

International Ocean Discovery Program
JOIDES Resolution Science Operator
FY17 Q1 Operations and Management Report

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Cooperative Agreement OCE-1326927

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to
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and
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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) FY17 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, 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*.

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 have worked successfully to streamline travel and shipping activities.

Progress reporting

JRSO FY16 Q4 Quarterly Operations and Management Report

The JRSO operations and management report for the fourth quarter of FY16 (July–September 2016) was submitted to NSF on 14 November 2016 (http://iodp.tamu.edu/publications/AR/FY16/FY16_Q4.pdf).

JRSO FY16 Annual Report

IODP Publication Services completed the first draft of the FY16 Annual Report in December 2016 and provided it to the JRSO directors and managers for review.

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/facility-boards>).

Planning meetings

Brad Clement (JRSO Director of Science Services), Mitch Malone (JRSO Assistant Director of Science Services and Manager of Science Operations), and Adam Klaus (JRSO Supervisor of Science Support) attended the US Science Support Program (USSSP) leadership meeting held at the American Geophysical Union (AGU) Fall Meeting on 14 December in conjunction with the IODP Town Hall meeting.

Project portfolio management

The JRSO initiated one new project (XRF Core Scanning Facility project) and continued work on three existing projects: Liquid Helium–Free Superconducting Rock Magnetometer Installation and Software Update, Laboratory Information Management System (LIMS) Data Display Tool—LIMSpeak II, and XRF Core Scanner Uploader and Reports (formerly the Shore XRF Scanner Implementation project) (See “Software development”).

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 37,884 site visits and 772,856 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 the 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	FY17 Q1 page views*	FY17 Q1 site visits*
www.odp.tamu.edu	492,752	24,578
www.odplegacy.org	4,559	1,774
www.deepseadrilling.org	85,636	6,396
Total	582,947	32,748

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

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 ^{1,2}	Total days (port/sea)	Days at sea (transit ³ /ops)	Co-Chief Scientists	Expedition Project Managers
Sumatra Seismogenic Zone	362	Colombo, Sri Lanka	6 August–6 October 2016	61 (5/56)	56 (7/49)	L. McNeill B. Dugan	K. Petronotis
Western Pacific Warm Pool	363	Singapore	6 October–8 December 2016	63 (5/58)	58 (8/50)	Y. Rosenthal A. Holbourn	D. Kulhanek
Mariana Convergent Margin ⁴	366	Guam	8 December 2016–7 February 2017	61 (5/56)	56 (8/48)	P. Fryer G. Wheat	T. Williams
South China Sea Rifted Margin ⁵	367	Hong Kong	7 February–9 April 2017	61 (5/56)	56 (2/54)	Z. Sun J. Stock	A. Klaus
South China Sea Rifted Margin ⁵	368	Hong Kong	9 April–11 June 2017	63 (5/58)	58 (4/54)	Z. Jian H.-C. Larsen	C. Alvarez Zarikian
Non-IODP (11 June–27 July 2017) (46 days)							M. Malone
Tasman Frontier Subduction and Climate	371	Townsville, Australia	27 July–26 September 2017	61 (3/58)	58 (7/51)	R. Sutherland G. Dickens	P. Blum
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 ⁶	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	Wellington, New Zealand	4 January–8 March 2018	63 (5/58)	58 (16/42)	R. McKay L. De Santis	D. Kulhanek
Hikurangi Subduction Margin	375	Wellington, 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

Expedition		Port (origin)	Dates ^{1, 2}	Total days (port/ sea)	Days at sea (transit ³ / ops)	Co-Chief Scientists	Expedition Project Managers
South Pacific Paleogene	378	Wellington, New Zealand	14 October–14 December 2018	61 (4/57)	57 (11/46)	TBD	C. Alvarez Zarikian
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)	TBD	A. Klaus

Notes: TBD = to be determined.

¹ Dates for expeditions may be adjusted pending non-IODP activities.

² The start date reflects the initial port call day. The vessel will sail when ready.

³ Transit total is the estimated transit to and from port call and does not include transit between sites.

⁴ Also includes Proposal 693 Ancillary Project Letter (APL), South Chamorro Seamount CORK.

⁵ Complementary Project Proposal (CPP) is contingent on substantial financial contribution outside of normal IODP funding.

⁶ Combined expedition with 841 APL and logging while drilling (LWD) from Proposal 781A (Expedition 375).

JRSO expeditions

Expedition 356: Indonesian Throughflow

Postexpedition activities

The JRFB granted a temporary publication embargo on the Expedition 356 *Preliminary Report* to give authors time to submit key findings papers to major scientific publications. There is one remaining paper still pending editorial decision during the quarter. Thus, the temporary publication embargo on the Expedition 356 *Preliminary Report* is still ongoing. The end of the moratorium will be reached next quarter, requiring publication of the *Preliminary Report* and the *Proceedings Expedition Reports*.

Expedition 361: South African Climates

Postexpedition activities

The Expedition 361 postexpedition editorial meeting and sample party were held 10–14 October and 16–21 October, respectively, in College Station, Texas.

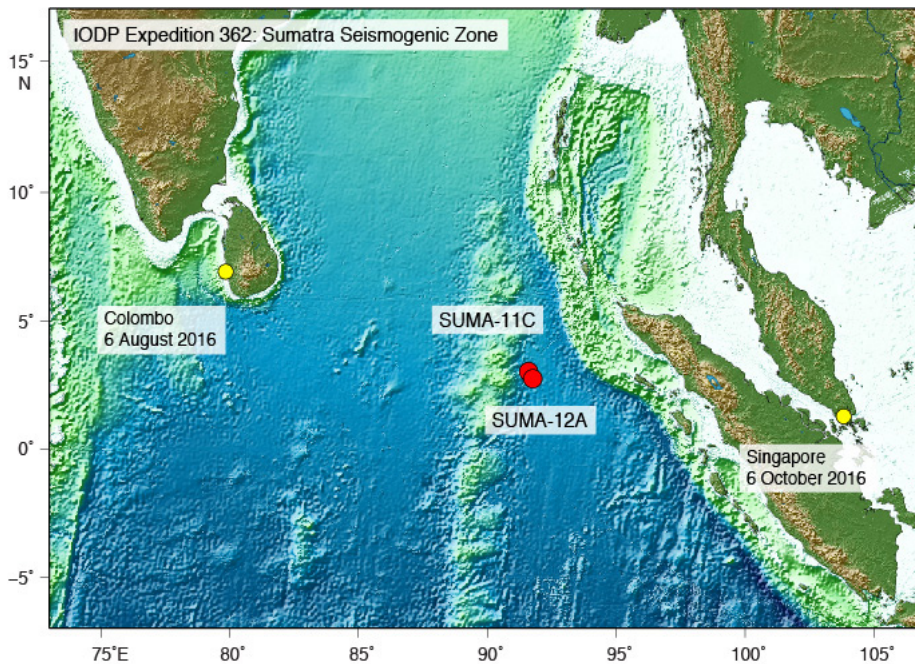
Expedition 362: Sumatra Seismogenic Zone

Staffing

A scientist from India withdrew on 20 July and was replaced in time to sail on the expedition.

Expedition 362 Science Party staffing breakdown		
Member country/consortium	Participants	Co-Chief Scientists
USA: United States Science Support Program (USSSP)	8	1
Japan: Japan Drilling Earth Science Consortium (J-DESC)	4	
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)	1	
Brazil: Coordination for Improvement of Higher Education	1	

Site map



Coring summary

Site	Hole	Latitude	Longitude	Water depth (mbrf)	Cores (N)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1480	U1480A	3°2.0447'N	91°36.3481'E	4147.5	1	6.00	5.94	99.0
	U1480B	3°2.0437'N	91°36.3603'E	4147.5	1	9.50	9.95	104.7
	U1480C	3°2.0337'N	91°36.3613'E	4147.5	1	9.50	9.68	101.9
	U1480D	3°2.0330'N	91°36.3496'E	4147.5	1	9.50	9.91	104.3
	U1480E	3°2.0341'N	91°36.3378'E	4147.5	12	99.70	97.64	97.9
	U1480F	3°2.0448'N	91°36.3375'E	4147.5	88	672.00	249.35	37.1
	U1480G	3°2.0550'N	91°36.3370'E	4147.5	72	672.00	329.16	49.0
	U1480H	3°2.0555'N	91°36.3482'E	4147.3	16	124.40	115.97	93.2
Site U1480 totals:					192	1,602.60	827.60	51.6
U1481	U1481A	2°45.261'N	91°45.5771'E	4178.3	37	350.30	219.80	62.7
Site U1481 totals:					37	350.30	219.80	62.7
Expedition 362 totals:					229	1,952.90	1,047.40	53.6

Science summary

Drilling the input materials of the North Sumatran subduction zone, part of the 5,000 km long Sunda subduction zone system and the origin of the Mw ~9.2 earthquake and tsunami that devastated coastal communities around the Indian Ocean in 2004, was designed to groundtruth the material properties causing unexpectedly shallow seismogenic slip and a distinctive fore-arc prism structure. The intriguing seismogenic behavior and fore-arc structure are not well explained by existing models or by relationships observed at margins where seismogenic slip typically occurs farther landward. The input materials of the North Sumatran subduction zone are a distinctively thick (as thick as 4–5 km) succession of primarily Bengal-Nicobar Fan–related sediments. The correspondence between the 2004 rupture location and the overlying prism plateau and the evidence for a strengthened input section suggest the input materials are key to driving the distinctive slip behavior and long-term fore-arc structure.

During Expedition 362, Sites U1480 and U1481 on the Indian oceanic plate ~250 km southwest of the subduction zone were drilled, cored, and logged to a maximum depth of 1,500 meters below seafloor (mbsf) into basement. The sequence of sediment/rocks that will develop into the plate boundary detachment and drive growth of the fore arc were sampled; their progressive mechanical, frictional, and hydrogeological property evolution will be analyzed through postexpedition experimental and modeling studies. Large penetration depths with good core recovery and successful wireline logging in the challenging submarine fan materials will enable evaluation of the role of thick sedimentary subduction zone input sections in driving shallow slip and the resulting amplified earthquake and tsunami magnitudes at the Sunda subduction zone and globally at other subduction zones where submarine fan–influenced sections are being subducted.

Expedition 363: Western Pacific Warm Pool

Planning

Final logistical preparations were completed with receipt of the surface- and air-freight shipments in Singapore.

Clearance, permitting, and environmental assessment activities

Authorization was received from the Philippines on 20 October after the start of the expedition; however, the remaining alternate site in Philippine waters was not occupied during the expedition.

Expedition 366: Mariana Convergent Margin

Planning

Final acquisition of supplies was completed, surface- and air-freight shipments were dispatched, and final logistical preparations for port call were completed during the quarter. Contact with the correct personnel in the US Navy were made to ensure deconfliction of potential operations in the area.

Expedition 367 and 368: South China Sea Rifted Margin

Planning

The Co-Chief Scientists decided which alternate site to elevate to replace the primary site that was too close to a submarine cable, and an addendum to the *Scientific Prospectus* was published. The Sample Allocation Committee (SAC) for the expeditions reviewed and discussed the research plans submitted by the sample party. Six scientists (three from each expedition) participated in the USSSP Short Course on Shipboard Sedimentology hosted by the JRSO in College Station, Texas. The expedition leadership discussed holding over some Expedition 367 scientists to crossover with their Expedition 368 counterparts to maximize scientific and methodical continuity between the expeditions. The JRSO received assistance from IODP-China to resolve logistical issues associated with the Shanghai port call.

Staffing

Two Education/Outreach Officers, one from the US and from China, accepted for each expedition.

Clearance, permitting, and environmental assessment activities

The US embassy in Beijing submitted the diplomatic note for the expeditions. The JRSO was informed that State Oceanic Administration of China approved the expeditions and issued permits and also received confirmation of the authorization from the embassy.

Expedition 371: Tasman Frontier Subduction

Planning

The Expedition 371 pre-expedition meeting was held 13 and 14 October in College Station, Texas. The JRSO was informed about current acoustic guidelines for New Zealand. New guideline development is in progress and will be implemented during the expedition. Initial communication about potential impact on planned check shot surveys was initiated with relevant authorities. The *Scientific Prospectus* was published in December.

Staffing

The first two rounds of invitations were issued, with 25 acceptances. Invitations for observers were issued after the Australian/New Zealand IODP Consortium (ANZIC) confirmed that the Australian and New Zealand governments supported sailing a scientist as an observer. Science staffing will be completed early next quarter.

Clearance, permitting, and environmental assessment activities

The clearance application was submitted to the US State Department on 11 December. The US embassies in Canberra and Wellington both confirmed submission to Australia and New Zealand on 14 December.

Expedition 369: Australia Cretaceous Climate and Tectonics

Staffing

The initial rounds of invitations were issued, with 27 acceptances by the end of the quarter, including the Australian observer. A special call for paleomagnetists was also issued. Staffing should be completed early next quarter.

Expedition 372: Creeping Gas Hydrate Slides and Hikurangi LWD

Planning

A joint pre-expedition meeting for Expeditions 372 and 375 was held 2–4 November in College Station, Texas. In addition to covering the routine requirements, discussion also focused on the degree of integration between the two expeditions with respect to data and publications because of the common Hikurangi component. Final preparations to the Expedition 372 *Scientific Prospectus* continued with an anticipated publication early next quarter.

Staffing

Nominations from the PMOs were received in December, and the initial review of applications commenced.

Expedition 374: Ross Sea West Antarctic Ice Sheet History

Planning

A pre-expedition meeting for Expedition 374 was held 15 and 16 December in College Station, Texas. Initial communication with potential ice breaker operators continued. A promising conference call between the JRSO, the *Nathaniel B. Palmer* operators, and NSF polar programs occurred on 22 November.

Expedition 375: Hikurangi Subduction Margin

Planning

A joint pre-expedition meeting for Expeditions 372 and 375 was held 2–4 November in College Station, Texas. In addition to covering the routine requirements, discussion also focused on the degree of integration between the two expeditions with respect to data and publications because of the common Hikurangi component. Final preparations to the Expedition 375 *Scientific Prospectus* continued, with an anticipated publication early next quarter.

Another CORK engineering design review meeting was held 10 and 11 November in College Station, Texas. Work continued on completed components to finalize manufacturing drawings toward initiation of fabrication.

Staffing

Nominations from the PMOs were received in December, and the initial review of applications commenced.

Expedition 376: Brothers Arc Flux

Staffing

Two Co-Chief Scientists were invited and accepted invitations. The pre-expedition meeting was scheduled for 1 and 2 May.

Technical and analytical services

Analytical systems

Analytical systems acquisitions and updates

The new Olympus DELTA Premium portable energy-dispersive X-Ray Fluorescence (pXRF) spectrometer was deployed during Expedition 366. Two of the sailing scientists were experienced with the pXRF technique, which will be very helpful to the JRSO in establishing good laboratory practices and methods for the instrument.

The 2G Enterprises helium-free superconducting rock magnetometer (SRM) was successfully installed during the Guam port call, taking advantage of the new software deployed during Expedition 362, and the Paleomagnetism laboratory was rebuilt in a more efficient layout.

The JRSO hosted a Color Reflectance Measurement Workshop last quarter with three external participants (one of whom could not attend but reviewed the work by email). Following the recommendations of the workshop, a decision was made to install the Ocean Optics QE Pro Peltier-cooled spectrometers on the Section Half Multisensor Logger (SHMSL) to improve color reflectance measurements. The QE Pro offers significantly lower dark current noise, which will be helpful in the analysis of dark core material, and has more than three times the signal to noise ratio of the USB 4000 units previously mounted on the SHMSL.

A new *P*-wave logger (PWL) housing was built to address mechanical issues with the PWL bearings on the Whole-Round Multisensor Logger (WRMSL) and to simplify the operation. The new PWL will use the same transducers and electronics as the old assembly, so no analytical change is being made, but the new assembly is much stouter and uses compressed air rather than servo motors to move the transducers.

The JRSO is developing guidelines for the support of postexpedition X-Ray Fluorescence (XRF) scanning and plans to fold the College of Geosciences system into JRSO management and control.

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.

Geology

The Geology LWG met this quarter to discuss issues arising from Expedition 362 as well as ongoing issues and work. No external participants were able to attend. The LWG-related issues reported during Expedition 362 included (1) the speed and reliability of DESClogik and (2) the ergonomics and space of the laboratory.

The JRSO is working on a redesign of DESClogik's underpinning data structure to try to resolve both speed and reliability, with a project in the scoping stages, and will also make the third (aft) description table height-adjustable to match the other two tables to better accommodate scientists.

Geophysics

The Geophysics LWG met this quarter to discuss the recommendations of the Color Reflectance Measurement Workshop and to review any ongoing issues and issues arising from Expedition 362. External participants Donna Blackman (Scripps Institution of Oceanography) and Tony Morris (Plymouth University, UK) were in attendance.

Workshop recommendations:

- Implementing the Ocean Optics QE Pro spectrometer as soon as possible;
- Maintaining the Minolta CM-2002 spectrometers on board the *JOIDES Resolution* to provide an ability to assess data quality and replacing the Minolta CM-2002 spectrometers with a modern model should both of the older units fail;
- Making appropriate color cards available to scientists for quality checking (JRSO already has these, but they will be brought to the attention of science parties);
- Parsing 2 nm-binned spectral data into LIMS (similar to the Janus color report, but with higher resolution) instead of in auxiliary files;
- Adding LIMS report(s) to provide spectral data in addition to color space data (several report and nomenclature changes were also proposed);
- Calculating RGB data from the Tristimulus XYZ data and parsing that into LIMS and adding the RGB data to the LIMS reports;
- Continuing to monitor surface contact and working to ensure that it is as close to perfect as possible, although workshop attendees acknowledged this is not always possible; and
- Continuing research into methods to overcome thin-film interference and spectral shift from the use of GLAD® ClingWrap, including but not limited to the use of noncontact techniques or advanced optical films.

Other issues:

- During Expedition 362, orientation declination data using downhole tools was off by ~150° to 180° throughout the cruise. The root cause is still being investigated; testing on board on the rig floor failed to uncover the cause.
- A proposal was submitted to create a database of known lithologies and their thermal conductivity values and to discontinue the use of the thermal conductivity detector (TCD), which often fails to

give a good result based on the condition of the sample. The proposal was considered and rejected; however, this can be studied for possible future consideration.

- The LWG continues to find that making the U/Th/K-reduced data available on ship is not essential for shipboard operations and that this analysis is best suited for postexpedition research; however, given the efforts made by Expedition 356 scientists in this area, the LWG will evaluate their methodology to determine if it could be applied to all expeditions. This discussion was tabled until the Expedition 365 method paper is published and available for analysis.

Geochemistry

The Geochemistry LWG met this quarter to discuss several ongoing issues and issues arising from Expedition 362. External participants Jason Sylvan (TAMU Department of Oceanography) and Rebecca Robinson (University of Rhode Island) were in attendance.

- Purchase of the Olympus DELTA Premium pXRF spectrometer required discussion of data structure and practices. Quantitative data (powders, pressed pellets, or flux fusion beads only) will be recorded in LIMS with a unit; qualitative data (any other sample type, including section halves) will be recorded in LIMS with “uncalibrated” as the unit to avoid confusion on the quality and usability of the data.
- The LWG received an update on the Excel-based inductively coupled plasma (ICP) analyzer application developed by Vinny Percuoco (JRSO Research Assistant), which was available during Expedition 362 but not used. The application was used during Expedition 363 and the scientist response was very positive thus far (at the time of the meeting, midexpedition).
- Sylvan recommended the creation of a microbiology workshop in the near future to discuss contamination control for microbiology, with an acknowledgement by him that the perfluorocarbon tracers (PFTs) are perhaps not the ideal approach in the modern microbiological context, even though the perfluoromethyldecalin (C₁₁F₂₀) performed better chromatographically compared to the perfluoromethylcyclohexane (C₇F₁₄) during Expedition 360: SW Indian Ridge Lower Crust and Moho.

Curation and Core Handling

The Curation and Core Handling LWG did not meet this quarter because no curatorial issues arose from recent expeditions; it will meet next quarter to deal with more recently identified issues.

Other projects and activities

Geosciences Laboratory

Most of the rescanning activities needed after the FY16 detector issues with the XRF Core Scanner have been completed, but the instrument is still nearly 100% booked until August 2017. A project has been created for the consolidation of expedition-related moratorium measurements into the LIMS database and for the management and oversight of the XRF Core Scanner Facility.

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 Gulf Coast Repository (GCR).

JRSO expedition core sampling

The JRSO planned sample and curation strategies this quarter for upcoming JRSO Expeditions 367, 366, and 368. The GCR hosted 26 scientists for the Expedition 361 Sample Party, which ran from 15 to 21 October. Scientists and staff took 36,540 samples during the 7-day period. Extensive effort was applied to planning future postexpedition sample parties in general (developing a standard operating procedure) but specifically for Expeditions 363, 367–369, 371, and 374.

GCR activity

In the Sample requests table, visitors to the repository are shown in the “Visitors” column in the same row as the sample with which the visit is associated. 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” column if no new samples were taken.

The following table provides a summary of the 7,392 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.

Sample request number, name, country	Number of samples taken	Number of cores XRF scanned	Number of cores Imaged	Number of visitors
44294IODP, Cummings, USA	1			
45506IODP, Hamada, Japan	0			1
45616IODP, Ford, USA	58			
45545IODP, Seyendali, USA	61			
43359IODP, Evangelinos, Spain	0	274		5
46724IODP, Hartman, Netherlands	12			
46408IODP, Higgins, USA	12			
45518IODP, Kruijer, Germany	5			
45992IODP, Harding, United Kingdom	7			

Sample request number, name, country	Number of samples taken	Number of cores XRF scanned	Number of cores Imaged	Number of visitors
44235IODP, Jones, USA	1			
46869IODP, Huck, United Kingdom	52			
46195IODP, Erdem, Netherlands	100			
46674IODP, McCartney, Poland	39			
47019IODP, Bhattacharya, USA	7			
44960IODP, Katz, USA	20			
47052IODP, Cowan, USA	23			1
47063IODP, Walczak, USA	106			
47044IODP, Wilson, United Kingdom	99			
47492IODP, Wycech, USA	1			
46782IODP, Liang, USA	77			
45867IODP, Li, Canada	19			
47414IODP, McClymont, United Kingdom	95			
43279IODP, Ponomareva, Germany	521			2
42836IODP, Flood, Netherlands	25			
37251IODP, Renaudie, Germany	190			
46408IODP, Higgins, USA	33			
44721IODP, Zhou, USA	312			
47530IODP, McCartney, USA	83			
46380IODP, Li, USA	95			
47350IODP, Marret-Davies, United Kingdom	39			
47131IODP, Underwood, USA	61			
44618IODP, Zhang, China	5,238			2
Tours/demonstrations 16	0			223
Totals	7,39	274	0	234

GCR tours/visitors

Type of tour or visitor	Number of visitors
Scientist visitors	11
Educational tours/demonstrations (16)	219
Public relations tours (1)	4
Totals	234

Use of core collection

The JRSO promotes outreach use of the GCR core collection by conducting tours of the repository (see “GCR tours/visitors” table, above) and providing materials for display at meetings and museums. The repository and core collection are also used for classroom exercises. During the quarter, Dr. Leah LeVay (JRSO Expedition Project Manager) held seven TAMU Oceanography core description classes for a total of 54 students, and Dr. Julia Reece held four TAMU Geology 306 classes for a total of 91 students.

Other GCR activities

Workshops and short courses

A Hard Rock workshop designed and taught by IODP staff was held at the GCR on 4 November and attended by 12 students from the University of South Florida. A TAMU graduate course workshop titled Shale Reservoir Workshop: analyzing organic-rich mudrocks from basin to nanoscale was held at the GCR from 7 to 11 November and attended by 20 students. A Shipboard Sedimentology Short Course funded by the Consortium for Ocean Leadership was held at the GCR from 14 to 17 November. The short course was designed for professionals planning to sail on future IODP expeditions and was attended by 16 scientists.

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 Information Technology (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 JRSO Expeditions 362 and 363 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 this expedition. No new data 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	774	USA	523
2	United Kingdom	417	Germany	180
3	Canada	225	Japan	172
4	Germany	175	China	91
5	China	137	United Kingdom	84
6	Netherlands	132	Russian Federation	48
7	Australia	62	Unknown	43

Top 10 countries accessing JRSO web databases				
Rank	Janus database		LIMS database	
	Country	Visitor sessions	Country	Visitor sessions
8	Japan	58	Brazil	29
9	Sweden	49	Austria	21
10	France	44	France	21
	Others	221	Others	179
	Total	2,294	Total	1,391

Top 20 database web queries				
Rank	Janus database		LIMS database	
	Query	Views	Query	Views
1	X-ray—XRD	2,897	Images—core photo	1,291
2	Images—photos	2,243	Samples	514
3	Samples	1,456	Hole summaries	323
4	Physical properties—GRA	1,308	Physical properties—GRA	268
5	Chemistry—carbonates	1,182	Section summaries	261
6	Paleomagnetism	1,076	Images—LSIMG	260
7	Physical properties—MAD	1,048	Physical properties—RSC	164
8	Chemistry—rock eval	1,039	Core summaries	146
9	X-ray—XRF	1,035	Magnetic susceptibility	145
10	Images—thin sections	993	Physical properties—MAD	144
11	Paleontology—paleo investigations	990	Images—close-ups	111
12	Chemistry—gas	974	Chemistry—carbonates	105
13	Smear slides	950	Physical properties—NGR	92
14	Site summaries	944	Chemistry—IW	88
15	Special holes	409	Images—thin sections	84
16	Core summaries	362	Point magnetic susceptibility	76
17	Chemistry—IW	208	X-ray—XRD	63
18	Hole summaries	169	Affine	57
19	Images—prime data	153	Chemistry—SRANL	55
20	Paleontology—age models	152	Physical properties—PWL	44
	Others	1,989	Others	1,066
	Total	21,577	Total	5,357

Data requests submitted to the TAMU Data Librarian		Countries submitting data requests to the TAMU Data Librarian	
Requests	Total	Country	Total
Images—core photos	6	USA	14
How to	5	Germany	2
Rock eval	3	United Kingdom	2
Depth	1	Canada	1
Gas	1	Denmark	1
Logging	1	Norway	1

Data requests submitted to the TAMU Data Librarian		Countries submitting data requests to the TAMU Data Librarian	
Requests	Total	Country	Total
Paleo	1		
Physical properties	1		
Samples	1		
Smear slides	1		
Total	21	Total	21

Software development

Liquid Helium–Free Superconducting Rock Magnetometer Installation and Software Upgrade

Project scope and deliverables

In FY14, the JRFB and NSF approved replacement of the current shipboard liquid helium cryogenic magnetometer with a new liquid helium–free magnetometer. The magnetometer currently in use aboard the *JOIDES Resolution* is almost 20 years old. Although it is still functioning well, the age of the system, the increasing costs of obtaining liquid helium, and the importance of magnetic measurements to IODP science were key factors in the decision to replace the current system. During this project, the JRSO will install the new helium-free magnetometer aboard the *JOIDES Resolution*, complete testing of the new system prior to Expedition 362, send the old liquid helium magnetometer to shore, and replace the software running the system.

Project status

Work continued on this project. The new SRM was placed into operation aboard the *JOIDES Resolution* in December. Minor software development, testing, and documentation continues.

LIMS Data Display Tool—LIMSpeak II

Project scope and deliverables

The goal of this project is to replace the current LIMSpeak application with a set of applications that will replicate the majority of its features while (1) improving the user interface and experience and (2) adopting some user-requested improvements.

Project status

The JRSO reviewed software development vendor proposals and decided to have the JRSO development team build the LIMSpeak application. Software development continues.

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 will purchase a second Avaatech XRF core scanner to be used on shore along with an existing Avaatech scanner to facilitate postexpedition XRF scanning. Goals include (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

JRSO completed the project management plan, which is under review by the management team.

XRF Core Scanner Lab

Project scope and deliverables

The purpose of this project is to review and revise current XRF operations and devise new procedures for the JRSO shore-based XRF laboratory. The implementation of these changes, both before and during installation of the new machine, should streamline the XRF core scanning process and provide a solid foundation for the new XRF laboratory. This project is closely related to the XRF Core Scanner Uploader and Reports project.

Project status

JRSO management team approved the project management plan for use in project execution.

Publication services

IODP Publication Services provides publication support services for Integrated Ocean Drilling Program and 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

Reports and publications	JRSO	USIO	CDEX	ESO*
Scientific Prospectus	10.14379/iodp.sp.367368add.2016 10.14379/iodp.sp.371.2016			
Preliminary Report			10.14379/iodp.pr.365.2016	
Data Report		10.2204/iodp.proc.340.207.2016 10.2204/iodp.proc.339.201.2016 10.2204/iodp.proc.340.205.2016 10.2204/iodp.proc.342.204.2016	10.2204/iodp.proc.331.203.2016 10.2204/iodp.proc.322.212.2016 10.2204/iodp.proc.348.202.2016	
Expedition Report				

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

Citation management

Scientific publication 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. DOIs have also been assigned to 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.

Reports and publications	DOI prefix	Number of online DOI resolutions			
		October 2016	November 2016	December 2016	FY17 Q1 total
IODP	10.14379	682	977	1,051	2,710
Integrated Ocean Drilling Program	10.2204	1,707	4,047	4,498	10,252
ODP/DSDP	10.2973	7,222	7,089	8,010	22,321

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 313, 314/315/316, 322, 329, 331, 337–342, 346–352, and 359 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 19,070 site visits and 224,843 page views. Where possible, visits by JRSO employees and search engine spiders were filtered out of the count.

Other projects and activities

Expedition 365 postexpedition editorial meeting

The JRSO hosted the postexpedition editorial meeting for CDEX Expedition 365: NanTroSEIZE Shallow Megasplay Long-Term Borehole Monitoring System (LTBMS) in College Station, Texas, from 10 through 14 October.

Abstracts authored by JRSO staff

American Geophysical Union Fall Meeting 2016

- Acton, G., Richter, C., Yamamoto, Y., Ohneiser, C., Yamazaki, T., Channell, J.E.T., **Evans, H.F., Petronotis, K.E.**, and Guidry, E.P., 2016. Paleolatitudinal constraints from Eocene to Recent sediments cored in the equatorial Pacific on IODP Expeditions 320 and 321. (Abstract GP43C-1257)
- Agrios, L., Licht, K., Hemming, S.R., and **Williams, T.**, 2016. Using U-Pb detrital zircon geochronology to study ice streams in the Weddell Sea embayment, Antarctica. (Abstract C41B-0654)
- Alonso-Garcia, M., Salgueiro, E., Rodrigues, T., **Alvarez Zarikian, C.A.**, Kuhnert, H., Roehl, U., Voelker, H.L.A.H.L., Sierro, F.J., and Abrantes, F.F.G., 2016. Late Pliocene-early Pleistocene oscillations in Mediterranean Overflow water: a new perspective from the Iberian margin. (Abstract PP33A-2347)
- **Alvarez Zarikian, C.A.**, Nadiri, C., Petruny, L.M., Alonso-García, M., Betzler, C., Eberli, G.P., and IODP Expedition 359 Scientists, 2016. A tropical Pleistocene record of changes in bottom water conditions from the Maldives Inner Sea (IODP Site U1467), Indian Ocean, based on benthic calcareous microfossils. (Abstract PP43A2295)
- Anderson, C.H., Dunlea, A.G., Murray, R.W., Tada, R., and **Alvarez Zarikian, C.A.**, 2016. Provenance of continental margin sediments in the East China Sea, results from IODP Expedition 346. (Abstract PP42A-06)
- Betzler, C., Eberli, G.P., Kroon, D., Wright, J.D., Swart, P.K., Nath, B.N., Reijmer, J.J., **Alvarez-Zarikian, C.A.**, and IODP Expedition 359 Scientists, 2016. The abrupt onset of the modern South Asian Monsoon winds. (Abstract PP41E02)

- Blackman, D.K., Ildefonse, B., Abe, N., Harding, A.J., Guerin, G., and Expedition 360 Scientists (including **P. Blum**), 2016. Physical properties of gabbroic rock exposed in oceanic core complexes—new borehole data from IODP Hole U1473A in the Indian Ocean and prior Mid-Atlantic Ridge results. (Abstract OS31D-2060)
- **Blum, P.**, 2016. IODP Exp 362T: additional coring and remediation in Hole U1473A—continuing the journey to the Moho. (Abstract OS31D-2058)
- Burgio, M., Zhang, J., Kavanagh, L., Martinez, O.A., and Expedition 360 Scientists (including **P. Blum**), 2016. Education and outreach from the *JOIDES Resolution* during IODP Expedition 360: linking onboard research and classroom activities during and after the expedition. (Abstract OS31D-2062)
- Castaneda, I., Gilchrist, S., Salacup, J., **Bogus, K.**, Fulthorpe, C.S., Gallagher, S.J., and Expedition 356 Scientists, 2016. Mid-Pliocene to early Pleistocene sea surface temperature history of the NW Australian shelf. (Abstract PP43A-2305)
- Cheadle, M.J., John, B.E., Coble, M.A., Koepke, J., Rioux, M.E., Liu, C.-Z., and IODP Expedition 360 Scientists (including **P. Blum**), 2016. The age of IODP Site 1473, Atlantis Bank: constraints from initial zircon U-Pb dating and geochemistry by SIMS. (Abstract OS31D-2052)
- Christensen, B.-A., Renema, W., Henderiks, J., Groeneveld, J., Castaneda, I., Reuning, L., **Bogus, K.**, Auer, G., Ishiwa, T., McHugh, C., Gallagher, S.J., Fulthorpe, C.S, and Expedition 356 Scientists, 2016. Indonesian Throughflow drove Australian climate from humid Pliocene to arid Pleistocene. (Abstract PP41E-01)
- Cirone, A., Brachfeld, S.A., Cortes, I., Verhagen, C.M., **Williams, T.**, Hemming, S.R., Licht, K., and van de Flierdt, T., 2016. Provenance tracing of glacial sediment from the Foundation, Academy, and Recovery ice streams, Weddell Sea, Antarctica. (Abstract C41B-0653)
- De Vleeschouwer, D., **Bogus, K.**, Auer, G., Christensen, B.-A., Baranwal, S., Fulthorpe, C.S., Gallagher, S.J., Groeneveld, J., Henderiks, J., Mamo, B.L., Petrick, B., and Expedition 356 Scientists, 2016. Timing and pacing of Pliocene climate and paleoenvironmental change in southwestern Australia (IODP Exp. 356, Site U1459). (Abstract PP43A-2306)
- Dick, H.J., MacLeod, C.J., **Blum, P.**, and the Expedition 360 Scientific Party, 2016. Lateral variability of the lower ocean crust at Atlantis Bank, SW Indian Ridge, results of IODP Expedition 360. (Abstract OS23F-02)
- France-Lanord, C., Galy, A., Spiess, V., and **Klaus, A.**, 2016. The Bengal fan record of Himalayan erosion from Miocene to Present from IODP Expedition 354. (Abstract T24A-07)

- Gallagher, S.J., Reuning, L., Himmler, T., Henderiks, J., De Vleeschouwer, D., Groeneveld, J., Fulthorpe, C.S., **Bogus, K.**, and Expedition 356 Scientists, 2016. The oldest Quaternary ooids and young reefs in the eastern Indian Ocean, evidence from the Northwest shelf of Australia, IODP Expedition 356. (Abstract PP41E-04)
- Huang, H.H.M., Yasuhara, M., Iwatani, H., **Alvarez Zarikian, C.A.**, Bassetti, M.A., and Sagawa, T., 2016. Benthic biotic response to climate changes over the last 700,000 years, the Sea of Japan: ostracode assemblages from Site U1427, IODP Expedition 346. (Abstract PP41E05)
- Khim, B.-K., Kim, J.-E., Lee, J., Ikehara, M., Clift, P.D., Pandey, D., **Kulhanek, D.K.**, and Expedition 355 Science Party, 2016. $\delta^{15}\text{N}_{\text{bulk}}$ oscillations linked to monsoon-induced denitrification during the past 1 m.y. in Eastern Arabian Sea (IODP Exp. 355 Site U1456). (Abstract PP43A-2300)
- Kurokawa, S., Tada, R., Irino, T., Seki, A., Itaki, T., Kamikuri, S., Raymond Matsuzaki, K.M., Murray, R.W., **Alvarez Zarikian, C.A.**, and the Expedition 346 Scientists, 2016. Cyclostratigraphy of the Pliocene-Miocene interval in the Japan Sea sediments (Expedition 346 Sites U1425 and U1430). (Abstract PP41B2246)
- Liddy, H., Feakins, S.J., Clift, P.D., Tauxe, L., **Kulhanek, D.K.**, Scardia, G., Warny, S., Bendle, J.A., Galy, V., Zhou, P., and the Expedition 355 Science Party, 2016. Late Miocene hydrological change in the Indus River Catchment. (Abstract PP42A-01)
- Lin, J., Li, C.-F., Wang, P., and **Kulhanek, D.K.**, 2016. Recent multidisciplinary research initiatives and IODP drilling in the South China Sea. (Abstract OS53C-01)
- MacLeod, C.J., Dick, H.J., **Blum, P.**, and IODP Expedition 360 Scientists, 2016. The nature of the intrusive crust and Moho at slower spreading ridges: SloMo Leg 1 (IODP Expedition 360). (Abstract OS23F-01)
- Mamo, B.L., Renema, W., Auer, G., Groeneveld, J., Gallagher, S.J., Fulthorpe, C.S., **Bogus, K.**, and Expedition 356 Scientists, 2016. Palaeobathymetric interpretations using foraminiferal data from the north-west continental shelf off Western Australia, IODP Expedition 356. (Abstract PP43A-2296)
- Martinez, A.O., Kavanagh, L., Burgio, M., Zhang, J., and IODP Expedition 360 Scientists (including **P. Blum**), 2016. Outreach aboard the *JOIDES Resolution* during IODP Exp. 360: bringing cutting edge research on mid ocean ridge processes to classrooms worldwide. (Abstract OS31D-2063)
- McHugh, C., Groeneveld, J., Henderiks, J., Renema, W., De Vleeschouwer, D., Christensen, B.-A., Potts, D., Fulthorpe, C.S., **Bogus, K.**, Gallagher, S.J., and Expedition 356 Scientists, 2016. Miocene wet and extreme arid climatic conditions in the southeast Indian Ocean off Western Australia revealed by the lithology of Roebuck and Perth Basins. (Abstract PP42A-04)

- McNeill, L.C., Dugan, B., **Petronotis, K.E.**, and IODP Expedition 362 Scientists, 2016. IODP Expedition 362: initial results from drilling the Sumatra subduction zone—the role of input materials in shallow seismogenic slip and forearc plateau development. (Abstract T41G-03)
- Meynadier, L., Savian, J., Selkin, P., Reilly, B., Lantzsch, H., Saur, H., Galy, A., France-Lanord, C., Spiess, V., and **Klaus, A.**, 2016. Magnetic study of a recent levee in the Bengal Fan (8°N, IODP Site U1454). (Abstract GP43B-1243)
- Morris, A., Bowles, J., Tivey, M., and IODP Expedition 360 Scientists (including **P. Blum**), 2016. Paleomagnetic constraints on the evolution of Atlantis Bank: results from IODP Expedition 360 “SW Indian Ridge Lower Crust and Moho”. (Abstract OS31D-2059)
- Natland, J.H., Cheadle, M.J., Dick, H.J., France, L., and the Expedition 360 Scientific Party (including **P. Blum**), 2016. Mobility of late-stage magmatic liquids and the development of detachment faults at a slowly-spreading ridge. (Abstract OS31D-2057)
- Petrick, B., Auer, G., Christensen, B.-A., De Vleeschouwer, D., Reuning, L., Martinez-Garcia, A., Haug, G., Gallagher, S.J., Fulthorpe, C.S., **Bogus, K.**, and Expedition 356 Scientists, 2016. Linking changes in Indonesian throughflow dynamics with the mid-Pleistocene transition. (Abstract PP43A-2307)
- Robertson, A., Kutterolf, S., **Petronotis, K.E.**, Avery, A., Baxter, A., Schindlbeck, J.C., Wang, K.-L., and Acton, G. 2016. Geological development of the Izu-Bonin forearc since the Eocene based on biostratigraphic, rock magnetic, and sediment provenance observations from IODP Expedition 352 drill cores. (Abstract V13C-2860)
- Sanfilippo, A., France, L., Ghosh, B., MacLeod, C.J., Liu, C.-Z., Morishita, T., Natland, J.H., Dick, H.J., and IODP Expedition 360 Scientists (including **P. Blum**), 2016. Igneous stratigraphy and rock-types from a deep transect of the gabbroic lower crust of the Atlantis Bank core complex (SW Indian Ridge): preliminary results from IODP Expedition 360. (Abstract OS31D-2056)
- Smith, R., Liebrand, D., van Peer, T.E., **Blum, P.**, Bohaty, S.M., Friedrich, O., Bornemann, A., and Wilson, P.A., 2016. Oligocene-Miocene transition in the North Atlantic interrupted by warming: new records from the Newfoundland margin, IODP Expedition 342. (Abstract PP33C-04)
- Spiess, V., Bergmann, F., Schwenk, T., Lantzsch, H., Bahk, J., Weber, M., France-Lanord, C., and **Klaus, A.**, 2016. Structure and buildup of the Middle Bengal Fan at 8°N from multichannel seismic surveys and the IODP Expedition 354 drilling transect. (Abstract EP43B-0962)
- Tada, R., Irino, T., Ikeda, M., Ikehara, K., Karasuda, A., Arisa Seki, S.L., Sugisaki, S., Itaki, T., Sagawa, T., Kubota, Y., Xuan, C., Murray, R.W., **Alvarez Zarikian, C.A.**, and Expedition 346 Scientists, 2016. Emergence and evolution of millennial scale variability in the East Asian summer monsoon over the

last 3 Ma recorded in hemipelagic sediments of the Japan Sea recovered by IODP Expedition 346. (Abstract PP41E03)

- Weber, M., Dekens, Reilly, B., Lantzsch, H., Selkin, P., Das, S., **Williams, T.**, Martos, Y., Adhikari, R., Gyawali, B., Jia, G., Fox, L., Ge, J., Manoj, M., Savian, J., Meynadier, L., Spiess, V., France-Lanord, C., and **Klaus, A.**, 2016. The last glacial cycle documented on the Lower Bengal Fan - chronological and paleoclimate implications. (Abstract A23J-0355)
- **Williams, T.**, Hemming, S.R., Boswell, S., Licht, K., Agrios, L., Brachfeld, S.A., van de Flierdt, T., Kuhn, G., Hillenbrand, C.-D., and Zhai, X., 2016. Using sediment provenance to study ice streams in the Weddell Sea embayment of Antarctica. (Abstract C34B-07)
- Yoshida, K., Cruz, J., Gyawali, B., Osaki, A., Manoj, M., Hatano, N., France-Lanord, C., Spiess, V., and **Klaus, A.**, 2016. Heavy mineral assemblages in lower-middle Miocene sediments in the Bengal Fan, IODP Exp. 354. (Abstract T51D-2965)

AQUA 2016

- Sloss, C.R., Betzler, C.G., Eberli, G.P., Lüdmann, T., **Alvarez Zarikian, C.A.**, Reijmer, J.G., Reolid, J., Ling Hui Mee, A., Nothdruff, L., Trovimos, T., Devereaux, A., and the IODP Expedition 359 Scientists, 2016. Facies scale depositional model for bottom-current controlled carbonate drift deposits [presented at AQUA 2016: Quaternary Perspectives from the City of Volcanoes, Auckland, New Zealand, 5–9 December 2016].

International Geological Congress (IGC), 35th

- Christensen, B.A., Renema, W., Henderiks, J., De Vleeschouwer, D., Groeneveld, J., **Bogus, K.**, Gallagher, S.G., Fulthorpe, C.S, and Expedition 356 Scientists, 2016. Decoupled Southern Hemisphere and Northern Hemisphere processes controlled by the Maritime continent: insights from a continuous Pliocene NW Australian shelf borehole (and decades of previous ocean drilling). (Paper 2128). <https://www.americangeosciences.org/sites/default/files/igc/2128.pdf>
- Fulthorpe, C.S, Gallagher, S.G., **Bogus, K.**, Christensen, B.A., Groeneveld, J., and Expedition 356 Scientists, (2016). Miocene to Recent Oceanographic and Climatic Histories from the Australian Northwest Shelf: Results from IODP Expedition 356. (Paper 819). <https://www.americangeosciences.org/sites/default/files/igc/819.pdf>
- O'Brien, E, **Bogus, K.**, De Vleeschouwer, D., Christensen, B.A., and Expedition 356 Scientists, (2016). Elemental abundances and paleoclimate implications: preliminary results from XRF core scanning of

IODP Expedition 356 Site U1463. (Paper 5120) <https://www.americangeosciences.org/sites/default/files/igc/5120.pdf>

- **Bogus, K.,** Fox, L., Kender, S., Leng, M., and Expedition 354 Scientists, 2016. Stable isotopes from Miocene to Pliocene planktonic and benthic foraminifera: preliminary results from IODP Expedition 354 (Bengal Fan). (Paper 2026) <https://www.americangeosciences.org/sites/default/files/igc/2026.pdf>

Appendix: JRSO quarterly report distribution

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