

University-National Oceanographic Laboratory System ~UNOLS~



DEep Submergence Science Committee
Student/Early Career Scientist Workshop
December 2, 2012





UNOLS and the Academic Research Fleet

Contents of this Presentation:

- **Part I:** UNOLS:
 - An Overview
 - The UNOLS Fleet
 - National Oceanographic Facilities
- **Part II:** The Ship Time Request & Scheduling System
- **Part III:** UNOLS Outreach Initiatives



UNOLS – an Overview:

UNOLS: Founded in 1971 with 33 ships operated by 17 laboratories

UNOLS today is an organization of 62 U.S. institutions with ocean science programs

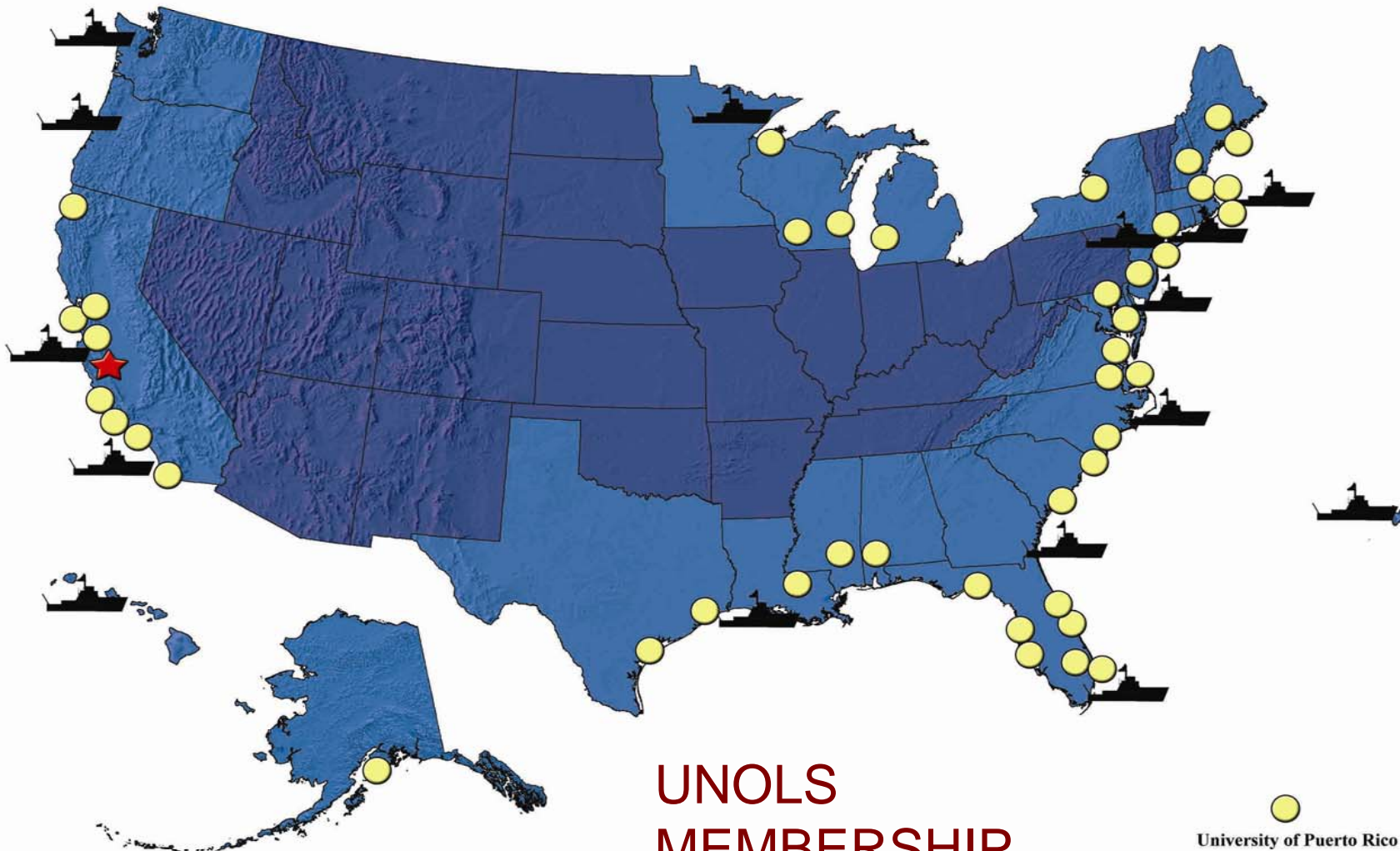
- **16 of the UNOLS institutions are facility operators that include:**
 - **20 Research vessels,**
 - **a National Deep Submergence Facility,**
 - **a National Oceanographic Aircraft Facility, and**
 - **a National Oceanographic Seismic Facility.**
- **Facilities are either owned by one of the Federal agencies or by individual institutions.**
- **Elected Council & 9 major committees (volunteers)**
- **UNOLS Office**



 **Operator Institution**
Note: Symbol indicates home port location. Multiple ships may operate from a single location.

 **Non-Operator Institution**

 **National Oceanographic Aircraft Facility Operator**



UNOLS MEMBERSHIP

 Smithsonian Tropical Research Institute - Panama

 University of Puerto Rico



UNOLS Goals

UNOLS is a coordinator or facilitator of community-wide efforts with these goals:

- Promote broad, coordinated access to oceanographic research facilities***
- Support continuous improvement of existing facilities***
- Plan for and foster support for the oceanographic facilities of the future***

UNOLS IS NOT A FUNDING AGENCY



The UNOLS Fleet - 2012

SHIP/CLASS	BUILT	Conv/ Mid Life	Owner	LOA m (ft)	Science Berths
Global Class					
<i>Melville</i>	1969	1991	NAVY	85 (279)	38
<i>Knorr</i>	1970	1989	NAVY	85 (279)	34
<i>Thomas G. Thompson</i>	1991		NAVY	84 (274)	36
<i>Roger Revelle</i>	1996		NAVY	84 (274)	37
<i>Atlantis</i>	1997		NAVY	84 (274)	37
<i>Marcus G. Langseth</i>	1991	2007-2011	NSF	71 (235)	35
Ocean/Intermediate Class					
<i>Kilo Moana</i>	2002		NAVY	57 (186)	29
<i>Endeavor</i>	1976	1993	NSF	56 (184)	18
<i>Oceanus</i>	1976	1994	NSF	56 (184)	19
<i>Atlantic Explorer</i>	1982	2006	BIOS	51 (168)	20
<i>New Horizon</i>	1978	1996	SIO	52 (170)	19
Regional Class					
<i>Point Sur</i>	1981		NSF	41 (135)	12
<i>Cape Hatteras</i>	1981	2004	NSF	41 (135)	14
<i>Hugh R. Sharp</i>	2005		UD	44 (146)	14
Coastal/Local Class					
<i>Robert Gordon Sproul</i>	1981	1985	SIO	38 (125)	12
<i>Pelican</i>	1985	2003	LUMCON	32 (105)	14
<i>Walton Smith</i>	2000		Miami	30 (96)	16
<i>Savannah</i>	2001		SKID/UG	28 (92)	19
<i>Blue Heron</i>	1985	1999	UMINN	26 (86)	6
<i>Clifford Barnes</i>	1966	1984	NSF	20 (66)	6



Global Class



Knorr



Thomas G. Thompson

*Ocean Class Vessel:
Kilo Moana*



Marcus G. Langseth



Atlantis



Roger Revelle



Melville



New Research Vessels



<http://www.sfos.uaf.edu/arrv/about/>

RV Sikuliaq:

Sikuliaq is an Inupiaq name meaning "young sea ice" or "young sea ice that is safe to walk on."

- Launch = Oct 13, 2012
- Enter Service = 2014
- NSF funded
- Operator: UAF

- Ocean Class: Construction of two new Ocean Class ships is underway. Completion in 2014 & 2015. Navy Funded. Operators: WHOI & SIO
- Regional Class: April 2012 - NSF released a solicitation for Design and Construction of up to 3 new Regional Class ships. Proposals were submitted in September.



Coring



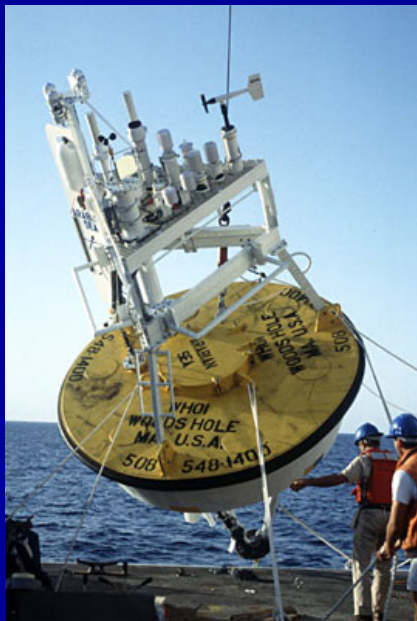
Sediment Trap



Rock Sampling



Mooring Deployment



Towing nets



Collecting Water and Taking Measurements





Shipboard Laboratories





National Deep Submergence Facility



AUV Sentry



DSRV Alvin (Photo credit: WHOI)



ROV Jason II (Photo credit: WHOI - <http://www.divediscover.whoi.edu/tools/jason.html>)



Center for Interdisciplinary Remotely-Piloted Aircraft Studies



UV-18a Twin Otter



Pelican OPV (Photo credit:
<http://cirpas.org/index.html>)

- A-10 coming soon
- Unmanned Aircraft Systems

www.cirpas.org



Seismic Vessel: *R/V Marcus G. Langseth*



Photo credit: Mutter, J. C., S. Carbotte, M. Nedimovic, J. P. Canales, and H. Carton (2009), Seismic imaging in three dimensions on the East Pacific Rise, *Eos Trans. AGU*, 90(42), 374–375. http://www.agu.org/pubs/eos-news/supplements/2009/mutter_90_42.shtml



The starboard paravane about to enter the water. The paravanes permit the streamers and other towed equipment to be widely separated.



← USCGC *Healy*

USCG Icebreakers





UNOLS Ship Requests and Ship Tracks

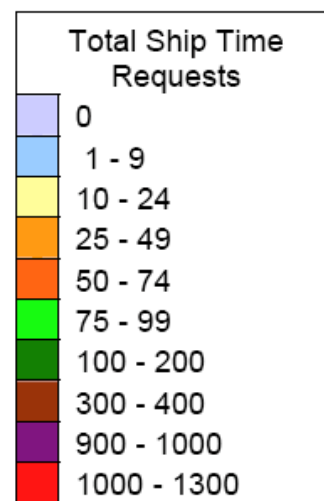
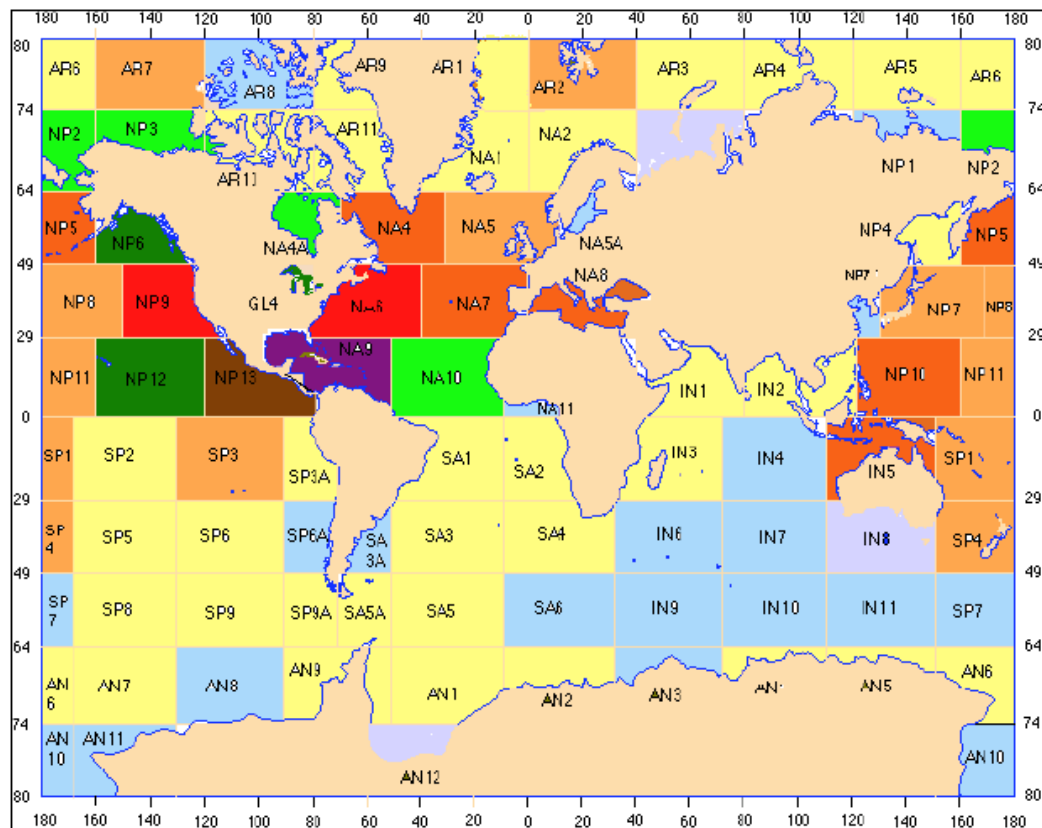


Figure 34. Geographic Distribution of Ship Time Requests (2000 to 2006)



From: UNOLS Fleet Improvement Plan, 2009 (www.unols.org)



Part II:

You have a science idea..

- Preparing a proposal
- **Submitting a Ship Time Request**
- Cruise Planning - Science and Logistics Planning



Ship Time Request and Scheduling System (STRS)

- Know agency proposal deadlines and begin the planning process early
- Identify all support facilities and technical assistance required to carry out your research program – ship(s), NDSF assets, special tools and equipment, etc.
- Give plenty of extra time for logistical preparations for polar work, foreign clearances, marine mammal and protected area considerations, etc.



Access the UNOLS STRS system portal:

https://strs.unols.org/Public/diu_login.aspx

~ Become a member and Log in ~

University-National Oceanographic Laboratory System

SEARCH PUBLIC RECORDS LOG IN

[Suggestions/Request Help](#) [Frequently Asked Questions](#)

Welcome to the UNOLS Ship Time Request & Scheduling System

Log In for Member Activities	Public Information
<p>User Name: <input type="text"/></p> <p>Password: <input type="password"/></p> <p><input type="checkbox"/> Store my credentials so I don't have to login next time (unless I logout)</p> <p><input type="button" value="Log In"/></p> <p>Forgot Your User Name Or Password?</p>	<p><i>Login not required for these activities</i></p> <ul style="list-style-type: none">• Research Vessel & Facility Schedules• Research Vessel & Facility Specifications• Technical Services Information for Research Cruises• Funded Projects• Cruise Reports (Ship Utilization)• Post Cruise Assessment• UNOLS Web Site Home Page
<p>New Member?</p> <p><input type="button" value="Create New Member Account"/></p>	
<p><i>Login or create account for these activities</i></p> <ul style="list-style-type: none">• Facility Requests (ship time requests)• Research Vessel & Facility Scheduling• Technical Service Definitions• Facility Specifications• Reports• System Administration	



Ship and NDSF Vehicle Schedules



University-National Oceanographic Laboratory System

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Ship Schedules

To view UNOLS Ship Schedules that have not yet been imported into the system click [here](#)

Ship: Year:

Year	Ship	Schedule Status	Last Modified
2011	Atlantic Explorer	Published	Nov 07, 2011
2011	Atlantis	Published	Nov 23, 2011
2011	Blue Heron	Published	Nov 15, 2011
2011	Cape Hatteras	Published	Oct 25, 2011
2011	Clifford A Barnes	Published	Oct 31, 2011
2011	Endeavor	Published	Jul 29, 2011
2011	F. G. Walton Smith	Published	Nov 07, 2011
2011	Hugh R. Sharp	Published	Nov 17, 2011
2011	JASON	Published	Nov 22, 2011
2011	Kilo Moana	Published	Aug 08, 2011
2011	Knorr	Published	Aug 18, 2011
2011	Marcus Langseth	Published	Oct 20, 2011
2011	Melville	Published	Nov 28, 2011
2011	New Horizon	Published	Dec 01, 2011
2011	Oceanus	Published	Nov 21, 2011
2011	Point Sur	Published	Nov 30, 2011
2011	Robert Gordon Sproul	Published	Dec 02, 2011
2011	Roger Revelle	Published	Oct 27, 2011
2011	Savannah	Published	Oct 24, 2011
2011	Scaevola	Published	Nov 29, 2011
2011	Thomas G. Thompson	Published	Nov 10, 2011
2011	Wecoma	Published	Oct 12, 2011

[Suggestions/Request Help](#)

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Ship Schedule and Scheduler Contact Information



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View Schedule

or schedule as: Expanded Condensed

the schedule as: Excel XML CSV Google Earth Map (KML) iCal Calendar

2011 - Roger Revelle

Preliminary Schedule

Published: 12/11/2010 10:27 AM - 10/27/2011

Scheduling Contact(s)

Liz Brenner

shipsked@ucsd.edu

(858) 534-2841

Notes: 12/3/10 Changed order of DYNAMO cruises
 12/15- Changed DP, Multibeam calibration, and transit dates in the month of Feb.
 3/2- Adjusted IWISE dates to accommodate a Vietnam port stop for the Navy.
 4/27- Updated schedule to take into account generator causalities. Required deferring Viet Nam port visit until 2012.

View Summary Set Default

Associated Cruises

Dates	Ports	Area/Navy Op	Lat/Lon	Chief Scientist	At Sea/Total Days
Mob: 27 Nov 2010 Dep: 27 Nov 2010 Arr: 06 Feb 2011 DeMob: 06 Feb 2011	Chi-Lung, Taiwan Chi-Lung, Taiwan	/	0N/0E 0N/0E	Maintenance	0/71
<input type="button" value="View"/>					
Project	PI/Institution	Project #	Days/Agency/Status		
Notes: Shipyard period 27 November 2010 - 7 February 2011.					
Dates	Ports	Area/Navy Op	Lat/Lon	Chief Scientist	At Sea/Total Days
Mob: 07 Feb 2011 Dep: 07 Feb 2011 Arr: 10 Feb 2011 DeMob: 10 Feb 2011	Chi-Lung, Taiwan Chi-Lung, Taiwan	/	0N/0E 0N/0E	Maintenance	4/4
<input type="button" value="View"/>					



Log in and go to your Principal Investigator Home Page



University-National Oceanographic Laboratory System

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Benjamin Rauh's Principal Investigator Home Page

[User Information](#)

[Principal Investigator](#)

[Technical Services](#)

[Customize Homepage](#)

Projects

[New Project](#) | Page Size:

[How do I create a Ship Time Request?](#)

[+ Filter Projects/Requests By:](#)

	Project Short Title	Start Date	PI	Status	# Requests	
View	test		Rauh, B	Draft	0	Show Requests

Schedules

Page Size:

[Home](#)

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How to create an STR – a step by step guide



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View FAQ

Question: How do I create a Ship Time Request?

Answer: There are four steps that you will need to follow:

STEP 1: Go to your Principal Investigator home page by clicking on the tab from your user home page or by using the drop down menu from the User Home link at the top of the screen.

STEP 2: create a "Project" by clicking on "New Project" link on your home page or by duplicating an existing project (click "view" for the project you want and then click on the "Duplicate Project" button and follow the instructions given). The project section describes the proposal, grant, and contract or program information. Click "Save and Finish Working" when done.

STEP 3: Once you click on "Save and Finish Working" you will be sent to the STR Manager page. Here you can create your individual ship (cruise) requests by clicking on the "Create New Request" buttons. You can create additional requests the same way until finished. If you wish to make multiple requests similar to the first you can view your request and then use the "Duplicate Request" button. If you created a duplicate project and chose to copy the requests associated with the project, they will appear in the STR Manager page and you can use the "Edit Link" to make changes.

STEP 4: Once you have completed the above two steps you will return to the STR Manager page. If you are ready to publish your request you will need to change the status of your requests from "Draft" to "Submitted". Once this is done, you can click on the "Submit and Publish STR" button and a copy of your request will be emailed to you.

If you have errors in either section of your Ship Time Request you will be notified during the submit operation. Also, if you have not filled in all of the required fields you will be notified during the submit operation. Verify that all required fields have been entered correctly. Be aware that requests that are submitted in "Draft" Status will not be visible to Ship Schedulers.

NOTE: For a successfully submitted Ship Time Request make sure that all required fields (both Orange and Red asterisks) are filled in! If you are not ready to publish your Ship Time Request you can fill in only the Red asterisks.

For more detailed information, read the help document.

[How to Create Ship Time Requests and Projects \(1.8 MB PDF\)](#)

[Home](#)

[Suggestions/Request Help](#)

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Create a new “Project”

The screenshot shows a web form titled "University-National Oceanographic Laboratory System" with a sub-header "Step 1: Enter the information for the new project/proposal". The form includes several sections: "PROJECT STATUS" with a dropdown menu, "PROJECT TITLE" with a large text area, "SUBMITTER" with a dropdown menu, "PI's and other Collaborators" with an "Add New" button, "PROGRAM" with a dropdown menu, "AGENCY" with two dropdown menus for "Agency/Division/Program" and "Agency Grant/Project #", and "AGENCY FUNDING" with two dropdown menus for "Agency Funding Source". There are also "Save" and "Cancel" buttons at the bottom.

- Funding
 - Agency Info
 - Proposal or Project Title
 - Start and End Dates
 - PIs
 - You will need a Project Report for each new Proposal
 - There is a duplicate feature
- SAVE YOUR WORK**



STR Manager Page

This is where you will create a ship time request.
A request is needed for every cruise.

STR Manager

Step 3: Create, edit and/or withdraw ship requests
Create new requests using button at bottom right or by duplicating existing requests.

Step 4: Ensure you have chosen 'Submitted' for all ship requests that you want to submit

Step 5: Click the 'Submit & Publish STR' button when finished with changes

Submit & Publish STRDuplicate Entire STRView STREdit Project Details

ID: 10011
Short Title: new project
Title: new project
PI: up men, APL

GD/PI(s):
Funding Agency: Agency/Division/Program
ACOE

Grant or Project Number
Not Specified

Status: Draft
Version: 1

Pending Status
Not

List of Ship, Aircraft and Facility Requests

Cancel New Request

[cancel] [x] [y]

STR Permissions



The ship time request

Requested Ship/Facility, Dates & Operating Days

Please describe the year and requested ship. All programs that are continuing February 1st of the year before the requested cruise year. Remaining dates, dates during only - half of the year only.

YEAR: Year: [dropdown] SHIP/FACILITY: [dropdown]

OPTIMUM START DATE: Month: [dropdown] Day: [dropdown]

Earliest Start Date: [input] Latest Start Date: [input]

Multi-Ship Op: [dropdown]

Describe multi-ship operations and/or list ships: [input]

List dates or range of dates to avoid, and explain: [input]

Approximate days requested for this cruise. Check if all days requested for special operations, for calibration, for identification and/or test cruises of special devices and then your requested operational days. Special days will be considered for these requests. Actual number of days may change after calibration and/or test cruises and/or special days or a change in the number of days authorized by program managers.

SCIENCE DAYS	Met-Ocean	Decked Days	Estimated Transit	Total Days
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0

Days Approved by Funding Agency? Yes No

If this cruise is a repeating cruise of an existing cruise, please enter the cruise year and cruise number. If this is a new cruise, please enter the cruise year and cruise number. If you are requesting a repeating cruise, please enter the cruise year and cruise number. If you are requesting a new cruise, please enter the cruise year and cruise number.

Is this a repeating cruise? [input] Interval: [input] Number of cruises: [input]

Describe requirements for repeating cruises (intervals or timing): [input]

Just fill a field for a note for ship captain, dates, events, number of days or any other information that will help with scheduling decisions: [input]

- Cruise Dates
- Vessel
- Science Days
- Multi-ship Operations?
- Geographic Area
- Foreign Clearances
- Ports

We try hard to schedule your cruise to your request



The ship time request (continued)

Major Equipment and Instrumentation Requirements	
Instrumentation Requirements That Impact Scheduling Decisions	
<input type="checkbox"/> Dredging	<input type="checkbox"/> Dynamic Positioning
<input type="checkbox"/> Seismic (bulk in)	<input type="checkbox"/> Fiber Optic (SOI)
	<input type="checkbox"/> Mailbeam
	<input type="checkbox"/> Vana
Explain instrumentation or capability requirements that could affect choice of ship in scheduling:	
Major Ancillary Facilities (that require coordination of schedules with ship schedule)	
Autonomous Underwater Vehicle (AUV)	
<input type="checkbox"/> Autonomous Benthic Explorer - ABE (NDSF)	<input type="checkbox"/> Other AUV
Coring Facility	
<input type="checkbox"/> Jumbo Platon Coring	<input type="checkbox"/> Large Drivity Core
	<input type="checkbox"/> OBU Coring Facility
	<input type="checkbox"/> Other Large Coring Facility
Helicopter Facility	
<input type="checkbox"/> Helicopter Ops (USCG)	
Human Occupied Vehicle (HOV)	
<input type="checkbox"/> Alvin (NDSF)	<input type="checkbox"/> Other HOV
Other Facility	
<input type="checkbox"/> Other Facility	
Remotely Operated Vehicle (ROV)	
<input type="checkbox"/> Jason II (NDSF)	<input type="checkbox"/> Other ROV
Seismic Facility	
<input type="checkbox"/> Ocean Bottom Seismograph Instrument Pool (OBSEP)	<input type="checkbox"/> Ocean-Bottom Seismometer Program (OBSP)
	<input type="checkbox"/> Other Seismic Facility
	<input type="checkbox"/> PASSCAL
<input type="checkbox"/> Portable MO/DIGS group	<input type="checkbox"/> U.S. Geological Survey Ocean Bottom Seismometer Facility (USGS at WHOI)
Towed Underwater Vehicle	
<input type="checkbox"/> ARDO II	<input type="checkbox"/> DSL 1204 (HMRO)
	<input type="checkbox"/> Finesil MR1 (HMRO)
	<input type="checkbox"/> IM12 (HMRO)
<input type="checkbox"/> BICO (HMRO)	<input type="checkbox"/> Other Towed Underwater Vehicle
Unmanned Aerial Vehicle (UAV)	
<input type="checkbox"/> Altus	<input type="checkbox"/> Other UAV

-Other major equipment

-Request your NDSF vehicle – Alvin, Sentry, Jason

-Provide as many details as possible



Submit and Publish

STR Manager

- Step 3:** Create, edit and/or withdraw cruise requests
Create new requests using "New Cruise Request" button at lower right or by duplicating existing requests
- Step 4:** Ensure you check "Include Cruise" for all cruises that you want to submit with this STR
- Step 5:** Click the "Submit & Publish STR" button when finished with changes

Submit & Publish STR Duplicate Entire STR New STR Edit Project Details

ID: 10000 Status: Draft
Short Title: new project Version #: 0
Title: new project
PI: sp mcm, ANL
CO-PI(s):

Funding Agencies: Agency/Division/Program: ACCE Grant/Project Number: Not Described Funding Status: To Be Submitted

List of Ship, Aircraft and Facility Requests New Cruise Request

Year	Ship	Event Date (optional)	Science Days	Include Cruise	Status
2008	Atkins Explorer	Jan 01, 2008	1	<input checked="" type="checkbox"/>	DRAFT

Delete STR Submit & Publish STR

STR Permissions

Click the "include Cruise" box.

Once the project/request is published a copy will be sent by email to the you, the schedulers, and the agency reps.

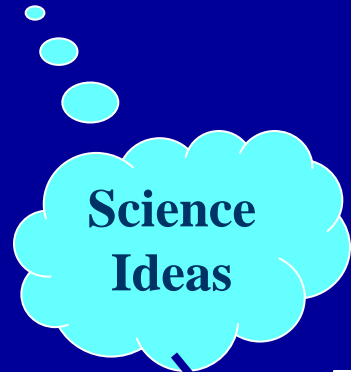


Next Steps

- Your project is now in the STRS system
- From the Ship Time Request Overview page – print your NSF STR form to submit with your proposal in Fastlane



Science Investigators and the Fleet



Science goes to Sea!





Cruise science planning

- Develop a Science Team for your Cruise
- Communicate with the Marine Tech and Marine Dept
- Don't assume the equipment will be there (winches, wire needs, instrumentation, CTD/sensors, navigational needs, vans, etc)
- Provide specifics about any PI supplied equipment and instrumentation
- **UNOLS Shared-Use equipment or Pooled assets** - discuss your plans with person responsible for this equipment ASAP and reserve it as soon as the cruise dates are set
- There are many on-line resources to help logistics planning for your cruise

http://shipsked.ucsd.edu/Schedules/Instructions_For_Scientists/



Take home messages...

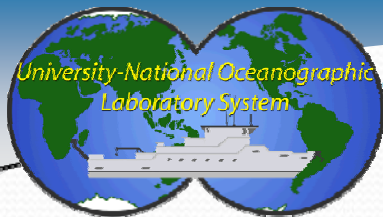
- Early and thorough planning is essential!
- Communicate, communicate, communicate!
- Use all resources available to plan your proposal and cruise
- Don't hesitate to ask questions
<www.unols.org>





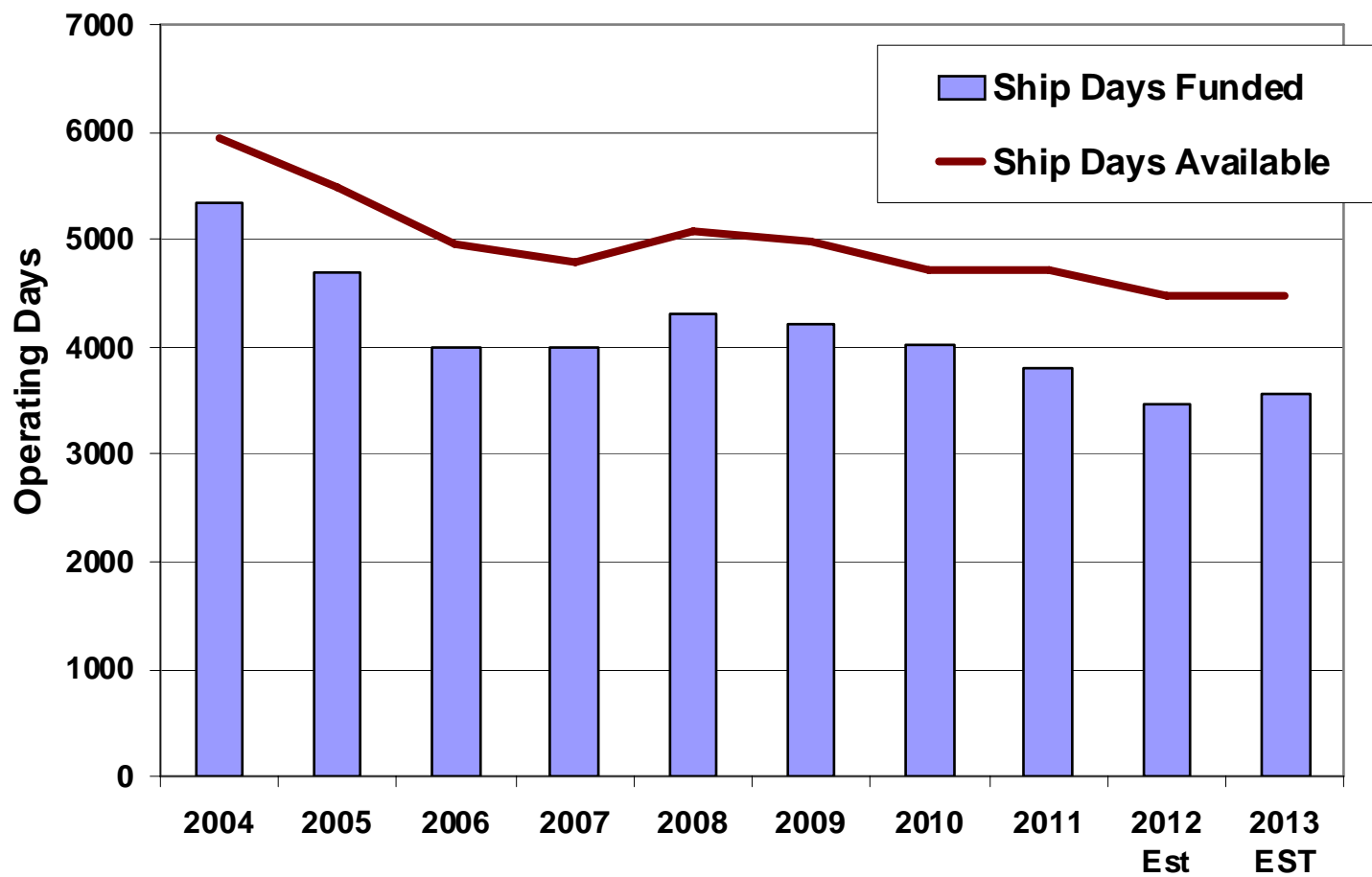
The future ... Fleet Utilization Trends, ship demand...Early Career Scientist Opportunities





UNOLS Ship Utilization Trends

Ship Days Funded/Pending and Days Available





UNOLS Outreach Activities

- Chief Scientist Cruise Training
- DeSSC SVC Opportunity
- UNOLS Speaker Series
- UNOLS On-line resources – Poster, Brochures, Slide packages
- UNOLS Meetings
- Cruise opportunities



UNOLS Chief Scientist Training Cruise program

- Target Participants: Student and Early Career Scientists
- Coordinator and PI: Clare Reimers
- NSF Funded ~ Rapid Award
- UNOLS On-line Application Process
- 2011 Program:
 - Two Wecoma cruise opportunities – July and Sept
 - 14 students on each cruise
 - Cruise Blog
- 2012 Program: November cruise on New Horizon
- 2013 program: East Coast – R/V *Endeavor* - Announcement coming soon



UNOLS Speaker Series

- Establish a speaker series to highlight UNOLS ships and oceanographic research and to serve as an outreach activity to non-UNOLS colleges and universities
- Particular attention to institutions with under-represented minorities in the marine sciences
- Pilot Program beginning in 2013

Regional Coordinators:

Great Lakes: Doug Ricketts (Univ. of Minn.)

Northwest: Bob Collier (OSU)

Southwest: Bruce Applegate (SIO)

Northeast: Mary Jane Perry (Univ. of Maine)

Southeast: Peter Ortner (RSMAS)

Gulf Coast: Vernon Asper (Univ. of Southern Miss.)

Hawaii: Marcie Grabowski (Univ. of Hawaii)

Alaska: Terry Whitledge (Univ. of Alaska)



Thank you!



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