



NOAA SOS Users Collaborative Network

Workshop 2009
November 17-19, Boulder, CO



Goals/Objectives of the Workshop

1. Improve effectiveness of **each institution's use** of Science On a Sphere
 - Investigate applications of current and future technologies for increasing interactivity with the sphere
 - Investigate best practices in docent/interpreter presentations
 - Identify points where connections can be made between SOS and other data visualization and display platforms
 - Improve understanding of real-time data feeds that are available
 - Develop guidelines on how to facilitate use of real-time data
 - Develop capacity to participate and lead spherecasts
 - Explore successful models for facilitating use of SOS with formal education programs
 - Improve capacity to maintain and align projectors
2. Evolve best practices in creation of **content**
 - Review newest content
 - Understand and refine iterative content development process
 - Revise guidelines for SOS content
 - Explore models for involving scientists in creation of content
 - Improve technical skills of institutions for creating content
3. **Understand the impact** spherical display systems have on learning earth system science in informal science education settings
 - Discuss initial results of assessment and evaluation study at the program level
 - Determine how network can utilize these results and what future studies may be needed
 - Share best practices for evaluation of exhibits featuring spherical display systems at the institutional level
4. Continue to inform the **future direction** for the spherical display system program
 - Inform NOAA on future investments related to spherical display systems and data visualizations
 - Identify and discuss major issues and best practices for utilizing spherical display systems in informal science education settings
 - Prioritize technical improvements for Science On a Sphere[®] system and improvements /additions to dataset library

- Identify key issues and needs faced by the network as it grows and evolves
5. Continue to grow a **cohesive and collaborative network** that is actively sharing information and content
- Meet SOS colleagues, assure that network members are aware of each other's efforts and working together when possible
 - Share lessons learned especially for new members to Network
 - Learn about future funding opportunities to support future work
 - Investigate SOS exhibits and interact with staff at two existing installations in Boulder, CO
 - Plan for future spherecasting events
 - Begin discussions of ideas and partnerships that may be proposed to NOAA's upcoming funding opportunities
 - Create a plan and mechanism for holding future workshops and meetings



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Agenda

Day 1 — November 17 @ NOAA Earth System Research Lab (ESRL)				
Location	Start Time	Mins	Topic	Presenter & Presenting Organization
	8:00 AM		Buses pick up at Quality Inn & Suites & the Hotel Boulderado	
ESRL	8:30 AM	0:30	Buses arrive from hotels, coffee and tea available	
ESRL	WELCOME AND INTRODUCTIONS			
GC-402	9:00 AM	0:10	Workshop Welcome	John McLaughlin, NOAA OED
GC-402	9:10 AM	0:10	SOS Program Updates	Bill Bendel, NOAA ESRL
GC-402	9:20 AM	0:30	ESRL & OED Welcomes to participants	John Schneider, NOAA ESRL & Christos Michalopoulos, NOAA OED
GC-402	9:50 AM	0:20	Workshop Agenda Overview & Logistics	John McLaughlin, NOAA OED
GC-402	10:10 AM	0:15	Future of SOS Education Program	Carrie McDougall, NOAA OED
GC-402	10:25 AM	0:30	Participant Introductions	
GC-402	10:55 AM	0:15	Break and snacks	
GC-402	NEW/PENDING SPHERE INSTALLATIONS			John McLaughlin, NOAA OED
GC-402	11:10 AM	1:10	Newest sphere installations	
ESRL	12:20 PM	1:00	Lunch	
GC-402	MAJOR WORKSHOP TOPICS PANELS			
GC-402	1:20 PM	0:10	Introduction to Panels	Carrie McDougall, NOAA OED
GC-402	1:30 PM	0:15	Panel 1 - Best practices in docent/interpreter presentations	Heather Barnes, Chicago MSI; Steve Bishop, Whitaker Sci Cntr;
GC-402	1:45 PM	0:10	Panel 1 - Q & A	Shawn Rowe or Nancee Hunter, Oregon St. Univ.
GC-402	1:55 PM	0:15	Panel 2 - Connections to formal education	Pat Hamilton, Sci Mus. Minn; Abbey Spargo, Ocean Explorium; Gary
GC-402	2:10 PM	0:10	Panel 2 - Q & A	Randolph, GLOBE
GC-402	2:20 PM	0:15	Panel 3 - Connections to other platforms	LuAnn Dahlman, NOAA Climate Prog. Offc; Kirk Bergstrom,
GC-402	2:35 PM	0:10	Panel 3 - Q & A	WorldLink; Matt McBride, NOAA Pacific Svcs. Cntr
GC-402	2:45 PM	0:15	Panel 4 - Understanding learning Impacts	Elizabeth Ban, Smithsonian Natural Hist. Mus; Manjit Goldberg, MD
GC-402	3:00 PM	0:10	Panel 4 - Q & A	Sci Cntr; Shawn Rowe or Nancee Hunter, Oregon St. Univ.
GC-402	3:10 PM	0:15	Panel 5 - Best practices in sphere content creation	Michael Starobin, NASA Goddard; Sue Guevara, Lawrence Hall of Sci;
GC-402	3:25 PM	0:10	Panel 5 - Q & A	Joe Verrengia, Dept. of Energy, Nat'l Renewable Energy Lab
GC-402	3:35 PM	0:15	Panel 6 - Real-time data and interpretation	Dan Pisut, NOAA Environmental Viz Lab; Maurice Henderson, NASA
GC-402	3:50 PM	0:10	Panel 6 - Q & A	Goddard; Patrick Rowley, Nauticus
	4:00 PM	0:30	Networking session around workshop topics and snacks	
	4:30 PM	0:45	Option 1: Tour of NOAA's Earth System Science Lab	Beth Russell, NOAA ESRL
2C-304			Option 2: Projector Alignment "How-to" Session	John Marciniak, MAXatrx Systems
GC-402			Option 3: Continue networking with colleagues	
	5:30 PM		Buses leave for hotels	
	7:00 PM		Optional dinner in Boulder at the Rio Grande Mexican Restaurant	



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Day 2 — November 18 @ NOAA Earth System Research Lab (ESRL)				
Location	Start Time	Mins	Topic	Presenter & Presenting Organization
	8:00 AM		Buses pick up at Quality Inn & Suites & the Hotel Boulderado	
ESRL	8:30 AM	0:20	Buses arrive from hotels, coffee and tea available	
GC-402	8:50 AM	0:10	Review of day's agenda/logistics	John McLaughlin, NOAA OED
SOS SOFTWARE AND DATASETS - NOAA UPDATE				
GC-402	9:00 AM	0:45	SOS Software recent and future improvements	David Himes, NOAA ESRL
2C-304	9:45 AM	0:45	New datasets & other updates to the SOS library	Beth Russell, NOAA ESRL
GC-402	10:30 AM	0:20	Break and Snacks	
GC-402	10:50 AM	0:30	Network-wide Evaluation	Kate Haley-Goldman, Inst. for Learning Innovation
GC-402	11:20 AM	0:20	Evaluation Discussion/Q & A	
GC-402	11:40 AM	0:30	Extended Panel on Creating Interactivity with SOS	Leon Geschwind, Bishop Museum; Eric Hackathorn, NOAA ESRL; Matt Benjamin, Fiske Planetarium
GC-402	12:10 PM	0:20	Interactivity Q & A	
GC-402	12:30 PM	1:00	Lunch and NOAA Science Speaker Dr. Russ Schnell	
SPHERECASTING DEMO				
2C-304	1:30 PM	0:20	Global Meteorology Update via spherecasting	Tom Lefebvre, NOAA Global Systems Div.
2C-304	1:50 PM	0:15	Discussion of spherecasting & COP-15	
BREAKOUT GROUPS - SET 1				
GB-124	2:05 PM	1:00	Concurrent Session 1A - Connections to formal education	
GC-402			Concurrent Session 1B - Real-time data and interpretation	
GC-402	3:05 PM	0:20	Breakout groups report-out	
ESRL	3:25 PM	0:20	Break and Snacks	
BREAKOUT GROUPS - SET 2				
GB-124	3:45 PM	0:45	Concurrent Session 2A - Connections to other platforms	
GC-402			Concurrent Session 2B - Future workshops & meetings	
GC-402	4:30 PM	0:20	Breakout groups report-out	
	4:50 PM	0:40	Option 1: Tour of NOAA's Earth System Science Lab	Beth Russell, NOAA ESRL
GB-124			Option 2: Intro to creating sphere content "How-to" Session	Dan Pisut, NOAA Environmental Visualization Lab
3C-405			Option 3: Projector Cleaning "How-to" Session	Rob Morris, Clark Planetarium
GC-402			Option 4: Network with colleagues	
	5:30 PM		Buses leave for hotels	



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Day 3 — November 19 @ Fiske Planetarium, Univ. of Colorado				
Location	Start Time	Mins	Topic	Presenter & Presenting Organization
	8:00 AM		Buses pick up at Quality Inn & Suites & the Hotel Boulderado	
Fiske Lobby	8:30 AM	0:30	Buses arrive from hotels, coffee and tea available	
Fiske Planetarium	9:00 AM	0:10	Welcome to Fiske	Doug Duncan, Fiske Planetarium & Science Center
Fiske SOS room & planetarium	9:10 AM	0:45	Fiske demonstration of clickers and SOS	
CONTENT SHOWCASE				
Fiske SOS room	9:55 AM	2:00	Content Showcase & Iterative Content Development Process	
		0:15	Sue Guevara & Matt Jacoby, Lawrence Hall of Sci – Docent-led presentation with new data sets and animation	
		0:15	Bryan Kennedy, Sci. Mus. Minn – "Role of Oceans in Earth's climate"	
		0:15	Laura Allen, AMNH – "Forecast: Tropical Cyclone"	
Fiske Lobby	10:40 AM	0:15	Break and Snacks	
Fiske SOS room		0:15	Michael Starobin, NASA Goddard – Clips from "Largest", "Frozen", and "Return to the Moon" or "Largest"	
		0:10	Joe Verrengia, NREL – "Energy Revolution"	
		0:15	Sara Lee, Alaska State Museum – New content for SOS	
		0:25	Leon Geschwind & Brad Evans, Bishop Mus. – Hazards/tsunami propagation maps & demo of new interactive kiosk	
		0:10	Dan Pisut & Lisa Taylor, NOAA - Tsunami content (work in progress)	
Fiske Lobby	12:10 PM	1:00	Lunch	
BREAKOUT GROUPS - SET 3				
Fiske SOS room	1:10 PM	1:10	Concurrent Session 3A - Best practices in sphere content creation	
Fiske Classroom			Concurrent Session 3B - Best practices in docent presentations	
Fiske SOS room	2:20 PM	0:30	Breakout groups report-out	
Fiske Lobby	2:50 PM	0:15	Break and Snacks	
BREAKOUT GROUPS - SET 4				
Fiske Classroom	3:05 PM	1:10	Concurrent Session 4A - Understanding learning Impacts	
Fiske SOS room			Concurrent Session 4B - Creating Interactivity with SOS	
Fiske Planetarium	4:15 PM	0:30	Breakout groups report-out	
Fiske Planetarium	4:45 PM	0:15	Wrap-up and Next Steps	
	5:00 PM		Buses leave for hotels	



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Participant List

Institution/Program	Name	Position/Title	Email Address
Alaska State Museum	Sara Lee	Visitor Services and Security Assistant	sara.chubb@alaska.gov
American Museum of Natural History	Laura Allen	Producer/Writer	laura@amnh.org
Aquarium of the Pacific	Barbara Long	Vice President, Government Relations and Special Projects	blong@lbaop.org
Aquarium of the Pacific	Derek Balsillie	Manager of Audio and Visual	DBALSILLIE@LBAOP.ORG
Bishop Museum	Brad Evans	Exhibit Designer	ignatz@bishopmuseum.org
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Boonshoft Museum of Discovery	Jason Heaton	Senior Astronomy Operator	jheaton@boonshoftmuseum.org
Clark Planetarium	Rob Morris	Planetarium Education Specialist / Master of the Sphere	rmorris@slco.org
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Denver Museum of Nature & Science	Ka Chun Yu	Curator of Space Science	kcyu@dmns.org
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Gwacheon National Science Museum	Kang Hwan Lee	Researcher (Ph.D.)	Kanghwan@mest.go.kr
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NOAA Climate Program Office	LuAnn Dahlman	Communications Specialist	luann.dahlman@noaa.gov
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NOAA ESRL	Beth Russell	Scientific Communications and Data Specialist	beth.russell@gmail.com
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NOAA Pacific Services Center	Matthew McBride		matthew.mcbride@noaa.gov
NOAA Visualization Lab	Dan Pisut		dan.pisut@noaa.gov
North Carolina Aquariums	Kris Smith	IT Analyst	kris.smith@ncdenr.gov
North Carolina Aquariums	Dia Hitt	Marine Educator	andrea.hitt@ncaquariums.com
North Carolina Aquariums	Rick Eller	MultiMedia Designer	Rick.eller@ncaquariums.com
NREL	Joe Verrengia	Senior Administrator	joe.verrengia@nrel.gov
Ocean Explorium at New Bedford Seaport	Abbey Spargo	Education Programs Coordinator	aspargo@oceanexplorium.org
Ocean Explorium at New Bedford Seaport	Mark Smith	Executive Director	msmith@oceanexplorium.org
Oregon Museum of Science and Industry	Nate Lesiuk	Program Developer	nlesiuk@omsi.edu
Oregon Museum of Science and Industry	Sue Wu	Senior Educator, Earth Science	swu@omsi.edu
Orlando Science Center	Brandan Lanman	Director of Public Programming	blanman@osc.org
Science Museum of Minnesota	Bryan Kennedy	Exhibit Project Leader	bkennedy@smm.org

Science Museum of Minnesota	Ken Stone	Video Producer	kenstone.media@gmail.com
Science Museum of Minnesota	Patrick Hamilton	Director of Environmental Sciences and Earth-system Science	phamilton@smm.org
Science Museum of Minnesota	Bob Perkerwicz	Video Editor	bperk@bitstream.net
Smithsonian Museum of Natural History	Elizabeth Ban	COSEE/Ocean Science Education Specialist	BanE@si.edu
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The Wildlife Experience	Carla Ahrenholtz	Education Supervisor	cahrenholtz@twexp.org
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The Wildlife Experience	Jessy Clark	Director of Programs	jclark@twexp.org
Thunder Bay National Marine Sanctuary	Sarah Waters	Visitor Experience Coordinator	Sarah.A.Waters@noaa.gov
Thunder Bay National Marine Sanctuary	Jeff Gray	Superintendent	jeff.gray@noaa.gov
Whitaker Center for Science and the Arts	Steve Bishop	Vice President, Science and IMAX Programs	sbishop@whitakercenter.org
WorldLink	Kirk Bergstrom	President	kirk@goworldlink.org
Total # of Attendees	90		