

June 2020

Bay Water Quality



Marsh Restoration



Oyster Restoration



## Brief...but Interesting

Highlights from Horn Point Laboratory



## A statement from President Goodwin on UMCES' commitment to diversity

***Injustice anywhere is a threat to justice everywhere.***

**— Martin Luther King, Jr.**

Chancellor Perman released a powerful statement, co-signed by all the USM Presidents, on the University System of Maryland's position on the rising racism, bigotry, and violence against minorities. [The statement is posted here.](#)

These disturbing times challenge us to reflect on our values to ensure that there is no place for any form of racism or discrimination in our institution and to reaffirm our commitment to ensuring diversity of all kinds within all facets of our enterprise. We must be the change we wish to see in the world (Mahatma Gandhi).

During the development of the UMCES Strategic Initiatives, the most pervasive issue in



the institutional deliberations focused on the lack of diversity in the Earth and Ocean Sciences. This is particularly striking as minority groups are often most heavily impacted by their environments. We learned from our students, staff, and faculty that social justice and environmental justice is the universal concern and cross-cutting theme. We heard that the desire to provide opportunity is a common thread across all our units. The insights from our community included the fundamental values of fairness and ensuring that the U.S. strives toward equal opportunity under shifting demographics—but this national imperative has many other facets.

The face of the U.S. workforce must reflect the face of America to ensure a talented workforce is available and continues economic growth which sustains global leadership. America is the global leader—for good or for bad—and our actions have a global impact. This has been evidenced by the rapid spread of demonstrations for positive change motivated by the killing of George Floyd and Ahmaud Arbery, not only across the U.S in cities both big and small, but also in many major cities around the world.

UMCES garners international recognition for our research and our alumni's influence on the environment. We also take pride in our understanding of how our research serves society. This is bolstered by our commitment to contribute to break down structural racism and oppose all forms of bigotry.

UMCES is committed to cultivating inclusivity, equity, and diversity in a supportive environment. We are committed to be an exemplar of environmental science professionals reflecting the face of the communities served by its work. Societal relevance of scientific research improves when supported by a diverse workforce. (UMCES Strategic Initiatives, 2019)

We will continue dialogue across UMCES, be cognizant of the mental health stress arising from both the pandemic and injustice crises, and that ensure we are reaching out to all our community for support.

Please continue to take care of your families, colleagues, and communities as we overcome these turbulent times.

**For more on UMCES' commitment to diversity, equity, and inclusion, click [HERE](#).**

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## **Pumped-up performance: Oysters' filtering feat overstated**

Is it true? Oysters filter 50 gallons of water a day. While oysters are ecological superheroes, [Matt Gray](#), HPL assistant professor, says such filtering capacity is not so likely in the real world. An oyster's propensity to filter anything close to 50 gallons a day is a little like Goldilocks in the classic fairy tale: Everything has to be just right. And in the wild, that sweet spot is hard to find.

That's not to say oysters don't play an important role in the Bay. They're "powerful ecosystem engineers," Gray said, building reefs with their shells that provide habitat for fish, crabs and other marine creatures. And when conditions are optimal, he added, "they



can really have transformative effects on water quality and clarity. But they are not a silver bullet,” he said. “Like any animal on Earth, there needs to be some baseline level of environmental quality in which they can function and live before they can have a major role in improving environmental health.”

[Read More](#)

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## Underwater grasses help to fight acidification in the Chesapeake Bay

Scientists at the University of Maryland Center for Environmental Science (UMCES) have found that the comeback of submerged aquatic vegetation (SAV) is helping to remove nutrient pollution and providing habitat for baby crabs and rockfish. But the grasses may also offset the growing problem of acidification caused by climate change.

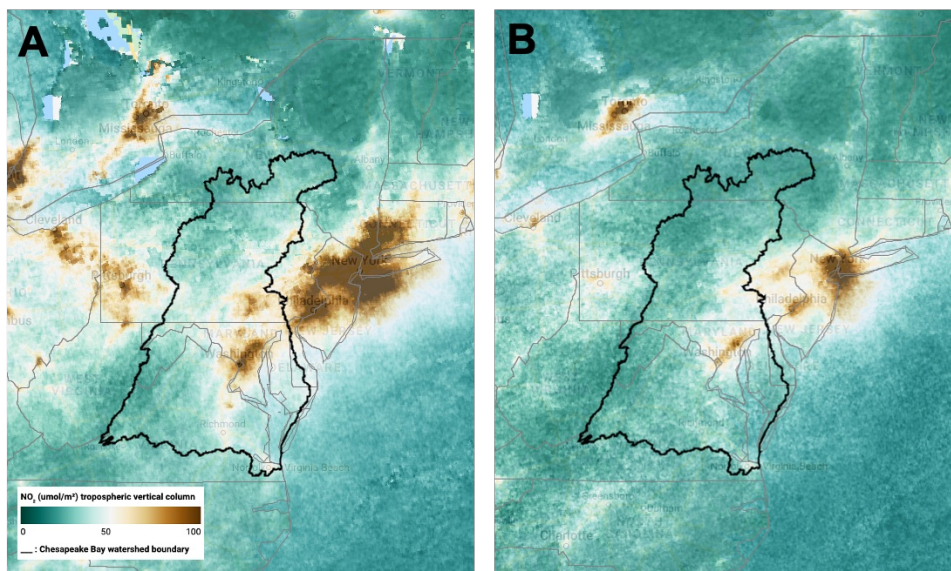
Study coauthor [Jeremy Testa](#), associate professor at UMCES, says SAV’s ability to buffer water against acidification is an “unanticipated benefit” of restoring SAV to manage nutrient pollution. ***“Just like people take TUMS to neutralize the acids that cause heartburn, SAV beds send carbonate minerals to the lower Bay to neutralize acids there,”*** Testa explains.

Testa, an HPL graduate, and a team of HPL faculty and students collaborated with fellow UMCES scientists and a global team of scientists to document these observations.

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Nitrogen dioxide (NO<sub>2</sub>) concentrations in A) March 2019 and B) March 2020

## Pulling back the curtain: what the COVID-19 response reveals about environmental pollution

Ninety-one percent of the world's population lives in a region where air pollution levels exceed World Health Organization guidelines (WHO, 2018). Currently, the COVID-19 pandemic has led to over 376,000 deaths, about 11 times fewer deaths than are caused annually by air pollution. [Anna Windle](#), HPL Graduate Research Assistant, studies both satellite and drone remote sensing to improve water quality assessment in the Bay and to understand factors impacting water quality. Air pollution directly impacts water quality and can be measured by satellites in space.

Anna recently assembled an interactive model to demonstrate the levels of NO<sub>2</sub>, nitrogen dioxide, in our atmosphere during the coronavirus pandemic. Nitrogen dioxide (NO<sub>2</sub>) is primarily emitted from burning fossil fuels such as diesel, gasoline, and coal. Chemical reactions and weather also determine the amount of NO<sub>2</sub> in our atmosphere, which ultimately impacts water quality.

[Explore the model](#)

[Read More](#)

Horn Point Laboratory presents

## CHESAPEAKE BAY 101:

a series of virtual seminars to dive  
into science and see the Bay in a whole new way

Grab a beverage and meet our faculty and students for 30-minute seminars  
with opportunity for conversation and questions from the audience.





Join us virtually for a series of 5 seminars hosted by HPL faculty to shed light into the mysteries of the Bay, *Bay 101 with HPL*.

Seminars will be every Wednesday from 5 to 5:30 pm, beginning July 8 thru August 5.

Pour your favorite beverage and join us to learn about the Chesapeake Bay.

Free and registration is required.

**July 8:** *"Chesapeake Bay's currents and winds for sailors and water enthusiasts"* Bill Boicourt

**July 15:** *"News on living shorelines to protect our waterfronts"* Cindy Palinkas

**July 22:** *"Bolstering the Maryland oyster aquaculture industry"* Shannon Hood

**July 29:** *"Modeling: what it is and how it helps predict the future of the Chesapeake Bay"* Kenny Rose

**August 5:** *"Chesapeake Bay underwater grasses"* Lorie Staver

[Register](#)

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## Student Highlights:

[Morgan Ross](#) wins "Best Presentation" in the [REEF](#) competition hosted by IMET/UMCES. The Ratcliffe Environmental Entrepreneurs Fellowship (REEF) is a one-year program to help young scientists cultivate leadership and business skills necessary to bring their research into commercial markets and enhance their appreciation of the potential business implications of their research.



[Pinky Liao](#) received the 2020 [Ryan Saba Student Memorial Fellowship](#)

As the 2020 fellow, she was awarded \$2,000 to advance her research. Pinky is the 6<sup>th</sup> recipient of this prestigious fellowship in support of a student's career goals and dreams for an environmentally healthy planet.

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Paulina Huanca



Anna Windle

[Paulina Huanca](#) and [Anna Windle](#) were each awarded a \$2,000 scholarship from the Mid-Shore Chapter of the [Izaak Walton League of America](#) (IWLA). The local chapter's long-standing support of HPL students has done much to create educational opportunities that could not otherwise be realized.

## Faculty Highlights:

[Pat Glibert](#) has been elected the next President of the Association of the Sciences for Limnology and Oceanography, [ASLO](#). Mike Roman remarked, "Being elected President of ASLO by its members is a well-deserved affirmation of Pat's many contributions to this leading professional society of researchers who study both freshwater and marine waters around the world."



With ongoing research programs spanning from the estuarine waters of the Chesapeake Bay to the open waters of the world's oceans, Horn Point Laboratory is a national leader in applying environmental research and discovery to solve society's most pressing environmental problems.

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