

ENVIRONMENTAL INSIGHTS

NEWS FROM THE UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE



Meet UMCES President Fernando Miralles-Wilhelm

As the University of Maryland Center for Environmental Science (UMCES) prepares to celebrate 100 years of working towards advancing scientific knowledge of the environment, we welcome **Fernando Miralles-Wilhelm** as president, the seventh in our history. A renowned ecosystem hydrologist, Dr. Miralles-Wilhelm has a career of over 30 years in academic leadership, bringing together his expertise with government, private sector, and international development organizations, most recently as dean of George Mason University's College of Science. He will also serve as the University System of Maryland's Vice Chancellor for Sustainability.

"Our biggest challenge as a society is the enhancement of the overall quality of our lives while preserving the natural resources that support it," said Miralles-Wilhelm. "This is a complex challenge everywhere in the world and Maryland can serve as a laboratory, of

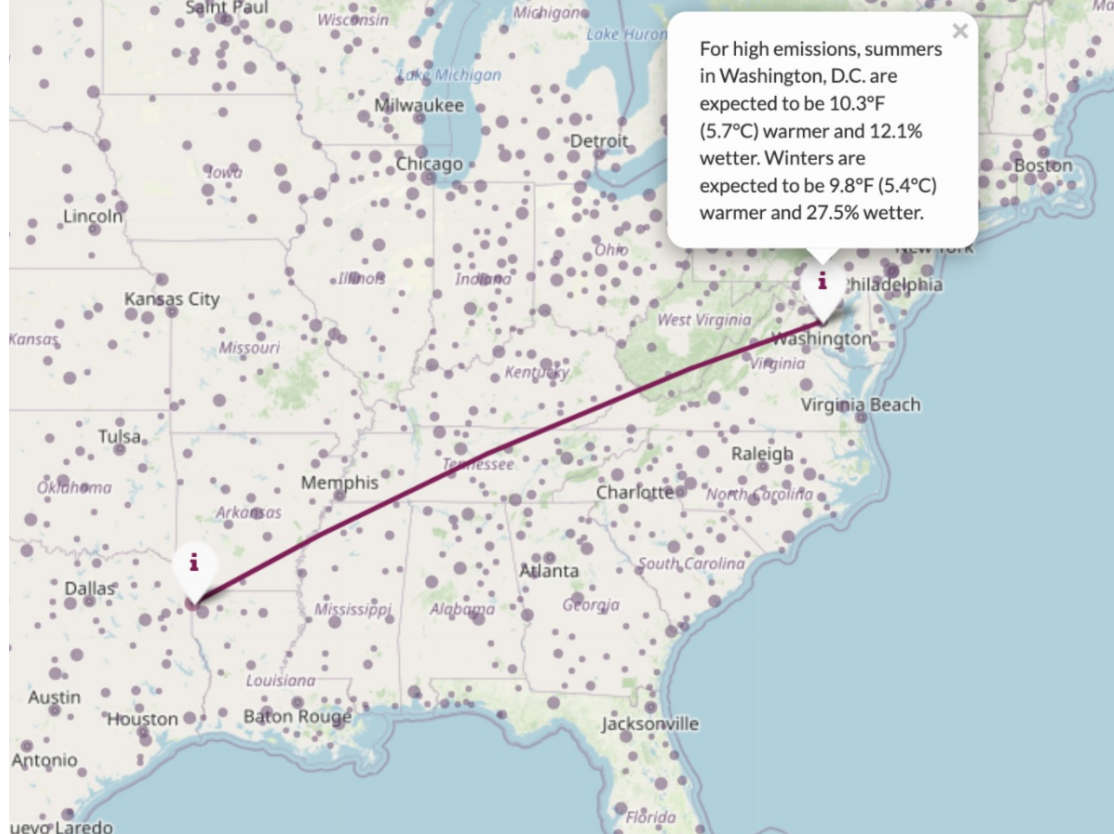
sorts, to experiment, test approaches, learn and continue to improve. UMCES is uniquely positioned to address these challenges and deliver on such opportunity, while continuing to be the most important environmental science knowledge enterprise in Maryland and increasing its global presence." [MORE](#)



Horn Point Scientists partner with City of Cambridge on flood mitigation project along Choptank River

An UMCES research team based at the Horn Point Laboratory will partner with the the City of Cambridge to build and monitor a natural shoreline flood mitigation project along the Choptank River. The city's flood mitigation project will create a hybrid flood barrier along the river that is integrated with a living shoreline to prevent erosion, mitigate sea-level rise, improve water quality, and reduce wave strength and storm surge.

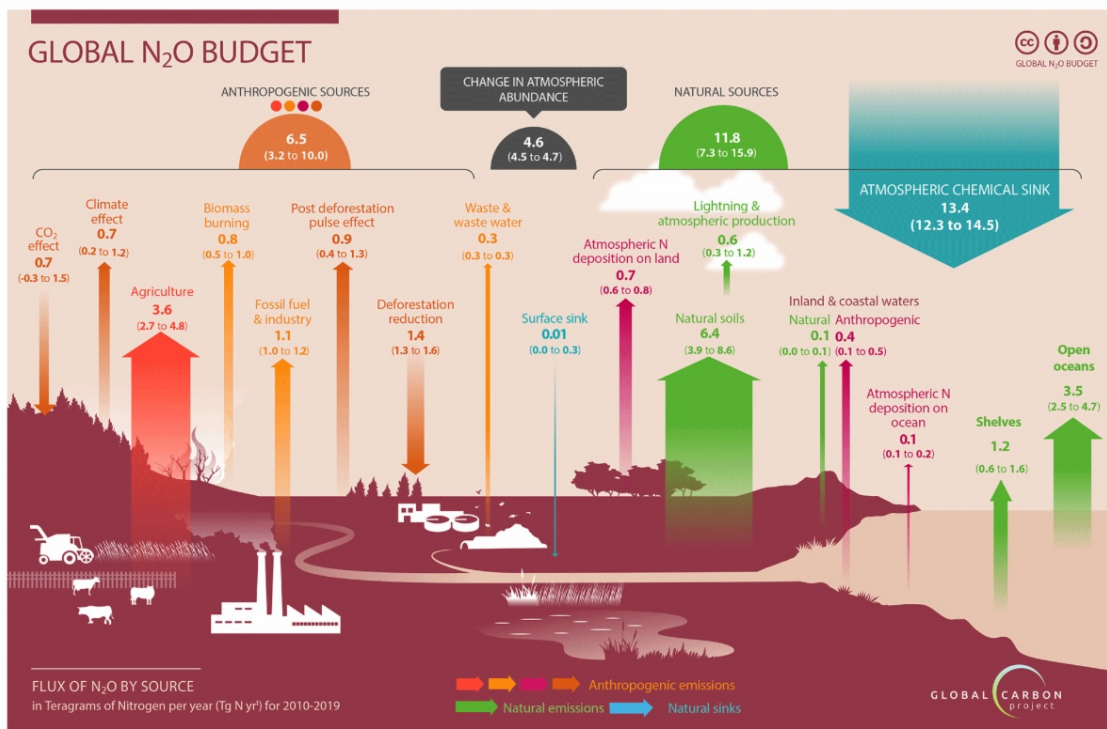
"Maryland's entire eastern shore community is a front-row witness to climate change," said Professor **Ming Li**, "The community is already starting to feel the impact of sea level rise. Kids cannot get to school because the streets are flooded, buses can't get to houses. We are trying to protect the town and generate new knowledge that will be useful to communities beyond Cambridge." [MORE](#)



Changing climate will make home feel like somewhere else

An interactive web application developed by Professor **Matt Fitzpatrick** allows users to search 40,581 places and 5,323 metro areas around the globe to match the expected future climate in each city with the current climate of another location, which provides an example of what could be in store. *What will my community's climate be in the next decade? How hot will summers be? Will we see any snow in winter?* Fitzpatrick's app helps to provide answers to these questions.

"In 50 years, the northern hemisphere cities are going to become much more like cities to the south," said Fitzpatrick. "Everything is moving towards the equator in terms of the climate that's coming for you. And the closer you get to the equator there are fewer and fewer good matches for climates in places like Central America, south Florida and northern Africa. There is no place on earth representative of what those places they will be like in the future." [MORE](#)



Study finds nitrous oxide emissions increased substantially from 1980-2020, greatly accelerating climate change

Emissions of nitrous oxide continued unabated between 1980 and 2020 when more than 10-million metric tons were released into the atmosphere primarily through farming practices. The use of commercial fertilizers and animal waste accounted for 74 percent of human-driven nitrous oxide emissions in the 2010s according to the report, *Global Nitrous Oxide Budget 2024*, led by researchers at Boston College and UMCES.

"Nitrous oxide is sort of the forgotten greenhouse gas," said Professor **Eric Davidson**. "In addition to being an important, potent, long-lived gas that contributes significantly to climate change, it also destroys the protective ozone layer in the stratosphere." Excess nitrogen contributes to soil, water and air pollution, while exacerbating climate change. [MORE](#)



Appalachian Laboratory gives Inspiration Award to GaCo

UMCES' Appalachian Laboratory recently presented FIRST Robotics Competition Team 1629 Garrett Coalition (GaCo) with the 2024 Appalachian Laboratory Inspiration Award. Launched in 2022 as part of the lab's 60th anniversary, the award recognizes individuals, non-profit organizations and for-profit firms that support or engage in STEM activities in the region surrounding Frostburg, Md.

"Every scientist at our lab, working at the highest levels of scholarship, has an origin story that starts with a science encounter as a young person; mine was in propagating native plants and removing invasive Brazilian pepper plants at the Fern Forest Nature Center in Fort Lauderdale, Florida," said **David Nelson**, director of the Appalachian Laboratory. "With this award, we want to recognize those individuals and organizations, like GaCo, who are playing a part in the stories of future scientists." [MORE](#)

UMCES in the News

[Maryland communities face multiple obstacles to win help for climate damage](#) (Maryland Matters)

[New project at Inner Harbor turning regular people into amateur marine scientists](#) (WBALTV 11)

[Giant venomous spiders are the latest invasive species. Why are we getting so many?](#) (Fast Company)

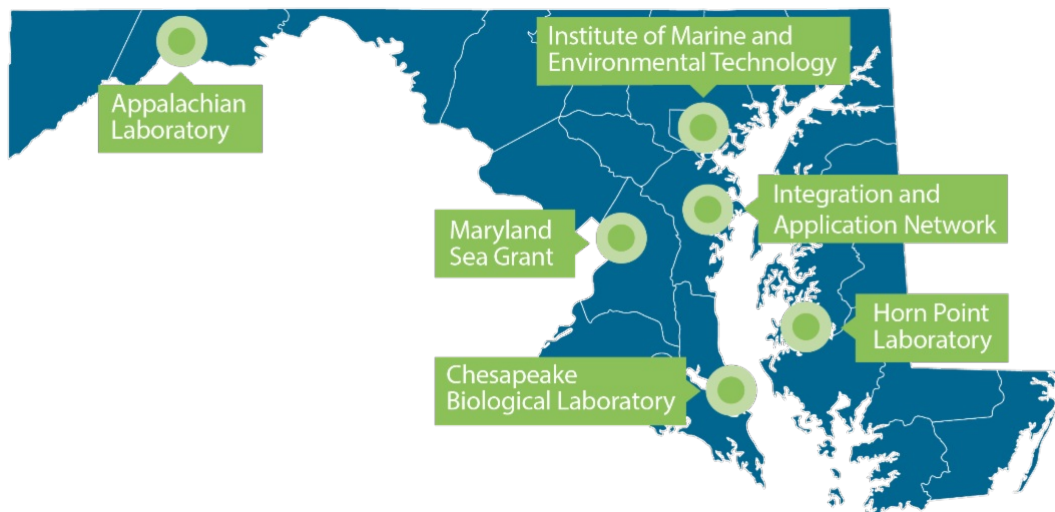
[What will be flooded in 25 years? Interactive mapping makes predictions](#) (WUSA9)

[Researchers prepare for blue crab stock assessment to help guide future management](#) (MD Department of Natural Resources)

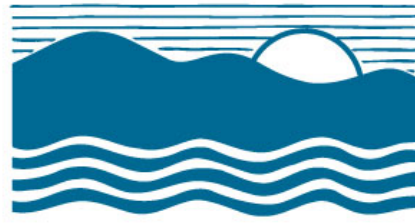
[Maryland map shows where state could be underwater from sea level rise](#) (Newsweek)

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