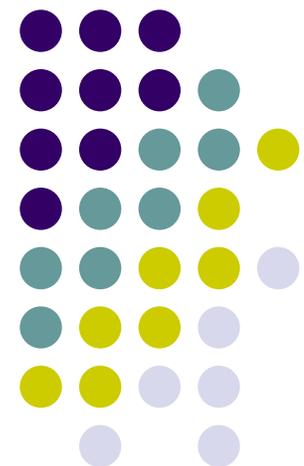


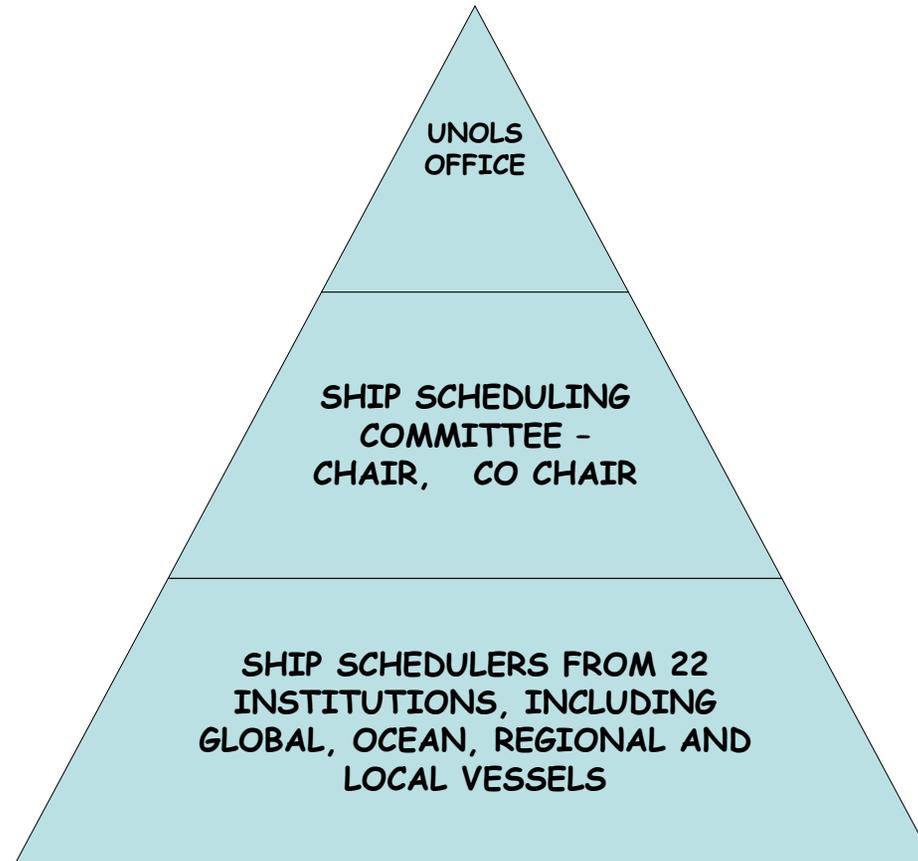
# SCHEDULING SHIPS IN THE U.S. ACADEMIC RESEARCH FLEET

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LINDA M. GOAD, PhD  
SHIP OPERATIONS PROGRAM MANAGER  
THE NATIONAL SCIENCE FOUNDATION,  
ARLINGTON, VA  
JANUARY 2009

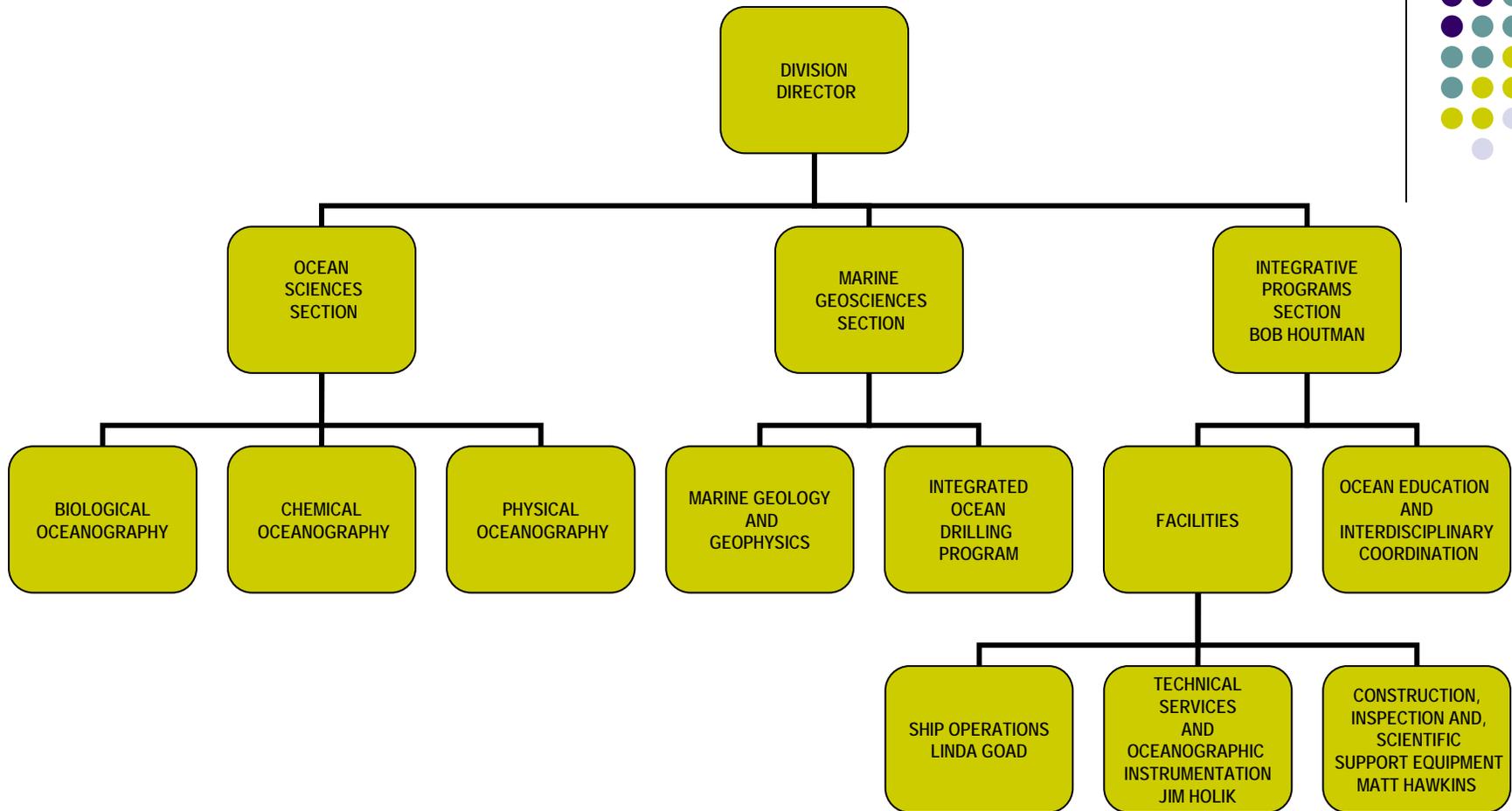


FEDERAL AGENCIES - NSF, NOAA, ONR, AND OTHERS FUND THE UNOLS OFFICE. UNOLS\* IS AN ADVISORY COMMITTEE TO THE FEDERAL AGENCIES. IN TERMS OF SHIP SCHEDULING, THE ARRANGEMENT IS PICTURED BELOW.

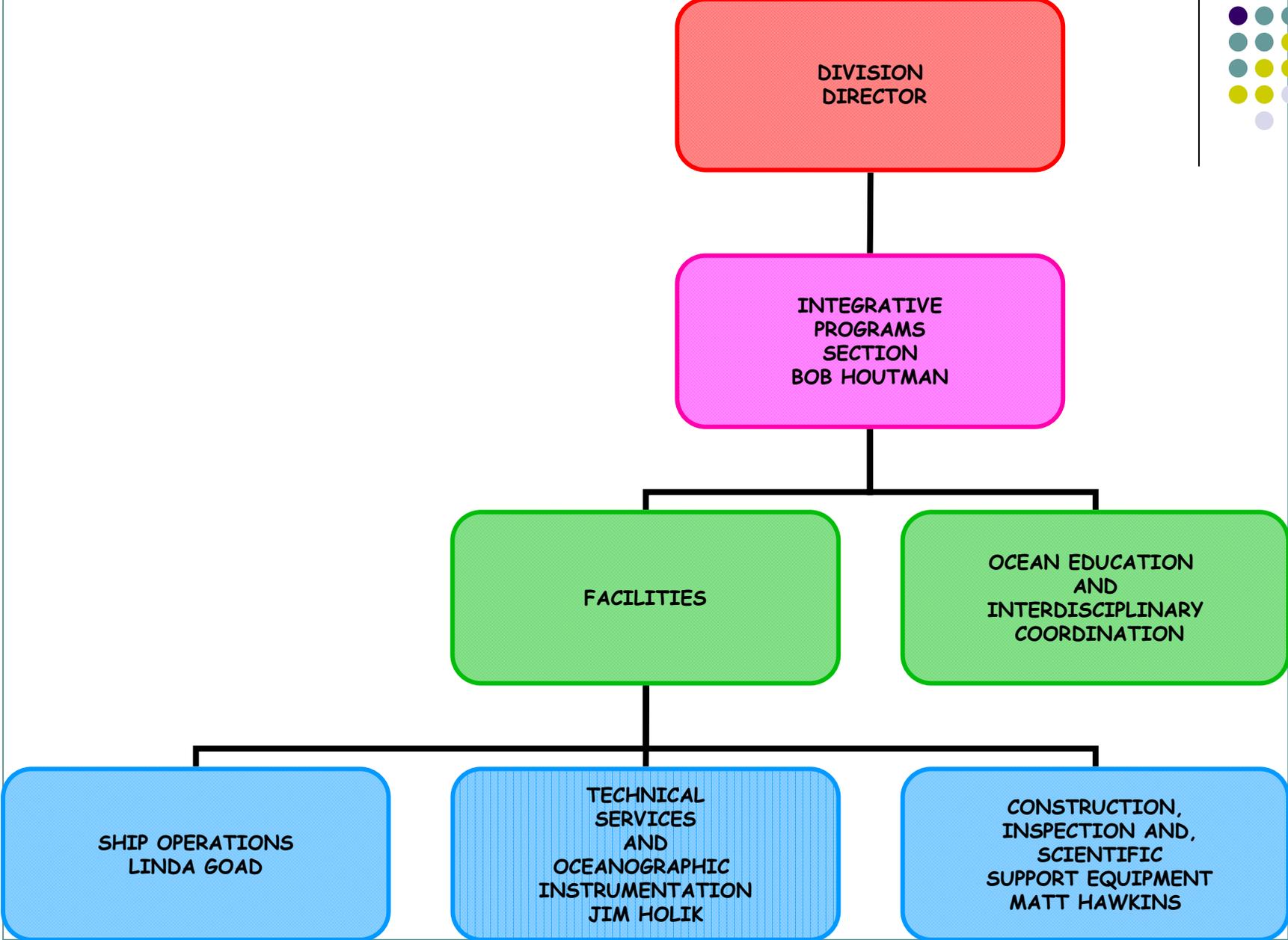
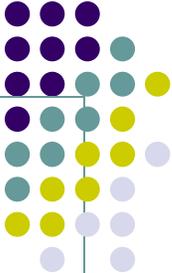


\***U**niversity **N**ational **O**ceanographic **L**aboratory **S**ystem

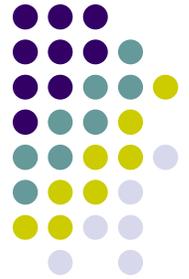
# ORGANIZATIONAL CHART OF NSF OCEAN SCIENCES DIVISION



THE INTEGRATIVE PROGRAM SECTION IS RESPONSIBLE FOR "GETTING THE SCIENCE TO SEA" IN AN EFFECTIVE, EFFICIENT, AND FISCALLY RESPONSIBLE MANNER

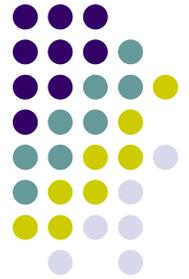


# NSF PERSPECTIVE ON SCHEDULING



- THE U.S. ACADEMIC RESEARCH FLEET (22 SHIPS TOTAL) USUALLY OPERATES BETWEEN 4,200 AND 4,800 DAYS PER YEAR
- NSF IS THE PRIMARY FUNDER OF SHIP DAYS FOR THE ACADEMIC FLEET, WITH OPERATIONS VARYING FROM 2,200 TO 2,800 DAYS PER YEAR.
- ON AVERAGE, NSF PAYS FOR APPROXIMATELY 65-70% OF THE OPERATING COST FOR THE FLEET, SO NSF IS THE AGENCY RESPONSIBLE FOR NEGOTIATING DAILY RATES FOR ALL SHIP USERS. THESE RATES APPLY TO ALL GOVERNMENT SPONSORED RESEARCH.
- WE TRACK, ON AVERAGE, 1000 TO 1500 SHIP REQUESTS PER YEAR. IF A SCIENCE PROGRAM REQUESTS SINGLE CRUISES IN EACH OF FIVE (5) CONSECUTIVE YEARS, THAT WOULD COUNT AS 5 REQUESTS.
- ON AVERAGE, AFTER SCHEDULING IS COMPLETE, NSF FUNDS AND TRACKS ROUGHLY BETWEEN 300 AND 400 CRUISE LEGS PER YEAR.

## SCHEDULING PROCESS OVERVIEW – FROM AN NSF PERSPECTIVE



- AN ELECTRONIC SHIP REQUEST FORM IS FILLED OUT ONLINE AT THE UNOLS WEBSITE DURING PROPOSAL PREPARATION AND BEFORE PROPOSAL IS SUBMITTED TO NSF (OR ANY OTHER AGENCY).
- THE REQUEST IS THEN AUTOMATICALLY DISTRIBUTED TO SCHEDULERS BASED ON SHIP SIZE REQUESTED, SHIP NAME, LOCATION OF WORK, ETC. IT IS ALSO DISTRIBUTED TO PROGRAM MANAGERS IN THE FEDERAL AGENCIES WHO ARE RESPONSIBLE FOR FUNDING SHIP OPERATIONS.
- FOR EXAMPLE, A REQUEST FOR A LOCAL SHIP WORKING IN THE GULF OF MEXICO WOULD BE SENT TO ALL SHIPS THAT NORMALLY OPERATE IN THAT AREA, ALTHOUGH SOME SCHEDULERS MIGHT ASK THE UNOLS OFFICE TO SEND THEM ALL REQUESTS FOR LOCAL SHIPS (COASTAL WORK) IN THE ATLANTIC AND IN THE GULF OF MEXICO. THIS ACTION MIGHT BE EXPECTED FROM THE OPERATOR OF A LOCAL OR REGIONAL CLASS SHIP THAT HAS ITS HOME PORT IN FLORIDA.
- PROPOSALS SUBMITTED TO NSF MUST HAVE A PAPER COPY OF THE REQUEST ATTACHED TO THE PROPOSAL AS THE LAST PAGE. THIS ALERTS THE SCIENCE PROGRAM OFFICER THAT THE PROPOSAL REQUIRES SHIP TIME.
- NSF HAS TWO "TARGET DATES" FOR ACCEPTING PROPOSALS EACH YEAR: THESE ARE FEBRUARY 15<sup>TH</sup> AND AUGUST 15<sup>TH</sup>. PROPOSALS SHOULD BE SUBMITTED WITHIN TWO WEEKS OF THESE DEADLINES, UNLESS THE SCIENCE PROGRAM MANAGER ALLOWS AN EXCEPTION.



UNOLS Ship Time Request Form - Section ONE - Project Information

Project Title: Distribution and Diversity of thermoacidophiles from deep-sea vents

Project Short Title: Distribution and Div UNOLS Project ID #: 101024 Last Modified: 5/28/2008 5:31:00 PM Project Created By: Anna-Louise Reysenbach Project Status: Submitted Version #: 4 Date Submitted: 4/12/2007

P.I. Name: Anna-Louise Reysenbach Institution: PortlandState Phone: (503) 725-3864 Fax: Email: reysenbacha@pdx.edu

Institution: PortlandState - Portland State University Address: 1719 SW 10th Ave, Biology Dept Portland, OR 97201 USA

Co P.I. Name Institution Phone Email No Associated Co-PI

Science Discipline: BioOce Large Program Abbr: None Selected If Other Science Discipline, specify: Large Program Comments: BIO-OCE

Project Status: New Proposal Agency/Division/Program Grant/Project Number Agency Funding Status NSF/OCE/BIO 0728391 Funded

Institutional Proposal #: Proposal Deadline submitted for: Project Start Date: 1/1/2008 End Date: 12/31/2011 Project Budget: \$398,713

Table with 4 columns: Year, Ship(s) Requested (Name or Size), Total Days Req., Start Date, Repeat/Multi-ship/Clearance Req./Estimated Cost. Rows for 2008, 2009, and 2009 Global.

Project Webpage: Summary of Field Work: Summary of Facility Requirements: 2008 Eastern Lau Spreading Center, SPI, Nokalofa, 20 days 12 ROV days; 2009 Atlantic Cruise, NA7, Sao Miguel-Sao Miguel, Snakepit,Rainbow, Lucky Strike, 20 days, 12 ROV; 2010 NP13, Guaymas Basin, 10days, 6 ROV days. Vehicle can be Jason or Alvin Summary of Other Requirements or Comments:

UNOLS Ship Time Request Form - Ship Request #1 Information

Project Short Title: Distribution and Div UNOLS Project ID #: 101024 PI Name: Anna-Louise Reysenbach Version #: 4 Last Modified: 5/28/2008 5:31:00 PM Date Submitted: 4/12/2007 Institution: PortlandState - Portland State University Funding Agencies: NSF/OCE/BIO

UNOLS Request ID #: 1001154 Last Modified: 1/15/2008 Request Type: Primary Date Submitted: 4/12/2007 Submitted By: Anna-Louise Reysenbach

Year Ship/Facility Optimum Start Earliest Start Latest Start 2008 Global 5/15/2008 5/15/2008 5/15/2008

Dates To Avoid:

Table with 6 columns: Op Days Needed, Science Days, Mob Days, DeMob Days, Transit Days (Est), Total. Values: 10, 0, 0, 10, 20.

Multi-Ship OP? No Description: Repeating Cruise? No # of Cruises: 0 Interval: Repeating Description: Schedule Justification:

Beginning: Lat/Long Marsden Grid Navy Op Area 33° N/36° W 112 NA07 Ending: 24° N/45° W 77 NA10 Op Area Summary: M. A. Ridge Op Area Size: Op Area Details: NA7, Sao Miguel-Sao Miguel, Snakepit,Rainbow, Lucky Strike

Foreign Clearance Required: Yes Coastal States: Portugal Foreign Clearance Comments: Coastal States: Portugal

Start Port: Horta, Azores (Acores), Portugal Intermediate Ports: None End Port: Horta, Azores (Acores), Portugal Port Explanation:

Chief Scientist: Anna-Louise Reysenbach # in Science Party: 10 # of Science Teams: 1 # of Marine Techs: 1 Science Party Explanation:

Instrumentation that affects scheduling Dynamic Positioning Multibeam Vans (1) Instrumentation Explanation:

Major Ancillary Facilities Alvin (NDSF) Jason (NDSF) Ancillary Facilities Explanation: Jason or Alvin



- PROPOSALS ARE IDENTIFIED BY CONSECUTIVE NUMBER AS THEY ARE RECEIVED INTO THE PROPOSAL PROCESS UNIT OF NSF. EACH PROPOSAL HAS A UNIQUE 7 DIGIT NUMBER, THE FIRST TWO DIGITS OF WHICH ARE THE FISCAL YEAR, FOR EXAMPLE, 0900001 WOULD BE THE FIRST PROPOSAL RECEIVED BY THE FOUNDATION IN FY 2009.
- AS PROPOSALS ARE RECEIVED, THE PROPOSAL NUMBER IS MANUALLY ENTERED INTO THE ELECTRONIC REQUEST BY THE SHIP OPERATIONS PROGRAM MANAGER.
- THERE IS A WEB TRACKING SITE ACCESSIBLE TO PROGRAM MANAGERS FROM FEDERAL AGENCIES, AS WELL AS SCHEDULERS, TO ACCESS REQUESTS AND REVIEW REQUIREMENTS, EVEN BEFORE REQUESTS ARE FUNDED. THIS ALLOWS SCHEDULERS TO COLLECT REQUESTS FOR EXAMPLE, OF GLOBAL SHIPS IN THE WESTERN PACIFIC. IT ALSO ALLOWS MANAGERS OF SPECIAL FACILITIES, SUCH AS DEEP SUBMERGENCE, OR CORING GROUPS, TO ANTICIPATE AND START PLANNING FOR OPERATIONS. THIS ALSO ALLOWS THE SHIP FACILITIES PROGRAMS TO NOTIFY THE SCIENCE PROGRAM MANAGERS IF THEY ANTICIPATE ANY PROBLEMS WITH REQUESTS. FOR EXAMPLE, THESE MIGHT INCLUDE UNUSUAL AND / OR DISTANT REQUESTS FOR THE USE OF DEEP SUBMERGENCE AREAS; COUNTRIES THAT HAVE DENIED CLEARANCES BEFORE, ETC.
- DURING THE PLANNING AND REVIEW PROCESS, ALL REQUESTS ARE CONFIDENTIAL AND CANNOT BE VIEWED BY THE GENERAL PUBLIC. THE WEBSITE IS PASSWORD PROTECTED, AND RIGHTS TO ACCESS CERTAIN PARTS ARE CONTROLLED BY THE UNOLS OFFICE. ONE SCIENTIST CANNOT VIEW ANOTHER SCIENTIST'S REQUEST UNLESS IT HAS BEEN DESIGNATED AS FUNDED, IN WHICH CASE THE REQUEST THEN BECOMES PUBLIC INFORMATION.

# URLs FOR SCHEDULING SITES



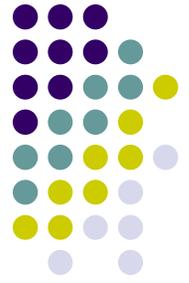
- <http://www.unols.org/info/vessels.htm>
- Vessel information website
  
- <http://www.unols.org/info/scheduling.html>
- Scheduling page – information and links
  
- [http://unolsweb.cms.udel.edu/strs/Public/diu\\_login.aspx](http://unolsweb.cms.udel.edu/strs/Public/diu_login.aspx)
- Login site for the request system

# GUIDELINES AND PRIORITIES FOR SCHEDULING



- **SCHEDULES ARE PREPARED TO MINIMIZE TRANSIT TIMES.**
- **IN THE END, THE AMOUNT OF SCIENCE GOING TO SEA IS DEPENDENT UPON BUDGETS AVAILABLE FROM THE AGENCIES, AND IN SOME CASES, OUTSIDE SOURCES.**
- **END OF THE CALENDAR YEAR SCHEDULES ARE REVIEWED EARLY IN ONE CALENDAR YEAR TO MAKE SURE SHIPS END THAT YEAR IN A FAVORABLE POSITION FOR FUNDED CRUISES IN THE NEXT YEAR. SMALL SCHEDULE ADJUSTMENTS MAY BE MADE AT THIS TIME, USUALLY SHIFTING CRUISES BY NO MORE THAN A DAY OR TWO. CRUISES WITH INTERNATIONAL CLEARANCES ARE NOT ADJUSTED, IF POSSIBLE.**
- **SHIP SCHEDULES HAVE TO BE ADJUSTED TO MEET INSTRUMENTATION NEEDS, ESPECIALLY FACILITIES SUCH AS THE ROV, WHICH MAY HAVE TO BE SHIPPED LONG DISTANCES.**
- **WHEN INSTRUMENTATION IS NEEDED BY TWO GROUPS, IN ENTIRELY DIFFERENT AREAS AND/OR ON DIFFERENT SHIPS, THE SCHEDULES ARE EVALUATED FOR THE IMPACT TO SCIENCE, SHIPPING ISSUES, WHO REQUESTED THE INSTRUMENTATION FIRST, WHICH AWARD WAS FUNDED FIRST, WHICH AWARD EXPIRES FIRST, ETC.**
- **IN GENERAL, OLDER PROGRAMS GET PRIORITY, ALTHOUGH NEWER PROGRAMS MAY HELP FILL OUT THE SCHEDULE, IN WHICH CASE THEY WILL BE INSERTED.**
- **SEISMIC CRUISES NEED A MINIMUM OF 18 MONTHS LEAD TIME DUE TO U.S. PERMITTING PROCESSES AND INTERACTIONS WITH OTHER COASTAL STATES.**
- **SCHEDULES ARE DEVELOPED BY THE SCHEDULERS AT INDIVIDUAL INSTITUTIONS AFTER DISCUSSING REQUIREMENTS WITH THE SCIENTISTS AND THE PROGRAM MANAGERS. ANY AREAS OF UNCERTAINTY ARE QUESTIONED AT THE BEGINNING OF THE PROCESS**

# TRANSITION FROM LETTER OF INTENT TO A PUBLISHED SCHEDULE



- **LETTERS OF INTENT ARE DEVELOPED ONLINE AND ARE REVISED THROUGHOUT THE SPRING AND SUMMER AS FUNDING DECISIONS ARE MADE.**
- **DURING THIS TIME, BASED ON BEST AVAILABLE INFORMATION REGARDING SCHEDULES, WE HAVE THE INSTITUTIONS SEND INFORMATION ON THEIR BEST “GUESS” DAILY RATES.**
- **THESE RATES ARE INCORPORATED INTO A SPREADSHEET DERIVED FROM POSTED LOIs AND ASSESS THE TOTAL COST OF THE FLEET AND DETERMINE WHAT NEEDS TO HAPPEN TO MEET OUR BUDGETS.**
- **BY EARLY SEPTEMBER, WE HAVE A REASONABLE ESTIMATE OF COSTS AND ALSO HAVE AN IDEA IF FUNDS ARE FORTHCOMING FROM OTHER SOURCES. BEFORE SCHEDULES ARE POSTED, WE RECONFIRM DAY RATES AND REASSESS BUDGETS TO MAKE SURE THAT WE HAVE THE FUNDS TO SUPPORT THE CRUISES.**
- **SCHEDULES ARE NOT POSTED UNTIL WE ARE CERTAIN THAT WE CAN SUPPORT ALL THE CRUISES. WE TRY TO AVOID, AT ALL POSSIBLE COST, SCHEDULING A SCIENTIST, THEN CANCELLING A CRUISE AFTER THE SCHEDULE HAS BEEN POSTED. SOMETIMES, BUT RARELY, WE DO RESTRUCTURE SCHEDULES FOR RAPID RESPONSE CRUISES OR OTHER UNUSUAL CIRCUMSTANCES.**
- **SCHEDULES ARE THEN POSTED ONLINE AT THE UNOLS WEBSITE, AND THIS POSTING AUTOMATICALLY INFORMS THE SCIENTISTS SCHEDULED FOR CRUISES OF THEIR CRUISE INFORMATION, SUCH AS SHIP ASSIGNED, DATES OF CRUISES, ETC.**
- **SCIENTISTS ARE CONTACTED THROUGHOUT THE DEVELOPMENT OF LOIs AND SCHEDULES TO ASCERTAIN THAT WE HAVE ALL THE CORRECT INFORMATION REGARDING THEIR CRUISES: NUMBER OF BERTHS, INSTRUMENTATION, SPECIAL NEEDS, LOCATIONS OF STATIONS FOR PERMITTING AND CLEARANCE PROCESSES, ETC.**

**•TENTATIVE SCHEDULES FOR ALL SHIPS ARE POSTED AS LETTERS OF INTENT (LOIs) AND ARE NOT AVAILABLE TO THE PUBLIC. THESE POSTINGS OCCUR DURING THE EARLY SPRING AND CONTINUE THROUGHOUT THE SUMMER.**

**•WE USE THE PASSWORD PROTECTED WEBSITE FOR “TRIAL” SCHEDULES TO SEE HOW THEY WORK**

**• WE HAVE SEVERAL WEB AND TELECONFERENCES TO REVIEW SCHEDULING ISSUES AND FACTORS THAT MAY IMPACT SCHEDULE FLOW, SUCH AS SHIPPING INSTRUMENTS, OPTIMAL WEATHER WINDOWS, AVAILABILITY OF SCIENTISTS, SCIENTISTS WHO ARE ON SEVERAL CRUISES IN DIFFERENT LOCATIONS, ETC.**

**• WE DIVIDE THE SCHEDULING CALLS ACCORDING TO SHIP SIZE AND WORK AREA:**

**GLOBAL AND OCEAN CLASS SHIPS**

**EAST COAST INTERMEDIATE AND REGIONAL**

**WEST COAST INTERMEDIATE AND REGIONAL**

**• WE LOOK INTENTLY AT REQUIREMENTS OF THE SCIENCE PARTY. OFTENTIMES, THE SCIENCE PARTY WANTS TO EXPAND THE CRUISE, EITHER IN DAYS OR NUMBERS OF SCIENTISTS ON BOARD. WHEN THIS HAPPENS, WE HOLD THEM ACCOUNTABLE TO THE INFORMATION SUBMITTED IN THE PROPOSAL THAT WAS FUNDED. SOMETIMES, SCIENTISTS ARE GIVEN THE OPTION TO USE A SMALLER SHIP AND GO TO SEA EARLIER IF THIS WILL FACILITATE THE SCHEDULING PROCESS.**

**• WE ASK SCIENTISTS TO BE FLEXIBLE. IF THEY CANNOT BE FLEXIBLE, FOR ANY GIVEN REASON, THEN SOMETIMES THEY MUST WAIT AN ADDITIONAL YEAR.**

