



# Impact

**VIMS** | WILLIAM & MARY  
VIRGINIA INSTITUTE OF MARINE SCIENCE

Laughing gull. ©Jenny Dreyer

## News From VIMS

### VIMS ALUM NAMED NATURAL RESOURCES SECRETARY

Virginia Governor Ralph Northam selected Matt Strickler—a 2007 graduate of the Thomas Jefferson Program in Public Policy at William & Mary and the Virginia Institute of Marine Science—as Virginia’s next Secretary of Natural Resources.

The Natural Resources Secretary oversees six state agencies: the departments of Conservation and Recreation; Environmental Quality; Game and Inland Fisheries and Historic Resources; as well as the Virginia Marine Resources Commission and the Virginia Museum of Natural History.

During his academic career at VIMS, Strickler combined field studies with water-quality and economic modeling to examine how land-use changes on Virginia’s Eastern Shore impact hard clam aquaculture, with a focus on clam-farming operations in Old Plantation Creek in Northampton County.

Strickler credits both his Master’s research and Knauss Fellowship for his interest and rapid advance in the policymaking arena. “The broad exposure I got at VIMS to a range of environmental science and policy

issues, as well as hands-on experience working on Chesapeake Bay with scientists and stakeholders, has been invaluable to me and I know will serve me well in this new role,” Strickler said. He added that being a Knauss Fellow “...taught me an unbelievable amount about the interplay between science and policy.”

Previously Strickler served as senior policy advisor to the House Natural Resources Committee under Democratic Ranking Member Raúl Grijalva (AZ-3). His portfolio included fisheries, oceans, wildlife, and coastal policy, along with related energy and public lands issues.

Prior to his work in Congress, Strickler served for three years as a legislative assistant to Northam during the governor-elect’s stint as a Virginia senator for the 6th District, which covers all or part of Accomack, Mathews, and Northampton counties, as well as the cities of Norfolk and Virginia Beach.

### EXPLORE HEALTHY WATERS AT MARINE SCIENCE DAY

Each spring the VIMS Gloucester Point campus opens its doors to the public for Marine Science Day, offering fun and educational opportunities for all ages. This year Marine Science Day will be held on Saturday, May 19, 10 a.m. – 3 p.m.

Visitors will explore the theme of “Healthy Waters” through exhibits, mini lectures and hands-on activities. Learn more about VIMS’ work in the Chesapeake Bay and around the world as you visit with scientists and tour their labs. Bring kids to the Children’s Pavilion to make crafts and participate in other activities. Take a walk through

the teaching marsh, seine for aquatic animals in the York River, and visit the oyster hatchery.

If you are feeling truly ambitious, register for the annual costume contest, then create a marine-themed costume. All ages can participate, and ribbons will be awarded for most original plant or animal, most creative use of

materials, best group costume, and best representation of a plant or animal.

There are activities to fill your day! Check the Marine Science Day website regularly for updates. Admission and parking are free. Register at [www.vims.edu/msd](http://www.vims.edu/msd).



*A group of friendly lobsters enjoy hands-on activities at the 2017 Marine Science Day.*



*Virginia Governor Ralph Northam (L) announces VIMS and W&M alumnus Matt Strickler (MS '07) as his Secretary of Natural Resources during a press conference at the Science Museum of Virginia in Richmond. © Bob Brown/ Richmond Times Dispatch*

## SCANNING THE FISHES

In its second Tribefunding initiative, VIMS launched “A Look Inside: CT-scanning of larval and juvenile fishes” in fall of 2017. The goal of the initiative was to help researchers and school children digitally dissect fishes through the creation of 3D computer models of specimens in the VIMS Nunnally Ichthyology Collection.

“Advances in technology are revolutionizing how collection specimens can be studied, especially tiny, larval fishes,” said Eric Hilton, collection curator and associate professor of marine science. “Micro CT scanning allows us to visualize internal structures such as muscles, bones, and nerves. It can even provide visualization of stomach contents, allowing researchers to learn about a fish’s diet. Scans can also help us learn about other aspects of an animal’s life history, such as the number and size of eggs in female specimens.”

With the nearly \$9,000 raised through Tribefunding, Hilton will

send a W&M undergraduate student to Florida this summer to CT scan hundreds of larval and juvenile fishes from the collection. The student will then develop 3D computer models that can be used by students and researchers to study these fishes.

The student will also print handheld 3D models of these fishes to be used in education and outreach at VIMS and the College of William & Mary. Hilton hopes they will be able to create additional models that will be donated to area high schools for use in biology classrooms and curricula.

In its 57-year history, the Nunnally Ichthyology Collection has grown from an uncatalogued teaching collection to become one of the largest repositories for freshwater, Chesapeake Bay, and



*Tribefunding dollars will enable micro CT scanning of specimens in the Nunnally Ichthyology Collection at VIMS.*

coastal fishes in the Commonwealth of Virginia. The collection includes 350,000 specimens, many of which are computer cataloged and searchable on the VIMS website.

## VOLUNTEERS TAG NEARLY 20,000 FISH IN 2017

The Virginia Game Fish Tagging Program (VGFTP) recognized the efforts of top taggers during its annual awards ceremony at Bass Pro Shops in Hampton in February.

A cooperative effort between the Marine Advisory Service program at VIMS and the Virginia Marine Resources Commission (VMRC), the VGFTP uses state saltwater license funds to train volunteer anglers to tag recreationally important finfish. The program began as a tagging project for

red drum in 1995, providing critical habitat and seasonal movement data. As a result of its success, other marine recreational species were added to the program.

In 2017, VGFTP anglers tagged more than 19,839 fishes and recorded more than 1,541 recaptures. Data on tagged and recaptured fish are summarized in annual reports that are accessible at [www.vims.edu](http://www.vims.edu).

**Subscribe to e-Tidings – VIMS’ monthly e-newsletter – to stay “in the know” about our upcoming public events and latest research.**

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### Top taggers for 2017:

<b>Overall Tags</b>	Ed Shepherd (Yorktown)
<b>Overall Recaptures</b>	Ed Shepherd
<b>Black Drum</b>	Ed Shepherd
<b>Black Sea Bass</b>	Ed Shepherd
<b>Cobia</b>	Jorj Head (Seaford)
<b>Flounder</b>	Ed Shepherd
<b>Red Drum</b>	Ed Shepherd
<b>Sheepshead</b>	Joe Hudgins (Chesapeake)
<b>Spadefish</b>	John Knight (Virginia Beach)
<b>Speckled Trout</b>	Ed Shepherd
<b>Tautog</b>	Rob Collins
<b>Triggrfish</b>	Bill Knapp (Virginia Beach)



*VGFTP 2017 top taggers were recognized on February 16 at Bass Pro Shop in Hampton, VA. From L to R: Lewis Gillingham (VMRC), Ed Shepherd, John Knight, Sheldon Arey, Wes Blow, Trevor Embry, Tom Embry, Susanna Musick (VIMS).*

## STUDY IDENTIFIES TIPPING POINT FOR OYSTER RESTORATION

A study by researchers at VIMS identifies a tipping point in oyster restoration efforts, wherein reefs rebuilt to reach a foot or more above the bottom develop into healthy, self-sustaining ecosystems, while those rebuilt at lower heights are quickly coated and then buried by sediment.

The study, featured in a recent issue of *Marine Ecology Progress Series*, is co-authored by former VIMS Ph.D. student Allison Colden along with VIMS professors Rob Latour and Rom Lipcius.

The researchers said their findings can help explain oyster loss and enhance oyster restoration efforts not only in the Bay but worldwide. Native oyster populations have declined during the last century due to overfishing, nutrient pollution, disease, and degraded habitat, with major economic and ecological impacts.

The scientists used oyster shell to build 24 experimental reefs across four sites in the Great Wicomico and Lynnhaven rivers, tributaries of Chesapeake Bay in Virginia. They built the reefs at six different heights, from five centimeters to half a meter above the bay floor—a range of elevations typically used in oyster restoration or repletion activities in the Bay.



*An experimental reef with sediment traps in place. © A. Colden/VIMS.*

They then observed these reefs at eight months and two years following construction using a video camera on a small remotely operated vehicle.

“Our video sampling showed that reef condition diverged almost immediately—within 2 months of construction,” said Colden. “On the lower reefs, sediments quickly buried the shells, particularly around the reef margins. On the taller reefs, we saw emergent shell, lots of young oysters, and lower levels of sedimentation.”

The tipping point or threshold between these two states was 0.3 meters, about a foot. Reefs built to this height or higher had oyster densities 3.5 times greater than lower reefs, and densities on the higher reefs generally increased through time. Densities on the lower reefs tended to decrease under a range of sedimentation rates, with most of these reefs eventually disappearing beneath a blanket of sediment.

“The higher the reef is above the seafloor, the less space there is for water to flow between it and the surface,” said Colden. “That makes the water flow faster, which prevents sediment from accumulating over the oysters, provides lots of plankton for them to filter, and helps maintain the nooks and crannies that shelter oyster larvae and other invertebrates.”

The researchers say the relationship between reef height and persistence also helps explain how harvest pressures led to the demise of native oyster populations during the 20th century.

“The threshold dynamics we observed help explain the historical loss of reef habitats along the Atlantic coast,” says Lipcius. “By breaking apart the reef structure and removing shells along with live oysters, harvesting techniques like dredging and hydraulic tonging reduced reef height below the critical threshold.”

### FOR THE BOLD CAMPAIGN

**Goal:  
\$35 Million**



Every gift to the VIMS Foundation underpins efforts to better understand and protect precious marine environments.

Become a VIMS supporter by making a gift of any size at [www.vims.edu/giving](http://www.vims.edu/giving) or by using the enclosed envelope.

### CELEBRATE THE OCEAN

On June 8th each year people around the world celebrate World Oceans Day in recognition of the ocean and its importance in their lives, and to inspire others to help conserve it. The focus for World Oceans Day 2018 is “Encouraging solutions to plastic pollution and preventing marine litter for a healthier ocean and a better future.”

Every day VIMS research makes advances that lead to practical solutions and enduring benefits for our coastal oceans, from restoring critical marine habitat and fisheries to combating ocean acidification and plastic pollution. VIMS graduate programs are developing leaders that are prepared to address current and future challenges facing coastal and ocean waters.

How will you celebrate World Oceans Day?

## RICHMOND COUPLE ENDOWS NEW STUDENT FELLOWSHIP

After many years of living in Richmond, Phyllis Cothran and her husband, Dr. Arnold Stolberg, both had an awareness of VIMS. “We knew it was the marine science arm of the state and did research, but that was the extent of our knowledge,” Cothran said. In 2010, when the purchase of a home in Gloucester started bringing them across the Coleman Bridge, the couple began to be more interested in the campus they could see on the crossing and wonder what it was all about.

As owners of riverfront property, Stolberg said it wasn’t long before they began to understand the significance of VIMS. “Our foundation was nine feet above high tide,” Stolberg recalled. “We didn’t even need to have flood insurance. Then we watched the tides getting higher, and we looked across to the Catlett Islands and watched the changes over the years. It’s amazing how many trees there were and how many are now ghost trees.”

Given what they were seeing in their area of the river, the couple wondered how VIMS was helping to solve these issues on the larger scale of a 2,000-mile coastline and around the Chesapeake Bay. They started searching out what VIMS scientists were studying and how it was relevant to their backyard, attending lectures and student presentations.

Then Cothran received a call from colleague Gordon Smith, who asked if she would be interested in joining the VIMS Council. “He was serving as council president at the time, and he encouraged me to visit the website and read everything,” she recalled. “I came away very, very excited about the research happening at VIMS. Then I interviewed with John [Wells] and became even more excited.” In 2014 she joined the Council, which later merged with the Foundation to form the VIMS Foundation Board.

“Now I hear more information because I am on the board,” Cothran said. “Every time I get to see the scientists and students, it is so stimulating to see that really smart, excited people are working on these very real problems that the world has to figure out.” It wasn’t long before the couple began to discuss the idea of funding a fellowship.

“These students are the best of the best,” Stolberg said. “VIMS students are exploring really relevant problems, and it is these vibrant young minds that will solve the problems.”

The couple made the decision to fund the Phyllis L. Cothran and Arnold L. Stolberg Fellowship Endowment to provide support for a graduate student at VIMS studying aquatic environmental health and water quality. “Healthy waters are not only important for health and recreation, they help lead to a healthy economy,” Cothran said. The couple also noted that they hope the student’s research will provide insights into global coastal change and shoreline management.

“We were particularly interested in the coastal emphasis because it’s



*Phyllis Cothran and Arnie Stolberg created a fellowship to support a VIMS graduate student.*

the major issue facing the world right now,” Stolberg said. “In [these students’] lifetime we will come to pay the dues on this issue. We want to do anything we can do to help them.”

## MYANMAR TRIP YIELDS NEW INSIGHTS INTO DELTAS

While many of us were slowing down and preparing to welcome a new year, a team of scientists from VIMS was traveling across the globe to Myanmar for an intensive two-week research trip.

As part of a National Science Foundation project, Professor Steven Kuehl, Mary Goodwin, Josh Williams, and graduate student Danielle Tarpley Smith joined VIMS alumnus Paul Liu from North Carolina State to study the Ayeyarwady Delta. Though other U.S. scientists are working on the delta, Kuehl believes his group is the only one doing off-shore work in the delta’s marine environment.

“The Ayeyarwady and Thanlyin rivers are two of the last world rivers still in their natural state,” Kuehl said. “Most have been altered by draining and damming.” This provides a unique opportunity to study how river sediment naturally moves and is deposited to onshore and offshore regions of the delta. Collected data will help scientists understand how the delta is growing and inform its future development.

Worldwide, half a billion people live on river deltas, and these areas are at great risk from flooding as a



*Members of the Ayeyarwady research team cut through a core sample from the delta.*

result of increasing land subsidence and accelerating sea-level rise. The Ayeyarwady Delta research not only helps that region and its six million people, it adds to our general knowledge of deltas.

While living onboard a retrofitted Myanmar vessel for two weeks, the team worked around the

clock to take core samples of sediment and collect data for laboratory study. “We will be going back to Myanmar at the end of the project to hold workshops and training that will help with planning for the delta,” Kuehl said. Their findings were recently presented at the Ocean Sciences Meeting of the American Geophysical Union in Portland, Oregon.

The trip was important for more than research, however; it was an opportunity to foster collaboration with the scientific community in Myanmar. Five scientists from the host country took part in the research, including geologist Dr. Yin Yin Aye from Mawlamyine University. The scientists will travel to the United States this spring to continue the collaboration with visits to VIMS and NC State.

## VIRGINIA HIGH SCHOOL STUDENTS COMPETE IN BLUE CRAB BOWL

Team A from Seton School in Manassas captured first place in the 21st-annual Blue Crab Bowl, held in February. Runner-up was Seton School-Team B. The win marks the first time Seton School has taken home the first-place trophy, and the first time a single school has taken the top two spots.

The Blue Crab Bowl, a cooperative effort between VIMS and Old Dominion University, is the Virginia regional competition of the National Ocean Science Bowl (NOSB®), an annual academic contest to test knowledge of the oceans among high-school students. Seton School-Team A will move on to represent the Commonwealth at the National Ocean

Science Bowl, April 19-22 in Boulder, Colorado.

This year's Blue Crab Bowl pitted 13 teams representing nine Virginia high schools from across the Commonwealth. The 75 students spent the day in heated tournament competition focused on the marine sciences.

Dr. Carol Hopper Brill, event organizer at VIMS, said "Using questions designed by marine scientists and educators, the contest tested students' knowledge of oceanography, geology, biology, maritime history, and policy."

Hopper Brill thanked the more than 70 volunteers, including faculty, graduate students, and staff from



The 2018 Blue Crab Bowl winners were from Seton School in Manassas.

VIMS, ODU, and NOAA, who collaborated to make the competition a success. "The VIMS community can be proud of the investment made in enriching the education of these aspiring scientists," she said. "Some of the young people inspired by [Blue Crab Bowl] in past years have participated in VIMS summer internships and other opportunities. Some will certainly become our colleagues in years ahead."

## GRADUATE STUDENTS GO TO BOOT CAMP

With a steady diet of academics and research, life is busy for VIMS graduate students. Now they are also going to boot camp. This week-long Writing Boot Camp aims to help students effectively communicate their science.

"Based on what I learned at a 2016 Council of Graduate Schools workshop on writing boot camps, I developed a boot camp framework that I thought would work well for VIMS students," said Dr. Linda Schaffner. "Our main focus is to introduce writing strategies designed to help them become more productive writers, then give them time to practice those strategies."

Strategies range from realistic goal setting to overcoming writer's block. Another important theme is resilience, health, and wellness. "Most of our

activities take place as a group, but I also work with students individually on an as-needed basis."

While Dr. Schaffner is primary instructor for the boot camp, introducing strategies and leading discussions, she also brings in guest speakers throughout the week. A panel of 4-5 faculty spend a morning discussing their approaches to writing, struggles they have, or strategies they use. Dean and Director John Wells shares his experience as editor for *Marine Geology* in a session titled "Writing for Journals" along with colleague Dr. Iris Anderson, section editor for *Estuaries & Coasts*.

So far 25 students, about 25 percent of the student body, have graduated from the two boot camps that have been held to date. Three boot camp graduates even opted to participate in "Re-Boot" in January to refresh what they had learned.

"Student feedback has been very positive," Schaffner said.

In one evaluation, a student noted, "I feel more at ease about writing bad drafts because I know I will be the only one to see them. It is something that I always felt I had to get right the first time, so I was hesitant to write anything down. Hearing and seeing others struggle with writing too makes me know that this is a common feeling ..."

Additional Writing Boot Camps are being planned.



Graduates proudly model their "I survived Graduate School Writing Boot Camp" tee shirts.



## VIMS RAISES FRIENDS AND FUNDS ON OTOD

On April 10, the annual William & Mary day of giving known as One Tribe One Day, the VIMS community will have some fun while raising serious money for science. Last year 333 friends of VIMS donated on OTOD, and this year the goal is to increase participation. Join us when One Tribe One Day returns by participating in challenges and following the social media fun.

In the past two years OTOD challenges have been made to support the VIMS General Graduate Student Endowment. This year the recipient of the endowment is Darbi Jones, a Ph.D. candidate in the VIMS Fisheries Department. Watch for more about Darbi in the summer issue of *Impact*.

## TIDEWATCH FORECASTS AREA TIDE LEVELS

Have you ever wished there was a way you could predict the magnitude of a tide so that you could anticipate its impact? Since 2012, the Tidewatch network has been doing exactly that. Through an ever-growing series of sensors located throughout the Chesapeake Bay and Virginia's seaside

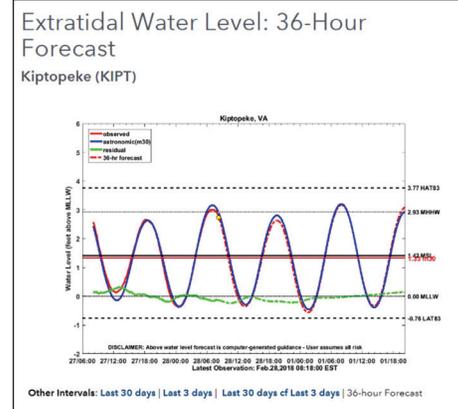


A new sensor installed on Tangier Island will provide much-needed water-level measurements for that historic community.  
©David Forrest/VIMS

Eastern Shore, Tidewatch collects water level measurements, then makes them available to the public with visuals and predictions for high tide.

“Tidewatch was developed by VIMS emeritus professor John Boon and continued to be maintained by him even after retirement,” said Mark Luckenbach, associate dean of research and advisory services. “Calculations for predictions are still based on Dr. Boon’s original algorithm.” Today the system is maintained and updated by Dr. David Forrest, a scientist at VIMS who has worked with Tidewatch since its inception.

Each day citizens of Hampton Roads and the Eastern Shore use Tidewatch for water level predictions, making it one of the most visited area of the VIMS website, [www.vims.edu](http://www.vims.edu). “Fishermen use it,” Luckenbach said, “but then so does the shipping industry.” Interactive prediction charts can also help people better prepare for storm tides. Online charts for each station display the difference between predicted astronomical tide and observed water level at a given location. This difference – called the residual – represents weather-related



Tidewatch provides observed water levels along with 36-hour water-level forecasts.

change in water levels, including storm surge.

There are currently 10 Tidewatch stations that span as far north as Bishops Head, Md., and as far south as Money Point. That number will increase exponentially this year, according to Forrest and Dr. Derek Loftis, providing information for additional locations around Hampton Roads. Loftis leads the StormSense Project in the Greater Hampton Roads Region of Virginia, an inundation forecasting research initiative to enhance emergency preparedness for flooding resulting from storm surge, rain, and tides.

Before data from the new stations can be added to the Tidewatch webpage, though, each sensor must be installed, calibrated, and set up to provide the data stream. Once that has been completed, Forrest builds the tide model and readies it to go live.

While most stations are owned and maintained by other entities such as local municipalities and NOAA, VIMS recently purchased and installed a new sensor near Tangier Island's Port Isobel to provide much-needed water-level measurements for that historic community. StormSense will contribute data from 28 new sensors in tidal areas of Virginia Beach, Norfolk, and Newport News, Loftis said, along with 18 United States Geological Survey (USGS) sensors in the lower Chesapeake Bay. The goal is to have this expanded network of sensors ready to increase the reach of Tidewatch in time for the start of the 2018 hurricane season on June 1.

The Matthew Fontaine Maury Society

### JOIN TODAY

Maury Society members—VIMS supporters who make donations of \$1,000 or more annually—are honored and celebrated at VIMS events, listed in the VIMS honor roll, and receive special recognition in our annual report. To become a member of the Maury Society, visit [www.vims.edu/impact](http://www.vims.edu/impact), and make your gift today.

## DINNER WILL HONOR MAURY SOCIETY DONORS

This spring VIMS will welcome its Maury Society donors to a special evening at the Gloucester Point campus. The yearly event honors those who support VIMS at an annual level of \$1,000 or greater. Donors will enjoy a reception and dinner overlooking the York River. If you are interested in joining, contact Jennifer Dillon at [jsdill@vims.edu](mailto:jsdill@vims.edu).



Dean and Director John Wells addresses supporters at the 2015 Maury Dinner.

## NEW FUND ENSURES CONTINUATION OF BAY SCALLOP RESTORATION AND RESEARCH

For years after bay scallops went missing from Virginia waters, no one could imagine the return of this native species. Seagrass beds were wiped out in the 1930s, and without a habitat to live, grow, and reproduce in, there could be no future for Virginia bay scallops.

Fast forward to 2009. With a successful seagrass restoration project taking hold, Mark Luckenbach, VIMS Eastern Shore Lab (ESL) director at the time, began to speculate about the possibility of bringing bay scallops back to the coastal bays along Virginia's Eastern Shore.

"This is an iconic species," said Dick Snyder, current ESL director. "The bay scallop is the canary in the coal mine. If we can succeed in bringing back the bay scallop, it would highlight the success of restoring these coastal marine habitats and show that they are functioning as they should." While the short-term goal is a sustainable wild bay scallop population, the long-term goal is a sustainable recreational harvest, which would be a boon to tourism on the Eastern Shore.

In a parallel effort, the lab is also continuing working on aquaculture techniques for bay scallops. This work dates to the 1960s when Mike Castagna, the original ESL director, sought to add a species that could be grown by an expanding Virginia aquaculture industry.

Grant funding and a crowdsourcing effort have enabled the ESL to release more than a million bay scallops into the seagrass along the Eastern Shore and gather crucial data on seagrass and bay scallops. With grant funding coming to an end, VIMS needed another long-term funding source to continue its work. No one wanted to lose momentum after such a monumental effort. Data collection must be consistent over the years to be valuable, and the possibility of a gap was real.

Thanks to a new five-year commitment from a private family fund at the Hampton Roads Community Foundation, VIMS is now able to establish a Bay Scallop ESL Fund. The fund will provide support

for hatchery and field expenses related to both bay scallop restoration and bay scallop aquaculture. "The gift comes at a critical time," Snyder said. "It is hard to sustain long-term projects with short-term funding. Long-term funding means we spend less time looking for money and have more time for the science."

"The legacy of the ESL is aquaculture R&D and the jump start of the clam industry," Snyder said. "It's a legacy of supporting aquaculture and basic marine science. This project fits very well with VIMS' mission and role in the industry. The legacy continues as we help to ensure the health and productivity of Virginia's marine resources and add diversity to our local aquaculture."

## W&M BIOLOGY STUDENT FUNDING OYSTER RESEARCH

When William & Mary junior Jill Ashley began her studies she knew she wanted to pursue work related to ecology and the environment. What she learned in a W&M lab changed the course of her studies.

"I was originally doing frog research, but it was not really what I was passionate about," Ashley recalled. "I decided to try other interests to see what would be a better fit." She found that fit at VIMS with Dr. Emily Rivest.

"I've been collaborating with her on the citizen scientist project," Ashley explained. The program, funded by the Dominion Energy Charitable Foundation, takes area high school students out of the classroom and into the water to study the ecology of global change in Chesapeake Bay. "So far I've been helping with water quality and oyster growth analysis."

Ashey's enthusiasm for the work changed her focus to environmental issues related to the marine environment. "I want to educate the public about how science and the ocean's health affects them daily," she



Jill Ashley



Intern Eli Turner helps with wild bay scallop research at the VIMS Eastern Shore Lab.

noted. After graduation she hopes to earn her Master's degree and pursue a career in research.

Her next step, however, will be a fundraising effort through the Charles Center at William & Mary to underwrite the summer research needed for her honors thesis. That work will build on the citizen scientist oyster project, helping us better

understand the role of environmental stressors on the tasty and economically important bivalves.

"Not only will this research opportunity give her a hint of what it's like to be a graduate student," Rivest said, "it will give her the experience of collecting and analyzing data for a project that is her own. It's empowering to do your own experiments from beginning to end."

Each student raising funds for honors work has created a personal video asking for support that is posted on the William & Mary website at <http://gvcmp.us/3vmt69>. Ashley's goal is \$6,000.

## SAVE THE DATE

**After Hours Lecture:**  
**The Science Behind**  
**Oyster Breeding**  
Thursday, March 29,  
7-8pm  
Adults and 10+

**Discovery Lab:**  
**Be a Bay Buddy!**  
Tuesday, April 17, 6-8pm  
All ages

**After Hours Lecture:**  
**It's a Keeper!**  
Thursday, April 26,  
7-8pm  
Adults and 10+

**VIMS Marine Science Day**  
Saturday, May 19,  
10am – 3pm  
Open house: tours,  
exhibits, activities,  
costume contest, and  
more. All ages.

**Discovery Lab:**  
**Animal and Plant**  
**Collections**  
Tuesday, June 12, 6-8pm  
All ages

**After Hours Lecture:**  
**Deep Sea Discoveries**  
Thursday, July 26, 7-8pm  
Adults and 10+

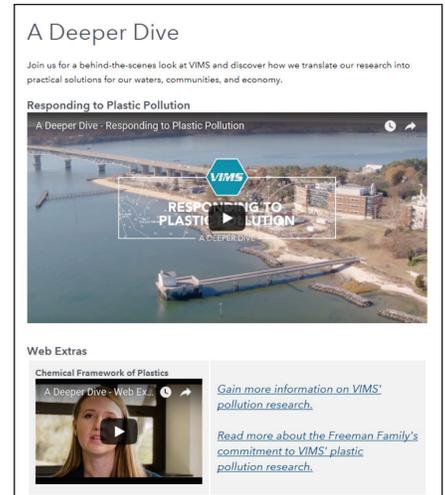
*No charge for events. Reservations required for most events.  
Visit [www.vims.edu/events](http://www.vims.edu/events) or call 804.684.7061*

## HAVE YOU TAKEN A DEEPER DIVE?

VIMS recently launched a new video series, called A Deeper Dive, that provides an insider's look at a different area of the institute each month. Viewers learn about VIMS researchers and students who are finding practical solutions to challenges facing marine life and coastal communities around the world.

The first video explored the challenge of "Building a Living Shoreline" that will both stop erosion and maintain the natural beauty of the shoreline. In February, "Responding to Plastic Pollution" showed how a Ph.D. student and a visionary donor share a passion for ending plastic pollution in our marine environments. A new video is distributed to the VIMS email list each month.

You can join the VIMS email list by signing up at [www.vims.edu](http://www.vims.edu) or by texting "VIMS" to 22828.



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