



## Letter from the President

Squeals of delight could be heard by all last weekend as my son dipped his toes in the cold waters of the Sound. The beautiful almost summer day was too tempting to not spend the day at the beach. We had just enjoyed a weekend camping at Hammonasset State Park in Madison, Connecticut. This beautiful campground on the shore reminded me of how lucky we are to live in Southern New England. My view of the Sound from my tent confirmed that this was the best location to introduce my little boy to the adventure of camping and hanging out with friends by the campfire. It got me to thinking about all the places I want to share with my son. From sailing off Newport, jumping in the waves at Misquamicut, kayaking among the Thimble Islands and spending a relaxing beach day on the Sound, these are all memories waiting to be made.

Naturally, two hurricanes in two years have made many of us realize just how vulnerable all these locations are. I myself have watched my old neighborhood in East Haven rebuild and then rebuild again after each storm. We have experienced the beauty and the fury that the ocean offers us. Yet these realities were far from my thoughts as I picked up a hermit crab to the merriment of my two year old. What was this strange creature - it looks like a rock but it moves? I could see the gears turning in his head and it was fun to see him puzzle out this new discovery. Sometimes between working, commuting and the daily distractions of life, I forget to stop for a moment and just enjoy a sunny day. I am glad I got to spend these moments on the shore with my little guy. I hope that you have the opportunity to relax this summer perhaps on a sunny beach and take a moment to cherish the beauty of our coastline. Explore a little more - visit a new beach and study a tide pool. Make a memory that will carry you through a good New England winter!

*Amy F. Ferland*

Amy F. Ferland  
SENEME President



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## SENEME Board of Directors & Committee Members 2012-2013

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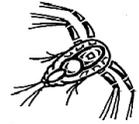
Andrea Gingras, Chair  
Katrina Barrett

### Scholarships & Awards Committee

Lauren Rader & Amy Ferland, Co-Chairs

## Nauplius Notations

By Donna Dione, Editor



Well, it seems we may have broken the "Electricity Curse" of the Volume XXIV Newsletters. If you remember, when it was time for me to work on both the Fall and Winter issues, I lost power due to Hurricane Sandy and the Blizzard of 2013. Although, it did start to look a little iffy when all of a sudden Tropical Storm Andrea appeared on the maps a few days ago, we managed to keep the lights on!

In this issue, I'm very excited to have an article from a student about his horseshoe crab research. It's not often we get student submissions, and we would love to have more. So if you have any students doing some interesting projects, please have them contact me or send in an article about them yourself!

Hope everyone has a great summer, and I look forward to seeing you at one of the upcoming SENEME Events!

### SENEME Organizational Members

*Mystic Aquarium  
New England Science & Sailing  
Foundation  
Project Oceanology  
URI Office of Marine Programs*

*Thank you for your support!!*

### SENEME LIFE MEMBERS

*2002 Find Pedersen  
2003 Mickey Weiss  
2004 Thaxter Tewksbury  
2005 Ralph Yulo  
2006 Elizabeth Gibbs  
2010 Katrina Barrett*

### MARINE EDUCATOR OF THE YEAR

*2005 Lance Arnold  
2006 Matt Schardt  
2010 Vicky Sawyer  
2011 Joseph Hage  
2012 MaryEllen Mateleska  
2012 David Bednarz*



## ***Coals on the Coast***



**SENEME invites you and your family to attend “Coals on the Coast,” a casual barbeque and evening boat cruise.**

We are looking forward to a relaxing evening of cooking, eating, and socializing on the gorgeous Connecticut coastline. A sunset cruise will take place after the barbeque. The event will occur rain or shine.

### **Details:**

**When:** Tuesday, August 20, 5-8 p.m.  
Boat cruise will be from 6:30-8 p.m.

**Where:** Project Oceanology

**Who:** SENEME Members, new members and their families

**Cost:** Member \$5  
Member + family (up to four guests) \$10  
Non-Member \$20\*  
Non-Member + family (up to four guests) \$25\*  
\*includes one-year membership

SENEME will provide the hamburgers, hotdogs, sides, dessert and drinks.

*The boat cruise is intended for those 6 years and older. There is a maximum of 40 participants. Registration is required. To register visit,*  
<http://events.constantcontact.com/register/event?llr=6t9mnbeab&oeidk=a07e7jczsn1a6cfa31>.

\*\*\*\*\*



## ***Reading the Rocks***



**SENEME invites you to an exploration of the Beavertail Rocky Shore in Jamestown, RI.**

Thursday August 1, 2013 from 9:00 – 11:00 a.m.

For: Grade K-12 Teachers, Science Teachers & Informal Science Educators

Registration Cost: \$5 for members, \$20 for non-members (includes a one year SENEME membership)

Join outreach scientists from the University of Rhode Island’s Graduate School of Oceanography as we explore the coastal area of the Beavertail Rocky Shore.

Look for registration information posted on the SENEME website  
<http://www.seneme.org/>. Contact Maryann Scholl with questions: [mscholl@mail.uri.edu](mailto:mscholl@mail.uri.edu).



**2013 SENEME Fall Conference and Annual Meeting  
in Conjunction with Oceans a la Carte**  
Saturday, October 19, 2013  
Project Oceanology  
Groton, CT

*Mark your calendar for the SENEME Fall Conference and Annual Meeting being held in conjunction with the rescheduled Oceans a la Carte workshop. Workshops, Field Programs, Silent Auction and more! The Call for Presenters and Exhibitors will go out soon.*

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**NOMINATIONS SOUGHT FOR SENEME AWARDS**

Would you like to recognize a fellow SENEME member for their contribution to marine and aquatic science education? Nominations are being accepted for the awards below. Further information can be found at [SENEME.org](http://SENEME.org) > Grants & Awards.

**SENEME Marine Educator of the Year:** For effective and innovative teaching, and/or distinguished performance by either a classroom teacher or professionals who are not classroom teachers. This nomination requires completion of a nomination form and a letter of recommendation from at least one active SENEME member. Recipient receives one-year membership to SENEME and registration to the annual Fall Conference.

**SENEME Life Member:** Life membership is the highest recognition the Association offers and is reserved for those individuals who have demonstrated a distinguished career in teaching, research or service in marine education. This nomination requires completion of a nomination form and letters of recommendation from at least three active SENEME members. The Awards Committee will present its recommendation to the SENEME Board for consideration. Upon endorsement by the majority of the Board, the successful nominee shall be declared a Life Member and will receive lifetime membership in SENEME.

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**WINNERS OF SENEME SCIENCE FAIR AWARDS**



This spring, SENEME presented awards to students at the Connecticut and Rhode Island State Science Fairs. There were two winners from each state with all four receiving a prize of \$75, a SENEME T-shirt and a one-year SENEME membership. The Connecticut winners were Kelsey Adamson of EO Smith High School in Storrs who won the Senior Award for her exhibit, "The Growth of Stony Coral, *Leptoseris*, in Low Levels of Electric Current" and Hyojune Jung from Six to Six Magnet School in Bridgeport who won the Junior Award for the project entitled, "What is the Relationship between Dissolved Oxygen and Coliform in the Pequonnock River?" In Rhode Island, Philletta Payne of Times<sup>2</sup> Academy in Providence won the Senior Award for the exhibit, "Biodiesel Production from Seaweed."

*(Editor's Note: At press time, the information for the RI Junior Winner was unavailable. We hope to give credit in a future issue. Any winners are welcome to send in their pictures for publication in the Fall Issue.)*

**Congratulations to all the winners!!**

## ***FROM THE BOARD ROOM...***

### **Help Wanted:**

#### **FALL CONFERENCE**

The Conference Committee for the Fall Conference is looking for volunteers to help with planning. We will need help organizing the day, the auctions, creating the agenda and exhibits. If you are interested in volunteering, please contact Andrea Gingras, [agingras@mail.uri.edu](mailto:agingras@mail.uri.edu).

#### **NMEA 2015**

SENEME will be hosting the National Marine Educators Association Annual Conference the summer of 2015 in Newport, RI. The planning has started, and we need your help. Below are descriptions of each committee. If you are interested in joining a committee, please contact the person listed. Continue to look for more information about NMEA 2015 on the SENEME Facebook page, NMEA website, SENEME website and in future *Nauplius* issues.

Field trips: secure field trip locations, coordinates logistics of field trip (transportation, food, participants)  
Maryann Scholl: [mscholl@mail.uri.edu](mailto:mscholl@mail.uri.edu)

Program: presenter selection, notification, and communication, supply content for program booklet, arrange audiovisual equipment, assist presenters  
Andrea Gingras: [agingras@mail.uri.edu](mailto:agingras@mail.uri.edu)

Transportation: how people get from one conference venue to another; may also assist with arrival and departure transportation  
Maryann Scholl: [mscholl@mail.uri.edu](mailto:mscholl@mail.uri.edu)

Publicity/Marketing: craft messages for social media, work with fundraising committee on development and advertising  
Maryann Scholl: [mscholl@mail.uri.edu](mailto:mscholl@mail.uri.edu)

Hospitality: coordinate logistics with conference venue, provide information to conference participants regarding local area  
Andrea Gingras: [agingras@mail.uri.edu](mailto:agingras@mail.uri.edu)

Special Events: arrange keynote speakers, other guests and VIPs, evening events, special performances.  
Diana Payne: [diana.payne@uconn.edu](mailto:diana.payne@uconn.edu)

Fundraising/Development: solicit donations from sponsors of the conference, assist in securing auction items, work with Publicity/Marketing committee  
Lauren Rader: [lrader@oceanology.org](mailto:lrader@oceanology.org)

Exhibits: solicit organizations to exhibit during the conference and provide logistical support during conference  
Diana Payne: [diana.payne@uconn.edu](mailto:diana.payne@uconn.edu)

Auction: coordinate donation of items for silent and live auction, provide logistical support during auction event  
Lauren Rader: [lrader@oceanology.org](mailto:lrader@oceanology.org)

Evaluation: develop conference evaluation (questions and format) and process results  
Diana Payne: [diana.payne@uconn.edu](mailto:diana.payne@uconn.edu)

Volunteer Coordinator(s): organize volunteers for meeting (recruiting, scheduling)  
Contact needed: Please email Andrea Gingras at [agingras@mail.uri.edu](mailto:agingras@mail.uri.edu), if interested.

## ***FROM THE BOARD ROOM***

### ***Notice from the Membership Secretary***

#### **Please note the following changes to the SENEME Bylaws which are now in effect:**

A new membership shall begin on the day of receipt of dues and will end on December 31<sup>st</sup> of the following year. Thereafter, the membership year of the ASSOCIATION shall begin on January 1<sup>st</sup> and terminate on December 31<sup>st</sup> of the same year. One, two and three (1, 2 & 3) year memberships to the ASSOCIATION shall be made available.

### ***Amendments to SENEME Constitution***

The SENEME Board of Directors proposes the following amendments to the SENEME Constitution. The two main themes of the revisions below are: changing our management structure to President and Vice President from our current President-Elect, President and Past-President; and completing our movement toward electronic communications and away from paper mailings.

The Constitution currently states that all proposed amendments shall be published in two consecutive issues of the newsletter before being voted on by the Board of Directors.

#### **ARTICLE IV, OFFICERS**

##### *Current form:*

Section 1A: The officers of the organization shall be the President Elect, President, Past President, Treasurer, Recording Secretary and Membership Secretary.

Section 2B: In the case of death, resignation, or inability to serve by the President, the President Elect shall assume duties of the office. Officers to fill any further vacancies shall be appointed by the President with the approval of the Board of Directors.

Section 3: The offices of President Elect, President and Past President shall be for a term of one (1) year each consecutively for a total of three (3) years. The Recording Secretary, Membership Secretary, and Treasurer shall be elected to a two (2) year term with a limit of three (3) consecutive terms. The Membership Secretary and Treasurer will be elected on alternate years. The NMEA Representative shall be elected to a two (2) year term.

##### *Change to:*

Section 1A: The officers of the organization shall be the President, Vice President, Treasurer, Recording Secretary, Membership Secretary and NMEA Chapter Representative.

Section 2B: In the case of death, resignation, or inability to serve by the President, the Vice President shall assume duties of the office. Officers to fill any further vacancies shall be appointed by the President with the approval of the Board of Directors.

## ***FROM THE BOARD ROOM***

### ***Amendments to SENEME Constitution continued...***

Section 3: The offices of President and Vice President shall be for a term of two (2) years with a limit of two (2) consecutive terms. A person who has served as President or Vice President for two (2) consecutive terms shall be eligible for re-election to the same office after two (2) years have elapsed. The Recording Secretary, Membership Secretary, NMEA Chapter Representative, and Treasurer shall be elected to a two (2) year term. The Membership Secretary and Treasurer will be elected on alternate years.

#### **ARTICLE V, BOARD OF DIRECTORS**

*Current form:*

Section 1: The ASSOCIATION shall be governed by a Board of Directors. The Board of Directors shall be made up of the President Elect, President, Past President, Treasurer, Recording Secretary, Membership Secretary, NMEA Representative, Executive Director and 2-10 Board Members-at-large elected from the ASSOCIATION's membership as provided for in the ASSOCIATION's Bylaws.

*Change to:*

Section 1: The ASSOCIATION shall be governed by a Board of Directors. The Board of Directors shall be made up of the President, Vice President, Treasurer, Recording Secretary, Membership Secretary, NMEA Representative, Executive Director and 2-10 Board Members-at-large elected from the ASSOCIATION's membership as provided for in the ASSOCIATION's Bylaws.

#### **ARTICLE XI, AMENDMENTS TO THE CONSTITUTION**

*Current form:*

Section 2: The Secretary shall inform the Executive Committee of the proposed amendment. The proposed amendment shall be read at two (2) consecutive Board meetings open to the general membership and shall be published in two (2) consecutive issues of the newsletter.

Section 3: Thirty (30) days after the mailing of the second (2<sup>nd</sup>) publication, the amendment may be voted on and passed by a two-thirds (2/3) majority vote of the Board of Directors or by one-half (1/2) plus one (1) vote of all Directors or by one-half (1/2) plus one (1) vote of all members responding to a mailed ballot or voting by written ballot at an ASSOCIATION meeting.

*Change to:*

Section 2: The Secretary shall inform the Executive Committee of the proposed amendment. The proposed amendment shall be read at two (2) consecutive Board meetings open to the general membership and shall be published in the newsletter, posted on the website, and sent to the SENEME e-mail list.

Section 3: Thirty (30) days after the publication of the proposed amendment, the amendment may be voted on and passed by a two-thirds (2/3) majority vote of the Board of Directors or by one-half (1/2) plus one (1) vote of all members responding to an e-mailed ballot or voting by written ballot at an ASSOCIATION meeting.

## SOUND NOTES FROM THE WATER COLUMN

*By Joseph Hage, Bacon Academy*

The early morning mist rose from the Poquonnock River as I sunk chin deep into the cool swirling waters. My feet sank into the mud, squishing between my toes, forming fortune cookies of black mayonnaise. I reveled in the moment, watching the mist rise about my head, and eelgrass tickling my legs. The dawn began to shimmer from behind the trees of Bluff Point. As a seventh grader, this was what marine science was all about. My instructors had just piloted a beat up Boston Whaler through the sinuous channel, into the velveteen green marshes, and anchored in a cove-let of peat and still water. The early morning air was punctuated by splashes, and squeals of disgust, as more students abandoned ship, and plunged into the water... This was heaven to me, I was hooked for life.

It is hard to believe that was thirty nine years ago, and now Project O is forty. It began with Mickey Weiss, and he still has a pivotal role in the continuity of the "Project": It was his brainchild. Today, the Project would not exist if it were not for the efforts of Thaxter Tewksbury. Thax has provided the Project with leadership and drive that dovetails with Mickey's dream. Even with today's new challenges, the advent of computers, the Internet, iPhones, Facebook, Twitter, Tumbler, and Vine, Project O still captures the imagination, and rivets students into the field of science. Thax has, and continues to, struggle with district budgets cuts, lack of funds, fickle grant processes, and a parade of different educational administrators. Yet, he and the Project still are providing students of all ages, a varied, hands-on-minds-on, quality education, and more importantly, fostering a stewardship of our marine environment that will last for generations.

Project Oceanology's model of solid educational practices has weathered the petulant tempests of new and innovative pedagogy that blow through, and then subside, only to be replaced by the new storm du jour of educational jargon-ese. The "Project O way" has been the most copied, emulated and otherwise stolen standard of time tested science education. I guess it is flattery, except that we are in constant danger of losing it. If it were not for Thaxter's leadership and the dedicated staff that persevere through the maelstrom of state mandates, state testing, competing organizations, and changing standards, the Project would not survive.

Adapt or perish and survival of the fittest; 40 years in this business has been astonishing. Project Oceanology has survived. Not too many educational institutions can celebrate this feat, and it is because of the quality of the programming, the brilliance of the idea, and the hard work of all the people involved. I thank you, my children thank you, and hopefully my grandchildren will thank the Project for providing the vision, access, and education to all things marine.

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### Call for Nominations

The SENEME Nominating Committee is seeking candidates for the following SENEME Board positions: President-Elect and Membership Secretary. The Nominating Committee invites SENEME members to submit qualified names for consideration.

The President-Elect assumes duties for one year before taking over as President for a year and then Past-President thereafter - a three-year commitment starting in October 2013.

The Membership Secretary assumes duties for two years starting in October 2013.

Please contact Andrea Gingras, Nominating Committee Chair for more detailed information about each position and to submit nominations.

***The Effect of Hemolymph Extraction on the Hemocyanin  
Concentration of Atlantic Horseshoe Crabs (Limulus polyphemus)***  
***Isaiah Nathaniel Mansour, Grade: 12***  
***Bridgeport Regional Aquaculture Science and Technology Education Center***

**PROJECT SYNOPSIS:**

Each year approximately 500,000 Atlantic Horseshoe Crabs (HSCs), *Limulus polyphemus*, are collected for hemolymph extraction, as their hemolymph is the only raw substance from which Limulus Amebocyte Lysate (LAL) can be produced. The generally accepted mortality percentage as a result of the hemolymph extraction process is 15%, though recent studies indicate that the mortality percentage may be 30%, thus resulting in the loss of tens of thousands of Atlantic Horseshoe Crabs every year. With populations in many areas in decline as a result of over-harvesting for biomedical and other purposes, a candidacy protocol to determine which individuals are eligible for hemolymph extraction beforehand must be developed in order to preserve the species as a sustainable resource.

Hemocyanin concentration within the hemolymph of Atlantic Horseshoe Crabs is a well-documented indicator of horseshoe crab vivacity. Healthy Atlantic Horseshoe Crabs typically have a concentration of 50 mg/mL to 82 mg/mL of hemocyanin within their hemolymph, depending on size. Lower concentrations indicate degraded health, and increased stress.

This study investigates Atlantic Horseshoe Crab vivacity after 30% of individual total hemolymph volume extraction (the standard amount extracted by LAL producers) as a function of initial hemocyanin concentrations, in order to reduce mortality by developing a candidacy protocol based on initial hemocyanin concentration. In order to determine the effect of hemolymph extraction on hemocyanin concentration, two groups of HSCs were established; experimental, which experienced standard 30% hemolymph extraction, and control, which did not. Baseline hemolymph samples (3 mL) were collected from all HSCs. Subsequently, experimental HSCs experienced standard 30% of individual total hemolymph volume extraction. Samples were collected again from control HSCs 15 minutes after the baseline extraction, and from experimental HSCs 15 minutes after standard 30% hemolymph extraction. Three days after the initial extraction, samples were collected again from all HSCs.

Samples were centrifuged immediately after collection in 4 degree Celsius containment tubes, diluted in 1M Tris-HCL pH 7.5, and analyzed with a UV/VIS spectrophotometer.

From the experimental group, the differences between hemocyanin concentrations 15 minutes after 30% hemolymph extraction and initial hemocyanin concentrations are: -6.30863 mg/mL, 1.241727 mg/mL, 6.765468 mg/mL, 18.72518 mg/mL, 5.663309 mg/mL, and -9.03813 mg/mL respectively. In all but two cases, hemocyanin concentration increased, indicating that the individuals compensate for the immediate loss of hemolymph by producing more hemocyanin in order to regulate oxygen levels and decrease the stress impact of extraction.

From the experimental group, the differences between initial hemocyanin concentration and hemocyanin concentration 3 days after 30% hemolymph extraction are: 14.58273 mg/mL, 20.34532 mg/mL, 22.14173 mg/mL, 19.33022 mg/mL, 10.62878 mg/mL, and 14.09424 mg/mL respectively. In all cases, hemocyanin concentrations decreased significantly 3 days after 30% hemolymph extraction, indicating that 30% hemolymph removal has a lasting negative impact on HSC vitality and physiology. The model;  $H_R = 1.0797H_I - 22.172$  ( $\pm 5$  mg/mL) illustrates how initial hemocyanin concentration ( $H_I$ ) can be used to predict hemocyanin concentration 3 days after 30% hemolymph extraction ( $H_R$ ), indicating organism vivacity. This model has a correlation coefficient of 0.9566. The absence of mortalities in this experiment indicates that HSCs with an initial hemocyanin concentration of 37.76 mg/mL or, more cautionary, 41.99 mg/mL, or higher are expected to survive the hemolymph extraction process.

This study represents the first evidence that individual Atlantic Horseshoe Crab (*Limulus polyphemus*) vivacity after hemolymph extraction is directly related to initial individual vivacity, measured by hemocyanin concentration.

From the data collected, it has been determined that hemocyanin concentration increases immediately after 30% hemolymph extraction in order to provide the individual with ample oxygen. This increase however does not accurately reflect vivacity, as it is a temporary stress-relief response, which wears off in time.

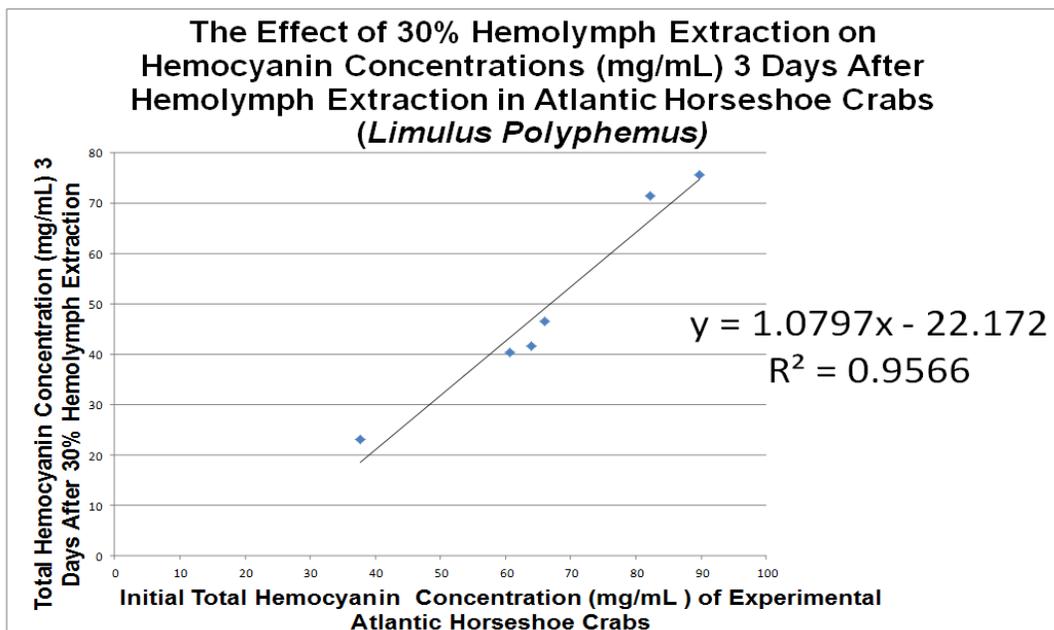
## The Effect of Hemolymph Extraction .... Continued

Three days after 30% hemolymph extraction, the hemocyanin concentration present in the individual is observed to decrease below the initial concentration. This accurately reflects vivacity, as it shows how hemolymph extraction degrades individual vivacity, thus proving that hemolymph extraction is a fundamentally stressful process that has a lasting impact on the individual.

Interestingly, the control group observed the same general reactions, 15 minutes after the baseline sampling hemocyanin concentrations increased above initial levels; however, three days later they had decreased below that recorded initially. This indicates that even minute hemolymph extraction of any percentage of the total volume has a lasting physiological impact on Atlantic Horseshoe Crabs.

The absence of mortality in this study indicates that individuals with an initial hemocyanin concentration of 37.76 mg/mL or, more cautionary, 41.99 mg/mL (the initial hemocyanin concentration which, when inserted into the model, predicts a post-hemolymph-extraction concentration of 23.174 mg/mL, the lowest post-hemolymph-extraction hemocyanin concentration recorded) or higher are expected to survive the hemolymph extraction process. The model  $H_R = 1.0797H_I - 22.172$  where  $H_R$  = the hemocyanin concentration 3 days after hemolymph extraction, and  $H_I$  = the initial hemocyanin concentration is the first step in determining a candidacy protocol for hemolymph extraction eligibility of Atlantic Horseshoe Crabs, thus preserving them as a sustainable resource for future use.

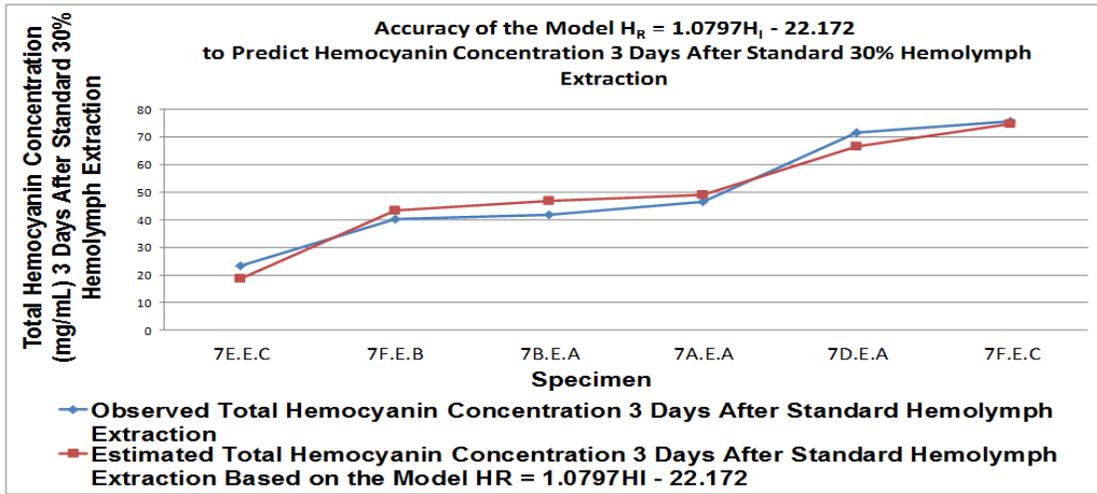
### Graphs:



**Figure 1:** There is a clearly delineated causal correlation between the initial hemocyanin concentration (mg/mL) of a specimen Atlantic Horseshoe Crab (*Limulus polyphemus*) and the hemocyanin concentration (mg/mL) of the same specimen three days subsequent to the 30% hemolymph extraction. In all cases, the hemocyanin concentration (mg/mL) of a given specimen decreased after 30% hemolymph extraction, thus indicating that large volume hemolymph extraction directly causes degraded vivacity, as hemocyanin content is indicative of overall individual vivacity.

The strong correlation coefficient of 0.9566 shows that the model  $H_R = 1.0797H_I - 22.172$ , where  $H_R$  = the hemocyanin concentration 3 days after 30% hemolymph extraction, and  $H_I$  = the initial hemocyanin concentration, can be used to accurately predict the post-extraction hemocyanin concentration (mg/mL) based on the initial hemocyanin concentration (mg/mL) to  $\pm 5$  mg/mL.

## The Effect of Hemolymph Extraction .... Continued



**Figure 2:** The accuracy of the model  $H_R = 1.0797H_I - 22.172$ , where  $H_R$  = the hemocyanin concentration 3 days after 30% hemolymph extraction, and  $H_I$  = the initial hemocyanin concentration, to predict post-hemolymph-extraction hemocyanin concentration based on initial hemocyanin concentration is illustrated by comparing the differences between the observed total hemocyanin concentrations (mg/mL) 3 days after 30% hemolymph extraction (blue), and those determined by the model based on initial hemocyanin concentration. The maximum difference between these two data sets is 5.0607218, proving the model to be accurate to approximately  $\pm 5$  mg/mL.

**Editor’s Note:** *Isaiah is very excited to share his research with our members. If you would like a copy of Isaiah’s full research manuscript or have any questions for him, you may reach him at [IsaiahNmansour@aol.com](mailto:IsaiahNmansour@aol.com). I am also thrilled to share news from Mystic Aquarium that Isaiah received their award at the CT State Science Fair!!*

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### DATES TO REMEMBER

Upcoming SENEME Board Meetings: July 16, August 20 & September 17, 2013. Meetings are held at various locations or via conference call. Please contact SENEME President, Amy Ferland at [amyferland@gmail.com](mailto:amyferland@gmail.com) to confirm meeting places and times.

July 22 – 26, 2013 – NMEA Conference, Spring Hill College, Mobile, AL

August 1, 2013 – Rocking the Rocks, Beavertail Rocky Shore, Jamestown, RI, 9:00 - 11:00 a.m.

August 1, 2013 – NMEA 2015 Planning Retreat, Place TBA in RI, 12:00 – 3:00 p.m.

August 20, 2013 – Coals on the Coast, Project Oceanology, Groton, CT, 5:00 – 8:00 p.m.

October 19, 2013 – SENEME Fall Conference & Oceans a la Carte, Project Oceanology, Groton, CT

Summer 2015 – NMEA Conference hosted by SENEME, Rhode Island



## BULLETIN BOARD



### The New England Aquarium

#### On the Waterfront: Integrating Science Standards through Classroom and Field Investigations

**Dates:** July 9-12, 2013 with two callbacks (Sept. 28 and Dec. 7)

**Time:** 8:30 a.m. - 4:00 p.m.

**Location:** New England Aquarium

**For:** Educators, grades 3-7

**Cost:** \$350 (includes Boston Harbor Educators Conference fee and MME half-year membership)

**Credit:** 41 PDPs or 4 science graduate credits from Cambridge College (additional fee, \$200)\*

Learn how to incorporate local coastal ecosystems into your existing curriculum by joining the staff of the New England Aquarium for our "On the Waterfront" course, where we will learn of all things related to the shoreline. Participants will conduct field- and in-classroom investigations, apply inquiry skills and learn content knowledge through hands-on activities. Boston Harbor will be used as an example to teach concepts such as linking science and literacy, marine biodiversity, adaptations, ecosystems, properties of water, human impacts, and conservation efforts. Activities include: Behind-the-scenes tour of the Aquarium, exploring local tidepools on the Boston Harbor Islands and/or a visit to a local salt marsh. Each person will receive copies of activities and resources to take back and use in their classroom.

#### Watershed Investigations

**Dates:** July 16-18, 2013 plus two callbacks (Sept. 28 and Dec. 7)

**Time:** 8:30 a.m. - 4:00 p.m.

**Location:** New England Aquarium

**For:** Educators, grades 8 - 12

**Cost:** \$300 (includes Boston Harbor Educators Conference fee and MME half-year annual membership)

**Credit:** 34 PDPs or 3 science graduate credits from Cambridge College (additional fee, \$150)\*

Our "Watershed Investigations" course is a field- and classroom-based program that will provide participants with the knowledge and skills to teach students about local watersheds. Programming includes field trips to the Charles River and Belle Isle Salt Marsh as well as science labs investigating water properties and water quality (dissolved oxygen, salinity, turbidity, pH, etc.). In addition to resources and ideas for classroom lessons, participants will leave with a greater understanding of watersheds and tips on how to bring students into the field.

#### Ocean Science for Early Elementary Educators

**Dates:** August 5-8, 2013 plus one Saturday callback (Nov.23)

**Time:** 9:00 a.m. - 3:30 p.m.

**Location:** New England Aquarium

**For:** Educators, grades K-2

**Cost:** \$250

**Credit:** 30 PDPs or 3 science graduate credits from Cambridge College (additional fee, \$150)\*

The ocean, filled with mystery and wonder, is the perfect way to engage young students and excite them about science. Participants will explore essential scientific concepts such as water properties, ocean habitats and animals, while making connections to literacy, math and art. Programming will include engaging hands-on investigations and a field trip to a local coastal habitat. Participants will walk away with knowledge about the ocean, ideas on how to incorporate ocean life into existing curriculum as well as activities and resources to use with young children!

\* In order to qualify for PDPs or graduate credits from Cambridge College, participants are required to attend all course sessions, complete all homework assignments (i.e. readings, journal reflections, etc.) AND complete a final project. The final project for our summer courses is to develop a Teacher's Guide which includes both an introduction and a three-part lesson plan that revolves around one of the concepts discussed during the program. A template will be provided and the lesson plan must be implemented in your classroom.

**REGISTRATION DEADLINE FOR ALL SUMMER COURSES - JUNE 28, 2013**

**FOR MORE INFORMATION OR TO REGISTER, VISIT [WWW.NEAQ.ORG/WORKSHOPS](http://WWW.NEAQ.ORG/WORKSHOPS)**

## NAUPLIUS NOSTALGIA

**This feature resurrects articles and/or pictures from the SENEME archives.  
Compiled by Donna Dione, Editor**



### Nautilus Nostalgia - Can you guess?

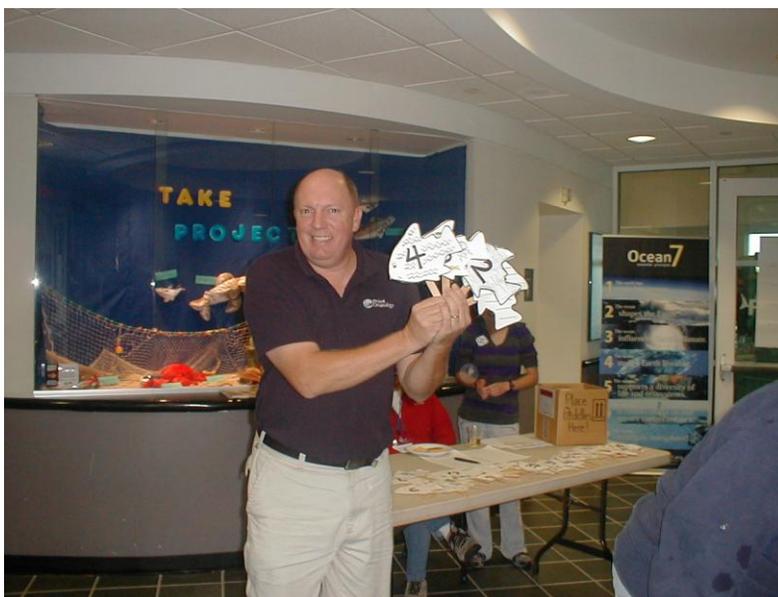
The top picture was our mystery photo last issue.

It was taken February 1, 2007 at the URI Bay Campus. Dr. Robert Ballard gave a presentation on “Deep Sea Exploration and Ocean Literacy.” Pictured left to right are Maryann Scholl, Dr. Ballard and Katrina Barrett.

Do you know where the bottom picture was taken and who the enthusiastic auctioneer is? (Okay, decided to make it an easy one this issue, but bonus points if you know the year!)

Answer in the next issue of  
*The Nautilus!*

*Photos courtesy  
Jill Johnen & Donna Dione*



## NMEA 2013

### REGISTRATION IS STILL OPEN!!

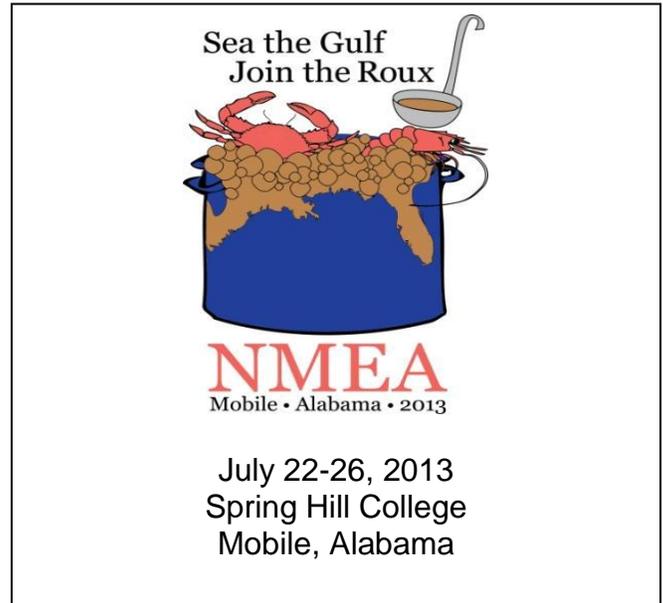
Join us for NMEA 2013 hosted by the Southern Association of Marine Educators (SAME) in beautiful Mobile, AL. During the Conference, we will be staying on the historic campus of Spring Hill College. Dorm rooms are available for your stay. All of our sessions and plenary speakers will be on campus as will the Stegner Lecture.

The Student Center is where we'll have all of our breakfasts and lunches. Evening events will be located off-site, starting with a night at the Saenger Theatre in downtown Mobile. Here, we will dine on hors d'oeuvres before the Keynote Speaker, author and journalist Richard Louv, speaks. The second evening of the Conference, we

will be hitting the beach with a visit to the Dauphin Island Sea Lab Estuarium. That evening begins with a mini-Mardi Gras parade including floats and throws. Attendees will get their fingers messy as they delve into a fresh from the Gulf seafood boil. The night of the auction, we will have a banquet dinner at Spring Hill College. The auction items are lining up, so bring your checkbook and be prepared to take away some beautiful items! After a full day of field trips – either exploring the brand new GulfQuest Museum, taking a cooking class in Ocean Springs or kayaking in the Delta, just to name a few – we'll slow it down a little for the last night of the Conference at the 5 Rivers Delta Resource Center. We will enjoy a beautiful sunset and some down-home country cooking as we relax on the deck overlooking the Mobile-Tensaw Delta. We might even glimpse an alligator or two, watching us from the tall grass. So think about joining us for some sweet and savory dishes as well as our famed southern hospitality.

Find all the details about lodging, speakers, field trips, FAQs and everything else: <http://nmea.disl.org/>  
Learn related information on Facebook: <https://www.facebook.com/Nmea2013MobileAl>

*Editor's Note: I highly recommend everyone watch the promotional video on the conference homepage!!*



*The Nauplius* is the newsletter of the Southeastern New England Marine Educators Association Inc. (SENEME) and is published three times per year for members of SENEME. Submissions including (but not limited to) articles, activities to share, student projects, pictures of SENEME members in action, recipes, other organization's announcements and Bulletin Board items are welcome for all issues. The opinions expressed by authors published in this newsletter do not necessarily reflect the views of SENEME and all its Board members. SENEME is not responsible for any typographical errors that may occur within this publication. Permission is granted by SENEME for readers to make copies of newsletter items for their own, non-commercial use.

Please send submissions and suggestions to Donna Dione, 146 Essex Street, Deep River, CT 06417;  
Email: [dmrhone@quixnet.net](mailto:dmrhone@quixnet.net). Please type articles in a Word format. If mailing media, all disks and pictures will be returned.

**Submission Deadline for the Fall Issue is October 25, 2013.**



# Southeastern New England Marine Educators (SENEME)

## MEMBERSHIP APPLICATION

New  Renewal (check one)

**Name:** \_\_\_\_\_

my information has not changed

**Today's Date:** \_\_\_\_\_

**School/Business Address:** \_\_\_\_\_

Street

**Home Address:** \_\_\_\_\_

Street

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
City, State, Zip Code

**Work Phone:** \_\_\_\_\_

**Home Phone:** \_\_\_\_\_

**Work E-mail Address:** \_\_\_\_\_

**Home E-mail Address:** \_\_\_\_\_

### Position (check all that apply)

- |                                    |   |   |                                      |
|------------------------------------|---|---|--------------------------------------|
| <input type="checkbox"/> Teacher   | <input type="checkbox"/> Retired        | <input type="checkbox"/> Scientist        | <input type="checkbox"/> Consultant  |
| <input type="checkbox"/> Principal | <input type="checkbox"/> Professor      | <input type="checkbox"/> Dept. Head/Chair | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Student   | <input type="checkbox"/> Superv./Coord. | <input type="checkbox"/> Administrator    |                                      |

### Disciplines (check all that apply)

- |                                    |   |   |                                      |
|------------------------------------|---|---|--------------------------------------|
| <input type="checkbox"/> Biology   | <input type="checkbox"/> Environmental    | <input type="checkbox"/> Computer Science | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Physics   | <input type="checkbox"/> Science          | <input type="checkbox"/> General Science  |                                      |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> Physical Science | <input type="checkbox"/> Tech Education   |                                      |

### Which grades do you teach? (check all that apply)

- |  |  |   |                                  |
|--|--|---|----------------------------------|
| <input type="checkbox"/> K – 5 <sup>th</sup> Grade | <input type="checkbox"/> 6 <sup>th</sup> – 8 <sup>th</sup> Grade | <input type="checkbox"/> 9 <sup>th</sup> – 12 <sup>th</sup> Grade | <input type="checkbox"/> College |
|--|--|---|----------------------------------|

### Send SENEME e-mailings to (check one):

- Home E-mail Address  Work E-mail Address

### Please consider joining one or more of our 5 standing committees (more information can be found on our website).

- Membership  Nomination  Publicity/Publication  Conference/Special Events  Financial Advisory

**SENEME is considering sponsoring the NMEA conference in 2015. Would you be interested in helping?** \_\_\_\_\_

### Membership Category (check one):

- Active Member (1 Year \$15)  
 Active Member (2 Year \$25)  
 Active Member (3 Years \$35)  
 Organizational Memberships (Non-Profits Only \$100)  
 Corporate Membership (1 Year \$250)

Please note: regardless of which membership option you choose, your membership will begin immediately and expire on December 31<sup>st</sup>.

**Total Enclosed:** \$ \_\_\_\_\_

Please return this form with check payable to SENEME.

**Mail to SENEME**  
c/o Julie P. Ainsworth  
31 Green Springs Dr.  
Madison, CT 06443