



## Drift cards to aid oil spill research

PHOTO BY DANIELLE EDWARDS



*Eric Quiroz, a Research Instrumentation Specialist at the Texas A&M University Geochemical and Environmental Research Group, deploys 200 drift cards aboard the R/V F.G. Walton Smith. He says the science team and crew were very excited about the card deployment program, and he can't wait to find out when and where one of the cards is found.*

Five thousand bright yellow cards are being released in the Gulf of Mexico by Texas A&M University researchers this summer and fall as part of a new study to understand and predict the behavior of ocean currents and how they transport spilled oil and other substances.

The environmentally friendly drift cards include a message encouraging people who find them to contact Texas A&M researchers online to report the time and location of their discovery. The message is in English and Spanish, as some of the cards are expected to travel as far as the coasts of Mexico and Cuba.

Dr. Piers Chapman, lead investigator of the study and head of Texas A&M's Department of Oceanography, says monitoring the pathways traveled by these drift cards will help determine major current flows in the Gulf of Mexico.

"From this we can get a rough idea of how fast the currents are moving and in which direction, at any given time," he says.

In use for decades, drift cards are a low-tech way to study ocean currents. From 1977 to 1988, Chapman took part in a similar study in South Africa, where drift cards were used to find major current structures in the South Indian and South Atlantic Oceans.

Cards have already been set adrift along the coasts of Louisiana, Mississippi and Alabama. More are being distributed along the coasts of Texas and Florida throughout the late summer, fall and winter.

The study is part of a \$14.4 million research grant from BP's Gulf of Mexico Research Initiative. The multinational oil and gas company committed \$500 million in funds over a period of 10 years dedicated to independent scientific research concerning the 2010 Deepwater Horizon oil spill.

Chapman leads the Gulf Integrated Spill Response Consortium funded by the grant.

The consortium includes scientists from Texas

A&M University, the University of Texas at Austin, Massachusetts Institute of Technology, Stanford University, the University of California at Berkeley, North Carolina State University, the University of Rochester, Woods Hole Oceanographic Institution, the University of Hawaii at Manoa, the University of Maryland and Cardiff University in the U.K.

The consortium is working to develop a modeling system that can track and predict the pathways of petroleum fluids released during deepwater oil spills in the Gulf of Mexico. The goal is to model what happens to an oil droplet from the moment it leaves the underwater spill to the moment it ends up on the beach.

The Deepwater Horizon blowout in April 2010 was the oil industry's first deepwater spill. "We have known what happens to oil released at the sea surface for nearly 50 years, since the Torrey Canyon oil spill in 1969. But this was the first deepwater spill, and people didn't know how it was going to behave," Chapman says.

Engineers, chemists, physical oceanographers and modelers are working at different scales to determine how petroleum plumes behave over time in the deep Gulf. "We start out by studying what happens to a petroleum droplet within the first 20 meters of leaving the wellhead. Then there's the bigger scale leading up to the full Gulf of Mexico scale."

Consortium researchers also are working with the Texas Sea Grant College Program to inform people about the effects of the blowout on the oceans. "Sea Grant extension agents can tell people about our program and the fact that there are still a lot of unknowns — even after 50 years of oil spill research," Chapman says.

For more information about the drift cards, the Gulf Integrated Spill Response Consortium or the Gulf of Mexico Research Initiative, visit <http://gisir.tamu.edu>.

— Roberto Molar-Candanos



*The bright yellow drift cards are about the size of an index card and have a designated number to identify the time and location of deployment.*