INTERNATIONAL OCEAN DISCOVERY PROGRAM (IODP)
http://iodp.tamu.edu/index.html and https://iodp.org

Integrated Ocean Discovery Program Funding
(Dollars in Millions)

FY 2022 Actual	FY 2023 Estimate Base	FY 2024 Request	Change over FY 2023 Estimate Base Amount	Percent
$51.70	$50.40	$52.77	$2.37	4.7%

Brief Description
The drillship *JOIDES Resolution (JR)* represents NSF's primary contribution to the International Ocean Discovery Program (IODP). The *JR* is a deep-ocean drilling vessel whose scientific operations are procured for NSF by means of a long-term lease held by the *JR* Science Operator (JRSO), Texas A&M University. Besides NSF, the Ministry of Education, Culture, Sport, Science and Technology (MEXT) of Japan and the European Consortium for Ocean Research Drilling (ECORD) continue to provide drilling platforms to IODP.

Meeting Scientific Community Needs
IODP began in FY 2014 as the replacement for the Integrated Ocean Drilling Program, which succeeded the Ocean Drilling Program. IODP represents an international partnership of scientists, research institutions, and funding organizations of 22 nations that collect geologic data and samples from beneath the ocean floor. IODP explores Earth's evolution and structure as recorded in the ocean basins. IODP platforms provide sediment and rock samples (cores), *in situ* monitoring, measurements from borehole observatories, shipboard and shore-based descriptive and analytical facilities, downhole geophysical and geochemical measurements (logging), and opportunities to conduct experiments to determine *in situ* conditions beneath the sea floor.

A comprehensive online survey of the U.S. science community was undertaken by the United States Science Support Program (USSSP) in 2016 and 2017 to assess the success of the *JR* in meeting the needs of the IODP Science Plan. This survey received 876 responses and led to 81 scientists convening for the *JR* Assessment Workshop to distill and analyze these survey responses, examine the science results of FY 2014-2017 *JR* operations, and make recommendations to NSF regarding whether the *JR* was still needed to address the remaining objectives of the ten-year science plan. The report states: "the survey results underscore the scientific community's deep satisfaction with the *JOIDES Resolution* and its ability to continue to fulfill IODP objectives."

Status of the Facility
After numerous international workshops in CY 2019, in October 2020, the IODP community released a new science plan entitled *2050 Science Framework for Scientific Ocean Drilling.*[1] This plan guides multidisciplinary sub-seafloor research into interconnected processes that characterize the complex Earth system and shape our planet's future. The *2050 Science Framework* has a 25-year outlook, requiring state-of-the-art approaches for scientific ocean drilling to achieve its objectives into the mid-21st century.

[1] www.iodp.org/2050-science-framework

The award with Texas A&M University supports facility operations through FY 2024. The current Environmental Impact Statement for the JR expires in 2028.

Governance Structure and Partnerships

NSF Governance Structure

NSF oversight is provided by a program officer in the GEO Division of Ocean Sciences (OCE), who works cooperatively with staff from Office of Budget, Finance, and Award Management (BFA), the Office of the General Counsel, and the Office of Legislative and Public Affairs. Within BFA, the Large Facilities Office provides advice to program staff and assists with agency oversight and assurance. The GEO facilities team and the Chief Officer for Research Facilities also provide high-level guidance, support, and oversight.

External Governance Structure

The JR Board, one of three IODP governing bodies, is chaired by a U.S. scientist, with participation by NSF, other contributing international funding agencies, community scientists, and the facility operator. The Board provides operational and management oversight of (1) the *JR* (via the operator—Texas A&M University), (2) the Science Support Office, and (3) the *JR* Facility Advisory Panels. The Board also approves annual program plans and decides on ship tracks on behalf of IODP; NSF decides whether to accept these plans in executing its fiduciary and legal authority for the operation of the *JR*.

Partnerships and Other Funding Sources

IODP participants include the U.S., Japan, ECORD, the People's Republic of China, India, Australia, and New Zealand, with all participants except Japan providing financial contributions to the *JR* operations. Japan provides program support through substantial investment in operations of the heavy drill ship *Chikyu*, with U.S. and Japanese scientists enjoying reciprocal rights on each drilling vessel.

Funding

Total Obligations for IODP

(Dollars in Millions)

		FY 2023		**ESTIMATES**[1]				
	FY 2022	Estimate	FY 2024					
	Actual	Base	Request	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Operations & Maintenance	$51.70	$50.40	$52.77	$52.77	$52.77	$52.77	$52.77	$52.77

[1] Outyear estimates are for planning purposes only. The current cooperative agreement ends in September 2024.

The FY 2024 Request includes $52.77 million for IODP. The increase above FY 2023 is primarily associated with inflationary increases in drilling equipment, supplies, and other operational costs.

Reviews and Reports

An external mid-award review panel was convened by NSF in July 2022 to examine facility performance. Excerpts from the panel summary follow: "The JRSO facility is vital to the marine geoscience community…The JOIDES Resolution is in remarkable condition. The physical facility (ship and instruments) and human resources currently provided through the JRSO … is spearheading the implementation of innovative measurements, curation (cores and data), computing, publications, and training the next generation of scientists and technical innovators. The (IODP) program … is working remarkably well and is addressing the current science plan as well as key elements of the 2050

Scientific Framework…"

Renewal/Recompetition/Disposition
After NSB authorization and the NSF Director's approval, the current award was renewed for an additional five years of operation from FY 2020 through FY 2024. After following its internal processes and careful consideration, NSF has decided not to renew the award for IODP O&M. NSF is actively engaging the scientific community regarding the future of scientific ocean drilling.