MSC Research Update  
June 2020

MSC Enters its Year 7. MSC received its funding for Year 7 that starts on July 1, 2020 and ends on June 30, 2021. Research projects that started in Year 6 will be completed in Year 7. Status updates for each of the project is as follows:

- For the **Low Cost Maritime Sensor Suite Project**, the research team is completing an interim status report describing the improvements made to the underwater passive acoustic system based on data collected during the January field test in the Padre Island area. The report will describe the progress on the development of a prototype algorithm for the fusion of AIS, acoustic, radar, and optical data.

- The **RF Surveillance Project** research team is currently working on building a low-cost Direction Finder and is planning to issue an interim status report soon.

- For the **VTS Project**, the research team has analyzed data received from a questionnaire that was sent to various VTS centers and are working on developing an RFI that will be used to solicit information from radar vendors for the detection of small vessels.

- The **Remote Operation of Moveable Bridges Project** research team have recently completed a draft of the remote bridge taxonomy.

For additional information on any project or to obtain a copy of the reports, please contact us at MSC@stevens.edu.

**Summer Research Students are Creating a Visualization Tool to Efficiently Display Maritime Incident Data in the Port of NY/NJ.** MSC Summer Research Institute (SRI) students are working to advance a maritime incident visualization tool that can be used to quickly and efficiently display reported incidents in the Port of NY/NJ. The visualization tool will allow USCG end-users to graphically display maritime incidents on a time-scale and provide data-driven trend analysis for improved planning and asset allocation. The concept for the risk assessment dashboard was developed during the Center’s 2019 summer research program and is being further enhanced by a team of students who are conducting their research virtually in the 2020 summer program. New features to the dashboard will include data on cyber incidents and predictive analytics capabilities. To learn more about this project, as well as the other SRI student research projects, please contact us at MSC@stevens.edu.

**Students to Present Final Summer Research Outcomes (Virtually) on July 23.** The MSC’s six student research teams will present their final research outcomes in a virtual presentation session on Thursday, July 23, 2020 from 10am to 12noon, Eastern Time. This summer’s student research projects include the following:
• Efficient Deployment and Monitoring of an Advanced Harbor Inspecting Underwater Robot (BlueROV)
• AI-Enhanced Design and Digital Twinning of a Novel, Net-Zero Energy Unmanned Surface Vehicle (Wave Glider)
• Maritime Cyber Risk – Risk assessment comparison between Information Technology (IT) and Operational Technology (OT) Vulnerabilities
• Risk Management Dashboard and Predictive Analytics
• Off-Shore Windfarm Safety and Security Issues
• Sulfur Emission Detection

The event is open to interested MSC stakeholders and guests. If you would like to attend the virtual presentation session, please confirm your participation via email to MSC@stevens.edu.

MSC Hosts Homeland Security Professionals in Webinars and Meetings with Summer Research Students. As part of the Center’s annual Summer Research Institute, MSC has leveraged its stakeholder network to provide guest lectures and subject matter expertise to its 23 summer research students. This summer’s program has engaged homeland security professionals from the USCG, CBP, Port Authority of NY/NJ, Center for Infrastructure Assurance and Security, and the Texas Military Department. Below is a list of the SRI 2020 webinar topics and speakers, together with a list of the USCG personnel who have shared their knowledge and expertise with the student teams. Webinar Topics and Speakers included:

• Security Risk Assessment and Management (Guest Speaker: Michael Edgerton, Manager, Port Security, Port Authority of NY and NJ)
• Overview of CBP Seaport Operations (Guest Speaker: Scott Rutledge, Acting Branch Chief, CBP Field Operations, Port of NY/Newark)
• USCG Operations in the Port of New York and New Jersey (Guest Speaker: Frank Fiumano, Port Security Specialist, USCG Sector NY)
• Cyber Security Concerns in Homeland Security (Guest Speaker: CPT Frank S. Hooton, Sr., Texas Military Department/TXDPS Texas Rangers Division.

USCG/Homeland Security contributors have included Mr. John Hillin, USCG Sector NY (Risk Management Dashboard and Sulfur Detection Teams), CDR McSorley, Sector SE New England (Offshore Windfarm Team), LCDR DeVolld, USCG Cyber Command and LCDR Doherty, USCG Sector NY (Maritime Cyber Risk Team) and Dr. Greg White, Center for Infrastructure Assurance and Security.