From the Captain’s Quarters

Greetings MAMEA family,

I am sure you will agree this has been a busy, but important time for educators, especially environmental and marine educators. We had an enriching and inspiring annual conference in Dewey Beach, and are on a journey that will end with a brand new strategic plan for our organization—something we have not had since 2004.

Funding for some of our most involved member organizations—Sea Grant, the National Estuarine Research Reserve System (NERRS), NOAA, and the EPA—are all in jeopardy. Now, more than ever, members need collegial support, and as we form our new strategic plan, we need to think critically about the role MAMEA has in our region’s education system, and the role YOU have in MAMEA.

As we move into “field season,” we must continue to do what we do best—educate. Whether you are in the classroom working with sixth graders, or in a marsh with lifelong learners, teaching about the ocean, rivers, creeks, lakes, and the watersheds that surround them, is vitally important right now. Use the best science available, communicate the science however works best for your audience, and continue to fight the good fight for our environment.

Be proud of what you do, and keep up the great work.

Christopher Petrone
MAMEA President
Over 80 new and returning members from around the region—including New Jersey, Pennsylvania, and Tennessee—gathered in Dewey Beach, Delaware, November 4-6, for the 2016 MAMEA Annual Conference. This was the first annual conference in Delaware since 2009, when we met in Lewes. While Dewey Beach is typically known for its nightlife (which did not disappoint either), MAMEA members rocked this small beach town during the daylight hours too.

The conference unofficially kicked off with the MAMEA Board’s annual meeting, beginning at lunch time Friday, November 4. Each member of the executive committee, state reps, and committee chairs all provided updates from their respective wheelhouses and discussed old and new business, including strategic planning, adding At-Large positions to the Board, increasing participation in MAMEA award and grant programs, and youth engagement. Minutes from this meeting are available from our Secretary, Carol Hopper Brill, and will be on the MAMEA website under Board Toolkit.

The conference officially kicked off with a Friday evening reception, and something a little different. MAMEA Past-President Dawn Sherwood facilitated a group BreakoutEDU game, where participants had to use clues to break into a locked box. Groups worked together and all successfully broke out (in)! Dawn, and educators around the country, are using BreakoutEDU to “gamify” their classrooms and better engage their students. The game was followed by a fantastic presentation on coastal flooding and storm surge from Dr. Dan Leathers, University of Delaware researcher and Delaware State Climatologist.

Saturday began with a keynote presentation by Dr. Jack Puleo from the University of Delaware, on his ongoing surf zone injury project and related classroom outreach initiatives. The day continued with 16 concurrent sessions featuring information on fisheries, climate change and ocean acidification, underwater robotics, program design, technology, citizen science, ghost pots, mini-boats, and so much more.

During the annual business meeting, we awarded the two MAMEA teaching awards. The classroom teacher award went to Kathy Richardson from Virginia, while the informal award went to Kathy Fuller from Maryland—two spectacular educators named Kathy!
2016 MAMEA Conference Summary (cont'd.)

We received an amazing keynote on student diversity and underwater exploration from Dr. Rosa Leon-Zayas, a UD post-doctoral student, who will be full-time teaching faculty at Willamette University in Salem, Oregon, beginning this summer!

The Saturday evening auctions did not disappoint in entertainment or fundraising, hosted by our rookie auctioneer, Scott Shatto, from the National Aquarium.

The conference wrapped up on Sunday with the New Board meeting and a (windy) field trip on Rehoboth Bay, hosted by the Delaware Center for the Inland Bays.

We left Dewey Beach inspired, educated, networked, and expecting great things from the 2017 MAMEA conference, which will be held November 3-5 in Ocean City, Maryland!

If you are interested in watching the three keynotes, they were broadcast via Facebook Live, and are available at https://www.facebook.com/pg/teachmamea/videos/.

2017 MAMEA Conference - Ocean City, MD

SAVE THE DATE!

The 2017 MAMEA conference will be held November 3-5, 2017 in Ocean City, Maryland at the Princess Royale Hotel.

Stay tuned for more information!
2017 Board Elections & By-Laws Change

Current Candidates and Call for Nominations
The MAMEA Nominations Chair is pleased to announce the following candidates for the 2017/18 Board:

President-Elect: Carrie Bateman Carlin and Rachel Riesbeck
Secretary: Carol Hopper Brill and Rachel Riesbeck
Maryland Representative: Christina Romano and Evan Beatty
North Carolina Representative: Ruth Gourley and Andy Gould

MAMEA welcomes the addition of other candidates who can offer expertise to advance our association and objectives of promoting marine and aquatic literacy. For a summary of Board officer duties, see the outlines on the MAMEA website at: www.mamea.org/board.html. Additional nominations must be received on or before May 11, 2017. Nominees must be MAMEA members in good standing (current dues paid) at the time the nomination is received. To nominate someone, please send the following information to Nominations Chair Andy Gould (andy.gould@ncaquariums.com):

1) Nominee’s name and contact information (including e-mail)
2) Office for which s/he is being nominated.

MAMEA By-Laws Change
Also, members will be asked to consider a change to our Association’s By-Laws that would allow the addition of At-Large Board Members. Please, review the proposed changes outlined in the email attachment that was sent to all members on April 10th so that you are informed prior to voting.

Electronic Voting Opens Friday, May 12th
MAMEA’s Board election will be conducted electronically, voting will open May 12. We encourage all MAMEA members to exercise their right to vote by completing and returning the electronic ballot they will receive via e-mail on May 12. Voting will be open from May 12 to June 12. New officers for 2017/18 will be announced at the MAMEA Chapter Meeting at the NMEA Conference (June 28), and then take office at the MAMEA annual conference in November 2017.

Questions about the nomination procedure?
Contact the Nominations Chair, Andy Gould, at andy.gould@ncaquariums.com.

Membership Update

It’s time to renew your MAMEA membership! MAMEA annual memberships run from January 1 - December 31 each year. If you have not yet renewed your membership in 2017, please take a moment to do so at: http://www.mamea.org/membform.html

MAMEA members are eligible for fantastic benefits including $1,000 grants, MAMEA awards, conference scholarships, a discount for NMEA membership and more. Currently, we have 119 members with the following state breakdown:

Washington DC - 4
Delaware - 13
Maryland - 31
North Carolina - 17
Virginia - 49
Other states - 5

RENEW TODAY!
NMEA Representative Report

Kathy Fuller
MAMEA Chapter Representative to NMEA

NMEA at NSTA

The NMEA Mid-Year Board Meeting was held at the NSTA National Conference on Science Education in Los Angeles, California on March 29th. On March 30th, NMEA hosted a track of marine education related sessions that was kicked off with a Whale of a Share-a-Thon. A great week of surf, sun, and science!

NMEA 2017 Conference Registration Now Open!

Make sure your calendars are marked for the 2017 NMEA conference in Charleston, South Carolina June 25-29. Visit the NMEA website to get up to date information on the conference:

www.marine-ed.org/page/2017conference

See you in Charleston!

Save the Date for the 2017 Osprey Banding - July 1, 2017

The 2017 Osprey Banding opportunity at Patuxent River Park in Upper Marlboro, MD will be held on Saturday, July 1st. More information will be coming soon. As an official NMEA event, participants will need to be current members to NMEA. Remember that MAMEA members get a discount as a Chapter Affiliate to NMEA. Contact the MAMEA Membership Secretary or NMEA Chapter Representative to take advantage of this membership discount.

See you on the river!
Green Eggs and Sand
May 12-14, 2017 (Wallops Island, VA) OR June 2-4, 2017 (Stone Harbor, NJ)

What’s included: An innovative workshop experience and set of curriculum modules designed to explore the Atlantic Coast horseshoe crab/shorebird phenomenon and management controversy. For more information, visit http://www.dnrec.delaware.gov/coastal/DNERR/Pages/DNERTeacherDevelopment.aspx or contact Maggie Pletta (Margaret.Pletta@state.de.us).

Renewable Energy and Energy Efficiency
July 2017 (Day TBD) University of Delaware Hugh R. Sharp Campus, Lewes, DE

What’s included: Content, resources, and hands-on learning about alternative energy, in the shadow of UD’s 2-megawatt wind turbine. Participants will learn from alternative energy scientists, build model wind turbines, explore solar arrays, and experiment with DIY solar ovens and thermal imaging. Clock hours will be awarded. Primary audience: Delaware and Maryland teachers and informal educators Cost: Free! Max. 15 participants For more information, visit www.deseagrant.org/education-opportunities or contact Chris Petrone (petrone@udel.edu).

Teachers on the Estuary (TOTE): Delaware Bay Discovery
August 1-3, 2017 St. Jones Reserve, Dover, DE

Join the Delaware National Estuarine Research Reserve for an exciting, hands-on, in the field, 3-day workshop focused on Delaware Bay and its surrounding watershed. Field studies, classroom activities and scientific presentations will make this a workshop you won’t want to miss! Space is limited! Audience: Formal (gr 4-12) and Informal Educators For more information, visit http://www.dnrec.delaware.gov/coastal/DNERR/Pages/DNERTeacherDevelopment.aspx or contact Maggie Pletta (Margaret.Pletta@state.de.us).

Robotics and Photogrammetry
August 8-10, 2017 University of Delaware Hugh R. Sharp Campus, Lewes, DE

What’s included: Scientist are now using a host of autonomous and semi-autonomous systems to collect data on land, in the air, and in the water. One Sea Grant project is measuring changes to beaches due to coastal storms, using aerial drones, autonomous kayaks, and other robotics. Data collected from these systems are then used to evaluate changes in beach width and slope, sediment structure, and vegetation. Learn how these systems operate and help the researchers collect more data. Clock hours will be awarded. Primary audience: Middle and high school teachers and informal educators from Delaware (others will be considered) Cost: Free! Max. 15 participants For more information, visit www.deseagrant.org/education-opportunities or contact Chris Petrone (petrone@udel.edu).

40th Annual Coast Day
October 1, 2017 University of Delaware Hugh R. Sharp Campus, Lewes, DE

Coast Day highlights how UD scientists, staff, and students are improving understanding of ocean environments and serving coastal communities. Coast Day attendees can interact with researchers, tour ships, try hands-on activities, and attend presentations on a range of topics. Family-friendly activities include an event-wide treasure hunt for answers to questions about the environment and Coast Day exhibits. Children can meet sea-dwelling animals such as horseshoe crabs and dogfish sharks at the critter touch tanks. Everyone can enjoy live music, vendor displays, and seafood favorites showcased by local chefs at the Crab Cake Cook-Off and the Seafood Chowder Challenge. This year’s event will feature a tour of the new Robotic Discovery Lab, where you will see ROVs, AUVs, drones, and a wealth of high-tech equipment. Cost: Free For more information, visit www.decoastday.org
Congratulations are in order!

* Jenny Smallwood, School & Youth Programs Educator at the Virginia Aquarium and MAMEA member, has been selected to represent the Virginia Aquarium at NOAA’s Teacher at Sea program!

* Long-time MAMEA member Judy Gwartzney-Green was honored as the 2017 Teacher of the Year at Page Middle School in Gloucester County, Virginia. Ms. Gwartzney-Green teaches 7th grade Life Science. This well-deserved recognition highlights Judy’s commitment to continually expanding her skills and content knowledge through professional development, her role as a generous mentor to young scientists as well as fellow educators, her dedication to inspiring students of all backgrounds and abilities, and her exemplary professionalism.

Virginia Scientists & Educators Alliance (VA SEA) Hosts Successful Lesson Plan Expo

Educators from the Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERRVA) and the Virginia Institute of Marine Science (VIMS) Marine Advisory Program recently invited Virginia’s middle and high school science teachers to the first VA SEA Lesson Plan Expo featuring classroom-tested lesson plans developed by science graduate students from across the Commonwealth. The expo, patterned after North Carolina’s successful SciREN program, was held on Friday, April 21st from 5-8pm.

The Expo, held in Watermen’s Hall at VIMS in Gloucester Point offered:

* 17 classroom-tested lesson plans based on real research and demonstrated by the graduate student developers
* Displays of teacher resources from CBNERR and VIMS
* An open house style format that included pizza and networking
* VA SEA resource thumb drive to the first 100 registrants

Reflecting on Practice (ROP)
Professional Learning Program for Informal Science Educators

Reflecting on Practice engages informal educators in discussions about, reflections on, and applications of research and theory on learning and teaching science. The ideas and tasks in the program create and strengthen a shared knowledge base and professional language among educators within an institution. It makes public the practices of all educators through greater understanding of, and reflections on, their beliefs, goals, and actions. For more information or to learn how to get involved, contact ROP Regional Leader Karen Burns of the Virginia Aquarium (kpburns@virginiaaquaum.com).
Build your staff members’ capacity in informal science education.

*Reflecting on Practice™* engages informal educators in discussions about, reflections on, and applications of research and theory on learning and teaching science. The ideas and tasks in the program create and strengthen a shared knowledge base and professional language among educators within an institution. It makes public the practices of all educators through greater understanding of, and reflections on, their beliefs, goals, and actions.

### 2017 Reflecting on Practice Coaching Workshops™

- January 23 - 25: Savannah, GA
- February 21 - 23: Long Beach, CA
- February 21 - 23: Port Aransas, TX
- February 22 - 23: Solomons, MD
- March 2 - 3: Indianapolis, IN
- April 17 - 19: San Francisco, CA
- May 9 - 10: Coal City, IL
- May 18 - 20: New York, NY
- August 29 - 31: Austin, TX
- October 17 - 19: San Francisco, CA

### Elevate informal science activities at your institution

"I was able to achieve a greater understanding of what is possible and how we need to design activities to truly make an impact."

"It gave me the tools...for developing or growing educational programs and made me more sure that this is something I’d really like to be involved with in the future as a career."

### Facilitate certifications from NAI or AZA at your site

The Association of Zoos and Aquariums (AZA) and the National Association for Interpretation (NAI) are partners of Reflecting on Practice. By participating in Reflecting on Practice, you can earn credit towards your NAI Certified Interpreter’s Guide certification or AZA’s Professional Development Certificate in Education and Interpretation.

### How to get involved:

1. Talk with a regional leader near you, or visit [www.ReflectiveEducators.org](http://www.ReflectiveEducators.org) to learn more.
2. Identify mid-career educator(s) at your institution to participate in a Coaching Workshop.
3. Sign up for the Reflecting on Practice Coaching Workshop that works for you.
4. Make a 6 - 12 month plan for implementing the program at your site.
5. Once completed, participating educators may receive certifications from NAI and/or AZA.
The Reflecting on Practice™ program advances the field through professional learning by:

- Promoting shared language & understanding
- Engaging educators in habits of reflections
- Building professional learning communities

National Office Staff
Lynn Tran, PI
(lynn.tran@berkeley.edu)

Catherine Halversen, Co-PI
(chalver@berkeley.edu)

Sarah Pedemonte, Project Manager
(spedmonte@berkeley.edu)

Kalie Sacco, Communications
(kaliesacco@berkeley.edu)

Contact one of the Regional Leaders below to learn more about how to bring the Reflecting on Practice program to your education community.

Chicago, IL:
- Chicago Zoological Society / Brookfield Zoo - Marilyn Brink
  (marilyn.brink@czs.org)

San Francisco, CA:
- California Academy of Sciences - Lindzy Bivings (lbivings@calacademy.org)

New York, NY:
- American Museum of Natural History - Preeti Gupta (pqupta@amnh.org)

Long Beach, CA:
- Long Beach Aquarium - Dave Bader (dbader@lbaop.org)

Port Aransas, TX:
- University of Texas at Austin, Marine Science Institute - Kristin Evans
  (klevans@utexas.edu)

Virginia Beach, VA:
- Virginia Aquarium & Marine Science Center - Karen Burns
  (kpburns@virginiaaquarium.com)
North Carolina Chapter

Pat Curley
North Carolina State Representative

NCSU's Center for Marine Sciences and Technology Hosting Summer Camps for 13-15 Year Olds

NCSU’s Center for Marine Sciences and Technology (CMAST) in Morehead City, North Carolina will be hosting two summer camps for rising 6th, 7th, and 8th graders.

Coastal Technology Camp: July 17 - 21
Coastal Science Camp: August 7 - 11

For more information visit our website:
https://sites.google.com/a/ncsu.edu/nc-youth-ocean-conservation-summit/camps

Compete in the North Carolina KidWind Challenge!

Think you or your class has what it takes to build the most efficient, functional, and innovative wind turbine? Try your luck at the KidWind Challenge! Be creative, have fun, and apply your knowledge of wind power to design a turbine!

WHEN: Saturday May 6th, 2017
WHERE: UNC Coastal Studies Institute
REGISTER: www.kidwindchallenge.org/events

READY TO COMPETE? YOU NEED...

- To be a student in 4th-12th grade
- A team consisting of 1-10 students
- An adult coach (teacher, parent, etc.)
- A generator, some parts, and a whole lot of creativity!

REGISTER: FREE for this event!

KIDWIND CHALLENGE ONLINE: Can’t make it to this event? The REmage Labs Online Challenge is always open and free to students K-college. Learn how to participate at www.rechargelabs.org/online-challenge.

LEARN MORE about the Challenge and find rules, learning resources, parts, and building tips online at www.kidwindchallenge.org.
2016 MAMEA Educator Awards

Carrie Carlin and Sarah Nuss
Awards Committee Co-Chairs

Each year, MAMEA sponsors two annual awards to recognize outstanding efforts by marine educators in our region: one award honors a formal classroom teacher, K-16, primary through college; and the other acknowledges an educator in an informal setting, such as museum, aquarium, zoo, science center staff or employees with government agencies. Congratulations to our 2016 MAMEA Educator awardees – Kathy Richardson and Kathryn Fuller!

Classroom Teacher Award

The Mid-Atlantic Marine Education Association (MAMEA) honored Kathy Richardson of Louisa High School with its 2016 Classroom Educator Award. Kathy has been a science teacher at Louisa County High School in Mineral, VA for nine years. Each year, she shows a great commitment to providing high-quality science instruction, field experiences, and support for her students. Kathy uses information and materials gleaned from years of professional development to assure that her students have the latest data, information, activities, and resources from the marine and environmental science worlds.

Kathy has been an active MAMEA member since 2008. She regularly attends MAMEA’s annual conferences, as well as Virginia-based mini conferences in order to glean as much information and as many educational activities and resources, as possible pertaining to marine science. In 2016 alone, Kathy attended over 25 events and devoted an 78.5 hours of her own time to continuing education, not to mention over 70 hours of volunteering with various organizations and citizen science efforts.

Kathy Richardson is a model for educators in our field. She is remarkably dedicated to expanding her own knowledge of marine and environmental science in order to provide her students with the best science instruction possible.

Congratulations, Kathy!

Kathy Richardson and out-going MAMEA President Andy Gould.
Photo Credit: Carol Hopper Brill
Informal Educator Award

The Mid-Atlantic Marine Education Association (MAMEA) honored Kathryn Fuller of the National Aquarium with its 2016 Informal Educator Award. For over 20 years, Kathy Fuller has been engaging, educating and inspiring youth and adults alike, instilling the importance of marine education and environmental science. Kathy has worked for a variety of marine education centers and nonprofits including the North Carolina Aquarium, Horsehead Wetlands Center, Under the Sea, the National Aquarium, and the Smithsonian Environmental Research Center. Kathy now shares her enthusiasm about marine education at the Prince George County Outdoor Education Center in Maryland.

Kathy approaches various age groups at a level appropriate to their abilities and comprehension. In her work with under-served youth, she demonstrates the ability to understand an audience and develop materials and programs that are interesting and informative, while providing room for personal growth and achievement. The wonderment in the eyes of her students participating in her programs is a testament to Kathy’s ability to engage and inspire.

Kathy’s commitment to marine education is also seen in her participation in both MAMEA and the National Marine Educators Association (NMEA). Her contributions to both the regional and national organizations have been extensive. She served as MAMEA Maryland Representative from 2000-2005, Secretary from 2005-2011, and for the three year President’s chain from 2011-2013. Since 2015, she has contributed to the NMEA board as the MAMEA representative. Her generous commitment to the broader marine education community is evident through these years of service.

Congratulations, Kathryn!

Get a head start thinking about who you want to nominate for a MAMEA award.

The Awards committee will begin accepting nominations in May. Look for more information to come!

Kathryn Fuller and out-going MAMEA President Andy Gould.
Photo Credit: Carol Hopper Brill
2015/16 MAMEA Grantee Reports

Carol Hopper-Brill  
Grants Committee Chair

The MAMEA Grants Committee awarded two educational project grants for last year’s 2015/16 award cycle. The informal education grant was awarded to Kristen Sharpe from the Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA). Beth Schap received the Classroom Teacher grant; Beth teaches science at Liberty High School in Eldersburg, Maryland. The committee is pleased to feature their project reports in this issue of the Masthead. You will also find their project descriptions on the MAMEA website at: www.mamea.org/awardwinners.html.

Testing MWEE Implementation for 4th Graders in Gloucester County

Submitted by Kristen Sharpe, CBNERR-VA, Virginia Institute of Marine Science, Gloucester Point, VA

The goal of the project was to partner with Achilles Elementary School in Gloucester, VA to provide the school’s fifty-four 4th grade students with a Meaningful Watershed Educational Experience (MWEE) deeply integrated into classroom curricula.

Preparation Phase

On March 29, 2016, CBNERR educators participated in a large, multiple-activity preparatory MWEE event that took place on the school’s grounds. Students cycled through four activity stations which focused on different Bay-related topics. The CBNERR-led station focused on wetlands - students participated in three activities to investigate the functions and importance of wetland habitats in the Bay. Additional stations included: an Enviroscape® to model pollution sources and run-off from land, the Incredible Journey lesson where students learned about the water cycle by collecting beads from different stations representing the movement of water molecules through the cycle, and a stream water quality station in which students were assisted by adults and high school volunteers in testing the water quality (salinity, temperature, and turbidity) of a stream located on their school grounds. The water quality testing equipment was provided by CBNERR.

Action Phase

The action phase of the MWEE allowed 4th-grade teacher Mrs. Giagnocavo and her students to have a deeply Bay-focused field experience at CBNERR’s headquarters at the Virginia Institute of Marine Science (VIMS) in Gloucester Point, VA. Each activity focused on a different habitat of the Bay as well as how humans can impact that habitat:

• Students began with a Project WET activity, Blue River, in which students line up to create a river system and pass “water molecules” (blue beads) along the line from the headwaters to the main stem. Through this activity, students were able to understand how water moves through a watershed. In addition, through a variety of different manipulations where we simulated changes in seasons and pollution loads, they were able to visualize how different weather patterns can influence the speed and amount of water (and pollution) flowing into the Bay.

• Students then visited the VIMS Teaching Marsh, where activities focused on plant survival adaptations. Using a data sheet, students were tasked with finding and identifying four common salt marsh plants. They drew pictures of them and noted any adaptation(s) the plants had that allowed them to live in the salt marsh habitat.

• Next, students participated in CBNERR’s Oyster Reef Habitat Cage activity, in which they used microscopes to observe and identify species that commonly inhabit oyster reefs within the Chesapeake Bay and York River. Students used simple dichotomous keys to identify unknown organisms, and entered their observations and data in science notebooks. Their focus was again on adaptations that each animal or plant exhibited that allowed it to live successfully in the oyster reef habitat.
Clockwise from top left:

Students passing bead "water molecules" from the dendritic headwaters to the main stem of our "river system."

Using a dichotomous key to identify the organisms living on an oyster shell.

Students observing and investigating adaptations of common salt marsh plants.

**Reflection Phase**

Students created a reflection piece to showcase knowledge gained and changes in attitude that resulted from the MWEE. They were given cut-outs of various marsh plants and animals, which they colored and wrote a small fact that they learned or attitude reflection. The individual pieces were compiled into a large mural that represented a salt marsh habitat. Also included on the final mural were pictures of the different activities done at VIMS, so that other students and teachers could visualize what had occurred during the field experience. The reflection piece was initially given to Mrs. Giagnocavo to showcase in the hallways of Achilles Elementary, and once the school year concluded was given back to CBNERR educators who displayed it at a Plant Adaptations Discovery Lab, one of a series of monthly general public education events held at VIMS. Also displayed at the Lab was information about MAMEA and the grant opportunity. Through this event, an additional 35 people were reached.

The reflection mural completed by Achilles students. Each animal and plant piece includes a fact or attitude reflection that students gleaned from the field experience.
Enriching Field Studies to Promote Interest in Marine Science at Liberty High School

Submitted by Elizabeth Schap, Liberty High School, Eldersburg, MD

What do you do when you teach high school students who are passionate about ocean science, but attend school in a county that has no ocean science curriculum and no plans to add any? You run an Ocean Science Club and look to MAMEA for help to really get it off the ground.

In 2015, the Ocean Science Club started as six students who wanted to participate in the Chesapeake Bay Bowl, Maryland’s regional competition of the National Ocean Sciences Bowl. The students that participated spread the word about the competition and all that you learn about ocean science. Before you knew it, we had the makings of a club. The only problem was that the students wanted to do more than we had the funds for, since we were starting out with none.

Instead of just reading about ocean topics and careers, students wanted to take trips that focused on different aspects of ocean science and get real life exposure to the subject. MAMEA’s grant allowed us to participate in real ocean science in the field, start a yearly competition within the school, provide hands on learning with after school labs, and expand the club.

The biggest and most beneficial outcome of the activities sponsored by the MAMEA grant was a day trip to the National Aquarium. We had a group of 17 students (out of the Club’s total of 50) attend. Students received a tour of the aquarium where they learned about the various species that live in the ocean and depend on it for life. Two special activities were the real highlights of the trip.

Aquarium educator David Christopher gave the students a talk about ocean career paths. He explained the degrees needed, the experience that is helpful, and the avenues a person can take if interested in marine science. Careers in husbandry, conservation and education were discussed, as well as public relations, art, and business. By talking with the students, Mr. Christopher was able to show them that ocean science careers go beyond those that are focused on research or education.

Students also worked with the Aquarium’s Conservation staff to test the water quality of the Inner Harbor. And, they completed a population and biodiversity count of the “bio huts” surrounding the Aquarium building. This hands-on experience with the aquatic life that is dependent on clean water surrounding the city of Baltimore sparked a desire in the students to create a habitat conservation project. Students that participated in the day excursion went back to school and proposed that the Club build its own bio huts to donate to the Aquarium and surrounding areas in order to help with restoration. The proposal was met with both enthusiasm and difficulty.

It turns out that the bio huts are actually patented by a company in France and the National Aquarium currently does not need any more of them at this time. Undeterred, the students decided to switch gears and focus on oyster restoration. Their plan, which will start in the winter and spring of 2017, is to create oyster reef habitat to be placed in the Chesapeake Bay. Students were able to get into contact with the Carroll County Outdoor School and developed a partnership to create oyster reef balls and participate in shell bagging. These activities will take place at Liberty High School on select weekends and after school. This will allow more students, both in the club and out to participate in the conservation effort. The club hopes that this will continue in successive years, expanding in scale and scope.

While waiting for the oyster restoration project to get off the ground in 2017, Club members wanted to do something to raise awareness of ocean health issues in 2016. In April 2016, the Club held an Earth Day Recycled Art Contest. This was sponsored by local businesses and the entries were put on display in the school cafeteria. Students throughout the school were invited to enter art made only from trash that would otherwise be thrown away. Club members used the art entries and informational displays made to go with the contest, to highlight the growing problem of ocean trash. The contest had 20 entries, 15 of which were from members outside the Club. The contest was such a success that the current club members are planning on running it again in 2017.
With MAMEA’s help, Liberty High School was able to take a few students interested in ocean science and turn them into an 80-member club and two NOSB teams, who are running a conservation program and an ocean awareness contest. Not bad for one year’s-worth of work and a grant.

Top and left: On their visit to the National Aquarium, Liberty High’s Ocean Science Club members learned about fish anatomy and conducted biodiversity surveys on contents of a “bio hut.” Members of Liberty High’s NOSB team absorbed ocean knowledge on the Aquarium tour that helped fuel their competitive performance.

Above: The Ocean Science Club spearheaded an Earth Day Recycled Art Contest. They educated the school about the growing problem of ocean trash while inspiring creative art from trash.
2016/17 Educational Project Grants Awarded

The Grants Committee announced the following Educational Project Grant award for 2016/17 at MAMEA's annual conference in November 2016.

Informal Education Project Grant Awarded to Andrew Wilson, Director of "Under the Sea" & Glen Echo Park Aquarium

Long-time MAMEA member, Andrew Wilson has been an informal education pioneer in the Mid-Atlantic. In 1995, he founded Under the Sea to promote marine education and provide interactive and enriching services in Northern Virginia and the DC Metropolitan area. In the past 20-plus years, Andrew has offered over 10,000 outreach programs in marine education to students in Virginia, Maryland, DC, West Virginia, Delaware and Pennsylvania. In September 2015, Andrew took another big step! Under the Sea opened Glen Echo Park Aquarium with the express mission of promoting awareness of the Chesapeake Bay and its watershed using a STEAM (Science, Technology, Engineering, Art and Math) approach.

Despite the many schools and students Andrew and his staff have reached over the years, their efforts are limited by distance. His MAMEA Education Project proposal offers Under the Sea/Glen Echo Park Aquarium way to reach all schools in the Bay watershed using programs broadcast via the internet. Polling teachers over the past 2 years, Andrew found they were extremely interested in participating.

The MAMEA grant he has been awarded will allow him to acquire the equipment and software needed to develop the program and reach a greater audience. Working with Project Advisor Peter Tuddenham of the College of Exploration, Andrew will develop and broadcast a “Discovering the Chesapeake Bay” program live from Glen Echo Park Aquarium. Topics will include Bay tributaries, keystone species, water quality, marine life adaptation, importance of the Bay to humans and human impacts on the Bay. Instructors will take advantage of the Aquarium’s resources, including the exhibits, living specimens, models and scientific tools.

Andrew imagines that this pilot program will serve as a template for other program topics. The distance learning equipment housed at Glen Echo Park Aquarium can be used for multiple years to reach students nationally and internationally through his partner, the College of Exploration.

For years, Under the Sea has provided outreach programs to audiences within 2 hours of its Northern Virginia headquarters using a traveling van. With the opening of Glen Echo Park Aquarium, Andrew Wilson has not only a facility to house living exhibits, but a platform for internet outreach efforts.
2017/18 Educational Project Grant Cycle

Put Your Thinking Caps On!
Be Ready for MAMEA’s 2017/18 Educational Project Grant Cycle!

MAMEA will be looking for more great ideas to support in its 2017/18 grant cycle. So put your thinking caps on. Get your next educational project off the drawing board and into reality, engaging students or fellow educators. Be ready for the next round of MAMEA Educational Project grants - start working on your proposal now!

Two grants for up to $1,000 are available annually: One for formal educators (classrooms, K-12); and one for informal educators (museum, aquarium, zoo, science center, government agency staff). Projects must focus on marine or aquatic topics.

To be eligible, applicants must be current MAMEA members with at least one year’s membership. To be competitive, projects should meet the program structure described on the MAMEA Grants page at www.mamea.org/minigrant.html. To read about projects that have received MAMEA support in the past, see www.mamea.org/pastgrants.html.

Visit the Grants page on the MAMEA website for the grant application form, as well as important details about the application process and grantee responsibilities. Or, contact the Grants Committee Chair, Carol Hopper Brill at chopper@vims.edu. Proposals are accepted throughout the year, but the deadline for the 2017/18 cycle is September 15, 2017. Grant awards will be announced at the MAMEA conference in November 2016, and the funding period is 12 months, from November 2017 to October 2018, with no extensions.

NOSB Regional Bowls & MAMEA Coach Awards

Congratulations to the Mid-Atlantic’s 2017 National Ocean Science Bowl Teams

More than 200 marine science students participated in the Mid-Atlantic’s three regional competitions of the 20th annual National Ocean Sciences Bowl (NOSB®) in February. Guided by their teacher coaches, teams spent weeks building content knowledge in diverse marine sciences. NOSB offers teachers an opportunity to incorporate more marine science into their curricula, and allows them to demonstrate the integrated nature of marine sciences. Students explore ocean subjects and demonstrate their command of wide-ranging subjects in head-to-head competition with other teens.

- The Chesapeake Bay Bowl was held on February 6 at the University’s Hugh R. Sharp Campus in Lewes, DE. Hosted by the Delaware Sea Grant and the University of Delaware’s College of Earth, Ocean, and Environment, the contest drew twelve teams from four states including Delaware, Maryland, Pennsylvania, and Northern Virginia. Participating schools included: Newark Charter High School (Newark, DE); Liberty High School (Sykesville, MD); Montgomery Blair High (Silver Spring, MD); Lower Dauphin High (Hummelstown, PA); State College Area High School (State College, PA); Thomas Jefferson High School for Science & Technology (Vienna, VA); and Yorktown High (Arlington, VA). Capturing First Place for the second year in a row was the team from Montgomery Blair High School’s Blair Magnet Program in Silver Spring, MD, coached by Tran Pham. Fifty hard-working volunteers made the competition possible. For more details on the CBB 2017 competition, contact Regional Coordinator Christopher Petrone at petrone@udeLe.edu, visit the website at www.chesapeakebaybowl.org
The team from Montgomery Blair High School’s Magnet Program took top honors at the Chesapeake Bay Bowl for the second year in a row. Team members include (left to right): Emma Jin, Lara Shonkwiler, Alex Miao, James Vinson, and Juliana Lu-Yang. Not pictured is Coach Tran Pham. Image courtesy of Christopher Petrone.

Virginia’s Blue Crab Bowl is co-ordinated by the Virginia Institute of Marine Science’s Marine Advisory Program and Old Dominion University’s Department of Ocean, Earth & Atmosphere. Thanks to support from both VIMS and ODU, the 2017 contest was held on February 17 and 18 at the VIMS campus in Gloucester Point, Virginia. A field of 15 teams represented 10 Virginia high schools. And, over 75 volunteers worked to officiate the Bowl and provide activities and support for the event. For a record-breaking tenth year in a row, a powerhouse Team A from Bishop Sullivan Catholic High School Virginia Beach, VA dominated first place, coached by science teachers Bill Dunn and Carol Stapanowich. Team A from Seton School (Manassas, VA) captured second place, coached by Hank Konstanty and Tricia Kellogg. In Third Place was Bishop Sullivan’s Team B, and in Fourth Place, Seton School’s Team B. This was the first time that just two schools swept the top four slots. For a description of the competition, list of all participating teams, and more, visit the Blue Crab Bowl website at: http://web.vims.edu/adv/bcb/index.html. The BCB Regional Coordinators are: Carol Hopper Brill at chopper@vims.edu; and Victoria Hill at vhill@odu.edu.

This year, North Carolina’s Blue Heron Bowl was hosted by the University of North Carolina at Wilmington, the UNCW Center for Marine Science and Watson School of Education. Thirteen schools sent teams to compete at UNCW on February 18. Emerging as First Place team was North Carolina School of Science 8 Mathematics from Durham, coached by Amanda Martyn. The winners received skateboards as one of their awards. For additional information on the competition, contact Regional Coordinator Erin Moran at morane@uncw.edu. Results will be posted on the Blue Heron Bowl website at https://sites.google.com/site/blueheronbowl.

Students from the North Carolina School of Science & Mathematics in Durham rose to First Place in this year’s Blue Heron Bowl. Coached by Amanda Martyn (not pictured), team members include (left to right): Vincent Xia; Shiv Patel; Team Captain Kenneth Xu; Raymond Gao; and Emily Zheng.
MAMEA Recognizes New Coaches and Top Coaches of Mid-Atlantic NOSB Competitions

Each year, MAMEA is pleased to recognize the coaches who prepare students for participation in the Mid-Atlantic regional NOSB competitions. To acknowledge the effort of teachers new to the competition, MAMEA awards a one-year membership which helps link these teachers to MAMEA’s active community of marine and aquatic educators. To recognize the accomplishments of the Bowls’ winning coaches, the MAMEA Top Coach awards provide complimentary registration to MAMEA’s Fall Conference.

Please, welcome these 2017 NOSB Mid-Atlantic New Coaches as MAMEA members:

Blue Crab Bowl
Kim Olsen, Chesapeake Bay Governor’s School-Waraw Campus, Warsaw, VA
Kathleen Overman, Broadwater Academy, Exmore, VA
Rhett Woo, Governor’s School for Science & Technology-New Horizons, Hampton, VA

Blue Heron Bowl
Carr Fullagar, Cape Fear Academy, Wilmington, NC
Natalie Pickett, Dobyns-Bennett High School, Kingsport, TN
Keni Rienks, Cape Fear Academy, Wilmington, NC
Marc Schurter, Eastman Chemical Company & Dobyns-Bennett high School, Kingsport, TN

Chesapeake Bay Bowl
Holly Ariff, Newark Charter High School, Newark, DE

And, congratulations to the Top Coaches from our three Mid-Atlantic Bowls. Each will receive a complimentary registration to the MAMEA Annual Conference in Ocean City, Maryland, this November.

* Blue Crab Bowl: Carol Stapanovich, Bishop Sullivan Catholic High School, Virginia Beach, VA
* Blue Heron Bowl: Amanda Martyn, North Carolina School of Science & Mathematics, Durham, NC
* Chesapeake Bay Bowl: Tran Pham, Montgomery Blair High School, Silver Spring, MD.

News from the NOSB National Finals, April 20-23

Virginia MAMEA members Carol Stapanovich and Bill Dunn coached their student team from Bishop Sullivan Catholic High to success at the National Finals of the National Ocean Sciences Bowl (NOSB), taking Fifth Place. This dynamic duo has lead their students to victory at the Blue Crab Bowl, Virginia’s Regional Competition of the NOSB, for 10 consecutive years. At the NOSB Finals, held in Corvallis, Oregon, the Bishop Sullivan team faced off against 24 other high-powered teams from across the country. While Bill will be retiring this year, Carol will carry on their strong program in the marine sciences at Bishop Sullivan.

2016-2017 BOARD OFFICERS
President: Christopher Petrone
University of Delaware & Delaware Sea Grant
Past President: Andy Gould
North Carolina Aquarium at Fort Fisher
President-Elect: Lauren Albright
National Aquarium in Baltimore
Secretary: Carol Hopper-Brill
Virginia Institute of Marine Science
Jackie Takacs
University of Maryland & Maryland Sea Grant

2016-2017 STATE REPRESENTATIVES
Delaware: Christopher Petrone (Interim)
University of Delaware & Delaware Sea Grant
District of Columbia: Allie Toomey
PBS Education
Maryland: Maria Madero
National Aquarium in Baltimore
North Carolina: Pat Curley
The Science House
Virginia: Kristen Sharpe
Chesapeake Bay National Estuarine Research Reserve in VA

The MAMEA Board meets twice a year. For more information visit: http://www.mamea.org/board.html