

NSF Response to the *JOIDES Resolution* Science Operator Site Visit Panel Report March 1–3, 2017

The National Science Foundation's Division of Ocean Sciences, Ocean Drilling Program welcomes the recommendations of the *JOIDES Resolution* Science Operator Site Visit Panel Report and will take action on all of them.

NSF was pleased to receive the Executive Summary that states: **"The *JOIDES Resolution* is a unique and outstanding scientific deep sea drilling vessel capable of exploring on a global scale. No other platform offers its range of capabilities. JRSO is performing the required tasks of technical and scientific support to the world--wide community of research in outstanding ways. The JR is a superb mentoring platform that brings together young and experienced researchers for periods of months at a time. The *JOIDES Resolution* (JR) Science Operator Site Visit Panel concludes that the facility is being managed exceptionally well by the JRSO, and also overseen effectively by the JRFB and NSF to meet the Science Plan."**

This primary finding—that the facility is being well run with exceptional management and effective oversight, with "exemplary" financial performance—reflects the dedication, hard work, and competence of the *JOIDES Resolution* Science Operator (JRSO), the *JOIDES Resolution* Facility Board (JRFB), and the JRFB Science Evaluation and Environmental Protection and Safety Panels. The Site Visit Panel noted "the *JOIDES Resolution* is an exceptional, well-maintained, and constantly improved platform" and also commented that "the strategy of focusing operations regionally along a...ship's track provides a mission-like theme for delivery of the Science Plan with clear benefits to operational and budgetary efficiency..." Importantly, the Panel realized that the streamlined and functional review process has reduced the time from IODP proposal submission to drilling from "10–7 years to presently ~4 years on average." NSF is grateful to both the JRSO and to the Panel for their hard work on behalf of the ocean drilling science community.

The Panel's recommendations fall into several main areas—those concerning the need for improved communications to ensure the most effective use of the *JOIDES Resolution* facility by the science community, those concerning the legacy of the facility and IODP program, and those concerning the staffing of *JOIDES Resolution* science parties, including those party members involved in Education and Outreach. The Panel was most impressed by how the JRSO had fully addressed recommendations of the previous Site Visit Panel.

Facility Communication Recommendations:

Recommendation 1: The Panel recommends that the JRSO take steps to capitalize on engineering advances and the regional emphasis of operations to publicize globally the ambition and scale of *JOIDES Resolution* activities and the scientific missions they underpin.

Recommendation 2: The Panel recommends that the JRSO implement additional steps during expedition planning to ensure that key stakeholders (e.g., proposal proponents and co-chief scientists) are made aware of the limitations, risks, and contingencies that impact all aspects of the JR facility, including logging and specialty tools.

Recommendation 3: The Panel recommends that the JRSO implement, in conjunction with the JRFB, mechanisms for assessing the readiness of tools and other engineering innovations and, when proven ready, scheduling their testing at-sea with minimal impact on science.

These recommendations are all interrelated and reflect concern that there is not enough critical information conveyed between the JRSO and Expedition co-chief scientists and other members of the scientific community regarding (1) substantial advances in JR operational capability from recent engineering development; (2) operational limitations of the JR, such as resulting from deepwater drilling; and (3) the state of readiness and operational risk of developmental tools. NSF supports these recommendations and will encourage the JRSO to be more forthcoming about their organizational accomplishments, as well as provide specific guidance regarding risk during more difficult operations. The JRSO can address these concerns by making more information available online regarding drilling, logging, and analytical tools, with discussion as to their readiness and known issues. The JRSO should also advertise the new capabilities in appropriate arenas, such as at AGU booths, etc.

Program and Facility Legacy Recommendations:

Recommendation 4: The Panel praises JRSO Publication Services for its innovative and forward-looking approach in adopting and exploiting digital library tools. JRSO is strongly encouraged to continue to pursue long-term archiving to include digital documents and others types of relevant products for the geoscience community, ensuring that figures and illustrations are preserved in the highest definition format possible. Publication Services should advertise its efforts widely and inform researchers of the new tools available and of their capabilities to facilitate research and increase its impact.

NSF shares the Panel's enthusiasm for these accomplishments and again notes that there is a need to more fully inform the science community of these new tools. The JRSO can address these concerns by making available more information online, as well as advertise the new capabilities in appropriate arenas, such as at AGU booths, etc.

Recommendation 5: The Panel encourages the JRSO to develop a long-term plan for continuing to accommodate core in the GCR within the existing building footprint. These plans should include adequate space in the GCR for use during sampling parties and effective mechanisms for consistent training and supervision of student workers.

Recommendation 6: In order to limit potentially damaging shipment of cores for whole-core analyses, the Panel encourages the JRSO to assess the need for additional laboratory core instrumentation in the GCR.

These recommendations are linked in that they both are designed to enhance preservation of legacy core material, and both also relate to the building and enclosed facilities associated with the Gulf Core Repository. NSF encourages the JRSO to develop a long-term draft plan for repository development in terms of both optimal instrumentation need and the recognition that core storage space will eventually run out in the current building structure. NSF understands that recommendations from such a study could involve the need for additional tasks within the current Cooperative Agreement or its potential renewal agreement, and thus have significant commingled-fund budgetary requirements.

JOIDES Resolution Science Party Staffing Recommendations:

Recommendation 7: The Panel fully endorses holding regular meetings of the PMOs to address ongoing staffing concerns.

Recommendation 8: The Panel recommends that the appropriate body establishes a structure that allows the JRSO to effectively facilitate an E&O program.

NSF will request at the upcoming September 2017 IODP Forum in Shanghai that meetings of IODP Program Member Offices occur annually in association with the Forum to ensure that staffing concerns of all IODP operators are able to be discussed and addressed on a timely and regular basis.

The Panel thoroughly discussed shortcomings in the current staffing and implementation of the Education and Outreach Officer position in *JOIDES Resolution* science parties. NSF agrees with the Panel that a programmatic framework for this position does not currently exist within IODP, thus complicating the staffing of these positions as well as preventing effective assessment of the success of Outreach and Educational expedition activities. NSF will discuss at the upcoming September 2017 IODP Forum in Shanghai the need for an IODP program workshop that would recommend a programmatic framework for Education and Outreach activities aboard IODP platforms.