Regional Class Research Vessels
The next generation of ships for coastal science
http://ceoas.oregonstate.edu/ships/rcrv

Oregon State University has a long history of operating research vessels as depicted in the image. OSU will operate the West Coast’s RCRV and create new economies for the academic fleet by managing maintenance and spares for the vessels.

Glosten is the Naval architectural firm working with OSU on the RCRV project.

For information on the RCRV Project contact:
Demian Bailey
RCRV Project Manager, OSU-CEOAS
Phone: 541-737-5114
Email: dbailey@coas.oregonstate.edu

Dr. Clare Reimers
RCRV Project Scientist, OSU-CEOAS
Phone: 541-867-0220; 541-737-2426
Email: creimers@coas.oregonstate.edu

UNOLS Fleet Recapitalization Plan Timeline by class
The University-National Oceanographic Laboratory System and other national organizations aim to strategically revitalize the U.S. fleet via the introduction of new vessels in the various classes. The latest to be christened is the Navy’s Sally Ride.

General arrangement rendering of RCRV developed by Glosten Associates, Inc., Seattle, WA. Glosten is the Naval architectural firm working with OSU on the RCRV project.

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The coastal ocean encompasses the most complex range of oceanic phenomena on the globe. Coastal regions are sensitive to human alteration from water and air pollution, resource extraction, transportation, and recreational activities. Wind- and freshwater-driven coastal ocean flows directly affect regional climate. As conveyors for heat and salt and regions of strong vertical mixing, boundary currents play an outsized role in the large-scale ocean circulation. Vigorous interactions between the coastal ocean and the atmosphere control many biogeochemical processes (e.g., the exchange of macronutrients and micronutrients between the land, ocean, and continental margin sediments).

Even with the development of new platforms to study the ocean such as cabled observatories and underwater robots, coverage is scant, and ships are more vital than ever for multi-disciplinary observations and sampling of the ocean.

In 2013, the National Science Foundation (NSF) selected Oregon State University to lead the design and construction of as many as three new coastal research vessels to address issues related to climate studies, ocean circulation, natural hazards, human health and marine ecosystems. In May 2015, the National Science Board (NSB) authorized Dr. France Córdova, the Director of NSF, to include construction of two RCRVs in future budget requests.

A request for proposals will be issued in 2016 to select a shipyard, and vessel construction will begin in 2017 provided anticipated funding is in place. The vessels will feature advanced sensors and sampling systems, and through telepresence capabilities and satellite communications, will bring science at sea to classrooms, the public, and researchers ashore. Oregon State is proud to be leading the charge in developing next-generation vessels that promise a waste heat recovery system, low underwater noise, variable frequency drives, and more efficient operations.

**Benefits of the RCRVs: Science, Community & Outreach**

The RCRVs are targeted investments for multidisciplinary research and education on the marine environment.

The ships will operate in coastal regions worldwide—from shallow coastal bays and estuaries to and beyond the continental shelf and slope—and will make open ocean transits. Furthermore, they will be capable of operating in light first-year ice.

**RCRV Capabilities:**
- Acoustic multibeam bottom mapping and sub-bottom profiling
- Launch and recovery of scientific packages, both tethered and autonomous using state-of-the-art handling systems
- The collection, processing, and sharing of a multitude of environmental data with shore based researchers and students

**Going Green: The RCRVs Will Feature...**
- EPA Tier 4 engines
- A biologic marine sanitation device
- A waste heat recovery system
- Low underwater noise
- Variable frequency drives

**Major Coastal Science Imperatives**
- Harmful algal blooms
- Underwater earthquakes and tsunamis
- Engineering & robotics
- Wave & tidal energy
- Effects of a changing environment

**Need**
- At the current rate of vessel retirements, the academic oceanographic fleet will be reduced to 15 vessels by the time the RCRVs enter service. There are no federal agency plans for new vessel construction after the RCRVs.
- The new capabilities of these ships will be crucial for oceanographic research for the next 35-40 years and possibly longer.
- The RCRVs will also combine versatility with cost efficiency.

**RCRV Particulars**
- Length overall: 193 FT
- Length waterline: 178 FT
- Beam: 41 FT
- Draft @ amidships: 125 FT
- Max speed: 13 KT
- Range: 7064 NM
- Endurance: 21 Days
- Ice Class: ABS CD
- Dynamic Positioning Capabilities: ABS DP-1
- Science Berths: 16
- Crew Berths: 13

**RCRV Particulars**

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