

# Impact

Sunset from atop the Coleman Bridge. ©G. Molino/VIMS

## FALL 2021 NEWSLETTER

## VIRGINIA INSTITUTE OF MARINE SCIENCE

### NEW DEAN AND DIRECTOR TAKES THE HELM AT VIMS

For the first time in 17 years, the Virginia Institute of Marine Science has a new director and the William & Mary School of Marine Science has a new dean. Nationally renowned ecologist Dr. Derek Aday was chosen to succeed John T. Wells, who retired July 31. Aday was previously head of the Applied Ecology Department at North Carolina State University, university director of the Southeast Climate Adaptation Science Center, a fellow of the American Fisheries Society, and editor-in-chief of its journal.

The move is something of a homecoming for Aday, who grew up in Williamsburg, the son of W&M

sociology professor Dr. David Aday. After more than 30 years away, he said the return to W&M feels somewhat surreal. "I consider Williamsburg my hometown, and William & Mary was central to my childhood there," he recalled. "The university's traditions make it truly special."

Though Aday was already familiar with VIMS and aware of its outstanding reputation for the highest quality marine science, he said the interview process



>Dr. Derek Aday

provided a deep dive into the institute and its people, and he learned a lot throughout it. "I think my greatest takeaway was the consistent message of connection and community at VIMS," Aday said. "I could feel it—even over Zoom—which is pretty remarkable."

That message has been reflected in the welcome he received from the VIMS community. "I have been touched by many warm offers

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### STUDY REVEALS EXTENT, SEASONALITY, AND CAUSES OF BAY WARMING

The Chesapeake Bay is warming, and long-term measurements of water temperature clearly show it. In addition to updating the warming trend, a new study by VIMS researchers reveals a clear seasonal pattern and quantifies the relative contributions to warming brought by the atmosphere, bay tributaries, and the ocean.

Kyle Hinson, a PhD student at the William & Mary School of Marine Science at VIMS, is lead author of the new study, published in the *Journal of the American Water Resources Association*. His co-authors are VIMS scientists Dr. Marjy Friedrichs and Dr. Pierre St-Laurent, fellow PhD student Fei Da,

and Dr. Ray Najjar of Pennsylvania State University.

"During the last three decades," Hinson said, "the bay has warmed three to four times faster in summer than winter. These changes have been driven primarily by atmospheric warming, but in Virginia waters, ocean warming has contributed as well."

The team's modeling experiments show that almost 90% of bay warming is driven by atmospheric effects—warming air temperatures and the increase in heat energy emitted back to the Earth from the atmosphere due to greater concentrations of greenhouse gases. Sea-level rise has slightly

tempered summer warming (as the bay becomes deeper it takes longer to both warm in the spring and cool in the fall), and the influence of warming due to river flow has been limited to the heads of tidal tributaries. The influence of ocean warming is greatest near the bay mouth, where it accounts for more than half of summer warming in bottom waters.

The team's discovery of the seasonality and causes of bay warming offer valuable perspectives on its likely impacts and the most effective management responses and monitoring approaches.

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## 31 NEW STUDENTS ARRIVE TO PURSUE MASTER AND PHD DEGREES IN MARINE SCIENCE

In August, VIMS welcomed its largest incoming class in almost two decades. There are 31 new graduate students on the Gloucester Point campus, bringing overall enrollment in William & Mary's School of Marine Science at VIMS to 95 students.

"This is an exciting time for our graduate program and students," said Professor Linda Schaffner, VIMS' Associate Dean of Academic Studies. Classes began on September 1, with most meeting in person under W&M's indoor masking policy.

The incoming class includes 13 doctoral students, 11 students in the Master of Science program, and 7 students in VIMS' new Master of Arts program (see page 3). Three students are from Virginia, 25 are



from out-of-state, and 3 are international.

Dr. Derek Aday, VIMS' new dean & director, said "Our incoming students bring us new talents and experiences. I'm excited to work with them and to see what they can accomplish."

Dr. Molly Mitchell, director of VIMS' new Master of Arts program, says she is "really excited" about its possibilities.

"Our professional MA program is for people who know they don't want to go into academia or research, but see the science as a really important part of their career path," she says. "It's an interdisciplinary program where the students learn the science but also pursue interests and skills in areas such as outreach, policy, and management."

## JUVENILE STRIPED BASS ABUNDANCE HOLDS STEADY IN VIRGINIA

Preliminary results from an ongoing long-term survey conducted by researchers at the Virginia Institute of Marine Science suggest that the abundance of juvenile striped bass in Virginia has been relatively stable.

The VIMS Juvenile Striped Bass Seine Survey recorded a mean value of 6.30 fish per seine haul in the Virginia portion of the Chesapeake Bay. The 2021 value—which scientists call a recruitment index—is similar to the historic average of 7.77 fish per seine haul and represents the 9th consecutive year of average or above-average recruitment in Virginia waters.

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, noted 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 2021 year class represents the group of fish hatched this spring that will grow to fishable sizes in three to four years.

VIMS has been conducting the survey annually since 1967 for the Virginia Marine Resources Commission (VMRC).

### *New Dean and Director Takes the Helm at VIMS, continued from page 1*

of support and friendship," said Aday. Chief among those was outgoing dean and director John Wells. Throughout their turnover, John "struck the right balance between providing information and giving me time to process it," Aday reflected. "He has done a great job of running VIMS and has positioned the institute to be recognized as a worldwide leader in the field."

The new dean and director is now rolling up his sleeves and bringing fresh eyes and energy to his work with faculty, staff, and students. "It's exciting to have the opportunity to collaborate with these very talented individuals to build on their success and forge a strong future for VIMS," Aday said. As he learns more about VIMS' people and programs, he is forming a vision for that future.

"I want to build on already existing strengths by growing academic offerings, finding new ways to provide training for our students, finding new opportunities for innovation, and

strengthening partnerships, particularly with William & Mary," Aday said. He also wants to take a more interdisciplinary approach to research at VIMS. "The problems the world is trying to solve are complex, with ecological and social components, and multiple disciplines are needed to make headway," Aday asserted. "More and more frequently the scientific community will be tasked with solving big problems that require this type of approach, and VIMS must be ready."

Aday is also enthusiastic about making sure the rest of the world is aware of the impactful work that is happening at VIMS. "We need to be strongly communicating what we do well," said Aday. "We have a great story to tell."

Above all, Aday said, he wants to "make sure we have the most diverse, equitable environment possible. I want everyone to feel welcome and connected, no matter who they are, where they are from, or what their interests are."



>Crew members PJ LeBel III (L) and Ashleigh Thomas (R) seine for juvenile striped bass on the James River.

© J. Buchanan/VIMS



## VIMS LAUNCHES PROFESSIONAL MASTER OF ARTS PROGRAM IN MARINE SCIENCE

VIMS has launched its new Professional Master of Arts program, welcoming 7 MA students along with 24 others seeking MS and PhD degrees in William & Mary's School of Marine Science at VIMS.

"We're thrilled to welcome our inaugural class of MA students," said Professor Linda Schaffner, VIMS' associate dean of academic studies. "Our program will offer them coursework and training for careers in policy, business, outreach, and other areas that require working collaboratively with diverse stakeholders."

The program "is designed to help students translate between what scientists can do and what society needs," said Dr. Molly Mitchell, a VIMS faculty member and MA program director. "It's really important to have students learn the science as well as any MS student, but also gain other skills and experiences that allow them to chart an interdisciplinary path."

Dr. Derek Aday, VIMS dean & director, said the new program "is perfectly suited to help students meet the challenges we face in the days and years ahead, ones that require new kinds of partnerships among scientists, economists, lawyers, policymakers, industry, educators, and community stakeholders. The MA program is designed to prepare students to thrive in these partnerships and to help find answers the world needs now and in the future."

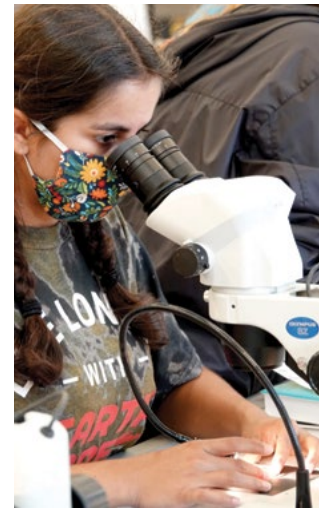
Students enroll in the Professional MA program for up to two years, first pursuing a curriculum of graduate-level coursework that seeks to ground them in the science of marine and coastal ecosystems as well as the statistical and numerical skills needed for research and analysis. The students then gain professional experience through internships and a capstone project, while developing skills in areas such as collaboration, communication, and leadership.

Mitchell said "The internship offers an opportunity to gain job-related skills and network, while during the capstone project, each student will work with a VIMS faculty member and an external advisor to design and conduct a project that addresses an issue at the boundary between marine science and society." Faculty at VIMS can advise in a range of areas such as aquaculture,

habitat conservation and restoration, fisheries management, water quality, and coastal flooding resiliency.

Alumna Jill Bieri (MS '92), director of The Nature Conservancy's Volgenau Virginia Coast Reserve Program, says "I'm excited about the MA program at VIMS and the new opportunities it provides—to do a project not so focused on research and to have an external mentor working in another aspect of the field. This degree will really allow people to translate, integrate, and apply marine science."

MA student Claudia Moncada said "I'm particularly excited about the internship opportunity and the chance to have a mentor outside the academic world. It'll be an incredibly valuable



> MA student Claudia Moncada examines zooplankton under a microscope during the annual new-student field trip to VIMS' Eastern Shore Laboratory. © D. Malmquist/VIMS.

experience, as I'll have access to points of view that are both integral to science communication. I'm also excited to take my work at VIMS in a multilingual direction and reach a wider audience."

## OUTREACH ENDOWMENT HONORS WELLS' CONTRIBUTIONS

To celebrate the extraordinary tenure of Dr. John T. Wells as VIMS dean and director, the John T. Wells Outreach Endowment was established through generous gifts by Phyllis Cothran, Jeanette and David McKittrick, Jim and Bootsie McCracken Rogers, Bill and Lydia Strickland, and Anne Whittemore. Those gifts have since been joined by hundreds of others given as tributes to Wells.

The endowment will support an area of work at VIMS that Wells saw as key to the institute's mission, noting that "reaching out and connecting

people to the science is part of our DNA at VIMS." These connections increase understanding and appreciation of the marine environment and the importance of VIMS' research, which benefits the Chesapeake Bay, coastal oceans, and estuaries worldwide.

At Wells' retirement this summer, VIMS Foundation Board member Jeanette McKittrick announced that nearly a quarter million dollars had been donated to the Outreach Endowment.

From July 2019 - June 2020, the outreach program connected more than 39,000 people to VIMS science: elected officials and educators, K-12 students and lifelong learners, watermen and water lovers, anglers, and members of the marine industry. These people attend events like Marine Science Day and After Hours lectures. They visit with VIMS scientists at street fairs and campus tours. They watch our videos and invite VIMS to their civic meetings.

Even in these days of social distancing, VIMS Outreach has found new, creative ways to share content through digital meetings, webinars, and social media. 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 our scientists and educators can reach.



> VIMS Foundation Board President Bill Strickland queues up the endowment announcement.





>The Schooner Alliance docks in Yorktown, VA.



> The cruise offers an opportunity for colleagues to catch up with each other.



The sun and the temperatures were high on July 30 when a few colleagues joined retiring dean and director John Wells for a short cruise on the York River aboard the schooner Alliance. Trivia questions about Wells entertained everyone and tested their familiarity with the boss. Mark Luckenbach, associate dean of research and advisory service, offered a celebratory toast, and the crew fired a cannon in salute as the boat passed the VIMS campus.

## WELLS CRUISES INTO RETIREMENT FETED BY COLLEAGUES



> Wife Patsy enjoys a sunny afternoon out with her husband.



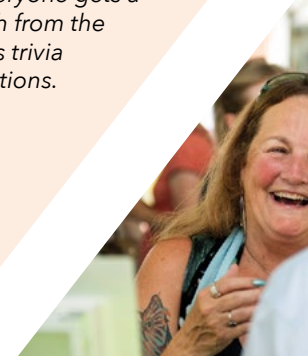
> John Wells enjoying his last official day at VIMS.



> Mark Luckenbach offers a champagne toast.



> Everyone gets a laugh from the Wells trivia questions.







**FACULTY, STAFF, AND STUDENTS CELEBRATED WITH DEAN & DIRECTOR JOHN WELLS ON HIS LAST DAY AT VIMS.**





## VIMS FOUNDATION BOARD WELCOMES NEW MEMBERS

Three new members were elected to the Virginia Institute of Marine Science Foundation Board and began their terms July 1: Jennifer Latour, Rich Lafferty, and Pierce Walmsley.

**Jennifer Latour** is vice president for finance & planning and chief financial officer at Christopher Newport University. She reports to the president, serves on the university's senior executive team, and advises the president on issues affecting financial strategy, personnel, budget, technology, and enrollment and institutional performance. Latour originally joined Christopher Newport as vice president for strategy & planning. Prior to her role at Christopher Newport, she served as the chief financial and administrative officer at VIMS for nine years.

Latour graduated from Christopher Newport University with a bachelor's degree in Mathematics and earned a master's degree in Business Administration from Averett College. She and her husband, Rob, have two children and enjoy living along the York River.

**Richard R. Lafferty** is a CFP® and senior vice president-wealth management and financial advisor at UBS. With more than 37 years with the firm and 43 years advising private clients, he is the longest tenured financial advisor with UBS in Princeton, NJ, and the senior partner in Lafferty/Stryker

Wealth Management. Lafferty started his financial services career in 1976 with Mutual and United of Omaha, became producing broker in March 1978, and joined PaineWebber's Princeton, NJ, office in October 1983, after which it was bought by UBS. He has been there ever since.

A life-long New Jersey resident, Lafferty was motivated to attend William & Mary after a family trip to Williamsburg. He studied biology, geology, and economics, and graduated with a Bachelor of Science degree with the class of 1974. He lives with his wife, Pam, in Pennington, NJ, and has a daughter, Lisa, who works in the U.K. Lafferty and his family are active in boating and kayaking on the Chesapeake Bay.

**Pierce Walmsley** has more than 20 years of executive experience in many different industries and on two continents. Prior to joining East Point Energy as a founding member, he served as the CFO and on the board of Coronal Energy after Coronal purchased HelioSage in 2015. He joined HelioSage as CFO in September of 2008. Prior to that,

he co-founded two successful start-ups, and before that Walmsley spent four years as COO of a specialty retail chain and three years as a commercial loan officer. He is also a director of Froehling and Robertson, Inc, a 133-year-old, privately-held consulting engineering/testing firm.

Walmsley holds a bachelor's degree in Economics and Psychology from the University of Virginia and an MBA from the Darden Graduate School of Business Administration. He enjoys family time, golf, and fishing when he's not in the office.

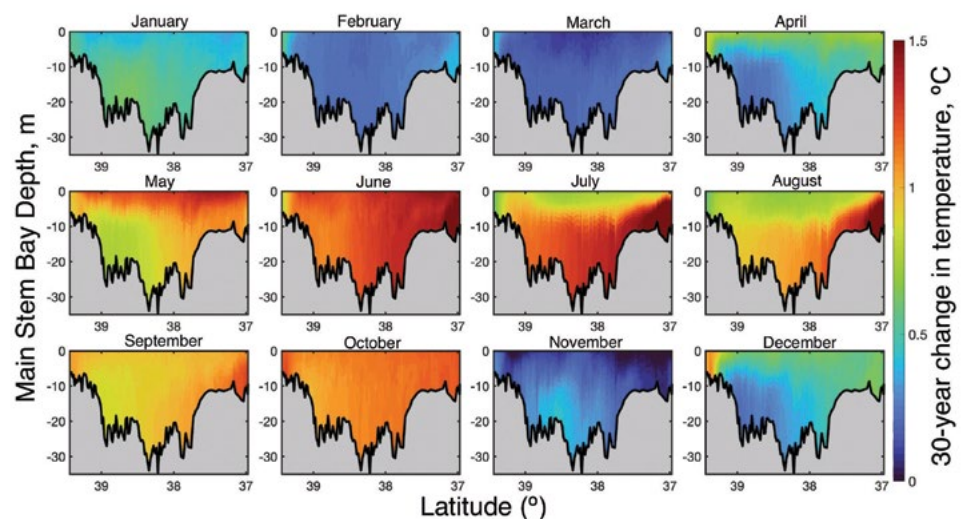


> Outgoing dean & director John Wells welcomes the 2021-2022 VIMS Foundation Board: (front row, l-r) Michela English, Anne Whittemore, Jim Carleton, Bill Strickland, (Wells), Sam Proctor, and Jennifer Latour; (back) Pierce Walmsley, Wayne Johnson, Chip Hortenstine, David Meeker, J.P. Causey, Rich Lafferty, and Rick Hill. Not pictured: Phyllis Cothran, Casey Duplantier, Jeanette McKittrick, Charlie Natale, Coby Owens, and Anne Waleski. ©Capture Photography

*Study reveals extent, seasonality, and causes of bay warming, continued from page 1*

"Elevated rates of warming during our yearly summertime peak in hypoxia and anoxia are particularly concerning," said Friedrichs, "as water's capacity to hold oxygen decreases with increasing temperature."

The warming-related drop in dissolved oxygen contributes to the decrease caused by human inputs of excess nutrients, which fuel algal blooms that suck oxygen from the water when the algal cells die, sink, and decay. Continued warming will therefore challenge recent successes in reducing nutrient inputs and dead-zone conditions due to the Chesapeake Bay Program's restoration actions.



>The Chesapeake Bay has warmed three to four times faster in summer than winter since 1985. Surface and bottom waters are generally warming at a similar rate throughout the bay, except for a slightly elevated rate of bottom warming in the saltier waters near its mouth. Colors show change in monthly averaged temperatures over 30 years, as measured and modeled from the head of the bay (left) to the bay mouth (right). K. Hinson/VIMS.

## EMERITUS PROFESSOR HONORED FOR LEADERSHIP IN SEAGRASS SCIENCE, RESTORATION

For more than two decades, emeritus professor Robert “JJ” Orth has led the successful effort to restore seagrass in the seaside bays of Virginia’s Eastern Shore. His team first began sowing the bays’ shallow waters with eelgrass seeds in 1999. Barren at the time, they are today home to nearly 10,000 acres of lush eelgrass meadow, making them the largest example of seagrass restoration in the world. In fact, they now hold 75% of the world’s restored seagrass acreage.

This year, Orth was chosen as a joint recipient of the Coastal and Estuarine Research Federation’s Odum Award for Lifetime Achievement, along with Dr. Ken Heck of the University of South Alabama and the Dauphin Island Sea Lab.

The pair’s nomination letter notes that “both candidates have shaped our understanding of seagrasses and marine ecology.... Moreover, their science has had a lasting societal impact through their long and successful track record of integration with management and policy.”

Orth’s success in Virginia helped sow a global effort to restore and maintain seagrasses as key components of coastal marine ecosystems. These submerged flowering plants—in trouble worldwide due to nutrient pollution and other factors—provide habitat and nursery grounds for fish and crabs, serve as food for waterfowl and other animals, clear the water by reducing wave action, absorb excess nutrients, and reduce shoreline erosion.

Seagrasses are also an excellent measure of the condition of Chesapeake Bay and other coastal waters because their health is closely linked to water quality. Annual values of seagrass acreage in the bay come from VIMS’ Submerged Aquatic Vegetation Monitoring and Restoration Program, now



> VIMS emeritus professor Robert “JJ” Orth

under the leadership of Dr. Chris Patrick. Created by Orth in 1978, the “SAV Program” is now the de facto yardstick for measuring and sustaining progress toward the Chesapeake Bay Program’s restoration goals and serves as a model for the development of similar programs around the world.

Orth said the award is “a real honor,” and adds that his partnership with Heck “has been a lifetime of great friend-

ship and great research, both as a team and individually.”

Orth, who retired in 2021, began his career at VIMS in 1969 when he enrolled as a graduate student. After earning his master’s at VIMS and his Ph.D. from the University of Maryland, he returned to VIMS as a faculty member in 1974.

## LATOUR RECOGNIZED BY WILLIAM & MARY FOR SUSTAINED EXCELLENCE IN TEACHING

Professor Rob Latour has been honored with the Thomas Ashley Graves, Jr. Award for sustained excellence in teaching. Recipients of the award, named for the 23rd president of William & Mary, are selected annually by the president.

A faculty member in the Department of Fisheries Science at the Virginia Institute of Marine Science, Latour was described by his award nominators as “an interdisciplinary scholar.” His scholarship and advisory service activities focus on collecting and analyzing data needed to assess the health of commercial and recreational fisheries. He directs two ecosystem-level monitoring and assessment programs in the Chesapeake Bay—one for finfish and one for sharks—and another in the coastal waters of the northeastern United



> Professor Rob Latour

States. He also oversees a program that monitors the striped bass population in the bay and mid-Atlantic.

Dr. Mary Fabrizio, chair of Fisheries Science at VIMS, emphasized the relevance of Latour’s scholarship. “The information from these surveys shapes policies for economically important fisheries, generates data for discovery and student training, and provides data for class-

room instruction and student research aimed at tackling societal problems,” she said.

James Gartland, an assistant research scientist who manages the day-to-day operation of the surveys, is also one of Latour’s current Ph.D. students. He noted that “Rob has an uncanny ability to distill complex ecological theory and associated

mathematics into relatively simple concepts that are accessible to all his students.” Gartland, who earned a master’s in marine science from VIMS in 2002, credits Latour with encouraging him to pursue further studies and mentoring him along the way.

Latour began his career at VIMS in 2000. To date, he has advised or co-advised 9 master’s and 11 doctoral students, including his 4 current students, and served on the graduate committees of 38 other students at VIMS and other institutions. He also participates in academic program governance and strategic planning at all levels.

On receiving the Graves award, Latour said, “I’m deeply honored to be recognized. Teaching and partnering with students in discovery have always been vital parts of my professional activities, and I’m incredibly grateful to the students because they push me to keep learning. Together we’ve tackled real-world fisheries problems, and I’m very proud of how our knowledge creation has aided societal needs.”

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

[www.vims.edu/impact](http://www.vims.edu/impact)



## NEW PARTNERSHIP WITH JASON LEARNING YIELDS MICROPLASTICS CHALLENGE

The Virginia Institute of Marine Science has partnered with JASON Learning for the “Beyond the Plastic Bottle Challenge,” an educational activity in which teams of students create a sustainable plan to reduce the debris associated with a source of microplastic pollution in their community.

The challenge is inspired by VIMS research and highlights the work of the Challenge STEM role model, Meredith Evans Seeley, a PhD candidate and Freeman Family Fellow in William & Mary’s School of Marine Science at VIMS. STEM—short for

science, technology, engineering, and math—is a curriculum based on an applied approach to educating students in these four disciplines.

JASON is an independent 501(c)(3) nonprofit founded in 1989 by Titanic

discoverer Dr. Robert D. Ballard. It provides curriculum and learning experiences in STEM for K-12 students, and high-quality professional development for teachers.

“Most people are aware of the damage that plastic does to the environment,” said Seeley. “Those same people are probably aware of the dangers that water bottles and plastic straws pose to nature. But something that a lot of people don’t think about are microplastics: tiny pieces of plastic that either break down from or break off larger pieces, which then pollute filtration systems and eventually find their way

into our food supply when fish and other animals accidentally eat them.”

The challenge will involve grade 6-12 students in their communities through creative, science-informed problem solving. This ties in directly

with the principles of JASON Learning and the formal and informal curriculum materials developed by marine educators at VIMS.

“JASON is honored to partner with VIMS,” said President Eleanor Smalley. “We are looking forward to seeing the real-world solutions that students develop, lending to the mission of micro-plastic reduction. We’re also thrilled to have such a talented role model spearheading the competition and offering her knowledge on the subject.”

The challenge will be an ongoing campaign, encouraging student participation on a local level throughout Virginia. Both organizations see the benefit of local solutions to problems that exist on a global scale. While there is no grand prize, JASON and VIMS will highlight participants with effective and creative ideas throughout the campaign’s lifetime. Students and teachers can share their progress using the hashtag #VIMSPlasticChallenge.

Learn more at [jason.org/virginia-institute-of-marine-science](http://jason.org/virginia-institute-of-marine-science)



*Microplastics are tiny pieces of plastic that break down from or break off larger pieces.*  
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