Impact

Incoming storm. ©D. Malmquist

SPRING 2021 NEWSLETTER VIRGINIA INSTITUTE OF MARINE SCIENCE

ADMINISTRATION NAMES VIMS GRAD TO WHITE HOUSE STAFF

In January, President-elect Joe Biden and Vice President-elect Kamala Harris named Dr. Ike Irby as policy advisor in the Office of the Vice President. Irby, who earned joint graduate degrees from William & Mary and the Virginia Institute of Marine Science in 2017, previously served as a senior policy advisor to Harris in the U.S. Senate, covering climate, environment, energy, transportation, and infrastructure.

Irby brings both a science and policy background to the nation's capital, with a Ph.D. degree from the School of Marine Science at VIMS and a master's degree in public policy from the Public Policy Graduate Program at W&M. He responded to the announcement in a tweet, writing, "Truly honored to serve as Policy Advisor to the next Vice President, Kamala Harris. The climate crisis is the challenge of our time, and I look forward to continue fighting for climate and environmental justice, the protection of our planet, and an equitable future."

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>Then-graduate student Ike Irby poses on the South Lawn during his 2014 White House internship within the Office of Science and Technology Policy. Photo: Ike Irby

RECFISH MOBILE APP WILL GIVE ANGLERS A UNIQUE FIELD GUIDE

Researchers at the Virginia Institute of Marine Science are casting a wide net in search of fish photos. Their immediate goal is to use angler snapshots to train software to identify different fish species. Their ultimate goal is to put that artificial intelligence into a "RecFish" mobile app, giving anglers a multi-use field guide right in their pocket, and scientists a collaborative tool for studying recreational species.

>Lisa Kellogg is the founder of RecFish.

RecFish founder Lisa Kellogg, a senior research scientist at VIMS, talked about the genesis of the app during a recent After Hours lecture now available for streaming on the VIMS YouTube channel. Joining her was Recfish team member and VIMS fisheries professor Dr. Eric Hilton.

"We're really excited about building out our app," said Kellogg. "Once finished, all you'll need to do is open the app and point your cell-phone camera at a fish and it will instantly tell you the species, size, and approximate weight, and let you record that info to your logbook with the touch of a button." The app will also instantly provide information on whether the fish is legal to keep based on the date, location, and local fishing regulations.

Before that can happen, the app-development team must train machine-learning software to recognize different fish species, a process that requires lots of photos. "Right now," said Kellogg, "we're working on training models to identify fish and that requires at least 5,000 photos per species. The more photos we have, the more accurate the models will be."

To help collect these images, the team has developed a website at recfish.org that makes it easy for anglers to upload their photos. Kellogg said, "We want people to look through their photos and upload anything that has a fish in it, so that we can use

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NEW OUTREACH ENDOWMENT HONORS VIMS DEAN AND DIRECTOR

After seventeen years as dean of the William & Mary School of Marine Science and director of the Virginia Institute of Marine Science, John Wells announced that he would retire at the end of June. During that time VIMS has enjoyed unprecedented growth and modernization, attracted top-rated students and faculty, provided essential support to Virginia's maritime economy, and provided the highest level of research to benefit the marine environment.

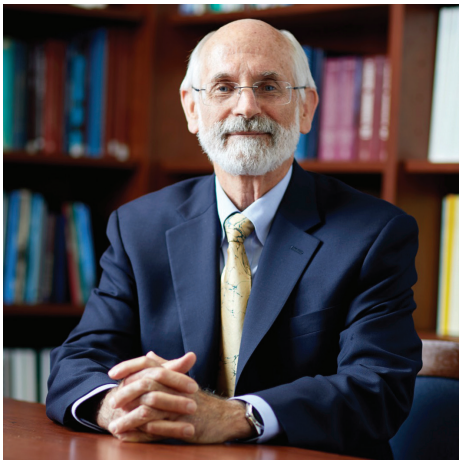
To honor his legacy, the VIMS Foundation Board voted to create an endowment in the retiring dean and director's honor, and several current and past board members have given cornerstone gifts in support of the effort. The John T. Wells Outreach Endowment will help underpin VIMS' public programs, which Wells has enthusiastically supported and advocated for during his tenure.

>Wells joins former Supreme Court Justice and W&M Chancellor Sandra Day O'Connor for a tour of the VIMS campus in 2007.

"Reaching out and connecting people to the science is part of our DNA at VIMS," Wells told a group of supporters recently. He believes that these connections increase understanding and appreciation of the marine environment and the importance of VIMS' research, which in turn benefits the Chesapeake Bay, coastal oceans, and estuaries world-wide.

In a typical year the VIMS Outreach program connects the science to in excess of 25,000 people of all ages and at no cost. These people connect to VIMS research through Marine Science Day, After Hours lectures, campus tours, videos, and local civic meetings. Even in these days of social distancing, VIMS Outreach is creating and sharing digital content that is engaging people from across the United States and around the world.

The John T. Wells Outreach Endowment will make certain that meaningful programs can continue for years to come and will increase the number of community members and decision-makers VIMS scientists and educators can reach with the institute's high-quality, unbiased science.



>Dean and Director John T. Wells is retiring after 17 years at VIMS.

Anyone interested in helping to create a lasting legacy of connecting marine science with communities can visit impact.wm.edu/wells to make a gift in support of VIMS Outreach and in celebration of the dean & director's contributions to VIMS and the marine environment.

RecFish mobile app will give anglers a unique field guide, continued from page 1

them as part of the model training." Their initial focus is on fishes of the Chesapeake Bay, but their long-term plans include expanding coverage to the U.S. East Coast and beyond.

The team is particularly interested in photos of less common species and species that people rarely photograph. "There are 270 resident species in Chesapeake Bay," said Hilton, "from common fishing targets such as striped bass, croakers, and flounder to more unfamiliar species such as stargazers and sea robins."

Kellogg and her project team appreciate that participating anglers may not want to share the whereabouts of their secret fishing spot. "You'll be able to share your exact location, which has the greatest value for scientists, but if you're uncomfortable with that, you can submit your data just by tributary segment—upper, middle, or lower York River, for instance—or with no geo-reference whatsoever."

Hilton noted that the app will also aid with basic fisheries science. "Anglers collect more data than any fisheries biologist ever could," he said, "because they're covering such a large area, including places that aren't sampled scientifically."

In addition to Kellogg and Hilton, the app-development team includes VIMS researchers Sarah Muffelman and Jennifer Dreyer; Dharmesh Trivedi, Harshil Shah, and their staff at the machine and deep learning firm DXFactor; and Rob Quartel, Innovation Advisor to VIMS Dean & Director Dr. John Wells.

App development was jumpstarted by support from the Dean & Director's Innovation Fund at VIMS, established in 2018 by the Joan and Morgan Massey Foundation and the Nunnally Charitable Trust.

"The goal of the Innovation Fund is to provide support for research and education activities that foster innovation and economic productivity at VIMS," said Wells. "What Lisa and her team are doing with their RecFish app is a great example of the kinds of projects we are looking to foster."

> When complete, the RecFish app will provide anglers with a species ID, length and weight, date and time, legality, and a choice of detail in terms of catch location.

"The Dean and Director's Innovation Fund encouraged us to think outside the box and come up with this concept in the first place," said Kellogg. The National Fish and Wildlife Foundation has provided additional funding for app development, and a wide range of management agencies and NGOs have expressed support. Kellogg expects the app to be available to the public by the end of 2021.

2020 TRENDS TOWARD SEA-LEVEL RISE ACCELERATION

Sea level "report cards" issued annually by researchers at the Virginia Institute of Marine Science add further evidence of an accelerating rate of sea-level rise during 2020 at nearly all tidal stations along the U.S. coastline.

The team's web-based report cards project sea level to the year 2050 based on an ongoing analysis of tide-gauge records for 32 localities along the U.S. coast from Maine to Alaska. The analysis now includes 52 years of water-level observations, from January 1969 through December 2020. The interactive charts are available on the VIMS website at www.vims.edu/sealevelreportcards.

The project's founder, VIMS emeritus professor John Boon, said "The year-to-year trends are becoming very informative. The 2020 report cards continue a clear trend toward acceleration in rates of sea-level rise at 27 of our 28 tide-gauge stations along the continental U.S. coastline." The one continental outlier—in Crescent City, California—joins four Alaskan stations as sites where coastal uplift makes it appear sea level is falling relative to land.

VIMS marine scientist Molly Mitchell said "Seeing acceleration at so many of our stations suggests that—when we look at the multiple sea-level scenarios that NOAA puts out based on global

>Coastal flooding is of growing concern across Tidewater Virginia and in other coastal areas worldwide.

models—we may be moving towards the higher projections." Mitchell has partnered with Boon to generate the report cards each year since 2017.

"Acceleration can be a game changer in terms of impacts and planning, so we really need to pay heed to these patterns," said Boon. "We have increasing evidence from the tide-gauge records that these higher sea-level curves need to be seriously considered in resilience-planning efforts," adds Mitchell.

Boon said the report cards add value by providing sea-level projections that are updated more frequently than those issued by NOAA or other agencies. Boon and colleagues also use a statistical approach that includes evidence for the recent acceleration in the rate of sea-level change at many U.S. tide-gauge stations, and stress their use of relative sea-level measurements—changes in water level relative to the land surface on which people live and work. The relative sea-level rise in Virginia and other East and Gulf coast areas is due to both rising water and sinking land.

Sea-level rise has now been accelerating at all U.S. East Coast stations since 2014. Prior to that year, stations south of Cape Hatteras had recorded little or no acceleration. "Today," said Boon, "sea level is accelerating faster at many of these southern stations than at some stations further north considered to be sea level rise 'hot spots' not long ago."

"Rates of sea-level rise in Norfolk, Virginia, are still the highest along the Atlantic Coast at 5.4 millimeters per year," said Mitchell. "However, acceleration at stations in North Carolina, South Carolina, and Georgia indicate that we should be watching sea-level patterns in those states very closely." Some studies indicate that the "hot spot" of sea-level rise in the mid-Atlantic is moving southward, and that stations south of Cape Hatteras will see greater sea-level rise by 2050 than their histories suggest.

VIMS MARINE SCIENCE DAY CONTINUES ITS GLOBAL REACH

Marine Science Day, the annual showcase of research by the Virginia Institute of Marine Science, will be held on Saturday, May 15. This year's virtual open house will offer a day of engaging content accessible to anyone in the world. Marine Science Day participants of all ages can enjoy marine science-themed activities, watch live presentations, and interact with scientists throughout the day with the MSD virtual platform. . Everyone will have opportunities to learn about the latest VIMS research on topics such as ocean acidification, fisheries, sea-level rise, water quality, ghost forests, plastic pollution, and marine science careers from VIMS' staff and scientists.

Once again MSD participants can enjoy one of the event's popular seafood cooking demonstrations, and children and adults can enter the annual art and costume contests that will be judged that day. You can even enter your family pet in the costume contest! Last year's grand prize winner was Quinn, from Yorktown, VA, whose costume was a very creative oyster bed. It's a fun opportunity to see everyone's creativity at work.

Last year's Marine Science Day reached more than 2,000 curious minds across the country and around the globe. Participants represented 41 states. and 12 countries, including Australia, Ireland, and Portugal. VIMS received overwhelmingly positive responses about the first virtual Marine Science Day, and many teachers reported that they used the content in their classroom to teach students about marine science.

> Marine Science Day returns in May on VIMS' online platform and includes the ever-popular costume contest.

Marine Science Day is free and open to everyone, and registration is required to gain access to the MSD event platform. Learn more at www.vims.edu/msd.

WORLD-CLASS SHELLFISH AQUACULTURE EXPERT TO LEAD VIMS PROGRAM

>Bill Walton will join VIMS as the Acuff Professor of Marine Science, Shellfish Aquaculture Program Coordinator. Photos: Fernando DeCillis

Research and advisory services at the Virginia Institute of Marine Science support the growing aquaculture industry and have helped make Virginia the worldwide leader in sustainable shellfish aquaculture. Now, with construction of the state-of-the-art Acuff Center for Aquaculture underway, VIMS has hired a world-class expert in the field of shellfish aquaculture to coordinate its efforts.

Dean and Director John Wells recently announced that Dr. William C. Walton has accepted the position of Acuff Professor of Marine Science, Shellfish Aquaculture Program Coordinator at VIMS. Walton is currently director of the Auburn University Shellfish Lab, professor in the Auburn University School of Fisheries, Aquaculture and Aquatic Sciences, and a Marine Extension Specialist in the Alabama Cooperative Extension System.

> *"Bill will spearhead interdisciplinary research that will take the VIMS Shellfish Aquaculture Program to the next level of national and international leadership." – John Wells*

"Bill Walton has broad experience with shellfish aquaculture from Maine to the Gulf of Mexico, and has developed close ties to the commercial aquaculture industry," Wells said. "He will spearhead interdisciplinary research that will take the VIMS Shellfish Aquaculture Program to the next level of national and international leadership. In addition, Bill will help develop a robust curriculum in shellfish aquaculture to support graduate, undergraduate, and public education."

Walton will begin his new position in June and is currently house hunting with his wife, Bethany, and their two teenaged sons, Cameron and Quinn.

As a young man, Walton fell in love with the ocean while camping with his family in the Canadian maritime region and along the West Coast. Later, as an undergraduate at Tufts University, a marine biologist took Walton "under his wing" and instilled a life-long love of invertebrates. After earning his master's degree in ecology and evaluation at Rutgers, Walton gravitated to the doctoral program in fisheries science at the University of Maryland.

"I came in on the typical academic route," Walton said. "I was interested in ecology and food webs, so I started looking at marine invasive species and their impact. I got interested in the idea that the problem could be managed if we couldn't get rid of the invasive species."

Walton loved the research, but there was something else that really sparked his excitement. "I loved doing scientific research that a regular person was going to make decisions with," Walton said. "Once I got into applied research, it changed the direction of my career."

His career began in Wellfleet, Massachusetts, as a "shellfish constable," responsible for the protection of the town's shellfish, and eventually led him to Auburn University.

"I took the job at Auburn to do research and extension work to answer applied questions related to shellfish aquaculture and to get the industry started down there," Walton said. He worked closely with growers, hatcheries, and researchers to address critical roadblocks to profitable aquaculture through applied research, frequently connecting commercial farms and Auburn students. "I love this work," Walton said.

As the Acuff Professor, his leadership will complement the existing strengths in shellfish aquaculture by establishing a robust institute-wide Shellfish Aquaculture Program. "There are a lot of excellent marine science labs around the US, but I'm impressed by how grounded [VIMS] is in applied science," Walton said. "It's a world-class program, and I'm excited for the chance to come in and work with VIMS' all-stars to help the program grow and diversify."

Walton said he is also looking forward to meeting people in the industry and finding out what they are worried about and what they would like to see from VIMS. "There are a lot of opportunities for collaboration," Walton said. "With a more coordinated program, we will be able to tackle these questions as effectively as possible. We want to help the industry thrive."

>Walton is currently director of the Auburn University Shellfish Lab, professor in the Auburn University School of Fisheries, Aquaculture and Aquatic Sciences, and a Marine Extension Specialist in the Alabama Cooperative Extension System.

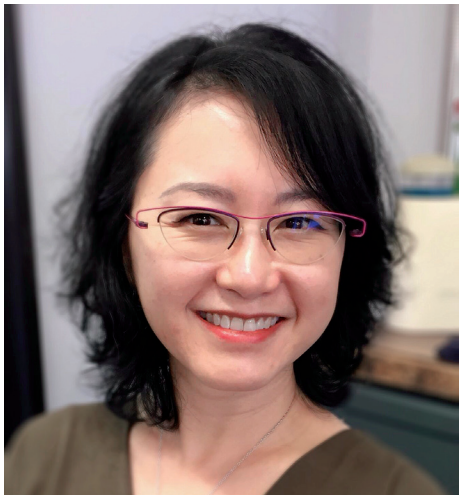
SCIENTIST BRINGS THE RIGOR OF DATA SCIENCE TO THE MARINE ENVIRONMENT

For many people, what they enjoy and what they do in their job are two very different things. For Dr. Grace Chiu, director of the VIMS Environmental Statistics and Transdisciplinary Data Science Lab, they go together flawlessly.

Since her childhood, Chiu has always loved the natural world. After her family emigrated from Hong Kong to Canada and she prepared to enter college some years later, Chiu decided not to pursue a career in biology. "I never had a biology course at school," Chiu said. "Instead, my love for the natural world drove me to look for a formalized way of understanding natural phenomena. I realized that scientists rely on data, and I like math. It's an interesting puzzle to solve. That's what drew me to statistics."

After graduating from the University of British Columbia with a double major in math and statistics, Chiu stayed on to earn her master's degree in statistics. She taught postsecondary statistics for some years before entering the doctoral program at Simon Fraser University. It was during her post-doctoral work at the University of Washington in Seattle, that Chiu met her partner, Dr. Anton Westveld, who got his statistics Ph.D. there.

Chiu identifies herself as a data scientist and a statistician. "Any time you need to understand the world, you need to collect data, and you need a way to make sense out of it," she said. "Data science is a rigorous way of interpreting that information, requiring a set protocol to 'tease it out.'"



>Grace Chiu founded the Environmental Statistics and Transdisciplinary Data Science Lab at VIMS.

After four years as an assistant professor in the Department of Statistics and Actuarial Science at the University of Waterloo in Ontario, Chiu said, "I started feeling detached from the kind of work that gave me a role in environmental science." When the Australian national science lab CSIRO approached her with a job opportunity, it seemed like a better fit, and she took it. Chiu missed working with students though, and she later joined the statistics group at the Australian National University. After ten years "down under," it was VIMS that came calling in 2018.

Arriving at VIMS in 2019, Chiu founded and now directs the Environmental Statistics and Transdisciplinary Data Science Lab at the institute. The ESTDatS lab is devoted to cutting-edge statistical and data scientific research in marine science, environmental science, and other scientific disciplines that are integral to the evidence-based policy making that is part of VIMS' advisory service mission. The lab specializes in integrative, holistic statistical methodologies to tackle multi-faceted research problems. Chiu is also very active with teaching and developing statistics curriculum for VIMS.

"I've always felt my biggest impact would be to contribute data science to environmental science, and this is a very rare opportunity," Chiu said. "Marine data are complex. You have to have complex, labor-intensive studies to get to the phenomenon. If data are complex, you need rigorous methods to deal with them. I can help make that rigor an upfront part of the science at VIMS. We need data science to be part of the science, not a footnote."

GIVING SOCIETIES

Private support is one of the greatest sources of flexibility in the VIMS budget. To better show appreciation for everyone who supports VIMS' marine and coastal science mission philanthropically, we updated our giving societies and the recognition opportunities that go along with them. For all societies, membership is determined based on gifts over the fiscal year, July 1 – June 30.

Navigator	$1,000+
Explorer	$2,000+
Innovator	$5,000+
Visionary	$10,000+
Pathfinder	$100,000+ in lifetime giving

Ordinarily, members of giving societies are thanked with invitations to special events and other exclusive opportunities. Given COVID-19 and the temporary suspension of our external events we're interested in hearing from you about what experiences would be most interesting or meaningful to you as a thank you. If you have ideas please contact Amy at aefisher@vims.edu and share your thoughts.

AQUACULTURE CENTER IS UNDERWAY

Construction has begun on the Acuff Center for Aquaculture at the VIMS Gloucester Point campus. The new center will be home to the Shellfish Aquaculture Program, integrating VIMS' world-renowned, multidisciplinary aquaculture initiatives.

VIMS STUDY EXPLORES IMPACT OF OCEAN ACIDIFICATION ON CHESAPEAKE BAY OYSTERS

The growth and survival of oysters and other shellfish is being challenged by the increasing acidity of seawater caused by the excess carbon dioxide responsible for global warming. A team led by researchers at the Virginia Institute of Marine Science is now helping oyster growers and restoration specialists better manage their future responses to acidification in the Chesapeake Bay.

The team, funded by the NOAA Ocean Acidification Program, is led by VIMS researchers Marjy Friedrichs and Emily Rivest, along with David Wrathall of Oregon State University. Other team members include Mark Brush, Pierre St-Laurent, and Karen Hudson of VIMS, and Bruce Vogt of NOAA's Chesapeake Bay Office. The team calls their project STAR, for Shellfish Thresholds and Aquaculture Resilience.

"Coastal acidification and its associated co-stressors present a serious and credible threat to the success of both oyster aquaculture and oyster restoration in the bay," said Friedrichs. The co-stressors include nutrient pollution, warmer Chesapeake Bay waters, and pulses of freshwater from rainstorms made more intense by global atmospheric changes.

Increased seawater acidity hampers the growth and survival of oysters and other shellfish by eating away at their calcium carbonate shells, the same process that causes carbonated sodas to corrode the enamel of human teeth. It also reduces the number of carbonate ions dissolved in seawater, making it more difficult for oysters to build their shells in the first place. Acidification is particularly challenging to oyster larvae and juveniles.

> VIMS technician Megan Considine helps study the physiology of oysters in VIMS' Seawater Research Laboratory. © Virginia Sea Grant.

The goal of the three-year project is to understand the vulnerability of shellfish aquaculture and restoration efforts to ocean acidification. To accomplish this, the team is integrating results from a high-resolution, 3-D model of the Chesapeake Bay; water-quality data; recent studies of ocean acidification and its effects on shellfish; and information from aquaculture stakeholders. The study will develop tools for forecasting acidification thresholds to help commercial shellfish growers make more informed decisions, thus helping to protect an industry that in recent years has generated around $15 million in farm-gate value in Virginia, and $9 million in Maryland.

"Recent research has given us a clearer understanding of the physiological vulnerability of oysters to ocean acidification," said Rivest, "but we still lack a basic understanding of how vulnerability might differ among oyster hatcheries, farms, public-harvest reefs, or coastal restoration projects. This knowledge gap is what motivated us to submit our proposal."

> Dr. Rivest and VIMS Ph.D. student Annie Schatz prepare to deploy an oyster cage into the waters of the Chesapeake Bay. © Virginia Sea Grant.

Administration Names VIMS Grad to White House Staff, continued from page 1

Professor Linda Schaffner, Associate Dean of Academic Studies at VIMS, said, "Ike is a shining example of the outstanding young scholars from VIMS and W&M who have gone on to significant leadership positions in science and policy."

For his dissertation, Irby assessed the performance of computer models used to forecast how nutrient-reduction strategies and climate change impact water quality in the Chesapeake Bay. His work was recognized with receipt of W&M's highest award for a graduate or professional student, the Thatcher Prize for Excellence, as well as VIMS' Best Paper Award for his subsequent article in *Biogeosciences*.

Irby is no stranger to the White House, having served as an intern in the Office of Science and Technology Policy in 2014. Established by Congress in 1976, OSTP provides the president and senior staff with relevant scientific and technical advice, ensures the policies of the executive branch are informed by sound science, and coordinates scientific and technical work to provide the greatest benefit to America.

>While a member of Senator Kamala Harris' staff, Irby was featured in a VIMS Deeper Dive video titled Shaping Leaders Who Shape the World.

Following his graduation from VIMS, Irby returned to Washington, D.C., as a Science and Technology Policy Fellow with the American Geophysical Union and American Association for the Advancement of Science. It was in this position that he first began working with then-Senator Harris of California. In this role, Irby led the legislative team advising the senator on issues related to the environment, energy, climate, and space.

FOUNDATION CO-FOUNDER LEAVES A LEGACY OF PHILANTHROPY AND SERVICE

VIMS lost a staunch friend and supporter with the death of E. Morgan Massey on March 10 at age 94. A life-long Virginian, Massey received his engineering degree from the University of Virginia and joined the family business, A.T. Massey Coal Company after graduation. He helped grow and transform that business and went on to found several businesses of his own.

Massey's son Craig said, "Our family has been in the coal industry for more than 100 years. When I was a kid and started learning about the environment, I asked my dad about our environmental impact. That is when he introduced me to VIMS. He explained to me that through education, understanding, and technology, society can both grow the economy and protect the environment. This insight is why he was such a strong supporter of VIMS and why he was always looking for ways to make manufacturing safer and environmentally responsible."

Morgan Massey's involvement with VIMS spanned four decades. In 1983 he joined the VIMS Council, which advised and assisted VIMS in its mission and worked to increase private giving. In 2000 he co-founded the VIMS Foundation with A. Marshall Acuff, Jr., Clifford A. Cutchins III, Arthur H. Bryant II, Thomas Blackburn, and Guildford D. Ware to focus on promoting philanthropy for VIMS and providing stewardship of private resources. He served as the foundation's first president and became an important ally and trusted advisor to VIMS leadership.

>Morgan Massey (center) congratulates Lisa Kellogg and Derek Loftis, inaugural recipients of cash awards from the VIMS Innovation fund, which Massey helped endow.

Reflecting on the time they spent together building the foundation, Acuff emphasized the importance of Massey's role. "He was really instrumental in putting together the foundation," Acuff said. "Morgan was very well respected, and his leadership in assembling the best people to serve on the foundation board was key to a successful beginning. He built a strong and enduring foundation."

Through the Massey Foundation, Morgan and the extended Massey family provided generous financial support to VIMS through unrestricted annual giving. Through the Joan and Morgan Massey Foundation, Morgan and his wife Joan helped fund passion projects such as the Dean & Director's Innovation Fund.

"Morgan was an absolutely amazing man, with intellectual curiosity, boundless energy, and a mind for innovation," said VIMS Dean and Director John Wells. "He saw enormous potential for VIMS in the entrepreneurial space and wanted to help underpin that effort with funding to nurture entrepreneurship." The first monetary awards from the endowed fund were made in 2019. "I am glad we were able to award money from the Innovation Fund during Morgan's lifetime so that he could see that vision realized," Wells said.

In honor of the Massey Foundation's long-term commitment to providing unrestricted financial support to VIMS, the institute created the Massey Medallion, which recognizes outstanding unrestricted support.

JUVENILE STRIPED BASS ABUNDANCE HOLDS STEADY IN VIRGINIA

As part of its advisory service mission to the Commonwealth, VIMS conducts an annual Juvenile Striped Bass Seine Survey to assess species abundance. Preliminary results from this year's survey suggest that it was another strong year for striped bass produced in Virginia tributaries of the Chesapeake Bay.

Striped bass play an important role as a top predator in the Chesapeake Bay ecosystem and are a valuable resource for commercial and recreational anglers. Professor Mary Fabrizio, who directs the Juvenile Striped Bass Seine Survey at VIMS, notes that the economic and ecological value of striped bass lends significant interest to the year-to-year status of their population. "By estimating the relative number of young-of-year striped bass," she says, "our survey provides an important measure of annual and long-term trends in the bay's striped bass population."

The VIMS survey samples 18 sites in the Rappahannock, York, and James River watersheds. Biologists sample each site 5 times from early July to early September, deploying a 100-foot seine net from the shore; in 2020, fewer sites were sampled. Each fish captured in the net is counted, measured, and returned to the river. These young striped bass usually measure between 1.5 and 4 inches. Survey scientists in Virginia measured 1,836 juvenile striped bass at these stations in 2020. VIMS has been conducting the survey annually since 1967 for the Virginia Marine Resources Commission (VMRC).

The striped bass population in Chesapeake Bay has rebounded from historic lows in the late 1970s and early 1980s after fishing bans were enacted in Delaware, Maryland, and Virginia in the mid- to late-1980s. Since then, the population increased to the point that striped bass in the Bay and elsewhere were considered recovered. In 2019, scientists determined that the striped bass population was overfished and that mortality due to fishing was higher than what the population can withstand in the long term. Monitoring of juvenile striped bass recruitment will continue next year to provide managers with crucial information to sustainably manage this important species.

>VIMS scientists use a seine net to conduct the annual striped bass survey.

Virginia Institute of Marine Science
P. O. Box 1346
Gloucester Point, VA 23062

www.vims.edu/impact

SAVE THE DATE

Discovery Lab
Harmful Algal Blooms (HABs)
April 20, 6 – 7pm
Family-friendly program for all ages.

A Scientist Walks into a Bar: Graduate Student Edition
April 21, 7pm
Enjoy listening to graduate students present 5 minute fast-talks on their research.

Earth Day
April 22

Lesson Plan Expo
April 22, 6:30 – 8pm
Presented by the Virginia Scientists and Educators Alliance. Educators are invited to learn about classroom-tested lesson plans developed by science graduate students.

Marine Science Day
Saturday, May 15, 10am–3pm
VIMS's annual open house is online with science talks, activities, a costume contest, and more. Fun for all ages.

World Oceans Day
Tuesday, June 8

After Hours Lecture
Chesapeake Bay National Estuarine Research Reserve
Thursday, June 24, 7pm

After Hours Lecture
Harmful Algal Blooms (HABs)
Thursday, July 29, 7pm

After Hours Lecture
Topics to be announced
Thursday, August 26, 7pm &
Thursday, September 30, 7pm

All programs are being held online at this time.
Visit www.vims.edu/events for information and registration.

VIMS MULTIMEDIA RESOURCE CENTER OFFERS VIDEOS AND SO MUCH MORE

Explore the multimedia resources the Virginia Institute of Marine Science has developed to provide insight into our research and to educate about our coastal and estuarine ecosystems. Take a tour of the oyster hatchery at VIMS' Kauffman Aquaculture Center on the Rappahannock River, watch the real-time activities of an osprey family, or learn about the effect of plastics on the marine environment, all without leaving your couch! Make sure to return often, as we create and share new content regularly. Bookmark www.vims.edu/public/online