

Texas Sea Grant

**2015 SITE REVIEW
BRIEFING BOOK**





AT TEXAS A&M UNIVERSITY

TexasSeaGrant.org



Cover photo by Tony Reisinger.

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PROGRAM MANAGEMENT AND ORGANIZATIONAL LEADERSHIP

Introduction

As a dynamic collaborative organization, Texas Sea Grant brings together a diverse set of stakeholders to take on some of the more pressing challenges in Texas and the Gulf of Mexico. The program's results-driven partnerships make a difference in the important work it does across a broad range of issues. Together, Texas Sea Grant and its partners are increasing the resiliency of the economy and communities, preserving healthy coastal ecosystems, training and empowering the next generation of decision makers, and making science work for Texans.

Management Team

The Texas Sea Grant Management Team leads the extension, outreach, education, research and communication functions of Texas Sea Grant to guide and administer the program's efforts and maximize its ability to serve the people of Texas through the achievement of the goals outlined in the program's Strategic Plan. This includes long-term planning, visioning and setting of priorities; the day-to-day support of projects and extension field staff, outreach professionals and sponsored researchers; and the engagement of partners and stakeholders at the local, state, regional and national level in collaborative projects.

The primary areas of responsibility of each team member are listed below:

Director: Has overall administrative responsibility for the program and provides comprehensive vision to ensure that the program's activities address the goals of the strategic plans of Texas Sea Grant, the National Sea Grant Office and NOAA; explores new relationships with partners and stakeholders, enacts formal partnership agreements, and establishes interactions with the program's Advisory Committee; and determines the research and administrative content of the program's omnibus proposal and ensures that the funded activities are satisfactorily completed.

Extension Program Leader: Provides vision for and coordinates the activities of the Texas Sea Grant marine specialists and county marine agents; works closely with the Director to integrate extension into the research program; coordinates with extension partners, including the Texas A&M AgriLife Extension Service; assists the Director with strategic planning and initiating cooperative efforts with partners and stakeholders.

Research Coordinator: Manages requests for and review of proposals for Texas Sea Grant competitive grants, fellowships and scholarships, ensuring public relevance and significance of funded research projects, and monitors the projects while in process; serves as liaison between funded researchers and Texas Sea Grant's communication, extension and reporting staff; and coordinates pre-award administration of externally funded projects.

Communications Program Leader: Develops and coordinates communications efforts in support of Texas Sea Grant, including all print and digital publications, websites, media relations, photography, and external, inter-agency and intra-network communications; manages freelance writers and photographers; identifies opportunities to publicize the work of Texas Sea Grant at the local, regional and national level; partners with outside agencies to leverage communications resources; and manages publication distribution and program archives.

Business Manager: Responsible for all financial and personnel issues; keeps records on all state, federal and local Sea Grant accounts and maintains active files on all budgetary transactions; develops the financial and personnel sections of annual Sea Grant proposal submitted to the National Sea Grant Office; and works with the National Sea Grant Office and the Grants Management Division of NOAA to ensure Texas Sea Grant compliance with all federal grant regulations.

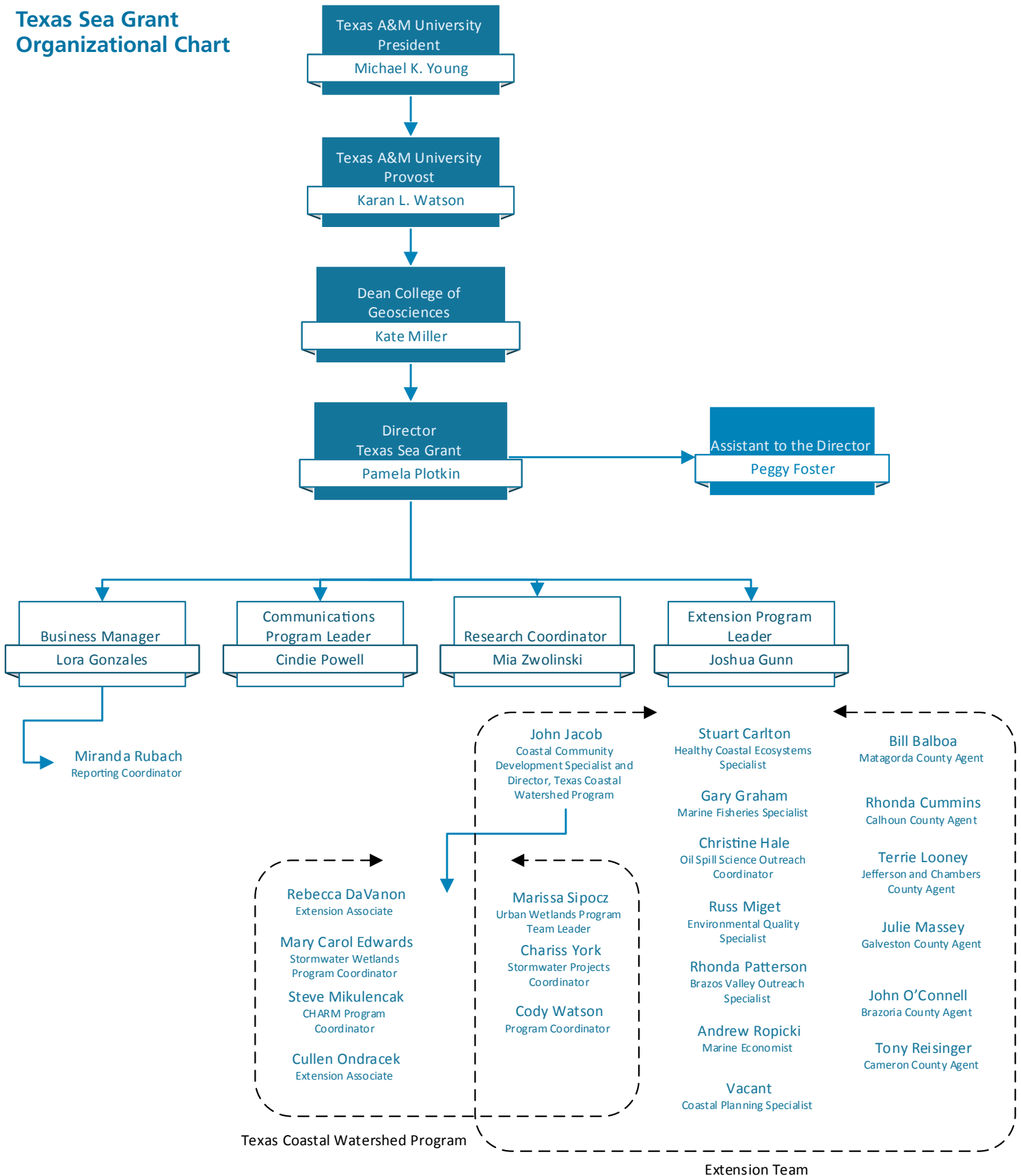
Reporting Coordinator: Coordinates Texas Sea Grant annual reporting to the National Sea Grant Office; develops processes and procedures and sets deadlines for the management team to facilitate the collection of the data and narratives required for the report; collects, organizes and compiles the information; submits the reports through the online reporting system (PIER); and serves as backup for research project reporting (Grants Online).

Texas Sea Grant Staff

While the Management Team is 100 percent Texas Sea Grant employees, several other positions, specifically in the Extension Program, are funded through partnerships with other entities, including the Texas A&M AgriLife Extension Service, academic departments within Texas A&M University, and county governments. Some positions also are funded entirely from sponsored programs.

PROGRAM MANAGEMENT AND ORGANIZATIONAL LEADERSHIP

Texas Sea Grant Organizational Chart



PROGRAM MANAGEMENT AND ORGANIZATIONAL LEADERSHIP

Advisory Committee Membership and Function

Texas Sea Grant's Advisory Committee meets annually to provide vision and guidance to the program and input into the strategic planning process. The members bring a wide range of experience and diverse perspectives to the program; they include representatives from industry, school districts, academia, local, state and federal government, associations and non-profits from all parts of the Texas coast and important inland watersheds.

On the recommendation of the previous Site Review Report, Texas Sea Grant formally codified the roles, responsibilities and expectations of Advisory Committee members and Texas Sea Grant to give the committee members a more active role in advising the program. The program finalized an Advisory Committee Charter (<http://texasseagrant.org/about/advisory-committee/>) in 2012. At that time, current members remained on the committee with a term ending two years in the future, and new members were

brought on for four-year terms; this allows for a regular infusion of new members on the committee every two years.

The charter defines the role of the Advisory Committee to:

- identify needs, opportunities and priorities that can or should be addressed by Texas Sea Grant programs;
- help create new connections, collaborations, partnerships and funding opportunities that will potentially further Texas Sea Grant's mission or provide resources for Texas Sea Grant programs;
- advise on Texas Sea Grant vision, mission, strategic plan, goals and priorities;
- educate and inform state and national decision-makers of the relevance and value of Texas Sea Grant programs; and
- provide input to Texas Sea Grant

review and monitoring processes, including evaluate progress towards Texas Sea Grant strategic plan and periodic internal and national program reviews.

Advisory Committee Recommendations

The Advisory Committee has made several significant recommendations to Texas Sea Grant that have influenced its 2014-2017 state Strategic Plan and improved its performance in intervening years. In 2012, Texas Sea Grant began using a standard set of guiding questions developed for state Sea Grant programs by the National Sea Grant 2014-2017 Strategic Planning Committee. These questions formed the basis for Advisory Committee discussions during the past four years, with fresh ideas from new Advisory Committee members as they have joined the group.

Texas Sea Grant Advisory Committee Members, 2011-present (* denotes current membership)

MEMBER	POSITION	TERM
Keith Arnold	Chief Executive Officer, Corpus Christi Convention & Visitors Bureau	2012-2014
Jude Benavides, Ph.D.*	Associate Professor of Hydrology and Water Resources, University of Texas at Brownsville	2012-2015
John Blaha*	Assistant Director, Coastal Conservation Association Texas	2012-2015
David P. Brown, Ph.D.*	Regional Climate Services Director, Southern Region, NOAA National Climatic Data Center	2014-2017
Edward Buskey, Ph.D.	Professor, Department of Marine Science; Research Coordinator, Mission Aransas NERR, University of Texas Marine Science Institute	2011-2013
Meridith Byrd	Harmful Algal Bloom Response Coordinator, Texas Parks & Wildlife Department	2013-2014
Charles W. Caillouet, Jr., Ph.D.*	Marine Fisheries Scientist and Conservation Volunteer	2012-2015
Aimee Coates Marsh*	Business Development, Americas Region and Mexico, Delta SubSea LLC	2012-2015
Debbie Danford	Grant and Proposal Coordinator, Institute of Renewable Natural Resources, Texas A&M University	2011-2013
Hudson DeYoe, Ph.D.	Director, Center for Subtropical Studies; Professor, Biology Department, The University of Texas-Pan American	2011-2013
Robert W. Dickey, Ph.D.*	Director and Nancy Lee and Perry R. Bass Regents Chair in Marine Science, University of Texas Marine Science Institute	2014-2017

PROGRAM MANAGEMENT AND ORGANIZATIONAL LEADERSHIP

Chris Dorsett, Ph.D.	Director, Fish Conservation & Gulf Restoration Program, Ocean Conservancy	2011-2013
Ryan Fikes*	Staff Scientist, Gulf Restoration Campaign, National Wildlife Federation	2012-2015
Linda Fuiman*	Marine Education Outreach/Roads Scholar Program Coordinator, University of Texas Marine Science Institute	2012-2015
Benny Gallaway, Ph.D.	President, LGL Ecological Research Associates	2011-2013
David A. Garza*	Commissioner, Precinct 3, Cameron County Commissioners' Court	2012-2015
Karen Huber	Barton Springs Edwards Aquifer Conservation District HCP Management Advisory Committee; Hill Country Alliance Water Team	2012-2015
Steven Johnston	Monitoring & Research and Water & Sediment Quality Coordinator, Galveston Bay Estuary Program	2011-2013
Jim Lester, Ph.D.	President, Houston Advanced Research Center	2011-2013
M. Sam Mannan, Ph.D.*	Regents Professor and Director, Artie McFerrin Department of Chemical Engineering, Texas A&M University	2014-2017
Carlos Marin, Ph.D.	President and Director, Ambiotec Group, Inc.	2012-2014
Larry McKinney, Ph.D.	Executive Director, Harte Research Institute for Gulf of Mexico Studies	2011-2013
Javier Mendez*	Director, Cameron County Parks & Recreation	2012-2015
Jim L. Munro, Ph.D.*	Professor of Public Policy (retired), University of West Florida, and Texas coastal resident	2012-2015
Helen Paige*	Manager, Marina Bay Harbor	2012-2015
Bonnie J. Ponwith, Ph.D.*	Director, Southeast Fisheries Science Center, NOAA Fisheries Service	2012-2015
Melissa Porter*	Grants Team Leader, Grant Program & Support, Texas General Land Office	2012-2015
Mike Ray, Ph.D.*	Texas Parks & Wildlife Department (Retired)	2013-2016
Carlton Reyes*	President, Brownsville-Port Isabel Shrimp Producers Association	2012-2015
Debbie Richards*	K-12 Science Coordinator, Bryan Independent School District	2012-2015
Robin Riechers*	Director of Coastal Fisheries, Texas Parks & Wildlife Department	2014-2017
Cecilia Riley*	Executive Director, Gulf Coast Bird Observatory	2012-2015
Patrick F. Riley*	General Manager, Western Seafood Company	2012-2015
Gil Rowe, Ph.D.	Regents Professor, Chair of the Interdisciplinary Degree Program (IDP) in Marine Biology, Texas A&M University and Texas A&M University at Galveston	2011-2013
Carlos Rubinstein	Chairman, Texas Water Development Board	2014-2015
Mark A. Shafer, Ph.D.*	Director, Southern Climate Impacts Planning Program, Oklahoma Climatological Survey, University of Oklahoma	2014-2017
Ruben Solis, Ph.D.	Director, Surface Water Resources, Texas Water Development Board	2011-2013
Joe Surovik*	Owner, Coastal Safari Charters	2012-2015
Reuben Trevino*	Coastal Resources Manager, City of South Padre Island	2012-2015
John W. (Wes) Tunnell, Jr., Ph.D.	Associate Director & Endowed Chair for Biodiversity and Conservation Science, Harte Research Institute for Gulf of Mexico Studies; Regents Professor and Professor of Biology, Texas A&M University-Corpus Christi	2011-2013
Joe E. Vega*	Mayor, City of Port Isabel	2012-2015
Robert Vega, Ph.D.	Director, Coastal Fisheries Enhancement Program, Texas Parks & Wildlife Department	2011-2013
Neal Wilkins, Ph.D.	Director, Texas Water Resources Institute and Institute of Renewable Natural Resources, Texas A&M University	2011-2013
Wyndylyn von Zharen, Ph.D.	Regents Professor, Marine Science Department, Texas A&M University at Galveston	2013-2015

Process Used to Develop Request for Proposal (RFP) Priorities

Texas Sea Grant has conducted research competitions under two different Strategic Plans since the last Site Review. The RFP priorities for the 2014-2016 and 2016-2018 competitions were based on the four focus areas of the Texas Sea Grant Strategic Plan 2014-2017: Healthy Coastal Ecosystems, Sustainable Fisheries and Aquaculture, Resilient Communities and Economies, and Environmental Literacy and Workforce Development. In both competitions, Texas Sea Grant emphasized that it was seeking meritorious outcome-oriented research projects that span broad areas of natural, social, behavioral, economic and physical sciences; address one or more of the four focus areas; integrate research with extension and education; and have public relevance to Texas.

Proposal Review Process and Review Panels

Texas Sea Grant has consulted with the National Science Foundation since 2014 to solicit their advice on the best practices in peer-review. These meetings have resulted in a more objective, fair, transparent and rigorous review process.

The program began using eSeaGrant in 2014, replacing a process that involved receiving proposals and managing reviews by email with a more efficient system of managing the entire proposal submission and review process online. Texas Sea Grant is now one of 13 Sea Grant programs participating in the enhancement of eSeaGrant and looks forward to implementing the new version of the system.

2014-2016

Pre-proposal Review: The program actively solicited pre-proposals from throughout the state of Texas and conducted an internal review with the Director, the Research Coordinator and several members of its Extension Team to

determine for each if: 1) the pre-proposal followed the guidelines, 2) the proposed project was a research project, 3) the proposed research aligned with one or more of the four Focus Areas, and 4) the research was publicly relevant. Texas Sea Grant encouraged all pre-proposals that met these criteria to be developed into full proposals.

Full Proposal Review: There were two parts to the full proposal review process: the Ad hoc review and the Technical Review Panel.

During the Ad hoc review, each full proposal was sent to three reviewers outside of Texas with expertise in the fields of research in the proposal. All proposals were evaluated on the basis of rationale, scientific or professional merit, innovativeness, qualifications and past record of investigators, alignment with Texas Sea Grant focus areas, public relevance and programmatic justification. Ad hoc reviewers submitted a written evaluation of each full proposal.

During the technical review process, Texas Sea Grant convened two Technical Review Panels. The program sought a diverse group of active researchers from a range of institution types, including academia and government, representing early, mid- and senior career stages, to serve on the panels. Selected from around the U.S. based on their contributions to their field of research, the panelists — five women and seven men; nine natural scientists, two social scientists and one interdisciplinary scientist — traveled to Texas and met over a two-day period to review, discuss and rank the full proposals. Before meeting, the panelists received copies of all full proposals and the Ad hoc reviewers' written evaluations, and were assigned as a primary or secondary reviewer for proposals in their areas of expertise. Each full proposal was thus assigned a primary and secondary reviewer and was evaluated on the basis of the same criteria used by the Ad hoc reviewers. During the panel review meeting, the primary reviewer took the lead in summarizing his or her

assigned proposals, discussed the merits, and summarized the Ad hoc reviewers' comments. The secondary reviewer documented the discussion and results. As each full proposal was discussed, the panel categorized it as "recommend for funding," "not recommend for funding" or "undecided." After the last proposal was discussed, the panel reached a consensus about the strengths, weaknesses and ranking of all of the proposals. The highest-ranking proposals were submitted in the program's Omnibus Proposal.

2016-2018

Pre-proposal Review: Texas Sea Grant again solicited pre-proposals from throughout the state of Texas. After receiving feedback from the NSGO about the review process the program used during the 2014-2016 competition, Texas Sea Grant implemented a more rigorous pre-proposal review procedure aimed at reducing the number of full proposals solicited. The program convened a Pre-proposal Technical Review Panel; panelists included subject matter experts, stakeholders, Texas Sea Grant extension specialists and members of the program's Advisory Committee, all of whom were sent the pre-proposals in advance and assigned as a primary or secondary reviewer. The panel met to review and evaluate the pre-proposals on the basis of rationale, scientific or professional merit, innovativeness, qualifications and past record of investigators, alignment with Texas Sea Grant focus areas, public relevance and programmatic justification. The primary reviewer took the lead in summarizing and discussing the merits of his or her pre-proposal, provided a preliminary score, and solicited feedback from the rest of the panel. The secondary reviewer documented the discussion and results. As each pre-proposal was discussed, the panel categorized it as "encouraged to develop full proposal" or "discouraged to develop full proposal."

Full Proposal Review: Texas Sea Grant received 33 full proposals, and at press time the review was still under way.

RECRUITING TALENT

Similar to the full proposal review process for the 2014-2016 competition, each full proposal will be sent out to three reviewers for Ad hoc review, and two Technical Review Panels will be convened in August to review, discuss and rank the proposals.

Number of Institutions Represented throughout RFP Process

To actively solicit proposals from a wide range of disciplines from universities and colleges, state agencies and other organizations around the state, Texas Sea Grant contacted more than 200 individuals at 48 Texas universities and colleges and 10 other entities at the beginning of the RFP process for the 2014-2016 and 2016-2018 funding cycles.

Proposals Submitted to and Funded by Texas Sea Grant

FUNDING CYCLE	PROPOSAL STAGE	NUMBER SUBMITTED	NUMBER OF INSTITUTIONS	NEW/ CONTINUING RESEARCHERS
2010-2012	Pre-proposals	62	17	
	Full Proposals	33	10	
	Funded Proposals	12	6	6/6
2012-2014	Pre-proposals	60	16	
	Full Proposals	24	9	
	Funded Proposals	8	5	4/4
2014-2016	Pre-proposals	122	21	
	Full Proposals	91	17	
	Funded Proposals	7	4	4/3
2016-2018	Pre-proposals	82	18	
	Full Proposals	33	8	
	Funded Proposals	In Progress	In Progress	In Progress

New vs. Continuing Research Projects and Principal Investigators

As shown in the previous table, at least half of the grants awarded from 2012-2016 have been to new principal investigators. At press time, the 2016-2018 research competition was still under way.

Texas has two public Tier One research institutions, Texas A&M University (TAMU) and The University of Texas (UT). TAMU's branch campus in Galveston (TAMUG) has academic and research programs focusing on coastal and marine issues, and UT has a marine research facility, The University of Texas Marine Science Institute (UTMSI), on the central coast. Two additional institutions that are part of the same two university systems, Texas A&M University-Corpus Christi (TAMUCC) and The University of Texas at Brownsville (UTB), also have coastal and Gulf of Mexico research centers. The majority of the research proposals submitted for the biennial funding cycle and for NOAA special research competitions are from researchers at these institutions, and as a consequence they are heavily represented in Texas Sea Grant's research program.

Competitive Research Projects Funded by Texas Sea Grant, 2012-2016 (unless otherwise specified, all projects are new; *denotes new Principal Investigator)

PROJECT TITLE	PI	AFFILIATION
2010-2012 Funding Cycle		
Evaluation of LISST instruments to monitor for harmful algal blooms (HABs) in Texas coastal waters	Dan Thornton*	TAMU
Role of microzooplankton in coastal ecosystems: Viewing windows of opportunity	Lisa Campbell*	TAMU
Investigating processes that affect Texas coastal hypoxia	Steve DiMarco	TAMU
Wave hydrodynamics in segmented wetlands with application to hurricane damage reduction and wetlands management and preservation	Jennifer Irish	TAMU

Post-lake recovery of upper Texas coast beaches and their status as sea turtle nesting habitat	Andre Landry	TAMUG
Geological controls on submarine groundwater discharge into an upper bay estuary: Copano Bay	Timothy Dellapenna*	TAMUG
Genetic effective size in hatchery-raised spotted seatrout, <i>Cynoscion nebulosus</i> , released for stock enhancement in Texas bays and estuaries	John Gold	TAMU
Marine education: Teaching high school students the scientific method through involvement in an ongoing field experiment	Lee Smee*	TAMUCC
Freshwater residence and habitat requirements of southern flounder determined by otolith chemistry	Benjamin Walther*	University of Texas Marine Science Institute
Promoting larval survival through broodstock diet: Implications for fish stock enhancement	Lee Fuiman	University of Texas Marine Science Institute
An experimental test of the effects of beach raking on macroinvertebrate communities of Texas beaches	David Hicks	University of Texas at Brownsville
Population status and demographics of the Texas diamondback terrapin (<i>Malaclemys terrapin littoralis</i>)	George Guillen*	University of Houston-Clear Lake

2012-2014 Funding Cycle

Determining pharmaceutical loadings to select Texas coastal systems and associated risks to aquatic life	Bryan Brooks*	Baylor University
Investigation of short-term fluctuation in shrimp abundance in the Gulf of Mexico	Masami Fujiwara*	TAMU
Perception of the rip current hazard on Galveston Island and South Padre Island	Chris Houser	TAMU
Modeling low impact development for optimal performance in Texas coastal zones	Fouad Jaber*	TAMU/Texas A&M AgriLife Extension
Mangroves invading Texas salt marshes: Does it matter?	Steven Pennings*	University of Houston
Movement and population connectivity of fishes across estuarine seascapes	Jay Rooker	TAMUG
Fish larvae recruitment to Texas bays through Aransas Pass	Scott Socolofsky	TAMU
The toxin(s) of the Texas brown tide organism <i>Aureoumbra lagunensis</i> , and its impacts on shellfish	Paul Zimba	TAMUCC
Texas public survey to inform water policy (mini-bus grant; not included in table of "Proposals Submitted to and Funded by Texas Sea Grant")	Arnold Vedlitz*	TAMU

2014-16 Funding Cycle

Economic valuation of brown and white shrimps as forage species in the coastal areas of Texas	Masami Fujiwara	TAMU
Assessment of population genetic differentiation of the blue crab in the Gulf of Mexico using next generation sequencing technologies	Luis Hurtado*	TAMU

RECRUITING TALENT

If we lose Folletts Island, we lose coastal communities and Christmas Bay: A geological framework and numerical model study of the sustainability of Folletts Island	Jens Figlus*	TAMUG
Identification of organic matter sources contributing to hypoxia formation in two eutrophic South Texas estuaries: Relationships to watershed land use practices	Michael Wetz*	TAMUCC
Mangroves are invading Texas salt marshes: What are the consequences? (continuing project)	Steven Pennings	University of Houston
Evaluating groundwater/surface-water inflow and nutrient transport to Texas coastal embayments	Dorina Murgulet*	TAMUCC
Why are black drum starving in Baffin Bay? An ecosystem-based approach to develop community resilience and sustainable fisheries in a hypersaline estuary	Greg Stunz	TAMUCC

Recruiting Talented Students

Texas Sea Grant also provides opportunities for university students to conduct research by funding two special programs, the Grants-in-Aid of Graduate Research Program and the Texas Sea Grant Scholars Program, supported by internal funds.

Undergraduate Research: The Texas Sea Grant Scholars Program

Following suggestions made by the Site Review Team in 2011, the Texas Sea Grant Scholars Program was the first new effort to support Texas students with the aim of developing a cadre of ocean and coastal leaders in Texas. As a recognized “high impact practice,” undergraduate research experiences increase undergraduate student learning and success, not only while students are at Texas A&M, but long after graduation.

Texas Sea Grant developed a partnership with Texas A&M University’s Office of Honors and Undergraduate Research, whose programs are highly visible and successful and have been instrumental in integrating undergraduates into research and learning at Texas A&M University’s main campus and at the Galveston campus.

Undergraduate students undertake independent research under the mentorship of a Texas A&M faculty member. To be accepted into the Texas Sea Grant Scholars Program, students must submit a research proposal related to the marine environment in any discipline. Students selected for the program are provided with \$1,300 in financial support to complete their research project. They are also expected to participate in workshops on research communication, research skills and thesis writing, and attend the annual Marine Science Symposium and Retreat, where they interact with Texas Sea Grant staff and other

Texas Sea Grant-supported researchers. The Texas Sea Grant Scholars also present their results at the annual Texas A&M Student Research Week in March. Students are encouraged to participate in a one-hour writing-intensive thesis-writing seminar and submit their results to *Explorations: The Texas A&M Undergraduate Journal*. Finally, all Texas Sea Grant Scholars are expected to prepare a formal research thesis, which is deposited in the university’s digital repository. Since the grants were first awarded in 2012, 18 undergraduate students have participated in the program. They and their projects are listed in Appendix A.

Grants-in-Aid of Graduate Research Program

Texas Sea Grant’s Grants-In-Aid of Graduate Research Program was launched in 2013 with the aim of promoting scientific excellence and achievement by providing small research awards to graduate students enrolled in Texas A&M University, Texas A&M University at Galveston and Texas A&M University-Corpus Christi whose research is marine or coastal related in any discipline. Texas Sea Grant releases a Call for Proposals in late spring each year, and the proposals are reviewed and evaluated based on intellectual merit and the broader impacts of the research. To date, 63 master’s and doctoral students have received grant awards ranging from \$500 to \$2,000. Students supported and their research projects are listed in Appendix B.

The grant recipients conduct field and laboratory research and present their results at professional conferences; they also participate in the annual Marine Science Symposium and Retreat, where they interact with Texas Sea Grant staff and other Texas Sea Grant-supported researchers. This program encourages and facilitates research among young investigators, provides them the opportunity to train in research and engagement, and is an important investment in the future of STEM fields and the workforce of the state and nation.

Leadership by Staff on Boards and Committees

Below is a list of recent and current leadership positions.

International, National and Regional

International Union for Conservation of Nature, Species Survival Commission, Marine Turtle Specialist Group (Plotkin)	Gulf States Marine Fisheries Commission, Mercury and Selenium in Fish Advisory Workgroup, Chair (Reisinger)	Roundtable Committee (Graham)
International Sea Turtle Society Board of Directors (Plotkin)	U.S. Army Corps of Engineers Interagency Workgroup (to Develop an Environmental Impact Statement to Analyze the Potential Environmental Impacts of issuing a Department of the Army Permit to Baryonyx Corporation, to construct an Offshore Wind Farm in North Rio Grande Lease and Rio Grande Lease Offshore South Padre Island, Willacy and Cameron Counties, Texas), Invited Sea Grant Representative (Reisinger)	World Wildlife Fund Smart Gear Program (Graham)
Gulf of Mexico University Research Collaborative Committee (Plotkin)	North Carolina Sea Grant BRD Advisory Committee (Graham)	Gulf of Mexico Fisheries Management Council, Shrimp Advisory Panel (Graham)
National Research Council, Ad hoc Committee, "Effective Approaches for Monitoring and Assessing Gulf of Mexico Restoration Activities" (Plotkin)	Gulf of Mexico Fisheries Management Council, Shrimp Federal Permit Moratorium Ad Hoc Committee (Graham)	Gulf of Mexico Fisheries Management Council, Red Snapper Advisory Panel, Vice Chair (Graham)
National Ocean Sciences Bowl, Regional Coordinator (Looney)	Gulf of Mexico Fisheries Management Council, Shrimp Maximum Sustainable Yield (MSY) Workshop Committee (Graham)	Gulf of Mexico Fisheries Management Council, Special BRD Advisory Panel (Graham)
U.S. Coast Guard Southeast Texas Waterways Advisory Committee, Fishery Representative (Looney)	Kemp's Ridley Sea Turtle Stock Assessment Panel (Graham)	American Planning Association, Texas Chapter, Emerging Planning Leaders Advisory Committee (Wade)
JASON Project Steering Committee (Looney)	Sustainable Fisheries Partnership Shrimp	Gulf of Mexico Alliance Resiliency Priority Issue Team (Wade)
Gulf of Mexico Coastal Ocean Observing System, Education and Outreach Council (O'Connell)		FEMA TXCHART (Texas Coastal Hazard Analysis Resources and Technology) Team (Wade)

STAKEHOLDER ENGAGEMENT

State and Local

Texas General Land Office, Texas Coastal Coordination Council (Plotkin)	(Cummins)	Texas Coastal Naturalist, Founder, Advisor and Member (Reisinger)
Texas Department of Agriculture, Texas Shrimp Advisory Committee (Plotkin)	Green Lake Advisory Committee (Cummins)	Texas General Land Office Region 4 Technical Advisory Committee (Reisinger)
Gulf of Mexico Alliance Wildlife and Fisheries Team (Plotkin)	Texas Shore and Beach Preservation Association Board (Cummins)	Texas Hazardous Algal Bloom Working Group (Reisinger)
Port Arthur International Sea Farers' Center Board of Directors (Looney)	Arroyo Colorado Watershed Partnership Habitat Workgroup, Co-chair (Reisinger)	Texas International Fishing Tournament Advisory Board (Reisinger)
Chambers County Environmental and Coastal Area Protection Committee (Looney)	Arroyo Colorado Watershed Partnership Outreach and Education Committee (Reisinger)	Texas (Fishing) Tournament Directors Foundation Advisory Board (Reisinger)
Lamar University Teaching Environmental Science Institute Advisory Committee (Looney)	Arroyo Colorado Watershed Partnership Steering Committee (Reisinger)	Texas Red Tide Rangers, Founder, Advisor and Member (Reisinger)
Camp SeaPort Advisory Committee (Looney)	Arroyo Colorado Conservancy Board of Directors (Reisinger)	Texas State Technical College-Harlingen, Biology Advisory Committee (Reisinger)
Texas A&M AgriLife Extension Statewide Career Ladder Review Committee, Chair (Massey)	Brownsville/Port Isabel Shrimp Producers Association Advisory Board (Reisinger)	University of Texas at Brownsville, Biological, Chemical and Safety Committee (Reisinger)
Texas A&M AgriLife Extension Southeast Regional Career Ladder Committee, Chair (Massey)	Gorgas Science Foundation Board of Directors, Treasurer (Reisinger)	University of Texas at Brownsville, Institutional Biosafety Committee (Reisinger)
Texas Master Naturalist, Galveston Bay Area Chapter, Board of Directors (Massey)	Gorgas Science Society (Reisinger)	University of Texas at Brownsville, Math, Science and Technology External Advisory Board (Reisinger)
Galveston Bay Area Estuary Program Public Participation Committee (Massey)	Laguna Madre Fly Fishing Association Advisory Board (Reisinger)	University of Texas at Brownsville, Science, Technology, Engineering, Math and Science Club, Advisor (Reisinger)
Texas Chapter Epsilon Sigma Phi, State Membership Chair (Massey)	Lower Laguna Madre Foundation Advisory Board (Reisinger)	University of Texas-Pan American, Coastal Studies Laboratory, Advisor (Reisinger)
Texas Coastal Management Program Project Review Committee (Massey)	Nature Printing Society (Reisinger)	Valley Proud Environmental Council Board of Directors (Reisinger)
Texas Master Naturalist, Cradle of Texas Chapter, Advisor (O'Connell)	Ocean Trust Native Plant Center South Padre Island, Project Team Member and Advisor (Reisinger)	Valley Sportsman Club Advisory Board (Reisinger)
Brazoria County Leadership Advisory Board, Advisor (O'Connell)	Rio Grande, Laguna Madre Bay Basin Area Stakeholders Committee, Chair (Reisinger)	Brazoria County AgriLife/Sea Grant Marine Issues Committee (Graham)
Houston-Galveston Area Council Natural Resource Advisory Committee, Matagorda County Representative (O'Connell)	Rio Grande, Lower Laguna Madre Bay Basin Area Expert Science Team, Advisor (Reisinger)	Aquarium at Rockport Harbor (Miget)
Calhoun County Local Emergency Planning Committee (Cummins)	Texas Master Naturalist, Rio Grande Valley Chapter, Advisor and Board Member (Reisinger)	Seafood Science and Technology Society of America (Miget)
San Antonio Bay Foundation Board, Vice President (Cummins)	Texas Master Naturalist, South Texas Chapter, Advisor and Board Member (Reisinger)	Nueces County Water Control and Improvement District #4, President (Miget)
Our Lady of the Gulf Catholic School Advisory Committee, Outreach Chair	South Texas Research Coordination Network for Climate, Energy, Environment and Engagement (Reisinger)	Mid-Coast Chapter Texas Master Naturalist, Advisor (Miget)
	Texas Aquaculture Association, Shrimp Section, Advisory Member (Reisinger)	

South Texas Chapter Texas Master Naturalist, Advisor (Miget)

Coastal Bend Informal Educators, Program Committee (Miget)

San Antonio Bay Partnership, Advisor (Miget)

Corpus Christi Independent School District, Innovation Academy Advisor (Miget)

Coastal Bend Bays Foundation (Miget)

Urban Harvest (Jacob)

Galveston Bay Council (Jacob)

Coastal Prairie Partnership, Founding Member (Jacob)

Water and Sediment Quality Committee of the Galveston Bay Council, Chair (Jacob)

Gulf of Mexico Alliance Resiliency Work Group (Jacob)

Houston Tomorrow, Research Board (Jacob)

Galveston Baykeeper, Founding Board Member and Chair (Jacob)

Katy Prairie Conservancy, Advisory Member (Jacob)

Bayou Preservation Association, Advisory Member (Jacob)

Native Plant Society of Texas, Houston Chapter, Program Committee Chair (Edwards)

Texas Society of Ecological Restoration, Gulf Coast Regional Representative Board Member (Edwards)

Galveston Bay Council/Galveston Bay Estuary Program, Water and Sediment Quality Subcommittee (Edwards)

Regional Watershed Coordination Steering Committee (Southeast and South Central Texas) of Texas State Soil and Water Conservation Board (Edwards)

Armand Bayou Watershed Partnership Steering Committee and Founding Board

Member (York)

Bass Brigade Steering Committee (York)

Bayou Preservation Association, Watershed Representative for Dickinson Bayou (York)

Galveston Bay Estuary Program Water and Sediment Quality Subcommittee (York)

Upper Galveston Bay Oyster Waters Total Maximum Daily Load Subcommittees, Public Outreach Workgroup Chair (York)

Galveston Bay Estuary Program, Natural Resources Uses Subcommittee (Sipocz)

Texas Soil and Water Conservation Board, Southeast and South Central Texas Regional Watershed Coordination Steering Committee (Sipocz)

Aransas County Leadership Advisory Board (Wade)

Coastal Training Program Advisory Board (Wade)

Texas Floodplain Management Association, Community Rating System Committee (Wade)

Coastal Bend Hurricane Conference Planning Committee (Wade)

City of Aransas Pass Resilience Committee (Wade)

Rockport-Fulton Eagle Ford Shale Task Force (Wade)

Texas A&M AgriLife Extension Natural Resources Leadership Class (Looney)

Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (Behl)

South Texas Community Rating System (CRS) Users Group (Wade)

Texas General Land Office Coastal and Marine Spatial Planning Data Standards Committee (Wade)

Sea Grant and NOAA

Sea Grant Association, Board of Directors (Plotkin)

Sea Grant Association, External Relations Committee (Plotkin)

Sea Grant Week Planning Committee (Plotkin)

Gulf States Marine Fisheries Commission, Sea Grant Fisheries Extension Committee, Chair (Graham, Reisinger)

Gulf States Marine Fisheries Commission, Sea Grant Fisheries Extension Committee (Cummins, Balboa)

NMFS/Gulf & South Atlantic Fisheries Foundation Gear Review Panel, Chair (Graham)

Gulf of Mexico Climate Community of Practice (Jacob, Carlton, Wade, Behl)

Sea Grant Communicators' Network (Powell)

National Sea Grant Web Specialists/Web Developers Network (E. Graham)

Sea Grant Educators Network (O'Connell, Patterson, Gunn)

Sea Grant Extension Assembly (Gunn)

NOAA Weather-Ready Nation Ambassador (Wade, Behl)

NOAA climate.gov, National Climate Assessment Teaching Resources (Behl)

Sea Grant National Coastal Community Development Focus Team (Jacob)

Sea Grant Climate Network (Jacob, Wade, Behl)

Climate and Planning Extension Network (Wade)

Sea Grant Sustainable Coastal Community Development Network (Jacob, Wade)

STAKEHOLDER ENGAGEMENT

Awards and Honors

Texas Sea Grant staff members are often recognized by partners and stakeholders for their commitment and leadership. The following are some of the awards that they have received since the program's last Site Review.

Harte's Hero Award, Harte Research Institute for Gulf of Mexico Studies, 2014 (Plotkin)

Texas A&M AgriLife Extension Superior Service Award, 2014 (Looney)

Texas A&M AgriLife Extension Superior Service Award, 2013 (Massey)

Texas A&M AgriLife Extension Superior Service Team Award, 2012 (Haby, Graham, Miget, Treece, Looney, Massey, O'Connell, Cummins, Reisinger)

Epsilon Sigma Phi Mid-Career Award, 2012 (Looney)

Sea Grant Extension Assembly Gulf of Mexico Region Superior Outreach Programming Award, 2010-2012, for Trade Adjustment Assistance for the Shrimp Fishery (Haby, Graham, Miget, Treece, Looney, Massey, O'Connell, Cummins, Reisinger)

Diocese of Victoria Mother Elizabeth Ann Seton Award, 2013 (Cummins)

Port Lavaca Chamber of Commerce Woman of the Year, 2014 (Cummins)

Texas House of Representatives Resolution H.R. 779 Congratulating Rhonda Cummins on being named 2014 Woman of the Year by the Port Lavaca Chamber of Commerce (Cummins)

Eugene Raffield Humanitarian Award, Southeast Fisheries Association, 2014 (Graham)

Service Award, Gulf and South Atlantic Fisheries Foundation, 2012 (Graham)

Texas Master Naturalist Chapter Advisor Award, 2013 (Reisinger)

Regional Award for Excellence in Extension, Association of Public and Land Grant Universities, 2014 (Jacob)

Texas A&M AgriLife Extension Superior Service Award, 2013 (Jacob)

Terry Hershey Award for Excellence, TAMU Department of Recreation, Park and Tourism Sciences, 2012 (Jacob)

Trees for Houston Arbor Award nomination, Exploration Green in Clear Lake City, 2015 (Edwards)

Treasures of the Bay "Making A Difference" Award, Galveston Bay Area Chapter of the Texas Master Naturalists, 2011 (Jacob)

Treasures of the Bay "Making A Difference" Award, Galveston Bay Area Chapter of the Texas Master Naturalists, 2011 (York)

Featured Artist for Gulf States Marine Fisheries Commission 65th Annual Meeting, Point Clear, Alabama, 2015 (Reisinger)

2014 Texas Governor's Volunteer Award, Community Leadership Award, 2014 (Texas Master Naturalist Program)

Texas Commission on Environmental Quality, Environmental Excellence Winner in the Civic/Community Category, 2014 (Texas Master Naturalist Program)

Featured Artist for Gulf Seafood Coalition video, 2013, <https://www.youtube.com/watch?v=6Lczko071TQ> (Reisinger)

Outstanding Public Health Partner, Galveston County Health District, 2014 (York)

Parks and Natural Areas Award, Houston-Galveston Area Council, for Ghirardi Family WaterSmart Park, 2014 (York)

Texas Recreation and Parks Society, East Region Award for Innovations in Park and Facility Development, for Ghirardi Family WaterSmart Park, 2014 (York)

Texas Commission on Environmental Quality, Texas Environmental Excellence Awards, Finalist, Sheldon Lake State Park Wetland Restoration, 2014 (Sipocz)

City of Houston Mayor's Proud Partner Award, Honorable Mention, Sheldon Lake State Park Wetland Restoration, 2014 (Sipocz)

Marina Association of Texas, Friend of the Industry Award, 2011 (Hollin)

Selected Stakeholder and Partner Activities

The following examples are just some of the Texas Sea Grant projects that illustrate engagement with stakeholder groups and the partnerships that help the program to succeed.

Improving ecosystem health and leading watershed-based planning, education and water quality improvement in Texas' largest coastal city

Stakeholders: Houston-area government officials, residents and natural resource NGOs

The Houston metro area is one of the fastest growing in the country. Its wetlands are disappearing at a rapid pace, and its many creeks and bayous, several of which have been classified as impaired by the Texas Commission on Environmental Quality (TCEQ), are part of the Galveston Bay Lower Watershed. To respond to these challenges, Texas Sea Grant has:

- led local stakeholders through public meetings and coordinated the creation of a Dickinson Bayou bacterial contamination remediation plan, which was subsequently approved by TCEQ, and a Highland Bayou watershed protection plan, still under way;
- produced several publications aimed at educating residents in the Dickinson Bayou watershed about proper septic system placement, use and maintenance;
- provided hydrology studies and designs for several stormwater wetland pilot projects with a range of basin types to demonstrate water quality improvements and other benefits of stormwater wetlands, including a 200-acre conversion of a city golf course in Clear Lake City to a stormwater park with a chain of lakes and 40 acres of wetlands;
- developed seven stormwater demonstration projects that highlight best management practices, including rain gardens, pervious pavement, bio-swales, vegetated buffer, rain water harvesting, green roofs and WaterSmart landscapes, for a League City park that drains into Clear Creek, which has high levels of bacteria, low levels of dissolved oxygen and legacy PCB in sediments;
- conducted an intensive monitoring program of the green stormwater infrastructure practices at the League City park to verify their effectiveness, since very little research has been done in this area;
- restored more than 100 acres of coastal prairie potholes at Sheldon Lake State Park, and in the process pioneered the Sheldon-Sipocz method, a restoration technique that is emerging as the restoration method of choice for similar habitats along the Texas coast;

- partnered in the development of a region-wide online mapping tool showing remaining natural habitat that is being used as the cornerstone of an eight-county regional conservation plan;
- reviewed wetland mitigation permits from the Galveston Bay area and found that nearly half were out of compliance for documentation of some form of mitigation, and relayed the information to appropriate federal and state agencies and began discussions about methods to ensure full mitigation is conducted;
- conducted a study of the wetland loss in the Houston area from 1992-2010 and found that overall losses over the time period were more than five percent, with some areas losing almost 30 percent of the freshwater wetlands present in 1992, published this information, and suggested actions for municipal governments, resource managers, regulatory agencies and citizens to reduce future losses; and
- studied the surface discharge characteristics of depressional wetlands on the Texas coast and published a paper calling into question the widespread perception that depressional wetlands are hydrologically isolated, which figured prominently in national deliberations on wetland connectivity to clarify the definition of "waters of the United States" under the Clean Water Act.

Partners: Texas Parks and Wildlife Department, Sheldon Lake State Park, Texas A&M AgriLife Extension, Texas Commission on Environmental Quality, Clear Lake City, Dickinson Bayou Watershed Partnership, Clear Lake City Water Authority, Houston-Galveston Area Council, Galveston Bay Estuary Program, Exploration Green Conservancy, City of League City, Texas Master Naturalists, Houston Advanced Research Center, Federal Highway Administration, Harris County Flood Control District, Katy Prairie Conservancy, Legacy Land Trust, Texas Forest Service, The Nature Conservancy, The Park People, The Trust for Public Land, U.S. Fish and Wildlife Service, Houston Wilderness, NOAA Coastal Management Program, Texas General Land Office, University of Houston-Clear Lake and Harris County Flood Control District.

KEY STAKEHOLDERS AND PARTNERS

Educating consumers about the sustainability and health benefits of Texas seafood

Stakeholders: seafood consumers, grocery retailers, Texas shrimp producers

Consumers are increasingly seeking locally produced and sustainably harvested products, even as the shrimp fishery faces competition from lower-priced imported products. To help consumers make more educated choices about the health benefits, sustainability and uniqueness of wild-caught Texas seafood products, Texas Sea Grant:

- held workshops for two of the largest supermarket chains in Texas, at which seafood managers and promotions staff learned about shrimp nutrition, ecology, handling safety, fishery economics, and the chemistry underlying the flavor differences between farmed and wild shrimp, to help these grocery professionals better answer consumers' questions about Texas shrimp;
- conducted a monthly "Cooking with Seafood" program in Calhoun County that educated local consumers about selection, storage, preparation, safety and sustainability of different seafood types;
- printed and distributed 40,000 information cards with advice about seafood safety and health benefits for pregnant or nursing women, women who may become pregnant, and children; and
- encouraged seafood producers to participate in Texas MarketMaker, an online resource for information on Texas seafood and agricultural products that is designed to connect producers with buyers.

Partners: Texas Department of Agriculture, Texas Shrimp Association, H-E-B Grocery, Kroger, Texas A&M AgriLife Extension, Texas Department of State Health Services, U.S. Department of Agriculture-National Institute of Food and Agriculture, and Gulf States Marine Fisheries Commission.

Engaging inland audiences in coastal and marine issues

Stakeholders: inland residents, industries dependent on healthy coastal ecosystems

One of Texas Sea Grant's goals is to raise coastal, marine and watershed awareness among Texans who live far from the Gulf of Mexico, in part to support the health of downstream coastal ecosystems. Texas Sea Grant:

- promoted the understanding of Gulf and ocean issues to K-12 students, Texas A&M University students and members of the public in the watershed of the Brazos River, the source of a Texas-based hypoxic zone discovered by Texas Sea Grant-funded researchers, through the Brazos Valley Ocean Awareness Program. The program established and maintains a 300-gallon saltwater aquarium on the Texas A&M University campus, operates an Adopt-A-Tank program for K-12 schools in the area, and conducts hands-on informal education programs around both to promote awareness of ocean and Gulf issues and watershed education;
- coordinated two regional competitions of the National Ocean Sciences Bowl, for which more than a hundred high school students from around the state study all disciplines of the ocean sciences each year;
- partnered in "Linking Inland to the Gulf," which educates students who live 500 miles from the coast in the Rio Grande watershed about marine and watershed issues through seven project lessons and a field excursion to the coastal city of Corpus Christi;
- contributed to a short video and webinar about pharmaceuticals and personal care products in water supplies for ProjectWET (Water Education for Teachers), a global resource for educators;
- helped Texans' voices be heard on water policy issues by partially funding two public water policy surveys to determine concerns and preferences relating to water resources and state water policies. Respondents' concerns about the quality and quantity of their water resources and about preserving water for environmental services, including inflows to Texas bays and estuaries, were communicated to the Texas Legislature, which put the water resources question to a public vote, at which Texans approved releasing \$2 billion from the state's Rainy Day fund to fund water infrastructure and conservation projects in the state.

Partners: Texas A&M University Office of the Provost, Texas A&M Zoological Society, Texas A&M Biology Department, George Bush Library, Boy Scouts of America, Girl Scouts, Homeschool COOP, more than 25 public and private K-12 schools, Texas A&M AgriLife Extension, Presidio County, ProjectWET, NOAA National Climate Assessment Network, and the Bush School of Government and Public Service and Office of the Vice President for Research, Texas A&M University.

Restoring habitats and promoting public access and engagement on the Texas coast

Stakeholders: coastal residents and users of coastal natural areas

With its outstanding natural beauty and ecological diversity, the Texas coast is a nature-lover's paradise. To promote Texans' responsible engagement with and appreciation of these natural areas, Texas Sea Grant:

- worked with coastal communities and conducted fieldwork on the entire Texas coast to update an inventory of all beach and bay public access points; the Texas General Land Office has used the data as the foundation of an online mapping app that allows for quick location of these sites by coastal visitors; and
- partnered in the Texas Master Naturalist (TMN) Program, a statewide effort to develop a corps of well-informed volunteers who provide education, outreach and service aimed at management of natural resources and natural areas. From 2011 through 2014, these Texas Sea Grant-coordinated volunteers:
 - o donated 246,340 hours with an economic value of \$5.52 million (via Independent Sector) and restored 6,762 acres of dune beaches, coastal prairie wetlands and other natural habitats;
 - o held youth field trips and guided tours for all ages at state parks and national wildlife refuges;
 - o rescued cold-stunned sea turtles and patrolled for sea turtle nests; and
 - o maintained hiking trails at several state parks.

Partners: Texas General Land Office, Texas A&M University-Corpus Christi, Texas A&M University at Galveston, Texas Parks and Wildlife Department, Texas A&M AgriLife Extension, The University of Texas-Pan American Coastal Studies Laboratory, Laguna Atascosa National Wildlife Refuge, Sea Turtle Incorporated, Ocean Trust, Texas Audubon Society, University of Houston-Clear Lake, Texas A&M University at Galveston, National Marine Fisheries Service, Sheldon Lake State Park, Flower Garden Banks National Marine Sanctuary, Armand Bayou Nature Center, Texas Nature Conservancy, Nueces Delta Preserve, Welder Wildlife Foundation, Goliad State Park, Palacios Prairie Wetlands, Aransas Pathways, Texas Marine Education Center, dozens of school districts, and the coastal communities of Houston, Galveston, Baytown, La Porte, Seabrook, Webster, Clear Lake Shores, Friendswood, Kemah, League City, Pasadena, Dickinson, Tiki Island, Texas City, High Island, Bolivar Peninsula, La Marque, Hitchcock, San Leon, Bacliff, Nassau Bay, Victoria and South Padre Island.

Improving the Gulf shrimp fleet's sustainability and protection of endangered species

Stakeholders: Southeastern U.S. shrimp fishery

The Texas shrimp fishery is the state's largest commercial fishery, and Texas Sea Grant works to support the sustainability and economic viability of the industry through a variety of activities. Texas Sea Grant:

- tested and conducted technology transfer of fuel-efficient trawl gear to the shrimp fleet, generating fuel savings in Texas alone of 2.4 million gallons worth \$7.5 million in 2014 and fuel savings worth more than \$51 million since adoption began in 2008;
- produced a detailed account of the gear evaluations, equipment and installation requirements and step-by-step instructions to help fishermen conduct a cost-benefit analysis to determine if the gear changes would represent cost savings in their particular circumstances, translated this document into Spanish and Vietnamese, the two main first languages of the southeastern U.S. shrimp fishery, and published the document in all three languages;
- tested and refined the steps shrimp fishermen could take onboard while at sea to preserve the appearance and flavor of wild caught shrimp to help their product successfully compete with imported, farmed shrimp, and published a fact sheet in 2013 that provided instructions about methods and equipment;
- published and translated into Spanish and Vietnamese an abridged version of the quality improvement publication, and printed, laminated and distributed the instruction sheet in all three languages for use aboard shrimp vessels;
- provided dockside training to shrimp boat owners and crews in Texas, Mississippi, Alabama and Florida about the correct use and installation of turtle excluder devices (TEDs) by conducting on-board inspections on request, helping crews make immediate adjustments if needed to comply with federal regulations, and providing access to new markets through documentation of proper use as proof for shrimp retailers and consumers that sustainable practices were being employed.

Partners: Western Seafood, Brownsville-Port Isabel Shrimp Producers Association, Texas A&M AgriLife Extension, National Fish and Wildlife Foundation, Gulf and South Atlantic Fisheries Foundation and Port Arthur Shrimp Association.

KEY STAKEHOLDERS AND PARTNERS

Helping Texas coastal communities improve resilience and sustainability through comprehensive planning

Stakeholders: coastal community elected and appointed officials, coastal residents

Many smaller coastal communities in Texas lack the resources to hire outside consultants to conduct the comprehensive planning that is needed to improve their cities' hazard resilience and sustainability. Texas Sea Grant works directly with coastal communities to help them identify social and environmental vulnerabilities and provide technical assistance and training for their staff. In addition to hiring a full-time Coastal Planning Specialist in 2011 to focus more resources on this important issue, Texas Sea Grant:

- guided nine coastal communities through the Coastal Resilience Index (CRI), developed by Mississippi/Alabama Sea Grant, to help officials to evaluate their risks and identify strategies to better prepare for the impacts of coastal hazards and climate change; one city has already used the results to begin updating its hazard mitigation plan;
- pioneered the development of a unique community engagement platform, the coastal CHARM (Community Health and Resource Management) model and the weTable, both launched in 2011. The weTable uses infrared remote technology to turn an ordinary table into an interactive computer interface, and CHARM allows users to "paint" different development types, each of which has specific impacts or resource uses, to immediately see the environmental impacts of specific development scenarios;
- conducted multiple demonstrations of the CHARM and weTable technology around the state to city, county, state and federal officials;
- expanded CHARM's database to new areas of the Texas coast, making possible workshops and planning exercises in new communities, and contracted with one coastal city to incorporate their community's data related to coastal growth and development into the CHARM model; and
- developed and offered a Texas Coastal Citizen Planner (TCCP) course to provide training for elected and appointed officials who act as "citizen planners" in their communities but may lack training or experience in this area; the first class graduated in January 2014 with additional knowledge that will help them plan for future coastal hazards and climate change.

Partners: Placeways, PlaceMatters, Federal Emergency Management Agency, Mission-Aransas National Estuarine Research Reserve, Texas Nature Conservancy, Mississippi/Alabama Sea Grant, Louisiana Sea Grant, Florida Sea Grant, U.S. Environmental Protection Agency, Galveston Bay Estuary Program, and coastal communities of Port Arthur, Freeport, Rockport, Ingleside, Port Aransas, Corpus Christi, Fulton, Point Comfort, Aransas Pass, Portland, Angleton, Laredo, South Padre Island, San Benito, Mission, Harlingen, Brownsville and McAllen, and Nueces, Aransas, Calhoun, Chambers and Jefferson counties.

Projects with other Sea Grant, NOAA and Agency Partners

Gulf of Mexico Sea Grant Programs research initiatives

Texas Sea Grant is an active participant in Gulf regional research planning and funded projects. To date, the programs have funded six regional research projects over three funding cycles totaling \$3.8 million in partnership with the NOAA National Ocean Service and the EPA Gulf of Mexico Program. In addition, the four Gulf Sea Grant programs are updating the Gulf of Mexico Regional Research Plan. Originally released in 2009, the plan's mission is to identify priority research needs for the Gulf of Mexico through broad constituent input and to implement strategies to address those needs. As numerous groups and agencies begin developing science plans in response to resources from the Deepwater Horizon oil spill, the need for input on regional research is more important than ever before.

Trade Adjustment Assistance for Southeastern U.S. shrimp fishery

Texas Sea Grant led a collaborative effort among several state Sea Grant programs — Louisiana, Mississippi/Alabama, Florida, Georgia, South Carolina and North Carolina — to submit a regional petition to allow shrimp fishermen in the Southeastern U.S. to qualify for the U.S. Department of Agriculture's Trade Adjustment Assistance (TAA) program, which is designed to support groups that are able to demonstrate reduced prices, revenues or production levels as a result of increasing foreign imports. Texas Sea Grant also took the lead in developing curriculum for the training that shrimp fishermen were required to complete in order to qualify for cash assistance through the program. Training topics included reducing fuel use, marketing locally caught shrimp, understanding regulatory requirements and developing a formal business plan that included sustainable practices. By the end of the program in 2013, 4,532 applicants from the Gulf and southeastern U.S. had participated in 57,000 hours of intensive training and created business plans to receive cash benefits from USDA that totaled \$44.8 million.

Expediting NOAA approval of new bycatch reduction devices

Under a grant from NOAA's National Bycatch Reduction Engineering Program, Texas Sea Grant conducted offshore field-testing aboard a commercial shrimp trawler of four prototype bycatch reduction devices (BRDs) to determine their potential effectiveness at reducing capture of non-target species while also limiting the loss of catch compared to BRDs currently certified for use by the southeastern shrimp fishery. The devices tested included one proposed by NOAA's National Marine Fisheries Service. Federal certification of new BRD models requires a lengthy series of in-depth trials; proof-of-concept testing like that conducted by Texas Sea Grant can identify gear that have the best potential to pass the rigorous testing at the federal level and expedite their approval for use by the shrimp trawl fishery. The results of the tests have been communicated to NOAA and published on their website at http://www.fisheries.noaa.gov/by_catch/docs/brep_2014_graham.pdf.

Gulf of Mexico Sea Grant Programs oil spill outreach team

The Deepwater Horizon Oil Spill in 2010, the largest in U.S. history, released about 200 million gallons of oil into the Gulf of Mexico, and more than 1.84 million gallons of dispersants were released into the Gulf as a consequence. Lingering questions remain about the impact of the spill on the environment, economy and society. Texas Sea Grant partnered with the other three Gulf Sea Grant programs and the Gulf of Mexico Research Initiative (GoMRI) to develop a regional oil spill science extension program. A region-wide strategy was developed to solicit input from target audiences, and Texas Sea Grant took the lead on working with natural resource managers and on the topic area of environmental impacts. Through early February 2015, 116 small and large group meetings with 530 stakeholders were held throughout the region. The Gulf Sea Grant programs' oil spill science outreach team used the input from these meetings to develop the topics to address in their outreach efforts, and also shared that information with the GoMRI Research Board to inform their research prioritization and funding decisions. Four oil spill science outreach specialists, including one with Texas Sea Grant, are working to identify target audiences that can benefit from knowledge generated from GoMRI-funded research and translating and disseminating the information using several different media to ensure that the findings are understood.

COLLABORATIVE NETWORK AND NOAA ACTIVITIES

Gulf of Mexico Climate Community of Practice

Texas Sea Grant is an active member of NOAA's Gulf of Mexico Regional Collaboration Team (GoMRCT). A partnership between GoMRCT and the four Gulf Sea Grant programs resulted in the Climate Community of Practice, a network of climate science outreach specialists and coastal planning practitioners that develops training for and provides technical assistance to local decision-makers to help them incorporate information about climate change-related coastal hazards such as sea level rise and precipitation changes into community plans. The network holds an annual meeting hosted by a different Gulf Sea Grant program each year; Texas Sea Grant hosted the 2013 meeting. Texas Sea Grant also supported this effort with the hiring in 2011 of a full-time Coastal Planning Specialist. Other NOAA partners include the National Weather Service, Office of Coastal Management, National Marine Fisheries Service, Flower Garden Banks National Marine Sanctuary and the Mission-Aransas National Estuarine Research Reserve.

Gulf Hydrological Restoration Inventory and funded projects

Beginning in 2010, Texas Sea Grant partnered with the NOAA Restoration Center and Gulf of Mexico Sea Grant programs to develop an inventory of hydrological restoration projects. Throughout the Gulf, Sea Grant staff met with community leaders, non-profit organizations, state agencies and universities to identify potential sites where restoration of historical flows would provide large-scale benefits to habitat and wildlife; details about the more than 80 unique sites they identified was collected into an inventory and shared on platforms such as Google Earth and ArcGIS online. Four sites, including one in Texas, have received funding from the NOAA Restoration Center for restoration to proceed.

Technology transfer to Sea Grant Network of public participation planning tool

The weTable, a tool developed by Texas Sea Grant, transforms an ordinary tabletop into an interactive computer interface. This affordable public participation tool allows teams to collaboratively explore and use computer-based data and programs in a workshop setting. The weTable enhances what people use daily — tables and pens — while the supporting technology works in the background. This allows participants to work with what matters most in a meeting: data, maps, and fellow participants. The weTable is ideal where workshop participants use data and maps to identify and develop planning priorities and strategies. In February 2013, Texas Sea Grant and Delaware Sea Grant

partnered to co-organize and host the first weTable conference. Held in Houston, Texas, the two-day conference featured workshop-style sessions, case studies, breakout symposia and numerous opportunities for participant feedback and discussion. The conference included representatives from 13 different state Sea Grant programs as well as regional/national partners including the U.S. Environmental Protection Agency and the Nature Conservancy. Pre- and post-test results indicated that an overwhelming percentage of attendees would find ways to integrate the weTable into their public outreach programs.

Red Tide Rangers: Supporting NOAA's Harmful Algal Bloom forecasts

Texas Sea Grant provides training and organizational support to the Red Tide Rangers, a volunteer group that monitors South Texas coastal waters for harmful algal blooms. If a bloom is detected to the north or in Mexico to the south, the volunteers begin daily sampling of Gulf waters, examining the samples in the laboratory for signs of the *Karenia brevis* algae, patrolling for fish kills and checking for aerosolized toxins in breaking surf. In 2012, Texas experienced one of the longest and largest red tide events in recent history. The Red Tide Rangers sampled and tested the waters around South Padre Island and sent their findings to the Texas Parks and Wildlife Department and NOAA to notify the public through websites and public safety announcements, thereby contributing to NOAA's Harmful Algal Bloom Operational Forecast System and verifying its satellite imagery.

Training and online resources for teachers

Texas Sea Grant contributed to two web-based NOAA National Climate Assessment Network tools, one focused on coastal areas and the other on the ocean environment, that present current science on how changing climate impacts both of these types of ecosystems. They include a list of essential principles and key messages that can be used by K-12 educators in the classroom when teaching about coastal and marine environments and can easily be adopted by K-12 formal and informal educators. Texas Sea Grant also has been a partner in two NOAA Office of Education B-WET (Bay-Watershed Education and Training) teacher professional development programs, one in 2012 focusing on the Arroyo Colorado watershed in South Texas and another, a three-day "Teachers on the Estuary" program in partnership with the Mission-Aransas National Estuarine Research Reserve, in July 2015.

COLLABORATIVE NETWORK AND NOAA ACTIVITIES

Success in Sea Grant National Competitions

National Competitions, 2010-2015:			
COMPETITION	# PROPOSALS/ # AWARDED	PI/AFFILIATION	FUNDED PROJECT
NOAA Sea Grant Aquaculture Research Program - 2010	1 submitted, 1 funded	Delbert Gatlin, Texas A&M University, Department of Wildlife & Fisheries Science	Advancing Fishmeal Replacement in Diets of Marine Fish for Enhanced Production Efficiency, Health, and Product Quality
NOAA Sea Grant Community Climate Adaptation Initiative - 2012	1 submitted, 1 funded	John Jacob, Texas A&M University, Texas Sea Grant/ Texas A&M AgriLife Extension	Texas Coastal CHARM: Coastal Resiliency Tools for Local Officials
NOAA Sea Grant Aquaculture Research Program - 2012	7 submitted, 1 funded	John Gold, Texas A&M University-Corpus Christi, Harte Research Institute	Use of Next-generation DNA Sequencing to Inform Regulatory Decisions Regarding Spatial Sites for Marine Aquaculture in the Gulf of Mexico
NOAA Sea Grant Aquaculture Extension and Technology Transfer - 2013	1 submitted, 1 funded	Tzachi Samocha, Texas A&M University, Texas A&M AgriLife Research	Seed-to-Harvest Operations Manual and Training Program for Indoor BioFloc-Dominated (BFD) Production of <i>L. vannamei</i> , the Pacific White shrimp
NOAA National Sea Grant Special Projects 'Conference and Workshop Support' - 2012	1 submitted, 1 funded	John Jacob, Texas A&M University, Texas Sea Grant/ Texas A&M AgriLife Extension	Sea Grant WeTable Participatory Planning Users Conference
NOAA Sea Grant Charter Fund - 2013	2 submitted, 0 funded		
NOAA National Sea Grant Gulf of Mexico Estuarine and Marine Fish Habitat Assessment - 2014	1 submitted, 0 funded		
NOAA Sea Grant Aquaculture Research Program - 2014	2 submitted, 1 funded	Lee Fuiman, University of Texas at Austin Marine Science Institute	Refining Pigfish Fingerling Production for Commercial Aquaculture: Captive Spawning, Feeding, and Fingerling Production
NOAA NSG Special Projects 'Conference and Workshop Support' - 2015	1 submitted, 1 recommended for funding	Joshua Gunn, Texas Sea Grant	Gulf of Mexico Regional Sea Grant Meeting

John A. Knauss Marine Policy Fellowships, 2012-2016:

Year	Applications Submitted to TXSG	Applications Submitted to NSGO	Awards
2012	4	4	4
2013	4	4	2
2014	3	3	1
2015	3	3	1
2016	6	3	1

PROGRAM CHANGES RESULTING FROM PREVIOUS SITE REVIEW

Texas Sea Grant has experienced many changes since its last Site Review Team visit. Only a few months after the Site Review in Spring 2011, a new director, Dr. Pamela Plotkin, joined the program following the retirement of Dr. Robert Stickney. With that change in leadership came the initiation of new programs and the expansion of existing efforts to focus additional resources on issues that are of growing concern, some of which were recommended by the Site Review Team. These include:

- helping coastal communities to improve their resilience;
- increasing the marine literacy of inland populations in areas vital to coastal watersheds;
- harnessing the academic potential of other higher education institutions, including by strengthening the program's relationship with its home institution, Texas A&M University, and building partnerships with other universities on the Texas coast;
- further improving the integration of research and extension;
- increasing stakeholder engagement through surveys, workshops and other events;
- facilitating regional restoration efforts in the Gulf of Mexico;
- expanding digital communications to support the program's mission; and
- increasing support for student researchers at all levels of their university careers as they develop the skills needed to become future problem-solvers.

Texas Sea Grant has made several specific changes to its program as a consequence of the recommendations and suggestions provided by the last Site Review Team. A detailed account of these changes has been included in the Background Materials provided to the Site Review Team.

APPENDIX A: TEXAS SEA GRANT SCHOLARS PROGRAM

Texas Sea Grant Scholars

Project Title	Recipient	Department	Affiliation
2012-2013 Academic Year			
Variation in skull shape reflects feeding adaptations in basal otariid pinnipeds	Gary C. Baine II	Marine Biology	TAMUG
Association between shrimp catch per unit effort and environmental variables in the Gulf of Mexico	Cyreneia Millberry	Wildlife and Fisheries Sciences	TAMU
The changes in growth and composition of marine microalgae in response to sodium bicarbonate and nitrogen	Marcella Nuñez	Marine Biology	TAMUG
'Our tables have suffered': Quantifying consumer market activity of commercially valuable living resources in Chesapeake Bay, 1850-1950	Josh Carter and Ravel Walker	Marine Biology/ Marine Science	TAMUG
2013-2014 Academic Year			
Acoustic vocalizations of dolphins and the effects of anthropogenic noise	Joclyn Bosquez	Marine Biology	TAMUG
Effect of exopolymers on the consumption of <i>Synechococcus</i> by <i>Oxyrrhis marina</i>	Peter Bruns	Zoology	TAMU
Sargassum Early Advisory System (SEAS): Developing the standard operating procedure of investigating the hourly growth rate of sargassum while suspended in the neritic coastal waters off of Galveston, Texas	Brandon Hill	Ocean and Coastal Resources	TAMUG
Association patterns of common bottlenose dolphins (<i>Tursiops truncatus</i>) in the Galveston Ship Channel, Texas	Kelsey Johnson	Marine Biology	TAMUG
Application of carbohydrates as biomarkers to study dissolved organic matter reservoirs in Arctic rivers	Rachel McMahon	Marine Science	TAMUG
Trematode prevalence as an indicator for Galveston marsh health	Marissa Oldiges	Marine Biology	TAMUG
2014-2015 Academic Year			
Genetic diversity in the hydroid <i>Janaria mirabilis</i> : Possible presence of cryptic species	Iris Cato and Katherine Gillis	Marine Biology	TAMUG
Cryptic species analysis of <i>Austrotilharzia variglandis</i> and <i>Mesostephanus appendiculatus</i> in the salt marsh gastropod, <i>Cerithidae pliculosa</i> , in Galveston Bay	Daniela Perrigo	Marine Biology	TAMUG
Aragonite saturation state and deep-sea coral distribution in the Northwest Hawaiian Islands	Kelci Miller	Environmental Studies	TAMU
Feeding ecology of coastal sharks in the Northwest Gulf of Mexico	Jeffrey Plumlee	Marine Biology	TAMUG
Identifying the differences in survivorship and growth of offspring of large and small females in the pipefish species <i>Syngnathus scovelli</i>	Andrea Martinez Aguirre	Biology	TAMU
The dietary tryptophan requirement of juvenile red drum	Emily Pewitt	Wildlife and Fisheries Sciences	TAMU

(Texas A&M University (TAMU) and Texas A&M University at Galveston (TAMUG); 2015-2016 grants had not been awarded at press time)

APPENDIX B: GRANTS-IN-AID OF GRADUATE RESEARCH PROGRAM

Grant Recipients

Project Title	Recipient	Department/ Degree Level	Affiliation
2013-2014 Academic Year			
Amphiphilic PEO-silanes for marine biofouling prevention	Melissa Hawkins	Biomedical Engineering (doctoral)	TAMU
Artificial reef structure and function: Effects on red snapper recruitment in the western Gulf of Mexico	Matthew Streich	Marine Biology (doctoral)	TAMUCC
Assessing the adoption of hazard mitigation practices in the Gulf coast	Chi Huang	Urban Planning and Landscape Architecture (doctoral)	TAMU
Affects of feeding modality of polychaete worms in methylmercury accumulation	Debra Hoekel	Biology (master's)	TAMUCC
Search for an oil resistance gene in deep sea macrobenthic communities	Travis Washburn	Marine Biology (doctoral)	TAMUCC
A meter for accurate measurements of optical attenuation	Ellie Figuera	Physics and Astronomy (doctoral)	TAMU
Characterizing and quantifying the responses of coexisting picoplanktonic microbial communities to nutrient enrichment in Galveston Bay, Texas	Alicia Shepard	Oceanography (doctoral)	TAMUG
Characterization of industrial water use practices of the Brazos River watershed that might be facilitating the transport of golden algae (<i>Prymnesium parvum</i>) into Galveston Bay	Adriana Mendez	Wildlife and Fisheries Sciences (doctoral)	TAMU
Why do some employees stay at work? Employee evacuation during a coastal natural disaster	Laura Lomeli	Industrial and Organizational Psychology (doctoral)	TAMU
Nutrient and inflow effects on <i>Karenia brevis</i> allelopathy	Rika Muhl	Wildlife and Fisheries Sciences (doctoral)	TAMU
Development of genomics markers using next generation sequencing techniques for conservation genomics studies of the critically endangered Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	Xochitl De La Rosa	Wildlife and Fisheries Sciences (doctoral)	TAMU
Assessment of the genetic diversity of colonizing fauna in restored <i>Spartina alterniflora</i> marshes in Southeast Texas	Gloria Espinoza	Marine Biology, Interdisciplinary Program (doctoral)	TAMUG
Spatial Appraisal and Valuation of Environment and Ecosystems (SAVEE)	Sasa Tapaneeyakul	Ecosystem Science and Management (doctoral)	TAMU
Linking behavior and physiology: Effects of toxicant exposure on blue crabs (<i>Callinectes sapidus</i>)	Kaitlyn Schroeder	Coastal and Marine System Sciences (doctoral)	TAMUCC
Evolution and maintenance of female alternative reproductive tactics in <i>Lepidochelys olivacea</i>	Kathryn Wedemeyer	Marine Biology (doctoral)	TAMU
Characterization of neritic communities in northeastern coastal waters of the Gulf of Mexico using stable isotopes of carbon and nitrogen	Clare Iseton	Marine Biology (master's)	TAMUG

(Texas A&M University (TAMU), Texas A&M University at Galveston (TAMUG) and Texas A&M University-Corpus Christi (TAMUCC))

APPENDIX B: GRANTS-IN-AID OF GRADUATE RESEARCH PROGRAM

Identification and assessment of a new to science cynaobacteria toxin	I-Shuo Huang	Life Sciences (master's)	TAMUCC
The impact of predator cue concentration and predator species on oyster morphology	Avery Scherer	Life Sciences (master's)	TAMUCC
Nutrient enrichment effects on coastal community structure and ecosystem functions	Carolyn Weaver	Ecosystem Science and Management (doctoral)	TAMUG
Developmental osteology of two species of economically important sciaenids, <i>Sciaenops ocellatus</i> and <i>Cynoscion nebulosus</i> (Teleostei: Sciaenidae)	Kole Kubicek	Wildlife and Fisheries Sciences (master's)	TAMU
Best practices in university community based programs	Kevin Andrews	Agricultural Leadership, Education and Communications (doctoral)	TAMU

2014-2015 Academic Year

Has enhanced sedimentation within upper Galveston Bay resulted in a buried Hg time bomb?	Mohammad Almkaimi	Oceanography (doctoral)	TAMUG
A biogeochemical investigation of a methane-dependent subterranean coastal ecosystem	David Brankovits	Marine Biology (doctoral)	TAMUG
Evaluation of nitrogen preference by phytoplankton and bacteria in Baffin Bay, a eutrophying South Texas estuary	Emily Cira	Life Sciences (doctoral)	TAMUCC
Impact of scaling and feeding biomechanics on ontogenetic dietary shifts in sharks	Joshua Cullen	Wildlife and Fisheries Sciences (doctoral)	TAMUG
A multi-stressor approach to understanding causes of reduced zooplankton grazing on brown tide	Anne Marie Gavlas	Life Sciences (doctoral)	TAMUCC
The genetic structure of oysters throughout Texas	Lauren Gurski	Marine Biology (doctoral)	TAMUCC
Matching of genomic profiles of hatchery broodfish used in restoration enhancement of red drum (<i>Sciaenops ocellatus</i>) and wild fish in Texas bays and estuaries	Christopher Hollenbeck	Harte Research Institute (doctoral)	TAMUCC
Does macrobenthic diversity have effect on ecosystem function?	Chien Hsiang	Harte Research Institute (doctoral)	TAMUCC
Predictive modeling of groundwater salinity variation in the South Texas coastal region	Riaz Khan	Physical and Environmental Sciences (doctoral)	TAMUCC
Local adaptation of <i>Streblospio benedicti</i> near oil refineries in Texas	Luz Angela Lopez De Mesa Agudelo	Marine Biology (doctoral)	TAMUCC
Short-term sediment accretion rates on Mustang Island, TX	Melinda Martinez	Environmental Science (master's)	TAMUCC
Phocid whisker sensitivity and implications for foraging ecology	Erin Mattson	Marine Biology (master's)	TAMUG
Why are black drum starving in Baffin Bay? — Revealing fine-scale resource needs of a critical Texas fishery with acoustic tracking technology	Kathryn Mendenhall	Life Sciences (master's)	TAMUCC
Female post-copulatory control of paternity in cetaceans	Dara Orbach	Marine Biology (doctoral)	TAMUG
The food web structure of a restored cordgrass (<i>Spartina alterniflora</i>) marsh community in Nueces Bay, Texas	Ryan Rezek	Life Sciences (doctoral)	TAMUCC
Characterization of morphological defenses and their energetic costs in the Eastern oyster (<i>Crassostrea virginica</i>)	Avery Schrer	Marine Biology (doctoral)	TAMUCC

APPENDIX B: GRANTS-IN-AID OF GRADUATE RESEARCH PROGRAM

Genetic effects of a novel predator on native communities: case study of lionfish in the Caribbean	Jason Selwyn	Marine Biology (master's)	TAMUCC
Assessing the impact of a newly constructed artificial reef off Port Aransas, Texas: What are we missing?	Matt Streich	Harte Research Institute (doctoral)	TAMUCC
An investigation of the role of geological inheritance on modern barrier island evolution	Bradley Weymer	Geology and Geophysics (doctoral)	TAMU
Characterization of the sodium iodide symporter in red drum (<i>Sciaenops ocellatus</i>)	Allison Wilkes	Biology (doctoral)	TAMU
Linking the neurobiology and ecology of decision-making: Analysis of predatory risk on the in vivo activity of a decision-making neural circuit in the mollusk <i>Aplysia californica</i>	Kevin Wolfe	Marine Biology (doctoral)	TAMUCC
2015-2016 Academic Year			
Preliminary search for scalloped hammerhead nursery grounds near Corpus Christi, Texas	Amanda Barker	Marine Biology (doctoral)	TAMUCC
The effects of natural and artificial substrate on oyster recruitment	Brenda Bennett	Marine Biology (master's)	TAMUCC
Assessing hydrologic connectivity between a coastal river and its floodplain using a field-based data logger array	Cesar Castillo	Geography (doctoral)	TAMU
Contribution of estuarine nurseries to adult red drum populations in Texas	Michael Dance	Marine Biology (doctoral)	TAMUG
Population genomics of a migratory coastal shark, the blacknose shark, <i>Carcharhinus acronotus</i>	Pavel Dimens	Fisheries and Mariculture (master's)	TAMUCC
Mate choice and chemical communication in sea turtles as mechanism to avoid inbreeding and hybridization	Christine Figgener	Marine Biology (doctoral)	TAMU
Assessing the communication dynamics of stakeholder relationships pertaining to complex environmental issues	Eleni Gesch-Karamanlidis	Communications (doctoral)	TAMU
Importance of dissolved organic nitrogen and phosphorus for microbial growth in a eutrophic estuary (Baffin Bay, Texas)	Kenneth Hayes	Life Sciences (master's)	TAMUCC
Vascular and algal primary production in the Nueces River (TX) salt marsh system	Benjamin Lawson	Life Sciences (master's)	TAMUCC
Application of high-throughput sequencing to determine the relatedness of juvenile blacktip sharks within and among three nurseries along the coast of Texas	Dominic Swift	Marine Biology (doctoral)	TAMUCC
Oyster sentinel: Investigating antibiotic resistance in an urbanized bay	James Tallman III	Life Sciences (master's)	TAMUCC
Using citizen science to assess bird community composition of a changing marsh-mangrove ecotone in coastal Texas	Ashley Whitt	Marine Biology (master's)	TAMUG
Investigating genetic patterns of two snook fishery stocks (<i>Centropomus spp.</i>) on the South Texas Gulf coast using ezRAD	Patricia Cockett	Marine Biology (doctoral)	TAMUCC
Temporal genomic variation of Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	Xochitl De La Rosa Reyna	Wildlife and Fisheries Sciences (doctoral)	TAMU

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Zooplankton community structure and seasonal abundance related to the loop current circulation in the Gulf of Mexico	Jillian Gilmartin	Marine Biology (doctoral)	TAMUG
The co-occurrence and potential for synergistic effects of anabaenopeptins and other cyanobacterial toxins on organisms	I-Shuo Huang	Marine Biology (doctoral)	TAMUCC
Invasive lionfish (<i>Pterois volitans</i>) — a source for human exposure to marine neurotoxins	Brittney Kosar	Marine Biology (master's)	TAMUCC
Local adaptation of <i>Streblospio benedicti</i> near oil refineries in Texas	Luz López de Mesa	Marine Biology (doctoral)	TAMUCC
Microbial colonization and degradation of polyethylene terephthalate (PET) plastic debris in Corpus Christi Bay	Lee Pinnell	Marine Biology (doctoral)	TAMUCC
Reversibility of morphological defenses in the Eastern oyster <i>Crassostrea virginica</i>	Avery Scherer	Marine Biology (doctoral)	TAMUCC
Determining factors affecting Dermo disease of oysters in Galveston Bay, Texas	Elizabeth Silvy	Wildlife and Fisheries Sciences (master's)	TAMU
Nutrient export to a reef dominated estuary through submarine groundwater discharge	Nicholas Spalt	Physical and Environmental Sciences (master's)	TAMUCC
Feeding ecology of bull sharks in the NW Gulf of Mexico	Thomas TinHan	Marine Biology (doctoral)	TAMUG

