

International Ocean Discovery Program
JOIDES Resolution Science Operator
FY18 Q1 Operations and Management Report

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Cooperative Agreement OCE-1326927

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to
The National Science Foundation
and
The *JOIDES Resolution* Facility Board

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Introduction

The organization of this quarterly operations and management report reflects activities and deliverables outlined in the International Ocean Discovery Program (IODP) *JOIDES Resolution* Science Operator (JRSO) FY18 Annual Program Plan to the National Science Foundation (NSF), as implemented by Texas A&M University (TAMU), acting as manager and science operator of the research vessel *JOIDES Resolution* as a research facility for IODP. Administrative services in support of JRSO activities are provided by the Texas A&M Research Foundation (TAMRF) through TAMU Sponsored Research Services (SRS).

Management and administration

Management and administration functions of the JRSO include planning, coordinating (with other IODP-related entities), overseeing, reviewing, monitoring, assuring compliance for, and reporting on IODP activities.

Subcontract activities

Overseas Drilling Limited

The JRSO continued to interact with Overseas Drilling Limited (ODL) to ensure efficient and compliant operations of the *JOIDES Resolution*. ODL management met with JSRO management at TAMU on 10 November 2017 to review operations and discuss planning for future activities, including work to be done during dry dock in the summer of 2018.

Schlumberger Technology Corporation Inc.

The JRSO continued to interact with Schlumberger Technology Corporation to ensure that wireline logging operations aboard the *JOIDES Resolution* continue in an efficient and compliant manner. The JRSO and Schlumberger worked successfully to streamline travel and shipping activities.

Progress reporting

The JRSO operations and management report for the fourth quarter of FY17 (July–September 2017) was submitted to NSF on 15 November (http://iodp.tamu.edu/publications/AR/FY17/FY17_Q4.pdf).

The JRSO FY17 Annual Report was completed and published on the web on 22 December (<http://iodp.tamu.edu/publications/AR/FY17AR.pdf>).

Liaison activities

The JRSO reports to and liaises with funding agencies and IODP-related agencies (e.g., *JOIDES Resolution* Facility board [JRFB], JRFB advisory panels, Program Member Offices [PMOs], and other national

organizations and facility boards) and participates in facility board, advisory panel, and IODP Forum meetings. Minutes from the facility board meetings are available online (<http://iodp.org/boards-and-panels/facility-boards>).

Planning meetings

Jay Miller (former Manager of Technical and Analytical Services), Steve Midgley (Operations Superintendent), Kevin Grigar (Operations Engineer), Peter Blum (Expedition Project Manager [EPM]/Staff Scientist), and Tobias Hoefig (EPM/Staff Scientist) attended the Deep Crustal Engineering Working Group meeting held at the JRSO on 16–18 October.

Brad Clement (Director of Science Services), Mitch Malone (Assistant Director of Science Services/Manager of Science Operations), Gary Acton (new Manager of Technical and Analytical Services), and Adam Klaus (EPM/Staff Scientist) attended a meeting of the US leadership on United States Science Support Program (USSSP) and IODP panels held at the American Geophysical Union (AGU) Fall Meeting in New Orleans just prior to the IODP Town Hall Meeting. The same individuals attended the IODP Town Hall Meeting to interact with and answer questions from the community.

JRSO site visits

On 10 November, the JRSO hosted a visit from Mr. Kristian Siem and ODL management, who met with the JRSO management team and toured the Gulf Coast Repository (GCR), and the TAMU College of Geosciences Advisory Committee, who met with the Dean of Geosciences and her staff. On 27 November, the JRSO hosted a visit from Dr. Carol A. Fierke, Provost and Executive Vice President of TAMU.

Web services

In addition to internal JRSO web page updates and additions, new content is regularly added to IODP expedition web pages at <http://iodp.tamu.edu/scienceops/expeditions.html>.

Program website statistics

During the last quarter, the IODP TAMU website received 41,836 site visits and 346,981 page views. Where possible, visits by JRSO employees and search engine spiders were filtered out of the count.

Legacy web services

The Ocean Drilling Program (ODP) science operator, ODP legacy, and Deep Sea Drilling Project (DSDP) publications websites are hosted at TAMU. Key data, documents, and publications produced during DSDP and ODP are preserved in the legacy websites, which highlight the scientific and technical

accomplishments of these ground-breaking precursors to the Integrated Ocean Drilling Program and IODP. The legacy websites contain downloadable documents that cover a wide spectrum of Program information, from laboratory and instrument manuals to Program scientific publications, journals, and educational materials.

Legacy website statistics

Legacy website	FY18 Q1 page views*	FY18 Q1 site visits*
www-odp.tamu.edu	194,339	26,250
www.odplegacy.org	3,895	1,622
www.deepseadrilling.org	36,112	7,969
Total	234,346	35,841

*Where possible, visits by JRSO employees and search engine spiders were filtered out.

Project portfolio management

The JRSO closed three projects (X-ray Fluorescence [XRF] Core Scanner Uploader and Reports, Coulometer, and KappaBridge Uploader and Laboratory Information Management System [LIMS] Online Report Environment [LORE] Reports) and continued developing project management plans for three new projects: SampleMaster Replacement, Data Publication, and DESClogik Replacement (a branch of the Geological Description [GEODESC] project, which remains on hold).

XRF Core Scanner Uploader and Reports

Project scope and deliverables

This project was formerly referred to as the Shore XRF Core Scanner Implementation project. The JRSO purchased a second Avaatech XRF core scanner to be used on shore along with the existing Avaatech scanner to facilitate postexpedition XRF scanning. Goals included (1) developing data structure, uploader, and reports for XRF Core Scanner data; (2) developing quality assurance guidelines and quality control data tracking; (3) taking delivery of a second XRF Core Scanner; and (4) training JRSO staff in the use, care, and maintenance of both scanners.

Project status

The JRSO successfully completed this project in December.

GEODESC

Project scope and deliverables

The purpose of this project is to replace DESClogik, with the principal goal of increasing performance and reliability. The GEODESC project proposes to design, build, and deliver a new and improved GEODESC tool set.

Project status

Because GEODESC would require an enormous investment of resources, the JRSO decided to keep the GEODESC project on hold while exploring additional options for a core description tool, including the use of commercial software. This action spawned the new DESClogik Replacement project.

DESClogik Replacement

Project scope and deliverables

The purpose of this project is to review commercially available core description software capable of replacing DESClogik. This project explores options for delivering a new and improved GEODESC tool set using commercial, off-the-shelf software.

Project status

The JRSO began developing a project management plan for the DESClogik Replacement project this quarter.

Coulometer

Project scope and deliverables

The purpose of this project was to design, build, and deliver an application with a simple, intuitive user interface to make it easier for technicians and scientists to operate the coulometer and correctly record the results of measurements. The new application guides the user through a series of steps that make it simple and intuitive to operate the instrument and to save or discard results. The Coulometer application will be used as a pilot project for the development of a new and improved instrument control framework.

Project status

The JRSO successfully completed this project in November.

KappaBridge Uploader & LORE Reports

Project scope and deliverables

The purpose of this project was to create an uploader to transfer the KappaBridge magnetic susceptibility data to the LIMS database and build LORE reports for viewing and downloading the data.

Project status

The JRSO successfully completed this project in December.

Data Publication

Project scope and deliverables

The purpose of this project is to build a framework, tools, and processes capable of publishing expedition information for long-term repository storage and discovery of referenceable information. This project will also support publication of data files not currently available online. When completed, all published information will be available for science community use via the JRSO publications website, a dynamic search engine (similar to LORE/OVERVIEW), and web-based searches.

Project status

The JRSO began developing a project management plan for the Data Publication project.

Science operations

The JRSO is responsible for planning, managing, coordinating, and performing activities and providing services, materials, platforms, and ship- and shore-based laboratories for JRSO expeditions; long-range operational planning for out-year JRSO expeditions; and technical advice and assistance for European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO) and Center for Deep Earth Exploration (CDEX) expeditions.

JRSO expedition schedule

Expedition		Port (origin)	Dates ¹	Total days (port/ sea)	Days at sea (transit/ ops)	Co-Chief Scientists	Expedition Project Manager
Australia Cretaceous Climate and Tectonics	369	Hobart, Tasmania (Australia)	26 September–26 November 2017	61 (5/56)	56 (7/49)	R. Hobbs B. Huber	K. Bogus
Creeping Gas Hydrate Slides and Hikurangi LWD ²	372	Fremantle, Australia	26 November 2017–4 January 2018	39 (5/34)	34 (15/19)	I. Pecher P. Barnes	L. LeVay
Ross Sea West Antarctic Ice Sheet History	374	Lyttelton, New Zealand	4 January–8 March 2018	63 (5/58)	58 (16/42)	R. McKay L. De Santis	D. Kulhanek
Hikurangi Subduction Margin	375	Lyttelton, New Zealand	8 March–5 May 2018	58 (5/53)	53 (2/51)	L. Wallace D. Saffer	K. Petronotis
Brothers Arc Flux	376	Auckland, New Zealand	5 May–5 July 2018	61 (5/56)	56 (2/54)	C. de Ronde S. Humphris	T. Höfig
Non-IODP (5 July–14 October 2018) (101 days)							M. Malone
South Pacific Paleogene	378	Lyttelton, New Zealand	14 October–14 December 2018	61 (4/57)	57 (11/46)	D. Thomas U. Röhl	L. Childress
Non-IODP (14 December 2018–18 January 2019) (35 days)							M. Malone
Amundsen Sea West Antarctic Ice Sheet History	379	Punta Arenas, Chile	18 January–20 March 2019	61 (3/58)	58 (12/46)	K. Gohl J. Wellner	A. Klaus
Iceberg Alley and South Falkland Slope ³	382	Punta Arenas, Chile	20 March–20 May 2019	61 (5/56)	56 (9/47)	M. Weber M. Raymo	T. Williams
Dynamics of Pacific Antarctic Circumpolar Current	383	Punta Arenas, Chile	20 May–20 July 2019	61 (5/56)	56 (20/36)	F. Lamy G. Winckler	C. Alvarez Zarikian

Expedition		Port (origin)	Dates ¹	Total days (port/ sea)	Days at sea (transit/ ops)	Co-Chief Scientists	Expedition Project Manager
Panama Basin Crustal Architecture and Engineering Testing	384	Valparaíso, Chile	20 July–19 September 2019	61 (5/56)	56 (TBD)	TBD	P. Blum
Guaymas Basin Tectonics and Biosphere	385	San Diego, California (USA)	19 September–19 November 2019	61 (5/56)	56 (9/47)	TBD	T. Höfig
Non-IODP (19 November 2019–21 January 2020) (63 days)							M. Malone
Gulf of Mexico Methane Hydrates ⁴	386	Galveston, Texas (USA)	21 January–22 March 2020	61 (3/58)	58 (2/56)	TBD	L. LeVay

Notes: TBD = to be determined.

¹ The start date reflects the initial port call day. The vessel will sail when ready.

² Combined expedition with Ancillary Project Letter (APL) 841 and logging while drilling (LWD) from Proposal 781A (Expedition 375).

³ Proposal 902 combined with APL 846.

⁴ Complimentary Project Proposal (CPP) is contingent on substantial financial contribution outside of normal IODP funding.

JRSO expeditions

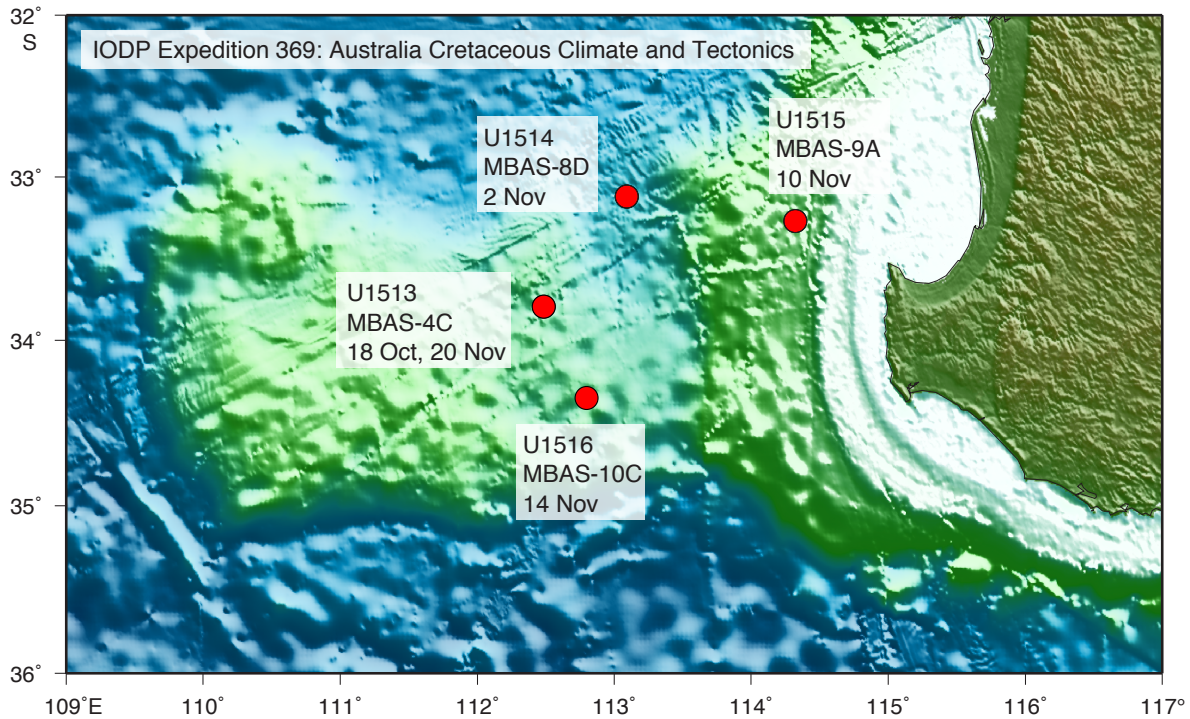
Expedition 369: Australia Cretaceous Climate and Tectonics

Expedition 369 Science Party staffing breakdown		
Member country/consortium	Participants	Co-Chief Scientists
USA: United States Science Support Program (USSSP)	9*	1
Japan: Japan Drilling Earth Science Consortium (J-DESC)	3	
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	9	1
Republic of Korea: Korea Integrated Ocean Drilling Program (K-IODP)	1*	
People's Republic of China: IODP-China	3	
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	2	
India: Ministry of Earth Science (MoES)	0	
Brazil: Coordination for Improvement of Higher Education (CAPES)	1	

*Includes US Onboard Education/Outreach Officer

Clearance, permitting, and environmental assessment activities

After review by the Environmental Protection and Safety Panel (EPSP) and TAMU Safety Panel, a new site (MBAS-10C) was submitted to the US State Department on 16 October during the expedition and was approved by the Australian government on 29 October.



Coring summary

Site	Hole	Latitude	Longitude	Water depth (mbsf)	Cores (N)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1513	U1513A	33°47.6084'S	112°29.1338'E	2789.19	50	292.50	170.6	58.32
	U1513B	33°47.6087'S	112°29.1471'E	2787.22	14	98.60	102.06	103.51
	U1513C	33°47.6190'S	112°29.1468'E	2788.32	2	17.10	17.37	101.58
	U1513D	33°47.6196'S	112°29.1339'E	2788.92	74	662.40	437.05	65.98
	U1513E	33°47.6190'S	112°29.1204'E	2788.62	7	67.20	49.99	74.39
Site U1513 totals					147	1,137.80	777.07	68.30
Expedition 369 totals					147	1,137.80	777.07	68.30

Science summary

The tectonic and paleoceanographic setting of the Great Australian Bight (GAB) and the Mentelle Basin (MB; adjacent to Naturaliste Plateau) offers an outstanding opportunity to investigate Cretaceous and Cenozoic climate change and ocean dynamics during the last phase of breakup among remnant Gondwana continents. Sediment recovered from sites in both regions during Expedition 369 will provide a new perspective on Earth's temperature variation at subpolar latitudes (60°–62°S) across the extremes of the mid-Cretaceous hot greenhouse climate and the cooling that followed. The primary goals of the expedition included the following:

- Investigate the timing and causes for the rise and collapse of the Cretaceous hot greenhouse climate and how this climate mode affected the climate-ocean system and oceanic biota;

- Determine the relative roles of productivity, ocean temperature, and ocean circulation at high southern latitudes during Cretaceous oceanic anoxic events (OAEs);
- Identify the main source regions for deep- and intermediate-water masses in the southeast Indian Ocean and how these changed during Gondwana breakup;
- Characterize how oceanographic conditions at the MB changed during the Cenozoic opening of the Tasman Gateway and restriction of the Indonesian Gateway;
- Resolve questions on the volcanic and sedimentary origins of the basin and provide vital stratigraphic control on the age and nature of the prebreakup succession.

Hole U1512A on the GAB recovered a 691 m thick sequence of black claystone ranging in age from early Turonian to early Campanian. Despite the lithologic uniformity, long- and short-term variations in natural gamma and magnetic susceptibility intensities show cyclic alternations that suggest orbital control of sediment deposition that will be useful for developing an astrochronology for the sequence. Sites U1513–U1516 were drilled between 850 and 3,900 m water depth in the MB and penetrated 774, 517, 517, and 542 meters below seafloor (mbsf), respectively. Under a thin layer of Pleistocene–upper Miocene sediment, Site U1513 cored a succession of Cretaceous units from the Campanian to the Valanginian. Site U1514 sampled an expanded Pleistocene–Eocene sequence and terminated in the upper Albian. The Cenomanian–Turonian interval at Site U1514 recovered deformed sedimentary rocks that probably represent a detachment zone. Site U1515 is located on the west Australian margin at 850 m water depth. It was the most challenging site to core because much of the upper 350 m was either chert or poorly consolidated sand. However, the prebreakup Jurassic(?) sediments identified in the seismic profiles were successfully recovered. Site U1516 cored an expanded Pleistocene, Neogene, and Paleogene section and recovered a complete Turonian/Cenomanian boundary interval containing five layers with high total organic carbon content.

Recovery of well-preserved calcareous microfossil assemblages from different paleodepths will enable generation of paleotemperature and biotic records that span the rise and collapse of the Cretaceous hot greenhouse (including OAEs 1d and 2), providing insight to resultant changes in deep-water and surface water circulation that can be used to test predictions from earth system models. Paleotemperature proxies and other data will reveal the timing, magnitude, and duration of peak hothouse temperatures and any cold snaps that could have allowed growth of a polar ice sheet. The sites will also record the mid-Eocene–early Oligocene opening of the Tasman Gateway and the Miocene–Pliocene restriction of the Indonesian Gateway; both passages have important effects on global oceanography and climate. Understanding the paleoceanographic changes in a regional context provides a global test on models of Cenomanian–Turonian oceanographic and climatic evolution related both to extreme Turonian warmth and the evolution of OAE 2.

The Lower Cretaceous volcanic rocks and underlying Jurassic(?) sediments cored in different parts of the MB provide information on the timing of different stages of the Gondwana breakup. The recovered cores provide sufficient new age constraints to underpin a reevaluation of the basin-wide seismic stratigraphy and tectonic models for the region.

Expedition 372: Creeping Gas Hydrate Slides and Hikurangi LWD

Planning

Final quotes were obtained, and the subcontract for logging-while-drilling (LWD) tools was completed. A conference call with scientists, the JRSO, and Schlumberger was held to discuss bottom-hole assembly (BHA) configuration and data requirements. Preparations for the airfreight were completed, and the shipments were dispatched. A final crew and science party list was submitted to New Zealand immigration. The JRSO learned about a US research vessel that was denied entry into a New Zealand port until the ship's hull was cleaned at sea and began investigating whether a similar implementation of the pending law would occur on the *JOIDES Resolution's* arrival into Lyttelton, New Zealand. Results of a survey of hull cleaning options by the ship's owner led to obtaining Australian approval to clean the hull in Fremantle, Australia, at the start of the expedition. The method available in Fremantle had less potential impact on Expedition 372 operations (2 days) than any other option. Discussions continued via the agent with New Zealand on biosecurity requirements for samples staying in New Zealand and samples and cores that will be shipped out from port.

Clearance, permitting, and environmental assessment activities

In accordance with the New Zealand Exclusive Economic Zone Act, notification of marine scientific research to key Māori groups was issued on 13 October. A report of the notifications and an initial environmental assessment form were submitted to the New Zealand Environmental Protection Authority on 28 November.

Expedition 374: Ross Sea West Antarctic Ice Sheet History

Planning

Agreements were reached with the German Aerospace Centre and the US Naval Ice Center to provide satellite imagery and ice forecasts. Weather forecasting was secured with the Meteorological Service of New Zealand. Final determination on visa requirements was obtained from New Zealand immigration and communicated to all participants. Final supplies were obtained, and surface and airfreight shipments were sent. Preparations for port call and facilitation of Australia/New Zealand IODP Consortium publication relationship activities continued. Final preparatory communications were sent to the science party, including special instructions related to Antarctic operations.

Staffing

The final two science party positions were filled, one with a replacement, and the final education and outreach position was staffed.

Clearance, permitting, and environmental assessment activities

Authorization for use of radioactive sources (logging tools) in Antarctic waters was received by NSF. The finalization of the environmental evaluation is anticipated at the beginning of next quarter, and the comment period on the waste permit application ends on 2 January. The EPSP and TAMU Safety Panel reviewed and recommended approval of a site (with a depth limitation) that had been deferred at the last EPSP meeting.

Expedition 375: Hikurangi Subduction Margin

Planning

Planning meetings continued on the various observatory issues. Observatory hardware and components continued to arrive at TAMU for packing and shipping. The seafloor pressure gauges were tested at TAMU in December. Initial review of the Expedition 372 LWD results and implications for the final observatory deployment plans began. Detailed loading and deployment plans are being finalized. Surface shipments are scheduled to depart the third week of January 2018. Conference calls were held to discuss research plans for Expeditions 372 and 375.

Clearance, permitting, and environmental assessment activities

Research authorization for Expedition 375 was issued by the New Zealand government on 20 December.

Expedition 376: Brothers Arc Flux

Planning

Design changes of the hydraulic release reentry system hardware were finalized. Discussions were initiated with CDEX about testing/use of their new turbine-driven coring system, which is designed to increase coring performance in fractured hard rock under high-temperature conditions. The high-temperature wireline tool was fitted with the new electronics and tested at a vendor with satisfactory results. Rental of the high-temperature Kuster water sampler tool was arranged. Communication with the science party on laboratory requirements was initiated, including details on third-party analytical instruments.

Staffing

Staffing of the science party and onboard education and outreach officers was completed.

Clearance, permitting, and environmental assessment activities

The marine scientific research application was submitted the US State Department on 5 October. The US State Department submitted the application and diplomatic note to the New Zealand government on 10 October.

Expedition 378: South Pacific Paleogene

Planning

The Expedition 378 pre-expedition meeting was held in College Station, Texas, on 6 and 7 November. Final edits to the *Scientific Prospectus* were submitted to publications in December.

Staffing

The JRSO received applications from the PMOs in mid-November, and an initial round of invitations was issued in December.

Expedition 379: Amundsen Sea West Antarctic Ice Sheet History

Planning

The pre-expedition meeting was held in College Station, Texas, on 1 and 2 November 2017. The *Scientific Prospectus* was published in December.

Staffing

Applications were received from the PMOs in mid-December, and initial review was completed. The JRSO will monitor and assess overlap with Expedition 382 with the two sets of Co-Chief Scientists considering overlapping interests.

Clearance, permitting, and environmental assessment activities

The JRSO submitted a waste permit application to NSF for Antarctic activities for all expeditions with operations in polar waters in FY18 and FY19, including Expedition 379. The comment period of the application ends on 2 January 2018.

Expedition 382: Iceberg Alley Paleooceanography & South Falkland Slope Drift

Planning

The pre-expedition meeting was scheduled for 8 and 9 February in College Station, Texas. The 846-Ancillary Project Letter lead proponent was also invited to attend the pre-expedition meeting.

Staffing

A second Co-Chief Scientist accepted the invitation to sail. Applications are due to the JRSO on 15 January. The JRSO will monitor and assess overlap with Expedition 379 with the two sets of Co-Chief Scientists considering overlapping interests

Clearance, permitting, and environmental assessment activities

The JRSO submitted a waste permit application to NSF for Antarctic activities for all expeditions with some operations in polar waters in FY18 and FY19, including Expedition 382. The comment period of the application ends on 2 January.

Expedition 383: Dynamics of Pacific Antarctic Circumpolar Current

Planning

The pre-expedition meeting was scheduled for 26 and 27 April in College Station, Texas.

Staffing

Two invitations were issued for Co-Chief Scientists to sail on the expedition; both accepted.

Clearance, permitting, and environmental assessment activities

The JRSO submitted a waste permit application to NSF for Antarctic activities for all expeditions with some operations in polar waters in FY18 and FY19. Expedition 383 includes one site south of 60°S. The comment period of the application ends on 2 January.

Expedition 384: Panama Basin Crustal Architecture and Engineering Testing

Planning

The JRSO received the final report of the Deep Crustal Drilling Workshop, which will inform the engineering testing and will be explored further next quarter.

Expedition 385: Guaymas Basin Tectonics and Biosphere

Planning

Discussions with a University-National Oceanographic Laboratory System ship operator that recently operated in the Gulf of California explored issues with ports and the clearance process.

Expedition 386: Gulf of Mexico Methane Hydrate

Planning

Monthly conference calls with the proponents continued.

Clearance, permitting, and environmental assessment activities

Discussions concerning permitting requirements raised some issues that needed further exploration, which led to interaction with NSF and the JRFB and tasking the ship owner to explore requirements for permitting the ship to operate in the Gulf of Mexico.

Engineering support

Final parts for the hydraulic power units for the vibration-isolated television camera were delivered to the ship at the Fremantle port call. The final installation and connection will be completed by the crew as time allows. Testing of the new units will occur during the transit from Subic Bay, Philippines, to Lyttelton, New Zealand, after the dry dock and maintenance period.

JRSO expedition science outreach support

JRSO staff assisted with planning and implementation of Expedition 372 port call public relations and outreach activities in Fremantle, Australia, and planning for the Expedition 374 port call in Lyttelton, New Zealand, that will take place early next quarter.

Technical and analytical services

Analytical systems acquisitions and updates

The new *P*-wave logger (PWL) design was implemented on both Whole-Round Multisensor Loggers (WRMSLs), so the *JOIDES Resolution* now has two identical systems with density estimation by gamma ray attenuation, magnetic susceptibility, and *P*-wave velocity.

Laboratory working groups

The laboratory working groups (LWGs) provide oversight, research direction, and quality assurance for the methods, procedures, and analytical systems both on the *JOIDES Resolution* and on shore. The groups meet regularly to review cruise evaluations, expedition technical reports, and issues management communications to provide advice on corrective actions and potential developments for laboratories.

Curation and Core Handling

The Curation and Core Handling LWG did not meet this quarter because no curation-related issues arose from recent expeditions.

Geochemistry

The Geochemistry LWG did not meet this quarter because of schedule conflicts (science lead at sea) but will meet next quarter to discuss ongoing issues as well as any issues arising from recent expeditions.

Geology

The Geology LWG met this quarter to discuss ongoing issues and issues arising from Expeditions 368 (South China Sea Rifted Margin) and 371.

- Ongoing issues:
 - The project lead on the DESClogik Replacement project informed the LWG that the project is on hold pending input from the community.
 - The LWG discussed stratigraphic correlation support and decided the JRSO will train technicians in the basics of the Correlator software as well as the IODP internal software. The technicians will be able to help to help orient new stratigraphic correlators to the software; however, they are not responsible for training the scientists on how to do the correlator job.
 - The LWG discussed complaints about ergonomics in the core description area; the JRSO purchased height-adjustment hardware for the third table, making all three tables height-adjustable. Each table also has adjustable mounts for the monitors, and the shipboard Marine Computer Specialists can help scientists arrange them within the limits of the mounts.
 - The LWG received an update on alternate lighting for the Section Half Imaging Logger, reporting that the light purchased for the test was too dim; modification to that light is ongoing for further testing.
 - The LWG discussed the complaints about the scanning electron microscope (SEM) uploader software and put the issue on hold until requirements for improvements can be assembled and a project proposed.
 - The LWG discussed lighting in the core description area and at the next meeting will discuss potential improvements.
 - The LWG is awaiting a report from one of the EPMs in regard to energy dispersive spectrometry (EDS) technology for potential use on the *JOIDES Resolution*.
- Issues arising from Expeditions 368 and 371:
 - SEM users requested that an SEM atlas be provided; the JRSO will acquire and deploy one on the *JOIDES Resolution*.
 - Diatom specialists requested that a copy of DiatomWare be kept on the ship; the JRSO will do so.

- The stratigraphic correlation scientists complained that the monitors for their workstation were excessively hot; this was confirmed, and the monitors were replaced.
- A request for TimeScaleCreator Pro software has been received; Information Technology (IT) services will determine how best to answer this request.
- The database visualization tool “LIVE” was well received, but users would find it helpful if section-half images were accompanied by a centimeter scale. The applications development group will investigate possible means of doing so.

Geophysics

The Geophysics LWG met this quarter to discuss ongoing issues and issues arising from Expedition 371.

- Ongoing issues:
 - The changes asked for by the Shanghai superconducting rock magnetometer (SRM) evaluation team were implemented (e.g., positioning of high-voltage power box and shielding of degauss power cables all the way to the connector).
 - The Agico JR-6A data uploader was adjusted to prevent user error from uploading inappropriate orientation framework data; in addition, Agico completed a modification to output a CSV file with all of the needed information, further insulating the workflow from error.
 - The Agico KLY-4 KappaBridge uploader project was completed.
 - Quality control parameters for physical properties measurements were discussed, and a project plan for implementing them was created.
 - As reported last quarter, during the upcoming Expedition 375, one of the physical properties scientists will bring his own thermal conductivity system (which offers only full-space needle options) to do a comparative study of the results with the TeKa Berlin TK-04 aboard the *JOIDES Resolution*.
 - Work to correct the core orientation tool issues continued, and the Siem core technicians may have found the culprit (a screw that is insufficiently strong to prevent rotation). Unfortunately, although the tools were run at Sites U1507, U1508, and U1510, the rocks were magnetically weak and it was not possible to conclude from the data whether the problem had been solved; the JRSO continues to work on this issue.
- Issues arising from Expedition 371:

- A batch of core liners had inner facets that gave rise to slight errors in *P*-wave velocity; JRSO engineering is working with the vendors to ensure this does not recur.
- The *P*-wave caliper software was modified to use the same picking method as the PWL on the WRMSLs.
- SRM z-axis data were reported to be noisy, but this report was in context with weaker sediments; no action item was initiated, but the JRSO will monitor.

Development, IT, and databases

The JRSO manages data supporting IODP activities, including expedition and postexpedition data, provides long-term archival access to data, and supports JRSO IT services. Daily activities include operating and maintaining shipboard and shore-based computer and network systems and monitoring and protecting JRSO network and server resources to ensure safe, reliable operations and security for IODP data and IT resources.

Expedition data

LIMS database

Data from Expeditions 371 and 369 were added to the LIMS database on shore this quarter. These data are currently under moratorium and available only to the scientists who sailed on the expeditions. Data from Expedition 362 (Sumatra Seismogenic Zone) were released from moratorium during this quarter.

Expedition data requests

The following tables provide information on JRSO web data requests from the scientific community. Where possible, visits by JRSO employees were filtered out.

Top 10 countries accessing JRSO web databases

Rank	Janus database		LIMS database	
	Country	Visitor sessions	Country	Visitor sessions
1	USA	2,148	USA	824
2	United Kingdom	1,122	China	358
3	Germany	544	Japan	252
4	Japan	538	Germany	176
5	China	438	Brazil	133
6	France	144	Canada	133
7	Italy	138	United Kingdom	119
8	Netherlands	130	Australia	88
9	Sweden	126	Spain	62

Rank	Janus database		LIMS database	
	Country	Visitor sessions	Country	Visitor sessions
10	Unknown	112	France	58
	Others	826	Others	298
	Total	6,266	Total	2,501

Top 20 database web queries

Rank	Janus database		LIMS database	
	Query	Views	Query	Views
1	Imaging—photos	2,405	Imaging—core photos	3,650
2	Core summaries	2,257	Samples	1,017
3	Site summaries	1,026	Physical properties—GRA	586
4	Samples	968	Imaging—LS section images	551
5	Paleontology—age models	588	Hole summaries	483
6	Hole summaries	557	Section summaries	470
7	Special holes	492	Core summaries	325
8	Chemistry—carbonates	471	Physical properties—MAD	251
9	Imaging—prime data images	358	Physical properties—RSC	243
10	Physical properties—MAD	349	Physical properties—MS point	222
11	Paleontology—range tables	347	Physical properties—MS	207
12	Physical properties—GRA	341	Chemistry—carbonates	196
13	Imaging—core close-up photos	336	Physical properties—NGR	187
14	Physical properties—MSL	246	Paleomag—SRM section	149
15	Hole trivia	216	Physical properties—PWL	141
16	Physical properties—RSC	213	Chemistry—IW	137
17	Physical properties—smear slide	206	Physical properties—PWC	132
18	Paleomag—SRM	198	Physical properties—RGB	122
19	Chemistry—IW	192	Imaging—thin sections	119
20	Physical properties—PWS	173	Imaging—expanded core photos	109
	Others	2,081	Others	2,623
	Total	14,020	Total	11,920

Data requests to the TAMU Data Librarian

Requests	Total	Country	Total
Photos	10	USA	11
How to	4	Canada	3
Lithology	2	United Kingdom	3
Ages	1	Australia	2
Chemistry	1	Fiji	1
Citation	1	Germany	1
Depths	1	Netherlands	1
Heat flow	1	Russia	1
Moratorium question	1	Unknown	1

Requests	Total		Country	Total
RSC	1			
Samples	1			
Total	24		Total	24

Network systems operation, maintenance, and security

The JRSO upgraded shipboard and shore-based Oracle database engines from Oracle 11g to Oracle 12c.

Core curation

The JRSO provides services in support of Integrated Ocean Drilling Program and IODP core sampling and curation of the core collection archived at the GCR.

GCR activity

The JRSO planned sample and curation strategies this quarter for upcoming JRSO Expeditions 376, 378, and 379.

The following table provides a summary of the 2,252 samples that were taken at the GCR during the quarter. Sample requests that show zero samples taken may represent cores that were viewed by visitors during the quarter, used for educational purposes, or requested for XRF analysis. For public relations or educational visits/tours, the purpose of the visit is shown in brackets in the “Sample request number, name, country” column and “No samples” is recorded in the “Number of samples taken” column if no new samples were taken.

GCR sample requests

Sample request number, name, country	Number of samples taken	Number of visitors
56140, Jacobel, USA	268	
56302, Shu, USA	30	1
49786, Hessler, USA	57	1
52539, McCarron, United Kingdom	0	
55888, Vargas, USA	6	
56475, McKay, New Zealand	59	
53671, Wycech, USA	74	
55822, Sosdian, United Kingdom	2	
55991, Snelling, United Kingdom	198	
56303, Takashimi, Japan	7	
56744, Abell, USA	61	
55916, Jardine, United Kingdom	164	
56434, Rizzo, USA	15	
57027, Jardine, United Kingdom	164	

Sample request number, name, country	Number of samples taken	Number of visitors
57005, Ford, United Kingdom	127	
56347, Khim, Korea	12	
56508, Koenig, Germany	37	
57150, Kast, USA	9	
57249, Oconnell, USA	35	
57539, Kulhanek, USA	31	
57828, Lafuerza, France	8	
57719, Snelling, United Kingdom	47	
57635, John, United Kingdom	41	
56240, Catalano, USA	12	
56345, Jin-Si, Canada	57	
56171, Jacobel, USA	164	
56512, Chen, China	158	2
55741, Norris, USA	198	
56196, Marcott, USA	103	
56336, Abdullajintakam, USA	50	
56413, Stracke, Germany	4	
57232, Bralower, USA	8	
54948, Hansen, USA	46	
Tours/demonstrations (6)	0	78
Totals	2,252	82

Use of core collection

The JRSO promotes outreach use of the GCR core collection by conducting tours of the repository and providing materials for display at meetings and museums. The repository and core collection are also used for classroom exercises. A VIP tour was conducted this quarter for Kristian Siem (Siem Offshore Inc.), and Chad Broyles (GCR superintendent) made a presentation to the Baylor Research Innovation Collaboration in Waco, Texas.

GCR tours/visitors

Type of tour or visitor	Number of visitors
Scientist visitors	4
Educational tours/demonstrations (6)	70
Public relations tours (2)	8
Totals	82

Other GCR activities

The GCR staff continued the work left over from the Expeditions 367 and 368 sample party, taking more than 5,000 samples this quarter. In addition, GCR staff took several hundred samples left over from the

Expedition 363 sample party. The GCR staff began preparing the cores for shipment to the Kochi Core Center. Preparations also began for the Expedition 371 sampling party, which is scheduled for the end of January.

C-Air-S, a Houston-based company, continued working to replace the heating, ventilation, and air conditioning (HVAC) in the GCR reefers this quarter. Construction is on schedule, and the target date for completion is March 2018. The current cooling system will stay in place and operational until the new system is fully functional.

Two seagoing Curatorial Specialists were hired this quarter, giving the GCR a full complement of three Curatorial Specialists.

Core scanning facility

During the quarter, 761 core sections were scanned at the GCR. Documentation relating to the operation, advanced configurations, maintenance, and troubleshooting of the XRF can be found at <https://sites.google.com/scientific-ocean-drilling.org/xrf-iodp/home>.

Core sections scanned

Request type	Expedition, name, country	XRF	SHIL	WRMSL
Old Instrument				
Personal	130, Feng, China	57		
Personal	356, Christensen, USA	94		
Personal	Non-IODP, Arcusa	26		
Program	368	119	196	
Program	371	85		
New Instrument				
Personal	130, Feng, China	180	237	
Program	371	123		
Program	368	77		
Totals		761	433	0

Notes: SHIL= Section Half Imaging Logger; WRMSL= Whole-Round Multisensor Logger.

Publication services

IODP Publication Services provides publication support services for IODP riserless and riser drilling expeditions; editing, production, and graphics services for required Program reports (see “Progress reporting” in “Management and administration”), technical documentation, and scientific publications as defined in the JRSO cooperative agreement with NSF; and distribution of Integrated Ocean Drilling Program, ODP, and DSDP publications.

Scientific publications

Newly published content on the IODP Publications website

Reports and publications	JRSO	USIO	CDEX	ESO*
Scientific Prospectus	10.14379/iodp.sp.379.2017			10.14379/iodp.sp.381.2017
Preliminary Report	10.14379/iodp.pr.366.2017			
Data Report	10.14379/iodp.proc.351.201.2017	10.2204/iodp.proc.346.203.2017 10.2204/iodp.proc.346.201.2017 10.14379/iodp.proc.349.203.2017	10.2204/iodp.proc.337.203.2017	
Expedition Report	10.14379/iodp.proc.362.2017		10.14379/iodp.proc.370.2017	10.14379/iodp.proc.364.2017

*ESO publications are produced under contract with the British Geological Survey.

Citation management

Digital object identifiers

IODP is a member of CrossRef, the official digital object identifier (DOI) registration agency for scholarly and professional publications. All IODP scientific reports and publications are registered with CrossRef and assigned a unique DOI that facilitates online access, as are the Integrated Ocean Drilling Program, ODP, and DSDP scientific reports and publications. CrossRef tracks the number of times a publication is accessed, or resolved, through the CrossRef DOI resolver tool. Program statistics for the reporting quarter are shown in the table below.

Number of online DOI resolutions

Reports and publications	DOI prefix	October 2017	November 2017	December 2017	FY18 Q1 total
IODP	10.14379	1,633	2,188	1,795	5,616
Integrated Ocean Drilling Program	10.2204	3,198	2,414	2,813	8,425
ODP/DSDP	10.2973	6,416	5,237	12,638	24,291

Expanding online access

Integrated Ocean Drilling Program and IODP expedition reports and data reports are now indexed at ScienceOpen (https://www.scienceopen.com/collection/IODP_Publications). IODP deposited 593 chapters from Expeditions 301–360 into ScienceOpen this quarter.

ScienceOpen IODP collection statistics

Period	Article count	Article view	Average view count	Read click	Share count
FY18 Q1	613	1,652	2,695	34	87

Publications management

Integrated Ocean Drilling Program closeout activities

Publications closeout

Integrated Ocean Drilling Program publications closeout activities continued during the reporting period. Expedition reports and postexpedition research publications published during the quarter in the *Proceedings of the Integrated Ocean Drilling Program* are listed above in “Scientific publications.” In addition, publication obligation papers and data reports related to Expeditions 317, 318, 320/321, 337, 340, 342, 346, 347, and 349 were submitted to English language peer-reviewed journals or the Program.

Publications website

The IODP Publications website is hosted at TAMU. During the last quarter, it received 20,843 site visits and 286,003 page views. Where possible, visits by JRSO employees and search engine spiders were filtered out of the count.

IODP publications archiving

The main IODP publications website (<http://publications.iodp.org/index.html>), with full content from all Integrated Ocean Drilling Program and IODP volumes, is archived with Archive-It, a long-term archive specializing in full website backups. Quarterly crawls incrementally update the archive with new files. The archive can be viewed publicly at <https://archive-it.org/collections/9148>.

Archive-It statistics

Period	Total data	New data	Total docs	New docs
FY18 Q1	183.2 GB	13.1 GB	176,563	23,339

Abstracts authored by JRSO staff

Abstracts of conference presentations during this quarter authored by JRSO staff include the following. Bold type indicates JRSO staff.

American Geophysical Union Fall Meeting 2017

- **Acton, G.D.**, Morris, A., Musgrave, R.J., Zhao, X., **Clement, B.M.**, **Evans, H.F.**, **Hastedt, M.**, **Haupt, D.**, **Mills, B.**, **Novak, B.**, and **Petronotis, K.E.**, 2017. Paleomagnetism onboard the IODP Research

Vessel *JOIDES Resolution*: recent advances, best practices, and pitfalls [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract GP43B-0976)

- Anderson, C.H., Dunlea, A.G., Murray, R.W., Tada, R., **Alvarez Zarikian, C.A.**, and IODP Expedition 346 Scientists, 2017. Reconstructing Eolian delivery to the Ulleung Basin (IODP Site U1430) over the past 12 Myr [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-05)
- Auer, G., Kanagawa, Y., De Vleeschouwer, D., Groeneveld, J., **Bogus, K.**, Henderiks, J., Castañeda, I.S., and IODP Expedition 356 Scientists, 2017. Timing of Indonesian Gateway restriction between 4.0 and 2.8 Ma and its impact on Indian Ocean surface waters based on calcareous nannoplankton assemblages [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-03)
- Babin, D.P., Hemming, S.R., Simon, M., Hall, I.R., Franzese, A.M., Goldstein, S.L., Cai, Y., Liu, T., Johns, M.A., Tejada, L., **LeVay, L.**, and Expedition 361 Scientists, 2017. Terrigenous provenance follows climate variability at IODP Site U1474, southwestern Indian Ocean [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-06)
- Balestra, B., **Zarikian, C.**, Bout-Roumazielles, V., and Flores, J.-A., 2017. Late Quaternary high resolution micropaleontological and sedimentological records in the Gulf of Cadiz [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP11D-1053)
- Baxter, A.T., Kutterolf, S., Schindlbeck, J.C., Sandoval, M.I., Barckhausen, U., Li, Y.-X., and **Petronotis, K.E.**, 2017. An integrated age model for the Cocos plate using IODP CRISP drilling data [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP33B-1332)
- Bowen, M.G., **Kulhanek, D.K.**, Lyle, M.W., and Hahn, A., 2017. X-ray fluorescence results from IODP Expedition 355 sediments in Laxmi Basin, eastern Arabian Sea: insights into late Miocene and Pleistocene carbonate production and burial and possible variations in monsoon intensity [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract OS51B-1150)
- Cares, Z., Farr, C.L., **LeVay, L.**, Tangunan, D., Brentegani, L., and IODP Expedition 361 Scientists, 2017. Calcareous nannoplankton assemblages across the Pliocene–Pleistocene transition in the southwestern Indian Ocean, IODP Site U1475 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23A-1285)

- Chapman, J., **Kulhanek, D.K.**, Rosenthal, Y., Holbourn, A.E., and IODP Expedition 363 Scientists, 2017. An initial examination of carbonate production in the western equatorial Pacific: XRF results from the Pliocene–Pleistocene of IODP Site U1490 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23C-1333)
- **Childress, L.B.**, Galy, V., and McNichol, A.P., 2017. Turbidite carbon distribution by ramped PyrOx, Astoria Canyon [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract B11A-1657)
- Cooper, S.K., **Petronotis, K.E.**, Ferraro, C., Johnson, K.T.M., and Yarincik, K., 2017. Bringing cutting-edge Earth and ocean sciences to under-served and rural audiences through informal science education [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract ED22B-01)
- Dailey, S.K., Clift, P.D., **Kulhanek, D.K.**, and Calves, G., 2017. The sedimentology and origins of a giant mass transport deposit: the Nataraja slide, Arabian Sea [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract NH53B-0150)
- De Vleeschouwer, D., Auer, G., **Bogus, K.**, Groeneveld, J., Henderiks, J., Jatiningrum, R.S., and Christensen, B.A., 2017. Marine isotope Stage (MIS) M2 (~3.3 Ma) in the Southern Hemisphere: constraining the climatic drivers of a short-term glaciation event during the Pliocene warm period [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23C-1329)
- Fryer, P.B., Wheat, C.G., **Williams, T.**, and the IODP Expedition 366 Scientists, 2017. Expedition 366 reveals widespread seamount subduction effects in the Mariana forearc [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract OS52A-03)
- Gallagher, S.J., McCaffrey, J., Wallace, M.W., Keep, M., Fulthorpe, C., **Bogus, K.**, and McHugh, C., 2017. Did the onset of high amplitude glacio-eustatic cycles trigger mass-transport processes on the Northwest Shelf of Australia? Insights from IODP Expedition 356 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-07)
- **Höfig, T.W.**, **LeVay, B.**, Stock, J.M., Xun, Z., **Klaus, A.**, Jian, Z., Larsen, H.C., **Alvarez Zarikian, C.A.**, and the IODP Expeditions 367 and 368 Scientists, 2017. XRF core scanning of igneous rocks: a cast study of IODP Expeditions 367/368 lava flows, South China Sea [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract T32A-08)

- Jian, Z., Liu, Z., Jin, H., Larsen, H.C., **Alvarez Zarikian, C.A.**, Stock, J.M., Sun, Z., **Klaus, A.**, and IODP Expeditions 367 and 368 Scientists, 2017. Sedimentary and paleoceanographic responses to the South China Sea Basin evolution [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract T32A-01)
- Kinsley, C.W., McGee, D., Anderson, C.H., Murray, R.W., Tada, R., **Alvarez Zarikian, C.A.**, and IODP Expedition 346 Scientists, 2017. Provenance changes over glacial–interglacial timescales recorded in Japan Sea sediments (IODP Site U1430) [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23C-1318)
- Laya, J.C., Prince, K., Betzler, C., Eberli, G.P., Blättler, C.L., Swart, P.K., Reolid, J., **Alvarez Zarikian, C.A.**, and Reijmer, J., 2017. Cement distribution and diagenetic pathway of the Miocene sediments on Kardiva Platform, Maldives [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract EP11D-01)
- Li, Y.-X., Zhao, X., Xie, S., Jovane, L., and **Petronotis, K.E.**, 2017. Paleomagnetic constraints on the forearc deformation history of the Costa Rican convergent margin [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract GP52A-08)
- Mamo, B.L., McHugh, C., Renema, W., Gallagher, S.J., Fulthorpe, C., and **Bogus, K.**, 2017. Foraminiferal signatures of mass transport from the north-west continental shelf off western Australia, IODP Expedition 356 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23C-1330)
- Petrick, B., Auer, G., De Vleeschouwer, D., Christensen, B.A., Stolfi, C., Reuning, L., Martinez-Garcia, A., Haug, G.H., and **Bogus, K.**, 2017. Indian Ocean circulation changes over the Middle Pleistocene Transition [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP33E-05)
- Ravelo, A.C., Carney, C., Rosenthal, Y., Holbourn, A., **Kulhanek, D.K.**, and IOD Expedition 363 Science Party, 2017. The evolution of Indian and Pacific Ocean denitrification and nitrogen dynamics since the Miocene [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-01)
- Ray, D.J., DeBone, K.N., Smesny, J., Chadinha, C., Mitchell, B., **Acton, G.D.**, and **Kulhanek, D.K.**, 2017. A chronostratigraphic and environment magnetic study of drill cores collected in the Mozambique Channel on Cruise MD13 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract GP43A-0967)

- Richter, C., Jensen, S.R., **Acton, G.D.**, and **Evans, H.F.**, 2017. Geomagnetic excursions and high-latitude paleomagnetic records of glaciomarine sediments from the Western Greenland margin (Baffin Bay) [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract GP33B-0977)
- Smith, R.A., Castañeda, I.S., Henderiks, J., Christensen, B.A., De Vleeschouwer, D., Renema, W., Groeneveld, J., **Bogus, K.**, Gallagher, S.J., Fulthorpe, C., and IODP Expedition 356 Scientists, 2017. Mid-Pliocene to early Pleistocene land and sea surface temperature history of NW Australia based on organic geochemical proxies [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP34B-02)
- Tada, R., Seiki, A., Ikeda, M., Irino, T., Ikehara, K., Karasuda, A., Sugisa, I.S., Sagawa, T., Itaki, T., Kubota, Y., Murayama, M., Lu, S., Murray, R.W., **Alvarez Zarikian, C.A.**, and IODP Exp. 346 Scientists, 2017. Intermittent occurrence of millennial-scale variability of East Asian Summer Monsoon before 1.45 Ma based on the high-resolution Br record of the Japan Sea sediments [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP33E-08)
- Tauxe, L., Feakins, S.J., Liddy, H., **Kulhanek, D.K.**, Scardia, G., and Routledge, C., 2017. Chronostratigraphic framework for the late Miocene interval of IODP Exp. 355 Site U1457: timing of the C3-C4 transition [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract GP42A-02)
- Valerio, D.A., **Kulhanek, D.K.**, Rosenthal, Y., Holbourn, A.E., and IODP Expedition 363 Scientists, 2017. An initial examination of carbonate variability in the western equatorial Pacific: XRF results from the lower to middle Miocene of IODP Site U1490 [presented at the American Geophysical Union Fall Meeting 2017, New Orleans, Louisiana, 11–15 December 2017]. (Abstract PP23C-1334)

Geological Society of America Annual Meeting 2017

- **Acton, G.D.**, Richter, C., Xuan, C., and Verosub, K.L., 2017. Paleoenvironmental change recorded in the magnetic properties of marine sediments cored off the margin of Spain and Portugal during IODP Expedition 339. *Geological Society of America Abstracts with Programs*, 49(6):218-6. <https://doi.org/10.1130/abs/2017AM-303980>
- **Alvarez Zarikian, C.A.**, Nadiri, C., Alonso-Garcia, M., Petruny, L., Hernandez, P., Kroon, D., Wright, J., Eberli, G.P., and Betzler, C., 2017. Ostracod-based reconstruction of bottom water conditions in the inner sea of the Maldives during the Pleistocene (IODP Site U1467, northern Indian Ocean). *Geological Society of America Abstracts with Programs*, 49(6):302-8. <https://doi.org/10.1130/abs/2017AM-303155>

- Kawamura, K., Kuranaga, M., Mochizuki, K., and IODP Expedition 362 Scientists (including **K.E. Petronotis**), 2017. Early diagenesis of deep-sea sediments on incoming plates: examples from the Izu-Bonin Trench and the Sunda Trench. *Geological Society of America Abstracts with Programs*, 49(6):115-7. <https://doi.org/10.1130/abs/2017AM-296938>
- Selkin, P.A., Bergmann, F., Brainard, M., Dekens, P., Galy, V.V., Lantzsch, H., Manzueta, M., Meynadier, L., Reilly, B., Ruiz, V., Savian, J., Weber, M., France-Lanord, C., Spiess, V., **Klaus, A.**, and the IODP Expedition 354 Science Party, 2017. Magnetic fabric and channel migration in the active levee of the Bengal Fan, IODP Site U1454. *Geological Society of America Abstracts with Programs*, 49(6):43-8. <https://doi.org/10.1130/abs/2017AM-305063>

Articles authored by JRSO staff

Program-related science and other articles authored by JRSO staff published during this quarter include the following. Bold type indicates JRSO staff. Other Program-related science articles are available online through the ocean drilling citation database (http://iodp.tamu.edu/publications/bibliographic_information/database.html) and the IODP Expedition-related bibliography (<http://iodp.tamu.edu/publications/citations.html>).

- Liu, Z., Li, C.-F., and **Kulhanek, D.** (Eds.), 2017. Evolution of the Deep South China Sea: Integrated IODP Expedition 349 Results. *Marine Geology*, 394.
- Liu, Z., Li, C.-F., and **Kulhanek, D.**, 2017. Preface: evolution of the deep South China Sea: integrated IODP Expedition 349 results. In Liu, Z., Li, C.-F., and Kulhanek, D. (Eds.), Evolution of the Deep South China Sea: Integrated IODP Expedition 349 Results. *Marine Geology*, 394:1–3. <https://doi.org/10.1016/j.margeo.2017.11.009>
- Robertson, A., Kutterolf, S., Avery, A., Baxter, A., **Petronotis, K.E.**, **Acton, G.D.**, Carvallo, C., and Schindlbeck, J.C., 2017. Role of late Oligocene–Recent deep-sea hemipelagic and tuffaceous sediments overlying oceanic crust of the Izu-Bonin forearc, NW Pacific (IODP Expedition 352) in the tectonic development of the NW Pacific region. *International Geology Review*. <https://doi.org/10.1080/00206814.2017.1393634>

Appendix: JRSO quarterly report distribution

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