

Bringing Ocean Sciences Meeting Material to the Classroom

Alia Thompson, Kaimuki Middle School Teacher

February 2014

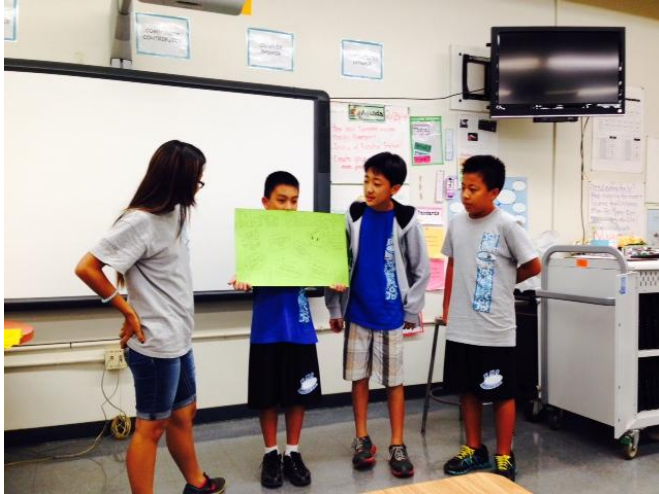
The 2014 Ocean Sciences Meeting held at the Hawaii Convention Center was my first large-scale conference and my first time creating a poster. I must admit that the first day I was very overwhelmed by the size and scale of the convention center, the number of presentations, workshops, town hall meetings and mixers to attend. I found myself staring around in awe of the grandeur and spectacle of the whole event. I attended a few talks in the morning; this was the most humbling experience I've had in a while. I know I am not a genius but I always thought of myself as a fairly intelligent person. There were several presentations that I wasn't at all able to follow. I sat there dumbfounded, as if the presenters were speaking a foreign language. I was getting very nervous thinking about how I would be able to transfer and use this information with my students, when I didn't understand any of it. I decided to take a break after several sessions and go look at posters and the different booths.

After walking alone collecting swag, pamphlets, brochures and journals, I spent some time looking at the multitude of research posters. It was a good way to see current topics in ocean sciences, which will help me to advise students when they are developing their research projects. I attended more sessions and felt relieved during the educational outreach presentations. I was most fascinated by a presentation that discussed using advertising techniques to further climate change literacy in Boston. I immediately saw how I could use the same techniques; then I started noticing how those techniques might already be used throughout my curriculum. My student was there during that presentation, and he and I spent some time during lunch discussing the implications of using such techniques. It was interesting that in the end, he and I both had mixed feelings about it and thought that its success would most definitely depend on the organization heading it and the people involved. My student and I also walked around the booths and collected information about possible college and career options in marine science. This part was the most fun for me, my student would ask a questions and I could say "I don't know, let's ask!" It was nice to learn with my student.

My other student, a 9th grader, joined us and we went to several more education presentations. The presentation by Jennifer Kuwahara about Mokauea Island was the most touching for all three of us. As members of the Kaimuki Science Club, both students and I experienced Mokauea Island curriculum. They were excited to see how other students got to go during class time. I had to make a mental note to see how I can extend this experience at my school to more students not limited to Science Club. Before I knew it, it was time to present at my poster, "Using Mobile Devices to Engage Students in Understanding Plankton Ecology and its Relationship to Climate Change." I really enjoyed meeting and talking with people, exchanging ideas, tips and tricks. While I did my poster presentation, the students met with a mentor who was also a Kaimuki Middle Alum - they both remarked how cool it was! I think only time will tell the benefit of their experience at OSM 2014: it will show when they are in college and professionals.

Honestly it took several days (I am still in the process) to digest and absorb my experience at OSM. My student and I still debrief about ideas or questions from those two days.

So far in my classroom, I have planned a few activities for my students directly based on my experience and knowledge gained. The first is a modified MBARI EARTH activity, “career



explorations.” In this activity, I took all the pamphlets, brochures and journals I acquired at OSM and set up a “mini convention” where students browsed the information and selected careers or colleges they were interested in. They formed groups and used the MBARI career information website to get more information about their selected topics. Then they put together an advertisement for their topic and “sold” it to the class (as shown in this picture). The students’

posters and more presentation photos are available in the link below:

https://drive.google.com/folderview?id=0B3_tquQpT9UZZTBjN0tDeEFJWEE&usp=sharing

The students really liked this activity - we were all laughing and learning. Many of them commented that they didn't even know some of these careers existed - for example, marine chemist and forensic meteorologist. I am about to use the same materials and teach this activity to a group of students on Maui!

Next I have planned to use the poster titled, “The Effects of Molasses on *Pocillopora damicornis* Health,” (<http://www.sgmeet.com/osm2014/viewabstract.asp?AbstractID=15611>) along with some local newspaper articles to explore the effects of human impact on the environment. This will be the lead into our plankton unit next month. Also, I made some notes and additions from several presentations to help improve my plankton unit.

I took pictures of the student posters and displays to use as examples for my students and to help guide them in feasible research projects. I plan to present them at our next Science Club meeting. I am also going to incorporate it into the first quarter curriculum which sets students up to design and conduct their own experiments/ research.

I know this experience will continue to inspire my professional development as well as my students’ learning path. I am so grateful for being able to participate and attend the OSM 2014. I feel as though there is so much I gained, I am not able to accurately and thoroughly describe the impact OSM 2014 has had on me. I end with the feeling of inspiration and imagination to keep learning and teaching.

Ocean Sciences Meeting Reflection

By: Alyssa Nishi – Grade 9

Upon attending the 2014 Ocean Sciences Meeting, I have learned a great deal about ocean science, advances in the teaching of science in the classroom, and insights and information regarding possible future careers in biology.

One of the fascinating projects relating to ocean science I came across was this undersea device that scientists use to collect data pertaining to the organisms currently living or moving through that area or range of the device. How it works is the scientists plant the device on the bottom of the sea floor in an area they want to know more about. The device will then send up periodic sound waves (kind of like how a bat echo locates), and organisms floating or moving above will bounce off the vibration telling the device its exact location in that particular wave. This device can collect the scientist's data without the necessity of their presence and for longer than they would be able to stay and manually collect it. I don't quite remember the name (it was something like "awkward rocket" or I have no idea), but this was just one of the projects at the ocean science convention.

One of the lecturers discussed how the teaching of science can and is being fortified in the classroom. I found this lecture to be just a little more interesting than the others because I was interested to know what kind of new opportunities there are to learn and experience science for real in class. Some pros of this were things like having an emotional connection to the criteria or what's being learned, as well as it being supplementary and imaginative to the students' learning experience. Cons include not having the technology for it and being too much for the teacher(s) to handle. This really made me think about how I learned or how I am currently learning science now compared to the way that the lecturer described, and if it really can be improved with "real-time data" and whether or not it will make a difference in my choosing of a science career. Whether or not these advancements occur now, I believe it will be a worthwhile endeavor to spark an interest in science in young people everywhere.

While the lectures and labyrinth of unending posters (most of which I was not even close to comprehending) was great, I think the best part and the most useful information I gained from this experience was from our mentor, Natalie. She was very knowledgeable, friendly, and was able to provide information on the specific career I was interested in (pharmacy) and give helpful tips on college and life. Talking with our mentor was my favorite part of this experience as well as what I believe to help me the most in the future because I was able to get a glimpse of what a career in the biology field could be like, what things are important to focus on for college, and all the fascinating things about a science career. After speaking with Natalie, I definitely want to go to a good college where I can pursue a degree in biology or some other form of science.

Overall, this whole experience of learning ocean science, science in the classroom, and speaking with a mentor was educationally enriching and a rare opportunity. I am grateful for the chance to participate in this and I will most definitely take what I've learned from this experience to fuel my schooling, career, and future endeavors.

Experience at OSM

O.S.M or ocean science meeting, 2014 was held at the convention center in Honolulu Hawaii from February twenty-fourth to February twenty-ninth. People from all around the world come to it to present projects they have been working on. By doing so they also get a chance to impress wealthy scientist and hopefully get grants to elaborate on their projects in upcoming years. Other scientist simply come to learn and get ideas about their next project. *O.S.M is held every two years at a different location around the world.* There are many talk sessions, learning activities, and poster presentations. I am one of the few younger people who was able to attend this meeting thanks to my science teacher Ms. Alia Thompson.

I learned about ocean science and other sciences that involve the weather and the way earth is changing in general. Through the two sessions I went to I was able to obtain a lot of information about climate change, the newest technology being used to study science, *and the various ways of involving normal people about the good and bad news about our world changing.* I also learned about all the different programs getting active and trying to make a change.

Climate change is one of the worst events that has happened over the *last few decades.* Climate change has caused more storms to occur, more bug issues that involve various diseases they carry and much more. Climate change has evolved our world and with the quickly changing environments, organisms are unable to adapt at the same pace as earth is. Fortunately there are many organizations that are making efforts to help attend to this serious problem. Current scientists will eventually leave the workforce which is why we need to look to the future of science. Impacts on the future earth is important to look at in order to survive on it. To do so we must look to future scientist, the next generation. But many educators think how they can connect students to the ocean and climate change?

Experts say that when students are passionate for something they tend to be good at it. In order to engage students in science needed for the future they need to go through good and fun learning experiences in their stages of learning. Mokuaea Island is working to do this. Mokuaea Island is a cultural island that used to have fishing ponds. These fishing ponds don't just provide cultural and historical learning but also sustainability and marine science. Experts believe that connecting culture and science together will help engage students more in both subjects. This island and everything around it was affected by the molasses spill, but the hard workers kept going through hardships to restore the ancient land with the help from volunteers. Field trips are highly valued by students. Hands on training and fun visuals usually allow students to be more engaged with a subject. If culture was intertwined with the school's curriculum it would give students a different and possibly better view of their learning subjects. People of Hawaii are connected to the ocean because they are surrounded by it. This provides a great hook to engage students in marine science education of all levels. Ocean Literacy Principles made by marine science organizations are 1) Earth has one big ocean with many features. 2) the ocean and life in it shape the features of the earth. 3) The ocean is a major influence on weather and climate. 4) The ocean makes earth a habitable. 5) The ocean supports a great diversity of life and ecosystems. 6) The ocean and humans are inextricably interconnected. 7) The ocean is largely unexplored. Other organizations studied the amount that students learned through special science education programs. A survey results showed that 75% who took this program improved on their test scores and 25% did worse or stayed at the same level of intelligence. Unfortunately it is not likely that these results are perfect, the probability of these results being perfect are very low due to other factors outside of the survey. Some of these factors include extra help during the program, people not taking it seriously, and failed truths (referring to students getting good scores by guessing. This also includes doing greatly or horribly before the program or after

on purpose). Otherwise there is no exact way to see the improvement of learning through the programs.

Having all this information for students is very important to find future scientists but how do we know that the evidence that teachers give to their students is accurate and precise. E.A.R.T.H is an organization that specializes in this situation. They are people part of an organization that is trying to teach teachers how to get the correct information to classrooms through workshops. E.A.R.T.H states that Information behind the actual data is important to know to help teachers educate the next generation. Material of information should not be set up by grade, but skill level instead. This is an important factor that teachers might need to understand more. E.A.R.T.H wants to convince teachers that they should open up lower grade levels to higher standards. Ideally, E.A.R.T.H wants to meet with teachers and experts in sessions and workshops for around 60–90 minutes a day to talk about lesson plans and how to get better knowledge into classrooms.

Information doesn't just have to go to students but also to citizens of the United States. If scientists don't influence the people of America to want to stop global warming then our world won't change for the better. There are many ways that scientists try to inform people about problems in our world that can affect the way we live. The most productive and influential are the entertaining visuals, including commercials and posters. These commercials and posters help show how horrible the world will be in the future if we don't make a change. These visuals get people involved by doing small and simple things like recycling, using less water, using less energy and many more environmental solutions. Showing correct data, estimated information and making it entertaining is all important for people to know about what is happening with the *environment so that they could possibly help make a difference.* Other organizations are working with e/I books to inform younger readers about the environmental issues. This is a great form of communication because many people are starting to have online

books instead of normal ones, by having this it conserves paper, saves money, and is more efficient for experts to provide information to people around the world.

In conclusion our world is changing immensely and we need to think of ways to preserve it. We need future scientist that will help save the generations after ours. The O.S.M is an important meeting not only to get ideas for projects but finding out deeper information about the world we live in. I am very thankful that I was permitted to attend the meeting for free thanks to the grant Ms. Alia Thompson was able to get for me. This experience will help me get ahead of my class and will help me excel in the field of science in the future. Hopefully in the future I will be able to be one of those students that will become a future scientist because of my experiences at a young age.

Another Thanks to Ms. Thompson