FALL 2023 / WINTER 2024 NEWSLETTER VIRGINIA INSTITUTE OF MARINE SCIENCE

FAMED WAYFINDER NAMED VIMS' SCHOLAR IN OCEAN RESIDENCY

One Ocean. One Canoe. One People. That mantra describes the vision advanced by Native Hawaiian Nainoa Thompson, who visited the Virginia Institute of Marine Science last fall to meet with researchers, students, and local tribal communities, as VIMS' inaugural Scholar in Ocean Residency.

Thompson is CEO of the Polynesian Voyaging Society (PVS) and a leader in the traditional Polynesian art of non-instrumented navigation who has helped lead canoe voyages throughout the global ocean guided only by stars, waves, winds, and marine life. He visited the Chesapeake Bay region in 2016 during the worldwide voyage of the Hōkūle'a, the double-hulled voyaging canoe that has helped revitalize the art of traditional navigation since its launch in 1975.

Thompson was accompanied on his most recent visit to VIMS by Lehua Kamalu, the first woman to serve as lead captain and lead navigator of the Hōkūle'a on a traditional long-distance ocean crossing—the 2,500-mile ancestral "sea road" between Hawaii and Tahiti known as Kealaikahiki.

A first for William & Mary and VIMS, the Scholar in Ocean Residency position is the brainchild of Dr. Kirk Havens, director of VIMS' Center for Coastal Resources Management, and made possible by funding from Bank of America. Havens and Thompson became friends while paddling from Moloka'i to O'ahu in 1990, and rejoined forces during Hōkūle'a's Chesapeake Bay 2016 visit. "As a scholar in ocean residency," said Havens, "we've asked Nainoa to be a guide for engagement with indigenous island and coastal cultures and to explore the idea of melding science with indigenous wisdom."

The ocean residency, conducted primarily remotely and at sea, coincides with Hōkūle'a's current voyage, a four-year, 43,000-mile circumnavigation of the Pacific Ocean whose goal is to inspire and educate youth to meet the challenges of a rapidly changing world. The voyage will visit 36 countries and archipelagoes, nearly 100 indigenous territories and more than 300 ports. That voyage is known as Moananuiākea (a voyage for the ocean, a voyage for the earth). Moananuiākea is the Hawaiian word for Pacific waters.

"What's really important to us," says Thompson, "is that while we're focusing on our home when we sail the Pacific, we

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IMPACT HIGHLIGHTS

"BEAUTIFUL SWIMMERS" ATTACK AT LOW TIDE

Dr. David Johnson, an ecologist at the Virginia Institute of Marine Science, has spent more than 20 years in salt marshes at sites all along the U.S. East and Gulf coasts. But while doing research in a Virginia salt marsh at low tide last fall, he and colleagues saw something they'd never seen before—blue crabs ambushing fiddler crabs from shallow, water-filled pits.

> A mud-coated blue crab begins to emerge from its ambush pit during low tide within a coastal salt marsh. ©Aileen Devlin/Virginia Sea Grant

"It was amazing because here was an aquatic predator—one that lives, eats, breathes, and breeds under water—feeding out of the water," said Johnson. He and his colleagues—VIMS Ph.D. student Serina Wittyngham; VIMS Laboratory and Research Associate Leah Scott; and Dr. Cora Baird of the University of Virginia—believe these ambush-style attacks from pits at low

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PAUSING TO HONOR VIMS "OUTFITTERS"

A group of philanthropists—known as the "Outfitters" for their role in outfitting the R/V *Virginia*—met the challenge to raise significant funds to outfit the vessel. The flagship of the VIMS fleet now boasts cutting-edge technology, including a $1,000,000 multibeam sonar suite that allows researchers to map the ocean floor, thanks to this group of supporters.

In October, the "Outfitters" were invited to spend some time aboard the R/V *Virginia* while it was docked in Yorktown. Those in attendance had the opportunity to watch a demonstration of the new technology, tour the vessel, and take photos with plaques commemorating their gifts. "It's nice to give money to an organization that tells you what they're going to do with it, and you can see the advantage of it and be very impressed—and I am with this," said Laura Smart '68. A plaque honoring the contributions she and her husband, Samuel Smart '67, made toward the vessel's outfitting adorns one of the crew's bunks.

> A group of donors tour the R/V Virginia in late October. © VIMS

Famed wayfinder named VIMS' Scholar in Ocean Residency, continued from page 1

want to make sure that we also focus on other people's homes on the Earth. So we really want to create those relationships, those bridges to education and staying connected with the Chesapeake Bay and its communities."

Dr. Derek Aday, VIMS Dean & Director, notes the residency meshes closely with the goals set forth in W&M's recent strategic plan. "The overarching goals of Vision 2026 are to expand William and Mary's reach, educate for impact, and evolve to excel," says Aday. "Our partnership with the Polynesian Voyaging Society will contribute to all three goals and fits particularly well with the plan's focus on finding innovative solutions to ensure the resilience of the world's oceans, coasts, and waterways.

Nikki Bass, a Tribal Councilwoman of the Nansemond Indian Nation of the southern Chesapeake Bay, is particularly enthusiastic about Kamalu's participation in the broader scholar in residence program. "Bringing our cultures together will be wonderful," says Bass. "I'm so excited for Lehua to be involved because I've been working a lot on women's role in environmental stewardship and our history on our waterways that has been forgotten. People often use the term Chesapeake Bay 'waterman,' and the stories of women on the water are left in the background."

> VIMS Dean & Director Derek Aday, Nainoa Thompson, W&M President Katherine Rowe, Chief Robert Gray (Pamunkey Indian Tribe), Chief Frank Adams (Upper Mattaponi Indian Tribe), Chief Lynette Allston (Nottoway Indian Tribe), Ocean Elders CEO Gigi Brisson. © VIMS

> The Hokule'a was built in 1975 in the tradition of an ancient Polynesian double-hulled voyaging canoe. © Polynesian Voyaging Society

Building a foundation to carry indigenous wisdom into the future is indeed one of the stated goals of the Moananuiākea voyage around the Pacific, which aims to encourage a new generation of 10 million "Navigators"—fresh young voices for indigenous communities and champions for the planet. To reach that lofty goal, says Thompson, will require a "third canoe" called Wa'a Honua, which translates to "a canoe for the earth"—a networked platform of communications and education initiatives to broadcast the need for ocean sustainability to audiences worldwide. VIMS has joined the Moananuiākea voyage as an Educational Partner, and VIMS and W&M students have an opportunity to join the voyage with support from the Hokulea Engagement Fund.

Local tribal leaders and VIMS educators are excited to help bring the third canoe to Bay waters. "There's a lot of interest in programming that brings youth from different tribes together and gives them leadership and networking opportunities," said Bass.

"Education is a core mission of Nainoa's work," says Ashley Spivey , a member of the Pamunkey Indian Tribe and Executive Director of Kenah Consulting, a company that supports communities across Indian Country to increase capacity, economic opportunity, and sovereignty. "That resonates with us here because education is the whole point of the work I've done and in partnership with other tribal communities. And it's not just learning about what we're facing and how we need to face it, but learning from our ancestors how to face it."

"The virtual canoe can carry us and carry you, can carry many other people," Thompson said. "From our experiences with the Chesapeake Bay, it's easy to see how humanity hurts the Earth, and it's so hard to see humanity heal it, and it makes you cry. And we're so inspired by the work to heal the Chesapeake and want to be connected to that. People who circumnavigate their home will better understand it and share, because you can't protect what you don't understand."

More information about the partnership between VIMS and PVS can be found at waahonua.com/vims-partner-page/, and Thompson's presentation to the VIMS community can be viewed at youtube.com/watch?v=xdgfuNqAop4.

NEW PLANNED GIFT PROVIDES UNRESTRICTED SUPPORT

VIMS Executive Director of Advancement Marise Robbins-Forbes recently interviewed VIMS Foundation President Rick Hill '84 and his wife Susan Ng Hill about their planned gift commitment for VIMS.

This interview has been edited for brevity and clarity.

Marise Robbins-Forbes: Rick, you and Susan recently documented an extraordinary $2.6 million planned gift to be split equally between William & Mary (W&M) and the Virginia Institute of Marine Science (VIMS). Thank you! What led to your decision to support both?

Rick Hill: Although I have an undergraduate degree from W&M, as a VIMS Foundation Board member I now better understand the critical work being conducted at VIMS and how researchers collaborate across the two entities. W&M's Water Initiative and the recent restructuring of VIMS to encourage cross-collaboration across disciplines acknowledges a future where differing scientific, business, and legal practitioners will need to collaborate in creative ways to solve problems. By supporting both I can honor my alma mater while also supporting our world-class coastal and marine research institute.

MRF: Why do you support the Virginia Institute of Marine Science?

RH: My wife Susan and I value VIMS research. We want clean water, vibrant fisheries from which to draw tasty food, and resilient infrastructure that can withstand water's occasional fury. I appreciate the scientific knowledge I learn from VIMS' programs and world-class faculty. Their impact on coastal communities around the Bay and beyond is unparalleled.

> Rick Hill and Susan Ng Hill recently documented a generous planned gift, to be split equally between W&M and VIMS.

MRF: It is unusual for a gift of this magnitude to be unrestricted. How does leaving an unrestricted legacy accomplish your long-term goals?

Susan Ng Hill: We learned long ago the importance of providing unrestricted support. Rick and I first choose organizations we believe in and that are deserving of our support. By providing unrestricted gifts to these organizations, we recognize the expertise of the organization's leadership. We trust that these leaders are best positioned to direct the funds to where they are needed most. We want organizations like VIMS to have unrestricted funds available for emerging needs and opportunities in the future—a future we cannot possibly predict.

MRF: What would you like others to know?

RH: It is my hope that our commitment spurs others to consider including VIMS in their estate planning. Susan and I are happy to highlight the importance of leaving a legacy to VIMS with our planned gift. This is a top priority for the VIMS Foundation as we seek to secure an even brighter future for VIMS.

OCEAN ELDERS

As an Ocean Elder, Nainoa Thompson is part of an international group of scientists and "amplifiers"—people with a unique ability to reach broad audiences—who provide a voice for the ocean. Ocean Elders' founder Gigi Brisson visited VIMS during Thompson's visit and talked about the impact Thompson and the other Elders are making.

"Ocean Elders has many goals, but the protection of the high seas (international waters) is a top priority," Brisson said. "It's a prime example of the tragedy of the commons, as there's no oversight or international agreement regarding its management or protection." That means problems must be solved through consensus building, which makes them quite difficult to solve, and raising awareness critical.

"Kids give me reason for hope," Brisson said. "The younger generations seem to be less interested in short-term financial gains at the expense of the long-term health of the planet." She added that the young people she meets these days are more outspoken as well, and willing to stand up for what they believe.

That's one part of Thompson's importance as an Ocean Elder. He has a gift for training and educating young people about the Earth and the importance of being caretakers.

> Nainoa Thompson and Haunani Kane practice the traditional Polynesian art of non-instrumented navigation during a Pacific voyage. © Sonja Swenson Rogers/Polynesian Voyaging Society

Brisson recalled that it was marine biologist and oceanographer Dr. Sylvia Earle, the first Ocean Elder, who said she should meet Thompson. "I met him on his mother's porch in Hawai'i," said Brisson. "In twelve seconds, the hair stood up on the back of my neck, and I thought, 'I am truly meeting a global elder!'"

"Ocean Elders is largely a virtual entity that defends the ocean," Brisson said. "Nainoa is living and executing on our vision every day, spreading the word of caring for the world and not taking more than we need. Every time he speaks is magical."

For more information about Ocean Elders, visit www.oceanelders.org.

VIMS OPEN HOUSE EVENTS DRAW 2,000+ ENTHUSIASTIC COMMUNITY MEMBERS TO EXPLORE SCIENCE

Have you ever wondered what happens behind the scenes at the Virginia Institute of Marine Science? Maybe you've asked yourself, "What do marine scientists really do?" At this year's Marine Science Day on VIMS' Gloucester Point Campus and Marine Life Day at the Eastern Shore Laboratory in Wachapreague, more than 2,000 community members had the chance to explore answers to these questions.

> On Marine Science Day, both children and lifelong learners are able to have hands-on educational experiences. Photo by Lathan Goumas

Through hands-on activities and mini lectures, guests learned how VIMS scientists create solutions to help marine life and our marine environment. Kids (and kids at heart) made marine science-themed crafts and got their hands wet in the Marine Life Day touch tank.

Marine Science Day 2023 was made possible through the generous support of our signature sponsor, Dominion Energy, as well as support from Colonial Pipeline Company, The Owens Foundation, Canon Virginia, Worley's Home Services, and C.A. Barrs Contractor, who support Marine Science Day and other initiatives throughout the year. And, for the first time, we hosted a marine science career fair, sponsored by Bank of America, where 115 attendees learned about the multitude of careers available in marine science and related fields.

> The VIMS Eastern Shore Lab's Marine Life Day touch tank provides hours of fun and remains open for local field trips the following week.

ROBERT J. BYRNE STUDENT FIELD RESEARCH SUPPORT ENDOWMENT

How do you honor a beloved teacher and mentor when they are gone? That was the question Mike Carron M.A. '76, Ph.D. '80, P '04, Bob Gammisch M.A. '86, and Charlie Natale M.A. '82 kept asking themselves when Virginia Institute of Marine Science faculty emeritus Dr. Robert "Bob" Byrne died in June of 2021. Soon the three friends were reaching out and asking each other that question.

"We wanted to honor Dr. Byrne in a special way, because he was a great mentor and role model," said Carron. "Bob was a well-respected, world expert in coastal resource management," Natale added. "He was also a cool guy who was very progressive and modern in his thinking, and at the same time he was kind, humble, and accepting of the challenge of learning together. He was one of the reasons I wanted to come to VIMS."

The trio of alumni had poignant memories of Byrne related to their fieldwork as students at the School of Marine Science at VIMS, and that led to an idea: Create an endowment in Byrne's honor to help fund student fieldwork.

"Bob was passionate for learning in the field," Natale said. "That was his laboratory. And if there was a vessel trip, he was on it!" He recalled how Byrne would frequently make breakfast for everyone before they left for fieldwork and often cooked dinner when they returned. Gammisch agreed, "He loved being in the field with us. He was a great field scientist and a naturalist. He encouraged you to look at the big picture and see how everything is connected. He made me a better scientist and a better mentor."

All three had also faced the challenges of funding their fieldwork. "It was hard to get funding for sampling equipment, testing and lab work, vessels," Natale said. "Students don't have that. Bob always found the money. If any student came to him and said he needed money, Bob said, 'Let me see what I can do.' And two days later he would come back and say, 'Okay, you've got the money.'"

> Dr. Robert Byrne left an indelible impression on his students, three of whom have set up an endowment in his honor.

"It's expensive to be in the field," Carron added. "It's more difficult to interest people in going into the field to do projects when they have to pay for it themselves."

The three worked closely with Susan Maples and Marise Robbins-Forbes in the VIMS Advancement Department. "We kicked the idea around with VIMS," Natale said. "We gave them an amount—enough to get going so it can spin off interest for funding each year—and told them we wanted to get others to help make it grow."

"The endowment is a fitting tribute to Bob Byrne," said Linda Schaffner, who served as Associate Dean of Academic Studies until 2023 and is continuing to work on special projects at VIMS as a professor. "He was a wonderful person and a wise and kind mentor to many, myself included. It will be a tremendous resource for our students. Field research support has always been a gap and the needs are diverse. I'm sure the impact will be high."

The funds will be used to support travel, scientific/field equipment, supplies, and associated incidental expenses related to field research.

Dr. Byrne is survived by his wife, Dr. Joan Byrne, and their daughters, Heidi and Heather. If you would like to contribute to the Robert J. Byrne Student Field Research Support Endowment, contact Susan Maples at susan@vims.edu.

LIFETIMES DEDICATED TO ENVIRONMENTAL SCIENCE INSPIRE FELLOWSHIP GIFT

After many years of working in environmental science, Fu-Lin Chu Ph.D. '82, P '97, P '12 and William Chu P '97, P '12 have seen a lot of changes in the natural world. Drastic changes.

"The polar ice is melting," Fu-Lin said. "We have extreme temperature variations, more severe hurricanes and wildfires. The situation is urgent." Now retired, she and William wondered how they could contribute to the solution outside of their labs.

As a young scientist, Fu-Lin first saw the impact of environmental changes while working with oysters at the Virginia Institute of Marine Science and wanted to know more. At the suggestion of faculty member Maurice "Mo" Lynch, she applied to the VIMS graduate program and wrote a proposal to fund her research. Both were accepted, and she completed her Ph.D. program while working full time and caring for two young daughters.

> Hopeful that the next generation will find solutions to climate change, Fu-Lin and William Chu decided to fund a student fellowship.

Her research focused on two areas: marine nutrition and parasite interactions in fish and shellfish, particularly in Virginia oysters. Fu-Lin studied the effects of environmental factors, including pollution and environmental stress due to climate change, on the development and reproduction of aquatic organisms. She received the VIMS Outstanding Faculty Researcher Award and the Dean's Prize for the Advancement of Women in Marine Science during her tenure. She retired in 2009 and is now an emeritus faculty member.

William spent the majority of his career at NASA, where he started as a contractor in the 70s. When he first joined NASA, he was part of a team studying the hole in the Earth's ozone layer. "That's how I became interested in global change," William recalled. "We were looking at atmospheric signs, then building a satellite so we could monitor the atmosphere from here."

While the changes the two scientists witnessed during their careers continue to concern them, they have not stripped away their hope. Young people, and particularly graduate students at Fu-Lin's alma mater, the School of Marine Science at VIMS, give them reason to believe in a brighter future for our planet. "We have to have hope," William said. "The hope is with our young people to find a solution."

"We talked about funding a graduate student at VIMS. We knew VIMS' mission and the strength of its research." The couple agreed they were particularly interested in helping to support someone who shared their passion for solving the problems of environmental change. In 2021, the Chus established a new fellowship at VIMS to do exactly that, and the following year the couple doubled the amount of their endowment. Every year, the Fu-Lin E. and William P. Chu Fellowship now helps to fund a student whose research area is environmental change.

"We hope these students can produce results that will help mitigate the problem," William said. "We know there's a long way to go," Fu-Lin added, "but ultimately we must find solutions to help the future."

VIMS RECEIVES RECORD GRANT TO LEAD NATIONAL DERELICT FISHING GEAR PROGRAM

The National Oceanic and Atmospheric Administration chose VIMS as home base for a new national program focused on protecting U.S. coastal waters from discarded fishing gear. The $8 million funding for the four-year program is the largest single grant award in VIMS' 83-year history.

The new Nationwide Fishing TRAP (Trap Removal, Assessment, & Prevention) Program will fund removal of pots and traps used to harvest crabs and lobsters and establish a lab to synthesize data and inform prevention and mitigation policies at the state and federal levels.

> Derelict crab traps are offloaded for disposal after being removed from the Chesapeake Bay. © K. Havens/VIMS

VIMS Ph.D. STUDENT JOINS PVS VOYAGE

In September, VIMS and Polynesian Voyaging Society (PVS) announced a new partnership to monitor phytoplankton and water quality as the Hōkūle'a circumnavigates the Pacific. School of Marine Science Ph.D. student Savannah Mapes joined the crew for Leg 8 of the Moananuiākea Voyage where she trained the crew in using the Planktoscope, a modular, open-source hardware and software for imaging plankton samples. Through this partnership, PVS and VIMS will pair indigenous knowledge, science, and student engagement to better understand and help amplify the importance of the oceans to a healthy earth.

Generous VIMS donors sponsored a "companion car" or "land canoe" that traveled down the west coast to provide land transportation for the crew at Hōkūle'a's ports of call from Seattle to San Diego. The crew named the car "'Elepaio" after the small, lively Hawaiian bird that was once considered the guardian spirit of canoe builders.

> Savannah Mapes standing in front of the companion car, or "land canoe," that traveled down the west coast to provide land transportation for the crew. © Jonah Apo/ Polynesian Voyaging Society

VIMS REBUILDS THE WACHAPREAGUE EASTERN SHORE LAB

On a beautiful fall day in 2022, nearly 100 members of the VIMS community—faculty, staff, students, donors, and volunteers—gathered at the Virginia Institute of Marine Science Eastern Shore Lab in Wachapreague, Virginia to dedicate a campus-wide rejuvenation. VIMS Dean & Director Derek Aday, Senator Lynwood Lewis, Delegate Rob Bloxom, and Eastern Shore Lab Director Richard Snyder cut the ribbon to resounding applause.

> TOP: Senator Lynwood Lewis and Delegate Rob Bloxsom, instrumental in obtaining state funding for the project, at the ribbon cutting; BOTTOM: Event attendees tour the new, state-of-the-art facilities. ©Bayside Gathering Co./VIMS

Funding from the Commonwealth—$16.72 million—supported the replacement of four old buildings: an administration building, residence hall, maintenance and fabrication shop, and shellfish hatchery, now known as the Castagna Shellfish Research Hatchery & Nursery. An additional research and education building was also constructed.

The Castagna Research Hatchery honors Mike Castagna, who pioneered aquaculture methods at the Eastern Shore Lab in the 1960s. He and his team worked on hard clams, bay scallops, and other species and laid the groundwork for the now-thriving, $58-million hard clam industry in Virginia.

Today, the Castagna Research Hatchery is leading bay scallop wild stock restoration and aquaculture, as Snyder and his team strive to continue the lab's legacy. "VIMS ESL has been releasing scallops to the coastal bays, and the population is reaching sustainable levels in recent years," says Snyder. "We also have been working with private growers for bay scallop aquaculture, and have assisted a company start up the first successful bay scallop farm in the region." The upgraded hatchery and all of the buildings will ensure the ESL team has the facilities to match their abilities in continuing marine science support for education, research, and advisory service for the Eastern Shore of Virginia and beyond.

Later in the day, the new greenspace between the buildings was put to use hosting a separate seafood feast thanking VIMS donors. Dean & Director Dr. Derek Aday presented the VIMS Massey Medallion to two couples for their long-term philanthropic support of VIMS. Dr. Maurice "Mo" Lynch and his wife Virginia were recognized for 42 consecutive years of giving. Dr. Carl Hershner and his wife Ruth were recognized for 26 years of continuous support.

In addition to the buildings, three new sculptures by local artist David Turner and a painting by Wachapreague artist Carrie Jacobson, were donated by former VIMS Foundation Board president Stephen Johnsen and his wife, Barbara, who were also recognized at the event.

"Beautiful swimmers" attack at low tide, continued from page 1

tide are the first ever recorded for the blue crab or any other swimming crab, save for an earlier anecdotal account from Dr. Richard Heard of the University of Southern Mississippi. The blue crab's genus name Callinectes, Greek for "beautiful swimmer," attests to its aquatic nature.

"It was really hot—95 degrees—and the tide wasn't going to return for another three hours," said Johnson. "But this aquatic crab had figured out a way to feed at low tide: dig shallow pits that fill with water and wait for prey to come to you. One crab was 70 meters away from the shoreline. That's 800 body lengths. It'd be like if I dove a mile underwater and hid behind a rock to ambush fish that swam by."

The researchers watched as the blue crabs emerged from the muddy camouflage of their pits, stalked and snatched a fiddler crab, then scampered back to the pit to devour their prey. Crustacean scientists have long known that blue crabs feed within the salt marsh during high tide; fiddler crabs typically respond by retreating to their burrows during tidal peaks to avoid being eaten. But scientists had long thought that during low tide, the exposed marsh surface provided a fiddler's refuge.

"Blue crabs have been known to dash a few feet onto land to snatch fiddler crabs before returning to the water to dismember and eat them," said Johnson, "But the behavior we saw was different. Blue crabs were not chasing their prey on land; they were waiting on land for their prey to come to them."

The discovery raised a tide of questions. How common is this behavior among blue crabs, and how successful? Do they dig the pits or rely on existing depressions? How do blue crabs deal with the risks of hunting ashore, such as exposure to common fiddler-crab predators such as herons and egrets?

To begin to address those questions, Johnson later returned to the same marsh to record blue-crab densities, sizes, and attacks. This follow-up visit, plus subsequent video from trail cams, confirmed the behavior and revealed more details. For one, most of the crabs (83%) were juveniles. He also found that most of the pits were typically not much wider or deeper than the blue crabs, suggesting they dug the pits themselves. This was corroborated by video footage showing the crabs scooping mud out with their claws. Out of 33 attacks captured on 37 hours of video, 11 (33%) were successful.

The discovery that Callinectes feeds in salt marshes suggests these environments are more important to blue crabs than previously thought. "Our observations underscore how vital salt marshes are to blue crab production and the blue crab fishery," said Johnson.

VIMS TO EXPAND RESTORATION OF SEAGRASS, BAY SCALLOPS ON EASTERN SHORE

Project will build on success of similar ongoing activities in nearby coastal bays

A team led by VIMS researchers will use a $2.25 million grant from the National Oceanic and Atmospheric Administration to expand their already-successful efforts to restore seagrass and scallops to the seaside bays of Virginia's Eastern Shore.

During the four-year project, led by Drs. Christopher Patrick and Richard Snyder of VIMS, scientists from the institute and its Eastern Shore Lab will join with staff and volunteers from The Nature Conservancy to plant at least 60 acres of eelgrass and release more than 6 million bay scallops into the shallow waters of Burtons Bay, a large coastal embayment about midway up Virginia's Eastern Shore. Project funding comes from the federal Bipartisan Infrastructure Law and Inflation Reduction Act and will be administered by the Virginia Coastal Zone Management program.

The project—conducted with support of Virginia Department of Environmental Quality's Coastal Zone Management Program and the Virginia Marine Resources Commission—will build on VIMS' success in leading a decades-long, multi-institutional effort to restore the South Bay region of the Eastern Shore. Largely barren when VIMS' Dr. Robert "JJ" Orth began seagrass restoration efforts in 1999, the region is now home to nearly 10,000 acres of lush eelgrass meadow. This ranks as the most successful seagrass restoration project in the world and provided VIMS with the impetus in 2009 to begin restoring a viable bay scallop population to these underwater grass beds. Like many other species, bay scallops depend on seagrass habitat.

Both eelgrass and bay scallops had been functionally extinct from the area since 1933, due to the combined impacts of a seagrass wasting disease and a devastating hurricane. Preservation of the area within the Volgenau Virginia Coast Reserve—the longest coastal wilderness on the U.S. Atlantic Seaboard—provides the water-quality conditions and protection from development that have contributed to the restoration's success.

Patrick, head of the Seagrass Monitoring and Restoration Program at VIMS, stresses that the Burtons Bay project will benefit far more than just eelgrass. "Our work represents a whole ecosystem restoration," he says. "Eelgrass is a key foundation species that not only improves water clarity, increases oxygen concentrations, and reduces erosion, but also creates essential habitat for bay scallops, waterfowl, and other marine organisms."

Snyder, who heads VIMS' Eastern Shore Laboratory in Wachapreague, notes that the project will have socio-economic benefits as well. "Restoration of eelgrass meadows boosts the productivity and biodiversity of local ecosystems," he says. "Eelgrass meadows enhance charter fishing, recreational hunting and fishing, ecotourism, and commercial wild harvests of blue crabs and other species." These benefits extend regionally, as eelgrass provides nursery and forging habitat for many species of migratory fishes.

Overall, says Patrick, "We expect our restoration efforts will bring both ecological and socio-economic benefits to the entire mid-Atlantic region, including enhanced fisheries, greater recreational opportunities, increased biodiversity, improved water quality, reduced erosion, and sequestration of carbon and nutrients." Beyond these regional benefits, he adds, "The project promises significant advances in our understanding of the value of seagrass habitat to seascapes and fisheries at larger scales and in different regions globally.

> Eelgrass beds help protect bay scallops from predators and strong currents. © VIMS

PUBLIC TOURS ABOARD THE R/V *VIRGINIA* PROVIDE WINDOW INTO SCIENTIFIC DISCOVERY

In September, VIMS opened the R/V *Virginia* to the public in Norfolk for free tours as part of a broader outreach and education event. Our display tent provided hands-on learning, with authentic tools and exciting artifacts, including shark jaws. On the public tours, enthusiastic attendees discovered the vessel's state-of-the-art capabilities and heard insights surrounding the latest research endeavors from VIMS scientists and members of the R/V *Virginia*'s crew.

VIMS | William & Mary
Virginia Institute of Marine Science

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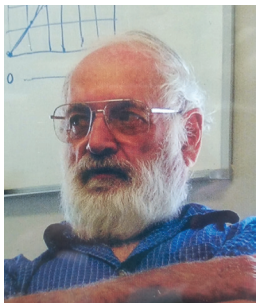
A VIMS PROFESSOR'S LEGACY: PAYING IT FORWARD

Dr. Kenneth L. Webb (1930-2022) made an impact during his lifetime with more than three decades (1965 through 1998) as a VIMS donor and professor. He spent his early years working on coral reefs, traveling to Australia, Hawaii, the Marshall Islands, and the Caribbean. His broad interests were in interdisciplinary investigations related to energy flow and nutrient cycling in marine environments, including: estuaries, salt marshes, seagrass systems, as well as coral reefs. Promoted to Full Professor and ultimately named a W&M Chancellor Professor, Ken Webb's graduate students included VIMS Emeritus faculty members: Maurice "Mo" Lynch, Laurence W. Haas, William D. DuPaul and Fu-Lin E. Chu.



> Dr. Kenneth Webb made an impact as a VIMS professor and donor, and a planned gift continues those contributions.

Reflecting on his philanthropy, Ken's surviving spouse Susan Stevick shared that Ken arranged for a planned gift to show gratitude to VIMS for "paying him to do work he loved."

SAVE THE DATE

After Hours Lectures
Topics to be announced
Thursday, January 25, 7pm - 8pm
Thursday, February 29, 7pm - 8pm
Thursday, March 28, 7pm – 8pm

Virginia Beach Winter Wildlife Festival
Saturday, January 27, 10am - 3pm
Princess Anne Recreation Center
Virginia Beach, VA
Dr. Rom Lipcius will also present a workshop on the winter blue crab dredge survey at 9:30am.

2024 Blue Crab Bowl
Saturday, February 10, 9am - 5pm

STEM Day at the Virginia Living Museum
Saturday, March 2, 11am – 3pm
Virginia Living Museum
Newport News, VA

One Tribe One Day
Tuesday, March 26

Marine Science Day
Saturday, June 1

Marine Life Day
Saturday, September 21
Eastern Shore Laboratory
Wachapreague, VA

All events take place on the VIMS Gloucester Point campus, unless otherwise noted.
No charge for events. Reservation required.
Visit www.vims.edu/events or call 804.684.7061