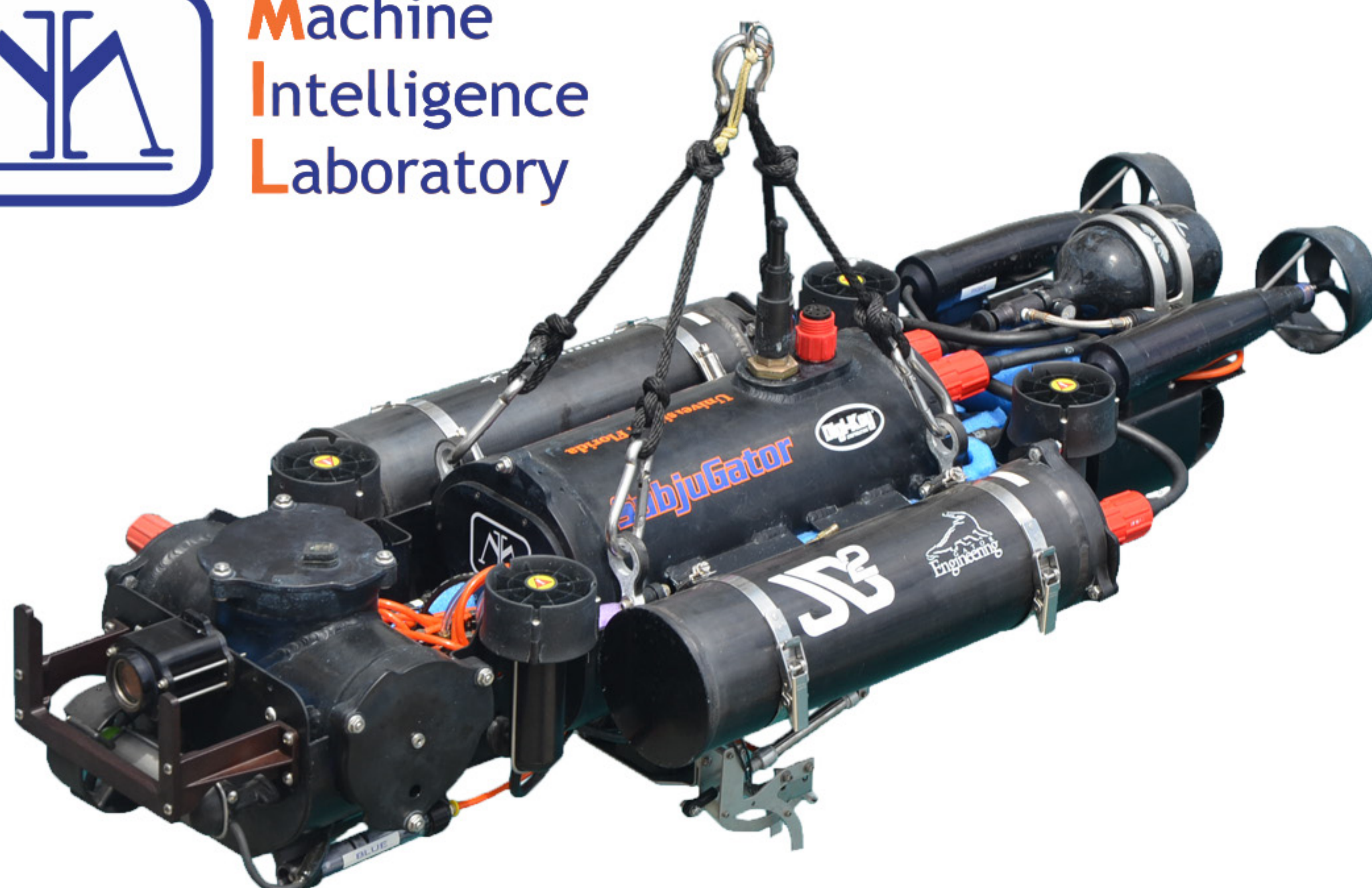# SubjuGator
UF Autonomous Underwater Vehicle

Machine
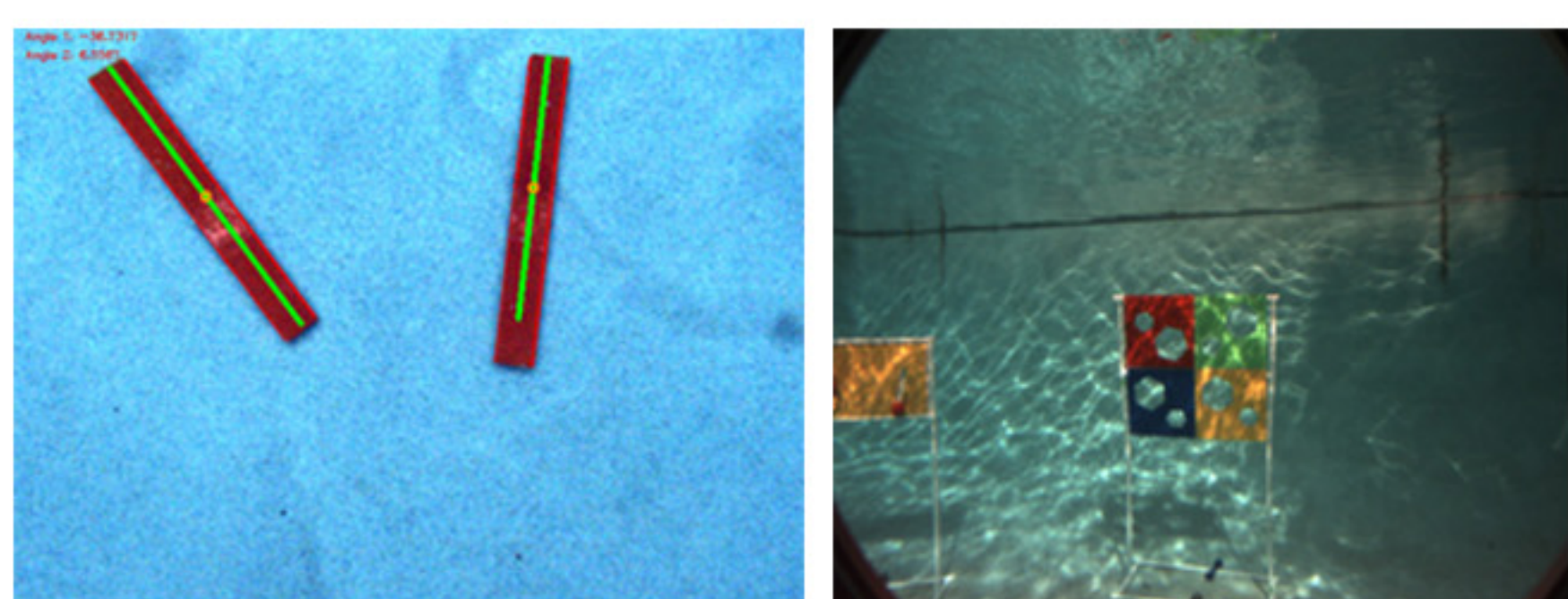**I**ntelligence
Laboratory

Specifications:
Weight: 110 lbs
Size: 50" x 18" x 18"
Endurance: 6 hours
Depth: 150 ft
Thrusters: 8

Software:
Robot Operating System (ROS)
ROS SMACH based mission planner
Novel particle filter vision approach
Comprehensive simulation environment

Navigation and Control:
Indirect extended Kalman filter state estimation
C3 continuous trajectory generator
Robust nonlinear control design
Fault tolerant thruster mapper
Self-contained navigation and control package
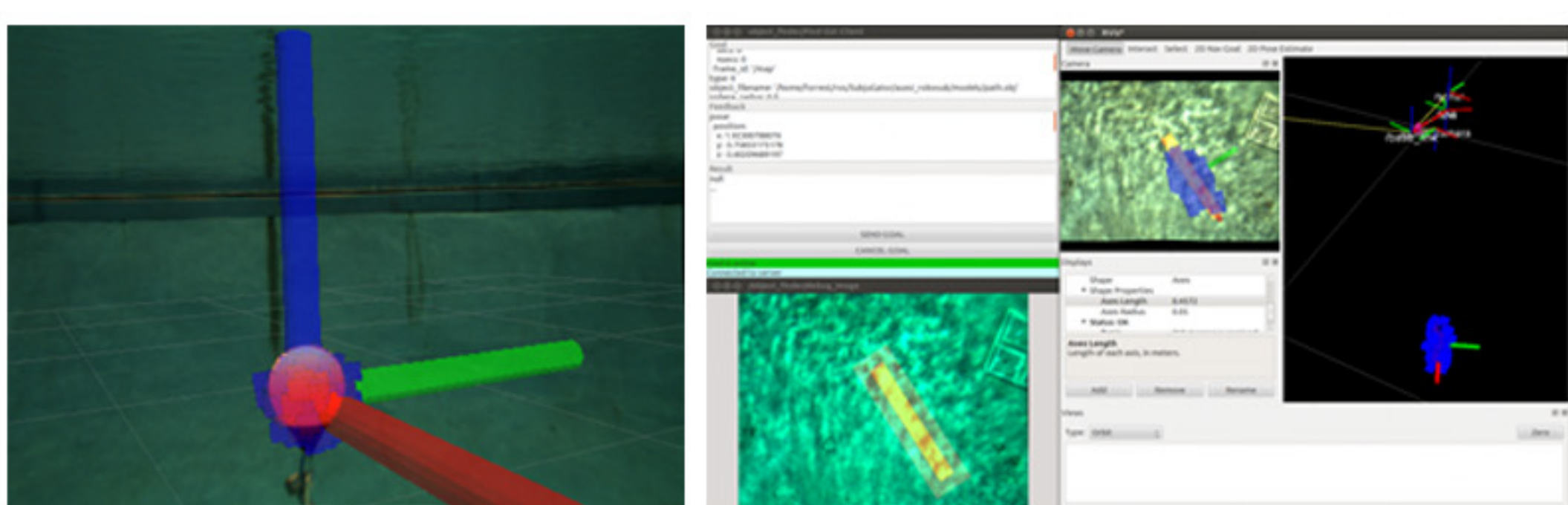
Electronics:
COTS Intel Xeon based computer
On-board power management and monitoring
Student designed motor control modules
Standard Ethernet communications
Hot swappable battery pods
Wet-mate electrical connections
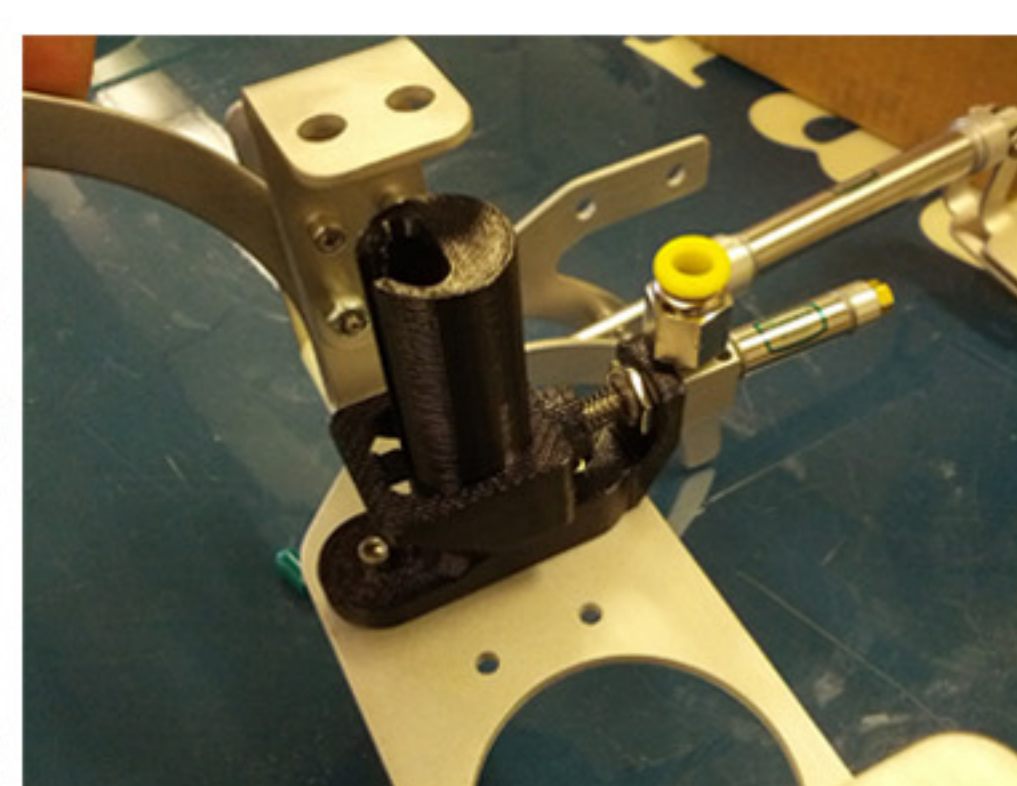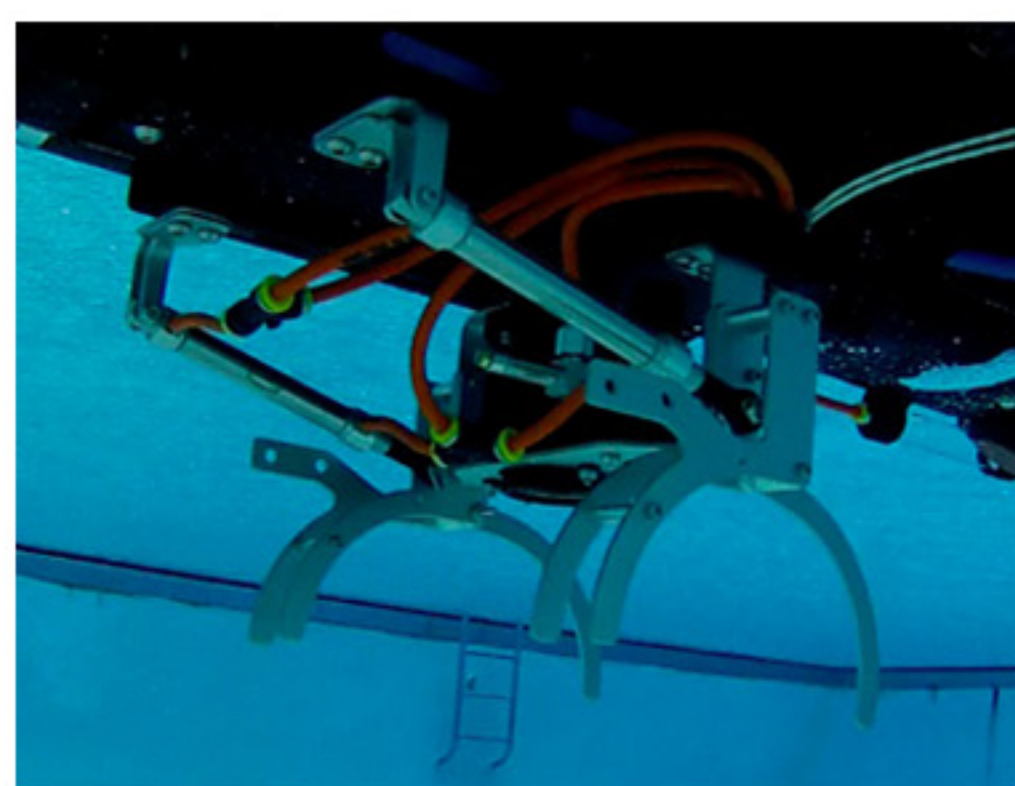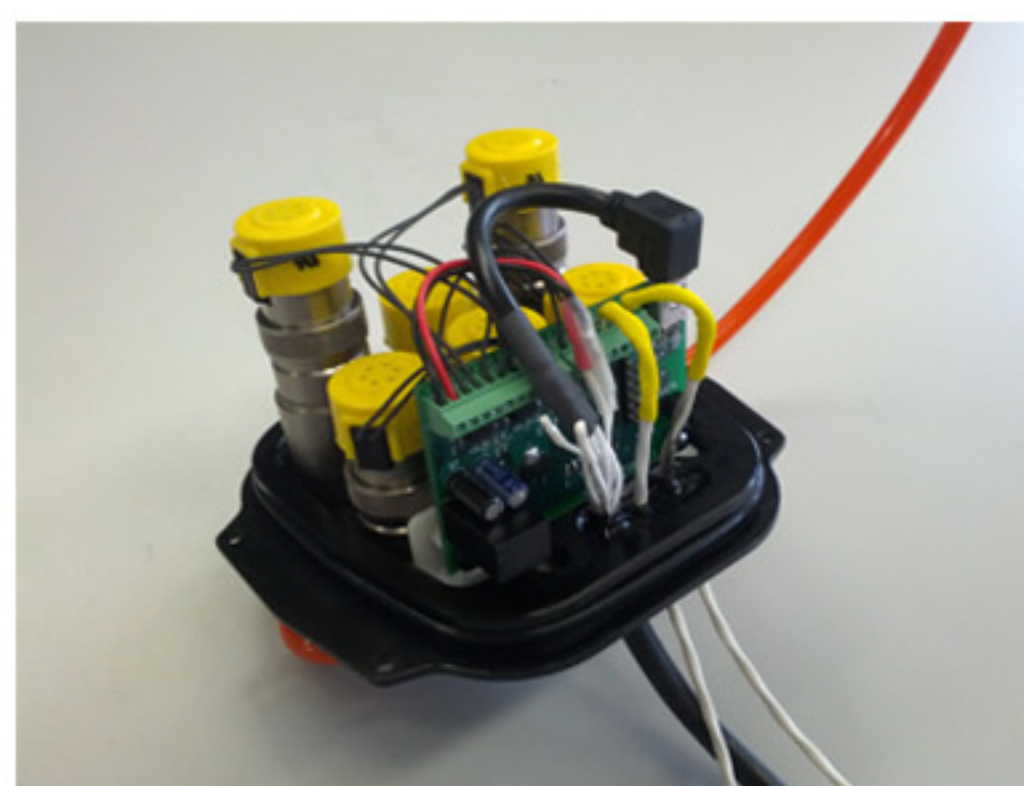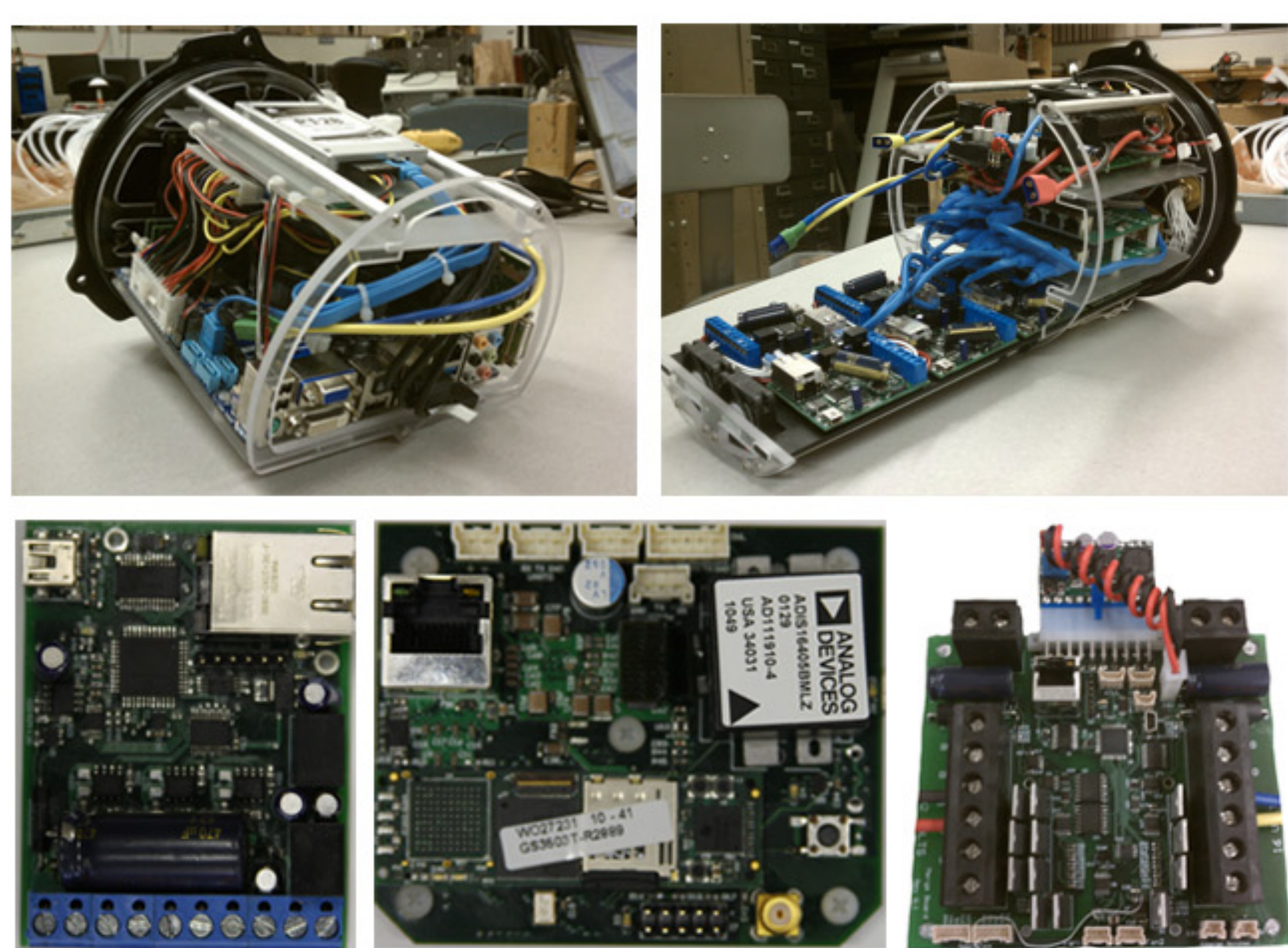
Pneumatic Actuators:
Fast acting and reliable - Six independent channels - Student designed mechanisms

Vehicle Testing:
Extensive pool testing
Sea trials in the Gulf of Mexico

Community Outreach:
Summer robotics camps
Hands on middle school demonstrations
Lab tours and community seminars