Maritime Security Center (MSC)
Virtual Annual Meeting
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www.Stevens.edu/MSC
Mission: Established in 2008 as a DHS Center of Excellence with a mission to conduct innovative research, develop new tools and technologies and provide relevant maritime security-focused educational programs to enhance our nation's maritime domain awareness, the resiliency of our Marine Transportation System (MTS) and the technical skills and leadership capabilities of our current and prospective maritime security workforce.

Stakeholders: U.S. Coast Guard, Customs and Border Protection, DHS S&T Directorate, Local, state and municipal law enforcement and emergency responders.
Research Focus

- Maritime Domain Awareness
- Sensor technology development
- Threat signature characterization
- Data analysis and integration
- Real-time information delivery
- Maritime Resilience and Risk
Current Research

• Low Cost Covert Sensors for Remote Locations
• RF Surveillance of Vessels with Illegal Activity
• VTS Radar for Small Vessel Detection
• Safety and Security in Remote Bridge Operations
• Counter UAS Supporting DHS S&T T&E (BOA Task Order)
Past Research

- Maritime Resilience
- Port and Network of Ports Modeling
- Port Mapper
- Predictive Port Resilience Tool
- Maritime Cyber Security
- Enhancing Situational Awareness from Social Networks
Educational Programs

• Coordinated STEM Internship Program
• Summer Research Institute
• Research Assistantships
• Maritime Cyber Security Professional Development Course
• MSI Educator Workshops
Research Transition

**Patented and Licensed:**
- Passive Acoustic Diver Detection System

**Patented & Licensed:**
- Low Flying Aircraft Detection (including training manuals and Level 2 drawings and documentation)

**Patent Pending:**
- Detection of Invasive Species at Ports of Entry
  *(BioSecurity Challenge for Maritime Shipping and USDA)*

**Field-base use of MSC Technologies:**
- GPS Real Time Trackers widely used by DHS and DoD
Recent Publications (see Stevens.edu/MSC)

Prospective Research Projects

- Investigation of Anomalous Behavior of Small Pleasure Craft Based on their Weight
- Impact of Wind Energy Projects on USCG Search and Rescue Operations
- Anomaly Vessel Detection Based on Maritime Digital Communication Data Analysis
- Vulnerability of Marine Navigation Systems to Electromagnetic Pulse and Geomagnetic Disturbances & Mitigation Technologies
- Global Navigation Satellite System Quality Monitoring
- Extending the Range of AIS
More Research Project Ideas

- Smart Acoustic Buoy
- Sensors for Unmanned Surface Vessels (USVs)
- Detection of GPS embedded in Contraband
- UAS-based Vessel Inspection
- Cell Phone-Based Sensors
- Means to Communicate in Hazardous Conditions
Outreach and Stakeholder Engagements

- Monthly Status Update Emails and Quarterly Newsletters
- USCG Committees
  - National Maritime Security Advisory Committee (NMSAC)
  - Sector NY AMSC Cyber Security Subcommittee
  - Project Evergreen
- Hosted: DHS I&A Security Symposium and Technology Foresight Forum
- Collaborated with other COEs for Joint Proposals, Proposal Reviews and COE Summit coordination.
Any Questions?

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