a: SOS Content Showcase I and Best Practices Discussion (Earth Revealed)

Facilitator: Michael Starobin, NASA Goddard

This session will allow participants to see some of the latest content created for spherical display systems. A discussion of the best practices for creating content will follow and the group will be asked to suggest further refinements to the content creation guidelines created and refined by the Network at previous workshops. The content pieces shown will include:

Title	Description	Presenter(s)
<i>Interactive analysis of NASA Earth Observations (NEO) datasets on SOS</i>	NEO is a web based interface that has provided interactive access to a wide range of NASA satellite data to support citizen scientists' inquiries. Now the full capability of this portal is being made available to the SOS community as an integrated option on the SOS iPad. This new functionality seeks to provide a seamless learning experience between the classroom, home, and SOS site.	Maurice Henderson (NASA Goddard), Kevin Ward (NASA Earth Observatory)
<i>Lunar Eclipses on the SOS</i>	Last December, we created a quick and dirty Lunar Eclipse visualization for our SOS. It was very cool and visitors liked it. It uses the spherical nature of the SOS in an essential way, and, unlike many SOS programs which are designed to look good from any viewing location, this one has a sweet spot – you need to stand where the Earth would be in order to see what the eclipse looks like from Earth. (This is a plus, not a minus, because you can also view the eclipse from other points in space.)	Eddie Goldstein (Denver Museum of Nature & Science)
<i>The Rising Sea</i>	Transforming the complex science of sea level rise into a dramatic and understandable human story. The combination of the global perspective provided by Science on a Sphere with details presented on accompanying video screens, weaving together datasets, video, and animation. At every turn, the data is personalized so that the audience is moved and motivated to take action.	Derek Balsillie and Barbara Long (Aquarium of the Pacific)
<i>A Working Waterfront: Seaports of San Pedro Bay</i>	Though the San Pedro Bay Seaports are located next to the Aquarium of the Pacific, few have ever seen the massive ships, the towering gantry cranes, and the hyperkinetic seaports operations up close. The presentation on both the Science on a Sphere and accompanying video screens will capture that energy and excitement. By weaving together SOS datasets, archival imagery, and original filming and graphics to make a richly-layered, emotionally stirring portrait of the San Pedro Bay Seaports.	Derek Balsillie and Barbara Long (Aquarium of the Pacific)
<i>GLOBE Earth System Science</i>	This SOS movie overviews connections between different components of the Earth System. It is based on a learning activity created by the GLOBE Program (www.globe.gov) and has stresses how to interpret a global data visualization and look for patterns and connections.	Dan Pisut (NOAA Visualization Lab)

Note: The content showcase later in the day will feature different content pieces.

Concurrent Session 3b: Tour of MSI (begin at Information Desk)

Guided and self-guided options available.

Concurrent Session 3c: Network and Regional Collaboration Ideas & Future of the Network (eSuite)

Facilitator: Carrie McDougall, NOAA Office of Education

Alan Peters, Smithsonian's National Zoological Park

This session will give participants an opportunity to discuss ideas for the future direction of the Network. Methods to improve the ability of the Network to collaborate will be discussed. There will be a special focus on the concept of regional SOS Network workshops, the first of which occurred this winter in the Mid-Atlantic area.

11:40 AM Lunch & Networking (food provided, West Pavilion)

Chicago-style pizza will be served! Lunch will be indoors.

12:40 PM Concurrent Sessions 4 (choose from the following 3 options)

Concurrent Session 4a: SOS Docent / Education Programs Showcase (Earth Revealed)

This will be a showcase of docent-led presentations that have been developed for SOS. The presentations shown will include:

Title	Description	Presenter(s)
<i>The Magnetic Earth</i>	"The Magnetic Earth" uses simple hands-on demonstrations along with solar and magnetic SOS datasets in a live presentation that discusses solar weather and how the Earth uses its magnetic field to protect us from this weather.	Brian Turkett (Maryland Science Center)
<i>The Stars of Mars</i>	A brief explanation of Hawaiian celestial navigation techniques, then an explanation of why the stars move based on the axis of rotation of planets, then a look at how the same techniques can be used to create new star lines for the use in exploration of the Red planet.	Pomai Kajiyama (Imiloa Astronomy Center)
<i>SOS Interpretation as a part of Formal Education for Small Institutions</i>	The SOS is a powerful tool for use in conjunction with formal education. As a smaller institution we do not have the capacity for technologically advanced content development but have found a niche using the readily available SOS datasets in both our field trip and teacher professional development programs. A brief discussion about how the SOS has become an integral part and how educators/instructors are trained to facilitate these experiences will occur. A period for Q&A is encouraged.	Abbey Spargo (Ocean Explorium)
<i>The Japanese Earthquake and Tsunami</i>	What caused the 9.0 Japanese earthquake and tsunami and how do we know that the Pacific Northwest will have a similar earthquake? How do you plan for disasters? Demonstration will include simple hands-on props.	Sue Wu (OMSI)

Title	Description	Presenter(s)
<i>Planet Earth Decision Theater</i>	We now live in a time where humans are the dominant force of change on the planet--the Athropocene. The Planet Earth Decision Theater is a docent lead presentation using iClickers and SOS animations, static datasets, and visualizations to engage our visitors with the idea of the Anthropocene. We will showcase the actor lead presentation and iClicker program along with stand in SOS content.	Bryan Kennedy and Stephanie Long (Science Museum of Minnesota)
<i>Fronts and Forecasting</i>	This program has visitors predicting the possibility of rain over a few days using data from the sphere. Using a fictional outdoor concert as our story, we investigate what a front is and how they can be identified on the sphere. We then predict when and where a front system will hit the Bay Area.	Sue Guevara (Lawrence Hall of Science)

Concurrent Session 4b: Content Creation "How to": Building a SOS Production from Start to Finish (Lab 1 & 2)

Kate Raisz, 42 Degrees North Films
Dan Pisut, NOAA Visualization Lab

You've seen 30 Minute Meals with Rachel Ray... now get ready for 75 Minute SOS Productions. Kate Raisz and Dan Pisut will run through the collaborative process of developing a SOS production from the storyboard, script, data processing, graphics, and final product. Participants will break up into teams to tackle building the parts of a SOS production, with resources provided by Kate and Dan.

Concurrent Session 4c: Content Creation "How to": Storytelling and Production Techniques for Spherical Surfaces (eSuite)

Michael Starobin, NASA Goddard
Leon Geschwind, NOAA Pacific Services Center

Besides the obvious differences, what really makes presentations on the Sphere different than rectangular screens? Michael Starobin and Leon Geschwind will present techniques for designing spherical productions from the ground up, including discussion about visualization techniques, additive solutions for existing elements, creating spherical stories and environments, and end-to-end project pipelining.

2:05 PM Break & Networking (refreshments provided, West Pavilion)

2:20 PM

Concurrent Sessions 5 (choose from the following 4 options)

Concurrent Session 5a: SOS Content Showcase II and Best Practices Discussion (Earth Revealed)

*Facilitators: Laura Allen, American Museum of Natural History
Bryan Kennedy, Science Museum of Minnesota*

This session will allow participants to see some of the latest content created for spherical display systems. A discussion of the best practices for creating content will follow and the group will be asked to suggest further refinements to the content creation guidelines created and refined by the Network at previous workshops. The content pieces shown will include:

Title	Description	Presenter(s)
<i>EarthViz: "Ozone's Slow Recovery" and BioViz: "Coral Reefs in Hot Water"</i>	AMNH will present the latest segments in our Science Bulletins Data Viz series, which covers global change.	Laura Allen (American Museum of Natural History)
<i>Feeding the Future</i>	Working with the University of Minnesota's Global Landscapes Initiative, the Science Museum is in the middle of producing an 8-minute SOS autorun film on global land use for agriculture. With population predicted to reach 9 Billion by 2050, we will use the sphere to demonstrate how we might grow enough food to feed all the people of the world. At this presentation we will demonstrate a storyboard of the story in development along with produced SOS datasets representing the research we will showcase in the film.	Bryan Kennedy and John Gordon (Science Museum of Minnesota)
<i>The Changing Earth</i>	An automated SOS movie that visualizes the changes that Earth experiences on many different time scales, ranging from days to decades and even millennia.	Daniel Rogers (Bishop Museum)

Concurrent Session 5b: International Aspects of the Network Discussion (eSuite)

Facilitator: Bill Bendel, NOAA SOS Technical Team

This group discussion will focus on the needs of the non-U.S. Network members as the Network continues to become increasingly international.

Concurrent Session 5c: SOS System Setup and Maintenance Demos (eSuite)

Moderator and Presenter: Rob Morris, Clark Planetarium

Jon Loptien, NOAA SOS Technical Team

Greg Christiansen, McWane Science Museum

This session will provide guidance on aspects of setting up and maintaining a Science On a Sphere system. It will feature three components:

- a) Rob Morris will give a demo of a method he has refined for cleaning projectors (15 min).
- b) Greg Christenson will present "Automatic audio level control for SOS" (10 min).
- c) Jon Loptein will demo "Proper system maintenance and Ubuntu installation with SOS setup" (40 min).

Concurrent Session 5d: Docent and Formal Education Best Practices Discussion (Lab 1 & 2)

Facilitator: Abbey Spargo, Ocean Explorium

This group discussion will discuss approaches for creating successful docent presentations and formal education programming on spherical display systems. The group will be asked to identify best practices in these areas.

3:40 PM

Closing Remarks (Little Theater, plenary)

In this plenary session we will review what we accomplished at the workshop. We will revisit the goals for the workshop in light of this discussion and identify next steps for advancing the efforts of the Network.

4:00 PM

Meeting Adjourns

4:15 PM

Buses Depart MSI for Hotel 71



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Expo Agenda (Day 2)

SOS Room Demonstrations (Earth Revealed)

Time	Title	Description	Presenter(s)
2:10 - 2:35	<i>The Future of EarthWatch...EarthNow: Real-time Data interpretation and Training</i>	The first part of this Expo session will involve how Nauticus uses real-time data for its daily EarthWatch presentation, and will include a "sample SOS presentation." Educators gather information regarding earth science events daily, and use SOS real-time (and not real-time) datasets to convey those stories. The second part of this session will showcase the new EarthNow project and its components. EarthNow will ultimately provide real-time data stories and training for SOS docents via a blog. Further, software will allow docents to easily add text and graphic annotations to SOS datasets.	Peter Leighton (Nauticus), Patrick Rowley (CIMSS/SSEC), Dan Pisut (NOAA Visualization Lab/IMSG)
2:40 - 2:55	<i>Interactive SOS techniques and content creation</i>	Newly created, innovative methods for interacting with the sphere that include a video link to the sphere through a phone or ipad, satellite tracking, and a music visualization.	Scott Muller and John Marciniak (MAXatrx/BW Color)
3:00 - 3:10	<i>SOS in Future Earth</i>	The Science Museum of Minnesota is creating a new core gallery called Future Earth. The Future Earth exhibit will focus on the problems and solutions at hand, now that humans are the dominant force of change on the planet. I will explain our plans to build a unique auto-run object theater using the SOS, media displays, and physical objects in the center of the exhibit. The presentation will highlight both the technical aspects of this theater construction as well as the thematic goals of the program, highlighting how the SOS will help us tell a story alongside other devices.	Bryan Kennedy (Science Museum of Minnesota)
3:15 - 3:30	<i>Integrating SOS into our Space Odyssey exhibit – how we use staff, volunteers, and laptop computers to enhance SOS.</i>	We consider the SOS to be an exhibit element in our Space Odyssey exhibit rather than a stand-alone device. As such, we chose to apply the same conversation-generating philosophy and techniques to the SOS that we use in Space Odyssey, and which won S.O. the ASTC Leading Edge Award. Many of these techniques are easy to do and we hope you will use some in your institution.	Eddie Goldstein (Denver Museum of Nature & Science)

Time	Title	Description	Presenter(s)
3:35 - 3:45	<i>Earth Bulletin: Weather and Climate Events</i>	AMNH Science Bulletins will present a segment from our flat-screen Weather and Climate Events visualization series, which highlights notable phenomena in global time-series IR cloud-cover data. The data are interpreted biweekly by atmospheric scientists at NOAA National Climatic Data Center and NOAA Climate Prediction Center; a resource available to SOS users for use with the SOS Real-Time IR dataset.	Laura Allen (American Museum of Natural History)
3:50 - 4:30	<i>SOS Projector Alignment Demonstration</i>	See a demonstration of how to align your four SOS projectors.	John Marciniak (MAXatrax/BW Color)

Dome Presentations (West Pavilion)

There are no set times for these presentations.

Dome	Title	Description	Presenter(s)
GeoDome	<i>Worldviewer in the GeoDome Portal</i>	We'll be showcasing Worldviewer, a new geospatial gaming platform that enables interactive Earth science storytelling. Worldviewer supports Science on a Sphere datasets, animations and movies in alternative display formats; we will demonstrate this both inside the GeoDome Portal and on a flatscreen. We'll also showcase Worldviewer's ability to augment SOS stories using supporting media from a variety of sources, including still images and video created for both spherical or flatscreen display, and leveraging other NOAA resources with content from Ocean Today and RSS data feeds. Content can be geospatially located and placed in chapters with Worldviewer's easy-to-use editor function.	Clay Hooker, D'nardo Colucci, and Hilary McVicker (The Elumenati)
GeoDome	<i>Worldviews Network in the GeoDome Portal</i>	Immersive virtual environments in the GeoDome Portal allows geospatial datasets to be explored at multiple scales, from global down to local, while placing the Earth in its proper cosmic context. This demonstration showcases the work of the Worldviews Network, a collaboration of informal science institutions, researchers, and NGOs, whose goal is to help audiences visualize, comprehend, and address complex bioregional issues from whole-systems perspectives. We will make a telepresence link-up with partners at the Cosmic Serpent workshop taking place simultaneously in Taos, New Mexico, demonstrating not only the simulcasting technology but its use to incorporate indigenous perspectives into our narratives.	Ka Chun Yu, PI (Denver Museum of Nature & Science); Ned Gardiner, co-I (NOAA Climate Program Office); NOAA ELG grant

Dome	Title	Description	Presenter(s)
GeoDome	<i>climate.gov</i>	I will present examples of climate coverage from <i>climate.gov</i> , an authoritative, credible online resource for honest assessments of the state of the climate system, regional impacts, and future projections. Our production team renders data, interprets scientific results, and describes the application of that knowledge. By bringing these capabilities together online, we hope to support docents in the SOS network and beyond. Positioned within centers trusted by society for proffering scientific information in an honest way, docents are an influential and important audience for us. This demonstration will highlight our approach to contextualizing climate information and platform-neutral methods for distributing it to audiences around the world.	Ned Gardiner (NOAA Climate Program Office)
iGlobe Dome	<i>iGlobe Inc.</i>	Using Breakthrough laser technology iGlobe functions as the world's first digital globe and immersive theater in one. We offer a variety of globe sizes, materials and configurations to fit the needs of both permanent exhibits and outreach. Sphere sizes can be changed in a matter of seconds. Remove the sphere and instantly project inside any dome up to 30 feet. The iGlobe is seamlessly controlled using our highly interactive software application and iPad touch interface.	Todd Estey (iGlobe)

Expo Presentations (West Pavilion)

There are no set times for these presentations.

Title	Description	Presenter(s)
<i>LOOP</i>	Everything moves...and because everything moves, everything changes. This project will examine circulation at a conceptual level by using several concrete and conceptual examples. Grounded in data visualization, the movie will look at ocean circulation patterns, atmospheric circulation, and regular rhythms of heat exchange on a planetary scale. Perhaps even more than the specific data sets and explanations this piece will offer—and there will be a wide range-- the concept of circulation offers an emotionally resonant comfort: in some things more than in others we perceive identifiable order. Circulation implies continuity and an endless cycle of repeated experience; it's a frame of reference for the kind of movement that resonates with people's daily lives as well as in the natural world.	Michael Starobin (NASA Goddard)
<i>User-controlled interface with Magic Planet</i>	We are designing and developing an interactive multiuser exhibit that allows visitors to explore the global dimensions and local impacts of climate change and interact with a 4-foot Magic Planet. We'd like your feedback on the preliminary design of the user-controlled interface that lets visitors control the sphere and choose from a range of global and local content they wish to explore.	Jennifer Santer (Miami Science Museum)

Title	Description	Presenter(s)
<i>From Pilot Plants to a World demonstration platform.</i>	The Island Lolland has developed test facilities securing 60 hectares and a village with a coastal protection system, appointed by EU Innovation Center as one of fifteen most important innovative pilot plants in EU. UN has highlighted raising water level, hunger and migration as the tree top trends to the future. Our system provides solutions for all tree problems on local scale. By using topographic mapping and tools as Google Map combined with SOS, a prescreening of all coastlines can be performed and the results demonstrated on SOS. Same method can be used on a large number of green solutions.	Leo Christensen (Lolland Municipality Denmark)
<i>EarthNow Project Evaluation</i>	During this expo evaluation session, we will seek feedback regarding the needs, education/training, and experience of docents, with particular regard to real-time data. We will also solicit comments to help the new EarthNow real-time data interpretation project move forward.	Patrick Rowley (Univ. of Wisconsin, CIMSS/SSEC), Dan Pisut (NOAA Visualization Lab)
<i>SoS on AR: The Sphere in the Palm of Your Hand</i>	This prototype presents Sphere content to visitors via marker-based augmented reality. A visitor holds a special 2D marker in front of a camera, and can see a live video feed that displays the visitor with a Sphere hovering over the marker. Rotating the marker rotates the sphere, and different markers present different Sphere content.	Eric Socolofsky (Exploratorium)
<i>Global Science Investigator: A virtual 3-D sphere</i>	Don't have access to an SOS or Magic Planet or you want to explore global data sets a bit more online? The Global Science Investigator is an online 3-D virtual sphere with Hazards, Ocean, and Climate related global visualizations. Narratives, additional info, FAQs, references and relevant ocean and climate literacy standards are provided. See: http://csc.noaa.gov/psc/dataviewer/	Leon R. Geschwind (NOAA Pacific Services Center)
<i>Demo for New iPad/iTouch SOS Controller</i>	As discussed in plenary, we will be demoing the iPad and iTouch as controllers for SOS.	Mike Biere (SOS Technical Team, NOAA/CIRA)
<i>iClicker and Smart phone apps for SOS</i>	I will present on the development of iClicker and Smart phone apps for SOS. Discussion of what has been developed and where we are headed.	Matthew Benjamin (Fiske Planetarium)