

THE MASTHEAD

WINTER 2009

Mid-Atlantic Marine Education Association

From the Captain's Quarters

Dear MAMEAns:

As the current MAMEA President, it is my pleasure to provide a recap of our Fall 2008 Conference, introduce our new Board and Committee members, and present key Association initiatives as we begin 2009.

I look forward to a productive year, with MAMEA membership as one of the best investments you make in your marine education professional development. I envision improved communications and interactions for MAMEA members, greater member awareness and use of MAMEA's benefits, and increased participation in MAMEA events and initiatives. Think we can do it? Yes, we can!



The Presidential Crab is passed from President David Christopher to President-elect Carol Hopper Brill at the 2008 Conference. Photo by John Chubb

Carol Hopper Brill
MAMEA President 2009

Looking Ahead: Key Initiatives for 2009

Improvements to MAMEA member communications, representation and benefits are at the core of the Board's initiatives for 2009. We want your MAMEA membership to be one of the most effective investments you make!

- **Our plans for improving MAMEA communications** are underway, with a new

electronic format for our newsletter and an exclusive e-mail members list that will help Board and Committee members keep you abreast of regional opportunities, news and MAMEA benefits in a more reliable and timely fashion. We are addressing problems with our old e-mail discussion list and looking for other ways for members to interact with one another electronically.

- **To bolster MAMEA's representation at the national NMEA level**, we will be revising our NMEA Representative assignment, making it a two-year position.
- **We will be offering greater support for MAMEA State Mini-Conferences**, helping State Reps with funding so they can offer you local opportunities at reasonable cost.

Members make MAMEA go round:

Our hardworking Board & Committee Members

MAMEA would not exist without the dedication of members who volunteer their expertise and energy to make the Association work for all of us. This year's incoming Board and Committee Chairs are building on the accomplishments and experience of our predecessors. We thank them all! Please welcome the Board and Committee members for 2009, a listing appears on page 2.

Paperless Communications Initiative:

A more useful MAMEA through electronic communications

In keeping with today's greener practices, MAMEA is moving toward more paperless communications.

- We reach you with this first electronic issue of *The Masthead* using a "MAMEA Communications E-mail List." The few members that lack reliable e-mail will receive a hard-copy of *The Masthead* via traditional mail.

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The MAMEA Board of Directors meets twice a year. If you are interested in serving on the Board, please visit <http://www.mamea.org> and click on "Board."

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Letter from the Editor

Greetings fellow MAMEAns and welcome to the first edition of the digital *Masthead*. I hope you are enjoying the newsletter so far. I have some big ideas for this benefit of membership, and if only half come to fruition, I'll call it a success! If, however, you have ideas, articles, features, et cetera that you think will improve *The Masthead*, please feel free to submit them. The digital format allows us to take advantage of utilities that were never an option with a hard-copy version, so think beyond the paragraph. I look forward to seeing what we can put together before the next great technology revolution and we are reading *The Masthead* via hologram or something! Thanks for reading and stay warm!

- Chris Petrone

To submit an activity, lesson plan, event, or other feature, please email the piece to petrone@vims.edu.

To become a member of NMEA:



Please visit <http://www.marine-ed.org>

About the Cover Ship

The goal is to feature a different Mid-Atlantic sailing ship on the cover of each *Masthead* issue.

This issue's ship is the Schooner *Virginia*. The original *Virginia* was completed in 1916 and was used as a pilot vessel despite it being the era of steam power. The then-pilot President William Rowe Boutwell insisted the *Virginia* be a sailing ship "to keep the pilots sharp sailors."

Today, the Schooner *Virginia* is based in Norfolk, VA and is used as an educational vessel, sailing the waters of the East Coast of North America conducting programs for children and adults. The *Virginia* website includes an interactive map, a complete history of the ship, crew profiles, and a ship blog. Visit the Schooner *Virginia* at <http://schoonervirginia.org>.

Photo courtesy of the Virginia Maritime Heritage Foundation

2008-2009 Election Summary

by David Christopher

MAMEA held its annual election on October 25 at the 2008 annual conference in Virginia Beach. This year's positions up for election were President-elect, Treasurer, Virginia Representative, and Washington DC Representative.

The winners of this year's election were as follows:

President-Elect – Tami Lunsford

Treasurer – Jackie Takacs

DC Representative – Bill Simpkins

VA Representative – Chris Witherspoon

Tami Lunsford was currently serving as the Delaware Representative. **John Lunsford** has been appointed to finish her term as **Delaware Representative** as she takes on the role of President-Elect.

NMEA Update

by David Christopher

2009 Annual Conference

The National Marine Education Association (NMEA) is holding its 2009 annual conference: One World Conserving One Ocean on June 29 – July 3, 2009. The conference will be held on the Asilomar Conference Grounds in Monterey, California. Asilomar is a tranquil ocean front retreat near the rocky shoreline of California's famed Monterey Peninsula and was the site of the very first NMEA national conference in 1976.

This year's conference will begin with optional, pre-conference field trips on Monday, June 29. Concurrent sessions will be held on Tuesday, June 30 and Wednesday, July 1. On Thursday, July 2, field based workshops will be held at several outstanding sites around the Monterey area. The conference will conclude with optional field trips on Friday, July 3. Participants can also look forward to an exhibitor's reception, the NMEA annual auction, and dinner at the Monterey Bay Aquarium.

NMEA is currently seeking proposals for those who would like to present at this year's conference. Deadline for concurrent session proposals is February 15. Conference registration and further details will be online soon so check <http://www.nmeaweb.org/> for updated information.

NMEA at NSTA

by David Christopher

MAMEA is excited to be a part of NMEA's "Whale of a Share-a-thon" which will be held at the National Science Teachers Association Annual Conference in New Orleans. The share-a-thon is scheduled for 8am to 9am on March 19, 2009. So stop by and say hello to your MAMEA Representatives and pick up some free marine education resources.

For those wanting to learn about marine education there will be an NMEA track of sessions following the Share-a-thon from 9am to 6pm (approximately) on March 19.

For more details on the NSTA Annual Conference, visit their website at <http://www.nsta.org>.

MAMEA Conference Announcement

When: 2-4 October, 2009

Where: University of Delaware College of Marine & Earth Studies campus, Lewes, DE

This year's conference will coincide with CMES' annual **Coast Day** event on Sunday the 4th.

Please plan to join us for a fun-filled, informative, and inspiring weekend of professional development and camaraderie. For those with tight budgets, several **live, virtual sessions** will be available for the first time!

If you are interested in helping with the event or for more information, please contact MAMEA President-elect Tami Lunsford, at tami.lunsford@gmail.com.

Conference scholarships are available!



More details coming soon.

Don't miss it!

CMES campus,
Lewes, DE.
Credit: Bob
Bowden, U. of
Delaware

Captain's Quarters (con. from page 1)

- This "Communications E-mail List" will be used only by MAMEA Board or Committee members for official Association communications. We will use this secure list to send important announcements about upcoming conferences, grant, scholarship, awards and other MAMEA business. This list will also help us facilitate nominations and our annual election of Board members.
- We will be updating our MAMEA website to make it more user-friendly, as well as easier to keep up-to-date and complete.
- We will be resetting the function of our MAMEA E-mail Discussion List. We aim to reduce cross-posting problems we have experienced in the past, while offering our regional members a means of sharing questions and advice with one another. You will receive an e-mail or phone call announcing the clearing of the List. Then, members can voluntarily sign-up for this Discussion List via MAMEA website.
- We will test the utility of a Facebook page as a way of linking MAMEA members. (see MAMEA TechCorner, page 12)

What have we done for you lately:

Are you taking advantage of your MAMEA benefits?

Like everyone else in these tight economic times, educators are looking for investments that bring the biggest bang for the buck. MAMEA fills the bill, offering many benefits for members. Do you know what they are? Sometimes the best opportunities are right in your own backyard. Don't miss out on your opportunity to benefit! MAMEA addresses your needs and all for just \$10 annually (calendar year basis, January - December). Take advantage of your membership benefits and encourage your education colleagues to join, too!

Need News?

Masthead Newsletter: Now in convenient electronic form, our newsletter contains news and listings of upcoming marine education events in member states, plus information, curricula, and resource materials.

Need Professional Development?

Annual Fall Conference: Each fall, members meet to exchange ideas, learn about new teaching techniques and current research, establish new partnerships, and renew old friendships. The conference is hosted by a different member state each year.

State Mini-Conferences: Each state representative hosts at least one conference, field trip or special aquatic event each year.

Need Funding?

Conference Scholarship Program: MAMEA's Paul Standish Scholarships support the attendance of members to the Annual Fall Conference. Last year, funds actually went unused!

Grant Program: Two grants each year support members' marine education projects for classroom or other audiences.

Need Recognition?

Awards Program: Two awards honor outstanding marine educators in the Mid-Atlantic region. Awardees are eligible for nomination for the National Marine Educators Association Awards.

Need interactions, advice or national involvement?

Interactions with fellow marine educators:

MAMEA members can connect with fellow classroom and informal educators via our voluntary e-mail discussion list. MAMEA members exchange information, make announcements, post inquiries, and keep current on regional events. And, a new MAMEA Facebook page provides additional means for exchanging ideas and news. A revitalized Mentorship Committee will be developing new ways to assist our members.

NMEA Membership Discount: Receive a discount on your annual National Marine Educators Association (NMEA) membership fees as an "Affiliate Member."



On the shoulders of giants...

by Carol Hopper Brill

On behalf of all MAMEA members, we acknowledge outgoing Board and Committee members for stellar service. These individuals have helped our Association make significant progress in recent years and they have represented our Mid-Atlantic region in NMEA's national arena.

- **John Chubb**, recently retired from the faculty of Broadwater Academy on Virginia's Eastern Shore, served as MAMEA Awards Co-chair for over eight years. In that time, he racked up a great record promoting the achievements of MAMEA educators at the national level. Since 2006, two of our MAMEA award winners have gone on to receive NMEA national awards. This reflects the strengths of their accomplishments, as well as John's careful documentation of their achievements in marine education.
- **Vicki Clark**, Education Coordinator for Virginia Sea Grant's Marine Extension Service at VIMS, has been active on the MAMEA Board for over 20 years. She served as MAMEA Secretary and President, as our NMEA Representative, and went on to contribute as NMEA President and Awards Committee Chair. This year, she steps down from Board service after many years as Chair of the MAMEA Standing Rules Committee.
- **David Christopher**, from the National Aquarium in Baltimore's Education Department, hadn't even completed his year as MAMEA President when he took on additional duties as MAMEA representative to NMEA. In 2008, he proposed several innovations that we hope to realize in 2009.
- **Adam Frederick**, our MAMEA president in 2007, moved to augment MAMEA benefits to members, including increased funding for mini-grants and conference scholarships. In 2008, while serving as Past-President, Adam was tapped as the new NMEA President, continuing a long history of MAMEA member activity in leadership at the national level.

It is clear that MAMEA members – through their service to our regional chapter and national association – are passionate about promoting marine science education. These individuals and all those who have preceded them have helped make MAMEA a vital organization. Their hard work, creativity, and dedication to service can inspire us all to follow in their footsteps.

MAMEA's strength lies in its members. You can make a difference, too! Help us keep our Association energized and active. Please consider involvement in MAMEA Board or Committees, present or volunteer at conferences, attend MAMEA events, share your expertise with fellow educators on-line. If you would like more information about contributing to MAMEA, please don't hesitate to contact me (chopper@vims.edu) or Past President David Christopher (dchristopher@aqua.org).

Fall 2008 Conference Wrap-Up

by Carol Hopper Brill, Chair 2008 MAMEA Conference Committee

We aim to have our MAMEA conferences provide one of the best professional development values of your year. Thanks to a great conference venue, hard-working Conference committee, and member participation, the Fall 2008 Conference – “Mid-Atlantic Coastal Environments: What Do We Know and How Do We Teach It?” – was a productive and rewarding experience.

Our attendees ranged from long-time members with up to 22 conferences under their belts to educators new to our Association. Of the gathering of nearly 80, roughly 30% were new members. Reaching both ends of experience is a testament to MAMEA's continued relevance among marine science educators, whether they are veterans or new to the field.

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2008 Conference Wrap-Up (con. from page 5)

We drew attendees from Virginia, North Carolina, Maryland, DC and Tennessee. And, our membership's employment diversity was well represented with: 32 classroom educators – elementary through college levels; 13 aquarium and museum educators; 18 agency and non-profit educators; and 5 educators with other affiliations.

The 2008 conference theme focused our attention to the status of Mid-Atlantic coastal environments. Our plenary speakers provided coverage regarding what we know and need to know, illustrating regional habitats, providing a status report and identifying crucial trends and topics.

Using natural history footage, filmmakers Michael Male and Judy Feith documented some of the Mid-Atlantic's diverse coastal environments. They also shared their plans for a new project that will make their excellent images more readily accessible to educators. Dr. Linda Schaffner, a benthic ecologist from the VA Institute of Marine Science (VIMS) provided a scientific status report on key habitats, showing us the kinds of data that regional researchers use to track changes in sensitive coastal systems. Finally, Dr. Roger Mann, Dean of Research at VIMS, addressed the potential impacts of climate change on natural resources in the Mid-Atlantic. Using Virginia as a case study, he explained how effects of climate change on uplands, watersheds, agriculture, species composition, human infrastructure and industry all can have impacts on the coastal region.

Members contributed thirteen concurrent presentations and seven poster and share-a-thon sessions, providing concrete examples of "how we teach" the important concepts and content of coastal environments to our diverse audiences. The fact that over 40% of Conference attendees were presenters illustrates MAMEA's important function in facilitating professional interactions. This level of participation and sharing speaks well of our members' professional activities. Several presenters were new to MAMEA and it was gratifying to know that these educators chose our conference as a venue for reporting their work. For brief descriptions of the presentations, see the MAMEA website at <http://www.mamea.org/2008Presenters.pdf>. Summaries of selected presentations appear on pages 7-9.

This year's fund-raiser was quite a success – raising over \$2,000 – thanks to a mix of auction items that included scientific equipment, teaching materials, gift items, food, and weekend getaways. Friendly competition, stoked by our imaginative auction team helped keep the crowd motivated. Proceeds from the auction support conference scholarships for members, to facilitate attendance at future MAMEA conferences.

The Conference also included several fieldtrips, coordinated by the Virginia Aquarium and Marine Science Center. Some members enjoyed a hard-hat tour of the *Restless Planet Gallery* – now under construction; others chose a front row seat for a training and feeding session with the harbor seals inside their Aquarium habitat; and a third group explored the beach at *First Landing State Park*, along the shores of Chesapeake Bay.



Educators measure water quality at a 2008 Conference session. Photo by Sarah McGuire



Auctioneer Chris Petrone takes bids on a Yellow Submarine cut out. Here, Chris is assisted by Jackie Takacs (left) and Kathy Fuller (right). Photo by Sarah McGuire

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Session Notes I

General Education

The following is a summary of Adam Frederick and Jackie Takacs' concurrent session at the 2008 MAMEA Conference in Virginia Beach. Adam and Jackie are Marine Education Specialists with Maryland Sea Grant.

The Eastern Oyster: Up Close and Personnel?

What do a German paleontologist/geologist and the Eastern oyster, *Crassostrea virginica*, have in common? It's muscular. What? *C. virginica* has a very small muscle that was once thought to be part of the larval foot known as the Quenstedt muscle named after Friedrich August von Quenstedt who's specialty was geology and the fossil record of the Jurassic period. After many years of attempting to get a good picture of this small and curious muscle we finally snapped a good photo and took some time to find out about it's namesake. Friedrich August von Quenstedt (known affectionately by the MDSG educators as "FAQ") was a very accomplished geologist in Germany who had a special interest in the ammonites of the Jurassic period and pterodactyls overlapping into the reptile world—hard to resist when studying the Jurassic.

The Oyster Anatomy Lab took shape in 1988 at Walkersville High School in Walkersville, MD, through the creativity of two science teachers Mr. Gary E. Hedges and Mr. J. Adam Frederick. Mr. Hedges (now with the MD Department of Education) sent in a proposal to NSTA for a presentation at the National Conference to be held in Seattle, WA, in 1989. The proposal was a surprise to Mr. Frederick who received a post card from NSTA stating "...your proposal *Which Way to the Oyster Bar* has been accepted for the NSTA conference in Seattle." He inquired with Hedges about the card and Hedges said, "yeah we need to get to work on what we're going to do." Needless to say the anatomy of the oyster was the main focus and the two teachers came up with a progression of how to approach the oyster anatomy from an external and internal point of view. The Seattle presentation was standing room only as over 100 participants dissected fresh oysters (obtained from a local market), snapped up free packets of Old Bay (obtained by Hedges), and eagerly took copies of the users guide that was put together. Needless to say this

was not the last presentation and the two "oyster guys" (as they were once called in the Denver airport) went on to present at NSTA conventions in Boston, Atlanta, Baltimore and Ocean City, MD.

In 1995 when Frederick took the position of Marine Education Specialist with Maryland Sea Grant a new incarnation of the oyster bar activity was about to take place. The world wide web was coming into its own and internet resources were at the beginning stages of an information explosion that would change the way people gathered information and found teaching resources. In 1997, Frederick started to work with Dr. Dan Jacobs at Maryland Sea Grant, IT Specialist and web programming expert, on ideas about how educational materials on the web could be more than point and click and read. The only questions were where to start and what to develop? Frederick suggested *The Which Way to the Oyster Bar* activity developed at his former high school and Frederick and Jacobs started to develop a web-based plan from the Hedges & Frederick users guide. During this time Maryland Sea Grant also hired Ms. Jackie Takacs as a Marine Agent to work out of the Chesapeake Biological Laboratory in Solomons, MD. Takacs had finished her MS degree at the Horn Point Laboratory and was closely involved with the day to day operations of the oyster hatchery, so her knowledge was called upon and she enthusiastically agreed to help develop the web sketch and educational materials. Hedges was called upon to take macro photos of the oyster anatomy since he was an avid photographer and original author and microscopic anatomical pictures were captured with an Olympus 35mm research stereoscope system by Frederick.



Eastern oyster (*Crassostrea virginica*) illustrating two pairs of gills. Picture taken with an Olympus C-8080 Wide Zoom digital camera set to Super Macro on a tripod. Photo by J. Adam Frederick

After many months of work and meetings about the progression of the activity from basic to complex, matching photos to text, and creating interactive elements, the Oyster Anatomy lab was launched in 1998. Since then, new lab activities, revisions, new photographs and continuous updates have resulted in a web resource that has attracted thousands, been downloaded in over 76 countries world-wide and received recognition from web resource reviews like NSTA SciLinks, Science Sphere, and The Bridge. So now in its 20th year of existence the Oyster Anatomy Lab still remains a popular resource and as download confirmation emails roll in from Florida Virtual HS students to Brazilian teachers, the team of Frederick, Hedges, Jacobs, and Takacs can only think about one thing — what should the next revision look like?!

For the complete oyster anatomy activity, visit <http://www.mdsg.umd.edu/issues/chesapeake/oysters/education/anatlab/index.htm>

Session Notes II

Informal Education

The following is a summary of Chris Witherspoon's concurrent session at the 2008 MAMEA Conference in Virginia Beach. Chris is the Director of Education at the Virginia Aquarium & Marine Science Center.

What's in Your Informal Program Toolbox?

How do you teach someone the steps for developing an informal program? To help our new educators understand the process, we use the concept of an "informal program toolbox."

The "tools" are the elements you use to build a program – for example, props, crafts, and experiments. A program may need just one tool, or it may combine several tools.

As you gain more experience in informal education, you'll add "tools" to your "toolbox" and learn which ones to select for a particular "job." To pull out the right tools for a program, you need to identify three things: 1) audience; 2) program subject and format; and 3) what you're comfortable doing.

Audience, subject, and format

Before you open your "toolbox," you should select the subject, define the format, and identify the anticipated

audience by age, knowledge level, and cultural and language background. Some programs will target specific audiences, such as story times for the "stroller brigade" or standards-based activities for school groups. Others, such as feeding programs at the aquariums, will be intended for whomever may be visiting your facility on a given day. Formats can vary from brief visitor interactions at a curiosity cart set up in the exhibit gallery to daylong summer camp experiences. Other possible formats include adult lecture series, announced programs at exhibits, demonstrations in special teaching spaces, and field experiences requiring pre-registration.

To ensure that your choice of audience, subject and format are appropriate, ask yourself the following: *Is the program "free-with-admission" and open to all comers, or are pre-registration and a fee required? If open to all comers, who will most likely attend? How many people can participate and how much time is needed? For what ages are the subject and potential activities appropriate? If the program is for a group, does it need to meet certain standards? How will the program accommodate guests who are visually or hearing impaired or who are confined to a wheelchair?*

What you're comfortable with

You should also think about what tools you are comfortable using. Don't lead a plant walk if you don't know the plants! Not into creepy crawlies? Then maybe you shouldn't offer to hold the tarantula for guests to see up close. Participants will notice your lack of confidence, which will distract attention from the positive aspects of your program. Focus on developing your skills with the tools you are most comfortable with. You can create a lot of programs with just a few basic and reliable "tools" in your program toolbox.

The tools in your informal program toolbox

The "tools" are the elements of your program. A program may consist of a single tool, or it may use several tools that work together to illustrate the subject matter. The following is a list of some of the "tools" and tips we use to build programs at the Virginia Aquarium:

- *Content discussion* – Every program has this element to some extent. The key is to determine how much is appropriate and how to blend it with hands-on and observational experiences.
- *Games* – These are great tools for keeping campers and other young audiences engaged in the subject. Always keep the rules simple.

- *Gallery tours* – A tour can be very structured, or an experienced educator can allow it to be driven by participant questions.
- *Experiments or demonstrations* – Experiments and demos must be easy to replicate if set up in an exhibit gallery for all comers. You can do more complex activities for pre-registered programs.
- *Stories and puppet shows* – Always review your book selection in advance to make sure it is appropriate for the selected age group and subject. Adding a puppet show will draw in older children.
- *Live animal experiences* – Touching or observing animals up close is a hit with any audience. Combine this tool with props and artifacts to illustrate adaptations and anatomy.
- *Crafts* – Doing crafts helps reinforce content and gives children a keepsake from their special experience at the Aquarium.
- *Nature walks and boat trips* – Always preview the area to identify points of interest and to estimate timing for the program.
- *Props and artifacts* – Using scale models, shells, teeth, and other props to illustrate concepts will make any program more interesting and effective.
- *Audience participation* – When a group is too large for hands-on activities, identify ways guests can participate from where they are standing or sitting.
- *Gimmicks* – Find something large (whale vertebra), odd (sturgeon skin and scales), or funny (singing lobster toy) that will attract attention and get guests to invest time in your program
- *Songs* – Children love to sing, but adults may be reluctant. Make up songs related to the subject that follow tunes the audience is already familiar with.

The benefits of applying this concept

Since we have started using the “tool and toolbox” concept, our new educators seem to grasp the development process more quickly than in the past. Our experienced educators have bought into the idea, which means we now have consistency in the program development process. As a quality check, we regularly ask, “Is there a better tool or another tool we should pull out for this program?” Finally, examining our imaginary toolboxes has made us better informal educators because it has encouraged self-assessment of individual development and presentation skills.

For more information, please contact Chris at cmwither@VirginiaAquarium.com or (757) 385-0270.

MAMEA Recognizes Ruth Gourley as 2008 Informal Marine Educator

by John Chubb

The Mid-Atlantic Marine Education Association presented its 2008 Informal Marine Educator Award to Ruth Gourley (nee: Schneider). Ruth is an education specialist at the North Carolina Aquarium at Fort Fisher. The only thing

“informal” about Ruth’s contributions to marine education is that the setting in which she

works is not a classroom. Beyond the thousands of aquarium

visitors with whom she interacts, she can nearly always be found mentoring and guiding volunteers, interns, new educators and teachers. Her engaging presentations show her infectious enthusiasm for all the critters of the sea.

Ruth began her marine education career at the University of Georgia under the guidance of Mare Timmons. After just two years working at the Ripley Aquarium of the Smokies, the sea drew her back to the coast and Fort Fisher. She has served MAMEA well as the North Carolina rep for three years during which she promoted mini-conferences and facilitated workshops. Ruth also organized the 2008 NMEA “Buddy Breakfasts.”

The 2008 MAMEA Informal Marine Educator Award recognizes Ruth’s natural curiosity and passion for marine education, the superior educational experiences she has created for everyone from little children through seasoned educators, her willingness to help others deliver marine education and her service to this organization.



Outgoing MAMEA President, David Christopher, and incoming President, Carol Hopper Brill present Ruth Gourley the 2008 Informal Education Award at the annual conference. Photo by John Chubb

To nominate a classroom teacher or an informal educator for a 2009 MAMEA award, please visit <http://www.mamea.org/awards.html> for the application, guidelines, and eligibility requirements.

Mid-Atlantic Marine Education Association

**Mid-Atlantic Marine Education Association
2009 Proposed Budget & Financial Standing**

Submitted by Jackie Takacs, Treasurer
October 24, 2008

Income Categories		Expense Categories	
Membership Dues:	\$ 1,500.00	Organizational Expenses	
		a. Accounting Services	\$ 500.00
		b. Bank Charges	25.00
		c. Legal Consultations	300.00
Annual Conference:		Operational Expenses	
a. Registration & Donations	500.00	a. Board Meeting	\$ 50.00
b. Auction	1,200.00	b. Office Supplies	100.00
		c. Past President Expenses	
		- NMEA mid-year meeting	500.00
		- NMEA Annual Conference	500.00
		d. Postage	100.00
		e. Renewal Notices	100.00
		f. Mini Conference support	1500.00
		MAMEA Objectives	
		a. Awards	
		- NMEA membership	70.00
		- Plaques	70.00
		b. Grants	2,000.00
		c. <i>Masthead</i>	200.00
		d. Presidents Discretionary	
		- Discretionary	100.00
		e. PS Scholarships	1,200.00
Total Proposed Income	\$3,200.00	Total Proposed Expenses	\$7,315.00

2009 MAMEA Financial Standing

Current checking account balance	=	\$13,931.63
Current CD balance	=	<u>\$35,172.73</u>
Current MAMEA Financial Standing	=	\$49,104.36
Expenses:		
2009 Proposed Budget		(\$ 4,115.00)
Additional Expenses		\$ <u>0.00</u>
Anticipated Year Ending Balance		\$44,989.36

To download the minutes from the October 24th MAMEA Board Meeting, please visit <http://www.mamea.org/mins/BoardOct08.pdf>.
To download the 2009 MAMEA budget, please visit <http://www.mamea.org/mins/Budget2009.pdf>.

MAMEA Grant 2008-2009

by Susan Haynes, Grants Chair

At the October conference Dawn Sherwood, from Highland Springs High School in Henrico County, was announced as the winner of this year's \$500 MAMEA Grant.

Dawn and her colleagues are developing a recycling education program on their high school campus with a goal of educating the student body about reducing, reusing, and recycling products that can harm the environment, especially the ocean. Students at HSHS will actively participate in cleaning up the environment, educating their peers, and hopefully educating their families as well. They plan to set up recycling bins at their school and actively encouraging everyone to recycle, sharing positive impact messages along the way.

Students at Dawn's school will:

- Participate in the International Coastal Cleanup/Clean Virginia Waterway – completed Sept. 20th
- Build the environmental club membership and get student involvement in recycling education
- Obtain a Newspaper Recycling Bin
- Have the environmental club create/post posters to educate student population on benefits of recycling
- Have students actively participate in recycling programs for plastic
- Hold an Earth Day activity
- Hold an End of School Year Paper Drive encouraging all teachers to recycle paper
- Hold a World Ocean Day w/activities
- Encourage the general public to recycle at sporting events
- Reduce, Reuse, Recycle!

Once the recycling plan is in full swing, Dawn and her colleagues plan to work toward increasing the number of recycling bins around school and to educate students at HSHS feeder schools about the dangers of marine pollution, encouraging reducing, reusing, and recycling at a younger age.

Through this work, Dawn is covering the following VA State Science Standards and Ocean Literacy Principles:

VA State Science Standards: ES. 7 d, e; ES. 9 e, f; ES. 11 b, e; BIO. 9 d

Ocean Literacy Essential Principles and Fundamental Concepts: OLEP 6. FC a, b, c, d, e, g.

Congratulations Dawn!

About the MAMEA Grant Program

The MAMEA Educational Project grant program provides funding to classroom teachers and other educators for marine and aquatic education projects.

Two \$1,000 grants are available annually. One for formal educators (classrooms, K-16) and one for informal educators (museum, aquarium, zoo, science center, government agency staff). Projects must focus on marine or aquatic topics. Applicants are encouraged to plan innovative projects that conform to the program structure outline found on the website. Any current MAMEA member with at least one year's membership may submit one proposal per year. Applications are due by September 21, 2009. The funding period is one year from the award date in October.

For more information, please visit <http://www.mamea.org/minigrant.html>.

Grant Project Update

by Dawn Sherwood

I want to thank MAMEA for my grant to encourage and educate about recycling in my high school as a way to help save our oceans. On September 20th, we had 5 faculty, 5 alumni/family, and 20+ students spend 3 hours picking up cigarettes butts, plastic, bottles, candy wrappers, and other junk totaling about 65 pounds; saving it all from going into the local drainage ditches and sewers that flow to the James River. We also used this cleanup event to promote our new Environmental Club which now has about 20 members. Both



students and faculty have made a habit of recycling paper and plastic in the classroom. We now recycle the copier paper boxes and the Environmental Club, a drama class, and three science classes have made over 120 signs to go on all the classroom receptacles. The environmental club regularly collects the paper and plastic bottles from each classroom and takes turns collecting recyclables during our lunch period. We have gotten a newspaper recycling bin in our parking lot and have a planned paper-drive in January. Currently, a local store allows us to bring in school-collected recyclables and use their bins or we take them home to our personal recycling bins. I have been thrilled with the community's response to recycling! **Thanks MAMEA!**

Program Spotlights

Marine Science Consortium Celebrates 40 Years of Getting Students Wet, Dirty, and Enlightened

by Matt Hess, Marine Science Consortium Elderhostel Coordinator

Wallops Island, Virginia - "This was (I do not exaggerate) the best and funniest field trip I have ever been on, not to mention learning about a month's worth of science classes in two days," wrote Hazel, a middle school student from Virginia's piedmont region, in a letter to the Marine Science Consortium.

Hazel is one of many students that come to the MSC for their three-day introduction to coastal ecology. Students of all ages - from fourth grade through college, and even into retirement - take advantage of the opportunities offered by this educational venue's Pre-College, College and Elderhostel programs. And they have been doing that now for forty years.

So how is the Consortium celebrating its fortieth birthday? The staff at the MSC are using this landmark as an opportunity to reflect on their accomplishments and prepare for the future. "We are adding to our curricula, creating new programs, raising new buildings and getting ready for our next 40!" says Amber Parker, executive director. This coming February, The Consortium breaks ground on a two-year project to replace the existing facilities.

The idea of newer, greener buildings transcends cosmetics; advanced labs and improved functionality promise opportunities to expand their educational scope beyond marine science and ecology. A reinvented curriculum will be taught in the new labs in the fall of 2009 and Elderhostel will debut two programs that fall and winter. But in the meantime, the educators at the MSC will continue to do what they do best: acquaint students like Hazel with jaw-dropping science.

continued on next page

Marine Science Consortium...

“Science is just systematic curiosity,” says Matt Hess, an instructor at The MSC. “I don’t know if you can teach curiosity, but it’s hard to go where we go and not come back with a load of questions based on what we saw. And isn’t that where it all starts?”

In the same letter, Hazel continues, “Before we left, I heard one of my classmates telling another that they now wanted to become a marine scientist when they grew up... it is so fun that science will turn from some boring old teacher’s subject into something real.” The Marine Science Consortium hopes that for another 40 years, its hands-on field experiences will give students of all ages an appreciation of science that, as Hazel said, makes it “real.”

For more information on the MSC, visit <http://www.msconsortium.org/>.

**Buoys in Your Backyard:
Using Real-Time Data in the Classroom**

by Ann Marie Chapman, NOAA @ Nauticus

NOAA’s growing Chesapeake Bay Interpretive Buoy System (CBIBS) offers watershed educators a unique perspective on the health of their waterways. Six buoys monitor water conditions in Virginia and Maryland from their locations on the James and Elizabeth Rivers and at the mouths of the Susquehanna, Rappahannock, Potomac and Patapsco Rivers.

Downloading real-time water quality data has never been easier. Educators can “visit” any buoy in the system via <http://www.buoybay.org> or by calling 877-BUOY-

BAY. Buoys monitor more than 20 different physical and biological characteristics of the water, including chlorophyll, turbidity, salinity, dissolved oxygen, and water and air temperatures.



The Jamestown buoy is located directly across from the historic settlement site. Credit: NOAA.

Interdisciplinary Initiative

The buoys, themselves, are testimonials to the power of interdisciplinary content. Each buoy not only monitors real-time data, but as a marker along the Captain John Smith National Historic Trail, tells the story of what happened to Smith as he explored the Bay. Students learn about Smith’s near-death experience at Stingray Point from the Rappahannock buoy; or his communications with several tribes along the Susquehanna from that river’s buoy. Many of Smith’s observations are the basis for definitions of the Bay’s historic condition. With oysters as large as dinner plates and fish so plentiful they could be caught with frying pans, it is easy to understand why the Chesapeake became home to England’s first permanent settlement in the New World.

Bringing It All Home

All of this material is made relevant to the classroom at <http://www.buoybay.org>. Here, educators can access buoy data as an Excel spreadsheet, explore a variety of graphing tools, and investigate temperature, turbidity and salinity. Interactive tools even allow students to visualize changes to the turbidity of the Bay over time using Bernie Fowler’s “sneaker index.”

CBIBS is also featured in the forthcoming “Chesapeake Exploration,” a Bay-focused curriculum. The three modules in Chesapeake Exploration ask students to analyze and interpret data using a variety of technologies. In the culminating activity, students develop a Habitat Suitability Index for striped bass, using the abiotic and biotic data they have collected and analyzed. Students use the actual tools employed by decision makers and resource managers throughout the watershed.

Watching the Bay Even When You Can’t See It

Innovative educators around the Bay are using CBIBS in their classrooms. Mary Baldwin College, in western Virginia, successfully applied for a NOAA Bay Watershed Education and Training grant to integrate CBIBS into Meaningful Watershed Educational Experiences. The program examines the relationships between the logging and farming cultures of western Virginia and the watermen culture of the Bay.

Mid-Atlantic Marine Education Association

Working closely with staff from the NOAA Chesapeake Bay Office, teachers and students in the upper Shenandoah and James River watersheds will build and place several Fixed Location Observation stations throughout their local watersheds. These stations will provide wireless data transmissions to students, who will then share their data with <http://www.buoybay.org> or National Geographic's FieldScope platform.

"Helping teachers and students understand the [Shenandoah] Valley's impact on the Bay may be a good step toward improvement of water quality in both locales," notes Dr. Tamra Willis, assistant professor in Mary Baldwin College's Master of Arts in Teaching Program. "Connecting land use impacts to the people of both regions may increase a feeling of empathy and stewardship and then to *action* to correct the problems."



The NOAA Chesapeake Bay Office pulls the Patapsco buoy out of the water each winter to prevent ice damage to the buoy's water quality sensors. Credit: NOAA.

Where Do We Go from Here?

While additional buoy deployments will be contingent on future Congressional appropriations, buoys could be placed to fill a number of critical observational gaps at locations up and down the Chesapeake Bay.

Additional materials and resources for educators will be available at <http://www.buoybay.org>; information on upcoming professional development opportunities at the NOAA Chesapeake Bay Office's Environmental Science Training Center will also be highlighted at that web site.

For more information on the summer 2009 Chesapeake Exploration educator training, contact Sarah McGuire at (804) 684-7878 or mcguire@vims.edu. For more information about the buoy system, please contact Kim Couranz, Communications Directors with the NOAA

Chesapeake Bay Office, at (410) 267-5673 or Kim.Couranz@noaa.gov.

MAMEA TechCorner

Through the MAMEA email list, you may have seen member Andrew Wilson introduce the MAMEA Facebook group. Via Scuttlebutt, the Bridge and NMEA's email list, you may have seen Chris Petrone's introduction to the Bridge Facebook page.

For those that are not familiar with Facebook, it is currently the largest and fastest growing social networking site on the world wide web. Linking friends, family, colleagues, and people of shared interests from all over the globe, Facebook is quickly outpacing e-mail as *the* way to keep in touch. Both the MAMEA *group* and Bridge Facebook *page* are hoping to: promote collegial sharing; foster friendships, partnerships and discussions; and provide outlets for great educational resources that can be used in the classroom and non-traditional settings.

Harnessing the "viral" value of Web 2.0, businesses, non-profits, social clubs and even high school student life offices are hoping to ride on the coattails of Facebook's popularity and reach more "customers" at absolutely no charge. The Bridge currently boasts over 140 Facebook "fans" with that number growing daily. Of these 140+ fans, 18% are over the age of 45; so that's no excuse for not getting on the Facebook train!

Is a Facebook group or page right for your course, club or program? Only you can decide!

To join the MAMEA Facebook group, just log in to your Facebook account and search for "MAMEA."

Species Spotlight

Editor's note: As indicated by the *Masthead* survey completed in late 2008, members are interested in learning more about the fauna and flora of the Mid-Atlantic. What a better way to start off this feature than with the MAMEA mascot itself, the blue crab? Some of the information below may be common knowledge for most, but we can always use refreshers! Enjoy.

Common names:
blue crab; Maryland blue crab; blue-claw crab; Atlantic blue crab

Scientific name:
Callinectes sapidus;
translation:
beautiful, savory swimmer



Photo by Carol Hopper Brill

Range: Western Atlantic Ocean from Nova Scotia to Argentina. It has also been introduced into both Asia and Europe

Field identification: Ten legs, including two rear swimmerets; Olive brown color with bright blue in parts; Females with bright orange or reddish claw tips; Males, immature and mature females can be identified according to the shape of their apron.

Interesting factoid: Female blue crabs migrate to the mouths of estuaries to spawn into high salinity waters. Once hatched, the larvae spend several weeks in the coastal ocean, at the mercy of the currents, where predators are limited. The larvae rely on northeast winds in order to be driven back into Mid-Atlantic estuaries, where they settle as juveniles.

Resources

- http://www.sms.si.edu/IRLspec/Callin_sapidu.htm
- Lippson and Lippson, [Life in the Chesapeake Bay](#).

North Carolina Job Opportunities

The NC Aquarium on Roanoke Island (located in the Outer Banks) has openings in its education department for Summer 2009! Opportunities include: Special Activities Instructor, Education Interns and a Seasonal Educator.



For more information, contact Dia Hitt at the Aquarium at (252) 473-3494 x236 or email Andrea.Hitt@ncmail.net.

Mid-Atlantic Research Update

Editor's note: Much like the *Species Spotlight* and several other features included in this edition of *The Masthead*, the 2008 survey indicated their was interest in learning more about the marine-related research taking place in the Mid-Atlantic region. Ask and you shall receive!

Dynamics of larval fish ingress from the coastal ocean into Chesapeake and Delaware Bays

A truly collaborative effort throughout the Mid-Atlantic, this project teams scientists up from the region's top marine research institutes, including the University of Delaware, the University of Maryland, and the Virginia Institute of Marine Science. The project aims to identify patterns in the abundance of fish larvae, spawned on the continental shelf, and transported into Chesapeake and Delaware Bays, and the timing in which this influx occurs. Additional key objectives are to determine the physical mechanisms that control this movement and whether these mechanisms cause variability in recruitment between the two estuaries, and from year to year.

Using state of the art ocean observing system data, fixed-site sampling, and research cruises, the scientists will not only identify patterns in transport, but also develop numerical models that will help forecast future recruitment and guide the management of commercially and recreationally important fish species,



Plankton sampling aboard the Research Vessel Hugh R. Sharp (seen on pg 3). Credit: Tammy Beeson

including Atlantic menhaden (*Brevoortia tyrannus*), Atlantic croaker (*Micropogonias undulatus*), and American eel (*Anguilla rostrata*).

For more information on this project, please visit http://northweb.hpl.umces.edu/Ingress/Larval_Ingress.htm.

2008 Conference Wrap-Up (con. from page 6)

Coordinating a MAMEA conference is a challenging, but rewarding endeavor. As the Conference Chair, I was thrilled by the positive response from veteran and new members alike. It couldn't have happened without the contributions of members, supportive institutions and businesses. Special thanks to Cape Henry Collegiate for hosting our gathering, their beautiful facilities and competent staff helped assure the success of our event. Thank you to the Virginia Aquarium for fieldtrips and other generous perks for all conference attendees. My sincerest appreciation to the conference sponsors and many donors to our annual auction – from individual members to local and national businesses, non-profits and State agencies. Finally, heartfelt thanks to the 2008 Conference Committee members for their creativity and hard work, for those who pitched in when we needed extra hands. For a list of all those who made the Conference possible, see the Conference Acknowledgements page on the MAMEA website.

The strength of each year's Conference depends on member activity, your willingness to share with your MAMEA colleagues and your support of the President-Elect and the Conference Committee. We look forward to another great conference in 2009 – best wishes to President-Elect Tami Lunsford. Be sure to see the Conference 2009 Preview on page 3. And, check out the State Mini-Conference announcements on pages 17-19.

February 21: Mid-Atlantic hosts three National Ocean Sciences Bowl regional competitions

by Carol Hopper Brill

On February 21, Mid-Atlantic schools will compete for regional honors in the National Ocean Sciences Bowl (NOSB[®]) competitions conducted in Maryland/DC, Virginia, and North Carolina.

NOSB regional competitions within the Mid-Atlantic region include:

- The **Chesapeake Bay Bowl**, with headquarters in Washington, DC. This contest draws schools from Maryland, the DC metropolitan area, as well as selected cities in Northern Virginia and Delaware. For information, contact Coordinator Staci Lewis at chesapeakebaybowl@hotmail.com.
- Virginia's Regional Competition is the **Blue Crab Bowl**. Coordinated by VA Sea Grant staff at the Virginia Institute of Marine Science and colleagues at Old Dominion University's Department of Ocean, Earth & Atmosphere, the Blue Crab Bowl is held either at the VIMS campus or at Old Dominion University. Visit the Bowl website at <http://www.vims.edu/bcb> or contact Carol Hopper Brill at chopper@vims.edu
- The University of North Carolina-Wilmington hosts the **Blue Heron Bowl** this year. Contact Coordinator Jennifer Dorton at dortonj@uncw.edu or phone 910-962-2777.

At each regional competition, up to sixteen teams are selected to participate. Contact the Regional Coordinators above for current information on teams competing in their respective Bowls. Visit the NOSB website at <http://www.nosb.org> for more information about the competition.



State Rep Reports

MARYLAND

Christine Grant

The **MAMEA Maryland Mini-Conference** and Teacher Overnight will be held on March 13th and 14th 2009 at the National Aquarium in Baltimore. The event begins at 5:00 P.M. on Friday and ends at 10:00 A.M. on Saturday. The theme of this year's Mini-Conference is: ***Impacts of Climate Change in Maryland***. The conference includes behind the scenes tours, dolphin show, 4D Immersion Theater, presentations, teaching materials, bag raffle tickets, evening snacks and beverages, breakfast, and sleeping in the vicinity of aquarium animals. The cost of the event is \$60.00 per person, \$50.00 if you are a MAMEA member. Scholarships are available! The cost includes a one-year membership to MAMEA. Registration is due by March 6, 2009. For more information and to register contact Central Reservations at the Aquarium (410) 576-3833 or email jdurkin@aqua.org.

The National Aquarium in Baltimore has recently closed the very successful traveling exhibit, *A Chorus of Frogs*. This spring, a new traveling exhibit, **Jellies**, will open. If you are in the Baltimore area, be sure to visit this exciting new exhibit.

For more opportunities located in Maryland, please see pages 20 and 21.

NORTH CAROLINA

Ruth Gourley

NC Marine Education Mini-Conference is 4:00 pm Friday, January 23- 12:00 pm Saturday, January 24, 2009!

This year's conference will be held at the NC Maritime Museum. Two day workshop is filled with educational resources from the area's marine education facilities. EE and teacher renewal credit available. Registration is required and the \$20.00 fee includes seafood dinner, snacks and breakfast. And a one year membership to the Mid-Atlantic Marine Education Association. Dorm style lodging is available at \$35.00/person. Call (252) 728-7317 to register and for more information. Hurry, registration closed January 12, 2009.

Linda Ferragut, member of MAMEA, reports that her Columbia 26 sailboat, an asset of Seavoyage Sciences International, LLC, has been moved to an area marina for further re-fits. Anyone interested in knowing about future plans for marine research on a small coastal vessel, feel free to contact Linda at (252) 354-6513, or P.O. Box 4412, Emerald Isle, NC 28594. LJF6513@yahoo.com

North Carolina Aquariums

- The North Carolina Aquarium on Roanoke Island is opening a brand new exhibit "**Oceans Revealed: Power of the Planet**" in Spring 2009. Oceans Revealed is an interactive exhibit that will feature Science on a Sphere, a nearly 6 foot spherical Earth that shows animated, real time scientific data. This dynamic Earth will bring cutting edge science to Aquarium visitors while allowing them to dive deep into the ocean, ride the oceans currents, track powerful storms, and explore the Planet in a whole new way. Join the Aquarium on our journey into the Power of the Planet!

continued on next page

N.C. Aquariums

- **“Scales and Tails”**

March 7-8, 2009 at the NC Aquarium at Fort Fisher. Special exhibits of all things scaly and slimy! Please join us in celebrating these magnificent animals from the reptile and amphibian groups. Get up close to local and exotic species. Come in for the fun!

- **"Mating, Dating & Romance in the Animal Kingdom"**

February 14th at 7:30 pm, the North Carolina Aquarium at Pine Knoll Shores will host an intimate and educational event for animal loving couples. Get a chance to find out all the naughty and nice things animals do to attract and keep a mate! Wow your date with something new and different this Valentine's Day! Laughter, games, dessert and coffee provided. Cost is \$25.00 per couple, space is limited, call (252) 247-4003 to register.

*Adults only please!

North Carolina Maritime Museum

Sunday, February 15, from 12:00 to 4:00 p.m.

Prior to the Ocean Awareness Day on the 16th, explore the winter estuary on a nature hike at the Rachel Carson Reserve (weather dependent). Cost is \$5 for the ferry ride. Counts 0.4 hours toward completion of CEU credit.

Advance registration is required, and class size is limited. To register, contact Allison Besch at allison.besch@ncmail.net, or (252) 728-7317. Direct questions to Allison or to Miriam Sutton at msutt@coastalnet.com.

February 16, 2009, 9:00 a.m. to 3:00 p.m.

Ocean Awareness Day - "Ocean Exploration with Real Scientific Data"

No registration fee. Co-sponsored by the Center for Ocean Sciences Education Excellence SouthEast (COSEE SouthEast), serving educators in NC, SC, and GA.

Discover how to tap into ongoing scientific data collection and bring it into the classroom. Activities include presentations by Dr. Hans Paerl on the local Ferry Mon project, and Jennifer Dorton from UNCW's Center for Marine Sciences. Tour the museum's exhibit hall and watercraft center. The six-hour workshop, lunch, door prizes, and associated resources are provided free of charge and can be submitted for 0.6 CEU credit.

Thursday Feb. 19 "All About the Oyster"

The 1:30 PM workshop discusses the biology of the important mollusk with oysters to taste. Cost is \$10.

At 3PM, join NC Heritage Tourism Officer Connie Mason for a free program on the oyster through history, stories, and song.

Saturday Feb. 21 "Family Day: Deep Sea Creatures"

Activities and displays for families and children. Free event, group reservations required. 1-4 PM.

Saturday, April 11, 2009: Opening of the **"Traditional NC Watercrafts"** temporary exhibit that will be up through Sept. 28, 2009.

VIRGINIA

Chris Witherspoon

2009 Virginia MAMEA Mini-Conference
Saturday, February 28, 2009 8:30 a.m. to 4 p.m.

Getting Conservation into the Classroom
Virginia Aquarium & Marine Science Center, Virginia Beach

Join us for a day of discussion, hands-on activity, and outdoor exploration as we share strategies for getting conservation into the classroom curriculum.



Activities include:

Guest Speaker - Susan Barco, Virginia Aquarium Senior Scientist and Stranding Response Coordinator

Susan will explain how she analyzes stranding data to develop questions and research projects that address conservation issues related to marine mammals and sea turtles. You'll receive stranding response data sets that can be used in your classroom.

Hands-On Activities for the Classroom

Participate in a variety of hands-on activities that illustrate concepts related to beaches, marshes, and other marine science topics. Take home instructions to help you set up these activities on your own.

Getting the Most Out of an Aquarium or Science Center Visit

Aquarium staff will share tips for developing custom scavenger hunts and worksheets for your students to use on a field trip. You'll put what you learn to use while touring the Aquarium's exhibit areas and also take home examples developed by Aquarium educators.

Outdoor Exploration

Come dressed to explore the marsh and forest for the "No Teacher Left Inside" portion of the workshop!

Share Your Ideas!

Participate in a round table discussion by sharing a conservation-based activity that has worked well in your classroom.

Registration Information:

\$25 for MAMEA members; \$35 for non-members (includes MAMEA membership)

To register, call the Virginia Aquarium Guest Services office at 757-385-0300. Registration deadline – Friday, February 20 at 4:30 p.m.

Ask us about nearby hotel options and whale watching opportunities! Lunch and morning refreshments included.



CHESAPEAKE TEACHER RESEARCH FELLOWSHIP PROGRAM

- When:** June 21, 2009 to August 7, 2009
- * June 21-25, 2009 – Residential Watershed Workshop
 - * June 29, 2009 – August 7, 2009 – Research Fellowship Experience
- November 14, 2009 – Follow-up Workshop
February 20, 2010 – Follow-up Workshop
April 17, 2010 - Classroom Connections Workshop
- Where:** One of the four University of Maryland science research facilities
- Appalachian Laboratory, Frostburg MD
Terrestrial & Freshwater Ecology, Landscape Ecology & Geospatial Tools, Conservation Biology
 - Center of Marine Biotechnology, Baltimore MD
Harmful Algal Blooms, Oyster Ecology & Disease, Bioremediation, Aquaculture
 - Chesapeake Biological Laboratory, Solomons Island MD
Fisheries, Environmental Chemistry & Toxicology, Ecosystem Studies and Restoration Science
 - Horn Point Laboratory, Cambridge MD
Oceanography, Marine Macrophyte & Wetland Ecology, Nutrient Dynamics, Aquaculture
- Who:** Middle and High School Teachers in Chesapeake Bay watershed
(Maryland, Virginia, West Virginia, Pennsylvania, New York, Delaware & District of Columbia)

*Interested in Joining a Research Team to Sharpen your Inquiry Skills?
Want Authentic Science Relevant to Your Students?*

In this exciting immersion program, fellows learn about Chesapeake research from its headwaters to the Bay in a weeklong residential watershed workshop. After, they will then take up residence at one of four University of Maryland premier research facilities working alongside scientists on projects that include wetland restoration, oyster and fish aquaculture, nutrient dynamics, and marine pollution. Fellows will develop classroom lessons that build on their research experience. During the following academic year, these lessons will be refined, tested with students and shared with colleagues at the ESEP Environmental Science Research – Classroom Connections workshop. Fellows will increase their scientific inquiry skills and knowledge of Chesapeake Bay watershed science, as well as receive a stipend, classroom supplies, and some travel expenses.

APPLICATIONS DUE MARCH 20, 2009

Applicants will be notified by April 3, 2009

Applications and eligibility information are available at

<http://www.esep.umces.edu>

OR by contacting

Jackie Takacs at 410.326.7356 or takacs@cbl.umces.edu



Environmental Science Research— Classroom Connections

Bringing University research to teachers by teachers

Environmental Science Education Partnership
in collaboration with
The National Aquarium in Baltimore

Teachers from the Chesapeake Teacher Research Fellowship (CTRF) Program will present their fellowship experiences and ideas for connecting University research to the classroom through “hands-on” activities and 5E lessons. Topics will include a range of content including invasive species to molecular biology.

Location

The Center of Marine Biotechnology (COMB)
&
The National Aquarium in Baltimore (NAIB)
Baltimore, MD

When

April 25, 2009
9 AM – 3 PM

Registration

A registration fee of \$15 will help defer costs for the program. Participation is limited to the first 25 paid registrations received by Friday April 10, 2009. Lunch included.

For more information about the workshop and the CTRF Program please visit-
<http://www.esep.umces.edu>.



Resource Library

- The **MetEd (Meteorology Education and Training)** website was established to provide education and training resources to benefit the operational forecaster community, university atmospheric scientists and students, and anyone interested in learning more deeply about meteorology and weather forecasting topics. The site houses online learning materials, as well as information on other training and education activities, such as classroom courses and teletraining, and links to other related resources. <http://www.meted.ucar.edu/>
- **Vernier Technology Awards** - The Vernier/NSTA Technology Awards promote the innovative use of data-collection technology using a computer, graphing calculator, or other handheld in the science classroom. Seven \$3,000 awards are available. Each award will consist of \$1,000 in cash for the teacher, \$1,000 in Vernier Products, and up to \$1,000 toward expenses to attend the 2008 NSTA National Convention. Current teachers of science in grades K-16 are eligible. <http://www.vernier.com/grants/nsta.html>
- **Nickelodeon's The Big Green Help** - Nick's Big Green help is all about helping you find simple, positive ways to help protect the Earth every day. This site contains games, videos and daily green tips geared specifically for kids! <http://www.nick.com/minisites/biggreen/index.jhtml?adfree=true&requestid=11562#main>
- **Climate Change in Pennsylvania: Impacts and Solutions for the Keystone State** - A new report by the Union of Concerned Scientists and a group of independent scientists and economists provides an in-depth look at the potential consequences of climate change in Pennsylvania and the opportunities available today to reduce heat-trapping emissions in the state. "Climate Change in Pennsylvania: Impacts and Solutions for the Keystone State" shows that without strong action to reduce emissions, Pennsylvania could face dramatic changes from increases in the number of extreme heat days to a decline in economically important trees species. http://www.ucsusa.org/global_warming/science_and_impacts/impacts/climate-change-pa.html
- **2009 is the "Year of Science"** - NOAA will be producing a DVD of earth and life science activities for classroom teachers, which includes marine-related lesson plans, videos, etc. Find out more at the website for the Coalition on the Public Understanding of Science. <http://www.copusproject.org>
- **Virginia Sea Grant Strategic Planning** - As potential stakeholders in the Virginia Sea Grant program, your input is requested as VASG prepares its strategic plan. This document will guide the program as it creates its five year proposal. As classroom and informal educators, you are an important audience for the VASG program, particularly the education team. So make your voice heard! First, please read the handout found at <http://www.vims.edu/adv/docs/planning4pg.pdf> and then complete the brief survey found at http://web.vims.edu/adv/stratplan_survey.html. To follow the VASG strategic planning process, please visit <http://vasgstratplan.wordpress.com/category/visitors/>. Virginia Sea Grant thanks you for your feedback!

*Reader's Review

So what did you think of the new *Masthead*? Please visit http://www.surveymonkey.com/s.aspx?sm=2bcyOpqdd0zoUh83VJVT4fw_3d_3d and take a very brief survey. Did you not get your program or lesson plan in this issue? Submit today for the spring issue! In the meantime, stay tuned to the MAMEA website and Facebook group for the latest news, information, and networking opportunities from the **greatest marine education association in the Mid-Atlantic!**

