

# NOAA's Teacher at Sea Program Southeast Region Alumni Workshop Report May 2018



*(Back Row L-R) Sam Northern, Vincent Colombo, Barbara Koch, Chelsea O'Connell-Barlow, Michelle Carroll (TASAA Staff), Virginia Warren, (Middle Row L-R) Beverly Owens, Dana Kosztur, Andi Webb, Brad Rhew, Miriam Sutton (Front Row L-R) Susan Oltman, Lindsay Smith, Sandra Thornton, and Jenn Annetta (TASAA Staff)*

# **NOAA's Teacher at Sea Program Southeast Region Alumni Workshop Report May 2018**

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**NATIONAL  
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# Workshop Goals and Content

NOAA's Southeast Region Teacher at Sea Alumni (SE TASA) Workshop was held on May 18-20, 2018 in Charleston, South Carolina. 14 Teacher at Sea Alumni (TASA) from the region (FL, GA, NC, and SC) attended this two and a half day professional development workshop in order to strengthen oceanographic content knowledge, build partnerships with NOAA scientists, gain knowledge about NOAA resources, and build an alumni network in their region.

## Workshop Goals:

The goals of the alumni workshop are aligned with selected NOAA Teacher at Sea Program's goals.

- Increase teachers' understanding of earth system science.
- Build working relationships among teachers, emphasizing participation of groups of teachers.
- Build partnerships between NOAA scientists and teachers in the Southeast region.
- Use NOAA data and resources in classroom activities.
- Use NOAA-related career information in classroom activities, when mentoring students and when working with colleagues.

## Workshop Content:

### Alumni Poster Presentations

Teachers created and printed presentation slides prior to the workshop. Upon arrival, slides were mounted on tri-fold boards and TASA presented their posters to each other.

#### Slide content included:

- **Background Information:** name, address, phone number, URL, teaching assignment/experience, reason applied, year sailed, name of ship, where sailed and for how long
- **Ship and Research Goals:** description of ship, the type of research that was being conducted on the mission, and teacher's role
- **At Sea Experience:** description of people met at sea, daily experiences, science content and lessons learned, unique experiences, and pictures of memorable moments
- **Products:** list and description of products created as a result of NOAA's TAS program (lessons, presentations, student projects, curriculum, new courses, community activities, videos, books, etc.)
- **Professional Benefits:** description of how NOAA's TAS program benefitted the educator
- **Highlights:** any additional information regarding the program (Congressional recognition, conferences, improved student test scores, media coverage, etc.)

### Tour of Hollings Marine Lab – Steve Morton, NOAA Research Oceanographer

The Hollings Marine Laboratory (HML) is built on an approximately 8-acre site within the Fort Johnson campus of the South Carolina Marine Resources Center in Charleston, South Carolina. The laboratory is a facility that promotes collaborative and interdisciplinary scientific research to sustain, protect, and restore coastal ecosystems. Although the HML is a NOAA-owned facility, it is a fully collaborative enterprise, governed by the five partner organizations. Scientists from all partner institutions work side-by-side in the laboratory, taking advantage of each other's special expertise.

([https://www.nist.gov/mml/hml/hml\\_overview](https://www.nist.gov/mml/hml/hml_overview))

- **Marine Environmental Specimen Bank (Marine ESB):** Jennifer Ness, National Institute of Standards and Technology (NIST), Research Biologist – Scientists at the lab cryogenically bank environmental specimens collected as part of marine research and monitoring programs. Many specimens are analyzed to determine time trends in emerging contaminants of concern in the environment and as part of a multi-agency effort to determine health trends in marine animals. (<https://www.nist.gov/programs-projects/marine-environmental-specimen-bank>)
- **Aquatic Production: Tanya Darden, South Carolina Department of Natural Resources, Estuarine Finfish Research Coordinator** – The aquatic production area includes 10 independent seawater culture systems each with a self-contained filtration package. There is also a support lab and food preparation area. Research focuses on developing and implementing genetic tools for diverse applications, from traditional population genetics to assessing environmental impacts, all with the ultimate goal of improving the science available to fisheries managers. (<http://www.dnr.sc.gov/marine/stocking/about.html>)
- **Marine Biochemical Sciences: Tracey Schock, NIST, Molecular and Cellular Biologist and Pathologist** – Marine Biochemical Sciences (MBS) mission is to perform state-of-the-art bioanalytical measurements, provide reference data and tools, develop standards, and advance the measurement sciences to support the nation's needs for research on marine organisms. Activities include the development of bioanalytical methods to characterize, identify, and quantitate molecules pertinent to marine organisms, including their biochemistry, molecular biology and toxicology. (<https://www.nist.gov/mml/csd/marine-biochemical-sciences-group>)
- **NOAA Research and Restoration: Cheryl Woodley, NOAA Biologist and Lisa May, NOAA Research Scientist** – Diseases and diminishing health conditions among corals has dramatically increased in frequency and distribution over the last decade. This led to unprecedented decreases in live coral, while altering the function and productivity of coral reef ecosystems. Responding to this threat requires improved scientific understanding and tools to:
  1. Detect and assess trends in coral diseases at the necessary scales for scientific investigation and policy development
  2. Determine the causes and consequences of increasing disease frequency and distribution
  3. Evaluate possible management responses designed to mitigate the spread and effects of disease on coral reef ecosystems and their users
 (<https://cdhc.noaa.gov/about/default.aspx>)

### **Bruce Cowden – NOAA Chief Bosun and Illustrator**

Bruce Cowden's thirty-year career with NOAA as a chief bosun was filled with many responsibilities, stories, a love of the ocean, and art. In addition to deploying and recovering countless instruments while ensuring the safety of the crew and communicating with the ships' officers, Bruce wove his passion of art into his career. He illustrated four books in collaboration with NOAA's Teacher at Sea program. Bruce truly has a passion for communicating the exciting work that NOAA does through storytelling and art. (<https://tinyurl.com/y7b5hvp3>)

### **South Carolina Aquarium Tour – Brian Thill, Director of Education and Kendyll Collins, Education Interpreter III**

Alumni had the opportunity to tour the aquarium behind-the-scenes. They explored and learned about the Sea Turtle Care Center and Hospital that focuses on rescue, rehabilitation, and release of threatened and endangered sea turtles. They also viewed a 42-foot deep Great Ocean Tank from the top, and learned how aquarium staff feed the sea turtles, sharks, eel, and over 500 fish. Alumni visited the food preparation area where individualized, nutritional meals are prepared for many animals to enjoy. There was much more to experience at this aquarium full of hands-on activities, recycled artwork, and several other exhibits. (<http://scaquarium.org/>)

## **Capers Island Wildlife Tour**

Capers Island is an undeveloped barrier island located about 15 miles north of Charleston. The island lies about three miles from the mainland, is approximately three miles in length, and only accessible by boat. It encompasses 850 acres of maritime uplands, 214 acres of front beach, 1,090 acres of salt marsh, and over 100 acres of brackish water impoundments. Prior to arriving at the island, a naturalist explained the salt marsh ecology as alumni cruised through tidal creeks to find diverse wildlife. Once on the island, alumni explored "Boneyard Beach", and interior freshwater ponds. Boneyard's name is due to the old tree skeletons and stumps left as a result of erosion and bleached out by the sun. Capers has been eroding an average of 15 feet per year since 1875. (<https://nature-tours.com/capers-island/>)

## **Andrea Sassard – NOAA Education Strategic Planning Specialist**

Andrea shared several NOAA education online resources, programs, and scholarship opportunities with alumni. She navigated through websites and answered questions. Andrea also welcomed alumni input about how the materials are used in varying grade level classrooms.

## **Alumni Lesson Share**

Each TASA brought one lesson plan to share with the group related to ocean or atmospheric science, or careers. Next Generation Science Standards were included in the lessons, as well as NOAA data and resources.

# Participants

## Participants in Attendance

| Teacher at Sea Alumnus                        | Ship  | School/Institution               |
|---|---|----------------------------------|
| * <a href="#">Virginia Warren</a> (AL)        | <i>Hugh R. Sharp/Oscar Dyson</i>                      | Breitling Elementary School      |
| * <a href="#">Vincent Colombo</a> (DE)        | <i>Oscar Dyson</i>                                    | Sussex Technical High School     |
| <a href="#">Chelsea O'Connell-Barlow</a> (GA) | <i>Bell M. Shimada</i>                                | Renfroe Middle School            |
| <a href="#">Susan Oltman</a> (GA)             | <i>R/V Melville</i>                                   | Mount Vernon Presbyterian School |
| * <a href="#">Sam Northern</a> (KY)           | <i>Gordon Gunter</i>                                  | Simpson Elementary School        |
| * <a href="#">Dana Kosztur</a> (MS)           | <i>Pisces</i>   | St. Martin Middle School         |
| <a href="#">Brad Rhew</a> (NC)                | <i>Bell M. Shimada</i>                                | Cook Literacy Model School       |
| <a href="#">Lindsay Smith</a> (NC)            | <i>Oscar Dyson</i>                                    | Mooresville High School          |
| <a href="#">Andi Webb</a> (NC)                | <i>Oregon II</i>                                      | Alderman Road Elementary         |
| <a href="#">Beverly Owens</a> (NC)            | <i>Henry B. Bigelow</i>                               | Kings Mountain Middle School     |
| <a href="#">Anne Byford</a> (NC)              | <i>Hugh R. Sharp</i>                                  | Gaston Day School                |
| <a href="#">Miriam Sutton</a> (NC)            | <i>R/V Nancy Foster, R/V Kilo Moana, R/V Melville</i> | Science by the Sea               |
| <a href="#">Barbara Koch</a> (SC)             | <i>Henry B. Bigelow</i>                               | Robert Anderson Middle School    |
| * <a href="#">Sandra Thornton</a> (VA)        | <i>USCGC Healy</i>                                    | Broadwater Academy               |

\* TASA from other alumni regions



## Participants Invited but Unable to Attend

| Teacher at Sea Alumnus               | Ship                      | School/Institution                         |
|--------------------------------------|---------------------------|--|
| <a href="#">Kathy Virdin</a> (GA)    | <i>Rainier</i>            | New Hope Elementary School                 |
| <a href="#">Christy Garvin</a> (GA)  | <i>Rainier</i>            | Vaughan Elementary School                  |
| <a href="#">Tom Savage</a> (NC)      | <i>Henry B. Bigelow</i>   | Henderson County Early College High School |
| <a href="#">Tanya Scott</a> (NC)     | <i>Miller Freeman</i>     | Newport Middle School                      |
| <a href="#">Beth Carter</a> (NC)     | <i>Rainier</i>            | Cape Fear Center for Inquiry               |
| <a href="#">David Riddle</a> (NC)    | <i>Albatross IV</i>       | Polk County Middle School                  |
| <a href="#">JoAnne Kronberg</a> (NC) | <i>Rainier</i>            | The Vineyard School                        |
| <a href="#">Lisha Hilton</a> (SC)    | <i>Delaware II</i>        | Pelion Elementary School                   |
| <a href="#">Jaimie Morris</a> (FL)   | <i>Nancy Foster</i>       | Palmetto Senior High School                |
| <a href="#">Nicole Macias</a> (FL)   | <i>Oscar Elton Sette</i>  | Sunrise Middle School                      |
| <a href="#">Heather Diaz</a> (FL)    | <i>David Starr Jordan</i> | Layer Elementary School                    |
| <a href="#">Chris Harvey</a> (FL)    | <i>Oscar Elton Sette</i>  | Edward H. Wright High School               |
| <a href="#">Steven Allen</a> (FL)    | <i>R/V Bellows</i>        | Palm Beach Maritime Academy                |



## Alumni Workshop Staff and Support

| Personnel        | Organization   |
|------------------|--|
| Jennifer Hammond | NOAA's Teacher at Sea Program  |
| Jennifer Annetta | Teacher at Sea Alumni Association/National Marine Sanctuary Foundation   |
| Emily Susko      | NOAA's Teacher at Sea Program  |
| Michelle Carroll | Teacher at Sea Alumni Association/National Marine Sanctuary Foundation   |
| Steve Morton     | Hollings Marine Lab NOAA Oceanographer   |
| Sherri Fields    | Director National Centers for Coastal Ocean Science (NCCOS) Charleston Marine Labs & Deputy Chief, Stressor Detection & Impacts Division |
| Jennifer Ness    | NIST Marine Environmental Specimen Bank, Research Biologist  |
| Tanya Darden     | South Carolina Department of Natural Resources Estuarine Finfish Research Coordinator  |
| Tracey Schock    | NIST Marine Biochemical Sciences Group, Molecular and Cellular Biologist and Pathologist   |
| Cheryl Woodley   | NOAA Research and Restoration, NOAA Biologist  |
| Lisa May         | NOAA Research and Restoration, NOAA Research Scientist   |
| Brian Thill      | South Carolina Aquarium - Director of Education  |
| Kendyll Collins  | South Carolina Aquarium - Education Interpreter III  |
| Bruce Cowden     | NOAA Bosun and Illustrator   |
| Andrea Sassard   | NOAA Education Strategic Planning Specialist   |

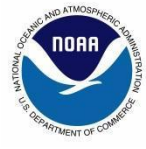
# Agenda



## NOAA Southeast Region Teacher at Sea Alumni Workshop

**Friday, May 18, 2018**

|                      |  |
|----------------------|--|
| <b>8:00 – 8:30</b>   | Poster Set-Up                                  |
| <b>8:30 – 9:00</b>   | Welcome and Introductions                      |
| <b>9:00 – 10:30</b>  | Poster Session                                 |
| <b>10:30 – 10:45</b> | BREAK  |
| <b>10:45 – 11:45</b> | Poster Session                                 |
| <b>11:45 – 12:45</b> | LUNCH  |
| <b>1:30 – 3:30</b>   | Tour of Hollings Marine Lab                    |
| <b>3:30 – 4:45</b>   | Break – Group Discussions                      |
| <b>4:45 – 5:30</b>   | Bruce Cowden, NOAA Chief Bosun and Illustrator |
| <b>5:30 – 6:00</b>   | Discussion and poster breakdown                |



## **NOAA Southeast Region Teacher at Sea Alumni Workshop**

**Saturday, May 19, 2018**

|                     |   |
|---------------------|---|
| <b>9:00 – 9:30</b>  | Behind-the-scenes tour of the South Carolina Aquarium |
| <b>9:30 – 11:30</b> | Tour aquarium exhibits                                |
| <b>11:30</b>        | LUNCH   |
| <b>2:30</b>         | Meet in hotel lobby to travel to Isle of Palms        |
| <b>3:30 – 7:30</b>  | Caper Island Wildlife Tour                            |

**Sunday, May 20, 2018**

|                      |   |
|----------------------|---|
| <b>8:00 – 8:30</b>   | Andrea Sassard, NOAA Education Strategic Planning Specialist            |
| <b>8:30 – 11:00</b>  | Lesson Share with Grade Level Groups                                    |
| <b>11:00 – 12:00</b> | Southwest Regional TASA Discussion and Next Steps; Forms and Evaluation |
| <b>12:00</b>         | LUNCH   |

# Evaluation Data

## Results from NOAA's Southeast Region TASA Workshop Evaluation (n=12)

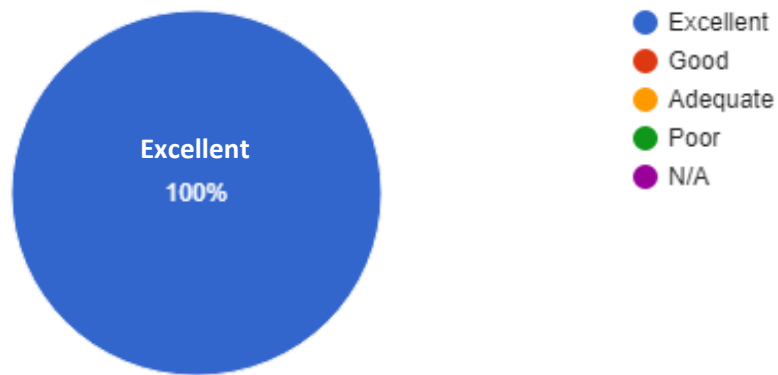
Participants were asked to select from – excellent, good, adequate, poor or N/A for the following items:

### Multiple Choice Questions

*Figure 1. Forms response chart for question: "Overall Workshop"*

#### Overall Workshop

12 responses



*Figure 2. Forms response chart for question: "Quality of Workshop Content"*

#### Quality of Workshop Content

12 responses

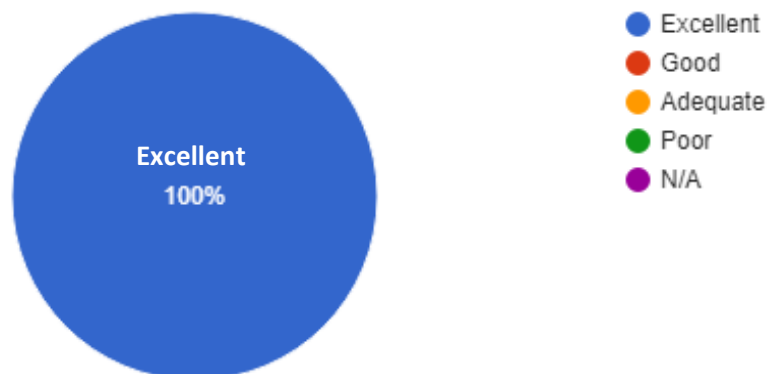


Figure 3. Forms response chart for question: “Relevance to your work”



Figure 4. Forms response chart for question on Poster Session

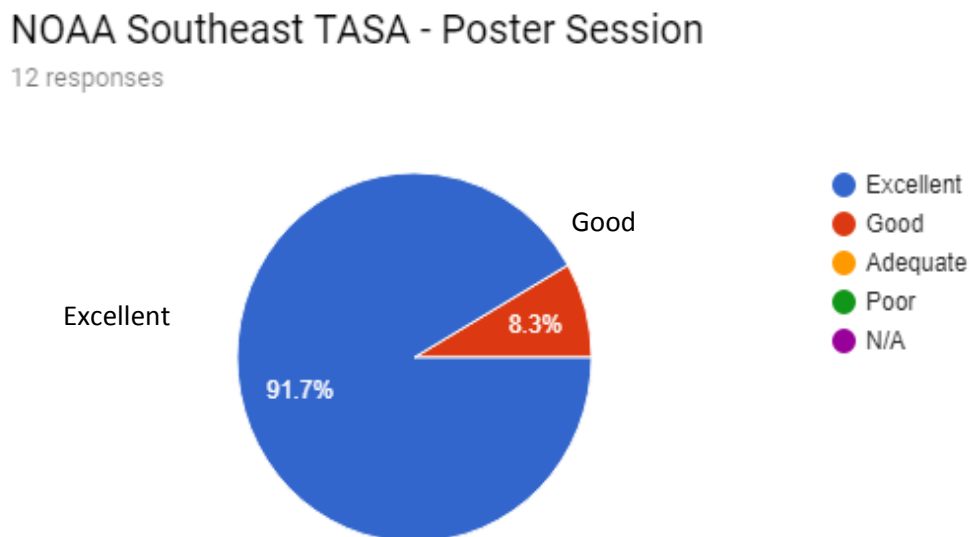


Figure 5. Forms response chart for question on Hollings Marine Lab Tour – NIST Specimen Bank

### Hollings Marine Lab Tour - Jennifer Ness: NIST Specimen Bank

12 responses

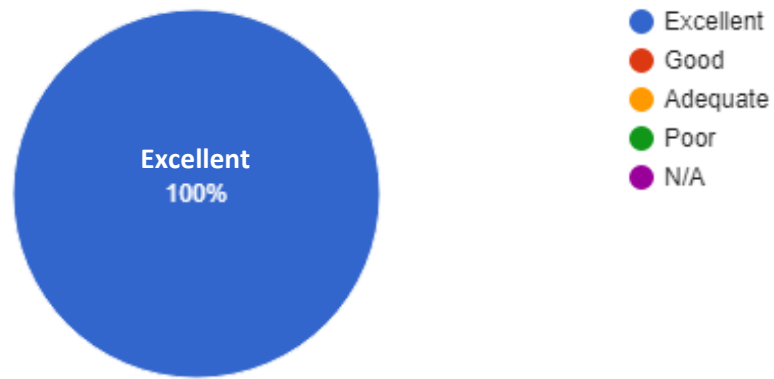


Figure 6. Forms response chart for question on Hollings Marine Lab Tour – Fin Fish and Red Drum

### Hollings Marine Lab - Tanya Darden: SC Dept. Natural Resources - Fin Fish and Red Drum

12 responses

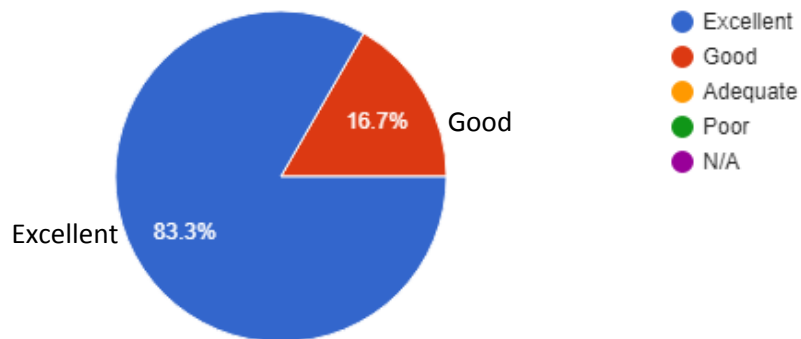


Figure 7. Forms response chart for question on Hollings Marine Lab Tour –  
Marine Biochemical Sciences Group

### Hollings Marine Lab Tour - Tracey Schock: NIST Marine Biochemical Sciences Group

12 responses

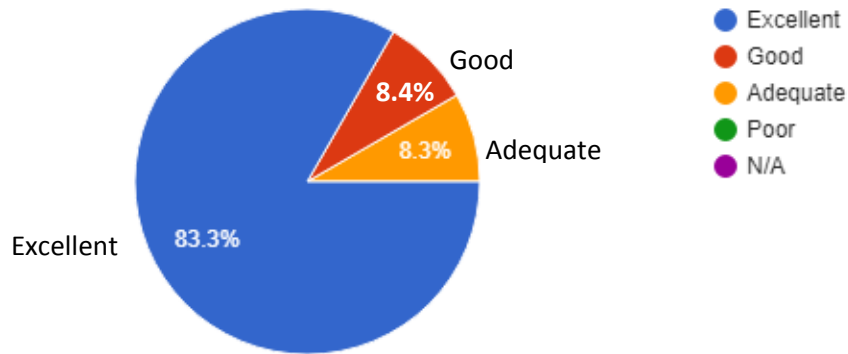


Figure 8. Forms response chart for question on Hollings Marine Lab Tour –  
NOAA Coral Research and Restoration

### Hollings Marine Lab Tour - Cheryl Woodley and Lisa May - NOAA Coral Research and Restoration

12 responses

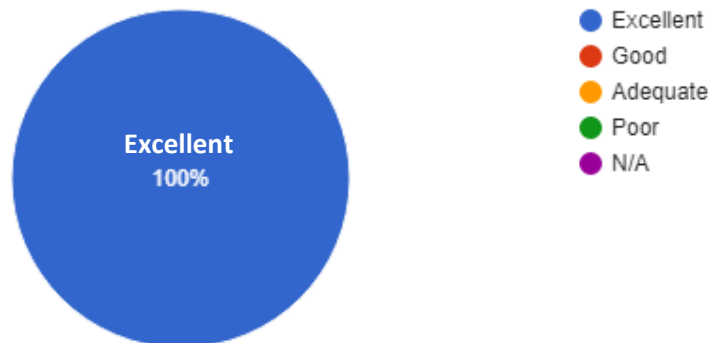




Figure 9. Forms response chart for question on Bruce Cowden presentation

### Bruce Cowden - Presentation: "Art Meets Science"

12 responses

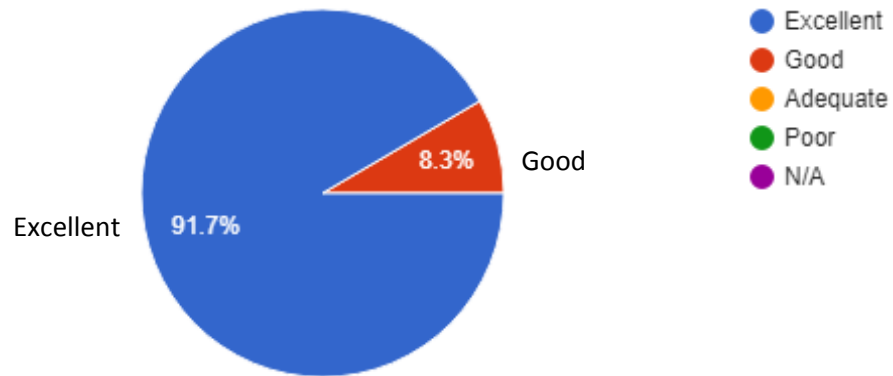


Figure 10. Forms response chart for question on SC Aquarium Tour

### SC Aquarium Tour - Kendyll Collins

12 responses

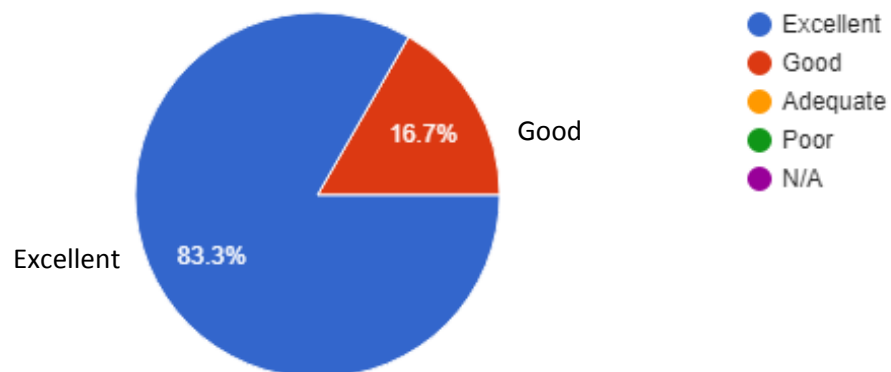


Figure 11. Forms response chart for question on Barrier Island Eco Tour

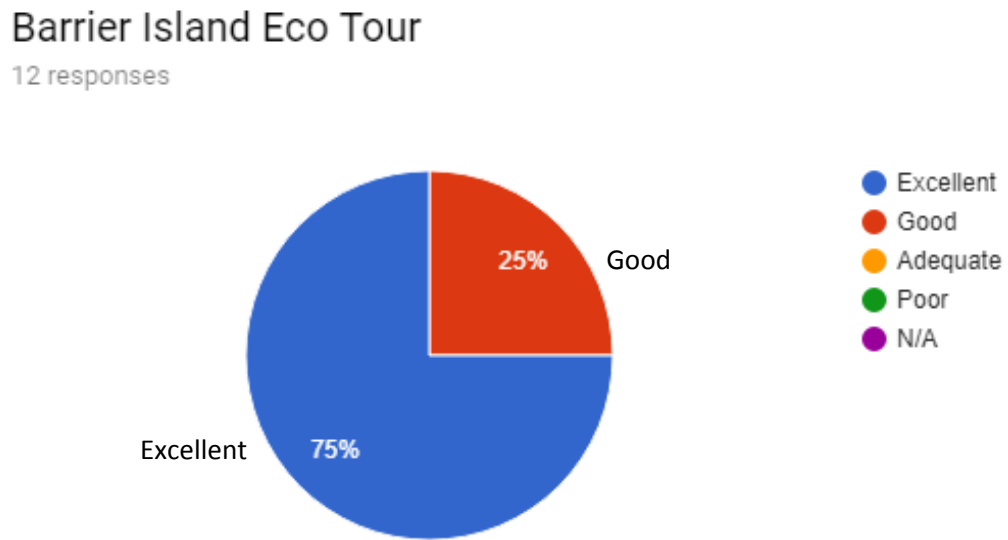


Figure 12. Forms response chart for question on Lesson Share and Collaboration

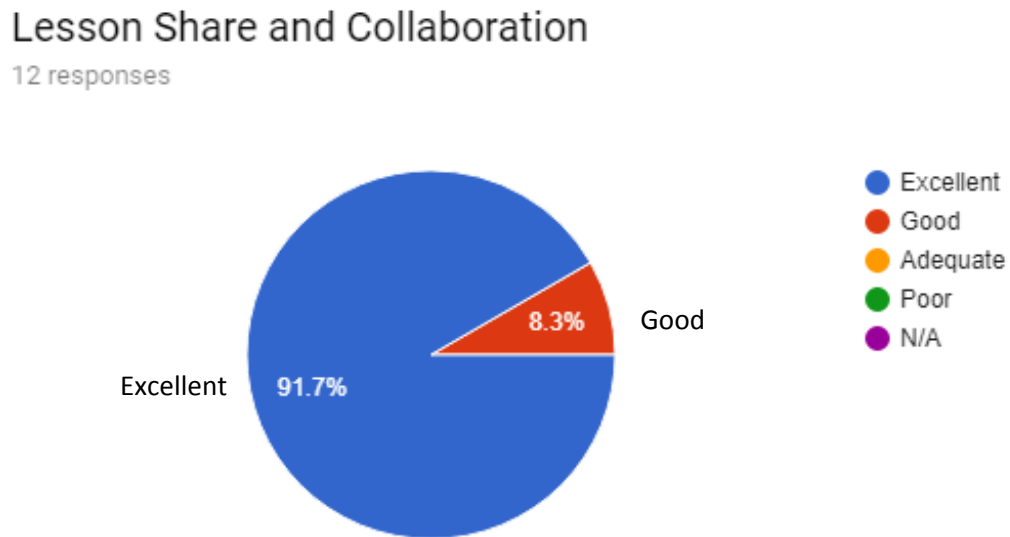
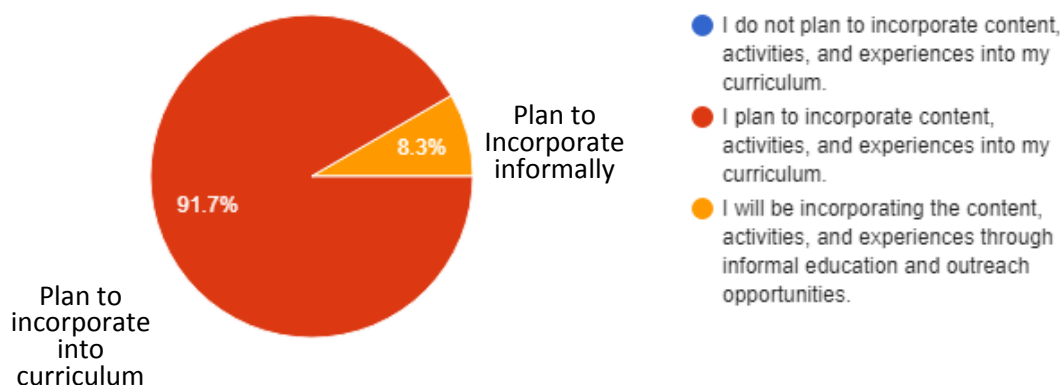


Figure 13. Forms response chart for question: “Do you plan to incorporate content, activities, and experiences from this workshop into your curriculum?”

Do you plan to incorporate content, activities, and experiences from this workshop into your curriculum?

12 responses



***Those alumni who said that they plan to incorporate workshop content into their curriculum explained that they would do so in the following ways:***

- I can adapt every lesson from the lesson shares in my curriculum. I will be able to use the information from the aquarium, marine lab, and eco-tour in my life science units. I am hoping to do some more research on corals and elaborate on what I learned from the marine lab. I think I can use it in my chemistry unit.
- I will use the NOAA Teacher at Sea picture books by Bruce Cowden to show students the writing process and how real-life experiences can be captured in a narrative. I will also share with students the ecosystem of the southeast Atlantic which is one of the closest ocean habitats to my school. The field trips in Charleston have inspired me to find ways for my students to learn more about their local environment and to make connections with science standards/objectives.
- The research process as explained and modeled by scientists at Hollings Marine Lab; Science and art projects ideas from Bruce Cowden and displays at aquarium; Ocean health investigations - coral health studies lessons; Sharing and scaling with other science teachers at my school; Skype with scientists at Hollings; Implement a couple of my TASA colleagues' lessons
- I loved Bruce's "Art Meets Science", and I would like to incorporate more art-based activities. The coral research/restoration tour is something that I will use in my Marine Bio course.
- I am sharing lessons with other science teachers in my school district and encouraging teachers in my district to apply to be a TAS. Thanks for everything!
- Using data available from the Hollings Marine lab in student research

## Open-Ended Questions:

### *What was the most valuable part of the workshop?*

- Connecting and sharing with other TAS alumni.
- Opportunities to share with other TASA were very important. The tours/activities helped me to think of new ways in which to incorporate my TAS experience.
- Hollings Marine Lab was also a home run!
- I really enjoyed just getting to know everyone and having fun with people who value similar things in education. Hearing about the great things others have done was also very helpful. I felt rejuvenated after the workshop. Thank You!
- It was one of the best workshops I have ever attended. It was very well organized.
- Learning about other NOAA opportunities, programs, and resources.
- Organization and flow of the workshop. Great mix of amazing sessions. Included researchers and tours. Using a business model for the workshop. Good mix of grade levels. Focus on real data.
- Lesson Share
- Facilitated sharing during poster sessions.
- Hearing from Bruce Cowden.
- Aquarium visit behind-the-scenes.
- The evening program was a great opportunity to compare “my” barrier islands to another barrier island system.
- There was actually time for discussion and collaborations. We did a lot of activities, but there was also plenty of discussion time.
- I loved the poster share as an ice breaker. I think it bonded us right away.
- I loved the integrity of the group – intelligent, science-minded people open to sharing and learning from example.
- Loved the willingness and ability of TASAA to support this opportunity as our continuing excursion experience.

### *How could this workshop have been improved?*

- Nothing!  
I SO appreciate how we were treated as professionals in our field of education, and we were treated with respect. We were treated like kings and queens. I can't remember another time in my 13 years of being a teacher when I have been treated so well.
- Lesson share with everyone. Not just grade level. There were several elementary and middle school lessons I would like to have seen.
- More days together.
- Provide contact information prior to the workshop.
- Would love business card of the scientists at Hollings Marine Lab.
- Hard at times to hear and see guide at the aquarium.

***Additional Comments:***

- This was so important to my experience. This feels like closure on my first chapter of TAS. The next phase is kicking off with utilizing these lesson shares and building my own so I can “pay” back the other TAS.
- I had an amazing time at the TASA weekend. I feel refreshed (mentally and professionally) after this weekend – particularly since this is the end of the school year. The activities were awesome, fun, and educational.
- Thank you for treating us as professionals. I felt so welcomed and respected...which is difficult to come by in education these days!
- Amazing workshop – great way to tie the whole experience together.
- Amazing opportunity that will result in much fruitful sharing and collaboration. My expectations were positive, and I was excited, but it exceeded my expectations – loved it all!
- Thank you for organizing a session that was relevant and interesting. I learned so much, and I am ready to take this back to the classroom.

## Appendix: Photos

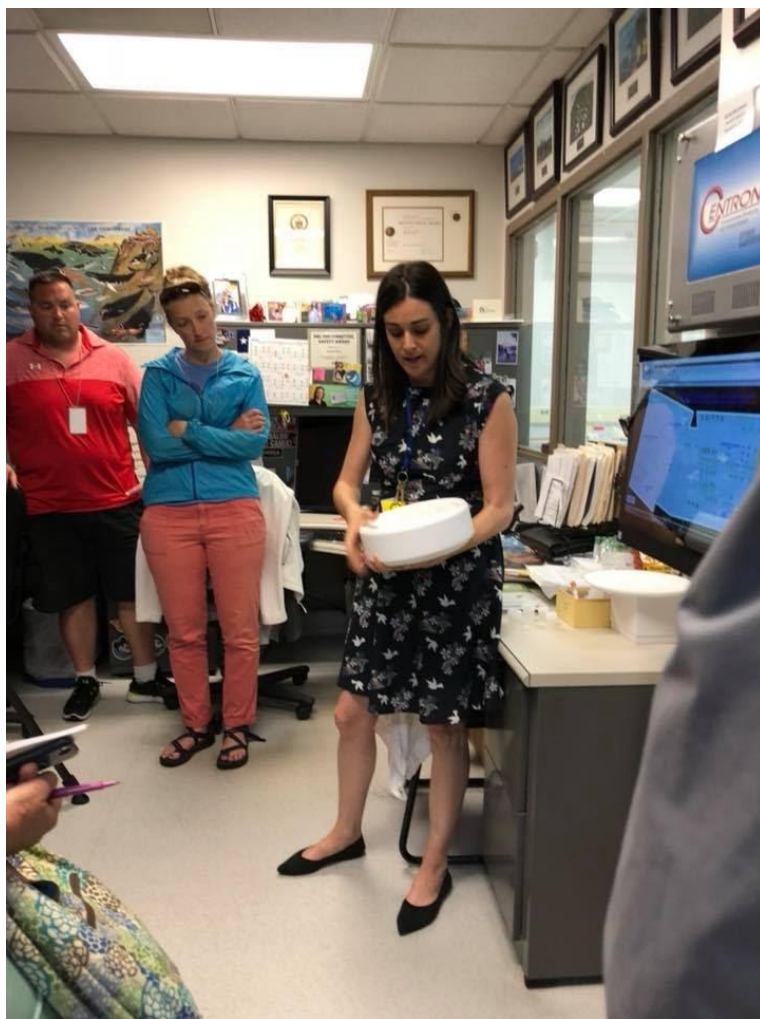


*Sam Northern (L) and Dana Kosztur prepare their poster for the poster session*



*Beverly Owens (R) shares her TAS experience with (L-R) Susan Oltman, Chelsea O'Connell-Barlow, and Miriam Sutton*





*Jennifer Ness gives alumni a tour of the Marine Environmental Specimen Lab*



*Hollings Marine Lab/National Institute of Standards and Technology Marine Environmental Specimen Bank*





*Tanya Darden, South Carolina Department of Natural Resources, Estuarine Finfish Research Coordinator at the Hollings Marine Lab Aquatic Production Area*



*Tracey Shock, NIST Molecular and Cellular Biologist and Pathologist, explains the Marine Biochemical Sciences Group research*



*Cheryl Woodley, NOAA Biologist, shares her coral research with TASA*



*Lisa May, NOAA Research Scientist, explains the work that is conducted at the lab*





*A close-up of coral under glass at the NOAA Coral Research and Restoration Center  
at Hollings Marine Lab*

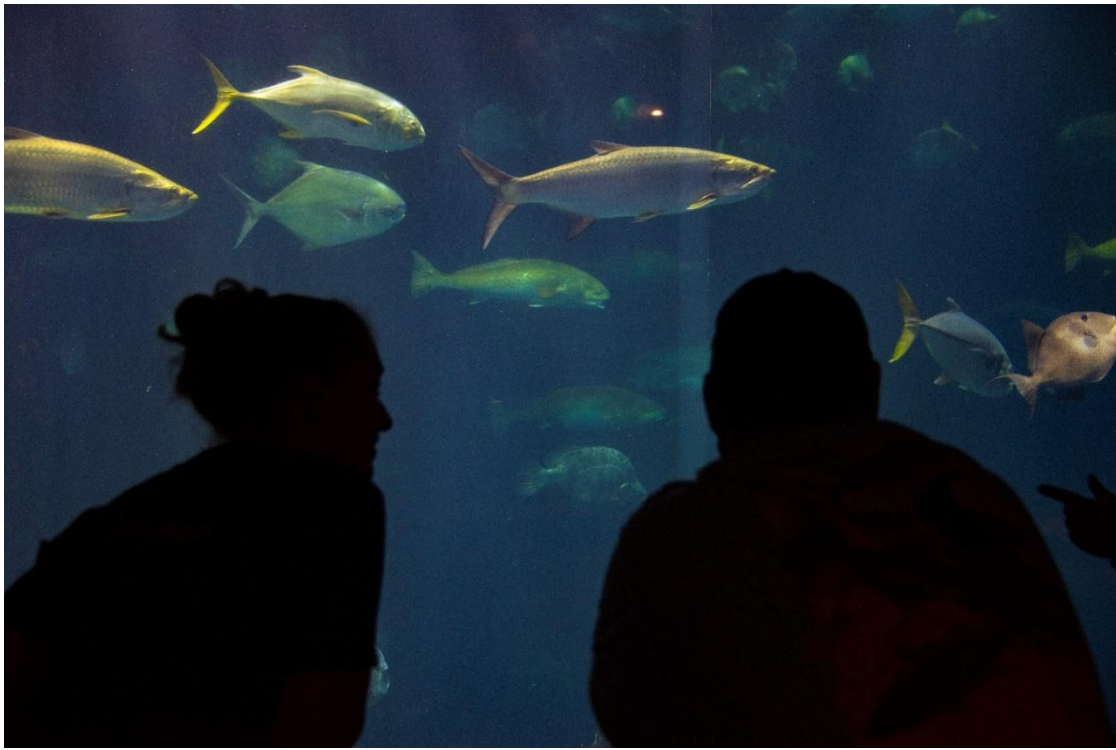


*Bruce Cowden presents his NOAA Chief Bosun experience interwoven with his artwork*



*Bruce Cowden (Right) signing NOAA Teacher at Sea books that he illustrated.  
(L-R) Brad Rhew, Chelsea O'Connell-Barlow, and Lindsay Smith*





*TASA taking in the aquarium exhibits*

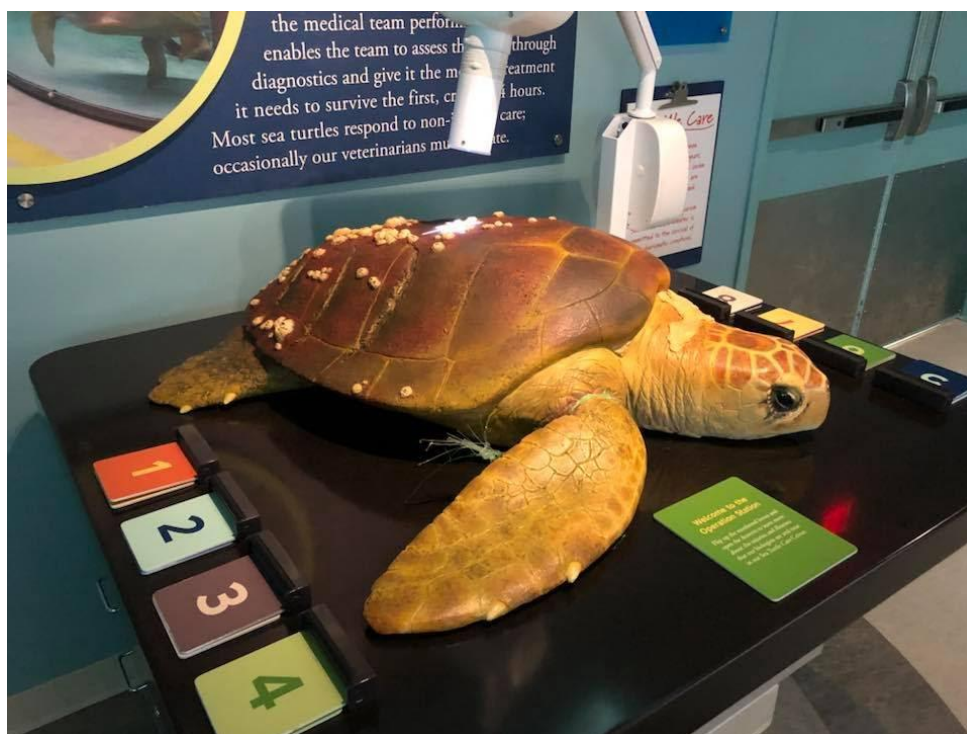


*SC Aquarium Education Interpreter, Kendyll Collins, shows TASA the food preparation area*



*Topside view of the 42-foot deep Great Ocean Tank*





*Interactive sea turtle exhibit at the SC Aquarium*



*SC Aquarium Education Interpreter, Kendyll Collins, introduces "Sassy" the skunk to TASA*





*Beverly Owens sees how she measures up to a stingray!*



*A Naturalist explains the local marine ecology on the way to Capers Island*



*Vinny Colombo enjoying the trip to the barrier island*



*Capers Island – Boneyard Beach*



*Capers Island – TAS Alumni 2018*