HBCU 1886

2025-26 RESEARCH HIGHLIGHTS

The University of Maryland Eastern Shore (UMES) continues to focus on cutting edge research and development projects, including:

- **DRONE MEDICATION DELIVERY PROJECT**
- **LIVING MARINE RESOURCES COOPERATIVE SCIENCE CENTER PROJECT**
- **HORMONAL REGULATION OF HSV-1 REPLICATION IN NEURONS PROJECT**
- **IR-4 CROP PEST MANAGEMENT PROGRAM PROJECT**

UMES was founded in 1886 and is a historically Black, Carnegie-classified doctoral research, land-grant institution offering more than 90 academic programs and concentrations leading to degrees from the baccalaureate to the doctorate.

UMES provides affordable access to higher education while driving innovation in fields like agriculture, science, engineering, and aviation. The University is also home to a variety of health profession programs, including the physical therapy, rehabilitation services, rehabilitation counseling, rehabilitative psychology, kinesiology, physician assistant, and pharmacy programs.

DRONE MEDICATION DELIVERY

1

UMES is developing aviation tools and training to help mitigate health disparities.

Through a Department of Transportation (DOT) SMART grant, UMES is participating in a drone delivery project. Activities include supporting flight demonstrations, data collection, community engagement activities, and assisting with drone operations between Crisfield, MD and Smith Island.

UMES students have logged more than 200 hours participating in field operations, assisting with planning drone delivery routes, and supporting the technical implementation of uncrewed aircraft systems (UAS) services for medical delivery applications.

Through this project, UMES is collecting data to analyze the potential for the health benefits of this technology while developing the local workforce.

2

LIVING MARINE RESOURCES COOPERATIVE SCIENCE CENTER

The Living Marine Resources Cooperative Science Center (LMRCSC) trains and graduates top tier students in marine science for careers in research, management, and public policy that support the sustainable harvest and conservation of our nation's living marine resources. With its partner institutions, the LMRCSC conducts research on marine and estuarine systems congruent with the interests of NOAA Fisheries.

The center is involved in collaborative research projects involving stock assessment, essential fish habitats, resource economics, and sustainable aquaculture. LMRCSC research has contributed information needed for the protection, management, and restoration of coastal and marine fish habitats and more than 20 species of finfish, shellfish, and protected species.

3

HORMONAL REGULATION OF HSV-1 REPLICATION IN NEURONS

UMES is studying the effects of the Herpes Simplex Virus (HSV) on brain neurons. HSV is one of the most prevalent viruses to infect humans. While the virus remains dormant in most people, increased stress can cause the virus to manifest.

"The typical manifestation is a cold sore," says Dr. Victor Hsia of the UMES School of Pharmacy and Health Professions. "But sometimes it can be severe, like herpetic keratitis or encephalitis, and sometimes, it can be lethal."

In addition to gaining a greater understanding of the effects of HSV-1 on the brain, Hsia also wants to dispel common misconceptions surrounding the virus and how it spreads.

"People believe that HSV-1 can only infect people with a lower socioeconomic status or who don't take care of themselves, and that's not true," he said. "The virus can affect anybody. People can get this infection at home, in school, or in movie theaters."

4

IR-4 CROP PEST MANAGEMENT PROGRAM

UMES is housing the IR-4 Project Northeast Region. Interregional Research Project Number 4(IR-4) is a USDA-funded national research program that facilitates the registration of safe and effective chemical and bio-based pesticides for fruits, vegetables, herbs, nuts, ornamentals, and other specialty crops and for minor uses on major crops like corn, soybean, cotton, wheat, and other small grains.

Pests do not discriminate between major crops and specialty crops. While the crop protection industry focuses its research on major crops, such as corn, cotton, and soybeans, growers of specialty crops are often left with fewer tools for effectively and safely managing pests. IR-4 conducts required research to meet this important need.