



# ANNUAL REPORT

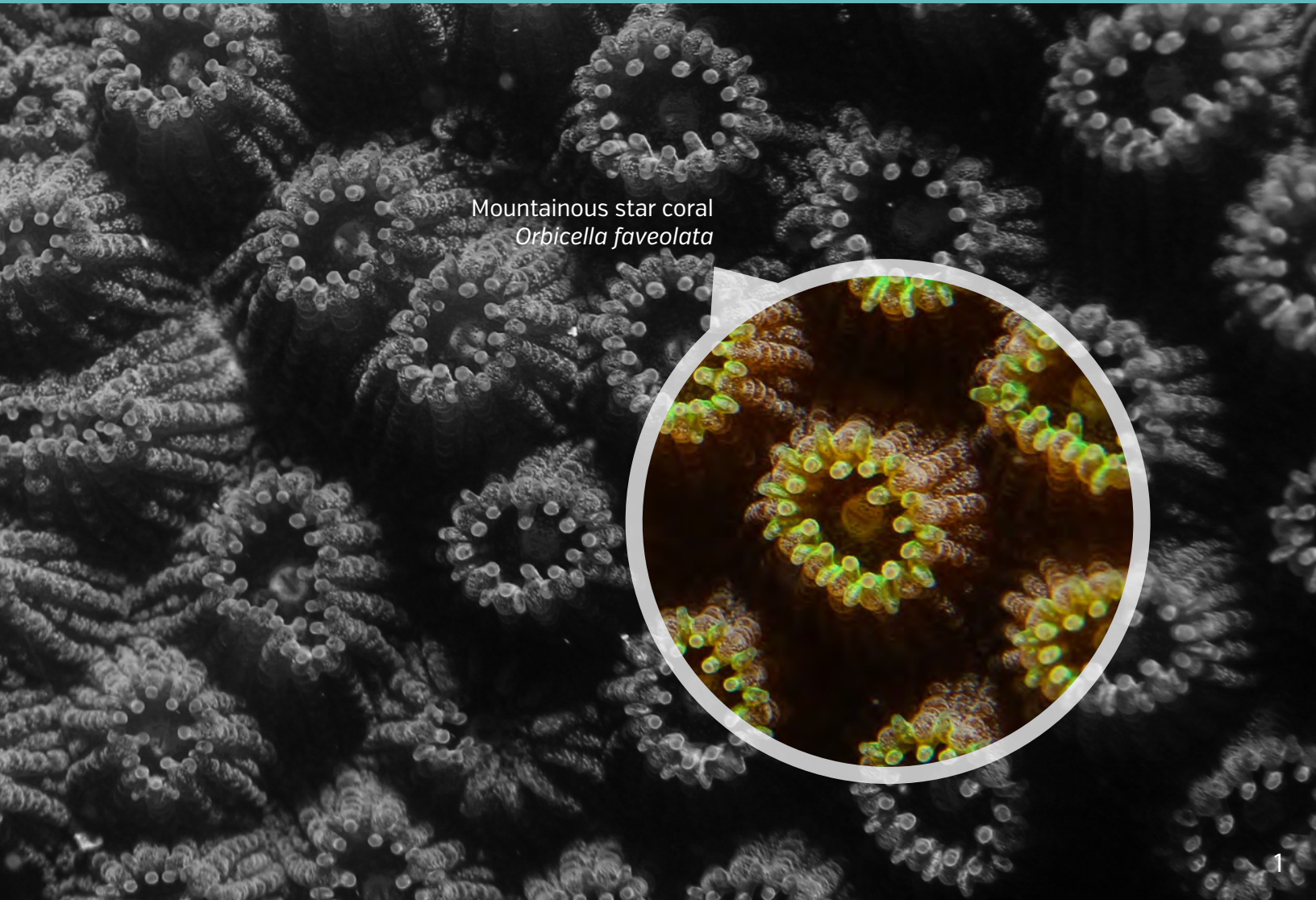
## 2015



Cover Image: Staff Biologist Christopher Page monitors the coral fragments growing in the raceways at Mote's Summerland Key Lab. Photo by Conor Goulding.

# Mote's Mission

The advancement of marine and environmental sciences through scientific research, education and public outreach, leading to new discoveries, revitalization and sustainability of our oceans and greater public understanding of our marine resources.



Mountainous star coral  
*Orbicella faveolata*

## Dear Friends...

What an amazing year it has been to serve in the role of Chairman of Mote Marine Laboratory's Board of Trustees. Not only did 2015 mark the milestone 60th anniversary of our revered and much-loved organization, it also included the launch of our first comprehensive fundraising campaign, *Oceans of Opportunity*.

As a member of the Board of Trustees since 2007, it has been truly awe-inspiring for me to help steward the growth and expansion of an institution with so many accomplishments in marine science, education and outreach. As I have taken on the role of Chairman of the Board in 2015, it has been my pleasure to work closely with Mote's President & CEO, Dr. Michael Crosby, in helping further his exceptional vision and leadership for the transformation of this world-class marine research enterprise to achieve our strategic goals.

Mote's Board of Trustees has also been significantly energized and enhanced in terms of both the addition of new members and a renewed level of commitment by all Trustees for Mote's mission. It is especially notable that this past year we more than doubled the number in Mote's Leadership Circle, which now totals eleven members. These generous philanthropists made gifts of \$1 million or more that will have a lasting impact – not just on the Mote of today, but on the long-term viability and strength of Mote to help protect our oceans for generations to come.

I thank you for your continued generous support of Mote's vital mission.



G. Lowe Morrison  
Chairman  
Mote Marine Laboratory Board of Trustees



## Dear Friends...

I am proud to be able to report that Mote Marine Laboratory had an exceptional year of accomplishments in 2015, exceeding even the challenging levels of performance that we had established for this amazing institution. However, we were only able to achieve these accomplishments with the wise guidance and counsel of our outstanding Board of Trustees, incredible levels of support from our local community and supporters around the world and the significant efforts by our entire team of dedicated scientists, aquarists, educators, support staff, student interns, partners and more than 1,600 volunteers.

Mote celebrated its 60th anniversary with transformational research innovations and impacts vital to the future sustainability of our oceans, programs that enhanced the ocean literacy of hundreds of thousands people, positively affecting the economy and quality of life in our communities, and a glorious *Oceanic Evening* celebration!

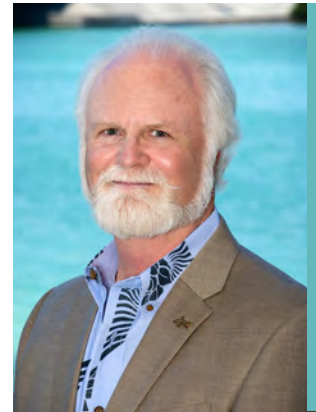
While it would be impossible for any report to capture every success of every scientist, aquarist, educator and staff member, I believe that the information in these pages provides a powerful look at the positive impact that Mote has on the world around us as we work to address the urgent needs and significant issues facing our oceans today.

Sadly, we lost our Founding Director in 2015. Dr. Eugenie Clark opened the Lab in 1955 as a young scientist equipped with the ideas, imagination, inspiration and community engagement needed to develop a strong foundation for the organization that we would eventually become. Today, after 60 years of groundbreaking scientific achievement, Mote stands at the crossroads of a transformational opportunity to secure a future that will last for lifetimes still to come.

Throughout our history, Mote's independence has allowed us the freedom to pursue groundbreaking, high-risk research with the potential to create the greatest impact and provide the most rigorous and unbiased information. While our independence is essential to our philosophy, independent marine science institutions are an endangered species. We rely on the generosity of our supporters to maintain our independent nature and help us realize Mote's vision for the future outlined in our *2020 Vision & Strategic Plan*.

Guided by this visioning document, in 2015 we launched our first major fundraising campaign, *Oceans of Opportunity*, with a powerful, yet attainable, goal of \$50 million. Reaching this goal will provide Mote with a foundation for our continued independence, the ability to enhance the impact of our quality education programs and the capacity for undertaking innovative research that will ensure the conservation and sustainable use of our marine environment.

During our 60th Anniversary year in 2015, we implemented "Version 2.0" of Mote's *2020 Vision & Strategic Plan*. Its core principles and strategic priorities remain the same as those outlined in 2010.



[READ MORE ►](#)

## LETTER FROM THE PRESIDENT CONTINUED...

However, we developed a refined course of action in our final five-year thrust for achieving an excitingly aspirational, yet fully achievable vision for the future. Notable 2015 *Strategic Plan* achievements included:

- Nurturing and ensuring the long-term prosperity of Mote science by establishing four concurrent Mote Postdoctoral Research Fellowships;
- Awarding eight concurrent Scholarly and Service Activities awards providing 25 percent salary support to Mote Scientists;
- Awarding three concurrent Eminent Scholar Awards providing 50 percent salary support to Mote Scientists and
- Achieving 13 science and technology intellectual property products (i.e. patents, patent submissions, commercial enterprise spin-offs) that can benefit society and provide potential sources of support for further research.

Strong fiducial acumen for the precious donations and grants that we receive to support our annual \$22 million operating budget and the proactive steps of an internally rigorous budgetary process were instrumental in positioning Mote to not only pay down more than \$1 million of debt but also end 2015 with a surplus of more than \$1 million. In the words of longtime Mote Board of Trustees Finance Committee Chair LTG (ret.) Howard Crowell: "This is the most exciting year-end financial report I've ever seen for Mote!"

Efforts to enhance and expand critical research infrastructure were significantly advanced in 2015 with the completion of significant pre-construction phases for Mote's new international center for coral reef research and restoration in the Florida Keys, which was made possible through the support of the new building founding donor, the Gardener Foundation. By the end of 2015, we remained on schedule for construction ground-breaking on Summerland Key early in 2016.

As direct result of the enthusiastic engagement of Trustees, volunteers, staff, the public and external partners, our accomplishments in 2015 have been exemplary in reaching a significant milestone for our comprehensive fundraising campaign, addressing critical financial challenges and achieving priority strategic goals. Together these accomplishments build a strong foundation for the future independence and growing impact of Mote Marine Laboratory & Aquarium.

I believe that the future vitality of our world's oceans depends on Mote's continued independence to conduct inspired research and educate millions of people. I also believe that the future of Mote is indeed strong because we have passionate philanthropic partners who agree that the time to invest in Mote is today.

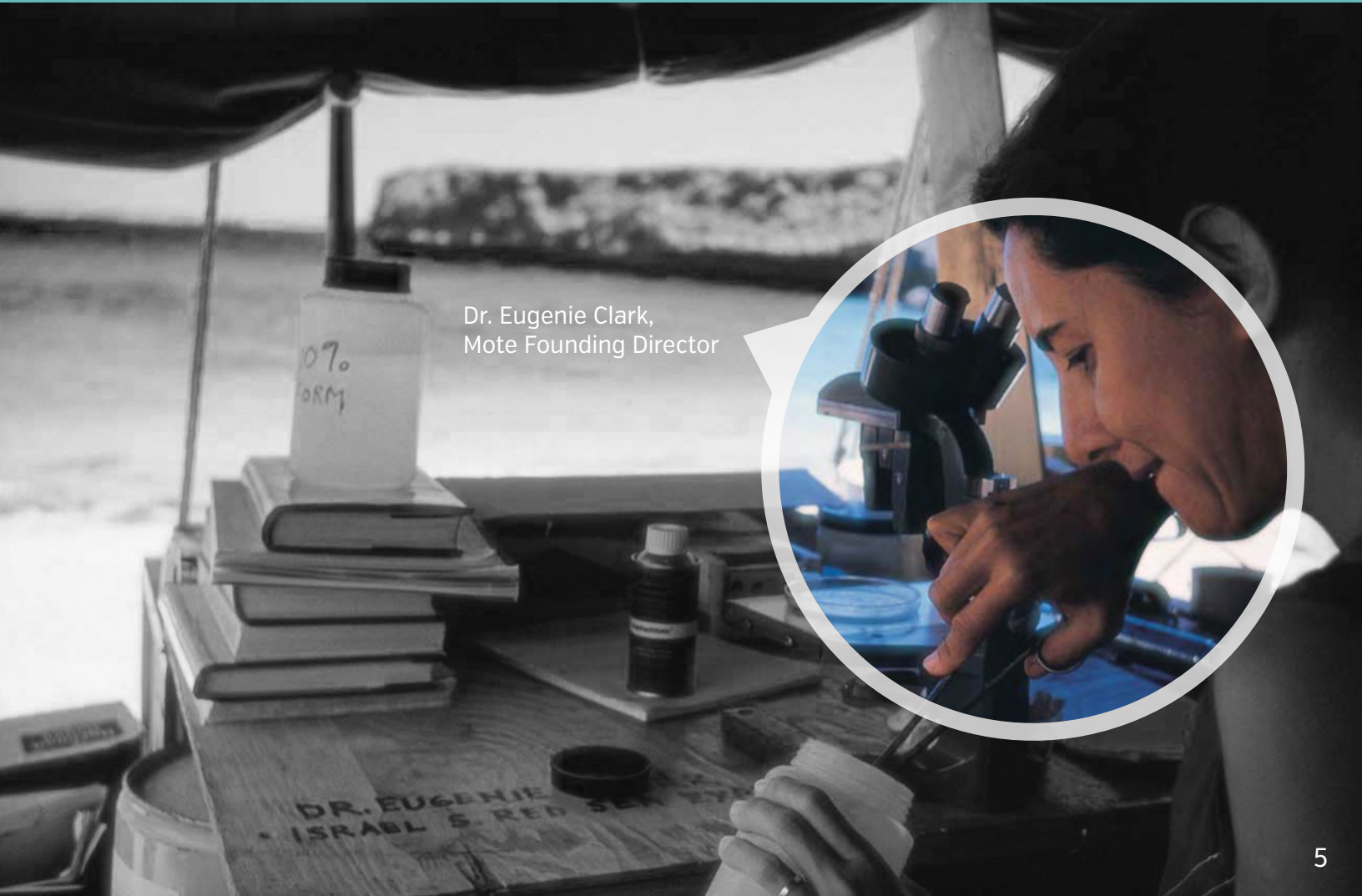
Please join us by supporting the marine science and education that is vital for addressing the grand challenges facing the sustainability of our oceans. Thank you for your support!



Dr. Michael P. Crosby  
President & CEO

# Celebrating 60 Years

In 1955, Mote's Founding Director, "Shark Lady" Dr. Eugenie Clark, started the one-room laboratory that has grown into the Mote we know today: home to more than 200 staff and 25 diverse research programs. Now, with the public launch of a multi-million-dollar comprehensive fundraising campaign, Mote continues to expand and build upon Dr. Clark's legacy.



Dr. Eugenie Clark,  
Mote Founding Director



## Honoring a Life Aquatic

After a lifetime spent blazing trails for marine research and for women entering the field, Mote Marine Laboratory's Founding Director, "Shark Lady" Dr. Eugenie Clark, died in 2015 at age 92. Dr. Clark inspired generations to learn about and to love the sea as she made new discoveries, unlocked ocean mysteries and shared her findings with a public always eager for more.

"Genie," as she was known to colleagues and friends, was an ichthyologist and world authority on tropical sandfishes and sharks. As a diver and explorer, she conducted 72 submersible dives as deep as 12,000 feet and led more than 200 field research expeditions to the Red Sea, Gulf of Aqaba, Caribbean, Mexico, Japan, Palau, Papua New Guinea, the Solomon Islands, Thailand, Indonesia and Borneo to study sandfishes, whale sharks, deep sea sharks and spotted oceanic triggerfish. She wrote three popular books and more than 175 articles, including research publications in leading peer-reviewed journals such as *Science* and a dozen popular stories in *National Geographic* magazine.

In 1955, Genie started the one-room Cape Haze Marine Laboratory in Placida, Florida, with philanthropic support from the Vanderbilt family. The Lab later moved to Sarasota and was renamed Mote Marine Laboratory in 1967 to honor its newest benefactor, William R. Mote.

Genie's distinguished career spanned almost 75 years and she will be remembered for her legacy of amazing discoveries and the ripple effects they had on marine science around the world. She is survived by her four children, a grandson and countless marine researchers she inspired over the years.

Before her death, Genie celebrated the 60<sup>th</sup> anniversary of the Lab she founded.





## ***Launching Oceans of Opportunity: The Campaign for Mote Marine Laboratory***

In January, Mote celebrated the public launch of *Oceans of Opportunity: The Campaign for Mote Marine Laboratory* – a multi-million-dollar, comprehensive fundraising effort to support and grow Mote’s research and education efforts into the future. By the year’s end, the campaign had raised more than \$40 million and was closing in on its \$50 million goal, making it the most successful fundraising effort in the nonprofit Lab’s history.

The *Campaign* – Mote’s first, comprehensive fundraising effort – marked a pivotal moment for the Lab’s science and education missions, which have led to groundbreaking discoveries about marine ecosystems, supported economic development and helped millions of people become more ocean literate.

“Though *Oceans of Opportunity* is still in progress, it is already the most successful fundraising effort in Mote’s history,” said Mote President & CEO Dr. Michael P. Crosby in December 2015. “Many leadership donors have stepped forward and pledged \$1 million or more, and we look forward to even greater community engagement as we near the finish line. The warm welcome this campaign has received demonstrates how much our communities care about marine research, the health of the oceans and all the lives that depend on them.”

## A New Circle of Leadership

*Oceans of Opportunity* will provide support that is vital to helping the organization carry out three key goals outlined in the *2020 Vision & Strategic Plan*: supporting and expanding Mote's annual research and education operations, spurring long-term growth in the endowment to support Mote's future and constructing a new, state-of-the-art research facility at Mote's property on Summerland Key, Florida.

A special group of community members who understand the urgent threats facing our oceans stepped forward in 2015 to create the new Mote Leadership Circle and provide critical financial support of \$1 million or more each to the *Oceans of Opportunity Campaign* to help address these problems.

We offer a special thank you to these leaders:



- Carol and Barney Barnett
- Maurice and Carolyn Cunniffe
- James D. and Pati Ericson
- Robert and Anne Essner
- Elizabeth Moore
- Rick and Nancy Moskovitz Foundation
- Four anonymous donors

To support Mote Marine Laboratory, please visit [mote.org/support](http://mote.org/support) or contact Erin Kabinoff at [941] 388-4441, ext. 309, or [ekabinoff@mote.org](mailto:ekabinoff@mote.org).



## Exciting Expansion in the Florida Keys

Philanthropic donations for Mote's new, state-of-the-art, LEED-certified research and education facility in the Florida Keys surpassed the \$3.5 million mark in 2015 with help of founding donor, the Gardener Foundation, and generous donations from others, including: \$2 million from the Rick and Nancy Moskowitz Foundation, \$1 million from Elizabeth Moore and \$325,000 from the Charles and Margery Barancik Foundation.

These gifts generated exciting momentum and allowed for the start of the construction process for a new building at Mote's Summerland Key property. Two residential and office buildings will be demolished and the current science building and working lab will be fully operational throughout construction in 2016.

The new building will more than double Mote's research and education space in the Keys, allowing the Lab to expand programs focused on studying and restoring damaged coral reefs and on finding new ways to address global threats to reefs – particularly climate change and ocean acidification.



# Notable at Mote in 2015



Mote Founding Director, Dr. Eugenie Clark, became famous for her studies of sharks, which earned her the nickname "The Shark Lady."

The [American Elasmobranch Society \(AES\)](#), [Save Our Seas Foundation](#) and [Mote](#) established the [Eugenie Clark Award](#) to honor the memory of Mote's Founding Director, who died in 2015 at age 92. The annual \$2,500 award will recognize female early-career scientists who demonstrate uncommon perseverance, dedication and innovation in biological research and public outreach on elasmobranch fishes – just as Clark did.

Mote President & CEO Dr. Michael P. Crosby attaches a new coral fragment to a reef near Looe Key in the Florida Keys as part of Mote's coral restoration program. Photo by Joe Berg/Way Down Video.

Mote President & CEO [Dr. Michael P. Crosby](#) was appointed to the Boards of [SCUBAnauts International](#) and the [Florida Keys History and Discovery Foundation](#). SCUBAnauts International is dedicated to guiding young men and women, ages 12 through 18, along an exciting pathway for personal development by involving them in marine science through underwater research activities such as environmental and undersea conservation projects that build character, promote active citizenship and foster effective leadership skills. The Florida Keys History and Discovery Foundation is a nonprofit organization that formed in 2013 to develop and operate the Florida Keys History & Discovery Center. The foundation aims to share the stories that define the rich character and culture of the Keys community and encompass its past, present and future. Their goal is to foster appreciation for Keys people and places, contributing to the community culturally, civically, environmentally and economically.





**Mote Aquarium** was named one of the top five aquariums in the nation in TripAdvisor's Traveler's Choice Awards program, moving the Aquarium up from 10th place in 2014. Mote was also named the 15th best Aquarium in the world.

Mote's redesigned Website, [mote.org](http://mote.org), won Best of Show for its budget class (tourism marketing budgets under \$500,000) during VISIT FLORIDA's 48th Annual Florida Governor's Conference on Tourism in Tampa. In the Website category for any budget, the redesign won a Bronze Award. The redesign was undertaken by Mote and its St. Petersburg-based marketing and web contractors Paradise Advertising & Marketing and Big Sea, Inc.



*Mote Senior School Programs Coordinator Brad Tanner addresses a group of students during their Environment Day field trip to Mote.*

**Brad Tanner**, the Lab's Senior School Programs Coordinator, was appointed Executive Director of the Florida Association of Science Teachers (FAST). FAST is the largest nonprofit organization for science teachers in Florida and dedicated to improving science education at all levels, from preschool through college. Tanner has been involved with FAST for nearly 10 years, serving about nine years on its Board of Directors.

*Digital Learning Coordinator Kasey Gaylord-Opalewski in Mote's SeaTrek Digital Learning studio.*

**SeaTrek Interactive** earned a Pinnacle Award for the 2014-2015 school year from the Center for Interactive Learning and Collaboration (CILC). The Award is given annually to organizations that receive outstanding scores on program evaluations submitted by educators. The award recognizes the remarkable quality of educational content and exceptional skill at program delivery. SeaTrek Interactive brings high-energy, multimedia science programming into classrooms throughout the country using videoconferencing and internet technology.



In October 2015, the [Sarasota Dolphin Research Program](#) [SDRP] celebrated its 45th anniversary as the world's longest-running study of a wild dolphin population. SDRP, which started in 1970 and is based at Mote, leads pioneering research efforts focused on the community of resident bottlenose dolphins in Sarasota Bay, which includes about 165 dolphins, with up to five concurrent generations. The SDRP has been operated by the Chicago Zoological Society in partnership with Mote since 1989.



Stranding Investigations Program Manager Gretchen Lovewell prepares to conduct a necropsy on Riptorn.

Two of Sarasota Bay's most-recognizable, long-term resident bottlenose dolphins died in 2015: [Riptorn](#) was easily recognized by countless boaters because of his disfigured dorsal fin, which was caused by a boat propeller wound. And, at age 50, [FB28](#) was the second-oldest male resident dolphin in Sarasota Bay. He was first identified in March 1971, during a pilot dolphin tagging study and had been observed more than 500 times over the years. Both were recovered dead in October.

Dr. David Vaughan, Executive Director of Mote's Tropical Research Laboratory, shows actor Justin Long how corals are grown in a nursery for later replanting in the wild.

Film and television actor [Justin Long](#) lent his support to Mote's online fundraising campaign for coral reefs on CrowdRise. Long, who visited the Lab in late 2015, had the opportunity to learn about Mote's coral reef research and restoration programs, including the development of new methods for restoring coral reefs by planting micro-fragments that help rebuild some coral species up to four times faster than they would naturally grow in the wild. The research has shown a 95 percent survival rate after just one year.



To support this work, visit [Mote's CrowdRise project](#) "Restoring Coral Reefs in this Lifetime." One acre of coral reef can be restored for \$10,000, or just \$10 per coral.

# Impacts

2015 was a year of celebration and sadness as Mote marked its 60th anniversary – a spectacular year of science, education and exciting new efforts to expand Mote’s positive impact locally and globally – and the passing of Dr. Eugenie Clark, the Lab’s Founding Director, whose passion for our oceans set the stage for decades of research and discovery.



Education & Outreach at Mote

The *Oceans of Opportunity Campaign* has helped to support the addition of five new Ph.D. researchers to join the 30 Ph.D. investigators already on staff to follow in Dr. Clark's footsteps.

Mote's informal science education center, Mote Aquarium, helped to share their findings with more than 311,000 visitors and our education programs served more than 27,000 people of all ages. Our traveling exhibit, Mote Mobile, took Mote science to other venues around the state, reaching an estimated 95,780 additional visitors. The Lab also hosted 190 college interns and 73 high school interns.

Mote's dedicated volunteers supported the entire year of successes, contributing 224,697 hours of service for the benefit of our oceans. Another 9,500 people became Mote Members or renewed their support in 2015.



## Impacts: World-Class Research at Mote Marine Laboratory

### Landmark Research and Conservation in Cuba

Mote shark and coral researchers and their Cuban counterparts placed the first satellite transmitter tags on sharks in Cuban waters and conducted the first coral transplant experiment on a Cuban reef in February. Mote's team in Cuba included [Dr. Robert Hueter](#), Associate Vice President for Research and Director of the Center for Shark Research, [Dr. David Vaughan](#), Executive Director of Mote's Tropical Research Laboratory, and [Dr. Kim Ritchie](#), Manager of Mote's Marine Microbiology Program.

The underwater action was featured in Discovery's *Tiburones: The Sharks of Cuba*, which aired during Discovery Channel's annual *Shark Week*.

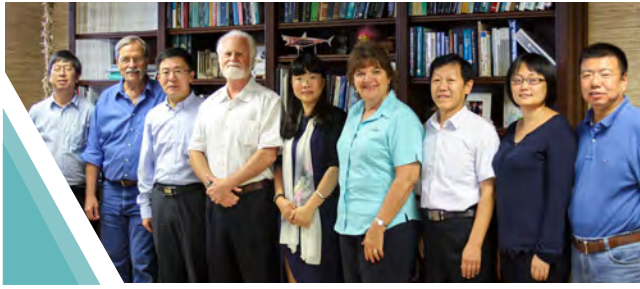


The team placed the first satellite transmitter tags on sharks in Cuban waters, providing new information on where sharks travel to better understand their life histories, habitat use and vulnerability to fisheries. The tags revealed that the sharks moved away from the inshore reef area where they were tagged and into deeper offshore waters, spending most of their time in the upper water column but also diving during the day. One of the sharks reached a maximum depth of 2,073 feet [632 meters]. This reveals that these sharks occupy the reef as well as very deep water offshore.

In October, Cuba released its "National Plan of Action for Sharks," with the goals of conservation and sustainable management of these ecologically and economically important fishes. Mote scientists participated in the plan's development and praised this major, collaborative step forward for shark and ray conservation in Cuban waters – a major area of focus for Mote's Center for Shark Research.

In the Gardens of the Queen, the researchers also conducted the first coral transplant experiment in Cuban waters by attaching healthy elkhorn coral fragments to dead coral skeletons to see if they can restore new coral growth to a depleted reef. The team also shared coral survey and sampling methods with the hope of one day partnering to generate some of the first genetic and microbiological data to better understand these resilient corals. This expedition was key to laying groundwork for the future of U.S.-Cuba coral research and a more open scientific exchange between the nations.

Top: Mote scientists and Cuban colleagues fit a silky shark with a scientific tag in the Jardines de la Reina [Gardens of the Queen] National Marine Park off Cuba's south coast. Bottom: One of the satellite transmitter tags used by scientists to collect information on sharks in Cuban waters.



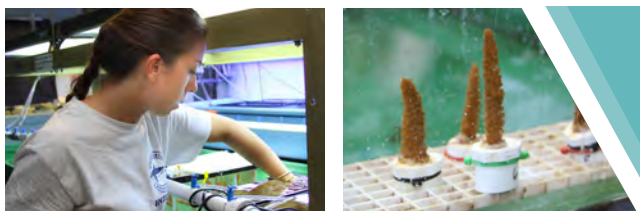
Mote President & CEO Dr. Michael P. Crosby with Mote scientists Dr. Kevan Main and Dr. Ken Leber and Chinese colleagues from the Yellow Sea Fisheries Research Institute.

## Collaborating with Colleagues from China and Italy

With dwindling supplies of seafood for Earth's growing population, fisheries enhancement and aquaculture (fish farming) research are needed more than ever. Dr. Kevan Main and other Mote scientists have been collaborating with colleagues from the Yellow Sea Fisheries Research Institute (YSFRI) under a Memorandum of Understanding designed to support knowledge sharing, research collaborations, graduate student exchanges and more.

With many wild fish stocks overfished and declining, more than half the world's seafood is supplied by aquaculture. Scientists at Mote and YSFRI are seeking solutions by developing aquaculture technology to raise seafood sustainably, while studying the best ways to enhance wild fisheries by strategically releasing hatchery-reared fish.

In 2015, Mote also welcomed Italian researcher Cinzia Alessi through a unique program coordinated in part by the University of South Florida Sarasota-Manatee (USFSM). She joined Mote's Ocean Acidification Program, headed by Dr. Emily Hall, to examine the impacts of ocean acidification on coral and sea grass.



## Deepwater Horizon Anniversary

Five years after the Deepwater Horizon oil spill, Mote scientists continued to lead new spill-related studies focusing on the health of key fishes in the Gulf of Mexico.

The research is part of the C-IMAGE II consortium of institutions studying the spill, led by the University of South Florida. C-IMAGE II and its earlier iteration, C-IMAGE I, are both supported by the Gulf of Mexico Research Initiative. Dr. Dana Wetzel, Toxicology Task Lead, is examining how specific levels of oil components affect fish under controlled laboratory conditions. The studies focus on three important Gulf species – red drum, pompano and southern flounder – to examine oil-related changes in immune and reproductive health, viability of offspring and other traits important for maintaining populations.



Mote Senior Scientist Dr. Dana Wetzel examines the effect of oil on important Gulf fishes: red drum, pompano and southern flounder.

## NSF Grant for Corals Under Threat

Dr. Erinn Muller received the National Science Foundation's (NSF's) prestigious CAREER grant totaling \$578,681 for five years of research and education focused on threatened corals. The Faculty Early Career Development Program offers NSF's most prestigious awards to support exemplary teacher-scholars through the integration of excellent education and outstanding research.

The grant is allowing Muller to conduct new research with staghorn coral (*Acropora cervicornis*), a threatened species that has dwindled significantly in Florida and beyond. Muller is studying the coral's potential to be affected by, and rebound from, major environmental stressors such as disease, high water temperatures and ocean acidification. Muller has worked with college interns and will involve high-schoolers in her research in 2016, engaging younger generations in science designed to benefit reefs.



Mote Staff Scientist Dr. Erinn Muller conducting field research with elkhorn coral (*Acropora palmata*) in 2013.

## New Acoustic Study of Protected Grouper

Mote scientists are listening to mating aggregations of protected grouper species by combining two acoustic techniques in a new way, advancing research to benefit depleted and recovering fish stocks. Staff Scientist **Dr. James Locascio** was awarded a Marine Fisheries Initiative [MARFIN] Program grant provided by the National Marine Fisheries Service [NMFS] to study protected populations of goliath grouper by combining sonar data with recordings of fish sounds – two key types of information normally collected separately. Combining these acoustic data could provide a new quantitative way to study fish spawning aggregations.

Field work for the grouper study kicked off in September 2015, when Mote scientists placed

several underwater sound receivers at their research site off Jupiter, Florida, to collect acoustic data from the grouper before their spawning season ended in October. More data will be gathered during the 2016 spawning season and during non-spawning times – a necessity for understanding how the sounds from these grouper change in relation to the background sounds made by other species.

## Studying Tarpon Movements in Charlotte Harbor

**Dr. James Locascio** is also using an array of acoustic receivers to study the movements of tarpon – a key target for the recreational fishing community that draws thousands of anglers to the region annually – in Charlotte Harbor. The movements of tagged tarpon that swim near the receivers are recorded, allowing researchers to better identify movement and spawning patterns.

Since 2013, Mote has been fitting tarpon and other fish species with acoustic tags that remain active for as long as 10 years. Mote's receivers can detect and record fishes acoustically tagged by Mote and others. Receivers deployed by other organizations, such as the Florida Fish and Wildlife Conservation Commission, will detect fishes tagged by Mote, creating a collaborative, data-sharing network.



Mote Staff Scientist Dr. James Locascio prepares to tag a tarpon in Charlotte Harbor. Photo by Ross Gallagher.



Mote Staff Scientist Carole Neidig scans a PIT tag and records its identification number. About 400 Mote-raised snook were tagged prior to their release.

## Enhancing Snook Populations

Scientists from Mote and the Florida Fish and Wildlife Conservation Commission (FWC) placed hatchery-reared juvenile snook into acclimation enclosures in Sarasota Bay and then released the fish from the enclosures into the wild as part of an ongoing research project focused on finding the most effective methods to replenish and enhance wild snook populations.

The study – the latest of Mote and FWC’s fisheries enhancement research that has been ongoing for more than 20 years – involved tagging about 400 juvenile common snook born and raised at Mote Aquaculture Park with passive integrated transponder (PIT) tags. The tagged fish were transported to acclimation pens in a Sarasota Bay creek and then released to the wild. The PIT tags provide a barcode for each individual fish to help scientists accurately track and recover data. According to study leader [Dr. Kenneth Leber](#), Associate Vice President for Research and Manager of the Fisheries Ecology and Enhancement Program, the research will show whether certain methods of acclimating snook for release can increase their odds of surviving.

## Coral Restoration Breakthrough

Mote scientists and colleagues published the peer-reviewed scientific paper *Growing coral larger and faster: micro-colony-fusion as a strategy for accelerating coral cover in the journal PeerJ*. This study demonstrates that an innovative technique pioneered by Mote scientists [Dr. David Vaughan](#) and Staff Scientist [Chris Page](#) – the micro fragmentation and fusion method – can be used to rapidly cover a variety of substrates with coral tissue. The research continues the refinement of coral reef restoration methods.

The authors reported that after 139 days, they were able to increase star coral coverage by as much as 329 percent and brain coral by 129 percent in a land-based nursery. While some reef-building corals in the wild might grow 1 centimeter or less in diameter or length per year, the corals raised in this study grew at several times the rate of their wild kin.



These coral fragments are being grown at Mote’s Summerland Key lab using a new technique that staff developed to restore wild coral colonies faster.



Top: Dr. Heather Marshall collects a blood sample from a pregnant 8-foot sandbar shark, which was used for projects by multiple researchers on board the *M/V OCEARCH*, including Dr. Marshall's own research on stress in caught-and-released sharks. Middle & Above: Tiger sharks Finley and Buddy were tagged with satellite transmitters during the expedition. Photos by R. Snow / OCEARCH.

## Tracking Shark Migrations

Mote Postdoctoral Research Fellow [Dr. Heather Marshall](#) was aboard the *M/V OCEARCH* in the Gulf of Mexico as part of a multi-institution study that allowed her to gather shark blood samples, tag multiple shark species and track their migrations. The team tagged “Joseph” a 10-foot 6-inch tiger shark, “Buddy” a 7-foot, 10-inch hammerhead, “Reveille” an 8-foot scalloped hammerhead and “Finley” a 10-foot tiger shark.

## Studying Shark Survival After Catch and Release

A \$192,310 federal grant is allowing scientists to continue studies using iPhone-quality motion sensors to examine survival and recovery rates of several shark species after they are caught and released by Florida's commercial fishers.

After fishers catch and release a shark, it is relatively unknown how the animals are affected, how long it takes them to recover or how well they survive release. This is vital information for resource managers seeking to assess shark stocks and maintain healthy shark populations, preserving the top predators that help keep ecosystems in balance.

Past Mote research has helped reveal that different shark species can have different post-release survival and recovery rates. The new Cooperative Research Program (CRP) grant, awarded by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) to Mote Staff Scientist [Dr. Nick Whitney](#), expands the study to new shark species, including some prohibited species that may be caught accidentally as bycatch – particularly *Carcharhinid* sharks, which include sandbar, blacktip, bull and tiger sharks.



[Dr. Nick Whitney](#) attaches an accelerometer tag to a shark in Charlotte Harbor.

## Impacts: Ensuring Long-Term Scientific Leadership and Success

One way Mote has chosen to ensure the Lab's long-term national and international scientific leadership and success is by developing programs that offer support for the best and brightest up-and-coming scientists and by creating programs that nurture and support scientists at later career stages who are making countless contributions to society. All awards are funded through philanthropic support.

### Mote Postdoctoral Research Fellowship

A two-year fellowship that provides 100 percent salary support, research start-up, supplies, equipment and mentorship to postdoctoral scientists conducting outstanding work early in their careers.

### Mote Scholarly and Service Activities Award

An award that provides 25 percent salary support so that scientists may conduct scholarly and service activities that reinvigorates their research and gives back to the community.

### Mote Eminent Scholar Award

An award that provides 50 percent salary support to Mote Senior Scientists who have great potential to advance a current research initiative or develop a new initiative that is consistent with the organization's *2020 Vision & Strategic Plan*.

# Congratulations to our 2015 award winners!

## 2015 Fellows:

Andrea Larsen (Tarnecki)  
Heather Marshall  
Justin Perrault  
Ryan Schloesser  
Paul Suprenand



## 2015 Scholars:

Dr. L. Kellie Dixon  
Dr. James Locascio  
Dr. Vincent Lovko  
Dr. John E. Reynolds III  
Dr. David Vaughan  
Dr. Catherine J. Walsh  
Dr. Dana Wetzel  
Dr. Nick Whitney



## 2015 Eminent Scholars:

Dr. Carl A. Luer  
Dr. Kevan L. Main  
Dr. Kimberly Beach  
Ritchie



## Impacts: Translating and Transferring Knowledge to the Public

### Coral Reefs Under Threat

Coral reefs worldwide are facing severe threats from disease, climate change and especially ocean acidification (OA). In 2015, Mote hosted a Florida roundtable and an international workshop to bring researchers together to put a spotlight on threats and seek ways to address them.



Staff Scientist Dr. Erinn Muller explains Mote's coral research at Mote's Summerland Key lab during an international workshop.

Florida has the only barrier coral reef along the continental U.S., which helps attract millions of visitors, supports vital fisheries and contributes about \$6.3 billion to the state's economy. Research by Mote and others shows that coral reef organisms – including threatened and endangered corals of the Florida Keys – can have a harder time growing and building their carbonate-rich skeletons as waters acidify. Lab experiments have shown that OA conditions can hinder key steps in producing the next generation of federally protected elkhorn corals.

Participants at the roundtable noted that the invisible threat of ocean acidification has already begun harming Florida's marine resources but that the state has unique strengths and opportunities to respond. One major strength is Mote's research facility in the Florida Keys, where work to study and restore coral reefs is ongoing. The Ocean Acidification Roundtable report informs the conversation on OA by providing vital updates on how OA

is affecting Florida waters and how scientists and others can respond.

Mote also co-hosted a second international workshop for scientists from the U.S., Cuba, Israel, U.K., Jordan, and Sicily – strengthening Florida's presence as a world hub of ocean acidification research. Mote and its partners have been studying the impacts of OA on corals in combination with other stressors such as climate change and disease, while developing innovative methods to help restore coral reefs in our lifetime with the coral genetic strains most likely to survive changing ocean temperature and acidity. A new \$5-million international coral reef research and restoration facility is being built by Mote in the Florida Keys and it will have a major focus on impacts of OA.



Dr. Shirley Pomponi, Executive Director of the Cooperative Institute for Ocean Exploration Research & Technology at Florida Atlantic University, addresses the audience at an Ocean Acidification Roundtable hosted by Mote and the Ocean Conservancy in September.

### Aquaculture for a Healthy Planet

Mote scientists and their collaborators won a Southwest Florida innovators' competition likened to the XPRIZE. The project "Healthy Earth-Gulf Coast: Sustainable Seafood System" won the Gulf Coast Innovation Challenge's grand prize – a \$375,000 grant.

The project aims to build a thriving, local seafood industry, especially by enhancing the



sustainability and economic impact of the heritage fishery for grey striped mullet that is based in Cortez, Florida. Mote researchers, known internationally for their expertise with sustainable fish farming, will play a lead role in developing and testing the fish meal and oil derived from mullet byproducts.



Sea purslane is grown as part of an aquaponics system at Mote Aquaculture Park in eastern Sarasota County.

Mote aquacultured fish and vegetables have also made their way into Southwest Florida's eco-friendly food scene. Sea vegetables and red drum [redfish] grown at Mote Aquaculture Park using marine aquaponics – raising seafood while using the wastewater to fertilize salt-loving crops – are being sold to restaurants from Sarasota to Tampa and its sea purslane and saltwort – edible sea vegetables – were being served in local restaurants and sold at the Sarasota Farmers Market.

## Grassroots Scallop Restoration

Mote scientists and a Japanese colleague tallied a record 114 baby scallops from one Sarasota Bay restoration site in March – good news for Mote's community-wide partnership working to replenish the Bay's depleted scallop populations.

Florida's scallop populations fell dramatically in the 1960s. The reasons are not fully understood but are thought to include decreased water quality, extreme red tides, destruction of sea grass habitat and



Baby scallops found in 2015 in Sarasota Bay.

overharvesting. To restore Sarasota Bay populations and study which strategies work best, Mote has partnered with the Florida Fish and Wildlife Conservation Commission (FWC), Sarasota Bay Watch, Sarasota Bay Estuary Program, Sarasota County, Bay Shellfish Co., local business leaders and many volunteer citizen scientists. Partners are placing young scallops into the Bay, monitoring for recovery and working to improve environmental quality and expand community involvement.

The *Mote Community Partnership: Scallop Restoration Initiative*, part of a global research initiative funded by the Japanese Research Institute for Humanity and Nature (RIHN), studies how communities and scientists work together on environmental problems.

## Restoring Coral, Restoring Hope

Mote joined forces with members of the Combat Wounded Veteran Challenge (CWVC) and SCUBAdivers International in an underwater mission to restore Florida's reef. In all, more than 50 divers planted some 250 fragments of staghorn coral in Mote's special restoration site near Looe Key in 2015.

This marked the fourth year that these groups have worked together to take coral fragments that were grown in Mote's underwater coral nursery and plant them in the restoration area. Mote established the nursery more than eight years ago to grow colonies of threatened staghorn coral [*Acropora cervicornis*] for replanting on decimated or damaged sections

of reef within the Florida Keys National Marine Sanctuary. In addition to boosting coral populations in the wild, this annual mission supports the recovery of veterans who have lost limbs or suffered other severe trauma while serving their country and provides them with an opportunity to teach leadership skills and mission focus to youngsters participating in the SCUBAnauts International leadership program for teens.



Mote President & CEO Dr. Michael P. Crosby shakes hands with Billy Costello, retired Sgt. 1st Class, U.S. Army, during a coral restoration mission in the Florida Keys.

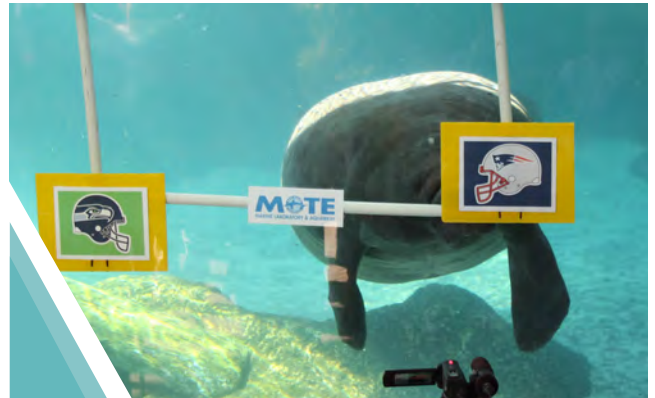
## Public Engagement Events

*In addition to engaging visitors at our informal science-learning center, Mote Aquarium, we actively seek ways to interact with new audiences so we can introduce them to marine life, marine research and the mysteries of the underwater world:*

## Super Bowl Fans and Manatees

2015 marked the eighth year that Mote's manatees made predictions about which team would win the Super Bowl. The winner in the XLIX matchup between the New England Patriots and Seattle Seahawks, the Patriots, was correctly chosen by Buffett, a manatee living with his half-brother Hugh at Mote Aquarium. Aside from being sports fans, Hugh and Buffett are the world's most extensively trained manatees. During this popular event, the manatees swim toward a target holding the logo of the team of their choosing and in doing so, highlight the research Mote scientists conduct with the endangered animals in order

to learn more about their senses, including hearing and touch, and about their physiology. What we learn with Mote's resident manatees helps to inform conservation of wild manatees.



Mote resident manatee Buffett correctly predicted that the New England Patriots would win Super Bowl XLIX.

## Scene Stealers

Hugh and Buffett also showed off their research skills during a web video produced by *Mutual of Omaha's Wild Kingdom* that helped raise public awareness about their species and demonstrated their special job of participating in Mote research to benefit conservation.

## Schoolchildren Name Underwater Robot

Mote's newest robotic glider was nicknamed "Genie" by Manatee County 5th-graders who won Mote's naming contest. The glider's name honors Mote founder Dr. Eugenie Clark and was chosen by 5th-grade science students at Annie Lucy Williams Elementary School in Parrish. The contest helped to introduce students to the tools used in real-life marine research and supported classroom activities in the science, technology, engineering and math (STEM) fields. The contest involved nine classrooms from five Sarasota-Manatee schools.



## Special Lecture Series

From deep-sea discoveries to marine biomedicine, ocean experts shared their passion and knowledge with the Sarasota community during Mote's annual Special Lecture series. Audiences learned how stingrays might give us clues to improve human healthcare, how Mote's coral reef restoration efforts are helping save a treasured ecosystem, the amazing creatures that inhabit the Galapagos of the Indian Ocean and why bacteria aren't always icky – many are important companions for corals, other animals and us.



Mote Senior Scientist Dr. Kim Ritchie spoke about her research on corals and their microbes.

## Raising Funds for Sea Turtle Conservation

Each year, Mote's *Run for the Turtles* 5K run and 1-mile walk/run and the *Siesta Key Crystal Classic* master sand sculpting competition introduce the public to sea turtles while giving them the opportunity to do something fun and raise money to help support conservation programs at Mote. The funds raised at these two events help to support Mote's Sea Turtle Rehabilitation Hospital, which treats sick and injured sea turtles, and Mote's Sea Turtle Patrol, which monitors 35 miles of beaches for nesting and hatching sea turtles each year from May through October.



Participants begin the 5K run during the 29<sup>th</sup> Annual Run for the Turtles event on Siesta Key Beach.

## Shark Days at Mote

Discovery Channel's *Shark Week* has long been a fan favorite, but as the nation's only Congressionally dedicated Center for Shark Research, Mote wanted to take the engagement a step further by highlighting real-life, accurate shark science. That's why we created *Shark Days at Mote: Real Sharks, Real Science* in 2015. The event included a week-long focus on real sharks and real shark science that wrapped up with a family fun festival.



A Mote Aquarium visitor has her picture taken in front of the Shark Habitat during the *Fins & Fun Family Festival*.

## Electrifying Event

As an organization dedicated to marine research and conservation, Mote is a natural fit to host the annual event *Electrify the Island*, the Sarasota-based kickoff event for the National Drive Electric Week, an annual event that features festivals across the nation highlighting electric vehicles and other eco-friendly technologies.

## Impacts: Public Service

### Supporting Coral Recovery

Worldwide, coral reefs are under threat – many so damaged and stressed that they cannot repair themselves without help. Coral reefs contribute to healthy ocean ecosystems that produce more than 50 percent of the oxygen we breathe. In Florida, our coral reef system is home to 6,000 species, supports 72,000 jobs and a \$6 billion economy.



Staghorn coral (*Acropora cervicornis*) is an important species that provides structure for coral reefs.

Mote research and public education programs are helping to support coral recovery in a number of vital ways:

Mote scientists helped to write key portions of the NOAA Fisheries recovery plan for elkhorn coral (*Acropora palmata*) and staghorn coral (*Acropora cervicornis*), key species that underpin Florida's reef. The plan, released in March, identifies criteria that must be met for these branching corals to be removed from the list of threatened species under the Endangered Species Act.

Mote forged education-focused partnerships with Florida Keys Community College (FKCC) and Jacksonville University (JU) in early 2015 designed to help support the next generation of coral researchers – with Mote providing mentorship for student research and the organizations developing joint research projects in shared research and educational facilities.

### Protecting the Public from Red Tide Effects

When red tide returned to Florida's Gulf Coast in 2015, Mote scientists sprang into action to monitor the blooms in order to deliver bloom movement forecasts designed to protect public health.

*Karenia brevis*, the single-celled, harmful algae that causes Florida red tide, occurs naturally in background concentrations in the Gulf. When concentrations are elevated, *K. brevis* toxins can kill marine life and send people with chronic lung conditions to emergency rooms.

From September through mid-December, Mote scientists conducted seven research sampling trips by boat and analyzed more than 500 water samples. In addition to gathering and testing water samples to check for elevated red tide counts, Mote scientists also use autonomous underwater vehicles to patrol the coast, seeking out blooms and detecting bloom movements. The information they gather contributes to red tide status updates provided by FWC at [myfwc.com/redtidestatus](http://myfwc.com/redtidestatus) and to Harmful Algal Bloom Operational Forecast provided by the National Oceanic and Atmospheric Administration's National Ocean Service.



Mote Senior Capt. Dean Dougherty, Engineering Technician Michael Tamez and Staff Scientist Dr. Jordon Beckler launch a glider used to detect red tide bloom locations and movements.

In 2015, Mote also upgraded its real-time, beach-monitoring tool to provide residents and visitors current information about where blooms are occurring, so those most affected by red tide toxins can avoid those areas. Mote's Beach Conditions Reporting System provides twice-daily, online updates about conditions at 27 of Florida's Gulf Coast beaches. The newer user-friendly website is mobile responsive – better for smartphone viewing – and adds several new types of information.

► [Online at visitbeaches.org](http://visitbeaches.org)

## Saving Marine Animals

Mote provides critical support for the rescue and recovery of marine animals – particularly sea turtles, dolphins, manatees and whales – through our dedicated rehabilitation facilities for dolphins and turtles and by participating in rescue networks supporting other species locally and statewide. Such programs receive very little governmental support to conduct rescues or rehabilitation and must often rely on grants from private foundations and individuals to support their work.



Mote's Sea Turtle Rehabilitation Hospital has admitted more than 560 sick and injured sea turtles since 1995. In 2015, 18 turtles were released back into the wild, including Gunner pictured above.

Mote also has research programs that are dedicated to understanding the overall species health of sea turtles and manatees and partners in a program dedicated to the study of dolphins so that we may better understand and improve their conservation status in the wild.

## KEY HIGHLIGHTS FROM THESE EFFORTS:

A 255-pound female loggerhead sea turtle nicknamed "Mrs. Turt Lee" rescued by the U.S. Coast Guard and treated for boat-strike injuries at Mote was returned to the wild on May 8 from Lido Key in Sarasota County. The return of this animal – an adult female with reproductive capability – to the wild supports overall species recovery. In all, Mote treated 49 sea turtles at its Sea Turtle Rehabilitation Hospital, returning 18 of them to the wild in 2015.

In August, a dolphin previously treated and released from Mote's Dolphin and Whale Hospital was seen with what was believed to be her first calf. "Ginger" was brought to Mote after stranding on a local beach in 2008. Mote staff with the Sarasota Dolphin Research Program - which has monitored Ginger since birth - returned her to the wild in 2009. Seeing her with a new calf shows how rescue and rehabilitation programs can help support wild animal populations.



Ginger swimming with a calf that appears to be her first baby in August in Sarasota Bay. Photo by: Sarasota Dolphin Research Program. Photo taken under NMFS Scientific Research Permit No. 15543.

In October, a Mote rescue team with the Sarasota Dolphin Research Program helped another bottlenose dolphin calf get free from life-threatening plastic debris and fishing line, and returned it to its mother in the wild, without bringing the animal into the hospital for rehabilitation.

## Battling Invasive Species

Divers and snorkelers removed 456 invasive lionfish from the Gulf of Mexico during the Sarasota Lionfish Derby at Mote in July. Lionfish are venomous, fast-reproducing fish that pose a major threat to Florida's native species and ecosystems. They consume more than 70 species of fish and crustaceans and in heavily invaded areas they have reduced fish populations by up to 90 percent – consuming native fishes at unsustainable rates.

The only controlling predators of invasive lionfish in Florida appear to be humans, making Lionfish Derbies an important way to harvest large numbers of a species that has spread along the eastern Atlantic coast, through the Caribbean Sea and Gulf of Mexico.



More than 450 invasive lionfish were removed from the Gulf during Mote's first Lionfish Derby.

Mote hosted the Derby in cooperation with Reef Environmental Education Foundation [REEF], which helps study and address the lionfish invasion and sanctions official Lionfish Derbies, and ZooKeeper, the Sarasota-based manufacturer of the leading lionfish containment unit used throughout invaded areas. The Derby was presented by Capt. Eddie's Seafood.

## Protecting Endangered Sea Turtles

Sea turtle nesting broke records in 2015 on Mote-monitored beaches from Longboat Key through Venice in 2015. Mote's Sea Turtle Conservation and Research Program has coordinated conservation of endangered sea turtles along 35 miles of Sarasota County beaches since 1981. Sea turtle nesting takes place from May through October on Florida's Gulf Coast. In 2015, there were 2,475 nests, which beat the 2012 record by six nests.



Mote staff member Paula Clark and volunteer Martha Michaels excavate a hatched nest to determine how many hatchlings successfully climbed out.

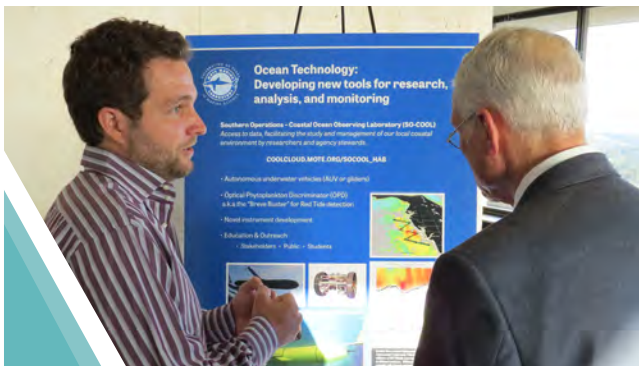
Of the nests, 340 were laid on the Manatee County side of Longboat Key, beating that area's previous record of 327 nests in 2013; 698 nests were laid along the entirety of Longboat Key, beating a record of 643 in 2013; 408 nests were laid along Siesta Key, beating its record of 343 in 1995; and a total of 36 green sea turtle nests were laid along all Mote-monitored beaches, breaking Mote's previous record of 30 green turtle nests in 2013.

Mote's multi-decade monitoring efforts provide data that resource managers can use to understand and protect sea turtle populations. Long-term data are particularly important because sea turtles are long-lived species. It takes about 30 years for hatchlings born on our beaches to return to nest as adults.

## Educating Policymakers

Mote leaders traveled to Washington D.C. to help promote Florida's eco-friendly seafood and share Mote's research with ocean-focused professionals, policymakers and scientists during the annual Capitol Hill Ocean Week [CHOW] sponsored by the National Marine Sanctuaries Foundation in June. CHOW featured the 40th Annual NOAA Fish Fry – a food-lovers' event showcasing sustainable seafood from across the U.S. The seafood industry is a pillar of Florida's ocean-driven "Blue Economy." Seafood harvested in Florida's waters contributed \$4.5 billion to the state's economy (as of 2011).

Mote also joined with the Florida Ocean Alliance and the Florida Institute of Oceanography for Florida Oceans Day in Tallahassee, where our research staff had the opportunity to meet with legislators and their staff to teach them about the importance of oceans and marine research.



Mote Staff Scientist Dr. Jordan Beckler explains Ocean Technology Program research to a Florida lawmaker during Oceans Day in Tallahassee.

Mote leaders also traveled to the U.S. capitol to meet with federal lawmakers, and hosted visits on our campuses by state and federal lawmakers and policy advisors interested in learning what they can do to support ocean conservation and marine research, including:

- Ambassador Dr. Jose Cabañas, Chief of the Cuban Interest Section, Washington D.C., visited the Lab in May to learn more

about Mote's Cuba-related research efforts, including shark and coral research. Mote hopes to expand our Cuba-related research in future years.



Mote President & CEO Dr. Michael P. Crosby with Cuban Ambassador Dr. Jose Cabañas.

- Legislative Assistant to Florida Sen. Nancy Detert [R-Venice] GeeDee Kerr, came for a visit in July where she met with Mote President & CEO Dr. Michael P. Crosby and other Mote staff.
- Florida State Rep. Holly Merrill Raschein, [R-Key Largo] visited Mote's main campus in Sarasota to participate in the Ocean Acidification Roundtable sponsored by Mote in September. Raschein also joined us underwater on a special coral restoration mission with members of the Combat Wounded Veteran Challenge and SCUBAnauts International.



Mote President & CEO Dr. Michael P. Crosby with Florida State Rep. Holly Merrill Raschein [R-Key Largo].

# Tea for the Sea

1. Laura Parker Roerden, Executive Director and Founder of Ocean Matters, delivers the keynote address during Mote's annual *Tea for the Sea*, which unites women in philanthropy for the pursuit of science.
2. Betsy Winder, Jenni Hudson and Lucy Harris.
3. Mote President & CEO Dr. Michael P. Crosby speaks to the audience about the legacy of the Lab's Founding Director, Dr. Eugenie Clark.
4. Montana Ross Taplinger and Rochelle Nigri.
5. From left to right: Dr. Andrea Tarnecki , Mote Postdoctoral Research Fellow; Dr. Kevan Main, Marine & Freshwater Aquaculture Research Program Manager; Dr. Erinn Muller, Coral Health & Disease Program Manager; Dr. Dana Wetzel, Manager of the Environmental Laboratory for Forensics; Kimberley Carreiro, *Tea for the Sea* Chair; Dr. Michael P. Crosby; Laura Parker Roerden; Dr. Nicole Rhody, Staff Scientist; Dr. Catherine Walsh, Marine Immunology Program Manager and Dr. L. Kellie Dixon, Chemical & Physical Ecology Program Manager.





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# Ocean Fest

6. Howard Livingston and the MM 24 Band provided entertainment for the 6th Annual Florida Keys Ocean Festival & Waterfront Craft Show at the Truman Waterfront in Key West. The event supports Mote's coral research and restoration programs.
7. Members of the MM 24 Band play on stage during the event.
8. Marine Artist Wyland holds up one of his paintings while Howard Livingston and the MM24 Band play in the background.
9. Dr. David Vaughan, Executive Director of Mote's Summerland Key lab, and his wife Donna Vaughan, take a minute to pose with Wyland.
10. Wyland, Jason Wolf, Nancy and Kenneth Logue and Dr. Michael P. Crosby show off a Wyland original that the Logues won in the Festival raffle.

OCEAN FESTIVAL PHOTOS BY: Ralph De Palma

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# Oceanic Evening

1. Judy Graham, Chair of Mote's 60th anniversary gala *Oceanic Evening* – Mote's major annual black-tie fundraiser – and Dr. Michael P. Crosby.
2. Mote Advisory Council Chairman David Dickson and wife Julie won the raffle for the diamond shark brooch designed exclusively for the gala by Diamond Vault.
3. Bob Essner, Mote Vice Chairman and Chairman of the *Oceans of Opportunity Campaign*, Veronica Brady, Senior Vice President for Philanthropy at Gulf Coast Community Foundation with Keith Monda.
4. Front row: Elizabeth Moore, Jeff Rodgers, Jan Pullen, Jim Pullen and Ann Marie Shields. Back row: Peter Moore, Catherine Ellis, Steve Ellis, Dr. David Vaughan, Donna Vaughan and Jim McDaniel.
5. The *Oceanic Evening* committee, from left to right: Ellie Waskom, Glenda Miller, Joan Galvin, Jane Graham-Hyslop, Michelle Senglaub, Beth Waskom, Judy Graham, Glenda Wright; Rae Malcolm, Mary Letschert, Sandi Stuart-Murray and Stacy Alexander, Mote Assistant Vice President for Community Relations & Communications.



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# Party on the Pass

6. Dr. Emily Hall, Ocean Acidification Program Manager, and Mote Trustee Jeanie Stevenson have a wonderful evening during *Party on the Pass*, an annual casual event to support Mote's hospitals for dolphins, whales and sea turtles.
7. Brian and Susan Kelly.
8. Mote's 60th anniversary committee, from left to right: Stacy Alexander, Rae Malcolm, Jane Graham-Hyslop, Dr. Michael P. Crosby, Judy Graham, Sandy Buchanan, Glenda Miller, Glenda Wright, Jeanie Stevenson, Michelle Senglaub and Sandi Stuart-Murray.
9. Mote Vice Chairman Bob and Anne Essner.
10. *Party on the Pass* attendees enjoyed delicious bites while watching *Oceans of Opportunity*, a video exploring how the campaign will make a difference for Mote and the future of our oceans.

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# Volunteers

## Honoring Their Service

Mote volunteers help to educate hundreds of thousands of people and serve in every area of the Lab operations – from science and education to administration and facilities. We are thankful to recognize the contributions of our 2015 volunteers.

We honored Dave Bowman, Mote's longest-serving volunteer, for contributing 16,289 hours of service over 35 years. As an Aquarium docent, Bowman has shared his passion for the ocean and educated visitors from around the world about Mote's research and conservation efforts.

Bowman began volunteering at Mote in October 1980, when the Aquarium first opened its doors. Since then, he has seen Mote's volunteer corps grow from a handful of people to more than 1,600. Bowman, age 80, moved to Wachula, Florida, in late 2015 but he plans to keep in touch now that he has become a member of Mote's Volunteer Emeritus Program, which allows volunteers with a minimum of 10 years or 1,000 hours of service to be nominated by Mote's Volunteer Board and approved by Mote's President & CEO to receive



Dave Bowman (left), Mote's record-breaking 35-year volunteer, shakes hands with Dr. Michael P. Crosby during the annual Volunteer Recognition Ceremony.

special honors upon their retirement. Emeritus volunteers retain many benefits of their service at Mote – including visiting Mote Aquarium for free and attending certain special events.

“Mote is an extraordinary place, and although I won't be able to volunteer regularly anymore, being Volunteer Emeritus is a way for me to stay connected to this organization that holds a very special place in my heart,” Bowman said.

The annual Volunteer Recognition Ceremony also honored nine Mote Trustees reaching milestones for their volunteer service: Alan Rose (25 years); Ron Ciaravella (15 years); Penelope Kingman (10 years); Jean Martin (five years, Honorary Trustee); Paul Carreiro and Jeanie Stevenson (three years); and Scott Collins, John Dart and Mo Cunniffe (one year).

## President's Volunteer Service Award

Bruce Camardo  
Myra Cooley  
Fred Gewirtz

Jeff Hollway  
Jo Legg  
Florence McCusker  
Kit McHugh

Ron Saper  
Gary Schmermund  
Joan Smith

## 35-Year Awards

Dave Bowman

## 25-Year Awards

Nancy Adams  
Joan Dropkin  
Alan Rose  
Tommy Vaughan-Birch

## 20-Year Awards

Freda Perrotta

## 15-Year Awards

Brenda Bolay  
Don Castracani  
Ron Ciaravella  
Carole Dann  
Betty Dimmick

Martin Fiderer  
Carol Fischbein  
Dee Flanagan  
Peggy Gause  
Henry Luciano

Marilyn Matecun  
Wes Meltzer  
Carol Miller  
Kevin Murk  
Pat Orr

Mary Jo Perkins  
John Puckhaber  
Bobbie Steiner  
Elaine Wheeler  
Ken Wiggins

## 10-Year Awards

Alison Albee  
John Arbuckle  
Evan Barniskis  
Greg Fiore  
Sue Gutek  
David Harralson  
Cindy Hayworth  
Angie Holmstrom  
Nancy Hume

Lynda Isler  
Hamilton Jones  
Brian Kelly  
Barbara Kemp  
Diane Kestner  
Melvin Kestner  
Charlie Key  
Penelope Kingman  
Nancy Lauria

Barbara Levine  
David Levine  
Cathy Marine  
Tom Maxfield  
Jim McCullough  
Barbara McIntyre  
Elaine Ogles  
Jeanne Panka  
Mary Richardson

Andy Rosebrock  
Kim Rosebrock  
Carol Scarbrough  
Lei Ann Slack  
Sally Souder  
Bob Steskal  
Jill Ungar  
Jean White  
Cathy Wiggins

## Volunteers Emeritus

Dave Bowman  
Bob Brown  
Essie Cohen  
Bill Coyle  
Gary Cull  
Penney Cull  
Diane Curtis  
Don Curtis  
Cynthia Deck  
Jackie Dixon  
Joan Dropkin  
Doris Dyer  
Alex Eichholz  
Bea Gallagher  
Henry Gieseler  
Pat Gieseler

Matt Goldman  
Joan Hamill  
Dick Helvig  
Les Jacobs  
Debbie Kimball  
Mary Lagunovich  
Tony Lagunovich  
Tom Landers  
Barry Langdon  
Gavin Litwiller  
Marilyn Lonzo  
Sam McGowan  
Ken Miller  
Mary Miller  
Frank Minore  
Jim Murphy

Ron Murphy  
James O'Neill  
Maria Pagano  
Forrest Paradise  
Joyce Patt  
Chet Pletzke  
Larry Prager  
Phyllis Prager  
Al Reinstein  
Jude Ritt  
Ira Rome  
Cindy Samwebber  
Jim Schreiber  
Rolla Schuh  
Norma Shearer  
Verna Silk

Judy Silverman  
Elaine Spencer  
Cary Stinespring  
Marjorie Strollo  
Frederick Verderosa  
Bruce Wallis  
Jann Warfield  
Bernard Waxman  
Daniel Weiner  
Anita Wells  
Al Wertheim  
Bob Wiegand  
Elisabeth Wiener



Dr. Michael P. Crosby with the Volunteer Emeritus Award recipients.

## 2015 Volunteer Board

Bob Cameron  
*President*

Angela Briguglio  
*Vice President*

Tom Norton  
*Treasurer*

Ralph Corse  
*Secretary*

Anna Marie  
Martin  
*Secretary*

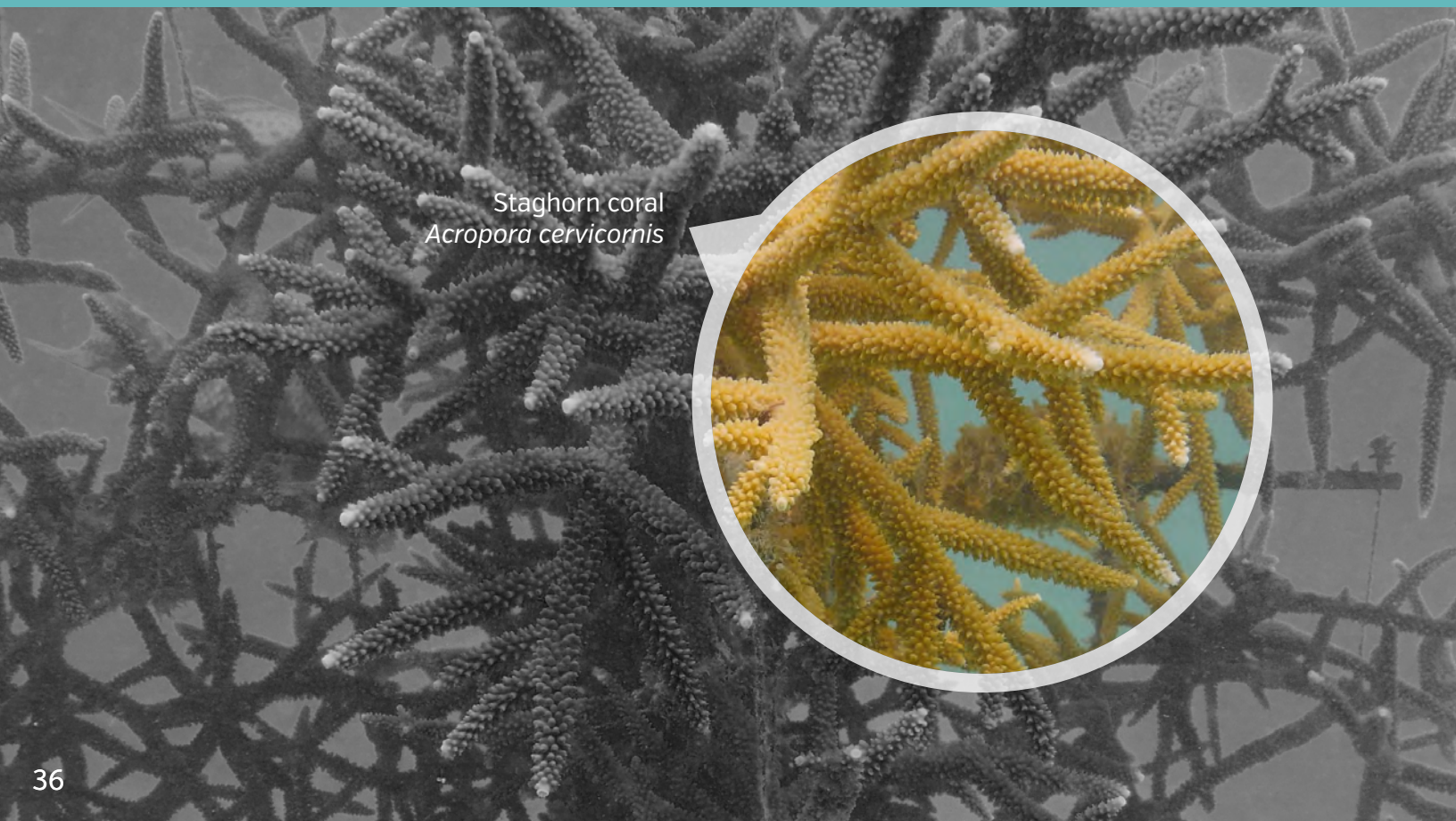
# Donors

## *Making World-class Research Possible*

Protecting and conserving oceans is hard work.

It takes dedication, creativity, intellectual productivity, stamina and even sheer will. It also takes the generous philanthropic support of individuals and private foundations to believe in our mission and choose to help us reach our goals.

We thank this strong community of donors who believe in Mote and show their support through their generous gifts.



Staghorn coral  
*Acropora cervicornis*



Judy Graham, Glenda Wright and Jane Graham-Hyslop.

## **Dr. Eugenie Clark Society**

**\$500,000 OR MORE**

Anonymous

Anonymous

Mr. and Mrs. Hoyt Barnett

GiveWell Community Foundation

Gulf Coast Community Foundation

Microsoft

Ms. Elizabeth Moore

Rick and Nancy Moskovitz Foundation

## **William Mote Guild**

**\$250,000 TO \$499,999**

Anonymous

The Charles and Margery Barancik Foundation

Jane C. Ebbs Trust

## **Presidential Roundtable**

**\$100,000 TO \$249,999**

Anonymous

Mr. Frank A. Brunckhorst and Mrs. Jaclyn Kim

The Cabbadetus Foundation

Caldwell Trust Company

The Community Foundation of Sarasota County

Carolyn and Maurice Cunniffe

The Dart Foundation

Mr. and Mrs. Robert A. Essner

Dr. Alfred Goldstein and Mrs. Jean Weidner Goldstein

Ms. Judy Graham

Ms. Jane Graham-Hyslop

Jane's Trust Foundation

Mote Scientific Foundation

Mr. and Mrs. Dana Robes

Estate of Theodore Stasichin

## **Cape Haze Society**

**\$50,000 TO \$99,999**

Anonymous

Arts and Cultural Alliance of Sarasota County

Mr. and Ms. Mickey Callanen

Mr. and Mrs. Howard C. Cobin

Mr. and Mrs. Michael Corrigan

Mr. and Mrs. James D. Ericson

The Harrison Foundation

Rand Hooper Trust

McCune Family Foundation

Robert C. Murtagh Estate

Sara Roberts Foundation

Wohlers Family Foundation

## **Chairman's Circle**

**\$10,000 TO \$49,999**

Anonymous

Mr. and Mrs. Arthur L. Armitage

Mr. and Mrs. James A. Armour

Mr. and Mrs. Eugene H. Beckstein

Left: Members of the winning team for the Gulf Coast Innovation Challenge are presented with their funding from Gulf Coast Community Foundation's, Mark Pritchett. This Challenge award helped advance important aquaculture work with Healthy Earth Sarasota and Mote Marine Laboratory.

Back row from left to right: Kelly Caldwell;  
Sonya Kristie; Marge Maisto; Vinnie  
Maisto, Mote Volunteer; Jan Miller; Jim  
Culter, Mote Staff Scientist, and Sheryl Vieira.  
Front row from left to right: Melissa Caldwell;  
Tom Stuhley and Cindy Stuhley.



Bloomin' Brands  
BMO Harris Bank  
Boca Grande Woman's Club  
Mr. and Mrs. Fred C. Brumbaugh  
Mr. and Mrs. Robert E. Carter  
Mr. and Mrs. Ed Chiles  
Mr. and Mrs. Ronald Ciaravella  
Combined Federal Campaign  
Dr. and Mrs. Michael P. Crosby  
Crystal Springs Preserve, Inc.  
Mr. and Mrs. Frederick M. Derr  
Dolphin Aviation  
Mr. and Mrs. Richard O. Donegan  
Frank E. Duckwall Foundation, Inc.  
Mr. Dean Eisner  
Julius Fleischman Foundation  
Ms. Karol A. Foss and Ms. Jill Watson  
Ralph S. French Charitable Foundation Trust  
Mr. Mac A. Greco, Jr.  
The Griffin Endowment  
Marjorie S. Heagy Living Trust  
The Hurlburt Family Foundation, Inc.  
Mark and Carol Hyman Fund  
Mr. and Mrs. Michael V. Janes  
The Jewish Federation of Sarasota-Manatee  
Mr. Ervin D. Johnson, Jr.  
Ms. Virginia M. Judge  
Keys Open Doors Foundation, Inc.  
Ms. Penelope L. Kingman  
The Jerome M. Kobacker Charities Foundation

Koski Family Foundation  
Rita B. Lamere Memorial Foundation  
Dr. and Mrs. David Law  
Mr. and Mrs. Trudo Letschert, Sr.  
Little Owl Charities  
Mr. and Mrs. Kirk F. Malcolm  
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Ms. Jan Miller and Mr. James K. Culter  
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Ms. Elizabeth Steele  
Estate of Charles Sheraden  
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Left: Andrew and Anne Hemmert.

Right: Robert Thomas and Laura Woodard.

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Triad Foundation, Inc.  
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Christie Uihlein  
Ms. Barbara L. Whitcraft and Mr. David Heinsler  
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**\$5,000 TO \$9,999**

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Captrust Financial Advisors  
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Right: Peggy Sears, Paul and Ardis Lighen,  
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## Leadership through Giving

The Mote Leadership Circle is a special group of community members who understand the urgent threats facing our oceans and are each providing critical financial support of \$1 million or more to the *Oceans of Opportunity Campaign*.

We offer a special thank you to members of the Mote Leadership Circle:

- Carol and Barney Barnett
- Maurice and Carolyn Cunniffe
- James D. and Pati Ericson
- Robert and Anne Essner
- Elizabeth Moore
- Rick and Nancy Moskovitz Foundation
- Four anonymous donors



## **Support Mote's Research & Education Enterprise**

Please visit [mote.org/support](http://mote.org/support) or contact Erin Kabinoff at [941] 388-4441, ext. 309, or [ekabinoff@mote.org](mailto:ekabinoff@mote.org).

### **Membership Matters Here**

More than 95,000 individuals and families choose to support Mote's mission by participating in our Mote Membership program, which provides them ready access to our informal science education center – Mote Aquarium – and to interactive programs that make learning fun.

In return, the funds we raise through our membership program help us keep the lights on, the research boats running and the staff humming.

We thank all Mote Members for their support and invite you to join or renew your membership today. Online at [mote.org/membership](http://mote.org/membership) or call [941] 388-4441, ext. 373.

# Celebrating Their Legacy

At Mote Marine Laboratory, we are grateful for members of our Legacy Society. No matter their diverse backgrounds and interests, these individuals all have one thing in common: a desire to improve and conserve our oceans and the animals that call them home.

By designating Mote as a beneficiary in their estate plans, our Legacy Society Members have shown foresight that will help lead to lasting changes that improve the planet we all call home. Thank you!



*R/V Thunder*



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To speak with one of our development officers about joining the Mote Legacy Society, please call [941] 388-4441, ext. 309. Learn more online at [mote.org/legacy](http://mote.org/legacy).

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# 2015 Finances



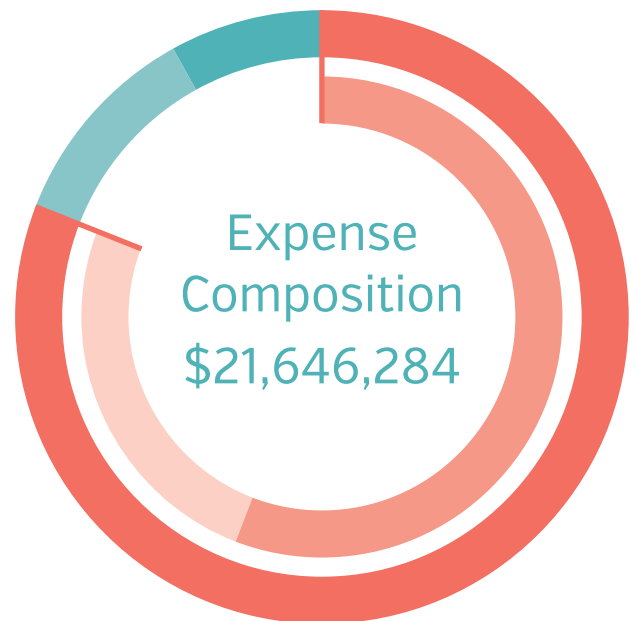
- 39% ■ Research<sup>1</sup> \$10,477,107
- 24% ■ Education & Outreach<sup>2</sup> \$6,583,675
- 37% ■ Contributions & Investments \$10,117,728

<sup>1</sup> **Research** includes Protect our Reefs program and Mote Aquaculture Park management

<sup>2</sup> **Education and Outreach** includes Aquarium and science education programs

\* Does not include beneficial interest in Mote Marine Foundation

- 81% ■ Program Services \$17,507,020
- 56% ■ Research<sup>1</sup> \$12,152,469
- 25% ■ Education & Outreach<sup>2</sup> \$5,354,551
- 11% ■ Administrative & General \$2,337,905
- 8% ■ Fundraising \$1,801,359



# 2015 Vital Statistics

Incorporated as a 501(c)(3) Nonprofit in 1955

## RESEARCH

**79** RESEARCH STAFF  
**35** DOCTORAL LEVEL

## NET ASSETS

**\$21 million+** LABORATORY  
**\$14 million+** FOUNDATION (ENDOWMENT)

## ECONOMIC IMPACTS

**\$86.8 million**  
 REGIONAL / STATEWIDE

## MEMBERSHIPS

**9,500+** INDIVIDUAL  
**114+** CORPORATE

## EDUCATION

After School Programs • **27** EDUCATION STAFF MEMBERS  
 Birthday Parties • Breakfast at Mote • College Internships • Educational Travel Programs • Field Trips • Gills Club • High School Internships • High School Volunteers • Home School Programs • Kayaking with Mote • Mommy & Me • Mote Science Cafés • Outreach Programs • Partnership Schools • Research Experiences for Undergraduates (REU) • Scout Workshops • SeaTrek Digital Learning • SeaSnooze Overnights • Shark Encounter • Special Lecture Series • Summer Camp Programs • Teacher Workshops • Traveling Exhibits • Volunteer Opportunities

**25** EDUCATION PROGRAMS

## VOLUNTEERS & STAFF

**201** TOTAL STAFF  
**1,642** VOLUNTEERS CONTRIBUTING  
 MORE THAN **224,697** HOURS A YEAR

## AQUARIUM

**50** AQUARIUM STAFF  
**17** OFF-SITE AQUARIUMS  
**1** DOCTORAL LEVEL

**311,000+**

VISITORS TO THE AQUARIUM  
**MOTE MOBILE EXHIBIT**

**95,780** VIEWERS 

**90** LIVE ANIMAL AQUARIUM EXHIBITS

**1** DOLPHIN, WHALE & SEA TURTLE HOSPITAL   
 (co-managed with Research Division)

## PROPERTIES & FACILITIES

### MAIN CAMPUS

Sarasota, FL 10.5 acres  
 (Long-Term Lease, City of Sarasota)

### MOTE AQUACULTURE PARK

Sarasota, FL 200 acres

### BOCA GRANDE FIELD OFFICE

Boca Grande, FL

### MOTE TROPICAL RESEARCH LAB

Summerland Key, FL 1 acre



**30** TOTAL BUILDINGS & STRUCTURES

**321,108** TOTAL SQUARE FEET

LIVING REEF EXHIBIT NOAA  
 ECO- DISCOVERY CENTER  
 Key West, FL

**25** TOTAL

## RESEARCH PROGRAMS

Behavioral Ecology & Physiology • Benthic Ecology • Chemical Ecology • Coral Health & Disease • Coral Reef Ecology & Microbiology • Coral Reef Monitoring & Assessment • Coral Reef Restoration • Dolphin Research • Ecotoxicology • Environmental Health & Monitoring • Environmental Laboratory for Forensics • Fisheries Ecology & Enhancement • Fisheries Habitat Ecology • Manatee Research • Marine & Fresh Water Aquaculture Research • Marine Biomedical Research • Marine Immunology • Ocean Acidification • Ocean Technology • Phytoplankton Ecology • Sea Turtle Conservation & Research • Sensory Biology & Behavior • Shark Biology & Conservation • Spotted Eagle Ray Conservation • Stranding Investigations

PEOPLE SERVED\*  
**27,641** Grades K-12

College Level Interns **190**

\*INCLUDES IN-SCHOOL, DIGITAL LEARNING AND ON-CAMPUS PROGRAMS

## FLORIDA SPECIALTY LICENSE PLATE

PROTECT OUR REEFS | EST. 2003

**\$1,045,300**

TO SUPPORT CORAL REEF RESEARCH, RESTORATION & EDUCATION IN 2015

## SEAWATER SYSTEMS

RESEARCH: **703,402** GAL.  

EXHIBITS: **415,380**

# 2015 Publications

Since Dr. Eugenie Clark started Mote as the Cape Haze Marine Laboratory in 1955, the Lab's staff and their collaborators have made significant contributions to the field of marine science. The first scientific paper based on work that was conducted at the Lab back in those early years was published in the journal *Nature* and focused on the biological makeup of shark livers ["Squalene content of various shark livers," M. S. Heller, S. Springer and E. Clark]. Here are the works published in 2015.



Coral Reef Restoration





A volunteer scuba diver surveys a colony of bleached coral in the Florida Keys.

## Books Authored or Edited

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Dr. Jayne Gardiner releases a blacktip shark after inserting a cotton plug into its nasal cavity as part of a study that investigated how sharks use smell to navigate to their home waters.



PHOTO BY: Kassie O'Brien

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Mote Senior Biologist Matthew Resley with a snook at Mote Aquaculture Park.

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Mote Senior Biologist Kim Bassos-Hull takes a sample from a spotted eagle ray.



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# Looking Ahead to 2016

## *Oceans of Opportunity*

In January 2015, Mote kicked off its 60th anniversary celebration with a bold, new initiative: a \$50 million-dollar fundraising campaign designed to expand the Lab's impact in marine science and education locally and globally.

At the time the annual report went to press in 2016, Mote had raised \$49.5 million and was in sight of the completion of the Campaign.

"I am overwhelmed with gratitude," said Dr. Michael P. Crosby, Mote President & CEO. "The community united together to raise \$49.5 million to help Mote achieve world-class science that will leave a lasting impression on our marine resources. Although we have received incredible support thus far, we are looking forward to reaching our \$50 million goal this year, which will allow us to realistically reach goals outlined in our *2020 Vision & Strategic Plan*."

The successful campaign will support and expand Mote's annual research and education operations; allow the organization to attract and nurture the next generation of marine scientists; spur long-term growth in the endowment to provide security and sustainability for Mote's future; protect and restore fisheries in Sarasota Bay and finance construction of a major new facility in the Florida Keys.

PHOTO BY: Henk Badenhorst

## **Helping fisheries in Sarasota Bay**

Philanthropists Carol and Barney Barnett, Mote's lead campaign donors, pledged \$3 million as a part of the *Oceans of Opportunity Campaign* to help Mote implement its Fisheries Conservation and Enhancement Initiative to protect and restore fisheries in Sarasota Bay, with an expectation that our community will match their support for this initiative as well.



## Construction Phase of Florida Keys Expansion

Thanks to generous gifts totaling more than \$3.5 million, Mote was able to begin construction in February 2016 at its Summerland Key research laboratory. Demolition of current office and dorm buildings paved the way for a new LEED Gold certified facility. Leadership in Energy & Environmental Design (LEED) certification recognizes green buildings and Mote's is expected to be the first of its type in Monroe County.

Approximately \$5.2 million total is needed for construction of the new, state-of-the-art research and education facility that will more than double Mote's research and education space, allowing the Lab to expand programs focused on studying and restoring damaged coral reefs and on finding new ways to address global threats to reefs – particularly climate change and ocean acidification.

Generous philanthropic donations for the facility have been provided by the founding donor, the Gardener Foundation, the Rick and Nancy Moskovitz Foundation [\$2 million], Elizabeth Moore [\$1 million] and the Charles and Margery Barancik Foundation [\$325,000]. Construction is scheduled to be completed in 2017.



## Mote Aquarium Otter Be Cute in 2016

Three North American river otters will make their 2016 debut in Mote Aquarium's newest exhibit, *Otters & Their Waters*, which provides an otter's-eye view of watershed environments.

Otters are excellent ambassadors, as they fish, roam, keep dens and protect their young in watershed habitats. These charismatic animals are helping Mote highlight important topics like healthy wetlands, the food web that interconnects many species and the ways people can take care of watersheds. Taking care of watersheds dovetails with taking care of the oceans – the heart of Mote's mission as an independent, nonprofit marine science institution dedicated to today's research for tomorrow's oceans.

Because we are dedicated to helping hundreds of thousands of people become more ocean literate each year, Mote Aquarium strives to provide new exhibits annually that increase public engagement.

The *Otters & Their Waters* exhibit was made possible thanks to presenting sponsor Tourist Development Tax (TDT) and exhibit sponsors Alfred Goldstein & Jean Weidner Goldstein, Jane Graham-Hyslop, James & Pati Ericson, Howard & Nancy Cobin, New Amsterdam Charitable Foundation, Wohlers Family Foundation, BMO Harris Bank, PNC Wealth Management, PGT Industries and Herald-Tribune Media Group.



*In loving memory,*

Dr. Eugenie Clark  
our beloved "Shark Lady"  
1922-2015



**Mote Marine Laboratory  
& Aquarium**

1600 Ken Thompson Pkwy  
Sarasota, FL 34236  
[941] 388-4441

**RESEARCH STATIONS**

**Mote Aquaculture Park**

874 W.R. Mote Way  
Sarasota, FL 34240  
[941] 388-4541

**Tropical Research Laboratory**

24244 Overseas Highway  
Summerland Key, FL 33042  
[305] 745-3554

**PUBLIC OUTREACH**

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480 E. Railroad Ave., Unit 7  
Railroad Plaza, Boca Grande, FL 33921  
[941] 855-9251

**Boca Grande Office Mailing**

P.O. Box 870  
Boca Grande, FL 33921  
[941] 855-9251

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35 East Quay Road  
Key West, FL 33040  
[305] 296-2325