**SOS Education Forum Meeting 3/6/13 NOTES**

**AGENDA:**

* Preview of a 100th Installation Tribute video clips from the network
* Update from NOAA Boulder on Teacher PD - Summer workshop - making the SOS experience 'active' for students
* Next steps in SOS education from Britta Culbertson- NOAA Office of Education Einstein Fellow Distinguished Educator
* Update from Lawrence Hall of Science's Sherry Hsi on Math on a Sphere
* Update from Space Foundation's Amy Robinson on new K-12 programming and activities
* Q/A and other updates from the Network

**Attendees**: Hilary Peddicord – NOAA Boulder, Alie Lebeau – AOP, Jeannie Allen – New Mexico Natural History Museum, Chris Pait – South Florida Science Museum, Robert Morris – Clark Planetarium, Sherry His – LHS, Erin Kendall – Hadley Anderson – Bishop Museum, Carla Rigsby – Detroit Zoo, Sara Chubb – Alaska Museum, Bryan DeBates – Space Foundation, Britta Culbertson – NOAA Office of Ed, Beth Russell – NOAA Boulder, Shilpi Gupta – NOAA Boulder, Amy Robinson – Space Foundation, Marria Murray – NOAA Office of Ed, Leon Geschwind – NOAA Pacfic Services Center, Carolyn Rose – Bay Education Center, Maggie McIntyre – Nova Scotia Natural History, Katie Hessen – GSFC, Toshi Komatsu - LHS

**SOS Collaboration Wall (Hilary)** <https://sites.google.com/a/noaa.gov/oar-gsd-sos-wall/home> – Is up and working (mostly) and in order to take advantage of it you need to go to the Education Forum/Discussion Wall and subscribe (under More) to updates to the page. I also recommend subscribing to the Education Forum>Files & Documents page. You’ll receive an email each time someone has something to add to the page but only that particular page.

**100th Installation Videos** (Hilary)– These 10-30 second clips are due by April 1st. We previewed some really good ones from AOP, GSFC, Nova Scotia, Telus, etc.

**Teacher PD update** (Hilary) – Britta C and Hilary hosted an SOS teacher PD brainstorming session with local Boulder teachers in Feb. The results mostly showed that high school teachers would be excited to use SOS if they could get some data lessons prior to visiting the sphere so their students could graph, predict and make assumptions in order to have some appreciation for the data being showed. The exit survey and discussion results are posted here: <https://sites.google.com/a/noaa.gov/oar-gsd-sos-wall/education-forum/files-documents>

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**Britta’s** **Einstein Fellowship Outlook**: Britta’s job outlook is combining art & photography and expanding the scope of SOS for teachers in a meaningful way. Lately she’s been working on packaging data and giving talks about where to access different types of NOAA and other data to teachers at NSTA conferences. “I’m trying to figure out where all the biological data is that teachers are looking for and who can put it into a format that works for the sphere. I met with Leon last week and was pleased to hear that the Global Science Investigator [http://csc.noaa.gov/psc/dataviewer/#](http://csc.noaa.gov/psc/dataviewer/) will be moving away from it’s flash-based format to html5, which is another issue that teachers were having if they were using iPads in the classroom.” Hoping to work with Leon to build upon the resource and make that connection between the classroom and seeing SOS in person or get the same type of information if they can’t take a field trip at all. If anyone has biological data that is available or know where to find it, please email me or post on the wiki: britta.culbertson@noaa.gov

**Q –** Sherry at LHS- What is an example of biological data?

**A –** Britta - Some things that teachers have been asking for is anything having to do with migration, human disease patterns correlated to climate change (dengue fever region shift).

**Comment:** Alie at AOP – We have migration datasets but they don’t really show up well and aren’t very interesting on the global picture of the sphere. TOPPS and sharks are ok but life sciences don’t translate as well on the sphere. Perhaps primary productivity is an area that can be explored.

**Comment:** Sara at Alaska Museum – Shared at the workshop her cartoonish dataset of Arctic Tern migrations and feels that is really grabs people so perhaps different ways of showing migration rather than actual data but rather an illustrator’s version of the data could be more captivating. ***Ask her to share with the network.***

**Comment:** Leon NOAA - Overlaying migration patterns on top of other datasets could be more interesting. i.e. Loggerheads on top of SST. Possibly other connections that could be made.

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**Sherry Hsi at Lawrence Hall of Science presenting on Math on a Sphere:** MoS is a NSF funded project for informal education an experimental pathways grant bringing more interactivity to SOS. Partnering with CU – Mike Eisenberg. Developed a programming environment that allows you to create different designs, learn non-Euclidian geometry and project on a sphere. **Site with pictures and blogs -** [**http://mathsphere.org/**](http://mathsphere.org/) **Site where programming happens:** [**http://mathsphere.org/mos-client/client.html**](http://mathsphere.org/mos-client/client.html)

 “We have had challenges getting the software working on all platforms but have updated it to include Firefox and Chrome. We have been writing some introductory lessons and activities and instructions for installing under resources tab. K-6, middle and high computational thinking and mathematics programs that can be done in the classroom with computers. Evaluations have been done recently with teen workshops. Offers creativity and is good for students who are used to touch screens and teaching them to program.

Currently working with the students as if it’s a day-camp – working with them for 4-6 hours in programming and ends with their parents seeing their creations put to music. We are wanting to expand this, thinking more globally, have a celebration and have different museums and classrooms create designs, submit to a google forum and then compile the playlist, get everyone on a Google Hangout and watch the creations. **Looking for museum partners who are interested in doing this giant experiment.**

**Q** – Leon - You mentioned having the intention of overlays. Do you have the capability now to put an Earth picture under the image and draw over it now?

**A** – Sherry - I think we can but we haven’t automated a way to do that yet. I’m working with a science teacher who does integrated math and science and so we’re thinking hard about how to introduce sustainability there with maybe airplane travel or shipping routes and food. If there are features you like then ask before summer when the programming happens.

**Q** - Jeannie Allen NASA – has anyone worked on lessons about scale on the sphere?

**A** – Toshi – I just posted on the Collaboration Wall – Files & Docs page – one of our volunteers created a scale that converts cm to km using the Earth and how big they are on the sphere.

**Comment** – Hilary Peddicord – I have recently found a gifted and talented group of middle school students and booked about 1 hour on a late-start day per week for 4 weeks to carry out the activities and programming language and creations then will invite them to NOAA for a showing on the 5th week.

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**Amy Robinson – Space Foundation – Hands-on inquiry-based classroom activities that directly link to sphere-based programs/course descriptions called Wonders of the Universe can be found here:** [**http://www.spacefoundation.org/education/classes-students-all-ages/wonders-universe/course-descriptions#.UUeJN1s4WZA**](http://www.spacefoundation.org/education/classes-students-all-ages/wonders-universe/course-descriptions#.UUeJN1s4WZA)

Space Foundation programming consists of: 20-35 min presentation in sphere then move to a classroom to do an activity that is aligned with CO state standards, a longer demo with no classroom activities or school groups can just spend time with a docent if they aren’t interested in a full blown field trip.

Constantly doing more programs and goal is to develop 3 classes per grade level so that students can come to Space Foundation every year and never have to see the same presentation twice. Started in the science realm now hoping to move towards social studies, language arts and math.

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**Other comments:**

**Alie Lebeau AOP** – Ongoing 3 year project in providing content specialist speakers to help docents and volunteers feel more comfortable talking about meteorology, oceanography, etc. John Falk was the most recent presenter highlighting pedagogy techniques as well as using SOS as a tool for inquiry and consider the objectives, motivations and expectations of their message when planning a program.

**Q - Alie Lebeau –** So much of the evaluations so far have showed that docent led presentations show better learning, higher effectiveness..etc. Many of us still use auto-run films and I was wondering if there has been any evaluations done with the use of auto-run on a sphere and the effectiveness or engagement.

**A - Beth Russell -** I’ve seen evaluations done on the content of auto-run but not looking at the engagement or learning from the auto-run pieces.Science Museum of Minnesota for the “2 Billion More Coming to Dinner,” did an eval that I can share.

**Comment - Alie** – I would like anything you have. Thanks.

**Comment - Toshi**– Just wanted to mention at the Lawrence Hall we are starting to do some things using Google Hangouts and on the 21st of March we are trying something new. I will be giving a climate change talk to about 9 people on a hangout as a panel of participants and many more will be able to stream to watch and we’ll have a discussion about how SOS is a great tool for education of climate change. **If you are a member of Google+ you can join and watch. It will also be archived on YouTube.**

**Comment – Hilary Peddicord** – Don’t know how many of you are familiar with **NEO**, a new interactive data program for SOS, but Maurice Henderson from Goddard has partnered up with some folks to make a program that can be launched from the iPad and is used to go deeper into the data that can be shown on SOS. This data can be probed, compared and graphed right on the sphere! You are able to check out its capabilities right on the web: <http://neo.sci.gsfc.nasa.gov/Search.html>

**MAVEN SOS** – Exploring where Mars’ atmosphere has gone is a new mission to Mars called MAVEN. MAVEN will explore the solar wind’s effect on the particles in the atmosphere to help us investigate the disappearance of Mars’ once-long-ago-thicker atmosphere. **If interested in the SOS program for this mission please email GSFC: andrea.j.jones@nasa.gov**

**Final comments - Toshi** – Posted a link to build your own solar system scale and it generates a KML file that will overlay the planet on Google Earth. <https://sites.google.com/a/noaa.gov/oar-gsd-sos-wall/education-forum/discussion-wall/sos-as-sunsolarsystemmodel>

**Hilary** – KML file overlay capability coming soon to SOS this summer!!