#### University-National Oceanographic Laboratory System ~UNOLS ~



#### DEep Submergence Science Committee Student/Early Career Scientist Workshop December 4, 2011





## UNOLS and the Academic Research Fleet

Part I - Everything UNOLS

- History the Early Days
- UNOLS in a Nutshell
- The Academic Research Fleet
- National Oceanographic Facilities
- Fleet Operations
- The Future Fleet

Part II - From an idea to a cruise,

-> The Ship Time Request System



## The Early Days

#### UNOLS is formed

#### Pre-UNOLS



HMS Challenger, 1870s



#### Atlantis, 1931-1964



R/V Teritu



**R/V** Trident

Copyright, Woods Hole Oceanographic Institution



## UNOLS in a Nutshell

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

UNOLS today is an organization of 61 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

#### UNOLS MEMBERSHIP



University of Puerto Rico

Smithsonian Tropical Research Institute - Panama

#### **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

#### **UNOLS: Council, Committees, and Federal Sponsors**



#### The UNOLS Fleet - 2011

		Conv/ Mid	Owner	LOA m	Science Berths
SHIP/CLASS Global Class	BUILT	Life	Owner	(ft)	Dertiis
	1000	1001		05 (070)	00
Melville	1969	1991	NAVY	85 (279)	38
Knorr	1970	1989	NAVY	85 (279)	34
Thomas G. Thompson	1991		NAVY	84 (274)	36
Roger Revelle	1996		NAVY	84 (274)	37
Atlantis	1997		NAVY	84 (274)	37
Marcus G. Langseth	1991	2007-2011	NSF	71 (235)	35
Ocean/Intermediate Class					
Kilo Moana	2002		NAVY	57 (186)	29
Wecoma	1976	1994	NSF	56 (185)	18
Endeavor	1976	1993	NSF	56 (184)	18
Atlantic Explorer	1982	2006	BIOS	51 (168)	20
New Horizon	1978	1996	SIO	52 (170)	19
Regional Class					
Point Sur	1981		NSF	41 (135)	12
Cape Hatteras	1981	2004	NSF	41 (135)	14
Hugh R. Sharp	2005		UD	44 (146)	14
Coastal Class					
Robert Gordon Sproul	1981	1985	SIO	38 (125)	12
Pelican	1985	2003	LUMCON	32 (105)	14
Walton Smith	2000		Miami	30 (96)	16
Savannah	2001		SKID/UG	28 (92)	19
Blue Heron	1985	1999	UMINN	26 (86)	6
Clifford Barnes	1966	1984	NSF	20 (66)	6

## **Global Class**



Marcus G. Langseth



Atlantis



Knorr



**Roger Revelle** 



Melville



Thomas G. Thompson

## Ocean/Intermediate Class





\_\_\_\_\_Atlantic Explorer







Kilo Moana

Endeavor

New Horizon

## **Regional Class**



Hugh R. Sharp



Point Sur



Cape Hatteras

#### **Coastal/Local Class**



Pelican



Robert Gordon Sproul



F.G. Walton Smith



**Clifford A. Barnes** 



**Blue Heron** 



Savannah

## 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



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



UV-18a Twin Otter

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.



#### ← USCG Healy USCG USCG Icebreakers





#### **UNOLS Ship Requests**





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

## 2010 Cruise Tracks









## The Future Fleet

#### New Research Vessels



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

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

- The Navy has awarded contracts for the construction of two new Ocean Class ships.
- NSF continues plans for up to 3 new Regional Class ships



#### UNOLS 2010 Goal - GREEN SHIPS AND BLUE WATERS GREENING THE UNOLS FLEET





Solar Sailor: http://www.solarsailor.com/

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





## Part II You have a science idea..

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

## The proposal



# "Now THAT is a good idea...."

"But how do l get it funded???" Is your proposed cruise component essential to science objectives? novel? feasible? cost-effective?

Does it provide any value-added benefits in addition to your science?

Does the seagoing work proposed require essential equipment or other resources provided by others?

#### If the answer is YES

-carefully plan for this with colleagues DURING the proposal stage

-include support letters in the proposal

-carefully budget for these resources (including any technical assistance)

## Shiptime requests for Global ships

- Timing of proposals is important
- Communicate with UNOLS and ship schedulers as needed during planning
- Consider combining your cruise with other work proposed/funded in the same area
- Stay flexible- scheduling may not coincide with your optimal time frame
- Reviewers appreciate indications that you have researched the value added components

**DON''T NEGLECT** additional planning considerations for polar, foreign cruises, marine mammals, protected areas considerations, etc. The shiptime request form

•What ship(s) can accomplish your mission?

 Make sure you list all equipment essentials and seasonal restrictions on the shiptime request form

#### Science Investigators and the Fleet



#### Step 1: www.unols.org



#### Step 2: click on Ship time Request System from pull-down

		National Oceanographic boratory System	N	UNOLS Office nography/URI - Box 32 and Exploration Center 215 South Ferry Road arragansett, RI 02882 Phone: (401) 874-6825 Fax: (401) 874-6167
Research Vessel & Facility Information	About UNOLS	Committees	Meeting Calendar & Information	Publications & Reports
University-National Oceanographic Laboratory System	Register 1 Register now DEep Submer Marcus Langsch 9 Greening the Researc Anno	<ul> <li> UNOLS quick navigator</li> <li>Search the UNOLS Website</li> <li>2012 Calendar of Meetings</li> <li>2011 Calendar of Meetings</li> <li>2010 Calendar of Meetings</li> <li>2010 Calendar of Meetings</li> <li>2010 Ship Schedules</li> <li>2010 Ship Schedules</li> <li>Ship Time Request System</li> <li>Ship Clearance Information</li> <li>Post Cruise Assessment Reports</li> <li>Research Vessel Safety Standard</li> <li>RVTEC Technical Exchanges</li> <li>Science Mission Requirements</li> </ul>	gs cisco, CA rancisco, Durham, N	<u>10-11, 2011</u> , <u>Dec 4, 2011</u> <u>CA, Dec 4, 2011</u> <u>NC, Jan 10-11, 2012</u>
UNOLS Public Outreach Resources	Follow	Travel Claim Information UNOLS Vessels Deep-Diving HOV Project	ise Particip	oants
Jobs/Personnel		DSV Alvin slated for operation tetter from UNOLS Chair on		uraged
UNOLS Office		Appendix B Workshop UNOLS Newsletter - Vol 2	- Feb 7-8th, 2012	

#### STRS – Public information and Step 3: Become and member/Log in

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#### 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





#### University-National Oceanographic Laboratory System

SEARCH PUBLIC RECORDS

LOG IN

Suggestions/Request Help

**Frequently Asked Questions** 

#### Ship Schedules

To view UNOLS Ship Schedules that have not yet been imported into the system click here

Ship: Select Ship Year: 2011 CO

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	Pelican	Published	Nov 30, 2011
2011		Published	Dec 02, 2011
2011	Robert Gordon Sproul	Publishe	Dec 02, 2011
2011	Roger Revelle	Published	Oct 27, 2011
2011	Savannah	Publich	Oct 24, 2011
2011	Control	rublished	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 Scheduling Contact



## **STRS User Homepage**

University-National Oceanographic University	versity-l	National Oc	eanogra	phic Laborator	y Systen		
	SEARC	H PUBLIC RECORDS	USER HOME		LOG OUT		
		Suggestions/	Request Help	Frequently Asked Questions	< Back		
	Benjamin Rauh's Principal Investigator Home Page						
User Information Principa	al Investigator	Technical Services					
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New Project   Page Size:	10 🗘	How do I create a Ship	Time Request?				
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Home		Suggestions/			< Back		
	© 2011 Ui	niversity-National Ocea	nographic Labor	atory System			
#### How to create an STR – step by step

	SEARCH PUBLIC RECORDS	USER HOME		LOG OUT		
	Suggestions/R		Frequently Asked Questions	< Back		
		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 the 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 step need to change the status of your requests from "Draft" 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 an detailed information, read the help document					
	How to Create Ship Time Requests and Projects (1.8 I					

Suggestions/Request Help

### Create a new "Project"

	Step 1 : Enter the information for t		eel too
	· r required field		
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- 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!!!!!

# Go to the next step... Time to submit a cruise request

Least Served: Not Yet Served	Save Neur Merk	Save And Go To Next Dep	Disregard Charges	

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



### The ship time request

Name Restort Service Tear and 10 (2017) (2010)	Repaired they ANY prepare that the advert	nersy fellows; chief the pair	lates the separate organic year. Smaller	d owner have speak week - gebr
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List dates or range of detects in avoid, and explicits				
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We try hard to schedule your cruise to your request – really!

- Cruise Dates
- Vessel
- Days
- Multi-ship Operations?
- Repeating Cruises?
- Type of request?
- Geographic Area
- Foreign Clearances
- Ports

# The ship time request (continued)

Major Equipment and Instrumentation Requirements							
Instrumentation Requirements That Impact Scheduling Decisions							
<ul> <li>Dredging</li> <li>Selanic (built in)</li> </ul>	Dynamic Peakioning	Piber Optic (581)	E Valibern				
Explain Autometricitie or Capability requirements that could affect choice of stop in scheduling.							
Major Anci	Major Anolitary Facilities (that require coordination of schedules with ship schedule)						
	Autonomous Under	water Vehicle (AUV)					
Autonomous Benthic Explaner- ABE (NDSP)	Coher AUV						
	Coring	Facility					
😑 Jumbe Pielon Caring	😑 Large Gravity Core	OBU Coring Pacility	Other Large Coring Facility				
	Helicopt	er Facility					
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		ed Vehicle (HOV)					
Avik (NDSF)	Cher HOV	Facility					
Other Facility	Uther	racity					
Remotely Operated Vehicle (ROV)							
<ul> <li>Jason II (NDSF)</li> </ul>	CONV ROV	and the second second					
	Selami	: Facility					
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😑 MGO (HMRG)	Other Tayved Underwoller Vehicle						
	Unmenned Aarl	al Vehicle (UAV)					
E Alus	CINAR UNIV						

Major Equipment

-This is where you request your NDSF vehicle -Alvin, Sentry, Jason

-and all other major equipment

#### 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	Deplicate Ontre STR			New STR. 14	t Project Details
<b>ID:</b> 1000	53			ditetas: Draft	
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Yes ES Date back	2055 Alberto Explorer	Jan 91, 2009	1	🖉 indude Cruise	DRAFT
-		Delete STR		Submit 6	PAMISE STR

E STR Permitations

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
- Keep your fingers crossed!

#### My proposal was FUNDED!!!!!!!

# WHA-HOO!

# NOW WHAT DO I DO???



# • Cruise science planning

Develop a Science <u>Team</u> for your Cruise (the earlier the better!!)

Team spirit and open communications leads to a more successful and enjoyable cruise for all • Are the science activities of my team members complementary and/or synergistic?

 Will there be open berths and/or wire time available for other scientists with interests in your cruise area, students or training opportunities?
 (post on UNOLS cruise opportunities page)

# Know thy and thou Science Objectives and Cruise Priorities

- Foster communications among Science Team to align sampling objectives and cruise logistics
  - Schedule a pre-cruise planning meeting well in advance, in person if possible
- Develop a primary cruise plan and contingency scenarios collaboratively

•Follow-up with conference calls

# Cruise Logistics Planning

Communicate with thy Marine Tech and Marine Dept

 closely follow the established cruise planning procedures and timetable for your vessel

•don't be afraid to ask for clarification and assistance in the cruise planning process from the ship operator and UNOLS

#### START LOGISTICS EARLY

Give plenty of extra time for logistical preparations for polar work, foreign clearances, marine mammal and protected areas considerations, etc. • discuss in detail your cruise equipment needs with Marine Tech

(DO NOT JUST ASSUME IT WILL BE THERE!) -deck (winches, wire needs) -instrumentation (CTD/sensors, sampling bottles) -lab (fume hoods, laminar flow hoods, fridge/freezer space) -navigational needs -other (transducers, special computing needs?) -vans • provide specifics about any PI supplied equipment and instrumentation -over-the-side equipment may require special planning -lab equipment

There are many on-line resources to help logistics planning for your cruise

<u>http://shipsked.ucsd.edu/Schedul</u> <u>es/Instructions\_For\_Scientists/</u>

# KNOW thy and thou equipment to prevent surprises

• If you plan to use any 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 Familiarize yourself with your equipment and its setup BEFORE the cruise (all PIs)

How will you deploy it?

How will you secure it?

Put together a spares box!

Bring your own tools, tape, hardware etc!

PREVENT SURPRISES AND SAFETY PROBLEMS Discuss with other PIs the equipment they plan to use and procedures

In a few cases, you may need to arrange that PIs bringing unusual equipment to discuss their operations and needs directly with the Marine Tech (especially true for any user-supplied wire or atypical over-the-ship operations)

# HAVE A HAPPY CRUISE!



Bon voyage!



## MAINTAIN FLEXIBILITY, OPEN MINDEDNESS AND GOOD HUMOR ABOVE ALL!!



# 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



Thank you!