

SeaScripts



The Newsletter of the South Carolina Marine Educators Association



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Fall 2013



SCMEA

The South Carolina Marine Educators Association

Captain's Corner

President's Letter

Greetings Fellow Marine Educators!

It is especially exciting to write this letter for the fall 2013 edition of *SeaScripts*; believe it or not, this year is the **25th ANNIVERSARY** of the South Carolina Marine Educators Association! As we prepare to celebrate this worthy occasion, it has been humbling to look back at what has been accomplished since the chapter was first organized, and realize the dedication and enthusiasm of our membership throughout the years. From the mountains to the sea, marine educators from across the state have worked to share our aquatic world for a quarter of a century-truly an outstanding accomplishment we want to acknowledge. It has been a fantastic year as president, and it would not have been possible without the amazing group I've had the pleasure to work with to further the goals of SCMEA.

I had the opportunity to attend the National Marine Educators Conference this summer in Mobile, AL, and our chapter was well represented here too. It is always reinvigorating to attend these professional development opportunities, and this year's event was no different. The sessions were diverse and informative-I didn't attend a single one that I didn't learn something new (ever heard of a hairy puccoon? Me either, until I attended a Great Lakes session!). Whether a national, regional, or state conference, we are so fortunate to have such an array of knowledge and an incredible group of members willing to share it with others.

This year's President Elect, Blaik Keppler, and all of our conference committees are doing an amazing job of organizing our fall conference and we hope you can join us in Charleston in November. In addition to a look back at SCMEA through the years, we will also be learning about cutting edge research, new technologies, and research findings. Our 2013 conference theme is "**A Look into the Future of Ocean Science**". We will kick off the weekend of fun and learning with a welcome reception Friday evening. On Saturday, setting the tone for the conference will be keynote speaker Dr. Leslie Sautter from the College of Charleston. Dr. Sautter is involved in constructing a deep-sea observatory that will revolutionize the way we study and understand the ocean. It is history in the making and South Carolina educators have a unique opportunity to learn more 'straight from the (sea) horse's mouth'! Hope to SEA you all there!

Happy fall,

Beth



Dolphin Health and Environmental Risk Assessment Project

Julie Binz - Education Coordinator
SC DNR/ACE Basin NERR

Except for the faint glow from a full moon, it was still dark at 6:30 am when we loaded the ice onto the boat to keep the samples and our lunches cool for the day. With eight boats and about 50 people, our team was huge for the Health and Environmental Risk Assessment Project. The project, started in 2003 by the NOAA National Ocean Service and Harbor Branch Oceanographic Institute, is a comprehensive research study designed to assess environmental and anthropogenic stressors that may affect the health and long-term viability of bottlenose dolphin populations. Dolphins inhabiting the coastal regions of Charleston, South Carolina and Indian River Lagoon, Florida have been the focus of the study. Since bottlenose dolphins (*Tursiops truncatus*) are apex predators, they serve as a sentinel species, giving us valuable insight into the health of our waterways and our own food sources.

The SC Department of Natural Resources boat, the *EV Discovery*, is usually full of students taking water quality measurements and sampling estuarine waters with a trawl net. With its flat deck and canvas shade, it was the perfect staging area to set up a floating laboratory complete with centrifuges and liquid nitrogen containers for the next two weeks. Originally, I thought we were going to cruise around the harbor and maybe if we were lucky, occasionally capture a single dolphin, but this was not the case. Once the team, and the immense amount of gear needed for catching and studying a live 500 lb dolphin, were on our respective boats, we headed into the harbor. Before I knew it, in a shallow alcove behind Fort Sumter 'the catcher', an experienced mullet fisherman, netted two male dolphins. Immediately, researchers and veterinarians guided each individual into a sling and carefully secured dolphins 862 and 864 for sampling. All females were examined with an ultrasound following capture, and were not removed from the water if they were pregnant. It took about an hour to work up each dolphin as they lay calmly on the deck of the US Fish and Wildlife boat, patiently cooperating as if they understood our purpose. Shaded from the August sun, they were sponged off to keep cool. The team worked quickly, obtaining all the samples efficiently with the least amount of stress to the dolphin.

Samples of saliva, blood, urine, blowhole, fecal, and blubber were taken from each of the four dolphins that were captured that day. All of the dolphins were already freeze branded on their dorsal fin with an identification number, indicating a capture years before. This number gives researchers a host of information about the dolphin, such as age, sex, and health from the last time it was captured just by



sight. At the end of the day, the samples were shipped off to multiple labs around the country where they will be analyzed for everything from contaminant and pathogen exposures to numerous health parameters. This study comes at an important time for *Tursiops truncatus*, as the number of die offs along the east coast this year steadily increase. The valuable information provided on marine mammal health and contaminants from studies like this one are becoming critical in the protection of the species.

Photo credit: NOAA and NMFS Permit No. 14352-02

South Carolina Marine Educators Association **2013 Conference and 25th Anniversary**

“A look into the future of ocean science”

Friday, November 1st - Saturday, November 2nd

Fort Johnson; Charleston SC

AGENDA

FRIDAY, NOVEMBER 1

5:00 pm Welcome Reception at Rita's
Seaside Grille; Folly Beach
(included in registration fee)

SATURDAY, NOVEMBER 2

9:00 Keynote address
*Dr. Leslie Sautter, College of
Charleston*

10:00 Concurrent Sessions

12:00 Lunch, Awards, and Business
Meeting

2:00 Concurrent Sessions

5:00 Cocktail Hour* and Silent
Auction

6:30 Dinner and Live Auction

8:30 Live Music and Bonfire

*Saturday night's events are BYOB. Coolers will be provided.

A max of 4.75 renewal credits
will be available.

CONFERENCE FEES

(Fee includes Friday night welcome recep-
tion and all Saturday conference activities)

\$ 60 SCMEA Members

\$ 90 Non-Members

\$ 25 Students (Valid student ID and two
volunteer hours required)

Registration Deadline October is 25th

*All current and new members who register for
the conference by October 25th will be
eligible to win \$60 towards their conference fee
sponsored by Ripley's Aquarium*

Lodging is not included in conference fee. To
reserve a room at the Tides Hotel at Folly Beach
at the conference rate of \$137/night, call
843-588-6464 by October 1st and mention the
SC Marine Educators Association.

**REGISTRATION, FULL
AGENDA, AND MORE AT:**

www.scmarineed.org/conferences/

Questions?

843-953-9024

scmarineeducator@gmail.com

We Joined the Roux

By: Meika Samuel, Chapter Representative to NMEA

Twelve faithful South Carolinians traveled by car, air, and bus to “Sea The Gulf and Join the Roux” during the annual NMEA (National Marine Educators Association) conference in Mobile, AL on July 20 – 26. We experienced Southern hospitality at its best topped with an extra dose of *lagniappe* (a little something extra for free). Many of us are still unpacking Moon Pies, Tabasco sauce, Dixie Lilly grits, REPEL mosquito wipes, and Mardi Gras beads.

Workshop conference strands highlighted: *Teaching Across Diverse Perspectives, Combating Nature Deficit Disorder, Ocean Change, STEM, and Education Research and Evaluation*. Specific attention was given to NMEA’s efforts to increase membership and to grow the online presence through a revamped website and social media. One of our own SCMEA members Tweeted live throughout the conference. We enjoyed ice cream and ice cold Coca-Colas during a meet & greet with more than twenty exhibitors who shared invaluable learning resources, including posters, activity booklets, and curriculum guides. Evening activities included a Mardi Gras parade at Dauphin Island Sea Lab, Keynote Address and booksigning by acclaimed author Richard Louv at the historic Saenger Theatre, and a lively Banquet Dinner & Auction held on the beautiful campus of Spring Hill College.

One of the most poignant moments was a memorial service for Johnette Bosarge who was a vital component of NMEA and the host chapter SAME (Southern Association of Marine Educators).

As Chapter Representative, I was excited to attend my first full NMEA Board Meeting and help facilitate our state chapter meeting.

We have a great group of energetic and committed folks working at all levels to expand education, communication, and engagement in the marine sciences.

Why don’t you join us? SCMEA is hard at work preparing for our state conference “A Look into the Future of Ocean Sciences” on November 1 – 2 at Fort Johnson in Charleston, SC. Everyone is welcome to attend. Conferences are a great opportunity to learn content and strategies, network with colleagues (old and new), and a fun way to relax and recharge.

Funding is available for persons interested in attending conferences at both the national (www.marine-ed.org) and local (www.scmarineed.org) levels. Visit websites for more details.



SCMEA members at the NMEA Conference



Why Explore?

To understand, manage and protect the ocean and its resources, NOAA believes it is critical to support a systematic program of ocean exploration, using the best of ocean technology to explore, discover, inform, educate, and motivate. The NOAA Ship *Okeanos Explorer* is a valuable asset to help us understand more about the unknown ocean.



Top to bottom: A deepwater sea lily, NOAA OER's new ROV, ROV pilot, co-pilot and engineer on the *Okeanos Explorer*, the NOAA Ship *Okeanos Explorer*: America's Ship for Ocean Exploration. All images courtesy NOAA.



National Oceanic and Atmospheric Administration (NOAA)
Office of Ocean Exploration and Research
oceanexplorer.noaa.gov

NOAA Ship *Okeanos Explorer* Education Materials Collection
Part I of II

Why Do We Explore?

Professional Development

for Educators of Grades 5-12

Saturday, November 16, 2013

8:30 a.m. to 4:00 p.m.

In Partnership with and Hosted by
South Carolina Aquarium
Charleston, South Carolina

All life on Earth relies on the ocean— yet, the ocean is 95 percent unexplored, unknown and unseen by human eyes...

From seamounts of the western Pacific to tubeworms and methane hydrates in the Gulf of Mexico and deepwater canyons of the Atlantic, the NOAA Ship *Okeanos Explorer* is making waves in ocean science exploration. The *Okeanos Explorer Education Materials Collection* is designed to encourage educators and students to become personally involved with the voyages and discoveries of America's first Federal ship dedicated to Ocean Exploration. This workshop introduces Volume 1 of the *Okeanos Explorer Education Materials Collection: Why Do We Explore?*, guiding educators through lessons focused on modern reasons for ocean exploration, including Climate Change, Energy, Ocean Health and Human Health. All lessons are correlated to the Next Generation Science Standards and the Ocean Literacy Essential Principles and Fundamental Concepts.

Pre-registration is required and space is limited. This is the first of a two-part workshop series. The second will be offered in the spring, targeting ocean exploration strategies and state-of-the-art technologies. Educators who attend both full day workshops will receive a \$100 stipend. Each participant will receive Volume 1 of the *Okeanos Explorer Education Materials Collection, Why Do We Explore?*, a NOAA Ocean Exploration Certificate of Participation, continental breakfast, and lunch.

Please register by October 25, or call to see if space is available.

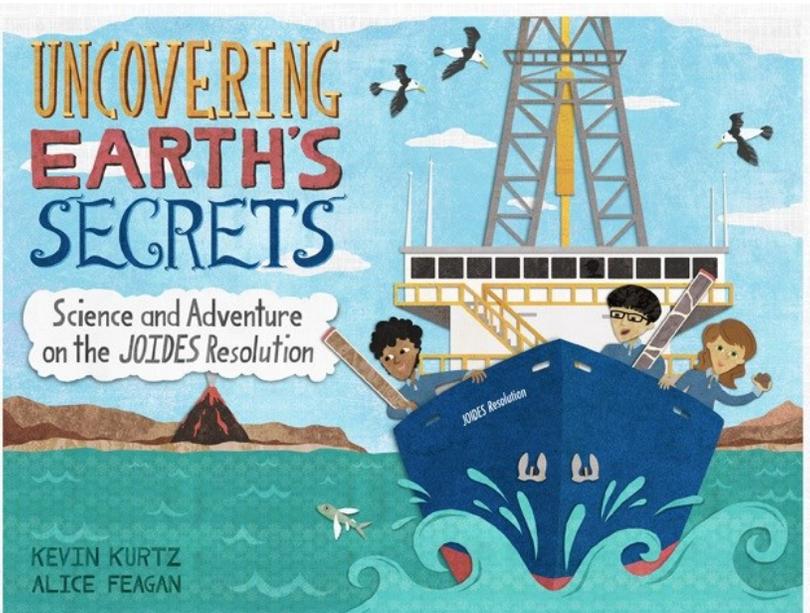
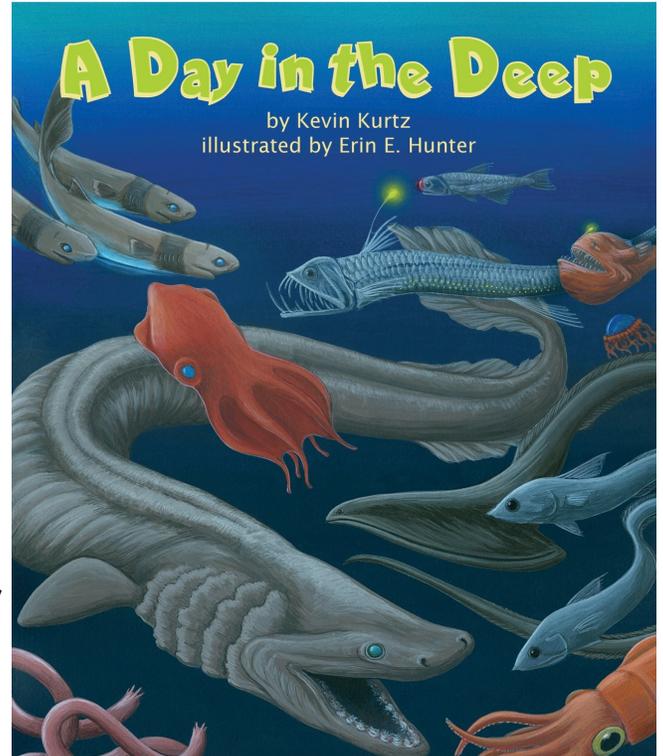
To register:
Email Jaime Thom at JThom@scaquarium.org
Or call Jaime at 843.579.8562

New Children's Books about the Deep Sea

by SCMEA member Kevin Kurtz

I am excited to have two new illustrated, nonfiction children's books about the deep sea releasing this year. Both books are for children in the 5 to 10 year old age range.

A Day in the Deep, publishing on September 10, is the third in the series about unique environments and their inhabitants that started with *A Day in the Salt Marsh*. *A Day in the Deep* takes readers on a voyage into the ocean that starts at the surface and then travels thousands of feet down where the high pressure, limited food and lack of light result in some amazing and fairly bizarre animals. Readers meet cookiecutter sharks, pelican eels, vampire squid, anglerfish, Atolla jellies and other unusual inhabitants of the deep, and also learn how marine snow, whale falls and the world's largest mass migration help these animals to survive. Like all my books, it is a rhyming, nonfiction book that is meant to be both educational and an enjoyable read-aloud experience. It is available for sale at Amazon.com and BN.com, or can be ordered by any bookstore. You can preview this book at the Sylvan Dell Publishing website: <http://www.sylvandellpublishing.com/bookpage.php?id=DayDeep>.



Uncovering Earth's Secrets is a new eBook I have written that is available for free! Written for a NSF grant, this book introduces reader to the R/V *JOIDES Resolution* and how drilling the ocean floor has allowed scientists on this ship to discover much about how the Earth works. The book is the first phase of a grant that hopefully will be further funded to expand the content, including turning the book into an interactive, educational app. You can download the book in its current version as a free PDF or iPad eBook by visiting: <http://joidesresolution.org/node/2998>.

Meeting School Standards. My publisher, Sylvan Dell, does a great job of making their books as teacher friendly as possible. On their website, you can find the



individual state science and Core Curriculum standards each book reaches for each grade level. Their website also has PDF packets specific to each book of classroom activities and resources that can be downloaded and printed for easy use, including worksheets that make use of the book's illustrations. The standards and other resources can be found at the *A Day in the Deep* web address printed above. (We're also hoping to have the same things for *Uncovering Earth's Secrets*, but we're not there yet.)

Your Students Can Meet the Author (i.e. Me). To further enhance the learning of my books, I regularly do school visits where I talk about the animals, habitats and science in my books (to help students reach science standards) and the process of writing nonfiction books (to help them reach Core Curriculum standards). I am planning to do live school visit tours in South Carolina in both the fall and spring, and will probably have those dates nailed down by the time you read this newsletter. I also do virtual author visits that allow me to talk to students from my home live, onscreen in the classroom using programs such as Skype. These can be scheduled at almost any time during the school year. The consistent feedback I receive from teachers and media specialists after my programs is both kinds of visits are inspiring to students and have a learning impact that teachers can draw upon throughout the school year. To learn more about scheduling either kind of school visit, go to my website <http://kevinkurtz.homestead.com> or email me at kevcurtz@gmail.com.

COASTAL CONCERNS TEACHER WORKSHOP

October 19, 2013

Join ecologists and local experts for a fascinating day, learning about issues impacting Georgia's coastal plants, and animals! Topics include declining pollinator populations and native plants, life history of bees, population decline of frogs and other amphibians, and alligator population study. This workshop is open to educators of all grade levels, and who are currently teaching in the formal or non-formal field.

LOCATION: University of Georgia Marine Extension, Brunswick GA

<https://maps.google.com/maps?ie=UTF-8&hl=en&tab=wl>

or <http://www.marex.uga.edu/advisory/Library/MAREXMap.PDF>

TIME: 8:30-5:00

COST: \$35, includes refreshments, lunch, and resource materials

Please register by October 4

If registration information is not included, please contact:

Georgia Graves at georgiabeachwalk@bellsouth.net or 912.266.2473



OCEAN NUMBER COUNTDOWN!

Match the correct # to the info on the right and have fun!

- 1 ___ km – approximate depth of the deepest part of the ocean (Marianas Trench)
- 2 remaining sea turtle species
- 3 depth zones in the ocean, gill slits in most sharks and major gyres
- 4 chambers in an octopus, squid, and sea turtle heart and types of ocean water movement
- 5 types of fins
- 6 # of sea turtles survive out of 1000
- 7 ways to name plankton
- 8 steps on the Beaufort wind scale
- 9 ___ to 12 fatalities caused by sharks per year in the world
- 10 meters down adds 1 atmosphere of pressure and phyla of marine animals
- 11 types of whales (basic)
- 12 arms on the sea star *Luidia senegalensis*

Answers on the last page of the newsletter

SCMEA Contacts

President:

Beth Thomas

North Inlet-Winyah Bay NERR
beth@belle.baruch.sc.edu

President Elect:

Blaik Pulley Keppler

SC DNR/ACE Basin NERR
kepplerb@dnr.sc.gov

Past President:

Elizabeth (EV) Bell

SC Sea Grant/COSEE SE
elizabeth.vernon@scseagrant.org

Membership/Treasurer:

Lindsay Thomas

North Inlet-Winyah Bay NERR
LThomas@horrycountyschools.net

Secretary:

Derenda Marshall

McDonald Elementary School
dmarshall9@sc.rr.com

Media Coordinator:

Julie Binz

SC DNR/ACE Basin NERR
binzj@dnr.sc.gov

Board of Directors:

Michelle Ashley

South Aiken High School
mjashley@live.com

Dr. Brandis Hartsell

Roper Mountain Science Center
bhartsel@greenville.k12.sc.us

Rachel Herold

Caw Caw Interpretive Center
rherold12@gmail.com

Sarah Piwinski

Lowcountry STEM Collaborative
spiwinski@gmail.com

Jaime Thom

South Carolina Aquarium
jthom@scaquarium.org

NMEA Representative:

Meika Samuel

South Carolina State Museum
meika.samuel@scmuseum.org

Scholarship/Awards:

Brian Thill

South Carolina Aquarium
bthill@scaquarium.org

SeaScripts Editor:

Kate Brown

South Carolina Aquarium
kbrown@scaquarium.org

OCEAN NUMBER COUNTDOWN

Answer Key

- 11 km – *approximate* depth of the deepest part of the ocean (Marianas Trench)
- 7 Remaining sea turtle species
- 5 depth zones in the ocean (epipelagic, mesopelagic, abyssopelagic, bathypelagic, and hadalpelagic), gill slits in most sharks and major gyres
- 3 chambers in an octopus, squid, and sea turtle heart and types of ocean water movement (waves, tides and currents)
- 6 types of fins
- 1 # of sea turtles survive out of 1000
- 4 ways to name plankton (phyto-, zoo-, holo-, mero-)
- 12 steps on the Beaufort wind scale
- 8 to 12 fatalities caused by sharks per year in the world
- 10 meters down adds 1 atmosphere of pressure and phyla of marine animals (Cnidaria, Porifera, Ctenophora, Mollusca, Annelida, Bryozoa, Arthropoda, Chaetognath, Echinodermata, Chordata)
- 2 types of whales (toothed and baleen)
- 9 arms on the sea star *Luidia senegalensis*

Would you like to visit the Galapagos Islands next summer?

Julie Cliff is leading her 9th group adventure to these fascinating islands June 12 - 22, 2014. The trip is limited to 16 participants. A 4 day pre-trip to the Amazon and a 7 day post-trip to Peru to visit Machu Picchu are also available. For more information or to

receive a detailed itinerary contact Julie at
juliecliff@yahoo.com
or 843-849-8367.



SeaScripts is published and distributed on a quarterly basis. The submission of articles and announcements to the editor (kbrown@scaquarium.org) is greatly appreciated and encouraged. To ensure that your submission is included in the proper issue, please observe the following deadlines:

Spring Issue - February 15th
Summer Issue - May 15th
Fall Issue - August 15th
Winter Issue - November 15th

Any materials that are not time sensitive may be saved and used in a future issue.