

2011 Committee of Visitors Report for the Facilities  
Programs of the Division of Ocean Sciences

## RESPONSE

We sincerely thank the Committee of Visitors (COV) for recognizing and commenting on the performance of the experienced, dedicated and knowledgeable Integrative Programs Section staff in addressing the challenges of supporting the facilities necessary for NSF-funded research and training of oceanographers. Your conclusion that the programs in the Integrative Programs Section are effectively and efficiently managed is very valuable feedback in light of the many challenges facing the Division of Ocean Sciences. The continuing increases in facilities operating costs has required a focused review of the way we do business and has resulted in a renewed effort to think strategically and to look for increased opportunities to conduct operations efficiently and collaborate with the federal funding agencies and the operating institutions.

### Recommendations

#### *Ship Operations*

**Recommendation (1):** Institute and conduct a periodic, holistic review (either internal to NSF, external, or a combination of both) of vessel operations, operator performance, material condition and capabilities to support current and emerging science. Reviews should include all available, pertinent information including ship operations e-jackets, ship inspection reports, and post-cruise assessments. The expected outcome is to ensure the capability of operators, crews and vessels to support safe and effective science operations, to maximize the efficiency of operations, maintenance, training and ship upgrades, and provide the background and justification for any necessary follow-on actions.

**Response (1):** As stated by the COV, there are numerous on-going mechanisms such as ship inspections, post-cruise assessments and proposal review analyses being used to gather inputs on vessel operations, operator performance, material condition and capabilities to support current and emerging science. In an effort to take a more holistic approach, the Integrative Programs Section will conduct an internal review of all aspects of the ship operations related activities. The approach will be to focus on each ship Class in the different geographic regions and review all the available data for each ship operator. This will include responses to ship inspection report discrepancies, feedback from the science community users, SSSE and OI proposal submission focus and quality, shipyard maintenance reports and plans, etc. The IPS Program Officers for Ship Operations, Shipboard Scientific Support Equipment, Oceanographic Instrumentation, Technical Services, and Submersible Support will evaluate past performance and the

effectiveness of on-going practices and discuss plans for the future in each program area. OCE Ocean Science and Marine Geosciences Program Officers will be invited to participate in a follow-on session to discuss the results of the review with a goal of increased coordination between the facilities and science programs. The overall expected outcome is increased safety and efficiency of all Academic Research Fleet activities in support of ocean science research operations.

**Recommendation (2):** While it is the understanding of the COV that a replacement for the Ship Operations Program Director has been sought and chosen, IPS should ensure the continuity of the successful ship operations and maintenance program at the high level maintained by the incumbent until the next Program Director is in place, and an effective turnover can be achieved.

**Response (2):** In order to ensure continuity, Brian Midson has accepted a 120-day Detail assignment into the position of Interim Program Director for Ship Operations. A 3-week overlap period prior to the departure of the outgoing Director allowed for seamless transfer of ongoing activities. These included final funding actions in support of calendar year 2011 operations, ship scheduling for 2012, and ongoing Fleet planning activities. A replacement Ship Operations Program Director is expected to arrive in late September, which will provide at least four weeks of overlap prior to the end of the Detail period.

**Recommendation (3):** IPS should consider the establishment of an external review panel to analyze, assess and document the causes of issues surrounding the acquisition, refurbishment, assignment and management of the *R/V Marcus Langseth*.

**Response (3):** IPS and the Large Facilities Office will hold an internal panel review at the end of September 2011 to assess the progress made by LDEO in addressing the findings of the Business Systems Review conducted in 2010. The outcome of the internal panel review will inform decisions on how best to continue oversight of the *R/V Marcus Langseth* operations under the existing cooperative agreement and the need for an external review panel.

#### *Submersible Support*

**Recommendation (4):** The relationship with NAVSEA for certification of ALVIN RHOV is an important one. We note that the funding actions in support of WHOI for this element in FY2011 fall outside the formal scope of this review. Regardless of budget mechanism or timing issues, this should have attention paid to it as part of the integrated program.

**Response (4):** The funding actions supporting the ALVIN RHOV project were made after the Final Design Review. The comprehensive recommendations from the panel included establishing, and fully funding, NAVSEA certification of the upgraded ALVIN. The Program has advised WHOI to pursue dual certification (NAVSEA and ABS) for Stage I (4500m operations).

**Recommendation (5):** Transparency of the ALVIN RHOV program structure and budget could be improved.

**Response (5):** The Program will prepare a briefing document that will describe all aspects of the ALVIN RHOV project, including the activities of Programs other than submersible support, which may be impacted by the ALVIN Upgrade.

**Recommendation (6):** Outreach efforts at AGU should be continued and expanded to both increase program visibility, and generate interest beyond the traditional geosciences user base. Specific efforts should be developed to encourage participation from underrepresented groups.

**Response (6):** In an effort to expand the deep submergence user base, UNOLS, with support from the Submersible Support Program, will promote the exposure of the National Deep Submergence Facility (NDSF) through the Deep Submergence Science Committee (DeSSC). The Program provided a small amount of funding to support approximately 25 people to attend the Fall 2011 DeSSC meeting in San Francisco, which is held the Sunday before the beginning of the Fall AGU meeting. This will provide an opportunity for graduate students and recent graduates with an interest in deep submergence science to attend who could otherwise not afford to participate. An announcement will be made through existing UNOLS/DeSSC distribution lists, as well as some direct contacts. For example, during the Fall 2010 AGU meeting, NDSF hosted a booth, at which a raffle was held where entrants expressed their interest in participating in deep submergence science, as well as their current career stage. Approximately 50 graduate students and recent graduates were identified in those entry forms, and these individuals will be included in the DeSSC announcement distribution.

**Recommendation (7):** The current MOU between NSF, the U.S. Navy, and NOAA should be rewritten to better reflect projected future collaborations and scientific objectives among agencies.

**Response (7):** The development of an updated MOU is an ongoing effort that precedes this COV review. The relationship between NSF, ONR and NOAA, and their scientific investment in deep submergence, has evolved substantially since the referenced MOU was established. The agencies are considering several modifications including the establishment of a "pay-as-you-go" model, which would require all operational costs be included in day rates. Currently, the ALVIN Major Overhaul, which occurs every five years, is funded by a 60:20:20 split between NSF:ONR:NOAA. The new approach, which replicates the mechanism used by the UNOLS ships, would invoke a Major Overhaul Stabilization Account (MOSA) to cover the anticipated overhaul costs.

**Recommendation (8):** Assess barriers to new users and look for ways to mitigate issues.

**Response (8):** This is an ongoing effort, please see Response (6) above.

**Recommendation (9):** Consider doing a MOSA (Major Overhaul Stabilization Account) for ALVIN as one possible model to amortize overhaul charges into the day rate.

**Response (9):** This is an ongoing effort, please see Response (7) above.

**Recommendation (10):** There are comparable facilities to NDSF, and situating NDSF to be competitive with these is important. Possible means of building success in this regard include building accountability measures into the NDSF funding process on value

delivered; better defining NDSF goals and the feedback used to define and refine these; and assessing responsiveness to community needs and requirements.

**Response (10):** The Program will explore with DeSSC additional ways to assess the value added by supporting deep submergence science operations through NDSF. The funding agencies, NSF, ONR and NOAA will use this assessment during the annual meeting to review funding for operations and maintenance of the vehicles and NDSF facility.

**Recommendation (11):** The wider oceanographic community may not be sufficiently well informed about opportunities available through NDSF. We encourage NDSF to find productive ways to address perceptions about developing a more “open” culture.

**Response (11):** IPS will explore with the UNOLS Council and NDSF any opportunities for developing a more “open culture”.

#### *Oceanographic Instrumentation and Shipboard Scientific Support Equipment*

**Recommendation (12):** Continue to use the NSF Ship Inspection process as a strategic planning tool for assessing the current status of each ship equipment assets and future needs to more effectively budget future capital expenditures to maintain and enhance fleet equipment and instrumentation assets.

**Response (12):** IPS plans to continue using the NSF Ship Inspection process as recommended by the COV.

**Recommendation (13):** Develop clearer and more specific proposal guidelines to distinguish between equipment and instruments funded through SSSE and OI and items more appropriately funded through ship operations (i.e., MOSA) and technical service awards.

**Response (13):** This is an ongoing effort. The Programs are currently revising the existing proposal submission guidelines to more effectively coordinate funding activities with oceanographic facility operators.

**Recommendation (14):** Establish firmer guidelines for ship operators that clearly outline the maintenance, calibration and access requirements for shared-use equipment pools, to ensure full use of these assets throughout the science community. Continue to develop and institute web-based inventories that identify pooled and shared-use equipment and the equipment request procedure for science users.

**Response (14):** The Program will instruct the relevant pool managers to implement and maintain a web-based inventory of assets, including guidance to users on how to incorporate such assets into their research efforts and how to include the capabilities in their proposals.

**Recommendation (15):** Continue to develop and expand use of major equipment pools (e.g., wire, winch) and shared-use equipment assets with adequate funding of their maintenance to ensure timely and widespread availability of these assets to meet science needs throughout the community.

**Response (15):** IPS plans to continue using the equipment pools process as recommended. IPS will investigate ways to develop and expand these pooled resources to best serve the community in terms of cost effectiveness and technical capabilities.

**Recommendation (16):** Maintain strong support for training workshops to educate operators and technicians on updated UNOLS requirements (e.g., RVSS Appendix A and B) and to provide technical guidance for best use practices and maintenance of equipment assets.

**Response (16):** IPS will continue to provide training and support for operators and technicians. For example, there will be a workshop on Appendix B requirements at Scripps in February, 2012.

**Recommendation (17):** Work with UNOLS to help implement a multibeam oversight committee and also to identify additional oversight committees as needed.

**Response (17):** The Technical Services Program funded a collaborative Proposal (LDEO of Columbia University and University of New Hampshire) in 2011 to form an oversight committee for Fleet-wide multibeam operations. The committee, made up of representatives from all the users in the Academic Fleet, will evaluate each platform and access an acoustic baseline, evaluate the quality of data from each system, develop a best-practices guide for users and make recommendations for the establishment of a fleet-wide maintenance agreement with the vendor (Kongsberg) as well as the viability of a spares pool for use by the operators. It is a three year continuing grant with the first meeting scheduled in December of 2011.

**Recommendation (18):** Investigate optimal means to manage, maintain and provide access to the science community for non-ship platforms, such as AUVs and gliders.

**Response (18):** IPS will continue to work with the UNOLS Council in support of executing emerging non-ship platform utilization. A mechanism and forum for these discussions is the UNOLS Ocean Observing Science Committee which is chartered to "Provide advice on decisions and plans from the science perspective related to NSF ocean observatories (MARS, HOTS, BATS, OOI, and others) and ocean observing support systems. These may include the U.S. Academic Research Fleet, AUV/ROVs, and other unmanned systems such as gliders."

**Recommendation (19):** Review the SSSE budget to determine if it is sufficient to cover future projections of equipment maintenance costs for pooled and shared-use equipment.

**Response (19):** As part of a larger strategic planning effort, the Division of Ocean Sciences is currently evaluating the optimal balance between science funding and facility support. Trends in usage are being evaluated, and future needs being projected within the limits of realistic expectations for federal funding levels. The SSSE budget will be part of the outcome of this process.

*Oceanographic Technical Services*

**Recommendation (20):** The OTS program should continue to provide training opportunities for seagoing technicians, publicize them, and strongly encourage technician groups and managers to request funding for training.

**Response (20):** The Technical Services Program recognizes the need for continued training of the technical staff. A Fleet-wide training cruise was scheduled in June of this year on *Melville* but was cancelled due to the fact that most technicians were working at sea during this busiest time of the year. Plans are underway to schedule another cruise this winter when more technicians are available. This effort is being coordinated through the UNOLS office. A survey was undertaken by the UNOLS office specifically focused on the training needs of the Fleet and those results have been distributed to the operational managers at each institution. The Program will reinforce its commitment to training during the RVTEC meeting in November 2011.

**Recommendation (21):** Look to increase the diversity of the tech pool in terms of advanced skills and abilities, gender, and culture through targeted recruitment efforts to replace those who may leave and/or retire.

**Response (21):** The Technical Services Program has focused specifically on the 'aging' of the technical support staff and has instituted a long-term internship program through the MATE program to recruit new personnel into the Fleet. In 2010, two 6-month internships were funded directly by the Program (no cost to the institutions). This was an unqualified success as both interns performed well and ultimately took full-time positions at the institutions. A third technician, although not selected for the internship, was hired at the University of Hawaii. In 2011, another two internships have been funded. Although the Program recognizes that the technical staff is over 80% male and predominantly white, it is unclear how the Program should actively recruit on the basis of gender and culture. The Program will continue its on-going discussions with the technical support managers to identify potential solutions to this issue.

### *Ship Acquisition and Upgrade*

No recommendations.

## Executive Group Teleconference Agenda

**Meeting No:** 3

**Date:** 19 September 2011

### **Expected Attendance:**

**Executive Group:** Joseph Alcamo (ex-officio UNEP), Lidia Brito (ex-officio UNESCO), Rohan D'Souza, Tim Killeen (ex-officio Belmont Forum), Rick Leemans, Peter Liss, Diana Liverman, Jakob Rhyner (ex-officio UNU), Johan Rockström, Paul Rouse (ex-officio ESRC), Martin Visbeck, Deliang Chen (ex-officio ICSU), Heide Hackmann (ex-officio ISSC), Steven Wilson (ex-officio Belmont Forum)

**Secretariat:** Gina Adams, David Allen, Helen Beadman, Maria Uhle (Belmont Forum); Leah Goldfarb, Vivien Lee, Roberta Quadrelli, Rohini Rao, Carthage Smith, Andrew Yang (ICSU); Eleanor Hadley Kershaw (ISSC)

**Chairs:** Johan Rockström, Diana Liverman

### **Topics of discussion**

#### **1. Name for the Initiative (5')**

The working title is currently Earth System Sustainability Initiative (ESSI). It would be good to decide a final name soon. Survey results can be discussed.

Documentation – 1 Results of the survey on names  
Actions – Agree on strategy to define a name: by when? How?

#### **2. Working Groups status report (20')**

A brief status report for the three groups is included in the documentation.

##### **2.1 Working Group 1 draft document (15')**

WG1 co-chairs are working on a draft outline with feedback from Transition team co-chairs, to be presented to the GEC Programmes in Rome. The EG is expected to discuss and agree on the main messages before the meeting. [The document 2.2 will be circulated at a later stage]

##### **2.2 Updates from Working Groups 2 and 3 (5')**

WG co-chairs may want to briefly report on progress/outstanding issues.

Documentation – 2.1 Working Groups status report. 2.2 WG1 research agenda draft outline  
Actions – Agree on research agenda strategy before the meeting in Rome

#### **3. Meeting with GEC Directors in Rome (10')**

The Transition Team co-chairs and Working group co-chairs will meet in Rome on September 27 the GEC Directors, in conjunction with the ICSU GA. Please see the agenda for the list of expected participants.

Documentation – 3 Draft agenda for the meeting  
Action – Agree on consistent messages to the GEC Directors

#### **4. Second Transition Team meeting (10')**

The second Transition Team meeting has been fixed for 9-11 December in San Francisco (Hotel Marriott). It will be likely preceded by an ESSP SC meeting.

Documentation – 4 Draft expected outcomes for the second Transition team meeting  
Actions – Agree on goal and expected outcomes

**5. Patrons (10')**

The Visioning Task Team had drafted a list of Patrons (high level ambassadors who would ensure high-level support to the Initiative). What is the best strategy to engage them? When?

Documentation – 5 Draft list of Patrons  
Action – Agree on names and on the strategy to engage Patrons

**6. A general presentation on ESSI for the website (5')**

A general powerpoint presentation on the Initiative has been drafted for publication on the ESSI website. Members are expected to comment so that an agreed version can be published.

Documentation – 6 draft pps presentation  
Actions – agree/comment on the ESSI presentation

**7. Dates for the third Transition Team meeting**

The results of the doodle for a third Transition team meeting back to back with Planet under Pressure are provided. 30 and 31 March seem to be those that maximize the number of participants. Would everybody agree? Please note that on 30 March there is a Global Change National Committee Meeting, hosted by the European Alliance for Global Change Committees (at the Royal Society?), and that at the First Transition team meeting, 30 March had been also indicated for a possible meeting with GEC Directors.

Documentation – 7 doodle results for a Transition Team meeting back to back with PUP  
Action – agree on a date for the second Transition Team meeting

**8. Updates (10')**

**8.1. Planet Under Pressure**

The Initiative will be presented at a 60-minute lunch event (Day 2), while Belmont will present the International Opportunity fund at a lunch event on Day 3. Key plenary presentations: Diana (Day 1) and Johan (Day 4).

Documentation – 8 draft plan for Planet Under Pressure

**8.2. Mary Kalin Arroyo replacement**

At its last meeting, the EG agree to appoint: i) Sandra Diaz or ii) Roberto Sanchez. Sandra declined as she is overcommitted in the short term and Roberto [already accepted] the formal invitation from the Alliance partners.

**8.3. Updates on outstanding actions**

Please see the documentation for actions that were completed or are ongoing. EG group members may report on developments of other actions.

Documentation – Actions from last EG teleconference / TT meeting (below)

**Date of next meeting**

Next EG meeting is scheduled for 14 October, 4pm (CET).

**For reference: Actions from previous EG**

No.	Action Heading	Action	
		By Whom (or leading)	By When
1	Draft an outline on Initiative vision	Diana/Johan	ongoing
2	Circulate draft agenda of EG/GECs meeting in Rome to GEC Directors, and finalize organization	Secretariats	done
3	Inform all members of dates for second TT meeting	Secretariats	done
4	Prepare a powerpoint presentation on the Initiative	Secretariats	Out for comments
5	Verify feasibility of a Transition Team meeting before/after Planet Under Pressure	Secretariats	done
7	Finalize WG ToRs	Secretariats/WG co-chairs/TT Co-Chairs	done
8	Consider additional participants for WGs	Secretariats/ EG	ongoing
9	Contact Sara Farley for potential collaboration on network design, and start dialogue	Secretariats/EG/WG2	ongoing
10	Draft a policy-forum article on the Alliance vision	Alliance partners	end September
11	Appoint a replacement for Mary Kalin Arroyo according to EG recommendations	Alliance partners	done
12	follow up with OECD S&T	Heide	ongoing
13	Patrons for the Initiative: send an update	Secretariats	by next teleconference
14	Follow-up with World Bank	Diana	end September
15	Contact IUCN	Rik	end September
16	Start organizing an ESSP meeting	Rik	end September
17	Communicate with CG to ensure strong partnership throughout transition	Rik	end September
18	Address gaps in the membership: identify representatives to engage the NGO community	EG/WG3	end September

19	Provide mapping landscape of coordinating systems outside the GEC	BF	end September
20	Submit possible names for the Initiative to TT co-chairs	all	ongoing
21	Rio+20 document	ICSU, ISSC and other UN bodies as appropriate	ongoing
22	Organize a meeting to discuss strategy for Rio+20	UNEP	end September
23	Thank the Task Team for its work	ICSU	after ICSU GA
24	Elaborate an outline for the end-of-design phase report	EG	end November
25	Within the plan for PUP, include a possible additional event in conjunction with the conference (29 or 30 March) for exchange between TT and GEC committees.	Secretariats	end November
26	Share with Secretariats information on substantive conversations with key persons	EG	throughout transition
27	Keep the overall project plan up-to-date	Secretariats	throughout transition

**For reference: Actions from Transition Team meeting**

No.	Action Heading	Action	
		By Whom (or leading)	By When
10	Start the dialogue with ESSP, and start organizing a joint meeting with ESSP	Rik	
11	Communicate with CG to ensure strong partnership throughout transition	Rik	
1	Thank the Task Team for its work	ICSU	After ICSU GA
2	Finalize ToR for the Transition Team in concept paper	ICSU	Done
3	Develop draft ToRs and working plans for the working groups, based on a common template	Secretariats/working groups co-chairs	done
4	Finalize composition of working groups, including addition of possible external experts, and members who did not attend the first meeting	Secretariats/Executive Group	ongoing
5	Setup a calendar of monthly EG teleconferences	ICSU	done

6	Develop a system for posting TT documents and communication (e.g. webpage)	ICSU	done
7	Develop a draft project plan for the overall design phase (EG, TT, WGs, main events)	BF/ICSU	done
8	Prepare a powerpoint presentation about the transition process	ICSU/BF	out for comments
9	Communication with GEC Programmes Directors	Co-Chairs	ongoing
12	Complete the paper on existing mechanisms	BF	done
13	Provide mapping landscape of coordinating systems outside the GEC	BF	end September
14	Submit possible names for the Initiative to TT co-chairs	all	ongoing
15	Rio+20 document	ICSU, ISSC and other UN bodies as appropriate	ongoing
16	Organize a meeting to discuss strategy for Rio+20	UNEP, UNESCO, ICSU, ISSC	ongoing
17	Discuss strategy for Patrons	EG	By next teleconference
18	Consider options for publication and draft a policy forum type paper around Alliance	ICSU/BF	End September
19	Address gaps in the membership: consider inviting a representative from the World Bank	ICSU and EG	End September
20	Address gaps in the membership: identify representatives to engage the NGO community and address them	EG/WG3	end September
21	Elaborate an outline for the end-of-design phase report	EG	End November
22	Within the plan for PUP, include a possible additional event in conjunction with the conference (29 or 30 March) for exchange between TT and GEC committees.	ICSU/BF/WG3	End November
23	Start organizing 9-11 December meeting	BF	ongoing