IODP

INTERNATIONAL OCEAN DISCOVERY PROGRAM

UNITED STATES IMPLEMENTING ORGANIZATION

FY14 Quarterly Report 1

1 October–31 December 2013

NSF Contract OCE-0352500

Submitted by the USIO

to

The National Science Foundation

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Introduction

The organization of this quarterly report reflects activities and deliverables that are outlined in the International Ocean Discovery Program (IODP) U.S. Implementing Organization (USIO) FY14 Annual Program Plan to the National Science Foundation (NSF) as implemented by the USIO, which comprises the Consortium for Ocean Leadership, Inc. (Ocean Leadership), and its partners, Texas A&M University (TAMU) and Lamont-Doherty Earth Observatory (LDEO) of Columbia University. In this document, references to TAMU include Texas A&M Research Foundation (TAMRF). When appropriate, this quarterly also reports on contract activities conducted for IODP's predecessor, the Integrated Ocean Drilling Program.

Management and Administration

The USIO provides integrated management that is led by Ocean Leadership in coordination with LDEO and TAMU. Management and Administration functions include planning, coordinating (with other IODP-related entities), overseeing, reviewing, and reporting on IODP activities.

USIO reports

FY13 Q4 Integrated Ocean Drilling Program USIO Quarterly Report

The Integrated Ocean Drilling Program USIO report for the fourth quarter of FY13 (October–December 2013) was submitted to NSF on 2 December (http://iodp.tamu.edu/publications/AR/FY13/FY13_Q4.pdf).

Integrated Ocean Drilling Program-USIO FY13 Annual Report

The Integrated Ocean Drilling Program USIO FY13 Annual Report was completed and under review at the end of this quarter.

Reporting and liaison activities

The USIO reports to and liaises with funding agencies and IODP-related agencies (e.g., facility boards), advisory panels, Program Member Offices (PMOs), and other national organizations, and participates in facility board, advisory panel, and IODP forum meetings.

Meetings

Standard facility board, advisory panel, and other special meetings are listed in the Conference and Meeting Schedule below. USIO attendees to all meetings are listed in "Appendix B: Travel." Minutes from the facility board meetings will be made available online (http://www.iodp.org/facility-boards).

Conference and meeting schedule

Conference/Meeting*	Date	Location
IODP Town Hall at the 2013 American Geophysical Union (AGU) Fall Meeting	10 December 2013	San Francisco, CA

*Implementing organization meetings, facility board meetings, advisory panel meetings, and Program-sponsored conferences.

Other liaison activities

Planning meetings

A USIO representative participated in the International Continental Scientific Drilling Program (ICDP) Science Conference held 11–15 November in Potsdam, Germany.

Contract services

Ocean Leadership

Contract activity

Ocean Leadership received the following modifications during the reporting period.

NSF Contract OCE-0352500 with Ocean Leadership

- Modification 63: Increased the FY14 Annual Program Plan by $2,300,000 to $66,799,800; increased the estimated total value to $617,635,239; and provided incremental FY14 funding in the amount of $30,000,000.

Subcontract activity

Ocean Leadership issued the following subcontract modifications during the reporting period.

Ocean Leadership Subcontract JSC 4-03 with LDEO

- Modification 67: Approved the FY14 Annual Program Plan in the amount of $6,428,608; increased the estimated total value to $61,266,090; and provided incremental FY14 funding in the amount of $797,349.
- Modification 68: Provided incremental FY14 funding in the amount of $2,887,108.

Ocean Leadership Subcontract JSC 4-02 with TAMRF

- Modification 83: Increased the FY14 Annual Program Plan by $2,300,000 to $58,112,129; increased the estimated total value to $471,538,272; and provided incremental FY14 funding in the amount of $26,098,340.

LDEO

Subcontract activity

LDEO issued the following subcontract modifications during the reporting period.

LDEO subcontract with Leicester University

- Amendment 22: Provided FY14 incremental funding in the amount of $50,000.

LDEO subcontract with Schlumberger

- Amendment 11: Provided FY14 incremental funding in the amount of $411,917.

TAMRF

Subcontract activity

TAMRF issued the following subcontract modifications during the reporting period.

TAMRF subcontract with Overseas Drilling Limited

- Amendment 25: Provided FY14 incremental funding in the amount of $3,500,000.
- Amendment 26: Provided FY14 incremental funding in the amount of $19,000,000.

Miscellaneous activity

- 30 October 2013: Submitted the Individual Subcontracting Report to Ocean Leadership through the federal eSRS database.
- 23 October 2013: Submitted the FY13 Federal Supply Number (FSN) and Detail property reports, shore annual inventory, and ship biennial inventory results to Ocean Leadership.
- 26 November 2013: Submitted the Federal Automotive Statistical Tool (FAST) information in the FAST online system.
- 6 December 2013: Submitted the fully executed federal SF97 form to NSF for the sale of a 1996 Ford F450 pickup truck.

Insurance related to Ocean Leadership subcontracts

During this quarter, the USIO began working to secure downhole tool insurance coverage for the potential use of mud motors leased through Baker Hughes for Expeditions 349–352.

Personnel status

Ocean Leadership

No positions were vacated or opened during the quarter.

The following position was filled during the quarter:

- Director, Contracts and Compliance (Anna Marie Scott): 7 October 2013

LDEO

No personnel changes were made during the quarter.

TAMU

The following positions were vacated during the quarter:

- Marine Laboratory Specialist I (Gabe Matson): 26 November 2013

The following positions were opened and advertised during the quarter:

- Laboratory Specialist I (three positions)
- Graphics Specialist II

The following positions were filled during the quarter:

- Graphics Specialist II (Keith Dupuis): 1 October 2013
- Marine Computer Specialist (Steven Thomas): 1 November 2013
- Marine Computer Specialist (Thomas Wick): 9 December 2013

USIO web services

The USIO websites are hosted at TAMU, LDEO, and Ocean Leadership. In addition to internal USIO web page updates and additions, new content is regularly added to IODP and Integrated Ocean Drilling Program expedition web pages at iodp.tamu.edu/scienceops/expeditions.html.

USIO website statistics

USIO website	FY14 Q1 page views*	FY14 Q1 site visits*
www.iodp-usio.org	16,331	10,151
iodp.ldeo.columbia.edu	14,166	3,442
iodp.tamu.edu	Not available	Not available
Total	**30,497**	**13,593**

*Where possible, visits by USIO employees and search engine spiders were filtered out.
FY14 Q1 website statistics were not available for iodp.tamu.edu at the time of this report.

Legacy documentation

The USIO routinely archives electronic copies of documents and reports produced on behalf of IODP and the Integrated Ocean Drilling Program.

Legacy digital archive

Legacy preservation activities include storing electronic copies of relevant management and administration–related documents and reports produced by the USIO. Documents and publications archived this quarter in a dedicated Content Management System (CMS) included contract modifications and the Integrated Ocean Drilling Program USIO FY13 Q4 reports to NSF and IODP-MI.

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 all of the Program's scientific publications, journals, and educational materials.

The ODP Science Operator website and the DSDP Publications website are hosted at TAMU. The ODP legacy website is hosted at Ocean Leadership.

Legacy website statistics

Legacy website	FY14 Q1 page views*	FY14 Q1 site visits*
www-odp.tamu.edu	Not available	Not available
www.odplegacy.org	5,905	3,442
www.deepseadrilling.org	Not available	Not available
Total	**5,905**	**3,442**

*Where possible, visits by USIO employees and search engine spiders were filtered out.
FY14 Q1 website statistics for www-odp.tamu.edu and deepseadrilling.org were not available at the time of this report.

Other projects and activities

TAMU Project Portfolio Management program

One project established through the TAMU Project Portfolio Management (PPM) program was completed this quarter, four are scheduled for completion during the second quarter, and two were placed on hold pending availability of resources (see "Maintenance period activities: *JOIDES Resolution* Microscope Laboratory Infrastructure Renovation project" in Technical, Engineering, and Science Support and "Software development" in Data Management).

Technical, Engineering, and Science Support

The USIO is responsible for planning, managing, coordinating, and performing activities and providing services, materials, platforms, and ship- and shore-based laboratories for USIO expeditions; long-range operational planning for out-year USIO 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.

USIO expedition schedule

Expedition		Port (Origin)	Dates[1, 2]	Total Days (Port/ Sea)	Days at Sea (Transit[3]/ Ops)	Co-Chief Scientists	USIO Contacts[4]
Start of International Ocean Discovery Program (1 October 2013)							
Dry Dock/Non-IODP [27 September 2013–26 January 2014]							TAMU: M. Malone
South China Sea (CPP)[5]	349	Hong Kong	26 January– 30 March 2014	63 (3/60)	60 (6/54)	C.-F. Li J. Lin	TAMU: D. Kulhanek* LDEO: T. Williams^
Izu Bonin Mariana (IBM): Rearc	350	Keelung	30 March– 30 May 2014	61 (5/56)	56 (4/52)	Y. Tamura C. Busby	TAMU: P. Blum* LDEO: G. Guerin^
IBM Arc Origins	351	Yokohama, Japan	30 May– 30 July 2014	61 (5/56)	56 (5/51)	R. Arculus O. Ishizuka	TAMU: K. Bogus* LDEO: L. Drab^
IBM Forearc	352	Yokohama, Japan	30 July– 29 September 2014	61 (5/56)	56 (7/49)	J. Pearce M. Reagan	TAMU: K. Petronotis* LDEO: S. Morgan^

Expedition		Port (Origin)	Dates[1, 2]	Total Days (Port/ Sea)	Days at Sea (Transit[3]/ Ops)	Co-Chief Scientists	USIO Contacts[4]
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 T. Schwenk	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
Dry Dock/Non-IODP [31 May–31 July 2015]							M. Malone
Indonesian Throughflow	356	Fremantle, Australia	31 July– 15 September 2015	61 (5/56)	56 (4/52)	S. Gallagher C. Fulthorpe	K. Bogus

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 transit to and from port call and does not include transit between sites.
[4] The USIO contact list includes both the Expedition Project Manager (*), who is the primary contact for the expedition, and the Logging Staff Scientist (^). In addition, further expedition information can be obtained at http://iodp.tamu.edu/scienceops/expeditions.html.
[5] Complementary Project Proposal (CPP) dependent on substantial financial contribution outside of normal IODP funding.

USIO expeditions

Expedition 341: Southern Alaska Margin Tectonics, Climate, and Sedimentation

Postexpedition activities

The Expedition 341 postexpedition editorial meeting was held 11–15 November in College Station, TX, followed by the Expedition 341 sampling party held 16–22 November at the Gulf Coast Repository (GCR).

Expedition 346: Asian Monsoon

Postexpedition activities

Planning for the Expedition 346 sampling party and postexpedition editorial meeting was initiated.

Expedition 349: South China Sea CPP

Planning

Review of the Expedition 349 Complementary Project Proposal (CPP) sample, data, and research proposals was initiated, along with final logistics and shipping. Science and technical planning with the Science Party and planning for port call outreach activities continued, including a key meeting during the 2013 American Geophysical Union (AGU) Fall Meeting held 9–13 December in San Francisco, CA.

Staffing

Expedition 349 science staffing was completed this quarter, and observers from Taiwan and the Philippines were invited and informed of the pre-expedition preparation requirements.

Clearance and permitting activities

Authorization to operate in the waters of the Republic of Philippines was received on 19 September along with a request for the inclusion of three observers. Space was not available to accommodate three observers, and an amendment agreeing to one observer was issued on 25 November. Authorization to operate in the waters of Taiwan was issued 25 October 2013 with one observer sailing.

In December, the U.S. State Department indicated the likelihood that Vietnam will not grant authorization, which would impact one site. At the request of the embassy, additional information was provided on the success of Leg 184, which Vietnam approved in 1999.

Reports were received from the embassy in China and the lead proponent that the Chinese State Oceanographic Administration, the granting agency, has approved the expedition. The U.S. State Department worked to obtain formal documentation of the approval from the Chinese Ministry of Foreign Affairs.

Expedition 350: Izu-Bonin-Mariana: Rear Arc

Planning

Science and technical planning for Expedition 350 continued this quarter, including discussions on aspects that need coordination among the Izu-Bonin-Mariana (IBM) expeditions. Planning for an IBM core description workshop was initiated.

Staffing

Expedition 350 science staffing was completed this quarter, and review of the applicants for shipboard education and outreach positions was initiated.

Clearance and permitting activities

Additional queries from Japan regarding clearance activities were answered in early December. Negotiations with cable companies continued and reached agreement in principle. Final confirmation is expected early next quarter and will be communicated to Japanese authorities.

Expedition 351: Izu-Bonin-Mariana: Arc Origins

Planning

Science and technical planning for Expedition 351 continued this quarter, including discussions on aspects that need coordination among the IBM expeditions. Planning for an IBM core description workshop was initiated.

Staffing

One scientist withdrew as Expedition 351 science staffing neared completion, resulting in a special call for applicants. The remaining position is expected to be filled early next quarter. Review of the applicants for shipboard education and outreach positions was initiated.

Clearance and permitting activities

The application to conduct marine scientific research in Japanese waters was submitted on 13 November. Negotiations with cable companies continued and reached agreement in principle. Final confirmation is expected early next quarter and will be communicated to Japanese authorities.

Expedition 352: Izu-Bonin-Mariana: Forearc

Planning

The Expedition 352 *Scientific Prospectus* was completed and published on 30 October. Science and technical planning continued this quarter, including discussions on aspects that need coordination among the IBM expeditions. Planning for an IBM core description workshop was initiated.

Staffing

Expedition 352 science staffing was completed this quarter, and review of the applicants for shipboard education and outreach positions was initiated.

Clearance and permitting activities

Preparations were initiated for the application for marine scientific research, which will be submitted in January 2014.

Expedition 354: Bengal Fan

Planning

The Expedition 354 pre-expedition meeting was scheduled for 16 and 17 January 2014.

Staffing

Both Expedition 354 Co-Chief Scientist positions were filled during the quarter. The call for applications was issued, with applications due to the PMOs on 15 January and nominations due to TAMU on 15 April 2014.

Expedition 355: Arabian Sea Monsoon CPP

Staffing

Both Expedition 355 Co-Chief Scientist positions were filled during the quarter.

Expedition 356: Indonesian Throughflow

Staffing

Both Expedition 356 Co-Chief Scientist positions were filled during the quarter.

Maintenance period activities

The *JOIDES Resolution* was in dry dock from late September until late November but remained tied up at the dock in Keppel Shipyard, Singapore, until mid-December for completion of remaining dry dock

issues. In mid-December, the ship transited to the Subic Bay, Philippines, area for tie-up until the end of the maintenance period (late January 2014).

Equipment security and protection

All early efforts during the maintenance period focused on preparing the laboratory spaces for dry dock activities and managing equipment security in the shipyard. Tasks undertaken in support of these efforts include the following:

- Temporary walls were built around large equipment, and instruments that could not be isolated were removed to secure storage.
- All mounted video equipment was removed and stored, and most instruments were shut down for the duration of the dry dock period.
- The fantail winches and crane were secured and covered with tarps to protect them from sandblasting grit during hull repainting.
- The magnetometer cable was spooled off and stored, and the underway laboratory was secured.
- The cryogenic magnetometer was protected from power outage and resultant liquid He loss by use of an air-cooled liquid chiller that was sent from College Station, TX, to replace the shipboard chiller that relies on shipboard power and water. The ship's electricians wired dedicated power to the area and the system was constantly monitored against inadvertent shut down.

Once the ship returned to independent power, the technical staff worked on removing security walls, reinstalling equipment, and restarting instruments.

Sonar dome maintenance

The sonar dome was cleaned and inspected, and repairs were performed on rubber sound isolation. Plywood covers were made and applied to protect the transducers and sound isolation rubber during sandblasting and painting. A new blanking plate, which incorporated a lifting eye, was constructed for the top of the sonar dome.

Office and laboratory maintenance

All furniture and equipment was removed from the four Bridge deck offices and Bridge deck conference room, X-ray laboratory, and entry to the microbiology laboratory to accommodate flooring repairs. Furniture and equipment were reinstalled after a commercial contractor repaired the floors. In addition, damaged counter tops in the core laboratory were sanded and refinished.

JOIDES Resolution Microscope Laboratory Infrastructure Renovation project

A common issue reported by scientists since the refit of the *JOIDES Resolution* has been lack of storage and desk space in the microscope area. To address this and other related issues, the *JOIDES Resolution* Microscope Laboratory Infrastructure Renovation project was established and vetted by the appropriate laboratory working groups (LWGs). This redesign project was in progress during the maintenance period, with an estimated completion date of 26 January 2014. Goals for the project include the following:

- Create an ergonomic distribution of workspace in the microscope laboratory with desks designed to accommodate both right- and left-handed personnel.
- Custom build desktops to fit the wall contours and recover unused space.
- Recover additional floor space by consolidating microscope parts and supplies under the close-up table and by installing the petrographic image capture and archiving tool (PICAT) station over the close-up table (over the core run-out end).
- Provide space for the scanning electron microscope (SEM) workstation and supplies.
- Provide additional storage (drawers, utility shelves) and work space (pull-out table tops, custom-fitted table tops).
- Install custom shelving for library that will accommodate microscope stations (height issues).
- Move the close-up station out of the core description area, removing a congestion point near the elevators.
- Move the color printer from the microscope laboratory back into the core laboratory, thereby removing the traffic caused by core describers printing VCDs.
- Install a shallow bench for general use where the close-up table used to be.
- Provide additional sample/supply storage for curation under the above bench.
- Create space for a large display in the core description area.

Analytical systems

Analytical Systems acquisitions and updates

New fully digital Carver Press controllers were purchased this quarter, and three new Zeiss Axioskop microscopes were ordered to replace aging shipboard microscopes. The installation of new gas safety chromatographs was scheduled for the latter part of the maintenance period in January 2014.

Laboratory working groups

The 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 cruise evaluations from Expeditions 341 and 346, ongoing quality assurance (QA) work, and four projects that have been approved by management for implementation. The expedition evaluations were complimentary of the efforts of the description team and the functionality and support of the microscopes, both optical and the SEM. Respondents to a survey regarding the reception and performance of the SEM during varied sea conditions seemed highly pleased with the shipboard system.

A request from the nannofossil community to have NannoTax installed as a mirror site on the *JOIDES Resolution* was considered but tabled for now. Also discussed was opening the microscope workstations to the internet to allow convenient access to fossil databases and collections. This will be done during Expedition 349 (South China Sea) to gauge the effect on internet performance.

QA activity continuing from the previous quarter included the upload of core description workbooks as assets to the database (ongoing through first quarter of FY14). These assets are downloadable as Excel workbooks containing all descriptive data entered during each expedition.

The approved project list includes:

- **Automated thin section form creation.** This project will improve the efficiency and ease of creating thin section reports from the descriptive data entered through DESClogik.
- **Image tagging and length controls.** This project will allow the selection of a "default display" image from a set of multiple section half images so that the software that consumes these images can work as expected. It will also create QA controls for section length versus the image length.
- **Stratigraphic correlation enhancements.** This project will formally define the input and output format of "wiggle" data, affine table, and splice table information to inform the designers of correlation tools (from Correlator to MATLAB scripts) of the expectations of IODP-USIO.
- **360 degree image capture and reporting.** This project was put on hold pending the availability of resources.

Geophysics

The Geophysics LWG met this quarter to discuss action items and recent cruise evaluations. Agenda items included:

- Discussion of the handling of an RBG [red, blue, green color] data set from the imaging logger that was created during Expedition 346 at the request of the Science Party as an enhancement of the stratigraphic correlation process;
- Continued discussion of Natural Gamma Radiation Logger (NGRL) boat position and edge correction effects with an emphasis on educating the scientists as to the source of this error and the handling of the edge data;
- Planning for Superconducting Rock Magnetometer (SRM) improvements, software design, and the possibility of purchasing a helium-free system to replace the 17+ year old unit; and
- Discussion of the Section Half Multisensor Logger (SHMSL) color reflectance data quality comments from Expedition 346, including the suggestion for an alternative linescan spectrophotometer (Chromasens truePIXA) to replace the integration sphere method, and submission of a project proposal to management for approval to implement such a system.

Geochemistry

The Geochemistry LWG met this quarter and discussed the Source Rock Analyzer, which was on shore for repair this quarter and will be returned to the *JOIDES Resolution* during the next quarter before Expedition 349 operations begin.

The LWG also discussed a comment from Expedition 346 participants that it was too difficult to run samples quickly because having to wait until the sample was logged into the Laboratory Information Management System (LIMS) was time consuming. The group consensus was that the driving need is to properly identify samples and keep them organized, so alternatives are risky. The following two available alternatives were identified, and scientists will be informed of them if the situation recurs:

- Create samples in LIMS ahead of time, not linked to their proper parent sample, that can be used as placeholder labels until the samples are created, then use the LIMS Editor reassign test module to move the data to the correct sample; or
- Use a serial number for the samples during initial analysis, print labels, and then upload the tests to LIMS against the proper sample identity later.

Curation and Core Handling

The Curation and Core Handling LWG did not meet this quarter, since their most recent meeting was at the end of previous quarter.

Projects and other activities

Geosciences Laboratory (ODASES)

The TAMU Ocean Drilling and Sustainable Earth Science (ODASES) Geoscience Laboratory hosted only four scientists during this period for X-ray fluorescence (XRF) scanning projects because the instrument host computer had to be sent to the Netherlands for upgrades.

Engineering support

Engineering equipment acquisitions and updates

Vibration-isolated television system

The deep water de-torque of the vibration-isolated television (VIT) system cable was successfully completed during the transit to Subic Bay. Final planning and software changes were made to incorporate the color camera to the VIT system, which will be tested during the transit from Subic Bay to Hong Kong early next quarter.

Projects and other activities

Large diameter pipe-handling infrastructure

Blohm & Voss (B&V) equipment including two 500-ton elevators, handler, and stool were shipped to Subic Bay for testing on board the *JOIDES Resolution*. LDEO, Howard & Associates, and B&V personnel will sail on transit from Subic Bay to Hong Kong to perform tests, assess equipment performance, and determine future plans.

Wireline heave compensating system

Routine maintenance of the wireline heave compensating system was completed during the maintenance period.

Legacy documentation

The USIO routinely archives electronic copies of documents and reports produced on behalf of the IODP and the Integrated Ocean Drilling Program. Legacy preservation activities for Technical, Engineering, and Science Support include storing electronic copies of expedition daily, weekly, and site summary reports; appropriate operations and engineering reports; and other technical documentation.

Engineering Development

The USIO is responsible for utilizing IODP resources to oversee and/or provide engineering development projects in accordance with the long-term engineering needs of IODP as prioritized by the *JOIDES Resolution* Facility Board.

USIO Technical Panel

The USIO Technical Panel (UTP) includes external members from industry and academia who will participate in bi-annual meetings to review engineering and operations issues within the USIO with the purpose of providing third-party advice to aid the USIO. The UTP is administered and operated by Ocean Leadership, the U.S. Systems Integration Contractor, with assistance from the USIO partners.

Project status

There were no UTP activities during the quarter.

FY12 multisensor magnetometer module project

The multisensor magnetometer module (MMM) is a magnetometer tool under development at LDEO. The MMM will provide the capability to work in both strongly magnetized hard rock formations and in sediments with weaker magnetizations and will produce continuous records of the magnetic field in the borehole, from which magnetization and polarity of the rocks surrounding the borehole can be calculated. The tool will also provide borehole and tool orientation data and will measure the borehole field on three axes, allowing calculation of the full formation magnetization vector: inclination, declination, and total field intensity. This downhole magnetic information will complement core sample magnetic measurements and significantly enhance IODP's ability to magnetostratigraphically date sediment sequences.

Deliverables for this multi-year project included tool delivery, modifications to extend LDEO and Schlumberger telemetry systems and surface panel software, completion of third-party tool certification requirements, bench and field tests at the test well at LDEO, and at-sea deployment. All deliverables except completion of systems integration testing and at-sea deployment were accomplished during FY12. Personnel changes within the USIO-LDEO engineering group in FY12 resulted in a reevaluation of the timeline for completing this tool.

Project status

Work on this project resumed with plans for testing at LDEO facilities to take place during January 2014. Testing will continue until the tool is ready for an at-sea deployment.

Core Curation

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

Sample and Data Requests application

The Sample and Data Request (SaDR) system is currently scheduled to replace the Sample Material Curation System (SMCS) at the end of the Expedition 347 moratorium period in February 2015.

Curation strategies and expedition core sampling

The USIO planned sample and curation strategies this quarter for upcoming USIO Expeditions 349, 350, and 351.

Curating the GCR core collection

All IODP core sample requests are handled by the GCR, Bremen Core Repository, and Kochi Core Center. The USIO conducts all responsibilities associated with curation of the GCR core collection and provides services in support of core sampling, analysis, and education.

Repository activity

The following "Sample requests" table provides a summary of the 4,267 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
23007A, Lawrence, USA	101			
22627C, Woodard, USA	45			
22556B, Norris, USA	6			
2110IODP, Beltran, New Zealand	30			
23023A, Markovic, Canada	19			
2076IODO, Talling, United Kingdom	794			
22613C, Marsaglia, USA	90			
17747B, Takata, South Korea	57			
23018A, Berggren, USA	28			
23005A, Purvis, UK	1			
22709C, Galbraith, Canada	19			
22978A, Algeo, USA	91			
2107IODP, Jutzeler, United Kingdom	1			

Sample request number, name, country	Number of samples taken	Number of cores XRF scanned	Number of cores Imaged	Number of visitors
22988A, Miyazaki, Japan	15			
22990C, Woodhead, Australia	56			
22967A, Robinson, USA	116			2
22843B, Wouters, United Kingdom	46			
22779B, Fraas, USA	535			3
2102IODP, Jones, United Kingdom	40			
2103IODP, Collins, USA	3			
2097IODP, Veenstra, Netherlands	58			
22992A, Thomas, USA	0			
2100IODP, McKinley, USA	5			4
22983A, Rolewicz, USA	79			1
22918C, Safi, India	74			
2094IODP, LeFriant, France	1,214			
22950B, Miller, USA	95			1
1889IODP, Stoner, USA	126			3
2083IODP, Jaeger, USA		98		2
2099IODP, Kordesch, United Kingdom	36			
2089IODP, Thomas, USA	17			2
21341, Rafter, USA	339			
22979A, Ramos, USA	20			
22962A, Olszewski, USA	0			
23024A, Kerr, United Kingdom	40			
2112IODP, Griffith, USA	71			2
Tours/demonstrations				191
Totals	**4,267**	**98**	**0**	**211**

GCR tours/visitors

Type of tour or visitor	Number of Visitors
Scientist visitors	20
Educational tours/demonstrations (3)	20
TAMU oceanography class (1)	15
TAMU geology class (6)	90
Public relations tours (2)	66
Totals	**211**

Use of core collection

The USIO 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, which included six TAMU geology classes and one TAMU oceanography class this quarter. The GCR also hosted tours this quarter for a

TAMU Investigate Geosciences (iGEO) camp, the U.S. University-National Oceanographic Laboratory System (UNOLS) Research Vessel Technical Enhancement Committee (RVTEC), and the newly appointed French Consul General, Sujiro Seam, and his entourage.

Legacy documentation

The USIO routinely archives electronic copies of documents and reports produced on behalf of IODP, as well as the Integrated Ocean Drilling Program, DSDP, and ODP legacy materials. Legacy preservation activities for Core Curation include the following projects.

Thin section archive sample scanning

The USIO continued high-resolution digital imaging of all GCR thin section archive samples from DSDP through ODP to make them publicly available online. This project began in October 2010 with the oldest thin sections (DSDP Leg 1) and is progressing toward a target completion date this summer.

Core working half imaging

The USIO conducted digital imaging of working half sections that were pulled for sampling or other scientific requests during the quarter. High-resolution images of core working halves are posted on the web for public viewing to show how much the working halves have been sampled to date (http://iodp.tamu.edu/curation/samples.html).

This routine procedure focuses on imaging only those sections that get sampled; therefore, the section list for imaging correlates with all sections that are pulled for sample requests (see the "Sample requests" table above). Resampling of previously imaged working halves also results in an updated image.

Other projects and activities

Sampling parties

The GCR hosted the Expedition 341 sampling party from 16 through 22 November, during which 22,772 samples were taken by 27 visiting scientists.

Data Management

The USIO manages data supporting IODP activities, including expedition and postexpedition data, provides long-term archival access to data, and supports USIO information technology (IT) services. The USIO also provides database services for postmoratorium ESO and CDEX log data. Daily activities include operating and maintaining shipboard and shore-based computer and network systems and monitoring and protecting USIO network and server resources to ensure safe, reliable operations and security for IODP data and IT resources.

Expedition data

LIMS database

Expedition 346 data were added to the LIMS database on shore. These data are currently under moratorium and available only to the scientists who sailed on this expedition. Expedition 344 data were placed out of moratorium during this quarter.

Log database

Work continued during the quarter to ensure proper access and visualization of the well log data from DSDP/ODP/Integrated Ocean Drilling Program/IODP through the GeoMapApp application. Methods of third-party tool access to the logging database were reviewed, with special focus on GeoMapApp, and suggestions for improvements were discussed with the GeoMapApp developers.

Expedition data requests

The following tables provide information on USIO web data requests from the scientific community. Where possible, visits by USIO employees were filtered out. FY14 Q1 data for the Janus and LIMS databases were not available at the time of this report.

Top 10 countries accessing USIO web databases						
	Janus database		LIMS database		Log database	
Rank	Country	Visitor sessions	Country	Visitor sessions	Country	Visitor sessions
No data available			No data available		USA	635
					United Kingdom	106
					China	103
					Germany	63
					Japan	53
					France	34
					Canada	27
					Italy	25
					Spain	19
					Australia	18
					Others	216
					Total	**1,299**

Data requests submitted to the TAMU Data Librarian	
Requests	**Total**
How to access	4
Images–photos	4
Color reflectance	3
Depth	3
Logging	2
Physical properties data	2
Element data (solids)	2
Samples	2
Citation information	1
Drilling data	1
Gas data	1
Images–prime images	1
Isotope	1
Moisture and density (MAD) data	1
Source rock analysis	1
Seismic	1
Temperature	1
Total	**31**

Countries submitting data requests to the TAMU Data Librarian	
Country	**Total**
USA	17
United Kingdom	6
Suriname	2
Australia	1
China	1
Germany	1
Japan	1
New Zealand	1
South Africa	1
Total	**31**

Other USIO web statistics			
	Janus database	**LIMS database**	**Log database**
Database query hits:			
Entire site (successful)			9,537
Average per day			103.66
Visitor sessions:			
Total number of visitor sessions			1,299
Average per day			14.12
Average length of visit			7:41
International visitor sessions	**No data available**	**No data available**	51.12%
Visitor sessions of unknown origin			0.00%
Visitor sessions from United States			48.88%
Visitors:			
Unique visitors			694
Visitors who only visited once			627
Visitors who visited more than once			67
Average visits per visitor			1.87

Operation, maintenance, and security

The LDEO Borehole Research Group (BRG) installed and configured two new Dell servers to replace aging Sun Microsystems servers, and replaced three 1500 VA UPS systems in the BRG server room. The Xserve G5, which had been the primary BRG back-up server, was decommissioned and both the primary and secondary backup servers were migrated to virtual machines on newer hardware.

Software development

LIMS Editing Tool

Project scope and deliverables

The goal of this project is to design, develop, test, and deploy a software package to give data review and editing capabilities to the technical user while maintaining the associations and relationships within the LIMS data structure.

Project status

This project was completed on 30 November as planned.

Shore Web Architecture Update

Project scope and deliverables

The goal of this project is to replace TAMU's current web infrastructure with a modern, less complex system that supports more responsive patch management to protect against the constantly growing list of security holes identified by the information technology industry. The system will provide support for future web content and services and include migration of current services such as the Integrated Ocean Drilling Program, ODP, DSDP, and Publications web sites. The new system must be

- Able to host the current web content and services, including IODP, ODP, DSDP, and Publications web sites;
- Accomplished with the least amount of downtime possible for current services;
- A secure system that conforms to the current best practice and security standards;
- Adaptable to the ship environment in order to keep the two locations as similar as possible;
- Able to provide for future web based projects and services, including content management systems;
- Able to provide software/hardware maintainability, and simplify patching and upgrades; and
- Reliable.

Project status

Progress on this project continued, with an estimated completion date of 30 September 2014. Load balancers, which were introduced to the web architecture in late December to add an extra layer of security, successfully passed TAMU vulnerability scans.

Thin Section Form Report

Project scope and deliverables

The goal of this project is to create a program that generates batches of form reports, one per thin section, for thin section data collected via DESClogik and exported to Excel workbooks.

Project status

Progress on this project continued, with an estimated completion date of 30 March 2014.

Image Tagging and Length

Project scope and deliverables

The goal of this project is to enhance the routine section half imaging workflow by (1) tagging one image as the display image in the case of replicate images of a section and modifying the LIMS2Excel and VirtualCoreTable programs to use the display tag during image retrieval, (2) capturing the cropped image size into the database so it can be used for accurate image plotting in core summary graphics, and (3) providing some type of alert to the user if the cropped image length is significantly different from the section length registered in the database.

Project status

Progress on this project continued, with an estimated completion date of 31 March 2014.

Stratigraphic Correlation Enhancements

Project scope and deliverables

The goal of this project is to enhance several aspects of the stratigraphic correlation work flow and associated software programs, including specification of affine and splice tables generated by stratigraphic correlators and/or correlation programs, changing how we import the tables into LIMS, implementing a naming convention for correlation files and LIMS Reports choice lists, fixing the LIMS internal conversion program from splice tie table to splice interval tables, and updating to LIMS reports using stratigraphic correlation information.

Project status

This project was placed on hold pending availability of resources.

360 Degree Images to LIMS

Project scope and deliverables

The goal of this project is to improve support for capture, retrieval, and management of Whole-Round Line Scan (WRLS) images and their composites. Successful integration entails revisions to data storage definitions, LIMS Reports, the data upload facility, and the Section Half Image Logger (SHIL).

Project status

This project was placed on hold pending availability of resources.

Legacy documentation

Legacy preservation activities for Data Management this quarter included storing electronic copies of materials documenting all information technology architecture and corresponding services configurations.

Other legacy projects

Preparations continued for archiving logging data at the National Geophysical Data Center in Boulder, CO. Inventory of equipment on ship and on shore continued this quarter, with disposal of broken equipment and surplus of obsolete systems.

Publications

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 reports, technical documentation, and scientific publications as defined in the USIO contract with NSF; and warehousing and distribution of Integrated Ocean Drilling Program, ODP, and DSDP publications.

IODP scientific publications

USIO publications

Scientific Prospectus

- Pearce, J.A., Reagan, M.K., Stern, R.J., and Petronotis, K., 2013. Izu-Bonin-Mariana fore arc: testing subduction initiation and ophiolite models by drilling the outer Izu-Bonin-Mariana fore arc. *IODP Sci. Prosp.,* 352. doi:10.14379/iodp.sp.352.2013

Integrated Ocean Drilling Program scientific publications

USIO publications

Proceedings

- Harris, R.N., Sakaguchi, A., Petronotis, K., and the Expedition 344 Scientists, 2013. *Proc. IODP,* 344: College Station, TX (Integrated Ocean Drilling Program). doi:10.2204/iodp.proc.344.2013

Data Reports

- Herrmann, S., and Stroncik, N.A., 2013. Data report: Si, Al, Fe, Ca, and K systematics of volcaniclastic sediments from selected cores of Hole U1347A, IODP Expedition 324. In Sager, W.W., Sano, T., Geldmacher, J., and the Expedition 324 Scientists, *Proc. IODP,* 324: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.324.204.2013
- Jungbluth, S.P., Johnson, L.G.H., Cowen, J.P., and Rappé, M.S., 2013. Data report: microbial diversity in sediment near Grizzly Bare Seamount in Holes U1363B and U1363G. *In* Fisher, A.T.,

Tsuji, T., Petronotis, K., and the Expedition 327 Scientists, *Proc. IODP,* 327: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.327.201.2013

- Nomura, R., Takata, H., and Tsujimoto, A., 2013. Data report: early to middle Eocene benthic foraminifers at Sites U1331 and U1333, equatorial central Pacific Ocean, Expedition 320/321. *In* Pälike, H., Lyle, M., Nishi, H., Raffi, I., Gamage, K., Klaus, A., and the Expedition 320/321 Scientists, *Proc. IODP,* 320/321: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.320321.212.2013

CDEX publications

Data Reports

- Dugan, B., and Zhao, X., 2013. Data report: permeability of sediments from Sites C0011 and C0012, NanTroSEIZE Stage 2: subduction inputs. *In* Saito, S., Underwood, M.B., Kubo, Y., and the Expedition 322 Scientists, *Proc. IODP,* 322: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.322.208.2013
- Kameo, K., and Jiang, S., 2013. Data report: calcareous nannofossil biostratigraphy of Site C0009, Expedition 319. *In* Saffer, D., McNeill, L., Byrne, T., Araki, E., Toczko, S., Eguchi, N., Takahashi, K., and the Expedition 319 Scientists, *Proc. IODP,* 330: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.319.202.2013

USIO reports

IODP Publication Services produces the USIO quarterly reports, annual reports, Annual Program Plans, and other reports as requested (see “USIO Reports” in “Management and Administration” for details on these documents).

Program-related citation statistics

Citations submitted to AGI

The USIO submits Program-related ocean drilling citations to the American Geological Institute (AGI) for inclusion in the GeoRef database and the subset Ocean Drilling Citation Database, which includes publication records related to DSDP, ODP, the Integrated Ocean Drilling Program, and IODP. During this quarter, 420 citations were submitted to AGI.

Publications management

Integrated Ocean Drilling Program scientific publication deadline extension requests

The requirement of all Science Party members to conduct research and publish the results of their work is detailed in the Integrated Ocean Drilling Program Sample, Data, and Obligations Policy (www.iodp.org/program-policies/). To fulfill this obligation, scientists publish their papers in a peer-reviewed scientific journal or book that publishes in English, or as a peer-reviewed data report in the *Proceedings of the Integrated Ocean Drilling Program*. Manuscripts must be submitted within 20 months postmoratorium (26 months for synthesis papers). Science Party members may request a deadline extension of up to one year. The Platform Curator reviews and approves these extension requests, and

IODP Publication Services monitors fulfillment of the publishing obligation. The tables below show extensions requested during the quarter and the status of all deadline extensions approved during the life of each volume.

Initial papers/data reports

Expedition	Submission deadline (20 months postmoratorium)	Deadline extensions approved in FY14 Q1	Overall extension status	
			Number approved	Number fulfilled
301	20 April 2007			
302	23 July 2007			
304/305	4 February 2008		14	12
308	7 March 2008		8	7
303/306	9 May 2008		13	9
307	13 June 2008		4	2
311	27 June 2008		12	8
309/312	28 August 2008		9	9
310	4 November 2008		16	13
313	4 August 2012		4	2
314/315/316	4 October 2010		27	22
317	4 September 2012		11	4
318	2 March 2013		4	
319	30 April 2012		6	3
320/321	30 June 2012		26	21
322	10 June 2012		11	7
323	10 August 2012		6	4
324	4 July 2012		10	7
325	16 March 2013*	31	31	7
327	5 May 2013		1	
330	11 October 2013	10	10	1
333	18 January 2014			
334	13 December 2013†	31	31	

*A 6 month extension was granted to the entire Science Party.
†A 1 year extension was granted to the entire Science Party.

Synthesis papers

Expedition	Submission deadline (26 months postmoratorium)	Deadline extensions approved in FY14 Q1	Overall extension status	
			Number approved	Number fulfilled
301	22 October 2007		1	1
302	21 January 2008		1	1
304/305	4 August 2008		1	1
308	8 September 2008		1	1
303/306	10 November 2008		1	1
307	15 December 2008		1*	1
311	29 December 2008		1	1
309/312	27 February 2009		1*	
310	4 May 2009		1*	

Expedition	Submission deadline (26 months postmoratorium)	Deadline extensions approved in FY14 Q1	Overall extension status	
			Number approved	Number fulfilled
313	4 February 2013			
314/315/316	5 April 2011		1*	
317	4 March 2013			
318	2 September 2013			
319	30 October 2012			
320/321	30 December 2012			
322	10 December 2012			
323	10 February 2013			
324	4 January 2013		1	
325	16 September 2013			
327	5 November 2013			
329	13 February 2014			
330	11 April 2014			
331	4 December 2013			
332	11 February 2014			

*Requests for submission deadline extensions beyond 38 months postmoratorium were received and referred to the respective Platform Curator.

Publications website

FY14 Q1 publications website statistics were not available at the time of this report.

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. Statistics for the reporting quarter are shown in the table below.

Reports and publications	DOI prefix	Number of resolutions			
		October 2013	November 2013	December 2013	FY14 Q1 total
IODP	10.14379	1	1	4	**6**
Integrated Ocean Drilling Program	10.2204	3,765	3,016	3,308	**10,089**
ODP/DSDP	10.2973	6,882	6,143	7,621	**20,646**

Publications support

The USIO hosted the postexpedition editorial meeting for USIO Expedition 341.

Technical documentation

Technical documents produced by the USIO are available to users via the Cumulus web client (iodp.tamu.edu/tasapps/) once they reach the technical draft stage. Technical documents in production during the first quarter of FY14 are shown in the following table.

Technical documentation	FY14 Q1 status
Quick start guides	
Chemistry: Alkalinity	Version 1.1 released
Chemistry: Chloride	Version 1.1 released
Chemistry: Metrohm Ion Chromatograph	Version 1.1 released
Chemistry: Inductively Coupled Plasma–Atomic Emission Spectroscopy (ICP-AES)	Version 1.1 released
Logger: Natural Gamma Radiation Logger (NGRL)	Version 1.1 released
Logger: Section Half Multisensor Logger (SHMSL)	Version 1 released
Paleomag: Agico JR-6 Spinner Magnetometer	Version 1.1 released
Physical Properties: Automated Vane Shear (AVS)	Version 2.1 released
Physical Properties: Moisture and Density (MAD)	Under technical review
Physical Properties MADMax	Version 1.1 released
Physical Properties *P*-wave Velocity	Version 1 released
Microscopy: Image Capture	Version 1.1 released
Microscopy: Scanning Electron Microscope (SEM) Sputter Coating—Scientific User Manual	Version 1.0 released
Microscopy: SEM Sputter Coating—Technician's Manual	Version 1.0 released
Paleomag: Superconducting Rock Magnetometer (SRM) Discrete Samples	Version 1.1 released
Paleomag: SRM Section-Half Samples	Version 1.1 released
Physical Properties: TK04 Thermal Conductivity	Version 1.1 released
X-Ray: X-ray Diffraction (XRD)	Version 1.1 released
X-Ray: XRD EVA Software	Version 1.0 released
User guides	
Chemistry: Cary Spectrophotometer	Version 1.0 released
Microscopy: SEM Sputter Coat Differences	Version 1.0 released
Microscopy: Fine Fraction Spraying	Version 1.1 released
Geology: Thin section Laboratory	Version 1.0 released

Legacy documentation

The USIO routinely archives electronic copies of documents, reports, and scientific publications produced on behalf of IODP and the Integrated Ocean Drilling Program. Documents archived this quarter included all scientific publications produced during the quarter, the Integrated Ocean Drilling Program USIO FY13 Q4 report, and planning documentation for reporting deliverables.

Education

The USIO is responsible for developing and disseminating expedition-specific and thematic education activities and materials for elementary through post-secondary and informal audiences, promoting diversity programs and partnerships, and supporting legacy resources.

The USIO facilitates education activities through Deep Earth Academy (funded jointly by the USIO and the United States Science Support Program [USSSP]) in cooperation with other U.S. education and outreach groups, conducting teacher education activities; developing, testing, and disseminating

educational curriculum that highlights IODP science programs; and implementing live and near-real-time programs that highlight and use the *JOIDES Resolution* as a platform for education.

Professional development

2014 Schools of Rock

Planning continued for a School of Rock to be held 8–15 June 2014 at the Indiana University of Pennsylvania (IUP). Primary instructors will be S. Hovan and J. Lewis, both from IUP.

Onboard educator program

The USIO received 18 applications from U.S. educators to serve as Onboard Education Officers during FY14 Expeditions 350, 351, and 352—the three IBM expeditions. The USIO will choose one or two U.S. educators for each IBM expedition, to be paired with ECORD Science Support and Advisory Committee (ESSAC)–sponsored educators. A training session for all 2014 Onboard Education Officers will take place during the next quarter.

Former Onboard Education Officer A. Mote (Austin, TX) presented a poster at the 2013 AGU Fall Meeting about her experience on board the *JOIDES Resolution* and the follow-up curriculum project she is working on in collaboration with Ocean Leadership and TERC/EarthLab.

Educational outreach events

Staff and Ship-to-Shore Science (STSS) grant participants held a half-day JR Outreach Network event at the Smithsonian's National Museum of Natural History on 14 November. This event featured an author reading from *Discovering Earth's Secrets*, a career discussion for teens, and two hours of six separate hands-on activity stations on the floor of the Ocean Hall.

USIO staff and volunteers worked the 2013 AGU Fall Meeting's Exploration Station, manning a booth that featured cake coring, a paleomagnetics activity, a dynamic positioning activity, and distribution of resources to the family and student audiences who attended.

Expedition-based learning activities and materials

The USIO links school and public audiences to activities on board the *JOIDES Resolution* via advanced web technologies, the *JOIDES Resolution* website, video broadcasting, and/or podcasting. The USIO also produces new expedition-specific and thematic video and learning materials based on legacy material and science and life at sea during USIO expeditions.

Deep Earth Academy website

Since its inception, the Deep Earth Academy website (deepearthacademy.org) has served as the hub for information on professional development, classroom activities, and materials ordering. During this quarter, staff and contractors completed transitioning deepearthacademy.org content to the joidesresolution.org website to streamline and simplify information distribution for site visitors. The Deep Earth Academy website will no longer be actively updated.

JOIDES Resolution website and social networking

The joidesresolution.org website promotes each expedition with expedition pages, blogs, videos, images, and more, and serves as the hub for Program social networking on Facebook, Twitter, and YouTube sites. During this quarter, staff completed the transition of all Deep Earth Academy content to this site; all information about professional development, classroom activities, and materials are now available at joidesresolution.org.

USIO educational website statistics

USIO educational website*	FY14 Q1 page views	FY14 Q1 site visits
www.joidesresolution.org	36,298	14,369
www.oceanleadership.org/education/deep-earth-academy	9,318	6,983
Total	**45,616**	**21,352**

*Ocean Leadership's educational websites are funded jointly by the USIO and USSSP.

Videos and video broadcasts

New videos released during this quarter included "Sedimentology on the *JR*," "Geochemistry on the *JR*," "Downhole Logging on the *JR*," and "Structural Geology on the *JR*"—all of which were filmed during Expedition 344: Costa Rica Seismogenesis Project. In addition, a short video titled "Introducing the International Ocean Discovery Program" debuted during the 2013 AGU Fall Meeting. This video describes the science goals and operational strategy of IODP for a general audience. All of these videos are available both on joidesresolution.org and Ocean Leadership's YouTube channel (http://www.youtube.com/oceanleadership).

Planning began during the quarter for two other videos—one on Educators on Board and one on How Science Works, both of which are scheduled for release during the next quarter. Scripts were written and reviewed and interviews were conducted during the 2013 AGU Fall Meeting.

Educational materials development and distribution

Materials developed this quarter included a new 2014 expedition brochure for educators, a handout postcard for outreach events, and a new activity titled "Exploring Data from the Seafloor." A new flash drive with many of the activities and videos was also produced.

Materials were distributed this quarter at conferences and outreach activities and in response to requests received through the Deep Earth Academy website. The office no longer sends extensive materials through the mail but primarily distributes materials at events run by staff or volunteers.

Scientists as educators

The USIO provides regular opportunities for scientists to participate in educational programming. During this quarter, scientists K. Johnson (University of Hawaii), K. Bogus (IODP-TAMU), and A. Haddad (Arizona State University) participated in the JR Outreach Network event at the Smithsonian in November (see "Educational outreach events"). M. Katz (Rensselaer Polytechnic) participated in the Science Teachers Association of New York State (STANYS) Annual Conference held 2–5 November in Rochester, NY.

Strategic partnerships

Center for Dark Energy Biosphere Investigations

The USIO continued to partner with the Center for Dark Energy Biosphere Investigations (C-DEBI) to produce microbiology-related materials and projects. During this quarter, USIO staff attended the C-DEBI Annual Meeting in Marina, CA, on 7 and 8 October and reviewed evaluation reports from the previous quarter's *Atlantis* expedition. A C-DEBI–supported educator (R. Brennon) who participated in the FY11 *Atlantis* expedition attended the 2013 AGU Fall Meeting to assist with presentations, videos and the Exploration Station booth.

Outside funding and sponsorships

This section describes grant proposal submissions, awarded grants, and subsequent grant-supported activities that complement USIO science and education activities.

Activities related to existing grants

C-DEBI grant

The USIO partnered with C-DEBI during FY11 on the education and outreach components of the R/V *Atlantis* Expedition AT18-07, which collected samples and data from subseafloor observatories (CORKs) installed during IODP Expedition 327: Juan de Fuca Ridge-Flank Hydrogeology. This partnership continued with the USIO leading education and outreach components of the R/V *Thompson* Expedition AT26-03, which returned to the same sites in July 2013. During this quarter, staff reviewed evaluation reports from the summer and planned for several postexpedition videos to be produced during the next quarter.

Ship-to-Shore Science grant (NSF Informal Science Education Pathways)

During this quarter, STSS pilot project leaders wrapped up their projects and data collection and prepared final reports and presentations for the brainstorming meeting held 12–14 November at the Ocean Leadership office. During this meeting, final reports from all projects were shared, evaluation questions were answered in the group setting, and brainstorming was done for a full NSF Advancing Informal Science Learning (AISL) proposal due during the next quarter.

Legacy documentation

The USIO routinely archives electronic copies of documents, reports, and materials produced on behalf of IODP and the Integrated Ocean Drilling Program.

Legacy digital archive

Legacy preservation activities include storing electronic copies of relevant educational products and materials produced by the USIO each quarter in a dedicated CMS. Products and materials archived this quarter include new videos (see "Videos and video broadcasts" above) and the new 2014 expedition brochure, handout postcard for outreach events, and classroom activity (see "Educational materials development and distribution").

Outreach

USIO Outreach activities are designed to build an easily accessible foundation of knowledge about IODP, to raise the visibility of the connection between the emerging scientific knowledge and its positive contribution to society worldwide, and to encourage interest in the Program. To accomplish these goals, the USIO targets informational outreach to the general public, science and general-interest media, legislators, scientists and engineers from within the IODP community and beyond, and decision makers at the national level.

Port call outreach

Planning was initiated for public relations activities related to the upcoming 26 and 27 January port call in Hong Kong, prior to Expedition 349. Activities will include a press conference as well as tours for government officials, industry representatives, members of the media, and local high school and university students.

IODP representation at meetings/conferences

U.S. IODP exhibit booths were present at two major meetings: the Geological Society of America (GSA) 125th Anniversary Annual Meeting and Exposition and the 2013 AGU Fall Meeting. At the AGU meeting, informational materials from ECORD were provided and a new short introductory video was debuted. Filling a gap left by the closure of IODP-MI, the USIO also helped organize and co-host the IODP Town Hall during the AGU meeting.

Public relations materials

USIO media advisories and news releases

During this quarter, the USIO either developed and published or played a role in developing the following press releases and media advisories (all items below are press releases unless noted otherwise):

- Asian monsoon cycle the focus of final Integrated Ocean Drilling Program expedition [8 November 2013]. http://oceanleadership.org/asian-monsoon-cycle-focus-final-integrated-ocean-drilling-program-expedition/
- Rare samples help piece together the formation of Earth's marine crust [3 December 2013]. http://oceanleadership.org/rare-samples-help-piece-together-formation-earths-marine-crust/

Communications tools

The Fall 2013 Issue of the *Core Discoveries* newsletter was published during this quarter (http://usssp-iodp.org/wp-content/uploads/CoreDiscoveries_Fall2013.pdf). This issue features FY13 expedition updates, information on the merging of the former Proposal Evaluation Panel and Site Characterization Panel to create the new *JOIDES Resolution* Science Evaluation Panel, and an article highlighting the emerging story revealed by Wilkes Land cores from Expedition 318.

Finally, the USIO's outreach-focused Twitter account, @SeafloorSci, gained many followers by posting news from expeditions and links to related media. At the end of December, the account had approximately 550 followers and more are being added regularly.

Program-related publications

Articles authored by USIO staff

Program-related science and other articles authored by USIO staff published during this quarter include the following. Bold type indicates USIO 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).

- Browning, J.V., Miller, K.G., Sugarman, P.J., Barron, J., McCarthy, F.M.G., **Kulhanek, D.K.,** Katz, M.E., and Feigenson, M.D., 2013. Chronology of Eocene–Miocene sequences on the New Jersey shallow shelf: implications for regional, interregional, and global correlations. *Geosphere,* 9(6):1434–1456. doi:10.1130/GES00857.1
- Gillis, K.M., Snow, J.E., **Klaus, A.,** Abe, N., Adrião, Á.B., Akizawa, N., Ceuleneer, G., Cheadle, M.J., Faak, K., Falloon, T.J., Friedman, S.A., Godard, M., **Guerin, G.,** Harigane, Y., Horst, A.J., Hoshide, T., Ildefonse, B., Jean, M.M., John, B.E., Koepke, J., Machi, S., Maeda, J., Marks, N.E., McCaig, A.M., Meyer, R., Morris, A., Nozaka, T., Python, M., Saha, A., and Wintsch, R.P., 2013. Primitive layered gabbros from fast-spreading lower oceanic crust. *Nature (London, U. K.),* 505(7482):204–207. doi:10.1038/nature12778
- Hernández-Molina, F.J., Stow, D., and **Alvarez-Zarikian, C.**, 2013. IODP Expedition 339 in the Gulf of Cadiz and off West Iberia: decoding the environmental significance of the Mediterranean outflow water and its global influence. *Sci. Drill.,* 16:1–11. doi:10.5194/sd-16-1-2013
- Hodell, D.A., Lourens, L., Stow, D.A.V., Hernández-Molina, J., and **Alvarez Zarikian, C.A.**, 2013. The "Shackleton Site" (IODP Site U1385) on the Iberian Margin. *Sci. Drill.*, 16:13–19. doi:10.5194/sd-16-13-2013

News articles, news programs, media citations, or public commentary

The following citations comprise examples of news articles, news programs, media citations, or public commentary related to USIO expeditions and/or science. See the "IODP in the news" web page (www.iodp-usio.org/Newsroom/news.html) for other articles that raise the profile of the Program.

- Friedman, B., 2013. Surprise! It's a volcano. *AAPG Explorer*, November 2013. http://www.aapg.org/explorer/2013/11nov/volcano1113.cfm
- Sandle, T., 2013. Measuring climate change at the sea floor. *Digital Journal*, 25 October 2013. http://www.digitaljournal.com/article/360924
- Witze, A., 2013. US ocean drilling ship gets a new lease on life. *Nature newsblog*, 21 November 2013. http://blogs.nature.com/news/2013/11/us-ocean-drilling-ship-gets-a-new-lease-on-life.html

Communications training

The USIO provided an all-day communications training workshop for graduate students and postdocs attending the C-DEBI Annual Meeting in Marina, CA, on 7 and 8 October, the majority of whom have either sailed on a USIO expedition or regularly use IODP samples in their work.

Legacy documentation

The USIO routinely archives electronic copies of documents, reports, and materials produced on behalf of IODP and the Integrated Ocean Drilling Program.

Legacy digital archive

Legacy preservation activities include storing electronic copies of relevant outreach products and publications produced by the USIO each quarter in a dedicated CMS. Products and publications archived this quarter include press releases and the Fall 2013 issue of *Core Discoveries.*

Appendix A: FY14 Q1 finance report

Please contact info@oceanleadership.org for hard copies of financial pages.

Appendix B: Travel

Purpose*	Category	Dates	Location	Institution: Personnel
Energy & Geoscience Institute meeting	Meeting	7–9 October 2013	Salt Lake City, UT	TAMU: B. Clement
TexasPack Packaging Trade Fair	Convention	15 October 2013	Houston, TX	TAMU: P. Rumford
American Association of Stratigraphic Palynologists–The Palynological Society (AASP-TPS)/Dino10 Joint Conference 2013	Conference	20–24 October 2013	San Francisco, CA	TAMU: K. Bogus
Oracle Training: Structured Query Language	Training	20–26 October 2013	Belmont, CA	TAMU: G. Maxwell
LabVIEW training	Training	20–25 October 2013	Austin, TX	TAMU: R. Wang
Dangerous Goods Advisory Council 2013 Conference	Conference	21–23 October 2013	New Orleans, LA	TAMU: T. Brashear, S. Dillard
Project Management Institute (PMI) Global Congress 2013	Conference	27–29 October 2013	New Orleans, LA	TAMU: P. Gates, J. Rosser
Geological Society of America (GSA) 125th Anniversary Annual Meeting and Exposition	Conference	27–30 October 2013	Denver, CO	Ocean Leadership: M. Wright
Dry dock activities	Dry dock activities	30 October–4 November 2013	Manila, Philippines	TAMU: B. Clement
Texas State Aquarium Distinguished Lecture Series	Workshop	1 and 2 November 2013	Corpus Christi, TX	TAMU: P. Rumford
International Continental Scientific Drilling Program (ICDP) Science Conference	Conference	11–14 November 2013	Potsdam, Germany	TAMU: B. Clement
Ocean Leadership Ship-to-Shore Science (STSS) Meeting	Education/ Outreach	11–15 November 2013	Washington, DC	TAMU: K. Bogus
Expedition 341 Sampling Party	Postexpedition activities	16 and 17 November 2013	College Station, TX	Onboard Education Officer: A. Mote
The Micropalaeontological Society (TMS) Conference 2013	Conference	18 and 19 November 2013	London, England	TAMU: D. Kulhanek
Top Track training and *JOIDES Resolution* laboratory remodel	Training/dry dock activities	18 November –22 December 2013	Manila, Philippines	TAMU: T. Cobb, W. Crawford, T. Gorgas, A. Morgan
Relocation	Relocation	2–5 December 2013	College Station, TX	TAMU: T. Wick
JOIDES Resolution logging IT systems upgrade	Dry dock activities	2–19 December 2013	Manila, Philippines	LDEO: T. Baker

Purpose*	Category	Dates	Location	Institution: Personnel
Initial installation and set-up of the HD video isolation transformer cable	Dry dock activities	3–13 December 2013	Manila, Philippines	TAMU: D. Ferrell
Oracle user security policies and building of new server	Vendor visit	5–8 December 2013	College Station, TX	Vendor Representatives: R. Elumalai, M. Manickam
2013 American Geophysical Union (AGU) Fall Meeting	Conference	9–13 December 2013	San Francisco, CA	Ocean Leadership: S. Cooper, D. Divins, J. Farver, D. Fils, R. Gagosian, G. Myers, M. Wright LDEO: C. Brenner, S. Davies, L. Drab, D. Goldberg, G. Iturrino, A. Malinverno, M. Reagan, A. Slagle, T. Williams TAMU: P. Blum, B. Clement, D. Kulhanek, M. Malone, J. Miller, K. Petronotis
Deep Earth Academy exhibit meeting	Education/ Outreach	23 December 2013	Washington, DC	North Museum Collaborator: J. Ringlein

*Travel associated with meetings, conferences, port call work, and nonroutine sailing activities.

Appendix C: USIO quarterly report distribution

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