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Wednesday, December 16, 2009

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## OSTP Takes Custody of Robotic Underwater Overachiever

By Phillip Larson

OSTP Senior Policy Analyst Dr. Jerry Miller traveled to Baiona, Spain, this week to participate in a history-making event in a city that more than 500 years ago saw Christopher Columbus arrive in port with news of a spectacular new world beyond any previously traversed horizon. The ceremony, on Wednesday, marked the completion of another transatlantic voyage—one accomplished by an unmanned underwater glider, launched from New Jersey more than 200 days ago.

That journey ended at 3 a.m. Eastern Time on Friday, when students and scientists from Rutgers University led a successful mission to recapture the small underwater robotic glider off the coast of Spain. The glider, dubbed The Scarlet Knight, is the first underwater robot to cross the Atlantic Ocean. With leadership from the National Oceanic and Atmospheric Administration (NOAA) and help from a number of international partners, students from the university's [Coastal Ocean Observation Lab \(COOL\)](#) piloted [The Scarlet Knight](#) glider during its eight-month voyage.

Dr. Miller, on behalf of Dr. John P. Holdren, President Obama's Science Advisor and Director of OSTP, attended today's ceremony marking the historic occasion and officially received The Scarlet Knight from Spanish officials.

(Story continues below photo)



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OSTP's Jerry Miller (left) receives The Scarlet Knight from a Spanish official at a ceremony Wednesday.

The Scarlet Knight is a coastal glider modified by Rutgers students and scientists. It is a winged vehicle, sans propeller, that "flies" in a sawtooth pattern by changing its buoyancy. The robotic glider is equipped with several environmental sensors to measure ocean temperature, salinity, and other physical and chemical conditions. Every eight hours the seven-foot-long vehicle surfaced to check its GPS position, send data back to the control room, and check its e-mail for new instructions.

Robotic and unmanned vehicles, such as The Scarlet Knight, offer several scientific benefits. Being able to operate for a long duration (over one year) on very low power and in extreme weather and environments are just a few of the advantages offered by this class of vehicle.

While the Scarlet Knight was the first coastal glider to cross the Atlantic Ocean, there are currently several agencies that have put similar craft to use in the field:

- The National Science Foundation uses gliders to study ocean processes and climate change
- The Office of Naval Research for storm and hurricane research.
- NOAA for fisheries management
- Environmental Protection Agency for monitoring water quality
- Department of Homeland Security for maritime domain awareness
- The Navy for forward-deployed wide area surveillance

The recapturing of The Scarlet Knight celebrates the ability, through human ingenuity and international collaboration, to make the most unknown part of our world—our oceans—better known than they have ever been before. One of this Administration's highest priorities is establishing a new era of international scientific cooperation, and this project is just one example of the kind of science and data gathering that can be accomplished when scientists around the world work collaboratively.

Dr. Miller summed the feat up best with remarks at today's ceremony:

"With no one on board, and guided by technology that Columbus could not have imagined—a network of man-made, orbiting satellites—this little craft made its way across the Atlantic, gathering data along the way that will help us, as a global community of scientists and political leaders, understand and respond to some of the most pressing environmental and ecological challenges in human history."

For Dr. Miller's full remarks, [click here](#).



Dr. Richard Spinrad and Zdenka Willis—both of NOAA—hold two items that they placed in the glider before the Scarlet Knight left from New Jersey. A leatherman with RUCCOL (Rutgers University Coastal Ocean Observing Laboratory) engraved on it and a NOAA coin were safely recovered when the glider was opened during a welcome ceremony in Baiona, Spain. Dr. Spinrad first challenged Rutgers to develop a trans-Atlantic glider.

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#### One Response to “OSTP Takes Custody of Robotic Underwater Overachiever”

Nate Jipson said on December 9, 2009 at 2:31 pm:

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Very true in saying that there is so much to the ocean that we don't know or understand yet. I'm glad that this endeavor was used as a way to work with other nations as well. Certainly developing ties with other countries via research such as this will help us work as a global community in finding solutions to climate related issues all countries face. Who would have thought something so interesting and cutting edge could have been launched from New Jersey!

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