#### THE UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE – Horn Point Laboratory

**SEPTEMBER 2022** 



# New Horizons: Discovery, Experience, Collaboration

#### Governor Hogan, Horn Point Lab and Partners plant the 10 Billion oyster in the Chesapeake

Saturday, August 20, 2022 was a great day for Chesapeake Bay restoration efforts. Mike Roman, director of UMCES Horn Point Laboratory, and Stephanie Alexander, HPL Oyster Hatchery manager, attended an event hosted by the Oyster Recovery Partnership to celebrate 10 billion oysters (yes, with a B!) planted in the Chesapeake Bay. All part of the effort to restore the health of Chesapeake Bay. Governor Larry Hogan led the ceremonial planting to mark the significant 10 billion milestone. Special guests from Maryland Department of Natural Resources, National Oceanic and Atmospheric Administration (NOAA), the U.S. Army Corps of Engineers, Headquarters, and the public/private oyster industries were also part of this "shell-abration."

photo courtesy of Oyster Recovery Partnership (ORP) **READ MORE** 



# "Protecting Nature with Nature"

What can be done when breakwaters fail? Whether they wear





down from storms and time or sea level rise, something must be done to protect property shorelines from erosion. Matt Gray, HPL assistant professor, and researchers with the National Wildlife Federation are collaborating on a greener, potentially less expensive solution to

defend shorelines. They are topping these failing structures with "oyster castles", building blocks seeded with oyster larvae that will interlock and build vertically as the oyster shells grow. Another benefit of oyster castles is the creation of habitat for marine life and removal of nitrogen from the waters through the oysters filtering. Gray reminds us, "there are hundreds of breakwaters throughout the Chesapeake Bay." "So, if this works," he added, "that's a way we could green the gray infrastructure and prolong its effectiveness."

Photo courtesy of Bay Journal - Dave Harp photographer READ THE FULL STORY IN THE BAY JOURNAL WATCH VIDEO WUSA CHANNEL 9



### ELECTRICAL BACTERIA MAY HELP SOLVE ENVIRONMENTAL CHALLENGES

"Chesapeake Bay mud may be stinky", says <u>Sairah Malkin</u>, HPL

Assistant Professor and biogeochemist. She notes the smell comes from a toxic sulfide in the mud. In this mud, are squiggling mud dwellers called cable bacteria. Cable bacteria are thinner than a human hair and have the ability to channel electricity. Cable bacteria use that power to rewire their surroundings. Malkin and colleagues are working to understand how these mighty mud dwellers can help clean up coastal ecosystems. **READ MORE IN "SCIENCE NEWS"** 

# Faculty, Students, Staff:

### Alan Williams: Next Generation Scientist

PhD student, Alan Williams is applying his mechanical engineering





background to design robotics that may improve quality, efficiency, and sustainability of oyster aquaculture in the Chesapeake Bay. He is highlighted as a Next Generation Scientist. **READ MORE** 

Christine Knauss: The Far Reaching Impact of a Scholarship

Christine defended her PhD thesis in December 2021 and is now completing a post doc at the Horn Point Lab. She has applied many of the skills she learned playing field hockey in her undergraduate years while earning 2 National Championships. "I was studying the impacts of microplastics on oysters, particularly oyster larvae ... there's so



much money and research and efforts going into repopulating the Chesapeake Bay oyster population," stated Knauss. "I was wondering if microplastics needed to be something that we should think about in terms of where we put those new oyster beds where we put our oysters and things like that." **READ MORE** 

## Professor Kenny Rose Honored by Colleagues

Receiving the prestigious Oscar E. Sette award affirms consensus by colleagues of <u>Dr. Rose's</u> demonstration of excellence through research, teaching, and administration. **READ MORE** 



# Perceiving and Talking about Climate Change

It's on nearly everyone's mind, so why do only 35% of people talk about climate change even occasionally? One issue is people fear nasty arguments. Matt Houser, HPL Associate Research Scientist and Regenerative Agriculture Fellow for The Nature Conservancy, related his research on perceptions and talking about climate change in a recent *Climate Forward, New York Times* 



article. Houser shares, "We shouldn't be scared to have these discussions. We should just be strategic, thoughtful and careful about how we enter them." "You don't need to enter into a broader discussion about changing the global reliance on petroleum," said Houser. "Talking about local solutions to local problems you can see in your own community is often more productive."

#### Seagrasses Appear To Be Thriving, But Is Something Lurking Below?

Thick submersed seagrasses and blue sky make a beautiful image, but all may not be as beautiful as it appears. What is happening below, at the bottom of these waters? HPL faculty, Judy O'Neil and Jeff Cornwell, are investigating



what is causing the harmful algae, *cyanobacteria*, to grow in the bottom waters of critical submersed aquatic vegetation (SAV) in the Chesapeake Bay. What may be potential consequences for these ecosystem's resilience? Addressing these questions is critical because the expansive SAV bed on the Susquehanna Flats plays a vital role in buffering the effects of acidification throughout the Chesapeake Bay. Seagrass functions much like kidneys in humans, filtering essential nutrients and sediment. Increasing cyanobacteria is related to climate change and is concerning because cyanobacteria mats may cause serious environmental, economic, and health issues.



#### Microplastics Research In Local Waters

Jamie Pierson and William Nardin, HPL faculty, have been out on the Choptank river and its tributaries gathering water samples and strategically placing boards carrying specific through our waterways and what happens to them along the way. How do different plastics breakdown? What are the impacts of marsh and sea grass on plastic transport? Do different types of debris move in different ways? This is all part of the NOAA Marine Debris project grant awarded to Pierson and Nardin. Visit the project's website to learn more about microplastic reserach, and why a short-wave infrared microscope is so important to the project's success! Photo by Dave Harp

LEARN MORE

### Horn Point Welcomes Four New Students for Fall 2022

Kerry Burns Michael Kalinowski Shayna Keller Ericka Koontz Left to right



# SCIENCE IS FUN & SERVES EVERYONE!

#### OPEN HOUSE Save the Date! Saturday, October 15

"This is the best day of the year for the community to learn about the science of the Bay. Everyone at the lab is on deck to explain their research with activities and displays that make it easy to understand," says Horn Point Laboratory Director, Mike Roman.



**Free and open to the public, kids scavenger hunt with free t-shirt** Hands-on activities for all ages to explore the world of marine science. Dive into science and see the Bay the Horn Point Way! **LEARN MORE** 

#### The Breakwater is Your Oyster

Join scientists at Horn Point Laboratory and the National Wildlife Federation for an afternoon learning about a new restoration technique, the



# The Breakwater is Your Oyster:

oyster retrofit. We recently installed the first pilot project and would love to share what we have learned with you.

Thursday, September 22 @ 2:00pm

For location detail please RSVPPlease RSVP to Amanda Poskaitis at <u>poskaitisa@nwf.org</u> or 443-842-7529



## Help Support the work of Horn Point Lab

Are you committed to helping solve our environmental challenges? Perhaps you are passionate about educating the next generation of environmental leaders? Do you support science for its contributions to policy and advocacy work? By supporting the Horn Point Lab you can fulfill that purpose.

# Even the smallest gift makes meaningful impact!

Visit our **Giving Page** or click on the link below.

# Make a Gift

Located in Cambridge, MD, Horn Point Laboratory is part of the University of Maryland Center for Environmental Science --a fully-accredited graduate school and research facility conducting environmental research on a variety of ecosystems spanning from the estuarine waters of the Chesapeake Bay to the open waters of the world's oceans. Horn Point is a national leader in applying environmental research and discovery to solve society's most pressing environmental problems.

#### **VISIT OUR WEBSITE**



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