International Ocean Discovery Program

JOIDES Resolution Science Operator

FY15 Q1 Operations and Management Report

1 October–31 December 2014

Cooperative Agreement OCE-1326927

Submitted by the JRSO

to

The National Science Foundation

and

The *JOIDES Resolution* Facility Board

14 February 2015

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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) FY15 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 the TAMU System (TAMUS) Office of Sponsored Research Services (OSRS). When appropriate, this quarterly also reports on US Implementing Organization (USIO) contract activities conducted for IODP's predecessor, the Integrated Ocean Drilling Program.

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

Schlumberger, Inc.

The JRSO initiated a subcontract with Schlumberger, Inc., this quarter for wireline logging services.

Kochi Core Center

The JRSO continued contract negotiations with the Kochi Core Center (KCC) for curation of the NSF-owned cores stored there.

Progress reporting

USIO reports

During this quarter, the JRSO produced the following reports for the legacy Integrated Ocean Drilling Program, which concluded on 30 September 2014.

FY14 Q4 IODP-USIO Quarterly Report

The USIO report for the fourth quarter of FY14 (July–September 2014) was submitted to NSF on 25 November 2014 (iodp.tamu.edu/publications/AR/FY14/FY14_Q4.pdf).

IODP-USIO Final Technical Report to NSF

The IODP-USIO Final Technical Report, a publication that summarizes the USIO's contributions to the Integrated Ocean Drilling Program and IODP from FY04 through FY14, was submitted to NSF on 26 November 2014 (iodp.tamu.edu/publications/FTR_FY14.pdf).

IODP-USIO FY14 Annual Report

Development of the IODP-USIO FY14 Annual Report continued this quarter, with a final PDF version of the report submitted to the USIO Systems Management Team 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 (iodp.org/facility-boards).

Planning meetings

The JRSO was represented at the European Consortium for Ocean Research Drilling (ECORD) Council Meeting held 8–10 October in Zurich, Switzerland, and at the opening ceremony for the new core repository at the Kochi Core Center (17 October).

Project portfolio management

The JRSO completed the Laboratory Information Management System (LIMS) On-line Report Environment (LORE) and Stratigraphic Correlation Enhancements projects in time for Expedition 353 (see "Software development" in "Development, IT, and databases"). Additionally, the JRSO Management Team began reviewing its current project portfolio management process and worked on a new process to prioritize emergent projects, with the goal of improving all tools and document templates during the second quarter.

Web services

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

Program website statistics

JRSO website	FY15 Q1 page views*	FY15 Q1 site visits*
www.iodp-usio.org	5,446	4,094
iodp.tamu.edu	491,208	35,516
Total	**496,654**	**39,610**

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

Legacy web services

Key data, documents, and publications produced during the Deep Sea Drilling Project (DSDP) and Ocean Drilling Program (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	FY15 Q1 page views*	FY15 Q1 site visits*
www-odp.tamu.edu	1,011,384	51,305
www.odplegacy.org	4,776	1,781
www.deepseadrilling.org	521,770	23,633
Total	**1,537,930**	**76,719**

*Where possible, visits by USIO 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 ECORD Science Operator (ESO) and Center for Deep Earth Exploration (CDEX) expeditions.

JRSO expedition schedule

Expedition[1]		Port (Origin)	Dates[2, 3]	Total Days (Port/ Sea)	Days at Sea (Transit[4]/ Ops)	Co-Chief Scientists	Expedition Project Manager
Dry Dock/Non-IODP [29 September–29 November 2014]							M. Malone
Indian Monsoon	353	Singapore	29 Nov 2014–29 January 2015	61 (5/56)	56 (7/49)	S. Clemens W. Kuhnt	L. LeVay
Bengal Fan	354	Singapore	29 January–31 March 2015	61 (5/56)	56 (6/50)	C. France-Lanord V. Speiss	A. Klaus
Arabian Sea Monsoon (CPP)[5]	355	Colombo, Sri Lanka	31 March–31 May 2015	61 (5/56)	56 (5/51)	D. Pandey P. Clift	D. Kulhanek
Tie Up/Non-IODP [31 May–31 July 2015]							M. Malone
Indonesian Throughflow	356	Fremantle, Australia	31 July–30 September 2015	61 (5/56)	56 (4/52)	S. Gallagher C. Fulthorpe	K. Bogus
Maldives Monsoon and Sea Level[6]	359	Darwin, Australia	30 September–30 November 2015	61 (5/56)	56 (17/39)	C. Betzler G. Eberli	C. Alvarez Zarikian
Southwest Indian Ridge Lower Crust and Moho	360	Colombo, Sri Lanka	30 November 2015–30 January 2016	61 (5/56)	56 (14/42)	H. Dick C. MacLeod	P. Blum
South African Climates[7]	361	Port Louis, Mauritius	30 January–31 March 2016	61 (5/56)	56 (6/50)	I. Hall S. Hemming	L. LeVay
Non-IODP [31 March–31 July 2016]							M. Malone
Sumatra Seismogenic Zone	362	Colombo, Sri Lanka	31 July–30 September 2016	61 (5/56)	56 (7/49)	L. McNeill B. Dugan	K. Petronotis
Western Pacific Warm Pool	363	Singapore	30 September–30 November 2016	61 (5/56)	56 (8/48)	Y. Rosenthal A. Holbourn	D. Kulhanek

Notes: TBD = to be determined.

[1] Further expedition information can be obtained at iodp.tamu.edu/scienceops/expeditions.html.

[2] Dates for expeditions may be adjusted pending non-IODP activities.

[3] The start date reflects the initial port call day. The vessel will sail when ready.

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

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

[6] Also includes Proposal 849-APL, Indian Peninsula Paleoclimate.

[7] Also includes Proposal 845-APL, Agulhas Current LGM Density.

JRSO expeditions

Expedition 350: Izu-Bonin-Mariana: Rear Arc

Postexpedition activities

The Expedition 350 postcruise editing meeting was held 6–9 October 2014 in College Station, TX.

Expedition 351: Izu-Bonin-Mariana: Arc Origins

Postexpedition activities

The draft Expedition 351 *Preliminary Report* was completed during the quarter but publication is being held while a high-profile journal article is under review. The Expedition 351 postcruise editing meeting was held 8–12 December 2014 in College Station, TX.

Expedition 352: Izu-Bonin-Mariana: Fore Arc

Postexpedition activities

The draft of the Expedition 352 *Preliminary Report* was finalized during the quarter but publication is being held while a high-profile journal article is under review.

Expedition 353: Indian Monsoon

Planning

Arrival of the last containers containing some science supplies and drilling mud that were shipped during the tie-up period was delayed because of internal issues in the Philippines; these shipments were diverted to Singapore, the starting port for Expedition 353. Air freight to Singapore was also dispatched during this quarter.

Staffing

Expedition 353 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)	1	
India: Ministry of Earth Science (MoES)	3*	
Brazil: Coordination for Improvement of Higher Education (CAPES)	0	

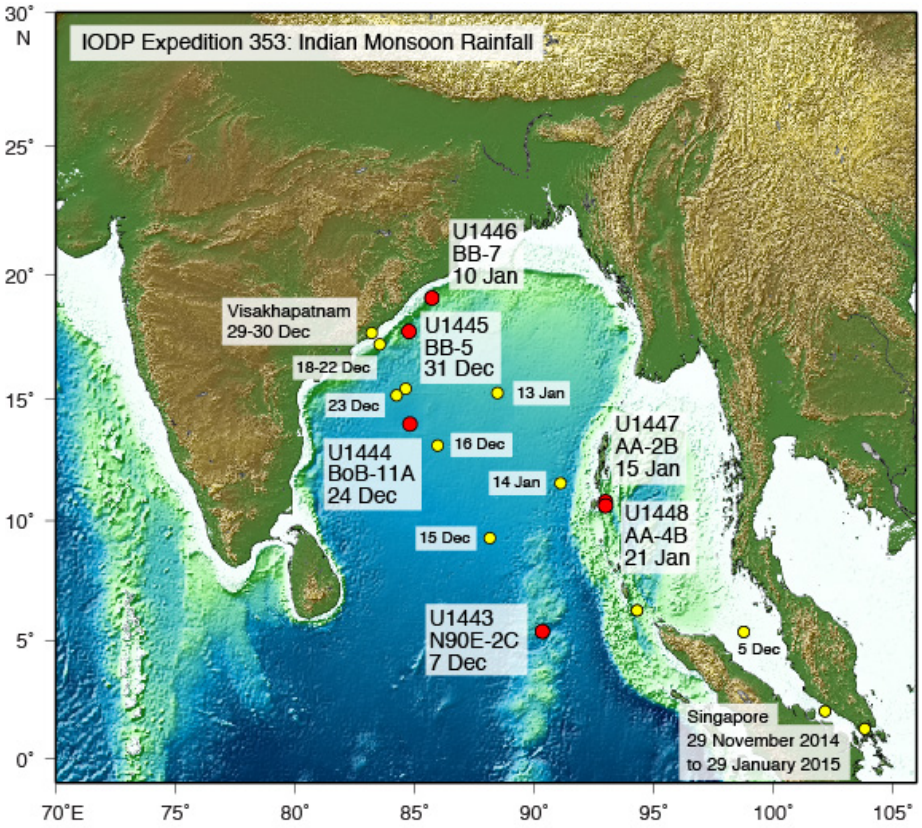
*IODP-India withdrew from participation in September 2014. Three Indian scientists boarded on 30 December as part of the clearance agreement.

Clearance, permitting, and environmental assessment activities

After the mid-November US-India Joint Commission Meeting on Science and Technology Cooperation in New Delhi, progress was made toward clearance to operate in the Indian exclusive economic zone (EEZ). Working closely with staff at the US embassy in New Delhi, the JRSO obtained clearance, permitting, licenses, and certificates from the Ministry of Home Affairs, Ministry of Defense, Department of

Telecommunication, Ministry of Shipping, Ministry of Earth Science, and naval security clearance and inspection in the Port of Visakhapatnam, followed by receipt of a diplomatic note on 30 December 2014 granting authorization from the Ministry of External Affairs.

Site map



Expedition 354: Bengal Fan

Planning

The JRSO and Co-Chief Scientists continued science planning during the quarter, including planning for sample and curation strategies. Surface shipping deadlines were moved up to accommodate anticipated delays associated with US West coast labor issues. On 30 December, the freight forwarder notified the JRSO that some of the surface shipments would not make the Singapore port call because of delays associated with West coast labor slow-downs. The JRSO initiated assessments to identify critical items that needed to be air freighted to port, and worked to divert stuck shipments to the Expedition 355 port call.

Clearance, permitting, and environmental assessment activities

A draft environmental evaluation for seismic activities to conduct check shot surveys was received on 19 December and passed to NSF for approval.

Expedition 355: Arabian Sea Monsoon CPP

Planning

The JRSO planned sample and curation strategies for Expedition 355 this quarter and began reviewing research plans and associated special laboratory requirements. The JRSO initiated an investigation of alternate shipping routes that avoid the US West coast, which may change the shipping deadlines for early next quarter.

Staffing

Science staffing was completed in October after a special call to fill two key positions.

Clearance, permitting, and environmental assessment activities

A purchase order (PO) was issued on 5 December for development of an environmental evaluation to conduct seismic activities for the planned vertical seismic profiles (VSPs).

Expedition 356: Indonesian Throughflow

Planning

The Australia-New Zealand IODP Consortium (ANZIC) indicated desire for public relations activities in Fremantle, Australia, and discussions were initiated concerning timing of events and other potential constraints.

Staffing

Science staffing continued with the second round of applications resulting in a total of 26 acceptances. Two additional invitations were issued and one scientist withdrew.

Clearance, permitting, and environmental assessment activities

A PO was issued on 5 December for development of an environmental evaluation to conduct seismic activities for the planned VSPs. The marine scientific research application to operate in Australian waters was submitted to the US State Department on 11 December.

Expedition 359: Maldives Monsoon and Sea Level

Planning

The Expedition 359 precruise meeting was held 1 and 2 October in College Station, TX, and the *Scientific Prospectus* was published in November.

Staffing

The JRSO received nominations from the PMOs on 1 December. Insufficient candidates were received for two critical shipboard positions; these positions will be solicited with a targeted special call. The JRSO worked with the Co-Chief Scientists to develop a first round of preferred invitees.

Clearance, permitting, and environmental assessment activities

The JRSO reviewed previous US and ODP activity in the Maldives EEZ and received input about experience of German site-survey cruises in preparation for submitting the marine scientific research (MSR) application next quarter. An environmental evaluation will be required to conduct VSPs.

Expedition 360: Southwest Indian Ridge Lower Crust and Moho

Planning

The Expedition 360 precruise meeting was held 15 and 16 October in College Station, TX. The process of acquisition began for initial long-lead items.

Staffing

The JRSO received nominations from the PMOs on 1 December. A first round of invitations was developed; these invitations are pending resolution of an issue with a PMO.

Expedition 361: South African Climates

Planning

The Expedition 361 precruise meeting was scheduled for 25 and 26 February 2015.

Staffing

Nominations from the PMOs were due to the JRSO on 1 January 2015.

Expedition 362: Sumatra Seismogenic Zone

Clearance, permitting, and environmental assessment activities

The representative from Badan Pengkajian dan Penerapan Teknologi (BPPT) assigned to work with the JRSO on developing a Memorandum of Understanding as part of the Indonesian clearance process was invited to attend a meeting next quarter in College Station, TX.

Expedition 363: Western Pacific Warm Pool

Staffing

Two of the proponents accepted invitations to sail as Co-Chief Scientists.

Engineering support

Engineering equipment acquisitions and updates

Vibration-isolated television system

The new replacement vibration-isolated television (VIT) cable has an initial delivery date at the end of March. Plans were made to install the cable during the 2015 tie-up period.

Technical and analytical services

Maintenance period activities

A maintenance period began in Keelung, Taiwan, on 28 September after the conclusion of Expedition 352. The *JOIDES Resolution* transited to Subic Bay, Philippines, arrived on 5 October, remained there until 24 November, and then transited to Singapore for the start of Expedition 353. Shipping delays to Subic Bay resulted in a decrease of planned activities.

Some equipment was replaced in the shipboard laboratories, including a new furnace and water treatment system. The conference room presentation system was revamped to address customer complaints of poor audio. New ground-fault interruption (GFI) outlets, power cables, and uninterruptable-power-supply (UPS) units were installed to bring laboratories up to new regulation standards.

JRSO application developers worked on the *JOIDES Resolution* for nearly 3 weeks, updating software to meet TAMU password complexity requirements and assigning appropriate security profiles. LabVIEW (one of the JRSO's primary software products) was upgraded, and all associated code changes for shipboard systems were implemented. Java and Tomcat on the Linux servers were upgraded to the same versions used on shore and, a new set of user-requested LIMS reports were implemented.

At the end of the maintenance period, JRSO staff members were sent to the vessel to restart all analytical systems; however, a smaller team was required than during previous tie-ups because of implementation of new preventative maintenance protocols during the down time. Finally, anti-piracy hardware and protocols were implemented to protect the ship and staff from the threat of piracy on the open seas.

Analytical systems

Analytical systems acquisitions and updates

Icefield borehole survey tools were acquired and deployed to the *JOIDES Resolution* as a replacement for the Minex FlexIt core orientation tools, which are no longer supported by the manufacturer. The new tools were run in secondary holes during the first part of Expedition 353 for comparison to the FlexIt tools. The Icefield tools performed to the satisfaction of the Science Party, the Operations Superintendent, and the Siem Core Technicians and are now being run independently.

New FLIR E8 infrared cameras were deployed to the ship for use in examining cores for signs of gas hydrates and are being used during Expedition 353.

The Agico KLY-4 KappaBridge, OI Analytical TOC Analyzer, and one UIC Model 5015 coulometer were sent to shore for evaluation, testing, and repair and were shipped back to the vessel, slated for arrival during the Expedition 355 port call.

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 during this quarter to discuss issues arising from Expeditions 349, 350, 351, and 352, as well as ongoing issues and action items. Zero-length TIF file errors on the Section Half Imaging Logger (SHIL) were reported during Expeditions 349 and 350 and were traced and repaired. Red-green-

blue (RGB) data extraction from the SHIL images was also discussed in terms of preparedness for upcoming expeditions and data structures and reporting in LIMS. The majority of the meeting was devoted to discussion of action items related to core description software (DESClogik) and the stratigraphic correlation update project in anticipation of Expedition 353.

Geophysics

The Geophysics LWG met during this quarter to discuss issues arising from Expeditions 350, 351, and 352. One issue that arose during these expeditions was the need to revise the code for handling "ghost" cores (re-drilled intervals) vis-à-vis calculating penetration depth; a recommendation was forwarded to the application developers. A new bearing system is being developed for the strength and velocity measurement gantry but has not yet been deployed, as re-machining of some parts was required. Preparations for installing the liquid helium-free cryogenic magnetometer were discussed, and the LWG recommended members for the project team. The LWG began compiling input from the community for the software of the new system (e.g., the ability to display data in various plots), as well as other high-level requirements.

Geochemistry

The Geochemistry LWG met this quarter to discuss issues arising from Expeditions 350, 351, and 352. One scientist requested that the JRSO purchase the software package Aabel to provide additional data plotting capability; the LWG recommended to management that Aabel be acquired. A review of service requirements from the Development, IT, and Databases department (DITD) is required. The Metrohm Ion Chromatograph had some issues with the integration of the K peak; this was solved during the expedition (contaminated reagent) and was not an issue in subsequent cruises. The LWG decided that the Inductively Coupled Plasma–Atomic Emission Spectroscopy (ICP-AES) interstitial water analysis method needs to be updated for a smoother workflow in producing standards. Further, scientist complaints about the ICP Analyzer software for data reduction were discussed; consensus was that rebuilding the data reduction software will require a project to be created and submitted to the JRSO Project Management process. Finally, the need for a detailed JRSO user guide for the handheld X-ray Fluorescence (XRF) spectrophotometer was identified, including protocols for data management and reporting in LIMS.

Other projects and activities

Geosciences Laboratory

The TAMU Ocean Drilling and Sustainable Earth Science (ODASES) Geoscience Laboratory hosted three groups of scientists during this period for XRF scanning projects. Although the number of clients was low, one of the projects extended for more than 6 weeks, resulting in total utilization of approximately 75% of available days.

Core curation

All Integrated Ocean Drilling Program and IODP core sample requests are handled by the GCR, Bremen Core Repository, and KCC. The JRSO supports curation of the core collection archived at the Gulf Coast Repository (GCR), including core sampling, analysis, and education.

JRSO expedition core sampling

A JRSO Curatorial Specialist supervised shipboard core sampling during Expedition 353 and reviewed all shipboard and moratorium-related requests in coordination with the other members of the expedition Sample Allocation Committee (SAC).

Repository activity

The following "Sample requests" table provides a summary of the 2,853 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. Public relations tours and educational visits to the repository are shown in the "GCR tours/visitors" table.

Sample requests

Sample request number, name, country	Number of samples taken	Number of cores XRF scanned	Number of cores Imaged	Number of visitors
18797IODP, Robinson, USA	79			
18321IODP, LeVay, USA	61			1
18821IODP, deMenocal, USA	81			
19115IODP, Jutzeler, United Kingdom	12			1
22644D, Kulhanek, USA	0	133	133	1
18181IODP, Watkins, USA	37			
17961IODP, Herbert, USA	170			
19171IODP, Romanova, Australia	13			
18912IODP, Purvis, United Kingdom	1			
19289IODP, Sawyer, USA	5			
19310IODP, Yao, Canada	16			
18316IODP, St. John, USA	9			
18956IODP, Trowbridge, USA	45			
19456IODP, Harper, USA	10			
18806IODP, Rafter, USA	171			
19298, Chang, Australia	139			
19745IODP, Lubke, Germany	11			
1932IODP, Walsh, USA	10			
19084IODP, Kulhanek	0			10
19736IODP, Haug, Switzerland	98			
18368IODP, Sawyer, USA	52			
16716IODP, Holbourn, Germany	132			
19759IODP, Rolewicz, USA	32			1
18851IODP, Veenstra, Netherlands	157			
19819IODP, Miller, USA	166			
20680IODP, Bhattacharya, USA	105			
18031IODP, Zorzi, Canada	132			
19924IODP, Hwang, Canada	5			
20634IODP, Dubin, USA	43			1
20575IODP, Ketterolf, Germany	26			
21025IODP, Zellers, USA	4			

Sample request number, name, country	Number of samples taken	Number of cores XRF scanned	Number of cores Imaged	Number of visitors
20976IODP, Amigo, Chile	2			
19376IODP, Huck, United Kingdom	343			
20924IODP, Sibert, USA	324			
20614IODP, Fluegeman, USA	22			
18016IODP, Stepanova, USA	0	20	20	
19816IODP, Kulhanek, USA	0			20
19580IODP, Laya, USA	0			27
20474IODP, Hickey-Vargas, USA	19			1
19700IODP, Zaiss-Bowman, USA	3			1
20960IODP, Holbourn, Germany	37			
20779IODP, Rennie, United Kingdom	25			
20957IODP, Knappertsbusch, Switzerland	33			
19287IODP, Paulsen, USA	6			
21541IODP, Daniel, USA	12			1
19580IODP, Laya, USA	0			
18964IODP, Norris, USA	205			
Tours/demonstrations	15			191
Totals	**2,853**	**153**	**153**	**256**

GCR tours/visitors

Type of tour or visitor	Number of Visitors
Scientist visitors	65
Educational tours/demonstrations (11)	153
Public relations tours (4)	38
Totals	**256**

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. In addition, VIP tours were given to the NSF Director, NASA Strategic Alliance, Congressman Lamar Smith, and Congressional staffers.

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

Expedition 352 data 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. Expedition 341 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				
	Janus database		LIMS database	
Rank	Country	Visitor sessions	Country	Visitor sessions
1	China	1,330	USA	286
2	USA	1,221	Germany	137
3	United Kingdom	274	United Kingdom	135
4	Germany	173	Japan	86
5	Unknown	157	China	61
6	France	151	Australia	47
7	Norway	109	France	36
8	Sweden	81	Unknown	16
9	Japan	76	Spain	12
10	Canada	63	Sweden	12
	Others	286	Others	105
	Total	**3,921**	**Total**	**933**

Top 20 database web queries				
	Janus database		LIMS database	
Rank	Query	Downloads	Query	Downloads
1	Images—core photos	2,072	Sample report	465
2	Site summary	1,356	Section summary	420
3	Depth point calculation	730	Images—core photos	327
4	Paleontology—investigations	645	Images—section scans (LSIMG)	301
5	Requests	531	Web tabular science data	236
6	Samples	509	DESC reports	214
7	Chemistry—Rock Eval	454	Phys props—magnetic susceptibility	208
8	Core summary	445	Core summary	165
9	Special holes	407	Web tabular samples	160
10	Chemistry—carbonates	394	Phys props—point magnetic susceptibility	155
11	X-ray diffraction	324	Hole summary	131
12	Phys props—GRA	282	Splice intervals	110
13	Images—thin section micrographs	275	Phys props—GRA	96
14	Paleomag—age models	251	Web tabular summaries	83
15	Chemistry—IW	242	Phys props—MAD	72
16	Hole trivia	235	Phys props—NGR	71
17	Phys props—MAD	230	Phys props—RSC	69
18	Chemistry—gas	219	Chemistry—carbonates	66
19	Images—prime data	218	Composite depths	59
20	Paleomag—SRM	212	Paleomag—SRM (sections)	45
	Others	2,791	Others	473
	Total	**12,822**	**Total**	**3,926**

Data requests submitted to the TAMU Data Librarian	
Requests	Total
How to access	3
Logging data	2
Images—core photos	2
Paleontology	2
Paleomag—SRM	2
Chemistry—IW	1
Downhole temperature	1
Drilling data	1
Laboratory information	1
Magnetic susceptibility	1
Microbiology	1
RSC	1
X-ray diffraction	1
Total	**19**

Countries submitting data requests to the TAMU Data Librarian	
Country	Total
USA	10
Unknown	2
Austria	1
Denmark	1
Germany	1
Japan	1
Spain	1
Sweden	1
United Kingdom	1
Total	**19**

Network systems operation, maintenance, and security

The JRSO used the *JOIDES Resolution* tie-up period to reconfigure and test Oracle's password settings to ensure compliance with TAMU's latest security policy, and also upgraded several instrument hosts to LabVIEW 2014.

Software development

LIMS On-line Report Environment

Project scope and deliverables

The goal of the LIMS LORE project is to implement a reporting framework that can incrementally handle very large data sets. The implementation will accommodate smooth transition from legacy systems to the new model. The implementation will ease the discovery and sharing of IODP content.

This effort focuses on the immediate need to be able to retrieve very large data sets (such as RGB) from current online systems without crashing end-users' browsers or intermediate systems participating in the transfer process. This effort does not address the needs and requirement for data publishing, which will be managed in a separate effort. Not only will this project solve the big data problems represented by RGB and other reports, but it will create a framework for the distribution of all kinds of data reports going forward. It is viewed as the replacement for both Web Tabular Reports and the current LIMS Reports.

Project status

The JRSO completed phase I of this project in November 2014 as defined in the project management plan. Remaining deliverables are scheduled for completion by June 2015.

Stratigraphic correlation enhancements

Project scope and deliverables

This project delivers an updated set of programs to provide spliced data sets assembled using the affine table and splice interval table provided by the shipboard stratigraphic correlation specialist. The deliverables will ensure accurate data, reliable process, and user-friendly interfaces and minimize the risk of spliced data sets that do not meet user intent and expectations. The scope includes the following components:

1. Correlation table files. Content and format of user-generated files for affine table, splice interval table (SIT), and splice tie points table (STPT; if still needed) are defined in detail as part of this project. The SIT represents the correlation specialist's splice definition more explicitly and completely than the STPT used to do and will therefore be used as the key table in the correlation workflow. This change in workflow should eliminate confusion among correlation specialists, support personnel, and computer programs.
2. Uploader for correlation files. The uploader program will be updated to comply with the newly defined correlation files' content and format in 1. This will also include the creation of new LIMS database tables for the correlation information.

3. Spliced data reports. The ultimate goal is to provide spliced data sets based on the affine table and SIT and the LIMS-internal program to assemble the spliced data sets. The existing program needs to be replaced to comply with 1 and 2.
4. Correlation files. The correlation files defined in 1 and loaded in 2 will be reported similarly to the way they are currently reported, but using all the new definitions and database tables.
5. Correlation data. LIMS2Correlator (the program used to extract correlation data from the LIMS database for use in the Correlator application) will be updated (or replaced). The main requirement is to include export of RGB data files.
6. Naming convention. A naming convention for alternate depth scales and splices will be implemented to facilitate user's selection of items from the choice lists on the LIMS Reports/LORE interface.
7. Legacy data conversion. Legacy data conversion will be included in this project if external users and expedition project representatives deem it worthwhile by assisting in the process.
8. Documentation. Processes and tools will be documented.

Project status

The JRSO completed this project in November 2014 as defined in the project management plan.

IT inventory

The JRSO has installed new workstations on the *JOIDES Resolution* and has installed versions of the Schlumberger software package, Petrel, both on the vessel and on shore.

Publication services

IODP Publication Services provides publication support services for IODP and Integrated Ocean Drilling Program riserless, riser, and mission-specific drilling expeditions; editing, production, and graphics services for all 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 warehousing and distribution of Integrated Ocean Drilling Program, ODP, and DSDP publications.

Scientific publications

JRSO publications

Scientific Prospectus
doi:10.14379/iodp.sp.359.2014

USIO publications

Proceedings
doi:10.2204/iodp.proc.341.2014

Expedition reports
doi:10.2204/iodp.proc.341.101.2014

doi:10.2204/iodp.proc.341.102.2014

doi:10.2204/iodp.proc.341.103.2014

doi:10.2204/iodp.proc.341.104.2014

doi:10.2204/iodp.proc.341.105.2014

doi:10.2204/iodp.proc.341.106.2014

doi:10.2204/iodp.proc.341.107.2014

Data reports
doi:10.2204/iodp.proc.318.201.2014

doi:10.2204/iodp.proc.320321.218.2014

doi:10.2204/iodp.proc.334.201.2014

CDEX publications

Data reports
doi:10.2204/iodp.proc.319.201.2014

doi:10.2204/iodp.proc.322.206.2014

doi:10.2204/iodp.proc.322.209.2014

doi:10.2204/iodp.proc.333.202.2014

doi:10.2204/iodp.proc.338.201.2014

Citation management

Scientific publication digital object identifiers

Reports and publications	Digital object identifier (DOI) prefix	Number of online DOI resolutions			
		October 2014	November 2014	December 2014	FY15 Q1 total
IODP	10.14379	98	111	113	**322**
Integrated Ocean Drilling Program	10.2204	5,292	4,259	2,576	**12,127**
ODP/DSDP	10.2973	10,033	8,732	12,351	**31,116**

Publications management

Integrated Ocean Drilling Program closeout activities

Publications closeout

Integrated Ocean Drilling Program publications closeout activities continued during the reporting period. Information about the FY14 Q4 IODP-USIO Quarterly Report, IODP-USIO Final Technical Report to NSF, and the IODP-USIO FY14 Annual Report is provided in "Progress reports" in the "Management and administration" section of this report. Expedition reports and postcruise 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, 323, 327, 329, 334, 335, 336, 340, and 343 were submitted to English language peer-reviewed journals or the Program.

Relocation of archived sets

In October 2014, IODP Publication Services relocated three full sets of legacy publications, including 321 DSDP volumes, 648 ODP volumes, and 81 Integrated Ocean Drilling Program DVDs, from the publications warehouse to the JRSO office.

Publications website

The IODP Publications website is hosted at TAMU. During the last quarter, the IODP Publications website received 33,401 site visits and 362,833 page views.

JRSO expedition science outreach support

JRSO staff provided support to the Expedition 353 Education Officers and assisted with planning for the Expedition 354 Education Officer's activities and support.

Abstracts authored by JRSO staff

Ocean drilling science abstracts presented by JRSO staff at professional conferences during this quarter include the following. Bold type indicates JRSO staff.

American Geophysical Union (AGU) Fall Meeting 2014

- Anderson, C.H., Dunlea, A.G., Murray, R.W., Kinsley, C.W., McGee, D., Giosan, L., Zheng, H., Tada, R., **Alvarez Zarikian, C.A.**, and IODP Expedition 346 Scientists, 2014. Tracking monsoon related provenance changes in continental margin sediments of the East China Sea: preliminary results from IODP Expedition 346. (Abstract PP43D-1506)

- Bassetti, M.A., **Alvarez Zarikian, C.A.**, Toucanne, S., Yasuhara, M., Holbourn, A.E., Sagawa, T., Tada, R., Murray, R.W., and IODP Expedition 346 Scientists, 2014. Variability of the Tsushima Warm Current during the Pleistocene and its relationship with the evolution of the East Asian Monsoon. Preliminary results from IODP Expedition 346 (Sites U1427 and U1428/29) based on benthic ostracod assemblages. (Abstract PP43-1514)

- D'Hondt, S., Inagaki, F., **Alvarez Zarikian, C.**, Morono, Y., Pockalny, R., Sauvage, J., and Spivack, A., 2014. Microbial cells and aerobic respiration from seafloor to basement in the South Pacific Gyre. (Abstract B21L-08)

- **Gorgas, T.J.**, Tada, R., Irino, T., Clemens, S.C., Ziegler, M., Holbourn, A.E., Murray, R.W., **Alvarez Zarikian, C.A.**, and IODP Expedition 346 Scientists, 2014. Sedimentation rates at IODP Site U1424 since the Pliocene deciphered from spectral analyses of RGB and GRA bulk density profiles. (Abstract PP43D-1517)

- Holbourn, A.E., Kuhnt, W., Tada, R., Murray, R.W., **Alvarez Zarikian, C.A.**, Clemens, S.C., and IODP Expedition 346 Scientists, 2014. Inter-linkages of SE Asian, Indian and Indonesian Australian monsoonal subsystems on orbital and suborbital timescales. (Abstract PP42C-06 [Invited])

- Ishizuka, O., Arculus, R.A., and **Bogus, K.,** 2014. IODP Expedition 351 Izu-Bonin-Mariana Arc Origins: preliminary results. (Abstract T51C-01 [Invited])

- Itaki, T., Motoyama, I., Kamikuri, S., Tada, R., Murray, R.W., **Alvarez Zarikian, C.A.**, and IODP Expedition 346 Scientists, 2014. Mid-Miocene to Pleistocene radiolarian fossil record from IODP Expedition 346: faunal response to the global climatic changes and local/regional tectonics. (Abstract PP42C-08)

- **Kulhanek, D.K.**, Cooper, S., Dadd, K., Colwell, F., Mote, A., Christiansen, E., and Expedition 349 Scientists, 2014. Live ship-to-shore video events from the *JOIDES Resolution* during International Ocean Discovery Program expeditions. (Abstract ED11C-3427)

- **Kulhanek, D.K.**, Su, X., Liu, C., Peleo-Alampay, A., and Expedition 349 Scientists, 2014. Oligocene calcareous nannofossils from IODP Site U1435: implications for the initial opening of the South China Sea. (Abstract T33C-4693)

- Lee, K.S., Bae, S.W., Kim, K., Kim, R.A., Kang, N., Ko, T.W., Tada, R., Murray, R.W., **Alvarez Zarikian, C.A.**, and Expedition 346 Scientists, 2014. High resolution Pleistocene alkenone temperature records of IODP Expedition 346 Sites U1425 and U1429. (Abstract PP43D-1515)

- Lin, J., Li, C.-F., Wang, P., Koppers, A., Dadd, K., **Kulhanek, D.K.**, and Expedition 349 Scientists. International Ocean Discovery Program Expedition 349 and multidisciplinary research in the South China Sea. (Abstract T31E-01)

- Lin, J., Li, C.-F., **Kulhanek, D.K.**, Zhao, X., Liu, Q., Xu, X., Sun, Z., Zhu, J., and Expedition 349 Scientists, 2014. South China Sea tectonics and magnetics: constraints from IODP Expedition 349 and deep tow magnetic surveys. (Abstract GP21B-05 [Invited])

- Murray, R.W., Tada, R., **Alvarez Zarikian, C.A.**, and Expedition 346 Scientists, 2014. Examination of the Asian Monsoon: ongoing studies from IODP Expedition 346. (Abstract T31E-02 [Invited])

- Pearce, J., Reagan, M., Stern, R., and **Petronotis, K.**, 2014. IODP Expedition 352 (Bonin forearc): first results. (Abstract T51C-02 [Invited])

- Penkrot, M., Jaeger, J., **LeVay, L.,** St.-Onge, G., Mix, A., Bahlburg, H., Davies-Walczak, M., and Gulick, S., 2014. Northern Cordilleran Ice Sheet dynamics in coastal Alaska from MIS 3 to the present: initial results. (Abstract PP21A-1285)

- Reagan, M., Pearce, J., Stern, R., Ishizuka, O., and **Petronotis, K.**, 2014. The ophiolite-oceanic fore-arc connection. (Abstract V51F-01 [Invited])

- Sagawa, T., Tada, R., Murray, R.W., **Alvarez Zarikian, C.A.**, and Expedition 346 Scientists, 2014. Influence of relative sea level on a marginal sea environment and its implication for

reconstructing ice volume changes using IODP Expedition 346, Site U1427. (Abstract PP43D-1511)

Geosciences 2014 Conference

- Shepherd, C., Crouch, E., **Kulhanek, D.K.**, and Hollis, C.J., 2014. The impact of global warming on calcareous nannofossils: an Eocene case study from Canterbury Basin, New Zealand.

4th International Paleontological Congress

- **Bogus, K.,** Angles, S., Mertens, K.N., and Edwards, L.E., 2014. The geochemical composition of organic-walled dinoflagellate cysts from the Yorktown Formation (Pliocene): evidence for diagenetic overprinting. [oral presentation]

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 (iodp.tamu.edu/publications/citations/database.html) and the IODP Expedition-related bibliography (iodp.tamu.edu/publications/citations.html).

- **Alvarez Zarikian, C.A.,** 2015. Cenozoic bathyal and abyssal ostracods beneath the South Pacific Gyre (IODP Expedition 329 Sites U1367, U1368 and U1370). *Palaeogeogr., Palaeoclimatol., Palaeoecol.,* 419:115–142. doi:10.1016/j.palaeo.2014.07.024

- Li, C.-F., Xu, X., Lin, J., Sun, Z., Zhu, J., Yao, Y., Zhao, X., Liu, Q., **Kulhanek, D.K.**, Wang, J., Song, T., Zhao, J., Qiu, N., Guan, Y., Zhou, Z., Williams, T., Bao, R., Briais, A., Brown, E.A., Chen, Y., Clift, P.D., Colwell, F.S., Dadd, K.A., Ding, W., Hernández Almeida, I., Huang, X.-L., Hyun, S., Jiang, T., Koppers, A.A.P., Li, Q., Liu, C., Liu, Z., Nagai, R.H., Peleo-Alampay, A., Su, X., Tejada, M.L.G., Trinh, H.S., Yeh, Y.-C., Zhang, C., Zhang, F., and Zhang, G.-L., 2014. Ages and magnetic structures of the South China Sea constrained by deep tow magnetic surveys and IODP Expedition 349. *Geochem., Geophys., Geosyst.,* 15(12):4958–4983. doi:10.1002/2014GC005567

Appendix: JRSO quarterly report distribution

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