

## PRESS RELEASE

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**Schedule:** 9:30 a.m. Students arrive at Norton Pines  
9:30 a.m. – 11:30 a.m. Students test and make modifications to ROVs  
11:30 - Noon Lunch and mission briefings  
Noon - 2:00 p.m. Competition and missions

### Reeths-Puffer students send underwater robots on missions

On Friday, May 29, 2009, from 10:00 a.m. – 2:00 p.m. fifth and sixth grade Reeths-Puffer Intermediate School students will put their hand-made underwater robots to the test. Using only the view provided on a video screen, the teams will maneuver their camera equipped robots through two underwater missions at the **Norton Pines Athletic Club's** pool. The missions are meant to help researchers from the National Oceanic Atmospheric Administration (NOAA) collect information on one of the worst invasive species in the Great Lakes, the Quagga Mussel. The mussels are causing many problems in the Great Lakes. To the students, who also raised salmon in their classroom, the missions are personal. They know the disruption of the food chain could mean the end of their salmon.

The students worked in teams of four throughout the school year while learning and using the engineering process to design, build, and test their robots, also known as remotely operated vehicles (ROVs). In the real world ROVs are used for many tasks including underwater explorations and documentation, recoveries, inspections, search and rescue, trenching, cable burial and much more. The students' robots are made from PVC plumbing pipe and utilize boat bilge pumps as motors.

The students used the science concepts of thrust, center of gravity, and buoyancy to design and build their own version of an ROV. They searched the Internet for design ideas and then used the computer to draw a sketch of their proposed ROV. Next, they manipulated a K-Nex CAD (computer aided design) program to create a virtual rendering of their ROV. Once that was accomplished, they made use of K-Nex to build a tangible model of the ROV. Finally, the team took all four of their models and they choose the one, or a combination, they felt would perform the best during mission testing. After the team ROV was built, the students tested and retested it in a small wading pool at school. They made improvements based on its performance.

According to Teacher Drew Morris, the underwater robot program is similar to what engineering students do at MIT and other colleges. In fact, the class is based on the engineering principals used in international competitions for ROVs at the high school and college level coordinated by the Marine Advanced Technology Education (MATE) Center in Monterey California. "My hope is to create enthusiasm with other teachers to get them involved in creating an ROV competition right here in Michigan," Morris said. "Just watching the students' excitement as they work through the process of creating, testing, and competing with their ROV is an incredible experience for me. It makes it all worth it," Morris added. The original ROV kit was awarded to Morris through a grant from GVSU's Annis Water Resources Institute.

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