

## MARITIME SECURITY CENTER (MSC) NEWSLETTER OCTOBER – DECEMBER 2017

### Advanced Maritime Systems Course to Address Maritime Cybersecurity

**Threats.** Starting spring 2018, Stevens Institute of Technology's Advanced Maritime Systems course (OE 629) will be augmented to address cybersecurity concerns in the Maritime Transportation System (MTS). The 3-credit course will combine material from Stevens' Maritime Systems and Cybersecurity degree programs. Topics will include:

#### Cyber Vulnerabilities of Shipboard and Port Systems

- Vulnerabilities of Shipboard Systems to Cyber Attack (e.g. propulsion, navigation, bridge systems, communication, electronic charts, etc.)
- Automatic Information System (AIS) and GPS operations and spoofing vulnerabilities

#### Maritime Cyber Protection

- Risk Assessment and Management Approaches
- Quantitative and Qualitative Risk Management Approaches
- Industry Practices

#### Access Control Methods – Physical and Cyber

- Biometrics, Multilevel Access Controls, Physical Access Controls

The course content complements research being conducted by the Maritime Security Center and Stevens Institute of Technology's Cybersecurity Program as part of a National Science Foundation (NSF) grant to build workforce capacity in Maritime Cybersecurity. The course is open for enrollment and will be held on-campus starting January 2018. To learn more and to register, please contact [MSC@stevens.edu](mailto:MSC@stevens.edu).



### Summer Research Opportunity - Applications Are Now Being Accepted!

The MSC is now accepting applications for the Center's 9th annual [Summer Research Institute \(SRI\)](#), to be held June 4 - July 27, 2018, on 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 16, 2018.

The maritime security-focused research program engages college-level STEM students from around the Nation in collaborative, hands-on research projects in conjunction with the Center's research investigators.

The SRI 2018 student research projects may include, but are not limited to:

- Remotely Operated Vehicles (ROVs) and Unmanned Surface Vehicles (USVs) in Maritime and Port Environments
- Unmanned Aerial Vehicles (UAVs) for Maritime Security Application
- Multispectral Imaging and the Detection of Chemical Emissions

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 about the SRI and to complete an online application, please visit: [www.stevens.edu/SummerResearchInstitute](http://www.stevens.edu/SummerResearchInstitute).

**MSC Request for Proposals Nets 16 Submissions.** The Maritime Security Center's recent request for proposals (RFP) resulted in the receipt of 16 high-quality submissions. Covering a broad range of topics, from Unattended Remote Sensing Applications to Piracy and Maritime Crime to Predictive Port Resilience Tools, the proposals addressed research themes and questions posed in the [RFP](#).

The proposals have recently undergone a Scientific Merit Review and are currently being assessed by the DHS Office of University Programs for Mission Relevancy. Notifications regarding projects selected for funding will be communicated following the completion of the two phase review process.

### **Maritime and Port Security ISAO Distributes MSC Exercise Development**

**Kits to its Members.** The Maritime and Port Security Information Sharing and Analysis Center ([MPS ISAO](#)) recently announced and have begun to make available the MSC's Maritime Cyber Attack and Active Shooter Exercise Development Kits to its members. Developed in collaboration with Master Exercise Practitioners and cybersecurity and homeland security professionals from the Stephenson Disaster Management Institute ([SDMI](#)) at Louisiana State University, MSC Exercise Development Kits provide maritime and port facility operators with practical resource materials needed to exercise and assess their organization's preparedness and response capabilities to an array of crisis events.

Modeled after the guidelines set-forth in the Homeland Security Exercise and Evaluation Program (HSEEP), the [MSC Exercise Development Kits](#) provide guidance on exercise objectives, core capabilities to be reviewed, and include a series of hypothetical threat scenarios as they pertain to cyber attacks and active shooter events at port facilities.

In addition to sharing the MSC exercise kits with its members, the MPS ISAO is also considering plans to utilize one or more of the exercise scenarios in a tabletop exercise of its own. For more information about the Maritime and Port Security ISAO, please visit their website at <http://portsecure.org/>.



**Research PIs Present Project Outcomes at MSC Annual Review Meeting.** The MSC held its 3rd annual review meeting on October 10, 2017, at the U.S. Coast Guard Headquarters in Washington, DC. Stakeholders from the U.S. Coast Guard, Customs and Border Protection and DHS S&T Borders and Maritime Security Division joined MSC research investigators and DHS Office of University Programs administrators for a one-day meeting to review the Center's research projects and to discuss strategies for transitioning the Center's work into operational environments.

The meeting included an overview of the Center's project portfolio and operational activities by Dr. Hady Salloum, MSC Director, and research and education project presentations related to the Center's work in the areas of Port Resiliency Planning and Assessment (*Florida Atlantic University*), Maritime Cybersecurity (*American Bureau of Shipping*), and Maritime Security Education and Professional Development programs (*MSC and Louisiana State University*). The meeting also included presentations by MSC students John Martin, Mechanical Engineering and Homeland Security Doctoral Fellow, and Dmitriy Savinskiy, Electrical Engineering Undergraduate Research Assistant, who discussed their respective research in Underwater Robotics and Autonomous Navigation and AIS Fraud Detection. Details regarding the Center's projects can be found in the [MSC Year 3 Annual Report](#).

**SAVE THE DATES: DHS S&T Centers of Excellence Summit - May 30 & 31, 2018.** Please mark your calendars and plan to attend the DHS S&T Centers of Excellence Summit to be held May 30 & 31, 2018, at the George Mason University campus in Arlington, VA. The theme of the summit is "Innovation for Security Operations: R&D for DHS Operational Impact".



The event will bring together representatives from each of the nine [DHS S&T Centers of Excellence \(COE\)](#) with Homeland Security practitioners and stakeholders to demonstrate and highlight COE research, technologies and knowledge products, and to identify opportunities for transition, collaboration and future research. Save the dates and stay tuned for more details.

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