



MARITIME SECURITY CENTER NEWSLETTER

OCTOBER – DECEMBER 2018

MSC to co-host Technology Foresight Forum. The MSC in conjunction with the NY/NJ Regional Metro Alumni Chapter of the Naval Postgraduate School's Center for Homeland Defense and Security (CHDS) will co-host a Technology Foresight Forum on January 17, 2019 to discuss the emerging implications of Artificial Intelligence, Machine Learning, and Autonomous Vehicles (land-based and maritime) on safety, security, and public policy. [Mr. Jared Maples, Director of the NJ Office of Homeland Security and Preparedness](#) will provide the keynote talk. MSC stakeholders interested in attending should contact MSC@stevens.edu.



Students provide research support to advance robots used to inspect underwater infrastructure. A team of students from the MSC's 2018 Summer Research Institute provided research support to Dr. Brendan Englot, Director of the Robust Field Autonomy Laboratory at Stevens Institute of Technology and his doctoral students to enhance the autonomy of an ROV that can be used to inspect the underwater infrastructure of piers and bridges. The student's work was highlighted in a NJTV news segment aired during the fall academic semester: <https://www.njtvonline.org/news/video/how-machine-learning-can-help-support-new-jerseys-infrastructure/>

MSC Director provides academic and research perspectives at NMSAC meeting. Dr. Hady Salloum participated in a National Maritime Security Advisory Committee (NMSAC) meeting held November 6 - 7, in Houston, TX. The two-day meeting included briefings from the U.S. Coast Guard on the agency's Cyber Security Navigation and Vessel Inspection Circular and on the concerns unmanned aircraft systems (UAS) pose to the maritime industry's critical infrastructure. The meeting also included discussions on security requirements for the Customs-Trade Partnership Against Terrorism (CTPAT) program and a briefing on maritime security at the Port of Houston. Dr. Salloum has been appointed to the NMSAC for a three-year term.

MSC/Stevens transition Maritime Cybersecurity curriculum materials to TSU. Leveraging an NSF grant awarded in 2016, MSC and Stevens Institute of Technology collaborated to develop, pilot and transition maritime cybersecurity curriculum materials to its academic partners at Texas Southern University (TSU), a Minority Serving Institution (MSI) located in Houston, TX. The NSF project efforts were initiated to address the workforce needs of current and aspiring maritime and homeland security practitioners to deal with cybersecurity vulnerabilities and threats to the maritime enterprise.

Stevens piloted the new maritime cybersecurity curriculum in a maritime security special topics course held during the spring 2018 academic semester. Class participants included an active duty member of the USCG. Dr. Ismet Sahin, Assistant Professor Engineering Department, will utilize the curriculum materials to deliver TSU's own university-based program in the Fall of 2019.

Fundamentals of Sensing Technologies and Data Science Workshop. MSC will host a one-day workshop on March 22, 2019 for high school and college-level educators from Minority Serving Institutions (MSI) and underserved communities to provide instruction on the fundamentals of sensor technologies. In addition to learning about different types of sensors and their applications, workshop participants will be introduced to data science techniques, engage in hands-on activities to build a sensor system, and will receive a unique perspective as to how homeland security professionals (e.g., U.S. Coast Guard) utilize sensor technologies and process data in real-world safety and security applications.

Workshop participants will receive curriculum materials that are aligned with Next Generation Science Standards (NGSS) in engineering design as well as a sensor kit that can be utilized and demonstrated in their classrooms. The Workshop will be held at the Stevens Institute of Technology campus and will include educators from the NJ/NYC metropolitan area.

MSC Director co-authored papers presented at IEEE International Symposium on Technologies for Homeland Security. Stevens Institute of Technology Senior Research Engineer, Dr. Alexander Sedunov presented two papers he coauthored in conjunction with Dr. Hady Salloum, among other researchers, at the 2018 IEEE International Symposium on Technologies for Homeland Security. The Symposium was held October 23-24, 2018 in Woburn, MA. The papers UAV Passive Acoustic Detection and Long-term Testing of Acoustic System for Tracking Low-flying Aircraft will be published as part of the conference proceedings.

Summer Research Opportunity - Applications Are Now Being Accepted. The MSC is now accepting applications for the Center's annual summer research program to be held June 3 - July 26, 2019 at the Stevens Institute of Technology campus in Hoboken, NJ. Admitted students will receive a stipend, free on-campus housing and travel reimbursement. The deadline for applying is February 15, 2019.

This summer's student research projects may include:

- Automatic Identification System (AIS) Anomaly Detection
- Applications of Remotely Operated Vehicles (ROVs) in Maritime and Port Environments
- Use of Unmanned Aerial Vehicles (UAVs) for Maritime Security Applications

To be considered for admission, students must be U.S. citizens, enrolled full-time in an accredited STEM degree program, and possess a minimum GPA of 3.0 or above. To learn more, visit www.stevens.edu/SummerResearchInstitute.

www.stevens.edu/MSC