

MSC NEWSLETTER – JANUARY/FEBRUARY 2017

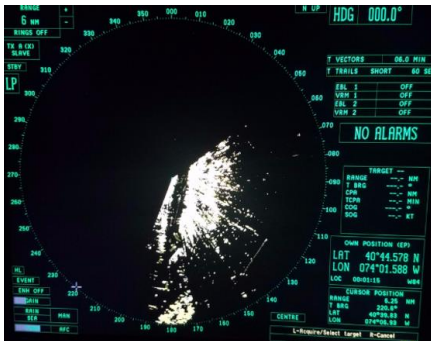
Stevens Institute of Technology receives patent allowance for its sensor system used to detect low flying aircraft along U.S. borders.

MSC research PIs and Stevens Institute of Technology research engineers have received a patent allowance for an aircraft detection sensor system that they specifically developed to assist in the fight against drug smuggling and illicit activity in remote areas along the U.S. border.

Currently fielded for operations along the border, the portable sensor system is helping to detect, track and classify ultralight and low-flying aircraft incursions that may be trying to evade detection by conventional radar surveillance systems. The Center successfully transitioned the sensor system in 2015 and has entered into a licensing agreement with Bridgenet International for its continued development and support. A patent allowance was granted for the system in February 2017.



(photo credits <https://flyingcalifornia.files.wordpress.com/2014/03/phil-flying-002w.jpg>)



MSC to conduct research to analyze Vessel Traffic Service (VTS) data for small vessel traffic.

Maritime Security Center (MSC) research PIs are conducting research in collaboration with DHS Science & Technology Borders and Maritime Division to develop signal processing algorithms that can be used to extract information from radars similar to those used in VTS systems. Concerns regarding small vessel threats spurred the Center's latest research project.

Anticipated outcomes from the project will include the development of new signal processing algorithms that can potentially be used to augment radar system capabilities for enhanced small vessel detection.

Maritime Security Fellowship program alumni assist in the planning and delivery of the DHS S&T 2017 NUSTL OpEx.

Chris Polacco and Hasan Shahid, recent graduates from the maritime security master's degree program at Stevens Institute of Technology are working with engineers and scientists from the [DHS S&T National Urban Security Technology Laboratory \(NUSTL\)](#) to test and evaluate equipment and emerging technologies, to help keep first responders and law enforcement professionals safe and prepared for emerging threats.

Hired by [LMI](#), a leading government support contractor, following the completion of their respective degree programs, Chris and Hasan have each been assigned to provide engineering and analysis support to NUSTL. As members of the NUSTL team, Chris and Hasan played key roles in the planning and execution of the DHS S&T Urban Operational Experimentation (OpEx), held January 24 - 26, 2017 in New York City. The event included Federal, State and local responders from around the U.S. in field-tests and application-based assessments of commercial technologies in the areas of mobile ad-hoc networks, cloud-based analytical platforms, portable facial recognition systems, and common operating intel and situational awareness platforms.



Prior to joining NUSTL, Hasan Shahid completed a field-based internship with the U.S. Coast Guard Research and Development Center and Chris Polacco served as an intern with the NYPD-Counterterrorism Division. NUSTL and MSC have worked closely together over the years to identify and place HS-STEM focused students in internships and careers within the DHS S&T national laboratory.



Prof. Brendan Englot will mentor a team of SRI students to conduct research using ROVs to perform 3D mapping of underwater environments.

Dr. Brendan Englot to lead a student research team during the Summer Research Institute (SRI). Dr. Brendan Englot, Assistant Professor, Mechanical Engineering and Director of the [Robust Field Autonomy Lab](#) at Stevens Institute of Technology will mentor a team of undergraduate and graduate-level students in an MSC summer research project working with remotely operated vehicles to perform autonomous 3D mapping of underwater environments. Prof. Englot received a 2017 CAREER award from the National Science Foundation for a 5-year project titled “Belief Space Planning and Learning for Uncertainty-Immersed Underwater Robots”, and in 2016 was awarded the Bluefin Robotics Award for Best Navigation/Localization Paper and Poster at the Marine Robotics Workshop, held at the IEEE International Conference on Robotics and Automation in Stockholm Sweden.

MSC’s 8th annual Summer Research Institute will be held at the Stevens Institute of Technology campus in Hoboken, NJ, from June 5 - July 28, 2017. To learn more about the program visit: <https://www.stevens.edu/SummerResearchInstitute>

Center highlights from December 2016:

Florida Atlantic University (FAU) hosts Port Resiliency Workshop for local, State and Federal maritime and port community members. Representatives from the USCG, USACE, MARAD, and local and State port facility operators and coastal community municipalities attended a workshop hosted by MSC research PIs from FAU to discuss current and developing efforts in port resiliency planning and risk management. Held on December 2, 2016 at FAU in Dania Beach, FL, the workshop included presentations and breakout sessions designed to acquire and share information across the diverse maritime and port partner communities and to provide a forum for discussion and feedback on current port resiliency tools and those under development at FAU.

FAU is currently developing a Port Resiliency Planning and Assessment modeling and simulation tool. The decision support tool aims to enhance the preparedness, response capabilities and rapid recovery of U.S. ports to man-made and natural disaster events. Input from the workshop attendees will contribute to the development of the Port Resiliency modeling and simulation tool. To learn more about FAU’s research in the area of Port Resiliency, please contact Dr. Manhar Dhanak, FAU at dhanak@fau.edu.



FAU leads the MSC’s research in port resiliency planning and assessment. In December 2016, FAU held a port resiliency workshop at the university’s SeaTech campus in Dania Beach, FL.

Maritime Security Center

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