

International Ocean Discovery Program
JOIDES Resolution Science Operator
FY26 Q1 Operations and Management Report

1 October–31 December 2025
Cooperative Agreement OCE-1326927

Submitted by the JRSO to
The National Science Foundation
30 January 2026



IODP
INTERNATIONAL OCEAN
DISCOVERY PROGRAM



Introduction

This technical report reflects the activities for the first quarter (Q1) of FY26 of the no-cost extension period of the National Science Foundation (NSF) award to manage and operate the *JOIDES Resolution* for the International Ocean Discovery Program (IODP). Post-IODP obligations related to expeditions conducted during IODP are funded by a separate award to the Texas A&M University Research Foundation (TAMRF). Consequently, the activity in the no-cost extension year relates to tasks that are not explicitly covered by the post-IODP obligation award.

Financial closeout and administrative activities

During Q1, administrative activities focused on placing orders and processing expenses related to approved wrap-up activities. This included equipment, related salaries for its set up and training, and other previously identified closeout activities.

Other activity

Recently approved and purchased analytical equipment continued to be received and installed with associated training. The Geotek Core CT scanner was installed, and staff received training from the vendor. The instrument was accepted, and the final invoice was paid. In addition, the Bruker desktop X-ray diffractometer was received near the end of the quarter. Installation and training by the vendor is scheduled early next quarter. Funds were also committed for staff to receive detailed training on the new Metrohm Ion Chromatograph, which was installed last quarter. Replacement X-ray tubes for two Avaatech XRF core scanners were received, and installation is scheduled for next quarter. Work continued on the SAFOD google site and is expected to be completed early next quarter. A poster on the status of SAFOD core collection was presented at the Geological Society of America annual meeting. Sample information data was provided to the System for Earth and Extraterrestrial Sample Registration (SESAR) at Columbia University to assign International Generic Sample Numbers (IGSNs) to IODP Site, Hole, Core, Section, and Section Half samples. These data were reviewed by the SESAR data curator, and registration of IGSNs to IODP samples will begin early next quarter.

Publications authored by staff

Articles and abstracts published during this quarter where some of the research occurred when staff were active on this award include the following. Bold type indicates JRSO staff.

Articles authored by JRSO staff

Huang, H., Gutjahr, M., Hu, Y., Pöppelmeier, F., Kuhn, G., Lippold, J., **Ronge, T.A.**, Wu, S., Blaser, P., Lembke-Jene, L., Jaccard, S.L., Luo, Y., and Yu, J., 2025. Expansion of Antarctic Bottom Water driven by Antarctic warming in the last deglaciation. *Nature Geoscience*. <https://doi.org/10.1038/s41561-025-01853-7>

Metcalf, A., Druitt, T., Pank, K., Kutterolf, S., Preine, J., Beethe, S., Schmitt, A., Hübscher, C., Nomikou, P., **Ronge, T.A.**, Berthod, C., Chen, H., Chiyonobu, S., Clark, A., DeBari, S., Gertisser, R., Johnston, R., Koukousioura, O., Manga, M., McCanta, M., McIntosh, I., Peccia, A., Tominaga, M., Yamamoto, Y., Woodhouse, A., Bernard, A., Perez, T.F., Jones, C.K., Joshi, K.B., Kletetschka, G., Morris, A., Polymenakou, P., Li, X., Papanikolaou, D., Pyle, D., and Sternai, P., 2025. Tectonic modulation of caldera volcanism on

the South Aegean Volcanic Arc. *Earth and Planetary Science Letters*, 671:119633.
<https://doi.org/10.1016/j.epsl.2025.119633>

Voelker, A.H.L., Ducassou, E., Balestra, B., Flores, J.A., Acton, G.D., Richter, C., Xuan, C., Lofi, J., Alberto, A., Kuhnert, H., and **Alvarez Zarikian, C.A.**, 2026. Early Pleistocene (1.94–1.46 Ma) records for the upper Mediterranean Outflow Water branch reveal low and high latitude climate influences. *Marine Geology*, 492:107697. <https://doi.org/10.1016/j.margeo.2025.107697>

Abstracts authored by JRSO staff

Alvarez Zarikian, C.A., Llerena, F., Huang, H.H.M., Abrantes, F.F.G., Wu, J., Kaboth-Bahr, S., and Hodell, D.A., 2025. Reconstructing the northward flow dynamics of Mediterranean outflow water over the last 600,000 years from IODP Site U1588 in the west Iberian margin. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Fundalewicz, X., Viskupic, O., Sarco, M., Stroop, R., Nehring, K., McCollum, J., Johnson, E.A., Elmi, C., St John, K.K., Lucchi, R., **Ronge, T.**, and IODP Expedition 403 shipboard scientific party, 2025. Compositional analyses of mixed detrital-authigenic sediments to inform sample processing decisions, IODP Expedition 403 Site U1620, Svyatogor Ridge sediment drift. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Gallagher, M., Williams, T., Hemming, S.R., Jasper, C.E., Mossell, H., and **Ronge, T.**, 2025. Provenance of iceberg rafted detritus during Termination 2 at Site U1537 in Antarctica's Iceberg Alley. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Huang, H.H.M., Yasuhara, M., **Alvarez Zarikian, C.A.**, Cronin, T.M., and Deutsch, C.A., 2025. Climatic forcing of deep-sea benthic ecosystem. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Khamitov, S., Reilly, B., Zhong, Y., Monito, L., Libman-Roshal, O., Lucchi, R., St John, K.K., and **Ronge, T.**, 2025. Late Quaternary paleo- and environmental magnetism of International Ocean Discovery Program (IODP) Site U1623, located on the Bellsund Drift, offshore the paleo-Svalbard-Barents Sea ice sheet (76.5 °N). Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Maher, T., DeBari, S.M., Druitt, T.H., Metcalfe, A., Kutterolf, S., Peccia, A., **Ronge, T.**, and IODP Expedition 398 Scientists, 2025. Characterizing eruption initiation mechanisms and storage conditions at the high-threat Submarine Volcano, Kolumbo, Greece. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Nehring, K., Sarco, M., Stroop, R., Buckley, M., St John, K.K., Lucchi, R., **Ronge, T.**, and IODP Expedition 403 shipboard scientific party, 2025. Preliminary characterization of sediment pellets to infer ice-rafting mechanism in the Eastern Fram Strait, IODP Expedition 403 Site U1623. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Redman, B., Reilly, B., Suganuma, Y., Zhong, Y., Libman-Roshal, O., Monito, L., Lucchi, R., St John, K.K., **Ronge, T.**, and Scientific Team of IODP Expedition 403, 2025. Addressing the greigite problem: towards isolating primary remanence in sediments from International Ocean Discovery Program (IODP) Expedition 403. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Reilly, B.T., Bailey, I., Brachfeld, S., Fenton-Samuels, K., Gonzalez-Lanchas, A., Hatfield, R.G., Hemming, S.R., Jasper, C.E., Khamitov, S., Libman-Roshal, O., Lucchi, R., Monito, L., Oconnell, S., Raymo, M.E., Redman, B., **Ronge, T.**, St John, K.K., Stoner, J.S., Suganuma, Y., Tauxe, L., Warnock, J., Williams, T., Zhong, Y., and IODP Expedition 403 Scientists, 2025. Pliocene-Pleistocene accumulation rate patterns in polar deep-sea contourite systems from International Ocean Drilling Program (IODP) expeditions in the Scotia Sea and Fram Strait constrained by paleomagnetic stratigraphy. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Ronge, T., Kletetschka, G., Druitt, T.H., Kutterolf, S., and Expedition 398 Science Party, 2025. Glass droplets from the Aegean Sea: volcanic origin or tektites? Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Sakai, Y., Lin, W., Plaza-Faverola, A.A., Yamamoto, Y., Lucchi, R., St John, K.K., **Ronge, T.**, and IODP Exp. 403 Science Party, 2025. Stress controls on seepage activity in Eastern Fram Strait: insights from three-dimensional in-situ stress regime via anelastic strain recovery. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

St John, K.K., Lucchi, R., **Ronge, T.**, Gruetzner, J., Reilly, B., Gonzalez-Lanchas, A., Sakai, Y., Johnson, J.E., Plaza-Faverola, A.A., Gebhardt, C., Rosenthal, Y., Barcena, M., De Schepper, S., Duxbury, L., Goss, G., Greco, N., Haygood, L., Husum, K., Iizuka, M., Kapuge, I., Lam, A.R., Libman-Roshal, O., Liu, Y., Monito, L., Suganuma, Y., Sijinkumar, A.V., and Zhong, Y., 2025. Evidence that regional geomorphic events and local tectonic influences were first order controls on sedimentation rates at Svyatogor and Vestnesa Ridges (IODP Sites U1620 and U1619) Since ~3 Ma. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.

Towaju, V., Reece, J.S., and **Childress, L.B.**, 2025. Compression trends in common marine sediment types using scientific ocean drilling data. Presented at the American Geophysical Union Annual Meeting, New Orleans, LA, 11–19 December 2025.