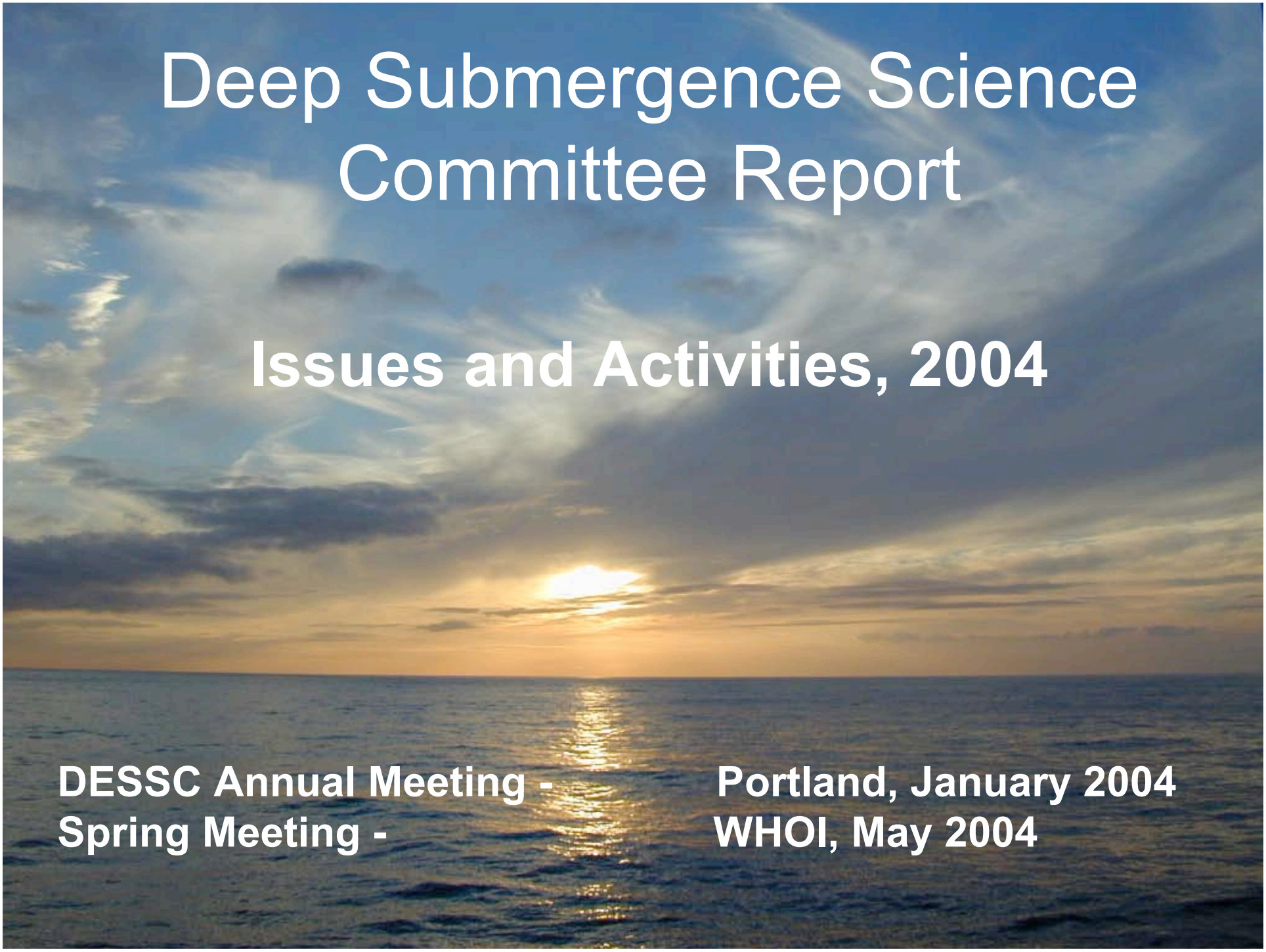


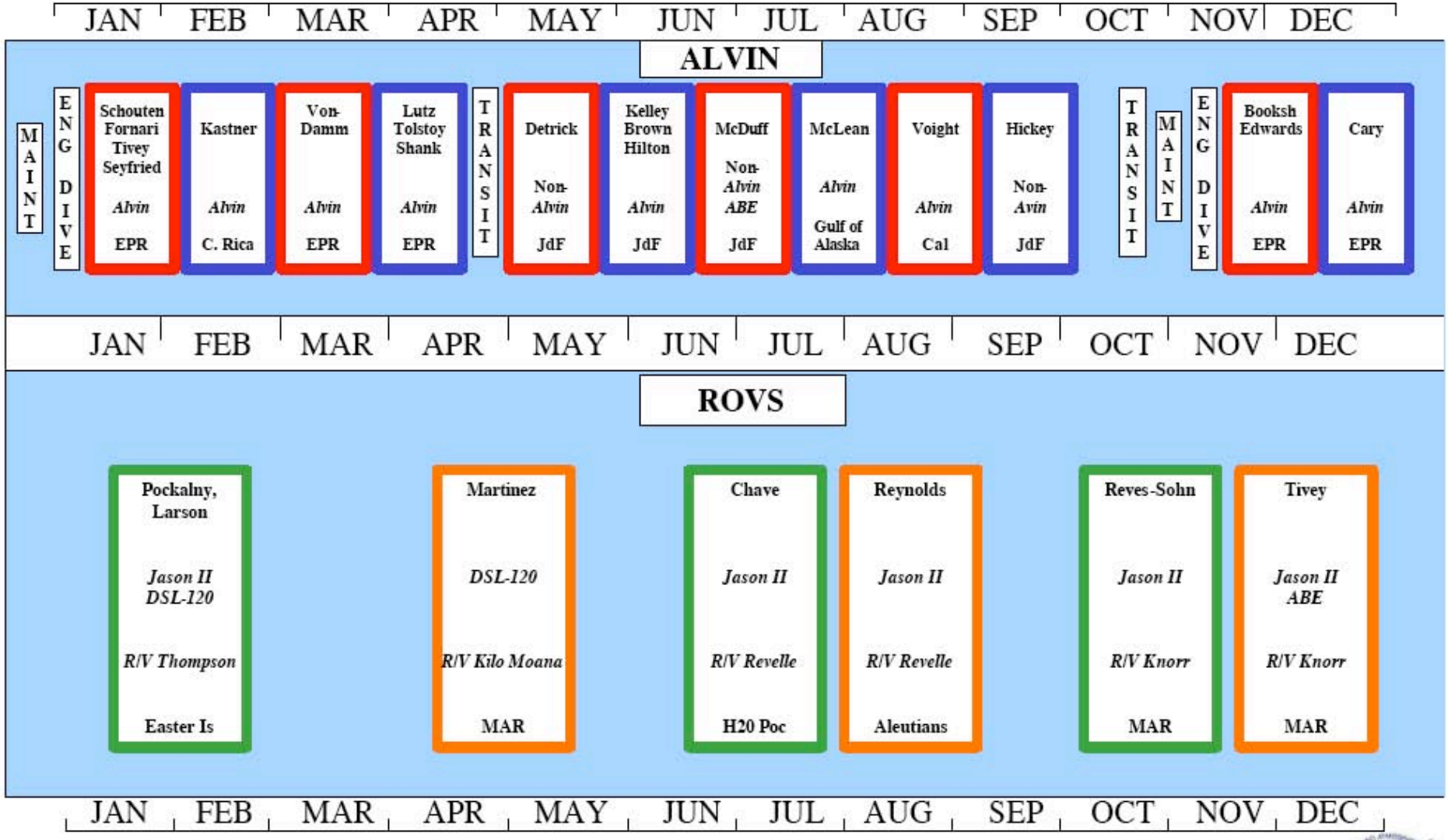
Deep Submergence Science Committee Report

Issues and Activities, 2004

DESSC Annual Meeting - Portland, January 2004
Spring Meeting - WHOI, May 2004

2004 ALVIN & ROV Scheduled Operations

Deep Submergence Group, Woods Hole Oceanographic Institution



Summary of all Alvin Operations as of May 2004

ALVIN Dive Statistics

Total Dives	4,012
Total Depth	8,339,919 meters
Average Depth per Dive	2,079 meters
Total Time Submerged	27,658 hours
Average Time Submerged per Dive	6.89 hours
Total Persons Carried	12,029
Dive Purpose Breakout	
Biology	1,424
Geology/Geophysics	1,418
Chemistry/Geochemistry	462
Engineering/Equipment Tests	279
Search/Survey/Recovery	234
Orientation/Training	140
Certification	55

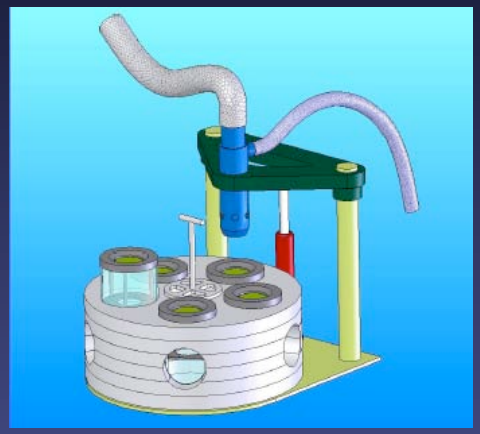
Summary of ROV Operations for 2004 (as of May 2004)

2004 ROV Operations

- Two science cruises:
  - Pockalny / TN165 – Endeavour Deep – Jason2 and DSL-120
  - Martinez / *Kilo Moana* – Lau Spreading Center – DSL-120 sonar, CTD
- Jason2: 9 lowerings, 297 hours of data
- DSL-120: 7 lowerings, 390 hours of data
- 72-hour Jason lowering – new record
- Four more Jason cruises scheduled this year

Reports: Available from DESSC web site minutes for May 2004 meeting

NDSF Archiving Project - D. Fornari, S. Lerner, S. Gegg, J. Howland, B. Walden: Designing a protocol for video data migration, meta-data, and development of a distributed database

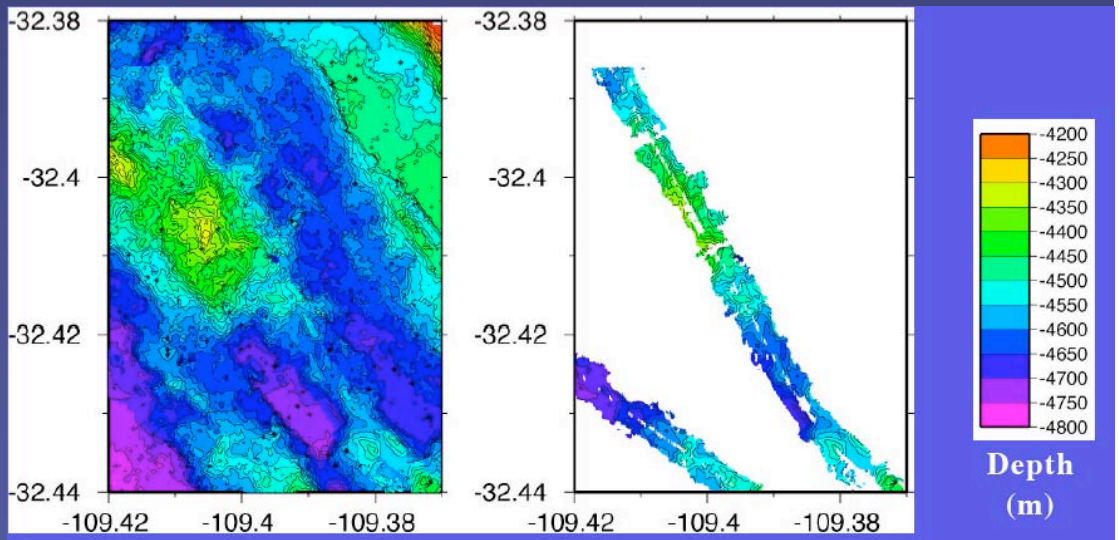


Survey of Future Needs and Upgrades for Deep Submergence Biological Research - T. Shank

Description of Multi-chamber sampler for multidisciplinary research: T. Shank

Status report on DSL120 high-resolution bathymetry

Training session results Jan 2004 Portland meeting



EM300 bathy on left DSL-120A phase-bathy on right

(20 m contour intervals)

DESSC Membership (9 members)

Leaving the committee (5): P. Fryer (Chair, UH), R. Embley (PMEL), A-L. Reysenbach (PSU), W. Ryan (LDEO), T. Shank (WHOI)

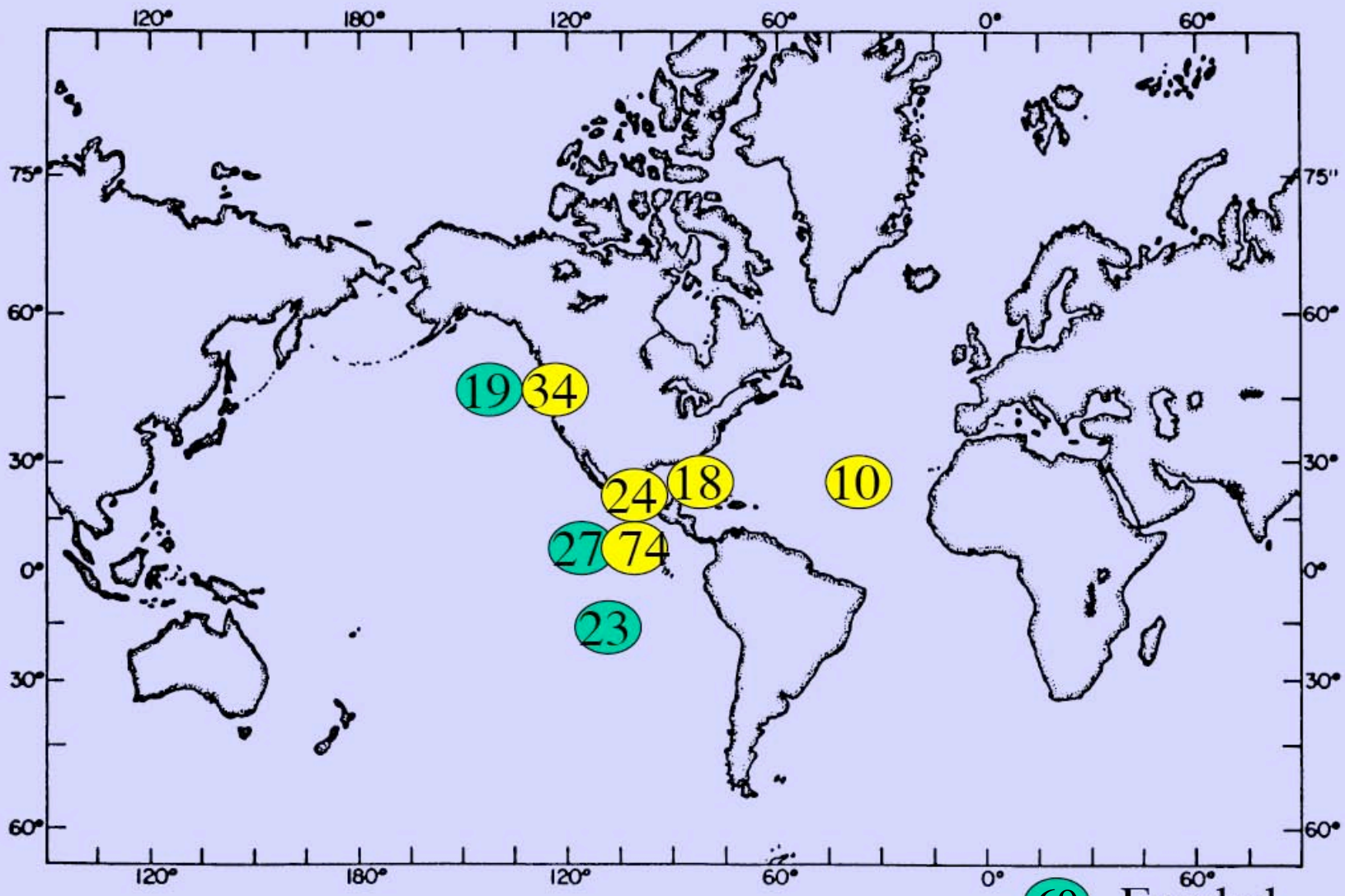
Remaining on the committee (4):
D. Kelley (UW), D. Mindell (MIT), M. Chaffey (MBARI), and H. Edmonds (UT)

DESSC recommendations (approved by Council, Oct. 14):
D. Kelley (Chair), J. Karson (Duke), W. Chadwick (ORST), J. Reynolds (UAF), K. Scott (USF), C. Young (UO)

Exofficio:
Leaving: R. Pittenger, D. Fornari, S. Pomponi

New exofficio:
R. Detrick, M. Tivey - Ch. Sci. (Chris German after Jan. 2006) ,T. Shank

ALVIN Requests - 2005

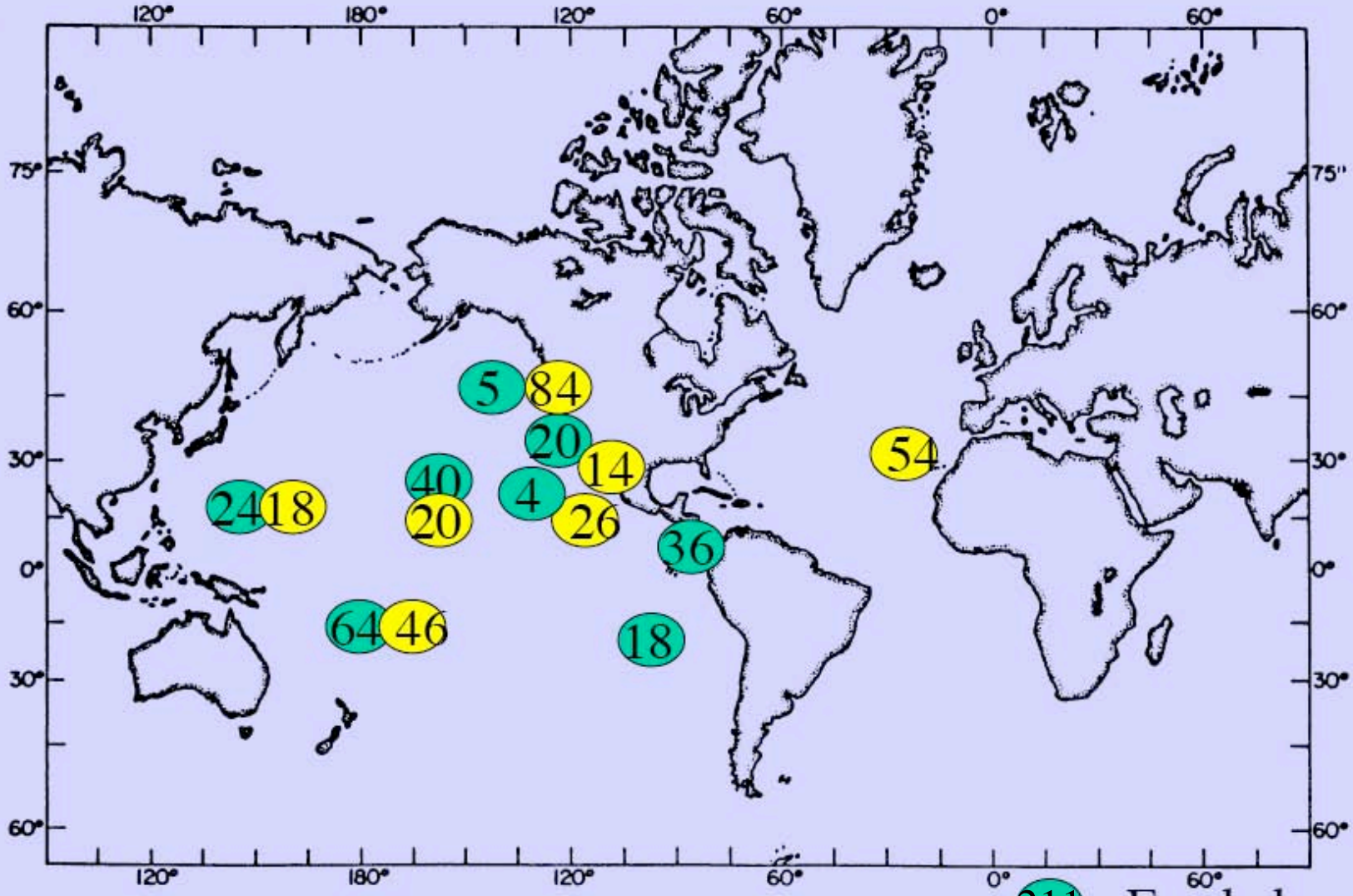


Total - 205

69 Funded

136 Pending

ROV and DSL-120 Requests - 2005

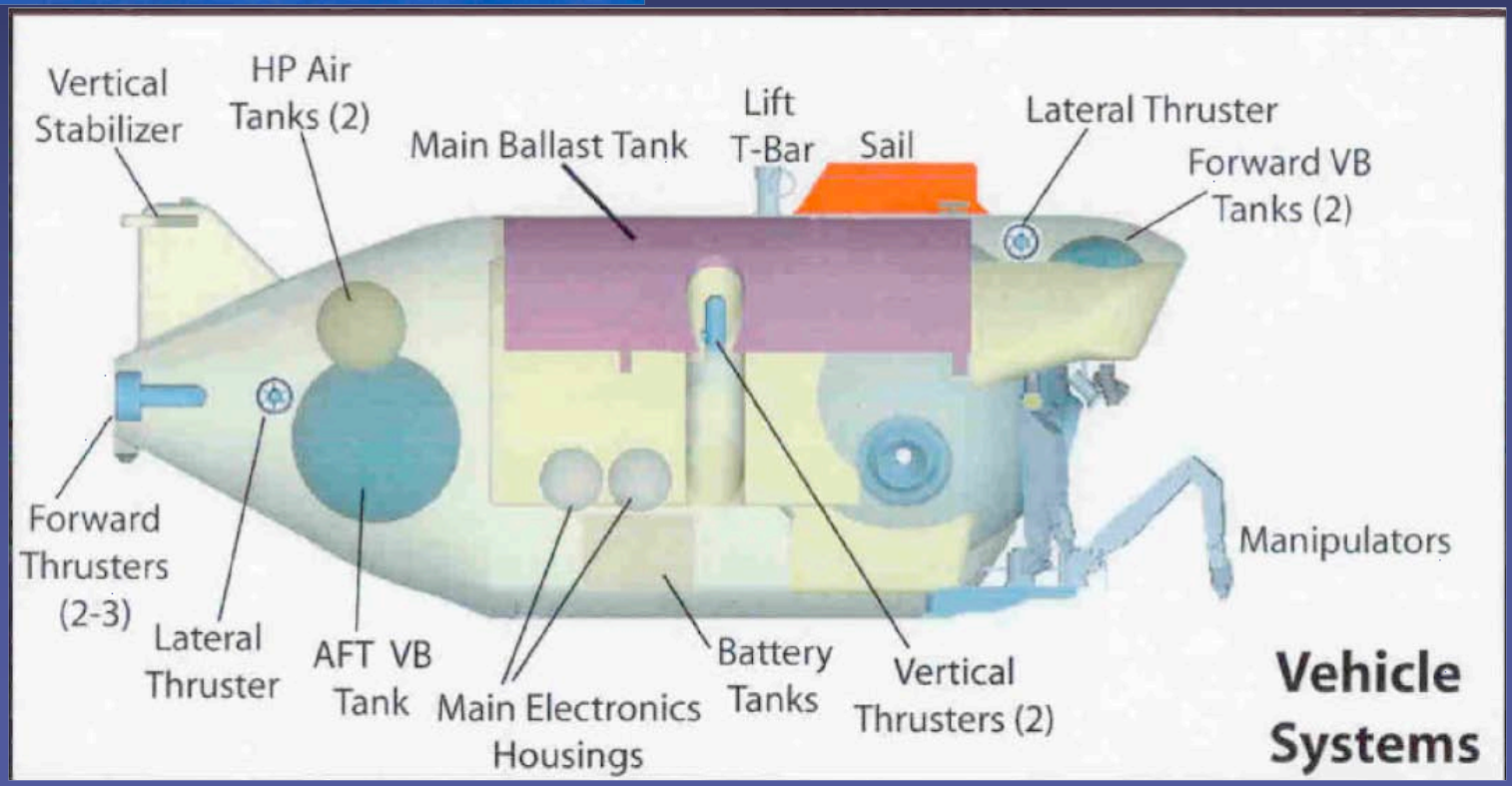


Funded/ Requested 2006+

Area	ALVIN	ROV	DSL 120
Funded Programs: 2006 and beyond			
NEPR	39		
Off Hawaii		77	
JdF	8		
West SPac - Lau Basin		17	
	47	**94**	**0**
Pending Programs: 2006 and Beyond			
Atlantic - MAR	32	30	
Gulf of Mexico	18		
Off Hawaii		42	
NEPR	95		
Costa Rica, Guaymas	45		
JdF	10	67	
Off Oregon, Cal Coast		4	16
Western Pac		13	
Western SP- Lau Basin, Fiji		82	
	200	**238**	**16**

A new Alvin


ALVIN

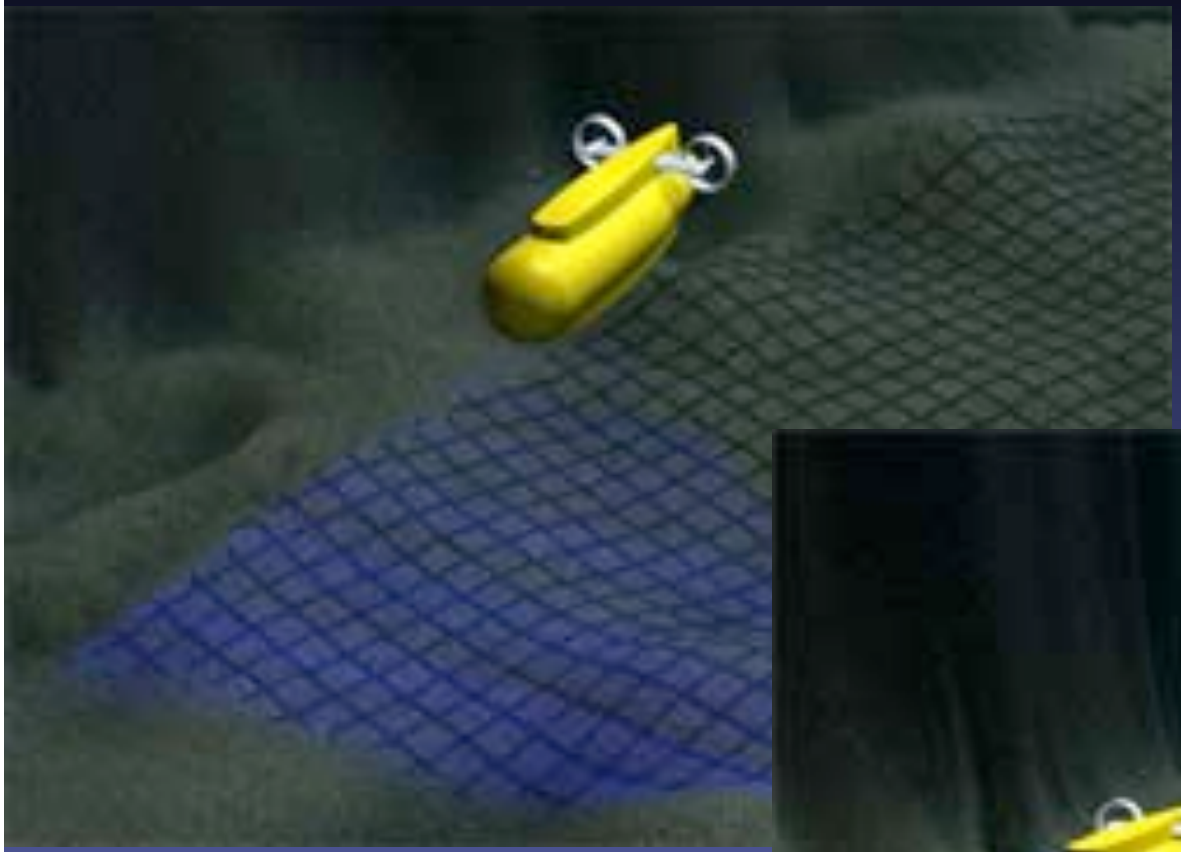

Vertical Stabilizer
HP Air Tanks (2)
Main Ballast Tank
Lift T-Bar
Sail
Lateral Thruster
Forward VB Tanks (2)
Forward Thrusters (2-3)
Lateral Thruster
AFT VB Tank
Main Electronics Housings
Battery Tanks
Vertical Thrusters (2)
Manipulators
Vehicle Systems

Anticipated Schedule

Jim Yoder presented the process for the funding of the new Alvin funding at the 2004 Portland DESSC meeting:

- Two phases, progress will be evaluated at the end of phase one (final sphere design and fabrication - 2005) and phase two (final vehicle fabrication and testing) will proceed based on the review.
- Anticipated vehicle final assembly 2007 and testing/technical support in early 2008.
- Begin science programs with new Alvin mid-2008.

HROV development status



AUV-mode

ROV-mode

HROV development status

Project Status and Plans - 2004

- Development of syntactic floatation material.
- Initial design of housings underway.
- Developed a plan for the analysis, design and testing of the micro fiber payout system with SPAWAR. Examining potential candidate microfibers in detail.
- Developing conceptual plan for power storage batteries
- Developing specifications for sensors (e.g. sonar) and identifying potential vendors
- Form oversight committee
- Optical analysis and initial design specification of LED based lighting.
- Generating detailed Project Plan with milestones.
- Conceptual outline of the vehicle control software underway
- Developing initial specifications for electric manipulator

HROV development status

HROV Project Plans

2005

- Complete final testing on syntactic floatation material
- Complete proof pressure testing and cyclic testing of 10-inch ceramic floatation spheres and main electronics housings.
- Initial testing of microfiber payout canisters.
- Prototyping of battery assemblies.
- Monitor/received purchased components.
- Fabrication and operational testing of LED lighting assemblies.
- Development/testing of the control system using the JHU test bed

First science proposal was submitted to NSF-OCE/MGG
Aug. 15, 2004

Next DESSC Annual Meeting

San Francisco, Sunday, Dec. 12, 2004
(before AGU meeting)

Ramada Plaza Hotel
1231 Market Street

Hand-off by Fryer to Kelley