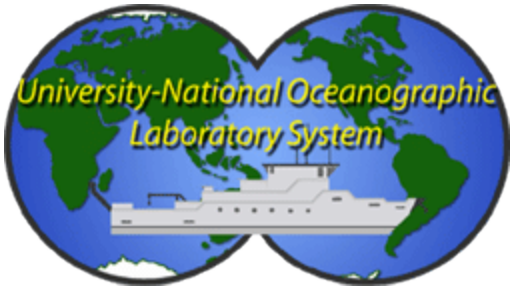
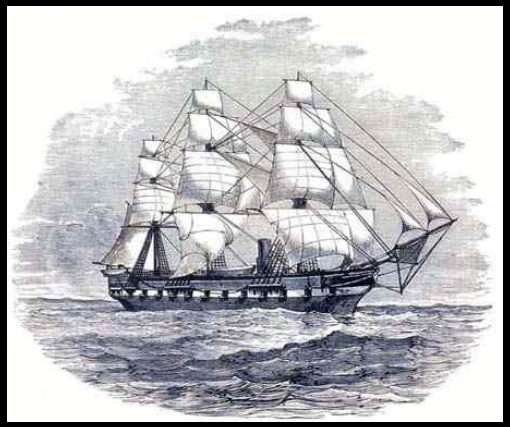


Greening the U.S. Academic Fleet: Progress Report

Greening the Research Fleet

January 10-11, 2012

Nicholas School of the Environment



http://www.geology.19thcenturyscience.org/books/hmsc.jpg

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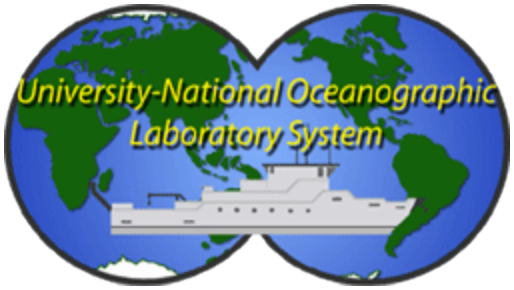
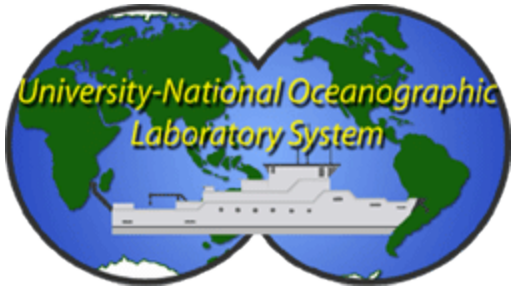


Greening the U.S. Academic Fleet: A UNOLS Workshop

Objective: An Assessment of Current Technologies, Designs and Practices for Environmentally Sustainable Research Vessels

Composition: 50 participants, with representation from Council, RVOC, RVTEC, FIC, NSF, Navy, NOAA, architects and naval designers, industry, and marine scientists



Format: 1 ½ day workshop with invited presentations on various aspects of green ships: design, technology, practices; Breakout sessions and group discussions

Funding: Support of the workshop funded by NSF, ONR, and the Nicholas School of the Environment

Announcements: UNOLS website and mailing lists, advertisement for workshop in EOS

Organized by the UNOLS Office, URI

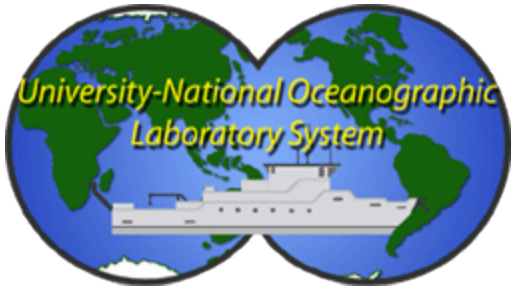
Participants

NSF
ONR
NOAA
UNOLS Office
Glosten Associates
Alaris Companies
ARUP
Foss Maritime
Kluber Lubrication North America
Eurofleet Project
Royal Caribbean Cruises
Tara Consortium
Tactical Marine Solutions
Harley Marine Services
Maersk Line, Limited
Wing Systems
Seacraft Design
DRDC Atlantic
Maritime Reporter Group
Aspin Kemp and Associates

Participants-UNOLS Members

Oregon State University*
Duke University
University of Rhode Island*
Columbia University*
Penn State
Bermuda Institute of Ocean Sciences*
University of South Florida (FIC)
University of Maine
Ocean Exploration Trust-GSO- URI
LUMCON*
WHOI
UW
UNCW
University of Miami
Skidaway
Humboldt State University
Consortium for Ocean Leadership
Schmidt Ocean Institute

*Marine Superintendent



LONG TERM GOALS:

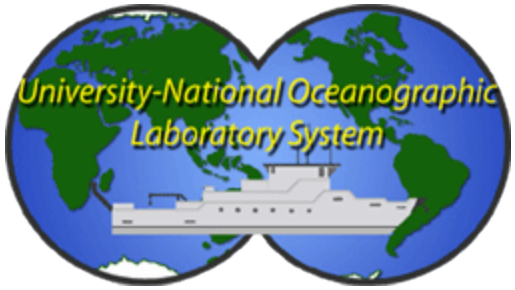
1) Promote environmental sustainability within UNOLS

2) Guidelines for construction, operation and recycling of UNOLS Research Vessels

3) Development of green vessel guidelines for U.S. vessels (outreach)

4) Promote environmental awareness on UNOLS ships with U.S. ocean scientists (outreach)

5) Ocean Class and Regional Class vessel construction



Green Workshop Findings

1. Sail-assist vessels with a small environmental footprint can be used for particular operations.

2. Hybrid power systems and new technologies should be considered as options for future vessels.

3. Vessel energy management consisting of detailed energy audits and on-going monitoring can be carried out with existing vessels.

4. Biofuels and bio-lubricants and an environmental management plan can reduce a vessel's environmental impact and may be appropriate for some vessels.

Green Workshop Findings

5. Development of an environmental classification system, similar to LEED, is underway (Tim Leach, Glosten Assoc.) and will help operators and agencies identify environmental issues and successes in the fleet.

6. Environmental sustainability of UNOLS support facilities and ports should be considered in parallel with vessels.

7. Environmental sustainability can be enhanced by incorporating both technological innovation and attitude changes (green culture) amongst ship operators and users.

Green Workshop Findings

8. Developing collaborations between UNOLS, ship operators, and the private sector will be beneficial to the fleet.

More information on the meeting at:

http://unols.org/meetings/2012/green_workshop/details.html

http://www.digitalwavepublishing.com/pubs/NWM/marinetechnologyreporter/201203/

Greening Shore Facilities: UCSD Nimitz

Sullivan Solar Power
Leading the Solar Energy Revolution

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UCSD Nimitz

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Solar Installation Location:

San Diego, California

System Size:

82.512 KWAC

System Components

Modules: (406) Sharp NU-U235F1
Inverter(s): (1) PV POWERED PVP 100KW
Mounting: Roof

This 82,500-Watt solar installation at Nimitz Marine Facility was done as a part of University of California, San Diego's "Clean Renewable Energy Project" which consists of five separate UCSD project sites, all with specific requirements. With a wide open roof, this site lent itself well to solar. The project employs Sunlink ballasted racking and the system is uniquely attached to the roof without penetrations.

Around the Pier: Scripps Now Powering Point Loma Ship Facility with the Sun

on OCTOBER 7, 2012 · 2 COMMENTS

Nimitz Marine Facility installs photovoltaic system

System Status

Simple | Detail | Help

Fat Spaniel TECHNOLOGIES Insight View™

Nimitz Marine Facility
297 Rosecrans Street, San Diego, CA 92106

Monitoring Customer

System Size: **84.4 kW DC**

Live Renewable Energy Monitoring

Environmentals

70.2 °F
Ambient Temp.

Right Now

Generating	24.7	kW

As of: 2:10 PM Oct 21, 2012 PDT

Lifetime Data

Generated	226,980.0	kWh

Enlarge

A plugin is needed to display this content.
Install plugin...

Environmental Benefits

Greenhouse gases avoided by use of renewable energy

CO_2	281,455.2 lb
NO_x	84.0 lb
SO_2	6.8 lb

The energy to operate a TV for **1,577,511** hours.