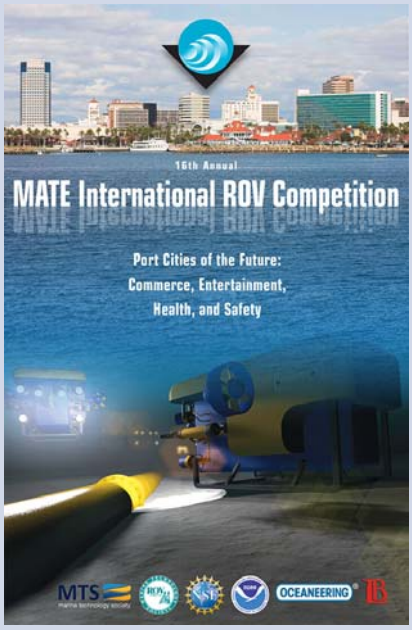
Student Competition — Remotely Operated Vehicles (ROV)



Gray's Reef Southeast Regional MATE ROV Competition
Port Cities of the Future
Savannah, GA
April 22, 2017
graysreef.marinetech2.org

Competition Mission: Build and demonstrate an ROV that can complete the following tasks:
1) assist with the installation of a port waterfront Hyperloop system;
2) conduct maintenance on the port's water and light show;
3) identify and collect samples of contaminated sediment; and
4) identify the contents of containers that fell off of a cargo ship into the harbor and map the accident site.
marinetech.org

Underwater Robotics Program Applies STEM Education Concepts

Gray's Reef National Marine Sanctuary is Georgia's national underwater park and is teeming with marine life. Boaters, fishermen and divers enjoy the wonders of the natural live-bottom reef, which is important habitat for a number of threatened and endangered ocean animals like Loggerhead sea turtles and North Atlantic right whales.

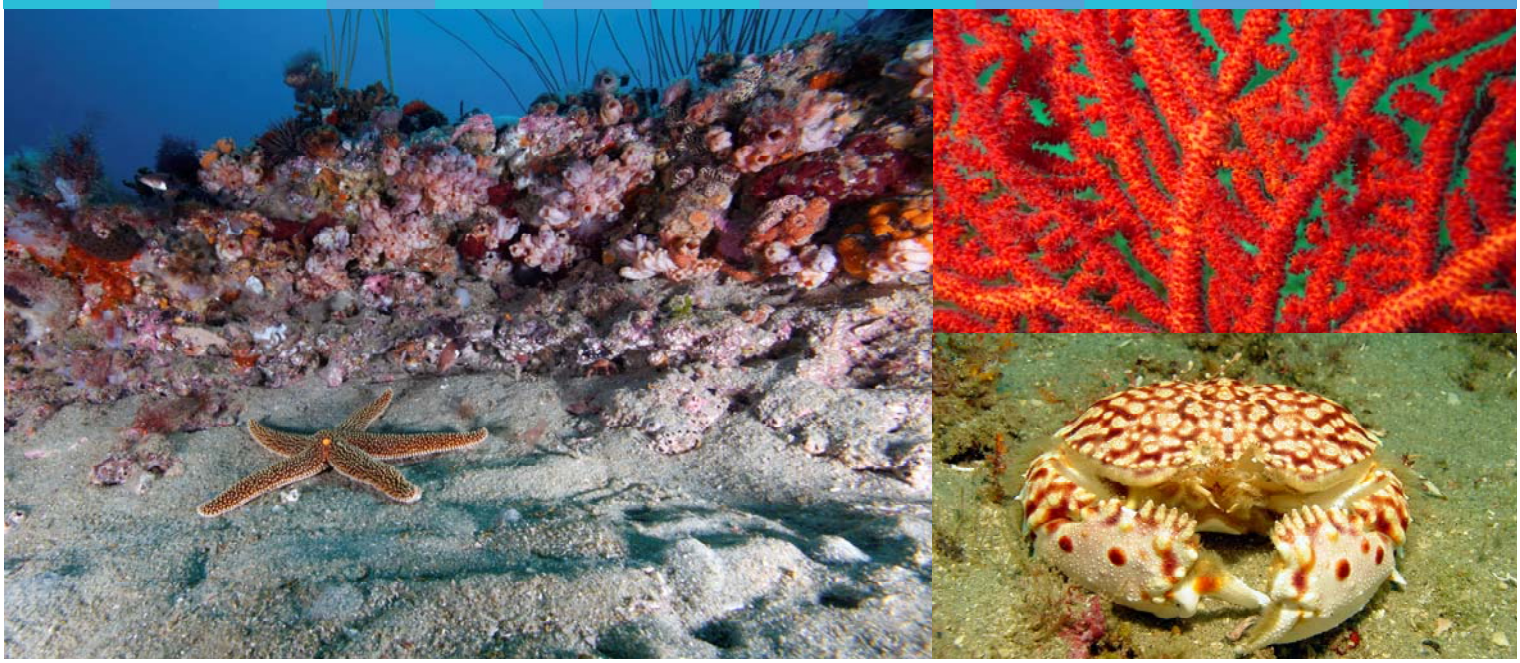
Over 200 species of fish are found there, in addition to sea stars, octopus, crabs, lobsters, soft coral, whelks, sponges and thousands of other plants and animals living among the rocky ledges and sandy seafloor of the Sanctuary.

Gray's Reef National Marine Sanctuary partners with the Marine Advanced Technology Education (MATE) Center to engage students in learning ocean sciences, technologies, engineering and mathematics (STEM) in support of the sanctuaries' mission to inspire ocean literacy and conservation through education.

Remotely operated vehicle (ROV) building workshops and competitions provide a vehicle to apply STEM education concepts, preparing students for secondary education and careers, and offering educators training and expertise in applied technologies.

Gray's Reef uses ROVs, to observe the natural resources found within the sanctuary and surrounding marine ecosystem. Furthermore, ROVs are used for exploration and research throughout our global ocean, and specifically in NOAA's National Marine Sanctuary System.

Gray's Reef competition winners from Carrollton High School at MATE 2014 Internationals held at Thunder Bay NMS.



Gray's Reef National Marine Sanctuary is a near-shore, live-bottom reef that is home to an abundance of marine life, including sea stars, crabs, coral, whales and sea turtles. The 22 square mile sanctuary is located 16 miles off the coast of Georgia, and averages 62 feet in depth. Photos: Greg McFall, NOAA

The MATE Center and the Marine Technology Society created the ROV competition as a way to:

- Engage students in STEM and expose them to science and technology careers;
- Encourage students to develop and apply technical, teamwork and problem solving skills;
- Provide funds, materials and technical expertise to support student learning, and;
- Provide maritime industries with skilled individuals that can fill workforce needs.

MATE underwater robotics competitions challenge K-12, community college and university students from all over the world to design and build ROVs to tackle realistic missions modeled after actual scenarios from ocean exploration and maritime industry services.

For more information about Gray's Reef National Marine Sanctuary's ROV workshops and Southeast Regional MATE ROV competition, please contact our Education Event Coordinator.

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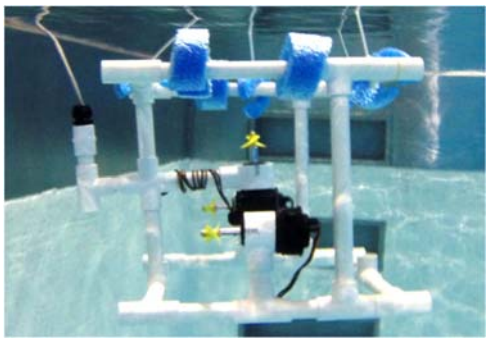

Workshop ROV. Photo: Sarah Webb

Competition ROV. Photo: Michael Tam

Commercial ROV. Photo: GRNMS