

SeaScripts



The Newsletter of the South Carolina Marine Educators Association



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Deadline:
May 15, 2011**



SCMEA

The South Carolina Marine Educators Association

Letter From the President – Beth Burkett – SCMEA President

Hello SCMEA,

Spring is just around the corner here in the Palmetto State and I am excited to once again experience my favorite season in the South. I love spring because everywhere I look I see signs of rebirth, opportunity and growth. From the tiny vegetable sprouts in my garden to the beautiful blooming azaleas, nature is pulling out all the stops and putting on a show.

Spring is also a good time to look for ways to grow in your own life. What opportunities can you find to shake things up and experience new adventures? SCMEA can help you with this and here are my top three picks for marine educators seeking new opportunities in South Carolina and beyond:

Go to a national conference about marine education.

This year's National Marine Educators Association (NMEA) conference will be held in beautiful Boston, Massachusetts from June 27-July 2. A quick look at the conference agenda reveals a tour of the New England Aquarium, a clambake on Thompson Island in the Boston Harbor, and fieldtrips to Woods Hole, the USS Constitution Museum and Stellwagen Bank National Marine Sanctuary.

SCMEA can help you attend this conference. Every year we select one active member to receive the Jacques Cousteau NMEA travel award. This award provides financial assistance to an individual interested in attending the national conference and all you have to do to be considered is fill out the application found in this newsletter or on our website at:

www.scmarineed.org

Create some magic in your classroom.

As educators, we all know that a dynamic learning environment can excite students and inspire passion for a particular subject. If you have plans to create a marine-related project and are looking for a funding source, SCMEA can help you out. Every year we give out several Renkas Marine Education grants to individuals finding innovative ways to incorporate ocean science into their curriculum. If you have a project that needs funding, fill out a grant application on our website and send it in.

Plan ahead.

I'm so happy to announce that SCMEA is joining forces with our Georgia neighbors to put on a joint conference on October 21-23, 2011. Conference chairs, EV Bell and Angela Bliss, are hard at work putting together a fantastic weekend that you do not want to miss. Save the date and plan on heading south in October for a GAME + SCMEA annual conference.

Clear Sailing!

Beth





New Lessons and Activities Focusing on South Carolina Water Resources

By Katie Giacalone

***What is a Watershed? And, why do we care?
And, why and how have we changed that somewhere?
(I've been reading a lot of *The Lorax!*)***

Any guesses? Watersheds are a critical concept to teach South Carolina youth. A watershed is the area of land where all of the water that drains off goes into the same stream, lake or other water body. ***However we define them, we all live in a watershed, and the actions we take affect our downstream rivers, lakes, estuaries and the ocean.***

Clemson's Carolina Clear program builds partnerships with communities, non-profits, universities, agencies and others to improve stormwater management and watershed protection. Through strategic and regional education, these partnerships seek to educate the public in understanding the link between our actions and water quality and define and create pathways for behavior changes that will improve or protect water quality.

One critical audience is youth; therefore, this program sought to create lessons plans that meet SC Science Standards and also build companion interactive whiteboard activities. Currently, three lessons and activities are available for FREE download from our website, and one more is in production. These lessons and activities are suitable for use in the classroom, at nature centers, after school programs and so on.

These three lessons meet either 5th or 7th grade standards (specified at website).

- **Head for the Hills:** Students pretend to be SC highlanders living on the tallest mountain in the mid 1700's. They will find the different routes to travel to SC's early port cities without crossing rivers. Students will model how topography affects water flow. As a result, the students will understand that high topography serves as a boundary separating one watershed from another.
- **A River Runs Through It:** In this lesson, students will "develop" a parcel of land along a stream or river in order to generate income. They will later learn that their parcel is connected to other parcels along the river's way to the sea.
- **Tag a Toxin:** In this game of tag, students will model and learn how pollutants are accumulated and passed from prey to predator in a freshwater food chain. [Lesson is included.] **The *Tag a Toxin* lesson plan is attached to this newsletter email.**

To download these lessons and activities, please click on "Watershed Lessons" at www.clemson.edu/carolinaclear. To comment or provide feedback, please contact Katie Giacalone at kgiacal@clemson.edu. Thanks for the hard work that you do!

How You and Your Students Can Explore the Ocean Floor with the *JOIDES Resolution*

By Kevin Kurtz

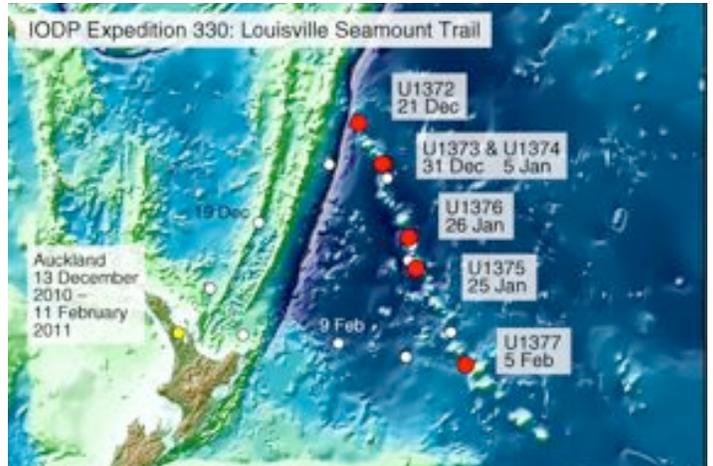
From December 13, 2010 to February 12, 2011, I was the Education Officer on the scientific research drilling ship the *JOIDES Resolution* (<http://joidesresolution.org>). I accompanied thirty scientists on an expedition to study a chain of extinct, underwater volcanoes in the South Pacific. The main research objective was to discover how the hotspot that created these volcanoes had changed over time and, in doing so, to better understand the Earth's still mysterious mantle. It was a phenomenal experience for me. I was able to work closely with scientists from around the world as the *JOIDES Resolution* brought up rock from volcanoes that once were islands and now are 3000 feet below the ocean surface. I was able share the fun of discovery with the scientists, while also using my creativity to find interesting and educational ways to share these experiences with the public.

Even though the expedition is over, the educational resources I created are still available on the *JOIDES Resolution* website and can be used by educators to help audiences of a variety of ages understand plate tectonic processes, hotspots, seamounts, volcanoes and the scientific method. Below is a list of these resources and information on how you could have a similar experience to me on future expeditions.

Louisville Seamount Trail Expedition

Overview: This webpage includes short videos and other resources that give an overview of the expedition I was a part of. It includes a map of all the scientists' hometowns that can allow students to see how science is often an international, collaborative effort, as well as links to the blogs of the microbiologist and one of the volcanologists in the science party.

<http://joidesresolution.org/node/1622>



JOIDES Resolution Continued

Webcasts from the Sea: One of my main responsibilities on the ship was to coordinate and facilitate live webcast programs with schools and museums. Participants were able to tour some of the *JR* lab spaces and see and talk with the scientists and other crew while they were at sea. Based on the feedback we received during our expedition, the webcasts were a powerful teaching tool that inspired students while reinforcing science concepts. Even though my expedition is over, each *JOIDES Resolution* expedition offers webcast opportunities that you can sign up for. Thanks to NSF funding, these webcasts are free, and thanks to Skype, fairly easy to set up. You can find out how to sign up for webcasts by visiting here: <http://joidesresolution.org/node/1746>

Educational Blogs Written By Me: One of my main responsibilities on the ship was to regularly post blogs on the *JR* website to help connect the public to the science being done on the ship. I wrote three blogs, each for a different audience, in which I let my sense of humor go nuts, in hopes that the posts would be both educational and entertaining (As examples, I wrote one post where I explained the broader impacts of the research of the expedition by connecting it to Kevin Bacon in six degrees. I also wrote one where I used Elvis and Batman to explain the motion of the Pacific Plate.)

- **High school students and adults:** The blog for this audience, written under my own name, was written to introduce people without a science background to some of the concepts (such as seafloor spreading, seamount formation and paleomagnetism) that would help them better understand the research objectives of the expeditions. Find it here: <http://joidesresolution.org/blog/44>
- **Kids ages 9 to 12:** This blog, written under the name “JR junior” by a stuffed animal called the Blogfish, introduces kids to basic science concepts of the expedition, life at sea and many of the scientists in the science party. Find it here: <http://joidesresolution.org/blog/255>
- **Classroom teachers and informal educators:** This blog, written under the name “Educator Ideas,” identifies hands-on, interactive activities that educators can use to help kids of a variety of ages understand plate tectonic processes, hotspots and the scientific method in ways that directly connect to the science of the Louisville Seamount Trail expedition. Find it here: <http://joidesresolution.org/blog/256>

JOIDES Resolution Educator Workshop: The Deep Earth Academy offers a professional development opportunity for educators about marine geology that occurs right on the *JOIDES Resolution*. School of Rock is like marine geology camp for teachers and informal educators that takes place at sea for about two weeks (I did it in 2009). Educators have the opportunity to learn about marine geology and research while also studying the same cores and using the same lab equipment as the scientists. It is a hugely beneficial program that provides knowledge and classroom resources, as well as contacts with both scientists and other, like-minded educators. And it’s free of charge with all expenses paid! To find out more about this program, visit here:

<http://www.oceanleadership.org/education/deep-earth-academy/educators/school-of-rock/>

Educator at Sea: Finally, if you want the full experience of the *JOIDES Resolution*, you can do what I just did, and apply to be the Education Officer for a *JOIDES Resolution* research expedition. It is a job (you are coordinating and facilitating educational outreach activities for the expedition such as webcasts and blogs; you do get paid for it, though), but it is also a professional development opportunity that allows you to be completely immersed in scientific research as it is happening, which is an invaluable experience for any educator who teaches science. Being Education Officer is a commitment and hard work (you work 12 hours a day, seven days a week for eight weeks straight) and, at times, can be an endurance test (for example, as fresh vegetables disappeared over the course of the expedition, I spent a lot of time daydreaming about leafy vegetables. I cannot say that has ever happened before), but looking back on the 56 days I spent at sea, I would gladly do it again (just, not like immediately) and would not trade the experience for anything. To find out how to apply, visit here: <http://joidesresolution.org/node/453>

Overpopulation and the Ocean

By Michelle Ashley



This year the world's population will surpass seven billion people. **Population Connection Education Program** is a dynamic organization that has been in operation for educators since 1975. Their goal is to educate adults and students on the ever-increasing effects of our immense human population on the lands and waters that we call home. It offers endless resources for social studies, science, math and English from the elementary grades up through high school and even college. The lesson plans are "user friendly" and utilize inexpensive materials...most of them can be found at your house.

If you go to the Population Connection webpage (<http://www.worldof7billion.org/>) they have a continuing tally of the U.S. population and our world's population...it's an "eye-opening" image of the increasing numbers of humans born every second. The lesson plans focus on how we as humans put a strain on the natural resources, along with other topics linked to an expanding population. They offer training for educators at workshops and training for presenters... if you'd like to represent Population Connection at conferences or at local schools and universities.



I was first introduced to Population Connection in 2004 at the South Carolina Science Conference in Charleston. I was amazed at the interactive lessons offered and of course, being a new teacher, was thrilled at the low cost of materials. I've used their material every year since then while teaching middle school and high school science. The students love doing anything except seatwork and the lessons focus on numerous aspects of our increasing population. Through e-newsletters that keep folks updated on new lessons, materials, and ideas....I've talked with my students about women's choices of bearing children and having an education in other countries, pollution, and protecting our natural resources. At the end of 2011, they are estimating that our world will reach a population of 7 billion, double what it was in 1965...about the time many of us were born. That's just hard to believe.

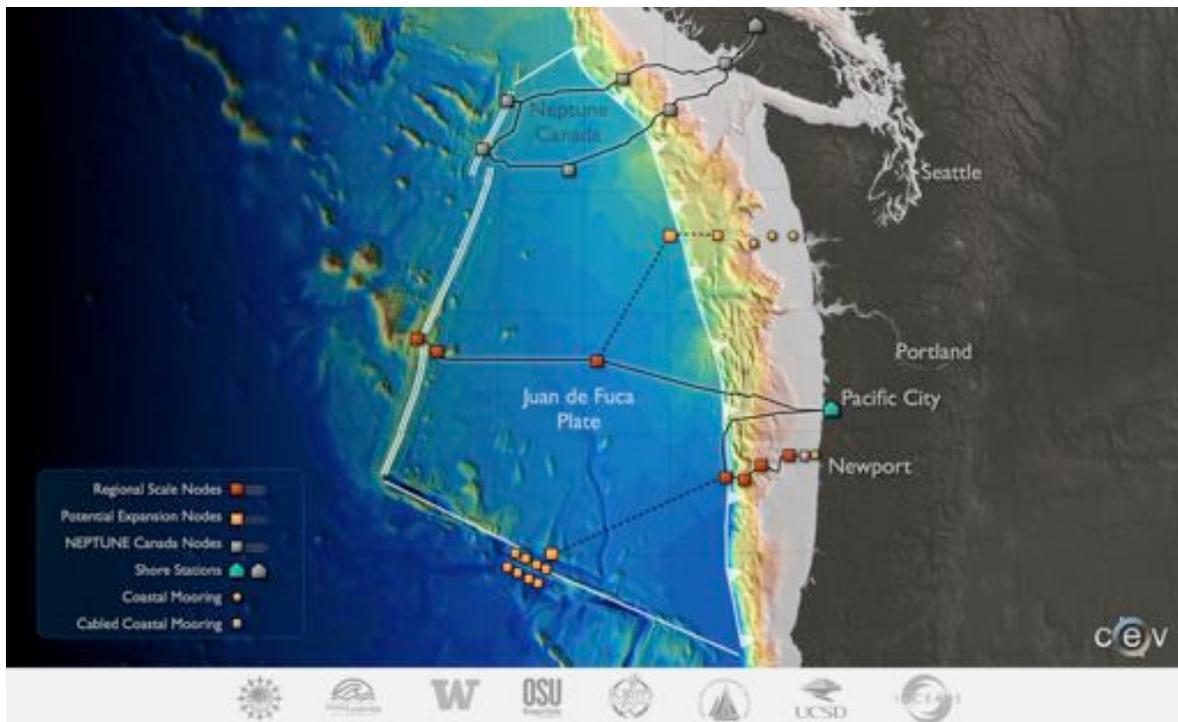
Attached to this email is a new lesson plan called "Code Blue: Endangered Oceans" that Population Connection just created. It's very similar to "Who Polluted the Potomac" that I presented at the conference in October. I'm looking forward to using it in my classroom. "Code Blue..." talks about how we are polluting the oceans and begins back in the 1500's and continues through today including the Gulf Oil Spill. For adults and students alike, these are fantastic lessons to get across the message we are responsible for the choices we make, which in turn affects the land and waters that give us life.

Learn about the new Ocean Observatories Initiative when SCMEA member Leslie Sautter returns to Charleston

The New Era of Ocean Science Research and Discovery: The NE Pacific's Cabled Ocean Observatory

Dr. Leslie Sautter, College of Charleston, Dept. of Geology and Environmental Geosciences
Wednesday, March 16, 4:15 PM
New Science Center, College of Charleston (corner of Calhoun and Coming Streets)

The National Science Foundation's investment of over \$350 million launches a new era in the way we observe and study our planet. The Ocean Observatories Initiative's Regional Scale Nodes (OOI RSN) - formerly called NEPTUNE - is operated by the University of Washington. The OOI RSN will have a network of fiber optic cables to supply continuous high power and high bandwidth to scientific instruments and HD video cameras on and above the seafloor. Two sites will be instrumented on the Juan de Fuca Plate off the coasts of Washington and Oregon: Hydrate Ridge is an area on the edge of the continental margin and plate subduction zone, rich with seeping methane gas and rock methane hydrates; Axial Seamount is an active underwater volcano with numerous hydrothermal vent chimneys located on the Juan de Fuca spreading ridge. When construction is complete in 2014, real-time data will be accessible to anyone on the internet, and the deep sea will be within view for many new discoveries and incredible educational opportunities. Educators, scientists, students and the public are all encouraged to attend. This talk will include recent video of hydrothermal vent communities and animations of the exciting near-future of ocean science and engineering. There will be a discussion session for additional information following the talk. To learn more about OOI RSN, please view the project's website at: <http://interactiveoceans.washington.edu>



News and Events



\$500 Travel Award Available for NMEA Conference in Boston this Summer

SCMEA members can apply for SCMEA's Jacques Cousteau Memorial NMEA Travel Award to receive \$500 to cover costs to attend the National Marine Educators Association conference from June 29 to July 3, 2011. Registration and all conference info can be found at www.massmarineeducators.org/NMEA2011 (or go to www.nmeaweb.org and press on the conference logo). Application for SCMEA's travel award to this conference can be found at <http://www.scmarineed.org/awards.html>. Applications are due April 1.

Large Environmental Education Grants Available from EPA

The EPA's Environmental Education Regional Grants Program supports environmental education projects that enhance the public's awareness, knowledge, and skills to help people make informed environmental decisions and take responsible action towards the environment. Grant awards are between \$15,000 and \$100,000. The deadline for 2011 is May 2. For more information visit:

<http://www.epa.gov/enviroed/grants.html>

NOAA Office of Ocean Exploration and Research onsite professional development workshop at South Carolina Aquarium

May 14, 2011, South Carolina Aquarium, Charleston, South Carolina

Learning Ocean Science Through Ocean Exploration

Follow Up Professional Development Workshop for Teachers

Contact Jaime Thom for information:

jthom@scaquarium.org (843) 579-8562

Registration Deadline: April 29, 2011

For more info visit:

http://oceanexplorer.noaa.gov/edu/development/onsite_development.html

Marine Animal Podcasts from Encyclopedia of Life

The Encyclopedia of Life is a collaborative effort among scientists and the general public to bring information together about all 1.9 million named and known species, in a common format, freely available on the internet. Learn more at www.eol.org. They have regular podcasts available on their website presenting the latest scientific research on a variety of species in an accessible way. For a podcast on sea cucumbers, visit here: <http://education.eol.org/podcast/sea-cucumbers-0>.

Scripps Marine Scientists Will Answer Kids' Questions

Scripps Institution of Oceanography at UC San Diego is inviting questions from kindergarten-through-12th grade students for the Voyager for Kids section of their magazine *explorations*. Selected questions will be put to the researchers to respond in the magazine. For examples of student questions, check out this month's issue: http://explorations.ucsd.edu/Voyager/Voyager_QA/. Students whose questions are answered and published will receive a selection of Scripps swag (hats, shirts and whatever fun stuff are in their stockpile).

Visit http://explorations.ucsd.edu/Voyager/Voyager_QA/Submit/ to submit questions.

Grants For Marine Microbe Education Available

The Center for Microbial Oceanography: Research and Education (C-MORE), based at the University of Hawaii, awards grants (up to \$1500) to foster education in microbial science. Any educator (from any of the 50 states) may apply for one of these grants, but preference will be given to public school teachers, non-profit organizations, and first-time applicants.

The application is short and simple! You can request funds for any project related to microbial science. Past teachers have received funds for equipment and consumable supplies, to attend conferences and professional development workshops, and for school field trips. Please visit the GEMS webpage for further information and to read about past projects (<http://cmore.soest.hawaii.edu/education/teachers/gems.htm>). Application require a sponsor and any UH faculty member (any campus) or any member of the C-MORE team can be a sponsor (<http://cmore.soest.hawaii.edu/team.htm>). Contact us if you have any trouble finding a sponsor and we can help! The next application deadline is May 2, 2011. Please address any questions or concerns to Dr. Michelle Hsia, GEMS Program Coordinator (956-3715) or email gems@soest.hawaii.edu.



8-DAY COSTA RICA TRIP FOR EDUCATORS – JUNE 29 to JULY 6 - \$995 land

EcoTeach is offering an 8 day trip for Educators to Costa Rica for a reduced rate of just \$995/land! Work with sea turtles, hike in the rainforest, meet researchers from the National Institute of Biodiversity, observe the active Arenal Volcano, raft the Sarapiquí River, fly through the air on a canopy zipline tour, visit an organic farm, soak in hot springs, and more!

This trip is specifically geared towards educators, but you are welcome to bring a spouse, partner, or friend with you at the Educator rate. The cost includes accommodations, meals, activities and entrance fees, local guide, and private transportation – basically everything! For more information, please visit our webpage at www.ecoteach.com/2011/educators/ or contact Stephanie Hall at 800-626-8992 x10 or via email at stephanie@ecoteach.com.

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www.etsy.com/shop/allisonsepmn



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