



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

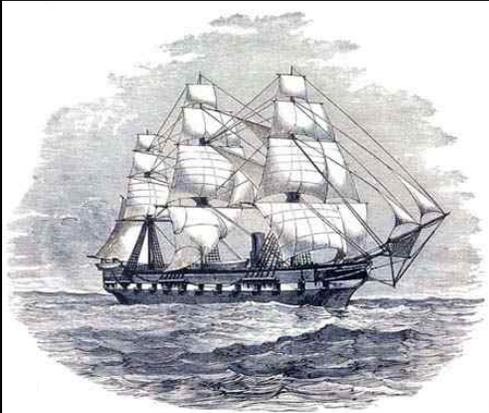
**Bruce H. Corliss  
Duke University  
DESSC Meeting  
June 13-14, 2012**



# 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.

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More information on the meeting at:

[http://unols.org/meetings/2012/green\\_workshop/details.html](http://unols.org/meetings/2012/green_workshop/details.html)

<http://www.digitalwavepublishing.com/pubs/NWM/marinetechologyreporter/201203/>