

Science in IODP is driven by community-generated proposals targeting the research themes outlined in the program's overall science plan and utilizing multiple drilling platforms. IODP proposal submission is a process designed to transform exciting science into successful expeditions.

Proposal Evaluation Overview

IODP Science Evaluation Panel



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1. Highlights from the SEP Terms of Reference

The Science Evaluation Panel (SEP) is responsible for selection of the best and most relevant proposals for forwarding to the *JOIDES Resolution* Facility Board (JRFB) or other Facility Boards (FBs).

The SEP also advises the FBs and the IODP Forum on any shortcomings of the proposal pool with respect to themes and challenges of the IODP Science Plan, and makes suggestions for stimulating proposal pressure in those areas.

2. SEP Review Procedures

Science questions:

- Are the scientific questions/hypotheses being addressed exciting and of sufficiently wide interest to justify the requested resources?
- Will the proposal significantly advance one or more goals of the IODP Science Plan/Science Framework?
- Would the proposal engage new communities or other science programs into the drilling program?

Site questions:

- Based on the data that are presented, can we be reasonably assured that the proponents can achieve their objectives?
- Given the data, are the proposed drill sites in the right locations and to the right depth to achieve the scientific objectives?

Drilling Plan questions:

- Can the scientific objectives be achieved by drilling fewer sites? Is the proposed drilling realistic in time?
- Are the drill sites in the right location and to the optimum depth to achieve the objectives?
- Is the coring and logging (and/or other downhole measurements, monitoring) plan appropriate?
- Are there sufficient alternate sites (at least one per primary site)?

3. Proposal External Review criteria

When SEP deems the proposal ready to send out for external review, the following questions are asked of the external reviewers:

- Assess the overall scientific importance of the proposed project and its likely impact on our understanding of Earth history or Earth processes.
- Identify and evaluate the specific scientific hypotheses behind the proposal.
- Judge the appropriateness of the study area for testing the identified scientific hypotheses.
- Judge the likelihood of success in achieving the stated scientific objectives through the proposed drilling strategy.
- Comment on the qualifications, range of expertise, and level of experience of the proponents.

4. Proposal Rating

Following external review, SEP evaluates the proposal and makes a recommended rating as follows:

Excellent proposal: Proposal is exciting, addresses new scientific problems, or will take novel approaches to existing problems that remain unresolved/controversial and considered of wide importance. May challenge existing paradigms, has strong potential for true discoveries and breakthroughs and most likely will open up new avenues of research in the field(s) pursued or even beyond. Should be drilled if at all possible:

- The science proposed is innovative, cutting edge, aims at, or extends beyond the vision of the Science Plan/Science Framework
- Excellent, succinct and carefully planned scientific drilling and research plan
- In all probability, the expedition(s) will be regarded as a major achievement of scientific ocean drilling
- In all probability, the scientific and technical achievements will have important societal impact in one way or another (e.g., application of results, outreach, or public education)

Good proposal: Has potential for producing exciting science, and will apply compelling research strategies. Compared to ‘Excellent’ proposals, ‘Good’ proposals address more mature scientific problems with less potential for major new discoveries or paradigm changes. They are still highly likely to produce important datasets that can support long-

term building of data archives, help resolve long-standing controversies in established fields of research, and thereby advance such fields of research in a significant way, possibly including new avenues of research within the fields pursued. Should be seriously considered for drilling if fitting into long-term efforts/planning and platform schedules:

- Objectives are consistent with one or more themes of the Science Plan/Science Framework
- In all probability, the expedition(s) will result in important refinements of existing scientific concepts and advance the Science Plan/Science Framework. Data are very useful to test the hypotheses as formulated in the proposal.
- Good and succinct drilling plan, feasible, carefully planned
- The science plan is likely to result in successful expedition(s) with a good effort to outcome ratio
- In all probability, the scientific and technical achievements will be important for society in one way or another.

Fair proposal: Falls behind in terms of excitement and potential for discovery. The research may still be able to provide important, complementary data sets that can help filling specific niches, but is unlikely to move the field of research significantly forward, or to lead to new avenues of research. Nevertheless, the proposal may contain elements that, if fit into other proposals or other planned drilling activities (e.g., regional proximity), could provide a solid scientific return for a limited program investment, and therefore might be considered for (partial) implementation at some point:

- Objectives show a fair consistency with thematic priorities in the Science Plan/Science Framework
- The science is not clear, and deficiencies are identified
- The expedition(s) could possibly result in some non-trivial achievements, but mostly of incremental nature, perhaps a partly relevant data set to test the hypotheses as formulated in the proposal, or the expedition(s) will not be successful
- Insufficient drilling plan with unfavourable effort to output ratio
- The potential societal impacts from scientific and technical achievements are not high, or are poorly documented