



Research Vessels		» 22' Eastern coastal vessel » 20' skiff	» 48' RV Arabella » 30' R/V Caleta » 36' coastal landing craft	» 81' RV Rachel Carson » several 18-30' class vessels	» 36' RV IRA C » 41' RV C-BOLD » 27' Eastern coastal vessel » 22' Hydra-Sports Ocean	» 50' R/V Lucky Lady	» 20' Carolina Skiff » Pontoon Boat	» 185' R/V Endeavor » 53' R/V Cap'n Bert » 20' skiff » 199' RCRV (2021)	» 274' R/V Atlantis » 238' R/V Neil Armstrong » 60' RV Tioga
Ocean Observing Platforms, Instruments & Networks	Sensors, Platforms & Instruments		» 34 Gliders » 1 REMUS » 6 airborne drones » coastal moorings	» automated robotic kayak » in situ sensors » include CTD » bio-optics	» hydro-acoustic arrays for fish and cetacean detection	» UMOOS » 1 SeaExplorer glider » ADCP » CTD » Fluorometers » nitrate sensors » 6 Slocum gliders	» 1 glider » 1 REMUS with microturbulence sensor suite » HF radar array » optics and CTD profilers » towed CTD package	» Multiple gliders & various undersea robotics through the work of a cohort of GSO & Ocean Engineering faculty	450 active ARGO profiling floats and ARGO lab, multiple gliders & underwater vehicles, including HOV Alvin, ROV system Jason/Medea, HROV Nereid Under Ice, various AUVs and a fleet of gliders..
	Shore Operations & Support Capabilities	» Direct waterfront access » floating dock (in 2019)	» 2 Field Stations with docking capabilities and lab space » JC NERRS reserve system	» Research Fleet Operations Center (Research piers at CBL and HPL)	» Customization of buoy control and telemetry systems » Underwater vehicle facilities » Glider missions » CTD systems » small boat operations	» Pier access to Clark's Cove » Meteorological station		» GSO pier - 100' L-shaped fixed dock » Marine Ops & Logistics » Pier enhancements in process to accommodate the RCRV.	» Iselin Marine Facility & pier » 2 berths: 430' and 256' » Sustained surface and subsurface mooring capabilities, dredges, and core samplers
Specialized Technology		» Echosounder system with 3 split-beam transducers » cameras and modified fishing gear » Interactive Learning Center with state of the art IT & AV	» L-Band & X-band satellite receiving stations » full metagenomic sequencing labs » programmer developer of NOAA glider DAC » active and passive acoustic arrays » coastal atmospheric LIDAR and Wind Tracer unit » triple nested HF Radar network	» Active and passive acoustic fish tags » range of optical and sonar based towed imaging systems » next gen sequencing » ultra high resolution mass spectrometry » sampling gear	» Automated imaging systems: IFCB and UVP-5HD » Automated QA of oceanographic observations » NASA SeaBASS and NOAA IOOS Open data sharing guidelines/formats	» Underwater camera systems » acoustic and imaging systems » acoustic tagging » ocean color and AVHRR remote sensing image processing	» Underwater camera systems for assessing fish and invertebrate abundance	» Inner Space Center, providing telepresence services to the academic research fleet	» Multiple underwater imaging systems, including HABCAM, Video Plankton Recorder, IFCBs, and deep-sea camera systems.. » Acoustic communications, and undersea telemetry, including extensive facilities for systems testing and prototyping.
Advanced Modeling Capabilities		Developing models that link climate information, fish distribution, fish abundance, management strategies, and economic opportunities	Ocean modeling group, developers of the Regional Ocean Modeling system. Advanced coupled ocean-atmosphere WRF model, energy/economic models through Blousten school, and former CAIT infrastructure modeling group	Physical oceanographic models (ROMS, HVCOM), End to end models, Fishery stock assessment models: ADMB, TMB and SS3, Fishery ecosystem modeling with EWE	16-core Server with four quad-core Intel Xeon 2.4 Ghz CPUs and 16 GB of RAM, 4 core computational units, file server with 32 TB. Access to Advanced Computing Group's clusters.	Advanced ocean modeling using integrated atmosphere-ocean model forecast system	Advanced modeling capabilities of coastal ocean and estuaries: biogeochemistry, population and economic models	Advanced modeling of the Narragansett Bay via a network of instrumentation managed by GSO.	Advanced ocean modeling capabilities, including physical oceanographic models (ROMS, FVCOM) and coupled biological-physical models.
Specialized Laboratories & Facilities		» Sampling programs for highly migratory species including bluefin tuna » Acoustic sampling for spawning herring and cod	» full seawater culture capability » joint RU/business Aquaculture Innovation Center	» Large running sea water facilities at both CBL and HPL	» Auto-analyzer nutrient analysis laboratory, phytoplankton culturing facilities » Dedicated satellite data ingest, processing and analysis laboratory	» Aquaculture; HP computing » Satellite image processing » Seawater culture facility » GIS » Remote sensing	» Aquaculture Research and Marine Ecosystem Research Labs » Marine Ecosystem Research Lab		Environmental Systems Laboratory (ESL), AVAST (Autonomous Vehicles and Sensor Technologies), Cafe Thorium Radioanalytical Facility, Pressure test facility.
Supercomputing and data storage facilities		Developed cloud-based environment, currently used by NERACOOS and IOOS, for managing oceanographic data.	full seawater culture capability, aquaculture research, a joint RU/business Aquaculture Innovation Center		Advanced Computing Group: Supercomputing center and data storage facility	HP Computing Center with 1500+ core parallel-processing cluster and ~400 terabytes of redundant disk storage	Access to supercomputer for advanced numerical modeling		High-performance compute cluster and research data storage repository.
Construction and engineering facilities for deep ocean observation platforms			Machine shop & Mechanical group.		Mooring operations; Electronic design and fabrication.				Machine shop and mechanical group. Facilities for heavy construction of mooring structures, dredges, and core samplers.
Educational Capacity	NOAA related PhD and MS programs (examples)		Relevant Departments (7) Expertise (Biology, Geography, Geology, Chemistry, Physics, Ecology, Evolution, Atmospheric Sciences, Institute of Earth Ocean and Atmospheric Sciences, Ocean Observing, Energy Institute)	Marine, Estuarine, Environmental Science program. Covers programs in oceanography, fisheries science, environmental chemistry, ecology	7 programs (MS and PhD programs in Oceanography, Marine Biology, and Marine Policy. PhD program in Ocean Engineering)	7 programs (Marine Biology, Marine Science & Technology, Integrative Biology, Civil & Environmental Engineering, Engineering & Applied Science, Data Science, Environmental & Public Policy)	M.S. and Ph.D. degrees in Marine, Estuarine and Environmental Science, M.S. and Ph.D. degrees in Toxicology	Ph.D. and M.S. degrees in Oceanography. Professional Masters of Oceanography (M.O.) degree (non-thesis)	Ph.D. degrees through the MIT-WHOI Joint Program in Oceanography
	Undergraduate education	NSF REU program on fisheries ecology and coupled natural & human systems	Undergrad Degrees: Marine and Coastal Sciences (Bio, Chem, Geo, Physical), Ecology and Evolution, Minor in Fisheries Science, Undergraduate Glider School, Mid-Atlantic Summer REU program	REU summer internships	Summer internships, specialized BS degrees in Marine Biology, Oceanography, Aquaculture	REU, summer internships, undergraduate minor in Sustainability, major in marine biology, environmental resources engineering	Summer REU in Marine and Estuarine Science, and Summer Geoscience Bridge Program	SURFO student program; strong collaborations with URI's communications school to advance science journalism & media production	REU, WHOI summer student fellowship program, CINAR undergraduate minority traineeship, guest student program
Community engagement and cooperative research		Operates the Marine Resource Education Program. Outreach with fishery stakeholders & communities. Developing technology for electronic monitoring/ reporting in fisheries. Extensive collaborative research	Dedicated outreach teams through Departments of Marine & Coastal Sciences, Agricultural Experiment Station and Departments of 4H	Extensive community engagement reaching 5,000+ per year. Close connection with local fisheries. Strong collaboration with state and federal researchers	Extensive community engagement with local fishing communities	Cooperative research with fishing communities in conservation engineering, bycatch reduction, tagging, biological sampling, fishery monitoring	Strong collaboration with researchers at State (MD DNR, MDE) and federal (NOAA) agencies	Extensive community engagement programs targeting K-12 students, science teachers. Strong connections with various industries including offshore energy (wind), fisheries and ocean technology	Multiple collaborations with regional fishing communities; fishery science & management education program for commercial and recreational fishermen.