US-SODA
https://us-soda.org
United States – Scientific Ocean Drilling Alliance

Representing U.S. Research Institutions and Universities in Support of Future Scientific Ocean Drilling

Our Vision: Long-term investment and maintaining leadership in the *ocean sciences* and *scientific ocean drilling* will be vital to enhancing our understanding of planetary health and sustainability while strengthening STEM research and inclusive workforce development in the United States of America

Re: Third Letter on the Critical Importance of Continued, Future Scientific Ocean Drilling in the U.S.

February 24, 2023

Director, Dr. Sethuraman Panchanathan
Assistant Director, Geosciences Directorate, Dr. Alexandra R. Isern
National Science Foundation

CC: Senior Advisor Facilities Planning and Management, Geosciences Directorate, Dr. Shelby E. Walker
Division Director, Ocean Sciences, Dr. James McManus
Program Director for Ocean Drilling Program, Ocean Sciences, Dr. Kevin Johnson
Program Director for Ocean Drilling Program, Ocean Sciences, Dr. Jamie Allen

Dear Drs. Panchanathan and Isern,

On 16 May 2022 and 3 August 2022, you received letters from US-SODA in support of continued United States funding for scientific ocean drilling activities. We thank you for your positive email responses (on June 3, July 25 and September 18) and for the Zoom meeting held with OCE leadership on October 18. Since then, the U.S. community and US-SODA have heard little from NSF. Meanwhile, our international partners are building a new drilling vessel (China) and establishing bilateral alliances (Europe, Japan) for a future international scientific ocean drilling program. The U.S. science community has not been included in these alliances and there is no indication that the NSF is engaged with these entities. This is causing major concern in the U.S. scientific ocean drilling community about the future of this critical scientific mission and infrastructure.

Over the last nine months, US-SODA has provided the NSF with evidence detailing the essential nature of scientific ocean drilling, the extensive national and international communities reliant on scientific ocean drilling, and the critical importance of this transdisciplinary scientific endeavor to U.S. workforce development. Further, scientific ocean drilling is generally acknowledged as one of the most outstanding international science efforts of its kind, and has brought an inestimable reputation to the NSF, its primary supporter over the decades. More than 2,200 supporters signed our petition and 50 research institutes wrote to the NSF to express support for the continuation of United States funding for scientific ocean drilling. However, the NSF's plans with respect to scientific ocean drilling remain unknown.

We are now entering a critical time interval for scientific ocean drilling. U.S. funding and operation of the *JOIDES Resolution* is set to expire in 2024. Without the lease or acquisition of a new globally-ranging riserless U.S. drilling vessel and continued funding of the *JOIDES Resolution* through 2028, the U.S. will relinquish its international scientific ocean drilling leadership position—held for more than half a century—to China, Europe and Japan.

The community has three critical and immediate concerns:

1. Continued U.S. leadership in international scientific ocean drilling requires that NSF provides clarity to U.S. scientists, and our international partners, regarding future U.S. funding of scientific ocean drilling. Over the last year, the U.S. community has been excluded at the programmatic level from international scientific ocean drilling initiatives developed by China, Europe, and Japan. As such, our leadership role in scientific ocean drilling, and our ability to develop international science priorities in the ocean sciences, are greatly diminished.

2. To retain scientific leadership in the international Earth science and oceanographic communities, it is essential that the U.S. continue to operate the *JOIDES Resolution* through 2028, while simultaneously preparing to build or lease a new global-ranging U.S. drilling vessel. If the U.S. sunsets the *JOIDES Resolution* in 2024, the U.S. scientific ocean drilling community will lack the mission critical infrastructure required to understand Earth's climate system, anticipate anthropogenic and natural hazards, and train and develop a diverse workforce of U.S. scientists.
3. The loss of U.S. efforts in scientific ocean drilling raises significant national security concerns for the United States. China has launched the hull of its new scientific ocean drilling vessel on 18 December 2022 (see this CGTN news article and YouTube video) and plans to hold sea trials in 2025. The new vessel is designed to operate in "unlimited navigation areas in global waters, with a drilling capacity of more than 10 km in the [oceans and] seas." Europe and Japan have announced that they are building a bilateral "program to facilitate post-2024 scientific ocean drilling using mission specific platforms and *Chikyu* drilling," and held meetings in January 2023 (see announcement) to set 5-10 years of science and operational priorities. As a direct consequence, the United States will lose significant capabilities to carry out novel science across all the oceans and seas, from the Southern Oceans to the Arctic and from the Arabian Sea to the South China Sea. This nation will relinquish any advantage it has gained in marine technology development, and it will have a diminished opportunity to investigate sea level rise and natural hazards, all recognized U.S. national security concerns.

We deeply believe that the U.S. cannot afford to retreat from this global research endeavor at a time when the fundamental science questions addressed by scientific ocean drilling (e.g. climate and ocean change, natural and anthropogenic hazards, etc.) have profound scientific, societal, and national security implications. The *JOIDES Resolution* has been a U.S. flagship and global ambassador for cutting-edge science and free and open data. Sunsetting the *JOIDES Resolution* will leave an enormous void that will be immediately filled by China, Europe, and Japan. We will forego our leadership in exploring the world's oceans for new knowledge using new technologies. We will lose the opportunity to train a diverse next generation of U.S. scientists. To make genuine progress in addressing these existential global issues, U.S. leadership in scientific ocean drilling must be maintained.

Yours sincerely and representing the 15 institutions in US-SODA,

Dr. Anthony A.P. Koppers
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Professor Marine Geology and Oceanography (CEOAS)
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