## SUMMER 2021 Up Front

### **QUICK STUDY**

A quarterly collection of high points and hurrahs that make us feel great about Buckeye Nation

#### **PORTRAITS IN PRESTIGE**

In April, third-year student Ose Arheghan was named Ohio State's ninth Truman Scholar. The award goes to third-year students based on their potential to be future public service leaders. Arheghan, from Shaker Heights, Ohio, has led as chair of the Undergraduate Black Caucus and cohort leader for the Queer and Trans People of Color Cohort at Ohio State. In 2018, Arheghan was named to NBC's #Pride30 list for teen LGBTQ activism.

"I feel really affirmed about my career path," Arheghan says. "It feels really good to see folks who are established in their careers say, 'OK, I see what you're doing, I see the path that you're on and I want to support you on this path because I think you're going to go far.""

Additionally, Mitchell Ticoras, a third-year studying molecular genetics, was named a Goldwater Scholar this spring. He's the 65th Ohio State student to earn the honor, which recognizes undergraduate researchers in science, math and engineering.

#### **FUTURE'S SO FULBRIGHT**

Ohio State produced more Fulbright Scholars than any other institution in the country in 2020–21. The Fulbright Program is the flagship international education exchange program sponsored by the U.S. government. Ohio State had 15 scholars this year and has been a top producer of Fulbright Scholars for six of the past seven years.

#### **REVVED-UP RESEARCH**

Ohio State will play a leading role in helping ensure the next generation of vehicles are more fuel efficient. The university recently was awarded a \$5 million Department of Energy grant that will help expand and enhance work to optimize fuel efficiency in connected and automated vehicles. This research will be led by the university's Center for Automotive Research, which is dedicated to advancing innovation in automotive technology and supporting economic development regionally and nationally.

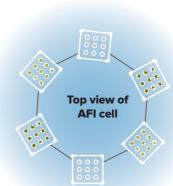
#### SUSTAINABILITY

# Islands in the stream

**ALMOST HALF OF OHIO'S LAKES**, wetlands and streams are tainted with nutrient runoff — fertilizers and animal manure, intended for land, carried into bodies of water by rain and gravity. Once in water, those chemicals threaten plant and animal life, water supplies for humans and local economies that depend on water recreation. Floating islands peppered with nutrient-chomping plants could be part of a solution. Ozeas Costa, associate professor of earth sciences, and graduate student Zhaozhe Chen are conducting research on artificial floating islands (AFIs) at Ohio State Mansfield. Here's a look at how these devices work and how they can help offset the effects of nutrient runoff. — GINA LANGEN '83, '92 MA

Costa and Chen have deployed AFIs in Milliron Research Wetlands on the Mansfield campus, in both open wetlands and in 40-gallon tanks with controlled conditions.

In the experiment, several AFIs are linked together in cells. Islands within each cell contain two different plant species to help determine how effectively different plants munch up pollutants. A few islands contain no plants at all, serving as experimental controls.





Used worldwide for the treatment of effluents — including industrial wastewater, agricultural runoff, municipal sewage and stormwater runoff — AFIs are environmentally friendly "green infrastructure" and can deliver waterquality improvements at lower costs compared to conventional water and wastewater treatment plants.

> Crowns and shoots of aquatic plants sit above the floating platform.

Cross-section view of AFI

> AFIs mimic natural conditions and improve biodiversity in streams, lakes, reservoirs and urban ponds.

The potential health and environmental damage from nutrient pollution in the United States is estimated at \$210 billion per year. The platform is made of PVC pipe and EVA foam (think pool noodles).

The root systems below water trap contaminants and host communities of microbes, which thrive on the contaminants in a process called bioremediation.