

# Thomas Harriot College of Arts and Sciences

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lg/September 16, 2014

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FOR IMMEDIATE RELEASE

**ECU to Acquire Aquatic Robot for Coastal and Marine Research**

GREENVILLE, N.C. (Sept. 16, 2014) — Four researchers in the Thomas Harriot College of Arts and Sciences Department of Biology at East Carolina University have secured a Major Research Instrumentation grant from the National Science Foundation. The $281,393 grant, awarded on Sept. 1, is for the acquisition of an Acoustic Wave Glider, an ocean-going, aquatic robot used for coastal and fisheries research.

Under the direction of Drs. Joseph J. Luczkovich, John P. Walsh, Mark W. Sprague and Roger A. Rulifson, the Acoustic Wave Glider will be custom built and ordered from Liquid Robotics, the company that manufactures the equipment. The researchers hope to have the glider constructed and delivered by December or January 2015 as a “Christmas present,” for the department and university.

As a custom build, ECU’s glider will have some features not available on all models.

“Our Acoustic Wave Glider will have special capabilities not available in other units, like the ability to record ocean soundscapes (where we can hear marine fishes and mammals), and detect migrating coastal sharks, endangered species like Atlantic sturgeon, spawning fishes and marine mammals like whales,” said Luczkovich, the main investigator on the research grant.

In addition, the glider will be able to collect environmental data including wind speeds and wave height, and water or ocean currents, temperatures, salinity, oxygen content, turbidity and plankton concentrations.

“The instrument will be useful in determining where wave and wind energy resources are highest in the coastal ocean, and where acoustically sensitive animals might have conflicts with ocean energy development projects,” said Luczkovich.

All data collected by the unit is stored on board, and data summaries will be sent to shore monitoring facilities here at ECU at the Institute for Coastal Science and Policy, as well as the UNC Coastal Studies Institute lab in Manteo, NC. Operators can monitor the position of the Wave Glider via satellite data links throughout its travels.

Once built, Luczkovich and other researchers will have to travel to Kona, Hawaii, to learn how to deploy, operate and recover the Acoustic Wave Glider from the research vessels it will be used with in North Carolina. An example of the operation of a Wave Glider, what it looks like and what it can do, may be viewed at <http://www.bloomberg.com/video/78240622-liquid-robotics-new-unmanned-maritime-vehicle.html>. Once deployed, a Wave Glider does not need fuel. It runs off of water currents, which is explained in this online video at <http://youtu.be/xfJq9nQ_m2A>.

“We plan to use it in initial tests in the January-to-February time frame, off the North Carolina coastline, to detect tagged sturgeon, sharks, striped bass and other fish,” said Luczkovich. “We ran a test trial with a borrowed Wave Glider from Liquid Robotics along the NC coast in 2012. So we know it can survive the harsh conditions in winter off Cape Hatteras.”

In the future, researchers at other universities, state and federal agencies may lease the Wave Glider from ECU. Once acquired, ECU researchers will commission and calibrate the unit. They will then list it on NC REACH, a UNC-sponsored website for scientific instrument sharing.

For additional information, contact Luczkovich at 252-328-9402 or luczkovichj@ecu.edu. More information about Liquid Robotics and the Wave Glider is available at <http://liquidr.com/technology/waveglider/sv2.html>.

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