CSR researchers conduct second HF Radar experiment in the Mona Passage. Rutgers University and the University of Puerto Rico-Mayaguez (UPRM) conducted their second High Frequency (HF) radar experiment in the Mona Passage as part of the CSR’s Maritime Domain Awareness (MDA) research in the Caribbean. The team installed and tested a 13 MHz bistatic transmitter from the cliffs of Mona Island and from aboard the M/V Mariangie (pictured left). The research team tested different deployment configurations to see which were optimal for increased radar coverage. The signal from the transmitter were received by two SeaSonde HF radar stations deployed on the west coast of Puerto Rico. During the experiment the researchers focused on detecting vessels that were visible to both radars simultaneously. They operated the real time vessel detection software on each of the two radars and then mapped the vessel detection data for use by Sector San Juan in a security exercise.

Over the next several weeks, the research team will analyze the data gathered in the experiment and will determine the types of vessels the radar is detecting. They will also take advantage of any detection opportunities the Coast Guard can provide by running their cutters through the coverage area of the radars.

Specific goals of the test include:
- A focus on providing data to federal and state law enforcement agencies,
- A focus on identifying types of vessels being detected (and sizes),
- Processing for joint detections by both radars (a new capability) as well as association of vessel positions.

The Puerto Rico Department of Natural and Environmental Resources assisted the team with the site selection and logistical planning for the Mona Island experiment.

CSR summer research students meet with CBP practitioners and attend a Port Awareness and Prevention course hosted by the NYPD-Counterterrorism Division. CSR Summer Research Institute (SRI) students had the opportunity to interact with Homeland Security professionals and law enforcement practitioners in separate events hosted by the U.S. Customs and Border Protection (CBP) and the NYPD-Counterterrorism Division (NYPD-CTD).

On June 17, CBP welcomed CSR’s summer research students for a discussion of the agency’s mission areas and a tour of the organization’s Tactical Operations Division at the Port of New York/Newark. The visit, coordinated by Officer Bradford Slutsky, CBP Program Manager, included observations of CBP’s radiation portal monitors, high-energy mobile non-intrusive inspection (NII) equipment, and a tour of a Centralized Examination Station warehouse where agricultural products are examined and cargo is physically inspected and analyzed. CBP has hosted the Center’s SRI students each summer for the past three years.

Later in the month of June, the summer research students were also invited to attend a one-day Port Awareness and Prevention course delivered by Officers from the NYPD-Counterterrorism Division. The objective of the course is to expose law enforcement and emergency management personal to the challenges associated with securing marine terminals, critical infrastructures, and port and harbor security zones. The course highlights the roles of various agencies including, NYPD, FDNY,USCG and CBP, in protecting and safeguarding the Port of New York/Newark. The DHS-certified course was held at the New York City Police Department Police Academy, in New York, NY.
CSR student research team gathers end-user feedback to enhance the functionality and capabilities of Magello. CSR Summer Research Institute students Gina Salmins (Stevens), Luis Miranda (Univ. of Puerto Rico-Mayaguez) and Beichen Li (Stevens), recently met with representatives from the USCG Incident Management team from Sector New York, to demonstrate the capabilities of the tool and to gather information on their operational needs. The meeting helped to identify areas where Magello can be enhanced to provide visualization of environmental protection zones and areas of responsibility in the New York Harbor, and the ability to visualize areas and map clean-up response following an oil spill.

Working under the mentorship of Talmor Meir, Ocean Engineering doctoral candidate and Grace Python, Research Associate, Stevens Center for Decision Technologies, the team is also working to build-out the tool to include data and visualization capabilities for the San Francisco Bay area, among other port areas.

Summer research students engage in scenario development brainstorming session at NUSTL. Chris Polacco (Maritime Systems), Nicholas Haliscak (Maritime Systems), Reed Oberlander (Naval Engineering), Thomas J. O'Neil (Civil Engineering) and Monique Cerqueira Zuidema (Naval Engineering), students on the Summer Research Institute scenario development team, recently attended a meeting hosted by Ben Stevenson, Program Analyst, at the National Urban Security Technology Laboratory (NUSTL), in New York City. The objective of the brainstorming session was to assist the students in developing hypothetical maritime threat scenarios with the intent of using the scenarios for tabletop exercises and emergency response training purposes. The meeting included representatives from NUSTL and the U.S. Coast Guard.

In a separate meeting held earlier in the month, the students had the opportunity to speak with Mr. Brian Onieal, from the New Jersey Office of Homeland Security and Preparedness (NJ OHSP), to discuss his experience and expertise in developing, planning and delivering a series of tabletop exercises for local, municipal, state and federal first responders.

At the culmination of the CSR summer research program, the students will be responsible for developing maritime incident scenarios that can be used by law enforcement and emergency response organizations in their training and education portfolios.

Conferences Attended:

CSR researchers Ms. Grace Python and Dr. Thomas Wakeman served as moderators and panelists at the TRB Innovative Technologies for a Resilient Marine Transportation System, 3rd Biennial Research and Development Conference, held June 24–26, 2014, in Washington, DC. Dr. Wakeman moderated a panel focused on Marine Transportation System Resilience and Grace served as a panelist discussing port and maritime infrastructure resilience. Conference attendees included representatives from the USCG, the Army Corps. of Engineers, the U.S. Department of Transportation, among other public, private and academic institutions.

CIMES researcher, Dr. John S. Allen, provided a talk entitled Aspect-dependent acoustic characterization of an underway autonomous underwater vehicle, at the 167th Meeting of the Acoustical Society of America, in May 2014. An abstract of Dr. Allen’s work, co-authored by John Gebbie, Martin Siderius, can be found in the April 2014 edition of The Journal of the Acoustical Society of America.

Dr. Julie Pullen, CSR Director, and Ms. Talmor Meir, Stevens Ocean Engineering doctoral candidate, participated in the Eighteenth Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Talmor Meir, provided a talk on studies in the complex urban-coastal environment of New York City, highlighting Magello. Dr. Pullen served as a moderator for the Computational Fluid Dynamics (CFD) Wind Tunnel, and Boundary Layer Studies panel.