

Semi-Annual Performance Report for  
Award Number NA16SEC4810009  
Reporting Period: September 1, 2016 to February 28,  
2017

**NOAA CENTER FOR COASTAL  
AND MARINE ECOSYSTEMS  
(CCME)**

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University of Texas, Rio Grande Valley – Dr. David Hicks  
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Bethune-Cookman University – Dr. Hyun Jung Cho  
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(Institutional PI)

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# NOAA Cooperative Science Center Project Performance Report

Reporting Period September 01, 2016 – February 28, 2017

## I. Executive Summary

This report covers the reporting period September 1, 2016 – February 28, 2017 for the newly established National Oceanic and Atmospheric Administration’s Center for Coastal and Marine Ecosystems (NOAA CCME). The CCME is a cooperative agreement between the NOAA Educational Partnership Program for Minority Serving Institutions (EPP/MSI), Florida A&M University (FAMU) – lead institution, Bethune-Cookman University (B-CU), Jackson State University (JSU), Texas A&M University-Corpus Christi (TAMUCC), California State University-Monterey Bay (CSUMB), and University of Texas-Rio Grande Valley (UT-RGV). The team consists of a new suite of partners as well as previous partners, all of whom bring unique capabilities to ensure the successful implementation of goals and objectives of this award.

The mission of the CCME is to build upon the best practices from the previously established NOAA Environmental Cooperative Science Center (ECSC) to educate and train a new generation of scientists, particularly from underrepresented minority communities, in NOAA-relevant STEM disciplines and social sciences, equipped to utilize interdisciplinary approaches to address issues confronting marine and coastal communities. The institutions welcome this opportunity to present a new suite of goals and objectives in alignment with NOAA’s current priorities as reflected in the NOS Roadmap (NOS, 2014).

Based on this mission the following goals have been established for the NOAA CCME:

- 1) Recruit, train, and graduate students, particularly from underrepresented minority groups with the competencies and skills that support NOAA’s Education Strategic Plan, workforce goals, and strategic objectives.
- 2) Conduct research leading to the development of management and communication tools that can be utilized to enhance the resilience of coastal communities and economies.
- 3) Develop competency and skills in the utilization of new and existing “Big Data” archives in decision support tools that promotes the vibrancy of coastal and marine ecosystems.

During this initial reporting period the CCME established an implementation plan and evaluation plan to track and assess project performance for years 1-5. Faculty members from the six participating institutions have implemented recruitment strategies resulting in the selection of 22 student participants in the center's initial cohort. As part of the research objectives of the CCME, committees in the areas of Coastal Resilience, Coastal Intelligence, and Place-Based Conservation have been established. Teams in the areas of Education and Social Sciences have also been established to meet project needs of training students to meet skill and competency requirements including an understanding of potential human dimensions of research conducted by CCME students and faculty. CCME teams have developed the course content for both the Center-wide core competency course and the big data boot camp.

Several organizational and administrative tasks have been executed during this reporting period. All partner institutions have been awarded subcontracts and the partners have initiated expenditures necessary for project implementation. The CCME has formally established its management and communication components with monthly teleconference calls held by the center management team and regular conference calls and meetings by all thematic area teams. Considerable progress has been made in the selection and utilization of an evaluation expert and the development of the draft evaluation plan. A national search has resulted in the selection of the Assistant Director and the scheduling of interviews for three candidates for the role of distinguished scientist.

Through NOAA-relevant research, the CCME faculty, staff and students will continue to produce results that can be used for better understanding and resolution of short-term and long-term science and policy issues related to coastal regions.

The following semi-annual report includes the activities that took place during the reporting period of September 1, 2016 through February 28, 2017.

## II. Accomplishments

What are the major goals of the project?

### **1. Recruit, train, and graduate students, particularly from underrepresented minority groups, with the competencies and skills that support NOAA's Education Strategic Plan, workforce goals and strategic objectives:**

- a) Provide financial support, education and training experiences for K-12 students, undergraduate students, graduate students, and postdoctoral fellows through teaching and mentoring provided by CCME faculty.
- b) Leverage new and existing partnerships with community colleges and high schools to recruit and prepare students for NOAA-relevant degree programs at CCME institutions.
- c) Utilize the Center-Wide Competency Course (CWCC) to ensure student proficiency in CCME focus areas.

d) Expose students to broader research and experiential learning opportunities such as Student Scholarship Internship Opportunities (SSIO) and NERTO, as well as through partnerships with NOAA and other scientists.

**2. Conduct research leading to the development of management and communication tools that can be utilized to enhance the resilience of coastal communities and economies:**

- a) Assess coastal risks and vulnerabilities
- b) Identify solutions to reduce risks and vulnerability
- c) Utilize engagement to empower coastal communities.

**3. Develop competency and skills in the utilization of new and existing “Big Data” archives in decision support tools that promotes the vibrancy of coastal and marine ecosystems.**

- a) Develop and implement a “Big Data Analytics Boot Camp”.
- b) Conduct research utilizing “Big Data” sets related to coastal and marine ecosystems.
- c) Develop tools such as communication and mitigation strategies associated with threats to coastal and marine ecosystems and coastal communities.

What was accomplished under these goals (recipient must provide information for the 4 categories below)?

**Major Activities:**

**CCME Florida A&M University (FAMU)**, as the lead institution for the NOAA CCME, has executed all sub-awards to the partner institutions.

Recruitment activities were conducted internally by CCME faculty and staff, and externally with coordinated efforts of a university-provided recruiter. External recruitment activities were conducted at regional recruiting events at high schools and community colleges. CCME participated in recruitment activities during key scientific meetings and conferences. The lead institution and partner institutions distributed press releases and additional marketing tools to enhance exposure of the Center to students as well as a broader collection of stakeholders.

Through FAMU an external evaluator, Mark Howse, was hired through a bidding process. Mark Howse serves as the Director of the Stellar Diverse Student Achievement Center.

Announcement and recruitment for the CCME Assistant Director position was completed. Sharmini Pitter, PhD was selected in this performance period. (Dr. Pitter's start date: March 15, 2017).

The Data, Information and Communications Manager and Distinguished Research Scientist positions have been advertised and the application acceptance period has closed. Candidates for both positions are currently under review by the CCME Faculty and Center Management Team (CMT). At this time, the Associate Director and Thematic Area Leads are assuming the responsibilities of the Distinguished Scientist. The Assistant Director, the Education Expert, and input provided by FAMU's IT staff are covering the essential functions of the Data, Information and Communication Manager.

The CCME Advisory Council members (seven) are currently under consideration. Formation of the Community Stakeholders Advisory Board has begun. The organizations associated with memberships to the Community Stakeholders Advisory Board can be found listed in Section III herein as partner organizations.

Monthly teleconference meetings for the Place Based Conservation, Coastal Resilience, Coastal Intelligence, Education, Social Science, and Principal Investigator team have all been established. Team members have also been participating regularly in multiple teams' meetings to merge ideas across the center.

**CCME Texas A&M University-Corpus Christi (TAMU-CC)** hired the Research Specialist provided for in the approved proposal. Mikell Smith came on board in October 2016 to provide coordinated Center-wide assistance to CCME faculty and students with experiential training opportunities and applications, recruiting, and outreach through STEM and minority serving student organizations, and providing assistance in coordinating reporting activities.

Smith launched a recruiting campaign seeking to fill the five Ph.D. and three M.S. student positions. The campaign entailed direct email and telephone contact with key faculty at Hispanic-serving Institutions (HSIs) and Historically Black Colleges and Universities (HBCUs), a Facebook advertising campaign, and an ad on the TAMU-CC College of Graduate Studies website. CCME faculty also recruited students via traditional channels as students applied for the relevant degree programs.

CCME faculty and staff joined the CCME focus area committees and participated in their conference calls, along with those of the Education and Social Science committees.

CCME faculty and staff participated in monthly CCME conference calls to advance planning and implementation of CCME activities.

Smith circulated NOAA experiential research and training opportunities to CCME fellows and faculty and assisted students as needed.

**CCME California State University, Monterey Bay (CSUMB)** has identified potential student participants in the CCME. A new student cohort will be in place by the next reporting period and they will begin conducting research.

**CCME The University of Texas-Rio Grande Valley (UTRGV)**

The University of Texas Rio Grande Valley (UTRGV) placed an ad (January 19, 2017) for a Research Specialist to develop a research program in the broad area of Coastal and Marine Science. This position is co-funded by the NOAA EPP Center for Coastal and Marine Ecosystems (CCME) and the UTRGV College of Science. The position requires that the candidate contribute 80% of their time to the research mission and goals of the NOAA CCME. The Research Specialist will assist UTRGV CCME faculty and students with experiential training opportunities and applications, recruiting and outreach through STEM and minority serving student organizations, and coordinating reporting activities.

UTRGV launched a recruiting campaign seeking to fill the six M.S. and five student positions. The campaign included direct email contact with UTRGV undergraduate students including our Marine Biology and Environmental Sciences majors and a Facebook advertising campaign. UTRGV faculty also recruited students via traditional channels as students applied for the relevant degree programs.

UTRGV faculty joined the CCME focus area committees and participated in their conference calls, along with those of the Education and Social Science committees.

UTRGV faculty and staff participated in monthly CCME conference calls to advance planning and implementation of CCME activities.

UTRGV CCME faculty circulated NOAA experiential research and training opportunities to CCME fellows and faculty and assisted students as needed.

**CCME Bethune-Cookman University (B-CU)** has identified four students who will participate in the NOAA CCME cohort for Fall 2016.

**CCME Jackson State University (JSU)** is currently accepting student applications for the NOAA CCME.

### **Specific Objectives:**

- 1a) Provide financial support, education and training experiences for K-12 students, undergraduate students, graduate students, and postdoctoral fellows through teaching and mentoring provided by CCME faculty.

Partner institutions have provided financial support, education and training experiences to undergraduate and graduate students as detailed in Section VI.

- 1b) Leverage new and existing partnerships with community colleges and high schools to recruit and prepare students for NOAA-relevant degree programs at CCME institutions.

Partner institution activities have been planned to recruit interested high school and community college students. These activities will take place and be reported on during the next reporting cycle.

UTRGV faculty participated in a regional science fair as judges and recruiters of promising high school students. Advertising of CCME opportunity was done at two graduate studies fair organized at UTRGV.

- 1c) Utilize the Center-Wide Core Competency Course (CWCC) to ensure student proficiency in CCME focus areas.

All CCME Faculty and staff participated in the planning of the CWCC through collaboration amongst CCME partner institutions in developing curriculum and learning modules. In particular CWCC organization was led by the Education Lead, Dr. Kelley, to whom the Focal Area Leads will provide summarized objectives and course curriculum.

Significant progress was made through each institution offering representation in all the CCME focus area committees as well as the cross-cutting committees (Education and Social Science). Each of the focus area committees is identifying methods and materials for incorporating coastal intelligence, coastal resilience, and place-based conservation into the training along with Social Science and Data

Science. The CWCC is scheduled to occur during the next reporting period. The final outcomes of the CWCC will be reported during the next reporting period.

- 1d) Expose students to broader research and experiential learning opportunities such as Student Scholarship Internship Opportunities (SSIO) and NERTO, as well as through partnerships with NOAA and other scientists.

Members of each partner institution circulated SSIOs to CCME students and faculty. NERTOs will be arranged once NOAA mentors have been assigned to the new CCME students. CCME students applied for several SSIOs as detailed below under “Significant Results”.

- 2a) Assess coastal risks and vulnerabilities

In collaboration with their faculty advisors, TAMUCC CCME students developed research project ideas that will explore coastal challenges. These project ideas will be shared with the focal area leads to aid further discussions of potential student projects in each focus area.

- 2b) Identify solutions to reduce risks and vulnerability

Potential student research project topics have been explored to include solutions to reduce risks and vulnerability. Possible topics include:

- Coastal and marine protection program recommendations that incorporate economic impact analysis and ecosystem services valuation
- Maps and models with cross-system applicability to inform mitigation/conservation management
- Create a new model that predicts post-storm conditions based on increased sand dune heights and hypothetical topographic scenarios
- Testing the value of instruments including a terrestrial laser scanner and Real Time Kinematic GPS to determine how surface elevations and vegetation were affected by maintenance
- A multi-criteria decision analysis approach to assist stakeholders and the government to more effectively deal with decommissioned energy structures
- Potential management strategies to for the Red Snapper fishery

- 2c) Utilize engagement to empower coastal communities.

The CCME Social Science Committee, consisting of Dr. Phyllis Gray-Ray, as CCME Social Science Lead, and members Dr. David Yoskowitz, Dr. Owen Temby, Dr. Richard McLaughlin, Dr. Hyung J. Cho, Dr. Hongmei Chi, and Dr. Elijah Johnson spent significant meeting time planning community engagement. This committee embodies substantial Social Science expertise that will be employed in developing community engagement workshops. CCME is also considering deployment of surveys to assess the awareness and perspectives of environmental issues among coastal community members to guide workshop development and assess results. The Community Stakeholders Advisory Board members will provide input to guide community engagement.

- 3a) Develop and implement a “Big Data Analytics Boot Camp”.



CCME TAMU-CC Co-Principal Investigators Drs. Jim Gibeaut, McLaughlin, and Yoskowitz worked closely with the Education, Coastal Resilience, and Social Science committees toward incorporating Big Data into the annual Center-wide Core Competency course (CWCC) to be held in July/August of 2017. Drs. Paul Montagna and Gibeaut helped to identify data resources that could be used during the CWCC through their membership in the CCME Coastal Intelligence Committee.

- 3b) Conduct research utilizing “Big Data” sets related to coastal and marine ecosystems.

Dr. Gibeaut is collaborating with CCME on data archiving methodologies. As research projects get farther along, partners will be better prepared to manage data.

- 3c) Develop tools such as communication and mitigation strategies associated with threats to coastal and marine ecosystems and coastal communities.

Community outreach and engagement has been a focus of the Social Science committee. The community workshops and surveys under consideration will provide critical information for understanding subject communities and for communicating science to residents.

### **Significant Results:**

#### **Florida A&M University (FAMU):**

During the current reporting period, in addition to student training through traditional coursework, FAMU faculty held one-on-one sessions and a teleconference with FAMU students to prepare them as applicants to the Hollings and EPP Fellowships. FAMU Faculty and Staff provided advisement to students interested in joining the CCME Cohort 1.

Center wide the CCME partners have engaged with students through various field experiences.

#### **CCME Texas A&M University-Corpus Christi (TAMU-CC):**

Two CCME cohorts embarked on Ph.D. degree programs in NOAA-related sciences. One Ph.D. student will join the program in May and two more have been identified to begin in Fall 2017.

An attractive and informative recruiting flyer was developed along with CCME web pages for recruiting as well as to inform the public about the project were launched on the Harte Research Institute (HRI) website. The Corpus Christi Caller-Times newspaper interviewed HRI faculty and published an article about the program.

CCME Student Elizabeth Del Rosario applied for the 12-week summer internship “Hydrodynamic and Hydrologic Modeling Intern” offered by NOAA NWS/NOS - Chesapeake Bay.

The Research Specialist was hired and made good progress with required duties. Mikell Smith has a Master’s degree in Environmental Science and a Bachelor’s degree in Communications. After a prior career in private business he worked for 7 ½ years for an

environmental nonprofit coordinating Gulf of Mexico-focused conservation and habitat restoration projects, meetings, and workshops. He also served as Coordinator for the Gulf of Mexico Alliance Habitat Conservation and Restoration Team. During the reporting period, Smith worked closely with CCME faculty and students to accomplish the results noted within this report. He also inventoried CCME faculty research experience and expertise to identify faculty resources that can be brought to bear upon research projects and tools.

**CCME California State University, Monterey Bay (CSUMB):**

N/A

**CCME The University of Texas-Rio Grande Valley (UTRGV):**

The CCME UTRGV recruiting efforts yielded five undergraduate student positions (100%) and three graduate student positions (50%) with 75% from underserved, under-represented minorities. It is expected that 100% of graduate students will be recruited by the start of the fall semester.

**CCME Bethune-Cookman University (B-CU):**

Mallory Brooks applied for the NOAA Deep-Sea Coral Cruise NOAA, Center for Coastal Ocean Science.

Philip Bellamy applied for the summer graduate internship at National Geospatial-Intelligence Agency and accepted for summer of 2017.

**CCME Jackson State University (JSU):**

N/A

**Key outcomes or other achievements:**

What training and professional development were completed during the reporting period for Center postsecondary students, early professionals, postdocs, and faculty?

CCME students applied for training opportunities that will occur during the next reporting period. CCME TAMU-CC Coordinator Mikell Smith encouraged CCME students to take advantage of scientific webinars, and shared the One NOAA Science Seminars list serve. CCME Ph.D. student, Diana Del Angel, participated in the following webinars:

Mapping Coastal Storm Surge Flooding and Marsh Structure

Wetland Mapping Consortium- training webinars

October 5, 2016

Presenters: Amina Rangoonwala – USGS and Dr. Elijah Ramsey III USGS

Mapping ecosystem Markets

Joint effort by USDA Office of Environmental Markets, EPA EnviroAtlas, and

Forest Trends Ecosystem Marketplace October 12, 2016

Presenters: Jessica Daniel; Anne Neale; Christopher Hartley; Genevieve Bennett

Forest Trends Ecosystem Services; Nathaniel Carol,

**Improving Prediction of Salt Marsh Response to Sea Level Rise: New Methods and Novel Dynamics**

OneNOAA Science Seminar Series January 19, 2017 11:00 am

Presenters: Dr. Scott Ensign, Aquatic Analysis and Consulting LLC, Morehead City, NC; and Dr. Carolyn Currin, NCCOS Center for Coastal Fisheries and Habitat Research, Beaufort, NC. Presenting remotely from Beaufort.

**Making Marine Ecosystem Services Matter**

January 18/2017

This webinar is also co-sponsored by MPA News, MEAM, OpenChannels, and the EBM Tools Network (co-coordinated by NatureServe and OpenChannels.org)

Presenters: Nicola Beaumont of Plymouth Marine Laboratory; Esther Wolfs of Wolfs Company; and Samir Rosado of the Belize Coastal Zone Management Authority and Institute.

**CCME California State University, Monterey Bay (CSUMB): N/A**

**CCME The University of Texas-Rio Grande Valley (UTRGV): N/A**

**CCME Bethune-Cookman University (B-CU):**

J. Cho Professional development (Sept 2016 - Feb 2017)

- Guest editor: Seagrass and other submerged aquatic vegetation occurring in coastal habitats (for Southeastern Geographer)
- Reviewer for journal: Remote Sensing, Open Access Journal
- Reviewer Florida Exotic Pest Plant Council Education Grant proposals
- Indian River Lagoon County Council STEM Committee member
- Project H2O (a regional consortium for protecting waters) steering committee member

**CCME Jackson State University (JSU): N/A**

How have the results been disseminated to communities of interest, including NOAA and other stakeholders?

Results will be disseminated in the future, once project results are available.

What actions will be taken by the Center during the next reporting period to accomplish the goals?

- Students will continue their coursework and also participate in SSIOs if their applications are successful.

- Faculty will fully develop the CWCC/Big Data Bootcamp and students will participate in the course, both the advance online modules and the hands-on week of training at the Gulf Coast Research Lab.
- Community workshops will be identified and scheduled.
- The newly recruited cohort will begin degree programs in summer of 2017 with the remainder starting in Fall.
- Research projects and tools will be further developed and aligned with CCME focus themes and NOAA science goals.

### III. Products of Award

#### **Degrees Awarded:**

None during this period.

#### **Publications in Journals:**

None during this period.

#### **Books:**

None during this period.

#### **Book Chapters:**

None during this period.

#### **Thesis/Dissertations:**

None during this period.

#### **Conference Papers, Posters and Presentations:**

None during this period.

#### **Other Publications:**

\*indicates author is a CCME student; \*\*indicates CCME Faculty

**McLaughlin, R.\*\***, "Mexico's Deep-water Oil Auction Will Have Big Effects in Texas, But More Science is Needed." Op/Ed, Texas Tribune, December 18, 2016.

Turner, E.L., K. Savage, J. Trungale, T.A. Palmer and **P.A. Montagna\*\***. 2016. Effect of freshwater inflow on habitat suitability change in Texas bays. Report to the Texas Environmental Flows Working Group and National Fish and Wildlife Foundation. Harte Research Institute, Texas A&M University-Corpus Christi, Corpus Christi, Texas. 35 pages.

**Montagna, P.A.\*\***, **D. Yoskowitz\*\***, and C. Carrollo. 2016. The Effect of the Deepwater Horizon Oil Spill on Human Wellbeing in the Gulf of Mexico. Final report submitted to National Academy of Science, Gulf of Mexico Research Program, Exploratory Grants – Award Year 2015, NAS Grant Number 200005982. Harte Research Institute, Texas A&M University-Corpus Christi, Corpus Christi, Texas, 33 p.

**Montagna, P.A.\*\***, L. Adams, C. Chaloupka, **E. DelRosario**, R.D. Kalke, and E.L. Turner. 2016. Determining Optimal Pumped Flows to Nueces Delta. Final Report to the Texas Water Development Board, Contract # 1548311787. Harte Research Institute, Texas A&M University-Corpus Christi, Corpus Christi, Texas, 75 p.

**Montagna, P.A.\*\***, C. Chaloupka, **E. DelRosario**, A. Gordon, and E.L. Turner. 2016. Effects on Benthic Macrofauna from Pumped Flows to Rincon Bayou. Final Report to the Coastal Bend Bays & Estuaries Program for Project # 1617. Harte Research Institute, Texas A&M University-Corpus Christi, Corpus Christi, Texas, 61 pp.

Chaloupka, C. and **P.A. Montagna\*\*** 2016. Vallisneria americana's physiological responses to change in salinity. Report to the Texas Environmental Flows Working Group and the National Fish and Wildlife Foundation. Harte Research Institute, Texas A&M University-Corpus Christi, Corpus Christi, Texas, 5 pp.

#### **Technologies or Techniques:**

**Patents:**

**Inventions:**

**Licenses:**

**Websites:**

Main: [ccme.famu.edu](http://ccme.famu.edu)

CCME web pages for recruiting as well as to inform the public about the project were launched on the Harte Research Institute (HRI) website.

<https://www.hareresearchinstitute.org/ccme>

#### **Media press and publicity**

- NOAA CCME News updates can be found at: <http://ccme.famu.edu/in-the-news/>
- Research team to discuss water protection efforts: article in Daytona Beach News Journal. Oct 12, 2016
- B-CU to receive \$908,540 award in Partnership with Florida A&M University on an Award from The National Oceanic And Atmospheric Administration: article in Daytona Beach News Journal and the B-CU website (<http://www.cookman.edu/newsInfo/newsroom/newsReleases/2016/b-cu-to-receive-908,540-in-partnership-with-florida-am-university-on-an-award-from-the-national-oceanic-and-atmospheric-administration.html>)

## IV. Participants in Award Performance

What individuals have worked on the project?

**Table 1. Senior Personnel**

Name	Most Senior Project Role	Project Hours Worked per Month
Richard McLaughlin, J.D., L.L.M., J.S.D.	Institutional PI	29
Mikell Smith, M.S.	Research Specialist/CCME Coordinator	139
Corey Garza, PhD	Institutional PI	10
J. Cho, PhD	Institutional PI	30
Timothy Turner, PhD	Institutional PI	30
Larry Robinson, PhD	Director/Principal Investigator	10
Michael Abazinge, PhD	Associate Director	10
David Hicks, Ph.D.	Institutional PI	20
Alejandro Fierro	Co-Principal Investigator	20
Carlos Cintra-Buenrostro, Ph.D.	Co-Principal Investigator	20

\*Note: Additional key personnel have continuous engagement with students throughout the year. However, many personnel are covered by 9-month university contracts and only receive support through NOAA CCME during the summer. These CCME members will be included in the next report, which will reflect summer support.

### What other organizations have been involved as partners?

1. Type of Partner Organization: Federal
  2. Name: Monterey Bay National Marine Sanctuary
  3. Location: Monterey Bay, CA
  4. Partner's Contribution to the Project: Develop project proposal for graduate student project
- 
1. Type of Partner Organization: State
  2. Name: St. Johns River Management District
  3. Location: Palatka, FL

4. Partner's Contribution to the Project: Community Stakeholder Advisory Board Member

1. Type of Partner Organization: Federal
2. Name: Grand Bay National Estuarine Research Reserve
3. Location: Moss Point, MS
4. Partner's Contribution to the Project: Community Stakeholder Advisory Board Member

1. Type of Partner Organization: Federal
2. Name: Mission-Aransas National Estuarine Research Reserve  
The University of Texas Marine Science Institute  
Estuarine Research Center
3. Location: Port Aransas, TX
4. Partner's Contribution to the Project: Community Stakeholder Advisory Board Member

1. Type of Partner Organization: Federal
2. Name: Apalachicola National Estuarine Research Reserve  
Environmental Education and Training Center
3. Location: Eastpoint, FL
4. Partner's Contribution to the Project: Community Stakeholder Advisory Board Member

**Have other collaborators or contacts been involved?** Yes No

If Yes, describe involvement and time spent.

**Have NOAA collaborators or contacts been involved?** Yes No

*If Yes, describe involvement and time spent.*

Andrew Devogeleare, approximately 10 hours in developing project description for graduate student participation

## V. Impacts of Award

*What is the impact on the development of future workforce candidates for the principal discipline(s) of the award and NOAA mission-aligned support of the project?*

At this stage center-wide student recruitment has taken place in order to meet the needs of NOAA workforce demands, particularly in recruiting underrepresented minority students who will be trained in NOAA mission-aligned fields.

CCME Faculty have also provided professional development guidance to assist students with application preparations for the NOAA EPP/MSI and Hollings undergraduate scholarship programs.

*CCME support allows CCME students to pursue their academic and professional development endeavors in NOAA mission-aligned disciplines.*

*What is the impact on other disciplines and Program Level Outputs and Outcomes aligned with the 2016 FFO?*

*What is the impact on the development of candidates for the NOAA mission future workforce?*

*What is the impact of the Center activities to build institutional capacity in support of the objectives of the NOAA FY16 CSC award?*

CCME support for students directly expands institutional research capacity by employing CCME fellows in the research project development and implementation. CCME faculty support facilitates their participation in developing multi-disciplinary research projects that incorporate CCME thematic focal areas as well as Social Science and Data Science. As evidenced by the CCME research experience inventory compiled during this reporting period, the CCME faculty from partner institutions collectively embody a rich resource of talent and expertise. Pooling these intellectual resources will enhance the impacts of the research products and tools produced.

*What is the impact of the NOAA award on the Center's data and information resources? To whom and how is this information and the Center accomplishments communicated?*

The collaboration fostered within CCME brings partnership resources to bear upon development of data and data management resources.

*How has the Center successfully conducted transfer of research results and new technologies in support of NOAA mission-aligned R2X?*

*What were the societal impacts of the Center research activities? How were or are the impact results communicated to the general public.*

Research projects are currently too early in development to assess impacts. As student projects are further developed CCME plans to disseminate research results to the public within one year of data collection.



Preparations to assess the societal impacts of CCME Center-wide research are currently in the planning stages and have been discussed during the monthly Social Science meetings. Further details will be included in future reports.

## VI. Changes / Challenges

The full award to CSUMB was not executed until mid-January 2017 due to internal administrative delays at CSUMB. This caused delays in beginning work related to the grant.

Changes in performance of the award objectives - approach and reason(s) for change:

Nothing to report.

Actual or anticipated problems or delays and actions or plans to resolve them:

Nothing to report.

Changes that have a significant impact on expenditures:

Nothing to report.

## VII. Special Award Conditions

This report section is intended to provide information on progress under each special award condition for the **specific reporting period**. This is not cumulative reporting.

Accomplishments (provide evidence) in implementing of:

### I. EPP/MSI CSC Performance Progress Reports

Performance Progress Reports will be provided by the CCME no later than 30 days following the end of each 6-month period from the start date of the original award. The original submission of the current report occurred on March 30, 2017 in compliance with the special award conditions.

### II. Evaluation Plan for Coastal and Marine Ecosystems Cooperative Science Center

#### Overview

The External Evaluator worked with the CCME Management Team (CMT) to draft the Comprehensive Evaluation Plan that has been submitted to NOAA for approval. The CMT and Evaluator engaged in multiple conference calls (5) during the development of the evaluation plan. The Evaluator's activity log is provided as an appendix to this report (See *Appendix A*). At the core of the evaluation plan is a list of formative and summative performance indicators aligned to the CCME project goals and Strategic Plan. The evaluation team also outlined a timeline for all critical evaluation activities and reports (See *Appendix B*).

On February 23, 2017, the evaluation team reviewed the CCME Logic Model again to ensure total alignment to the approved project plan. The team also agreed on the performance indicators that the Evaluator will use for mid-year and annual reporting. Those indicators are consistent with the standard performance indicators that NOAA has established for all CSCs and are as follows:

- Number of students from underrepresented communities who are trained and graduate in NOAA mission sciences annually;
- Number of students who are trained and graduate in NOAA mission sciences annually;
- Number of students completing experiential opportunities at NOAA facilities;
- Number of EPP funded students who are hired by NOAA, NOAA contractors and other environmental, natural resource, and science agencies at the Federal, State, local and tribal levels, in academia and the private sector;
- Number of collaborative research projects undertaken between NOAA and MSI partners in support of NOAA operations;
- Number of students and faculty who participate in and complete postdoctoral level research programs in support of the NOAA mission;
- Number of peer reviewed papers published in NOAA mission sciences by scientists (faculty, postdoctoral fellows, and students) sponsored by NOAA EPP;
- Funds leveraged with NOAA EPP funds (including student support); and
- Number of outreach participants engaged in NOAA mission relevant learning.

In addition, the Evaluator participated in two (2) Education Committee conference calls. During those calls, the Evaluator discussed the major elements of the CCME Evaluation Plan and weighed in on conversations regarding the Center's approaches to social science and big data integration into CCME student research.

The Center Evaluation Plan was submitted via Grants Online on March 1, 2017 within the 6-month timeline agreed upon in the Special Award Conditions. The Evaluation Plan is currently under revision. Information regarding the final agreed upon Evaluation Plan will be included in the next reporting period from March 1, 2017-August 31, 2017.

With exception to this initial Performance Report, the External Evaluator will submit an evaluation update to the Project Director and CMT that will be included in the regular reports to NOAA.

### III. Required Center Implementation Plan

The Center Implementation Plan was submitted on March 16, 2017 and is currently under review. Information regarding the final agreed upon Implementation Plan will be

included in the next reporting period from March 1, 2017-August 31, 2017.

#### IV. EPP/MSI CSC Substantial Involvement and Collaborative Engagement

NOAA CCME has worked closely with the Federal Supervisory Program Manager Ms. Jacqueline Rousseau, and Federal Program Manager Dr. Audrey Trotman. Two technical monitors have also been identified to work with NOAA CCME; Dr. Steve Thur, Acting Director, NOAA NCCOS and Dr. Chris Moses of NOAA OAR. Both Dr. Thur and Dr. Moses have provided a valuable connection to the NOAA Line offices.

Both the technical monitors and EPP/MSI program managers have been involved in monthly NOAA CCME Center meetings. Continued communication occurs particularly in working toward achieving key objectives of the NOAA CCME program, including the Center's annual meeting and Center-Wide Core Competency course.

#### V. EPP/MSI Direct Student Support, Post-Doctoral Program and Pre-Publication Manuscript Submission

##### Direct Student Support -

Note: A full summary of FY16 Cohort 1 CCME students will be provided in the second performance progress report for reporting period March 1-August 31, 2017. Student recruitment is still in effect for the period reported on herein.

##### EPP CSC Award Postsecondary Student Cohort(s) Supported (provide for each student by name):

Table 2. Student Support  
(in USD)

Table 2a CCME TAMU

CCME TAMUCC Student	Classification	Tuition	Stipend	Travel	NERTO	One-time Research
Del Angel, Diana	PhD	7,143.84	12,348.36	0	0	0
Del Rosario, Elizabeth	PhD	6,300.08	15,022.84	614.78	0	89.01
Keen, Elena K.	PhD	6,729.06	16,227.08	0	0	0
Gingras, Melanie	MS	6,804.06	9,403.06	25.38	0	35
Rydman, Julia Claire	MS	7,123.42	9,403.06	0	0	0
Tompkins, Alex	MS	6,300.08	8,429.68	0	0	0
<b>Totals</b>		<b>40,400.54</b>	<b>70,834.08</b>	<b>640.16</b>	<b>0</b>	<b>124.01</b>

Table 2b FAMU

CCME FAMU Student	Classification	Tuition	Stipend	Travel	NERTO	One-time Research
Hamilton, Alexis	BS	3000	1500	0	0	0

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Shokere, Alexis	BS	3000	1500	0	0	0
Rolle, Shaquila	BS	3000	1500	0	0	0
Vidal, Prian	MS	0	3000	0	0	0
<b>Totals</b>		<b>9000</b>	<b>7500</b>	<b>0</b>	<b>0</b>	<b>0</b>

*Table 2c B-CU*

<b>CCME B-CU</b>						<b>One-time Research (supplies)</b>
<b>Student</b>	<b>Classification</b>	<b>Tuition</b>	<b>Stipend</b>	<b>Travel</b>	<b>NERTO</b>	
Brooks, Mallory	MS	7205	4500	20	0	0
Bellamy, Philip	MS	7205	4500	20	0	0
Guruvadoo, Shan	MS	7205	4500	567.60	0	0
Mwenda, Samuel	MS	7205	4500	20	0	5410
<b>Totals</b>		<b>28820</b>	<b>18000</b>	<b>627.60</b>	<b>0</b>	<b>5410</b>

*Table 2d UTRGV*

<b>CCME UTRGV</b>						<b>One-time Research</b>
<b>Student</b>	<b>Classification</b>	<b>Tuition</b>	<b>Stipend</b>	<b>Travel</b>	<b>NERTO</b>	
Alanis, Brianna	BS	1,430	642	0	0	0
Lecusay, David	BS	1,430	614.78	0	0	0
Bauer, Shelby	BS	1,430	642	0	0	0
Rodriguez, Cassandra	BS	1,430	642	0	0	0
Madrid, Cristina	MA	3,260	1,375	0	0	0
Lopez, Jaime	BS	1,430	642	0	0	0
Lima, Anthony	MS	3,260	1,375	0	0	0
Murphy, Ashley	MS	3,260	1,375	0	0	0
<b>Totals</b>		<b>16,930</b>	<b>7,335</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Post-Doctoral Program

As part of the CSC Special Award Conditions NOAA CCME funding for up to two years will support two post-doctoral researchers. At the time of the initial reporting period one post-doctoral student has been identified to begin participation in the CCME on June 1, 2017. The student will be based at University of Texas Rio Grande Valley. Recruitment for a second post-doctoral student, who will be based at Florida A&M University, is in place and the CCME is on track to support both post-doctoral students as part of NOAA CCME Cohort 1. Fulfillment of this requirement will be reported in the second semiannual report for the reporting period March 1, 2017-August 30, 2017.

### Pre-Publication Manuscript Submission

Due to the early stage of student project development there are no CSC student manuscripts in process at this time.

VI. EPP/MSI Center External Evaluator Support on Award Funds Special Award Condition

At the time of reporting the Center External Evaluator has received \$25,000 in support. The Center is currently awaiting the acceptance of the Center-wide Evaluation Plan.

VII. NOAA Environmental Data and Information

Currently, there is no collected data and information to report. Sharing of data collected through student research associated with the NOAA CCME will be shared with the public within two years of data collection as described in the CCME Data Management Plan of the award proposal.

VIII. New Award Special Award Condition

This award number NA16SEC4810009, to FLORIDA A & M UNIVERSITY, supports the work described in the Recipient's proposal entitled "NOAA Center for Coastal and Marine Ecosystems" dated March 30, 2016, and revisions dated July 27, 2016 and August 23, 2016, which are incorporated into the award by reference. Where the terms of the award and proposal differ, the terms of the award shall prevail.

IX. Multi-Year Special Award Condition

NOAA CCME recognizes that continued funding of the current award is contingent upon availability of funds. The funding period for this award is 09/01/2016 – 08/31/2017 and may be extended through 08/31/2021.

X. EPP MSI CSC Programmatic Special Award Conditions

**Fall 2016/Spring 2017 enrollment of students in courses identified in the proposal:**

Increased enrollment numbers can be expected as CCME student Cohort 1 is completed. CCME Faculty and Staff will also provide additional advisement to students to ensure completion of coursework within NOAA mission-relevant fields including the data sciences.

Table 3. Student training

*Table 3a TAMU Course list*

COURSE	# CCME TAMU-CC STUDENTS ENROLLED
ECON 5315 - Managerial Economics	1
CMSS 6359 - Marine Ecosystem Dynamics	1
CMSS 6372 - Environmental Sustainability Economics	2
ESCI 5360 - Coastal Management and Ocean Law	1

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ESCI 5490 - Advanced Topics: Computer programming	1
CMSS 6305 - Natural Systems Modeling	2
CMSS 6307 - Coastal and Marine Systems	2
ESCI 5203 - Professional Skills for Scientists	1
ESCI 5330 - Oil Spill Management	1

*Table 3b FAMU Course list*

<b>COURSE</b>	<b># CCME FAMU STUDENTS ENROLLED</b>
CHS5610C - Environmental Chemistry	1
EVR5213 - Marine Pollution	1
EVS5905 - Environmental Seminar	1
BSC1011 - General Biology II	1
CHM1025 - Fundamentals of Chemistry	2
MAC1114 - Algebra and Trigonometric Functions	2
BSC1010L - General Biology Lab I	1
CHM2210 - Organic Chemistry	1
EVR4032 - Environmental Ethics	1
STA2023 - Introduction to Probability and Statistics	1

*Table 3c B-CU Course list*

<b>COURSE</b>	<b># CCME B-CU STUDENTS ENROLLED</b>
ES502 - Environmental Seminar II	4
ES530 - Envir. Policy and Risk Management	4
ES631 - Advanced Environmetrics	4
ES641 - Toxicology and Risk Assessment	4

*Table 3d UTRGV Course list*

<b>COURSE</b>	<b># CCME UTRGV STUDENTS ENROLLED</b>
MARS 3320 - Marine Biogeochemistry	1
BIOL 5340 - Statistical Ecology	1
EEMS 6300 - Ecosystem Management	1
BIOL 6305 - Biometry	1

\*CSUMB and Jackson State are still accepting applications and thus have no accepted CCME students to report at this time.

In addition to the coursework listed, all NOAA CCME students are required to attend a Big Data Bootcamp in which they will receive instruction on uses of big data analysis in NOAA mission fields. Students will also be required to complete pre and post assessments as part of the course to determine individual progress in understanding the uses of Big Data in NOAA mission research areas.

A. Provide FY16 Center award information for:

1. **Number of EPP-funded post-secondary students from underrepresented minority communities** who are trained (15) and graduated (0) in NOAA-mission sciences.
2. **Total number of EPP-funded post-secondary students** who are trained (22) and graduated (0) in NOAA-mission fields relevant to this announcement.
3. **Number of EPP-funded graduates who enter the NOAA mission workforce as hires** by NOAA (0), NOAA contractors (0), NOAA partners (0), resource management agencies (0), NGO community (0), academia (0) or as entrepreneurs (0).
4. **Number of EPP-funded graduates who participate in and complete NOAA agency mission-related postdoctoral level programs** (0).
5. **Total new funds leveraged with NOAA EPP award** (including post-secondary student support).

B. Provide FY16 Center award information to demonstrate contribution to supporting CSC Desired Program level Outcomes and Outputs defined in FFO p. 7 - 10, for this reporting period.

### **NOAA CCME Outcomes and Outputs:**

NOAA CCME progress will be monitored based on the following outcomes and outputs as outlined in the FFO. There are no outcomes to report at this time for the initial reporting period from September 01, 2016 – February 28, 2017.

#### **5.1 Education and Training**

*Outcome 1. Increased number, annually, of CSC post-secondary students, trained.*

##### **Outputs**

- Increased quantitative and analytical skills;
- Increased competence in applying STEM to decision making, policy and management; and,
- Increased skills to use large data sets, geographical information systems (GIS) and statistical analysis, computer modeling, and algorithm development.

*Outcome 2. Increased number of CSC post-secondary students educated and graduated annually.*

##### **Outputs**

- The number of degrees earned annually in NOAA mission-related disciplines.

- The number of students (total and URM) who participated in professional development opportunities, to include at least one on-site experiential research and training opportunity at a NOAA lab, office, or facility with tangible training and research: (a) for a minimum duration of 4 consecutive weeks, and (b) resulted in a publication or an oral or poster presentation to experts, peers, and/or other stakeholders.

*Outcome 3. Increased CSC capacity to train and graduate students.*

Outputs

- Number of seminars, new courses, new programs, and new degrees offered to develop working skills and functional competencies to support the NOAA mission and workforce.
- Total numbers of students supported by the CSCs and degrees awarded that reflect the changing demographics of the nation (Census Bureau 2014 National Projections, <http://go.usa.gov/c2VfP>).

*Outcome 4. Reduce the attainment gap for URM students in NOAA mission-relevant fields*

Outputs

- Increased number of URM students in student development activities that will lead them to the attainment of degrees and/or employment in NOAA mission fields.
- Increased number of URM students who select to pursue higher education in NOAA mission fields.

## **5.2 Scientific Research**

*Outcome 1. Increased NOAA mission-relevant research capacity at MSIs.*

Outputs

- Number of research collaborations with NOAA and CSC faculty, staff and students.
- Number of NOAA scientists serving as mentors and advisors for student research.
- Number of intra-institutional collaborative partnerships established and maintained in support of NOAA's mission.
- Number of uses of NOAA data in research and tool development.
- Number of inter-institutional collaborative partnerships established and maintained in support of NOAA's mission.

*Outcome 2. CSC-supported faculty, staff and students' research directly aligned with NOAA's mission and strategic priorities.*

Outputs

- Number of peer reviewed publications, presentations, and tools developed by faculty, staff and students.
- Use of CSC research results and tools by NOAA and other stakeholders.
- Number of instances CSC publications are cited.
- Number of CSC students, staff or faculty recognized nationally for CSC research.

## **5.3 CSC Administration**

*Outcome 1. Increased CSC capacity to support and sustain education and research in*



*NOAA mission areas.*

Output

- Amount of funds leveraged with CSC award to support NOAA mission in education and research.

*Outcome 2. Increased engagement by CSCs with the URM communities to enhance the mission workforce pipeline.*

Outputs

- Number of structured activities to recruit and retain students, particularly from URM communities, in NOAA mission-relevant higher education programs.
- Number of MSI inter-institutional collaborative partnerships established and maintained in support of NOAA's mission.

*Outcome 3. To increase communication of CSC accomplishments and capacity*

Outputs

- Number of CSC products used by stakeholders.
- Number of featured articles in print or digital media referencing the NOAA CSC.

*Outcome 4. Increased use of post-secondary education evaluation methodologies*

Outputs

- Number of best practices that are measurable, scalable and transferrable.
- Consistent use of established evaluation practices, including higher education practices, to measure effectiveness of each component of the award.

**Professional Development - Award Recipient Must Report Activities Accomplished for:**

1. Rising Sophomore Experiential Training Program. Participation results of the rising sophomore experiential training program will be reported in the upcoming reporting period covering March 1, 2017-August 31, 2017.
2. Individual Student Development Plan.  
During the initial reporting period there are no student research topics that have been finalized by the Center. Thus, no NOAA mentors have been assigned at this time. Each student in Cohort 1 is expected to participate in a NERTO within FY18 depending on the availability of NERTOs

**Table 4. Student Areas of Interest**

<b>Student Name</b>	<b>Classification/ Area of Study</b>	<b>Institution</b>	<b>Research Area/Area of Interest</b>
Del Angel, Diana	PhD, Physical & Environmental Sciences	TAMUCC	Place-Based Conservation
Del Rosario, Elizabeth	PhD, Physical & Environmental Sciences	TAMUCC	Place-Based Conservation Environmental flows policy and regulations
Vidal, Prian	MS, School of the Environment	FAMU	Marine and Estuarine environments
Brooks, Mallory	MS, Integrated Environmental Science	B-CU	Evaluating the Effectiveness of Living Shoreline Buffers in Mitigating Nonpoint Source Pollution and Climate Impacts in the Mosquito Lagoon (ML), Florida, USA.
Bellamy, Philip	MS, Integrated Environmental Science	B-CU	A GIS Tool for Determining Potential Runoff Coefficient and Runoff Depth for the Indian River Lagoon Watershed, FL
Guruvadoo, Shan	MS, Integrated Environmental Science	B-CU	Wind-driven wave simulation in Indian River Lagoon
Mwenda, Samuel	MS, Integrated Environmental Science	B-CU	Sustainable Watersheds
Madrid, Cristina	MA, Sociology & Anthropology	UTRGV	Natural disaster preparation and response in the Rio Grande Valley
Lima, Anthony	MS, Earth, Environmental & Marine Sciences	UTRGV	Gulf of Mexico fishery governance
Murphy, Ashley	MS, Earth, Environmental & Marine Sciences	UTRGV	Place-Based Conservation

3. Student Preparation for Success in the Career Path Relevant to the Center Award.

There are currently no training and student development programs to report for the initial reporting period. Professional development activities will be included in the next reporting period.

## **NOAA Substantial Involvement and Collaborative Engagement**

Faculty will work with NOAA to identify NOAA mentors for the newly-recruited CCME students as their project synopses are completed during the next reporting period.

## **CSC Programmatic Special Award Conditions**

Recipient must provide accomplishments for Programmatic Special Award Conditions that address the education and training, scientific research and administrative functions in the award including, for example, outcomes from Advisory Board Meetings, effective management for all key personnel positions, early engagement with NOAA in performance of award, outcomes of Center meetings, integration of human dimensions in all award activities, implementing longitudinal outcomes tracking, and overall Program-level metrics for the EPP/MSI CSC postsecondary awards as a Federal STEM Education Agency-mission Future Workforce, for reporting period (NOT cumulative).

Center-wide monthly teleconference meetings have been established for the Place Based Conservation, Coastal Resilience, Coastal Intelligence, Education, Social Science, and Principal Investigator team.

### Coastal Resilience

The Coastal Resilience team (8 members), dubbed the Coastal Resilience Community of Practice (CRCP) to reflect the group's vision for how it will function within the partnership, is currently working to further develop potential research topics across the center. The team members also overlap with the social science team and are seeking ways to engage the surrounding communities for each partner institution. Initial matters to address included how to link the CRCP to the student research projects, defining the role of the group to CCME community engagement, and how best to work with the other focus area committees. The CRCP resolved to develop strategies based on member's expertise, their research projects, and issues pertinent to the communities where they work. Inventorying the research experience and expertise of partner faculty members would help identify whom to engage as research projects come online. Since many members sit on other focus area committees – Place-based Conservation and Coastal Intelligence – the connection between those working groups could be assured. Dr. Bernadette Kelly, FAMU, leads the Education Committee and twice joined CRCP calls, providing real-time clarification and support for CRCP education and training contributions, such as the Center-Wide Core Competency Course (CWCC) and professional development activities for CCME students. All the members of the Social Science Committee, which embodies expertise critical to robust community engagement activities and products, belong also to the CRCP.

By the end of this reporting period, the CRCP had created a survey for gathering information for the faculty research experience inventory and circulated it to the membership of all CCME committees per request of their leadership. Results confirmed that CCME faculty embody a breadth of disciplinary, geographic, technical, and topical

research expertise that can be brought to bear upon the student research and training (Appendix C). The CRCP also made significant progress developing the scope, approach, and curriculum for the CWCC. The group will create online modules to introduce students to coastal resilience concepts in advance and hands-on elements for the face-to-face training scheduled for July/August 2017.

The CRCP anticipate using development of Deer Island as the problem for students to address during the CWCC given its relevance, proximity, and the opportunity to build on materials already produced for last year's event. To improve last year's curriculum, which was dominated by policy and legal aspects, the CRCP resolved to incorporate Social Science and Resilience this time. The curriculum should be focused on applying what students are learning about resilience and Social Science to the identified problem: Deer Island. CRCP members agreed to incorporate a presentation from MS Sea Grant, whose office is on the Gulf Coast Research Lab campus where the CWCC will be held, on the Coastal Community Resilience Index. While not holistic, this tool has been implemented in many communities around the Gulf with good results.

#### What Coastal Resilience proposed in the proposal

- Apply knowledge of natural and nature based infrastructure to address issues of extreme weather events
- Engage in community-based approaches for implementation of natural and nature-based infrastructure
- Create a model for a community based approach to assessing needs and implementing solutions for mitigation of impact from extreme events and sea level rise using natural and nature-based infrastructure
- Develop tools for the assessment of natural and nature-based infrastructure in a selected variety of coastal ecosystem and communities for mitigation of impact of extreme events and sea level rise

#### Accomplishments

1. Participation in inventory survey of research experience (Appendix C) of participants is completed to facilitate collaboration across the disciplines and the center.
2. Revisited the original proposal
3. Monthly conference calls on the 4<sup>th</sup> Wednesday of each month at 10:00am EST.

#### Place-Based Conservation

The Place-based conservation (PBC) team consists of faculty members (16 regular members) with diverse backgrounds, working closely with other thematic areas. They have completed inventory of research backgrounds of partners to facilitate collaboration across the disciplines and for interdisciplinary research and advisement (Appendix C). Since PBC programs work for communities' benefits and value the experiences of local and indigenous populations, the PBC and Coastal Resilience teams are working together to develop outreach survey questions for center-wide

community outreach programs. The special places that we have identified for research and outreach include Apalachicola NERR (FL), Grand Bay NERR (MS), Mission-Aransas NERR and Laguna Madre (TX), Tijuana River NERR and western coast (CA), and Florida's Atlantic coast (Indian river Lagoon). PBC is planning to work closely with Stakeholder Advisory Board members as their roles will be essential in developing outreach strategies, means, and survey questions. PBC meets once a month and shares a summary of each institution's research and students' prospective projects in the realm of place-based conservation.

What PBC proposed in the proposal:

- Develop outreach, policy, and decision-making tools
- Link natural and applied science, social sciences, and policy-making to increase management capacity
- Engage and involve local communities for balanced conservation that addresses demands for coastal resource use and economic development
- Enhance community engagement by emphasizing the unique opportunities and issues connected with special places of concern
- Provide comprehensive ecosystem service valuation tools and place-based knowledge
- Develop and implement ecosystem service assessment tools that balance conservation with the demands for coastal resource utilization and economic development

Some of the discussed projects are:

- i. Place-based predictive ecological models for estuaries: forecasting ecosystem shifts and changes in key ecological indicators
- ii. Biotic information on reefs and banks
- iii. Marine habitat assessment using geospatial technologies
- iv. Community based living shoreline and restoration
- v. Coastal Urban Resilience Planning

Accomplishments

1. Inventory of research experience (Appendix C) of participants is completed to facilitate collaboration across the disciplines and the center.
2. Revisited the original proposal
  - a. The PBC team went back to what was proposed and will develop strategies to achieve the goals and meet the requirements/mission of place-based conservation.
3. Place-based community outreach and surveys
  - a. For 2016-2017 community surveys will be conducted as a demonstration practice by students during the CWCC week.

- b. Coastal resilience and Social Science groups have also been invited to work on community outreach survey questions for the student activities to meet their specific needs.
4. Monthly conference call on the last Monday of each month at 3:00pm EST.

### Coastal Intelligence

The Coastal Intelligence group (13 members) has established regular monthly meetings for the 3<sup>rd</sup> Monday of each month at 4:00PM Eastern. Most of the members have participated in the skills and interests survey developed by Dr. Cho and Mike Smith (Appendix C). The committee members are actively recruiting students for the first cohort. They are currently developing resources for the first CCME CWCC and Big Data Boot Camp.

What Coastal Intelligence proposed in the proposal

- Improve sea level rise impact projections by enhancing the SLR observation network
- Improve understanding of ecosystem health through investigations focused on the influence of stressors on ecosystem processes

- Improve understanding of ecosystem dynamics through using archived, existing, and new data streams
- Develop database and decision support tools to address coastal hazards
- Identify/develop best practices for ecosystem restoration and assessment

#### Accomplishments

1. Participation in inventory survey of research experience (Appendix C) of participants is completed to facilitate collaboration across the disciplines and the center.
2. Revisited the original proposal
3. Monthly conference calls on the 3<sup>rd</sup> Monday of each month at 4:00pm EST.

#### Education

The education team is currently working with faculty to develop the CWCC curriculum. The three thematic area teams have been asked to provide educational objectives for each area. The education team will track student progress through coursework to implement timely student support interventions. The goal of the education committee is to ensure student success in maintaining the required 3.0 GPA and full participation in CCME activities. The education committee will also share information regarding NOAA NERTOs and assist students and researchers with the NERTO application process.

A monthly meeting conference call on the 4<sup>th</sup> Thursday of each month at 10:00am EST has been established for the education team.

#### Social Sciences

The social sciences team is currently working with faculty to incorporate social science themes within the areas of Coastal Resilience, Coastal Intelligence, and Place-based Conservation. The team is working to identify key strategies to incorporate social sciences into each thematic area across the CCME.

Part of the social science team assessment will include the number of CCME student projects that include a social science faculty member on graduate committees and in advisory roles for undergraduate research projects. The social science team will also work with Place-Based Conservation to determine effective strategies to assess community engagement.

A monthly meeting conference call on the 4<sup>th</sup> Wednesday of each month at 11:00am EST has been established for the social sciences team.

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## **VIII. Appendices**

**APPENDIX A**  
**Evaluation Activity Log**  
**NOAA CCME Semi Annual Performance Report**



**Project: Center for Coastal Marine Ecosystems**

Date	Time		Total Hours	Activity Description	Collaborators	Stellar Evaluator
	Start	End				
2/13/17	4:30PM	6:00PM	1.5	Education Planning Call	CCME Management Team (CMT)	Howse
2/15	7PM	10PM	3	Drafting Evaluation Plan	None	Howse
2/16	7PM	12AM	5	Drafting Evaluation Plan	None	Howse
2/17	8PM	11PM	3	Drafting Evaluation Plan	None	Howse
2/18	1PM	9PM	8	Drafting Evaluation Plan	None	Howse
2/19	4PM	7PM	3	Drafting Evaluation Plan	None	Howse
2/20	6PM	8PM	2	Drafting Evaluation Plan	None	Howse
2/23	10AM	11AM	1	Education Committee Call	CCME Education Committee	Howse
2/23	3:30PM	4:30PM	1	Evaluation Planning Conference Call	CCME Management Team (CMT)	Howse
2/24	7PM	10PM	3	Editing Evaluation Plan	None	Howse
2/26	7PM	10PM	3	Editing Evaluation Plan	None	Howse

**APPENDIX A**  
**Evaluation Activity Log**  
**NOAA CCME Semi Annual Performance Report**



**Project: Center for Coastal Marine Ecosystems**

2/27	10PM	11PM	1	Evaluation Planning Conference Call	CCME Management Team (CMT)	Howse
3/1	7PM	10PM	3	Editing Evaluation Plan	None	Howse
3/3	8PM	10PM	2	Editing Evaluation Plan	None	Howse
3/5	7:30PM	8:30PM	1	Evaluation Planning Meeting	CCME Management Team (CMT)	Howse
3/23	9:30AM	11AM	1.5	Education Committee Call	CCME Education Committee	Howse
3/24	5:00pm	5:30pm	.5	Evaluation Planning Conference Call	Sharmini Pitter	Howse

**APPENDIX B**  
**CCME Evaluation Activity Timeline**  
**NOAA CCME Semi Annual Performance Report**

Evaluation Activity		Project Year 1				Project Year 2				Project Year 3				Project Year 4				Project Year 5				Closeout
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<b>Planning</b>	CMT Evaluation Planning and Update Conference Call			X	X	X		X		X		X		X		X		X		X		
	Review/Revise Logic Model			X						X												
	Review/Revise CCME Comprehensive Evaluation Plan			X						X								X				
	Develop Focus Group Protocol				X								X									
	Draft Perception Surveys				X								X									
	Internal Evaluation Team Conference Call			X	X		X		X		X		X		X		X		X			
<b>Site Visits</b>	Review/Refine Site Visit Protocol			X	X																	
	Site 1 Site Monitoring Report Due to Evaluator				X				X				X				X				X	
	Site 1 On-site Visit				X				X				X				X				X	
	Site 2 Site Monitoring Report Due to Evaluator				X				X				X				X				X	
	Site 2 On-site Visit				X				X				X				X				X	
	Site 3 Site Monitoring Report Due to Evaluator				X				X				X				X				X	
	Site 3 On-site Visit				X				X				X				X				X	
	Site 4 Site Monitoring Report Due to Evaluator					X					X				X				X			
	Site 4 On-site Visit					X					X				X				X			
	Site 5 Site Monitoring Report Due to Evaluator					X					X				X				X			
	Site 5 On-site Visit					X					X				X				X			
	Site 6 Site Monitoring Report					X					X				X				X			

**APPENDIX B**  
**CCME Evaluation Activity Timeline**  
**NOAA CCME Semi Annual Performance Report**

	Due to Evaluator																			
	Site 6 On-site Visit				X					X				X				X		
<b>Perception Data</b>	Distribution of CCME Student Survey			X			X			X				X				X		
	Distribution of CCME Faculty/Staff Survey			X			X			X				X				X		
	Distribution of CCME Administrative Questionnaire					X			X				X				X			
	Conduct CCME Student Focus Group Discussion				X			X			X				X				X	
	Conduct CCME Faculty Focus Group Discussion				X			X			X				X				X	
<b>Reporting</b>	CCME Mid-Year Status Report Due to Evaluator					X				X				X				X		
	Submission of Mid-Year Evaluation Report						X			X				X				X		
	CCME Annual Status Report Due to Evaluator				X			X			X				X				X	
	Submission of Annual Evaluation Report to CMT					X			X				X			X				X
	2-Day Annual Evaluation Meeting with CMT and Lead PIs					X			X				X			X				
	Focus Area Progress Report Due to Evaluator						X					X							X	
	Submission of Interim 3rd-Year Evaluation Report													X						
	Submission of Summative 5th Year Evaluation Report																			X

**APPENDIX C  
EXPERIENCE SURVEY  
NOAA CCME Semi Annual Performance Report**

TOTAL	Breier	Cho	Chi	Cintra	Fierro Cabo	Garza	Gibeaut	Gray-Ray	Haupt	Huang	Jagoe	Johnson	Kelley	Kulawardhana	Long	Mateeva-Tarkalanov	Mclaughlin	Montagna	Nickols	Stunz	Tchounwou	Temby	Thoma	Turner	Yoskowitz
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Organism research experience																									
Coral reefs	5			●					●		●	●												●	
Invertebrates	9			●		●			●		●						●		●	●	●		●		
Finfish	9			●	●				●		●					●			●	●	●	●			
Marine mammals	0																								
Phytoplankton	2		●												●										
SAV	4		●						●										●	●					
Seagrass	7		●		●												●		●	●			●		
Prokaryotes	3	●									●				●										
Vertebrates (other than fish and mammals)	3				●	●					●														
Amphibians	1										●														
Birds	1										●														
Reptiles	2				●						●														
Shorebirds	1					●																			
Wetland plants	6		●		●									●				●		●					



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Subtidal rocky reefs	2						●													●						
Swamps	2											●										●				
Disciplines, Topics																										
African American	4		●						●					●											●	
Anthropogenic Stressors	9				●	●			●			●				●				●		●		●		●
Asians	0																									
Benthic Ecology	2																			●				●		
Bioinformatics	1															●										
Coastal Hazards Assessment	9	●						●			●	●	●		●			●	●			●				
Community Development & Engagement	4		●						●	●								●								
Computer/Information Science	5						●				●		●	●	●											
Cultural diversity	4						●		●					●								●				
Curriculum Development	8		●	●			●		●			●		●						●		●				
Diversity	1																							●		
Ecological restoration techniques	1					●																				
Economics/Ecosystem services	6	●						●								●			●			●				●



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Ecosystem Management	15	●			●	●	●			●	●				●			●	●	●	●	●	●	●		●
Ecotoxicology	1																					●				
Environmental policy	7	●						●		●								●				●	●			●
Environmental Science	16	●	●		●	●	●	●				●	●		●	●	●		●	●	●	●			●	
Environmental sociology	1								●																	
Fishery Governance	4																	●			●	●	●			
Functional monitoring techniques	1					●																				
Genomic Analysis	1															●										
Geomorphology	1							●																		
High income coastal residents	0																									
Human Health Risk Assessments	1												●													
Latino/ Hispanic	2					●	●																			
Law and Policy	1																	●								
Living Shorelines	6		●				●	●										●				●		●		
Mid to low income Caucasian	2		●						●																	
Molecular modeling	1												●													

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	TOTAL	Breier	Cho	Chi	Cintra	Fierro Cabo	Garza	Gibeaut	Gray-Ray	Haupt	Huang	Jagoe	Johnson	Kelley	Kulawardhana	Long	Mateeva-Tarkalanov	Mclaughlin	Montagna	Nickols	Stunz	Tchounwou	Temby	Thoma	Turner	Yoskowitz
Molecular Phylogenetics	1																							●		
Native Indians	1						●																			
Oil Spill Response	8	●						●			●	●			●			●	●				●			
Physical Sciences	6	●			●			●					●				●			●						
Political Science	2																	●					●			
Public education	6		●				●		●					●				●				●				
Race and Ethnic relations	2								●					●												
Religions/Faith	0																									
Risk assessment and management	1																						●			
Sea-level rise	7				●			●			●				●			●					●			●
Seasonal residents/snowbirds	0																									
Social impact assessments	1								●																	
Social science research methods	1								●																	
Sociology	1								●																	
Spatial statistics	1						●																			
Strategic planning	1																					●				
Storm event	2							●			●															
Tools/software development	3							●		●									●							

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Urban Planning	3		●															●					●			
Water Management	10	●	●		●						●				●			●	●		●	●				●
Geography, location of experience																										
Apalachicola NERR	5										●	●	●			●			●							
Arctic	0																									
Bahia Grande, TX	2				●	●																				
Channel Islands	1						●																			
Elkhorn Slough	1						●																			
Grand Bay NERR	5		●									●	●		●							●				
Great Lakes	1																						●			
Mission Aransas NERR	4																	●	●		●					●
Monterey Bay National Marine Sanctuary	1						●																			
Northern Indian River Lagoon	1		●																							
San Francisco Bay Estuary	1						●																			
Technique, skills																										
Aerial Remote Sensing	4						●	●					●		●											

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Atmospheric modelling	1												●													
AUV	1																				●					
Big data analysis	3			●											●				●							
Drones/UAV	1						●																			
Ecosystem modelling	7						●			●	●	●	●		●				●			●				
Engineering/numerical modeling	2			●									●													
Radar/Lidar	2							●							●											
Raster GIS Remote Sensing	4		●				●	●							●											
ROVs	1				●																					
Satellite Remote Sensing	3		●					●							●											
Socio economic modeling	3			●																			●			●
Vector GIS	4		●				●	●							●											
Visual data science	4			●			●								●				●							

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SEPARATE NEW SECTION IN SUBMITTED PERFORMANCE REPORT

## IX. Financial Information

### 1. Total NOAA funding breakout

Budget Category	Funds Used	Funds Encumbered	Funds Remaining
Salary	\$2,038.31	\$22,712.66	\$318,533.56
Fringe Benefits	\$309.22	\$5,713.50	\$71,917.28
Supplies	\$3,645	\$0.00	\$14,671.00
Travel	\$2,38.58	\$2,382.30	\$37,345.42
Center Participant (student) cost	\$152,763.79	\$0.00	\$1,390,154.13
Sub-Awards	\$154,020.80	\$1,625,796.20	\$0.00
External Evaluator	\$25,000.00	\$25,000.00	0.00
Equipment	\$0.00	\$0.00	\$0.00
F&A	\$20,982.79	\$0.00	\$119,258.21

Collaborative Research: Nothing to report.

### 2. Total leverage funding breakout

Postsecondary Student Support: Nothing to report.

Collaborative Research: Implementing and evaluating the effectiveness of native vegetative buffers at controlling nonpoint source pollution and as a tool for public education along the Indian River Lagoon, FL Department of Environmental Protection and EPA. \$494,693, PI (Cho)