INTEGRATED OCEAN DRILLING PROGRAM
United States Implementing Organization

FY11 Quarterly Report 2

1 January–31 March 2011

NSF Contract OCE-0352500

IODP-MI Contract IODP-MI-05-03

Submitted by the USIO

to

The National Science Foundation
and
IODP Management International, Inc.

Integrated Ocean Drilling Program
United States Implementing Organization

13 May 2011

TABLE OF CONTENTS

INTRODUCTION

The organization of this quarterly report reflects activities and deliverables that are outlined in the Integrated Ocean Drilling Program (IODP) U.S. Implementing Organization (USIO) FY11 Annual Program Plans to the National Science Foundation (NSF) and IODP Management International, Inc. (IODP-MI) 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.[1]

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

FY11 Q1 IODP-USIO Quarterly Report

The USIO report for the first quarter of FY11 (October–December 2010) was submitted to NSF and IODP-MI on 14 February 2011 (http://iodp.tamu.edu/publications/AR/FY11/FY11_Q1.pdf).

FY11 Annual Report

The USIO initiated FY11 Annual Report planning and content collection activities during this quarter.

FY12 Annual Program Plan

Budget development and planning activities for the FY12 Annual Program Plan began this quarter.

Reporting and Liaison Activities

The USIO reports to and liaises with funding agencies and IODP-related agencies (e.g., the Science Advisory Structure [SAS]), Program Member Offices, and other national organizations, and participates in SAS panels, IODP-MI task forces, working groups, and so on.

Meetings

Standard SAS committee and panel, IODP working group, task force, 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 for SAS meetings are available online through committee and panel links from the meeting schedule web page (http://www.iodp.org/meeting-schedule/).

Conference and Meeting Schedule

Conference/Meeting*	Date	Location
Expedition 317 Operations Review Task Force (ORTF) Meeting	5–7 January 2011	College Station, Texas
IODP/ICDP Workshop: Geological Carbon Capture and Storage	8–10 January 2011	Muscat, Oman
Science Advisory Structure Executive Committee (SASEC) Meeting	18 and 19 January 2011	Miami, Florida
International Working Group Plus (IWG+) Meeting	20 and 21 January 2011	Miami, Florida
Site Survey Panel (SSP) Meeting	2–4 February 2011	Kanagawa, Japan
Scientific Technology Panel (STP) Meeting	13–16 February 2011	Auckland, New Zealand

[1] In this document, references to TAMU include Texas A&M Research Foundation (TAMRF).

Conference/Meeting*	Date	Location
Engineering Development Panel (EDP) Meeting	22–24 February 2011	Grenoble, France
Expedition 318 ORTF Meeting	8 and 9 March 2011	Palisades, New York
Operations Task Force (OTF) Meeting	26 March 2011	Edinburgh, United Kingdom
Science Planning Committee (SPC) Meeting	28–31 March 2011	Edinburgh, United Kingdom

*Implementing organization meetings, IODP-MI task force meetings, Science Advisory Structure (SAS) panel meetings, and Program-sponsored conferences.

Contract Services

Ocean Leadership

Contract Activity

Ocean Leadership received the following modifications during the reporting period.

NSF Contract OCE-0352500 with Ocean Leadership

- Modification 48: Provided $25,000,000 in incremental funding for the FY11 Annual Program Plan and incorporated FAR 52.223-18 Contractor Policy to Ban Text Messaging While Driving.
- Modification 49: Approved the FY10 Annual Program Plan carryforward request dated 31 January 2010, reduced the FY10 Annual Program Plan budget of $39,861,378 by $1,043,997 to $38,817,381, increased the FY11 Annual Program Plan budget of $64,322,723 by $635,000 to $64,957,723, incrementally funded the FY11 Annual Program Plan budget with $949,519 (carryforward from FY10 Annual Program Plan), and approved corrective action to adjust prior budget carryforward request errors.

IODP-MI Subcontract IODP-MI-05-03 with Ocean Leadership

- Modification 31: Increased the FY11 Annual Program Plan budget by $48,242 to cover the scope and budget for the Engineering Development project "Multi-Function Telemetry Module (MFTM) for the Simple Cabled Instruments for Measuring Parameters In-situ (SCIMPI) system;" increased the FY11 science operating costs (SOC) budget of $4,078,906 by $48,242 to $4,127,148.
- Modification 32: Provided $48,242 in incremental funding toward FY11 SOC activities.
- Modification 33: Incorporated by reference FAR 52.223-18 Contractor Policy to Ban Text Messaging While Driving; approved the request to carry forward the FY10 obligated amount of $391,700; reduced the FY10 Annual Program Plan by $296,964 to a revised fully funded FY10 budget of $3,816,244; and increased the FY11 Annual Program Plan budget by $25,000 to the level of $4,152,148 for the purpose of conducting a needs assessment for a digital archive of IODP scientific publications.
- Modification 34: Provided $1,000,000 in incremental funding for the FY11 Annual Program Plan.

Subcontract Activity

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

Ocean Leadership Subcontract JSC 4-03 with LDEO

- Modification 45: Provided $325,000 in incremental funding toward FY11 SOC activities.
- Modification 46: Provided $3,334,277 in incremental funding toward FY11 platform operating costs (POC) activities.
- Modification 47: Increased the FY11 SOC budget by $48,242 from $923,310 to $971,552, provided $48,242 in incremental SOC funding, and added Contract Clause FAR 52.223-18 Contractor Policy to Ban Text Messaging While Driving.

Ocean Leadership Subcontract JSC 4-02 with TAMRF

- Modification 56: Provided $600,000 in incremental funding toward FY11 SOC Activities.
- Modification 57: Provided $20,819,694 in incremental funding toward FY11 POC activities.
- Modification 58: Revised the FY11 Annual Program Plan to add $25,000 in unobligated carryforward; reduced total estimated costs by $324,127 to $409,026,523; reduced prior approved FY10 Annual Program Plan budget by $349,128 to $33,447,851; reduced FY10 funding by $349,128 to $33,447,851; deobligated FY10 unobligated SOC funding in the amount of $236,982; added $25,000 to the prior approved FY11 Annual Program Plan budget of $58,333,297; and added Contract Clause FAR 52.223-18, Contractor Policy To Ban Text Messaging While Driving.
- Modification 59: Provided $646,012 in incremental funding toward FY11 SOC activities.

LDEO

Subcontract Activity

LDEO issued the following subcontract modifications during the reporting period.

LDEO Subcontract with Schlumberger

- Amendment 15: Provided second funding increment of $2,000,000.
- Amendment 46: Provided final funding modification of FY11 in the amount of $147,500.

TAMRF

Subcontract Activity

TAMRF issued the following subcontract modifications during the reporting period.

TAMRF Subcontract with Overseas Drilling Limited

- Amendment 13: Provided operational incremental funding in the amount of $15,300,000.

Contracts/Procurement Activity ($100,000 or Greater)

- 15 April 2011: Purchased eighteen 8-1/4 inch outer core barrels in the amount of $158,162 from Houston Downhole Drilling.

Miscellaneous Activity

- 12–16 February 2011: Conducted an NSF property inventory on the *JOIDES Resolution.*

Insurance Related to Ocean Leadership Subcontracts

In February 2011, TAMRF received notification from the insurance to anticipate a 20% increase in FY12 premiums for the following policies: Hull and Machinery, Cargo, Equipment, Control of Well, and Excess Liabilities. Other coverages were expected to remain at FY11 levels.

In March 2011, additional coverage totaling $21,000 was purchased for the logging-while-drilling (LWD) tools used during Expedition 334: Costa Rica Seismogenesis Project (CRISP).

Personnel Status

Ocean Leadership

No positions were vacated or filled during the quarter.

The following position was opened and advertised during the quarter:

- Administrative Assistant, Deep Earth Academy

LDEO

No positions were vacated, opened, advertised, or filled during the quarter.

TAMU

The following positions were vacated during the quarter:

- Applications Developer III (Stephanie Zeliadt): 4 February 2011
- Temporary Microcomputer Specialist (John Baldwin): 31 March 2011

The following positions were opened and advertised during the quarter:

- Business Coordinator II
- Lead Software Applications Developer
- Marine Laboratory Specialist (2)

The following positions were filled during the quarter:

- Assistant Research Scientist (Nicole Stroncik): 3 January 2011
- Business Coordinator II (John Miller): 14 February 2011
- Senior Software Applications Developer (Saravana Nagarajan): 14 March 2011

USIO Web Services

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

USIO Web Site Statistics

FY11 Q2 USIO Web Site*				
Parameter	**www.iodp-usio.org**	**iodp.ldeo.columbia.edu**	**iodp.tamu.edu**	**Total**
Page views	22,692	7,941	303,674	332,307
Site visits	13,230	1,157	73,100	87,487

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

Legacy Documentation

Legacy Digital Library

Legacy preservation activities this quarter included 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 the FY10 Q4 and FY11 Q1 IODP-USIO quarterly reports, FY10 Annual Report, USIO update reports for SAS meetings, and contract modifications.

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 web sites, which highlight the scientific and technical accomplishments of these ground-breaking precursors to IODP. The Legacy web sites 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 web site and the DSDP Publications web site are hosted at TAMU. The ODP Legacy web site is hosted at Ocean Leadership.

Legacy Web Site Statistics

	FY11 Q2 ODP Web Site*			FY11 Q2 DSDP Web Site
Parameter	**www-odp.tamu.edu**	**www.odplegacy.org**	**Total ODP**	**www.deepseadrilling.org**
Page views	1,270,119	9,920	1,280,039	149,231
Site visits	365,398	4,120	369,518	39,214

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

Other Projects and Activities

USIO-TAMU Project Portfolio Management Program

TAMU conducted two project management workshops in February and March 2010 as part of its Project Portfolio Management (PPM) initiative. These two practical workshops enabled 30 TAMU employees to learn how to apply project management best practices while managing projects. Specifically, both workshops focused on project management concepts, creating the charter and scope (defining deliverables), project document management using logs, work breakdown structure, scheduling activities, and risk management.

Progress of the USIO-TAMU Project Portfolio Management (PPM) program continued, with multiple analytical projects completed (see "Analytical Systems" in "Technical, Engineering, and Science Support" for more information) and two project teams formally chartered to tackle the top two projects: developing a Laboratory Information Management System (LIMS) database web query application called "LIMS Reports" and enhancing the DESCLogik core description application (see "Software Development" in "Data Management" for more information). The estimated completion date for both projects is 1 September 2011.

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 IODP-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]
South Pacific Gyre Microbiology	329	Papeete, Tahiti	9 October–13 December 2010	65 (4/61)	61 (9/52)	S. D'Hondt, F. Inagaki	TAMU: C. Alvarez-Zarikian* LDEO: H. Evans^
Louisville Seamount Trail	330	Auckland, New Zealand	13 December 2010–12 February 2011	61 (5/56)	56 (8/48)	A. Koppers, T. Yamazaki	TAMU: J. Geldmacher* LDEO: L. Anderson^
Transit		Auckland, New Zealand	12 February–15 March 2011	31 (5/26)			
Costa Rica Seismogenesis Project	334	Puntarenas, Costa Rica	15 March–13 April 2011	29 (2/27)	27 (1/26)	P. Vannucchi, K. Ujiie	TAMU: N. Stroncik* LDEO: A. Malinverno^

Expedition		Port (Origin)	Dates[1, 2]	Total Days (Port/ Sea)	Days at Sea (Transit[3]/ Ops)	Co-Chief Scientists	USIO Contacts[4]
Superfast Spreading Rate Crust 4[5]	335	Puntarenas, Costa Rica	13 April–3 June 2011	51 (4/47)	47 (6/41)	D. Teagle, B. Ildefonse	TAMU: P. Blum* LDEO: G. Guerin^
Non-IODP							
Mid-Atlantic Ridge Microbiology	336	Bridgetown, Barbados	16 September–17 November 2011	62 (2/60)	60 (10/50)	K. Edwards, W. Bach	TAMU: A. Klaus* LDEO: L. Anderson^
Mediterranean Outflow	339	Ponta Delgada, Azores	17 November–17 January 2012	61 (5/56)	56 (5/51)	J. Hernández-Molina, D. Stow	TAMU: C. Alvarez Zarikian* LDEO: T. Williams^
Lesser Antilles[6]	340	Lisbon, Spain	17 January–18 March 2012	61 (5/56)	56 (14/42)	Le Friant, Ishizuka	TAMU: N. Stroncik* LDEO: A. Slagle
Non-IODP							
South Alaska Margin	341	Victoria, British Columbia	15 July–14 September 2012	61 (5/56)	56 (8/48)	Jaeger, Gulick	TAMU: K. Petronotis LDEO: H. Evans

Notes: TBD = to be determined; N/A = not applicable.
[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 www.iodp-usio.org.
[5] Science Party will disembark in Balboa, Panama (3 June 2011).
[6] Science Party boards in St. Johns, Antigua (tentative) on ~3 February 2012; expedition ends in Curaçao.

USIO Expeditions

Expedition 329: South Pacific Gyre

Postexpedition Activities

Final editing and input to the *Preliminary Report* was completed but publication was postponed to allow for submission of a manuscript to *Science*.

Expedition 330: Louisville Seamount Trail

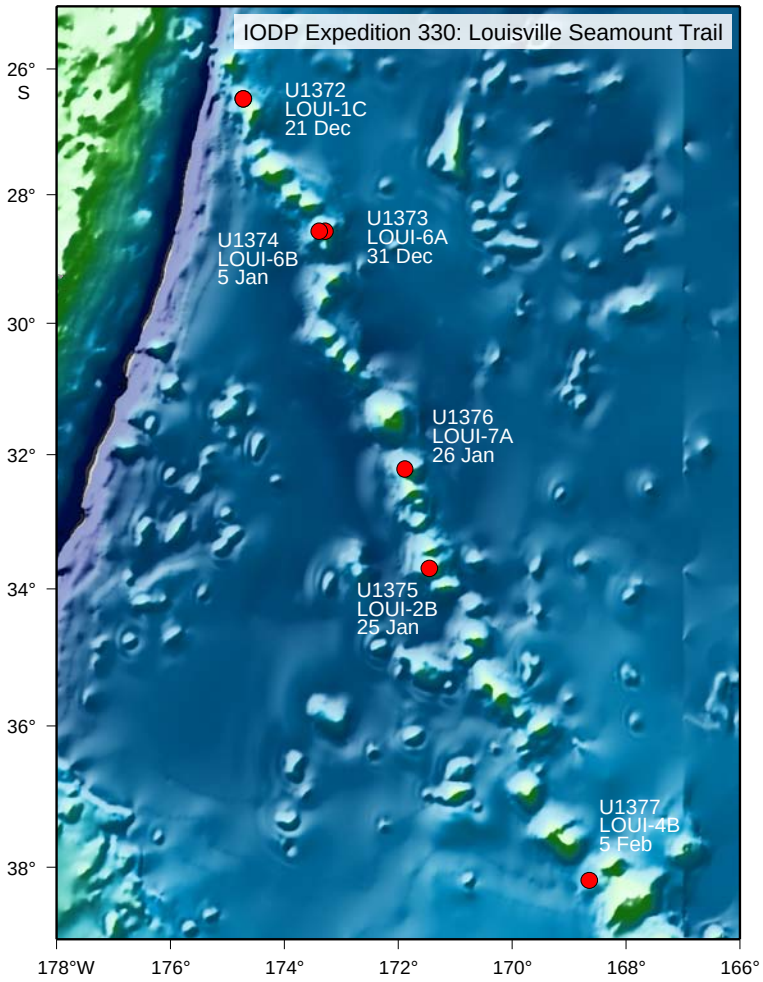
Expedition Staffing

Expedition 330 Science Party Staffing Breakdown	
Member Country/Consortium	**Participants**
USA: United States Science Support Program (USSSP)	8
Japan: Japan Drilling Earth Science Consortium (J-DESC)	8
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	8
South Korea: Korea Integrated Ocean Drilling Program (K-IODP)	0
People's Republic of China: IODP-China	1
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	2
India: Ministry of Earth Science (MoES)	0

Expedition Operations

Several locations for Expedition 330: Louisville Seamount Trail presented challenging drilling environments. The drill string became stuck in Holes U1372A and U1376A, which required severing the pipe at the top of the bottom-hole assembly (BHA) in both cases. A re-entry into Hole U1373A failed when the free-fall funnel (FFF) tipped over, and another re-entry was made into an open ~10 inch hole (i.e., with no FFF). A request for a new site (LOUI-6B) was received, reviewed by the Environmental Protection and Safety Panel (EPSP), and approved to allow for an alternative drill location on Guyot 28.6°C.

Expedition 330: Louisville Seamount Trail Site Map.



Expedition 330: Louisville Seamount Trail Coring Summary.

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1372	U1372A	26°29.6017'S	174°43.7506'W	1957.6	38	232.9	139.70	60.0
				Site U1372 Totals:	**38**	**232.9**	**139.70**	**60.0**
U1373	U1373A	28°33.8907'S	173°16.8499'W	1447.0	13	65.7	47.22	71.9
				Site U1373 Totals:	**13**	**65.7**	**47.22**	**71.9**
U1374	U1374A	28°35.7513'S	173°22.8294'W	1559.0	73	522.0	458.16	87.8
				Site U1374 Totals:	**73**	**522.0**	**458.16**	**87.8**
U1375	U1375A	33°41.9020'S	171°26.9395'W	1258.0	2	11.5	1.50	13.0
	U1375B	33°41.7860'S	171°27.0753'W	1258.0	1	8.5	0.57	6.7
				Site U1375 Totals:	**3**	**20.0**	**2.07**	**10.3**
U1376	U1376A	32°13.0429'S	171°52.8396'W	1503.3	23	182.8	136.17	74.5
				Site U1376 Totals:	**23**	**182.8**	**136.17**	**74.5**
U1377	U1377A	38°11.2500'S	168°38.2587'W	1262.0	6	53.3	8.76	16.4
	U1377B	38°11.2500'S	168°38.2587'W	1262.0	37	57.5	5.00	37.0
				Site U1377 Totals:	**43**	**110.8**	**13.8**	**12.4**
				Expedition 330 Totals:	**193**	**1134.2**	**797.08**	**70.3**

Science Results

The Louisville Seamount Trail is a 4300 km long volcanic chain built during the past 80 m.y. as the Pacific plate moved over a persistent mantle melting anomaly or hotspot. Because of its linear morphology and its long-lived, age-progressive volcanism, Louisville is the South Pacific counterpart of the much better studied Hawaiian-Emperor Seamount Trail. Together, Louisville and Hawaii are textbook examples of two primary hotspots that have been keystones in deciphering the motion of the Pacific plate relative to a set of "fixed" deep-mantle plumes. However, drilling during ODP Leg 197 in the Emperor Seamounts documented a large ~15° southward motion of the Hawaiian hotspot prior to 50 Ma, leading to two end-member geodynamic models that were tested during Expedition 330: (1) Did the Hawaiian and Louisville hotspots move in concert and thus constitute a moving reference frame for modeling plate motion in the Pacific, or (2) could they have moved independently, as predicted by mantle flow models that reproduce the observed latitudinal motion for Hawaii but that predict a largely longitudinal shift for the Louisville hotspot?

In addition, existing data from dredged lavas suggest that the mantle plume source of the Louisville hotspot has been remarkably homogeneous for as long as 80 m.y. These lavas are predominantly alkali basalts and likely represent a mostly alkalic shield-building stage, which is in sharp contrast to the massive tholeiitic shield-building stage of Hawaiian volcanoes. Geochemical and isotopic data for the lavas recovered during Expedition 330 will provide insights into the magmatic evolution and melting processes of individual Louisville volcanoes, their progression from shield-building to postshield and (maybe) posterosional stages, the temperature and depth of partial melting of their mantle plume source, and the enigmatic long-lived and apparent geochemical homogeneity of the Louisville mantle source. Collectively, this will enable characterization of the Louisville Seamount Trail as a product of one of the few global primary hotspots, better constraint of its plume-lithosphere interactions, and further testing of the hypothesis that the Ontong Java Plateau formed from the plume head of the Louisville mantle plume around 120 Ma.

The drilling strategy of Expedition 330 replicated that of ODP Leg 197, targeting Louisville seamounts that have ages similar to the Detroit, Suiko, Nintoku, and Koko Seamounts in the Emperor Seamount Trail. In total, five seamounts were drilled in the Louisville Seamount Trail: Canopus, Rigil, Burton, Achernar, and Hadar Guyots (old to young). Analysis of a large number of time-independent in situ lava

flows and other volcanic eruptive products from these seamounts using modern paleomagnetic, $^{40}Ar/^{39}Ar$ geochronological, and geochemical techniques will enable direct comparison of the paleolatitude estimates and geochemical signatures between the two longest-lived hotspot systems in the Pacific Ocean.

Expedition 330 drilled into the summits of the five Louisville guyots and reached volcanic basement at four of these drilling targets. In two cases, larger seamount structures were targeted and drilling occurred near the flanks of these ancient volcanoes. In the other three cases, smaller edifices were selected and drilling occurred closer to their centers. Some of the drill sites were capped with only a thin layer of pelagic ooze between 6.6 and 13.5 m thick. These were cored using a low-rotation gravity-push technique with the rotary core barrel to maximize recovery. However, no pelagic ooze was present at Sites U1373 and U1376, and the holes were started directly into cobble-rich hardgrounds. In all cases, the bulk of the seamount sediment cover comprised sequences of volcanic sandstones and various kinds of basalt breccia or basalt conglomerate, which often were interspersed with basaltic lava flows, the spatter/tephra products of submarine eruptions, or other volcanic products, including auto-brecciated flows or peperites. Several intervals of carbonate were also cored, with a ~15 m thick algal limestone reef at Site U1376 on Burton Guyot. Condensed pelagic limestone units were also recovered on three of the other seamounts, but these units did not exceed 30 cm in thickness. Despite their limited presence in the drilled sediment, these limestones provide valuable insights for the paleoclimate record at high ~50° southern latitudes since Mesozoic time.

Several Louisville sites progressed from subaerial conditions in the top of volcanic basement into submarine eruptive environments and, for some of the sites, drilling of the igneous basement immediately started in submarine volcanic sequences (e.g., Sites U1376 and U1377 on Burton and Hadar Guyots, respectively). Coring reached more than 100 m into the igneous basement at three sites: 187.3 m at Site U1372, 505.3 m at Site U1374, and 140.9 m at Site U1376. Because of unstable hole conditions, coring at Site U1375 did not reach basement and at Site U1375 reached only 38.2 m into basement. Even so, drilling during Expedition 330 resulted in a large number of in situ lava flows, pillow basalts, or other types of volcanic products such as auto-brecciated lava flows, intrusive sheets or dikes, and peperites. In particular, the three holes on Canopus and Rigil Guyots (the two oldest seamounts drilled in the Louisville Seamount Trail) resulted in adequate numbers of in situ lava flows to average out paleosecular variation, with probable eruption ages estimated at ~78 and 73 Ma, respectively. Remarkably, large quantities of hyaloclastites, volcanic sandstones, and basaltic breccias were also recovered at all drill sites, which in many cases show consistent paleomagnetic inclinations compared to the lava flows bracketing these units. At Site U1374 on Rigil Guyot, we also observed a magnetic polarity reversal in the cored sequence. Overall, this is very promising for determining a reliable paleolatitude record for the Louisville Seamounts following detailed postexpedition examinations.

Deeper penetrations of several hundred meters required bit changes and reentries using free-fall funnels. Basement penetration rates were 1.8–2.5 m/h, depending on drill depth. In total, 1114 m of sediment and igneous basement were drilled at five seamounts, with 806 m recovered (average recovery = 72.4%). A total of 522 m was drilled at Site U1374 on Rigil Guyot, with a record-breaking 87.8% recovery. Nearly all Expedition 330 core material is characterized by low degrees of alteration, providing a large quantity of samples of mostly well-preserved basalt containing, for example, pristine olivine crystals with melt inclusions, fresh volcanic glass, unaltered plagioclase, carbonate, zeolite and celadonite alteration minerals, various micro- and macrofossils, and, in one case, mantle xenoliths and xenocrysts. The large quantity and excellent quality of the recovered sample material allowed us to address all of the scientific objectives of this expedition.

Logging Summary: Wireline logging was carried out at Sites U1374 and U1376 during Expedition 330; however, hole instability and shallow penetration prevented logging at the other sites that were drilled. The wireline logging strings deployed included the triple combination (bulk density, neutron porosity, resistivity, and natural gamma ray), Formation MicroScanner (FMS)-sonic (resistivity images and elastic wave velocity), ultrasonic borehole imager (UBI), and Gottingen Borehole Magnotometer (GBM). Besides measuring in situ physical properties, the logging instruments collected resistivity and ultrasonic

borehole images to characterize the lithology and structure of volcanic formations. Three-component magnetic data acquired by the GBM will supplement the analysis of the paleolatitude record for the Louisville Seamount Chain.

Expedition 334: Costa Rica Seismogenesis Project

Expedition Planning

In addition to typical science, operational, and logistical planning that occurs immediately prior to an expedition, planning efforts this quarter were dominated by securing LWD tools, insurance, and related support equipment and making the associated logistical arrangements.

Expedition Staffing

Expedition 334 Science Party Staffing Breakdown	
Member Country/Consortium	**Participants**
USA: United States Science Support Program (USSSP)	8
Japan: Japan Drilling Earth Science Consortium (J-DESC)	8
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	8
South Korea: Korea Integrated Ocean Drilling Program (K-IODP)	1
People's Republic of China: IODP-China	1
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	1
India: Ministry of Earth Science (MoES)	1

In addition, a Costa Rican scientist sailed as an observer.

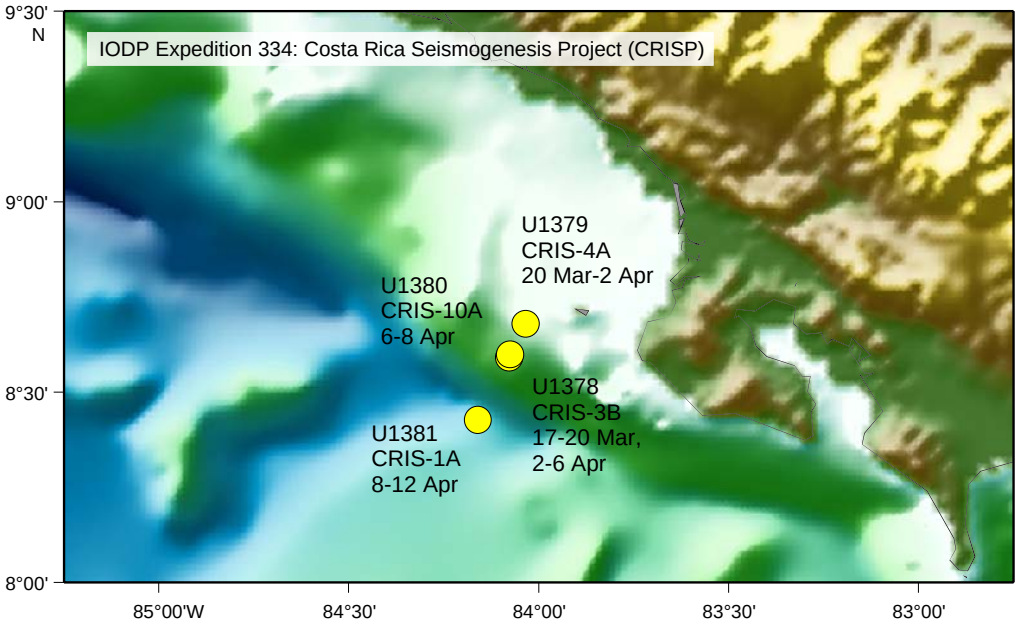
Clearance and Permitting Activities

Clearance was received on 8 March 2011 to operate in Costa Rican waters.

Environmental Assessment

A safety monitoring protocol for deploying LWD tools prior to coring was submitted for EPSP and TAMU safety panel review on 21 January 2011 and was recommended for approval in mid-February.

Expedition 334 Site Map



Expedition 335: Superfast Spreading Rate Crust 4

Expedition Planning

Planning efforts this quarter focused on science, technical, and logistics planning, including completion of hardware to facilitate whole-round core imaging and developing description templates for gabbros. In addition, invited members of the Expedition 335 Science Party participated in a core description workshop where they were introduced to the DESClogik system.

Expedition Staffing

Science staffing was completed in January 2011, and efforts continued toward filling the last education and outreach berth.

Clearance and Permitting Activities

The USIO received clearance for the Superfast CRISP contingency requirement to core and log at the remaining CRISP sites if Hole 1256D is not drillable.

Expedition 336: Mid-Atlantic Ridge Microbiology

Expedition Planning

Planning for Expedition 336 continued with biweekly conference calls between circulation obviation retrofit kit (CORK) proponents and TAMU representatives. Umbilical lines were specified, quoted, and the order submitted; lateral CORK (L-CORK) designs were finalized and sent out for bids; and plumbing designs were completed and preparation of bid packages began. Scoping on fiberglass casing options continued with preparations for an order to be placed at the beginning of the next quarter.

Expedition Staffing

Science staffing was almost completed, pending the last open berth and replacement of a scientist who withdrew.

Expedition 339: Mediterranean Outflow

Expedition Planning

An Expedition 339 pre-expedition meeting was held on 3 and 4 March 2011 in College Station, Texas, with the Co-Chief Scientists and the proponent for 763-APL in attendance.

Expedition Staffing

Applications were received from the program member offices (PMOs). Co-Chief Scientist review began, with first-round invitations expected at the beginning of the next quarter.

Expedition 340: Lesser Antilles Volcanism and Landslides

Expedition Planning

The Lesser Antilles Volcanism and Landslides expedition was approved to replace the Cascadia Margin expedition, which was removed from the schedule (see “Cascadia Margin” below for more information). A pre-expedition meeting was scheduled for 9 and 10 May 2011.

Expedition Staffing

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

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

Expedition Planning

A pre-expedition meeting was scheduled for 5 and 6 May 2011 and a webinar for interested participants was scheduled for 13 April 2011.

Expedition Staffing

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

Cascadia Margin Expedition

Expedition Planning

An engineering planning meeting took place on 14 January 2011 with several proponents in attendance. Following the meeting, the expedition was removed from the FY12 expedition schedule in response to budgetary and timeline issues.

Transit Activities

Maintenance was conducted and several shipboard improvements were made during the 12 September–15 March 2011 transit from Auckland, New Zealand, to Puntarenas, Costa Rica. A new refrigeration unit was installed in the Microbiology cold room to improve space utilization and performance, inventories in ships stores were completed, spill response equipment was reorganized, shelving was added in the core refrigerator, and the radioisotope van was cleaned and equipment inventoried. Routine and nonroutine equipment monitoring and repair was under way throughout the transit.

Analytical Systems

Analytical Systems Acquisitions and Updates

The USIO developed and deployed a novel system for capturing images of the external core section for hard rock cores. A new core holder and adapters to the split-core imaging system were designed and fabricated. The images captured can be compared with FMS log data.

Laboratory Working Groups

Kickoff meetings were held for laboratory working groups comprising technical and science staff members. These working groups will provide oversight, research direction, and quality assurance for the methods, procedures, and analytical systems both on the *JOIDES Resolution* and on shore. Plans were made for scheduling regular meetings to review cruise evaluations, expedition technical reports, and issues management communications to provide advice on corrective actions and potential developments for laboratories.

Projects and Other Activities

Project Management

USIO staff worked throughout the quarter to complete analytical systems projects identified through the PPM process (see “Projects and Other Activities” in “Management and Administration” for more information). Of the 20 projects assigned to Technical and Analytical Services, 5 were completed and efforts were devoted toward 8 more projects.

Core Description Workshop

A core description workshop was held with invited scientists from the Expedition 335 Science Party. Since this would be the first expedition using the new core description protocol and software as applied to deep crustal rocks, the workshop helped to define intentions and served to introduce members of the Science Party to the DESClogik system.

Geosciences Laboratory (ODASES)

Six different researchers utilized the X-ray fluorescence (XRF) scanner at the TAMU Ocean Drilling and Sustainable Earth Science (ODASES) Geosciences Laboratory during the quarter, keeping the instrument booked for 89 of the 90 available calendar days. Avaatech representatives repaired a failed servomotor and replaced a faulty cooling pump during this time, as well. The shore laboratory imaging logger was

made available to visiting scientists who wished to image their core sections while using the XRF scanner, and Gulf Core Repository (GCR) staff continued the working half core image inventory project.

Projects and Other Activities

Large Diameter Pipe Handling Infrastructure

Discussions continued on the details of the contractual agreement with Howard and Associates Inc. (HAI). Contract finalization is expected early in the next quarter. Columbia University sent comments on the Blohm and Voss (B&V) nondisclosure agreement and the USIO is currently working on B&V's response to those comments. HAI will have significant involvement in the technical aspects of this project, including engineering oversight, elevator design and feasibility assessment, final equipment recommendations, quote revisions, manufacturing oversight, prototype testing, functional testing on board the ship, and producing a final report. B&V will begin working on detailed engineering drawings that include the 350- and 500-ton elevators, elevator handler, bushing, and base plates The drawings will also include specifications of overall dimensions, weight, and center-of-gravity location required for determining if the infrastructure designs can be used on board the *JOIDES Resolution* before manufacturing begins.

Magnetic Susceptibility Sonde Rebuild

Testing of signals from the reference, drive, and measurement coils in the low-resolution sensor neared completion and assembly of the high-resolution sensor began. Testing of different metals for the field joints was completed and fabrication of pressure housings began.

Multifunction Telemetry Module Project

Testing of the MFTM-Electrical Release System (ERS)-motion decoupled hydraulic delivery system (MDHDS)-temperature-to-pressure (T2P) tool configuration was successfully completed in late January 2011, and potential deployment of the entire system in the Schlumberger Genesis well was targeted for June 2011.

Development of the Center for Dark Energy Biosphere Investigations (C-DEBI) MFTM continued and testing was scheduled to begin in mid-May 2011. This module will be used for deploying a combination of LDEO and Schlumberger tools along with the deep exploration biosphere investigative tool (DEBI-t) that is being developed by scientists and engineers from the University of Southern California, the National Aeronautic and Space Administration Jet Propulsion Laboratory at the California Institute of Technology, and Photon Systems, Inc.

Wireline Heave Compensating System

The USIO and Schlumberger continued data collection under different conditions (i.e., water depth, heave, and so on) prior to beginning logging operations in open holes for optimizing the system's capabilities. The USIO will continue to routinely assess results and work with Schlumberger to optimize the system.

Wireline Logging Routine Maintenance

Plans neared completion for projects to be conducted during the upcoming maintenance period. Some of the projects identified include wireline tool maintenance, wireline sheave replacement, and fixing a kink in the wireline spool that occurred while performing severing operations during Expedition 330. The wireline tools will be shipped to the Schlumberger office in Webster, Texas, for routine maintenance and for the upcoming DEBI-t testing once the *JOIDES Resolution* arrives in Curaçao.

Legacy Documentation

The USIO routinely archives electronic copies of documents and reports produced on behalf of IODP. Legacy preservation activities for Technical, Engineering, and Science Support this quarter included

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 SAS.

Multisensor Magnetometer Module

The FY11 Engineering Development project is a new magnetometer tool under development at LDEO. The multisensor magnetometer module (MMM) 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. This downhole magnetic information will complement core sample magnetic measurements and significantly enhance IODP's ability to magnetostratigraphically date sediment sequences.

Work was finalized on the specifications of the nonmagnetic pressure housings for the MMM, and work began toward determining the location of the different instruments within the pressure housings. Testing of the different sensors began.

MFTM for SCIMPI Deployment

IODP-MI approved and funded an Engineering Development project this quarter to build an MFTM that will be used in SCIMPI deployment. The SCIMPI is a borehole observatory sensor system that incorporates established modular technology to capture data from subseafloor sensors over long time periods (months to years) to measure in situ physical and hydrogeological properties in IODP boreholes.

Work on the SCIMPI MFTM began shortly after funding was received in mid-February 2011.

CORE CURATION

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

Curation Strategies and Expedition Core Sampling

The USIO planned sample and curation strategies for Expedition 339. USIO Curatorial Specialists supervised shipboard core sampling during Expeditions 330 and 334 and reviewed all shipboard and moratorium-related requests in coordination with the other members of the expedition Sample Allocation Committees. A total of 24,254 samples were taken during Expedition 330, including shipboard and personal samples. There were 34 personal sample requests.

Sample/Data Request System

IODP Curatorial staff reviewed and tested the second version of the new IODP-MI Sample/Data Request System this quarter, which led to a third and final design iteration. Input from Program-wide curatorial staff was incorporated into this process. Plans were also made for the programmer to come to TAMU early in the next quarter to go over these final changes with staff so they can be implemented as quickly as possible.

Core Curation

All IODP core sample requests are handled by the GCR, Bremen Core Repository (BCR), and Kochi Core Center (KCC). The USIO conducted all responsibilities associated with curation of core collections at the GCR, providing services in support of core sampling, analysis, and education.

The "Repository Activity" table below provides a summary of the number of samples taken during the quarter, details of the sample requests, and tours of the GCR.

Repository Activity

Gulf Coast Repository	Visitors	Request Number, Name, Country	Number of Samples
		22237A, Diester-Haas, Germany	106
		283IODP, Holbourn, Germany	172
		983IODP, McHugh, USA	623
	3	22024B, Fildani, USA	205
		21692B, Faak, Germany	7
	1	22241A, Jaeger, USA	62
		1008IODP, Jaeger, USA	273
	1	22232A, Marsaglia, USA	41
	1	22239A, Lyle, USA (XRF)	10
		22250A, Hay, Canada	16
		22188B, Gill, USA	74
	1	21904B, Hague, USA	4
	1	22047B, Alloway, New Zealand (XRF)	16
		1035IODP, Takata, Japan	15
		22248A, Schueth, USA	199
		22252A, Egan, United Kingdom	27
		21312B, Coadic, France	103
		271IODP, Erhardt, USA	117
	1	22107A, Castillo, USA	22
		22260A, Ravizza, USA	11
		987IODP, McKay, New Zealand	270
		22253A, Van Hoesen, USA	6
		1013IODP, Houben, Netherlands	41
		1016IODP, Warren, USA	49
	1	22203A, Brandl, Germany	506
		21921C, Jung, Germany	238
	1	22265A, Joseph, USA	12
		257IODP, Passchier, USA	254
		22255A, Osborne, Germany	82
		22278A, McManus, USA	20
		22273A, Liebrand, United Kingdom	805
		1127IODP, Palike, United Kingdom	30
		22256A, Smart, United Kingdom	11
		22279A, Stoll, Spain	79
	1	22170D, Stepanova, Russia	13
	3	22284A, Lyle, USA (Education)	No samples
		20815D, Spezzaferri, Switzerland	13
		22285A, Chetelat, United Kingdom	43
		21550C, Schneider, USA	11
		652IODP, Gonzalez, Spain	109
	1	21341I, Rafter, USA	22
	1	1000IODP, Diederick, Germany (XRF)	269
	1	915IODP, Espejo, Spain (XRF)	199
	184	Public Relations Tours (11)	No samples
Total science	**15**	**42**	**5,185**
Total education:	**3**	**1**	**0**
Total public relations:	**184**	**0**	**0**
Total:	**202**	**43**	**5,185**

Use of Core Collection

The USIO promotes outreach use of the GCR core collection by conducting tours of the repository and providing materials for display at meetings and museums. Public relations tours and educational visits to the repository are shown in the Sample Requests table above.

Three core sections from the Gulf of Mexico, three core replicas, and other display materials were loaned to the Texas Maritime Museum in Rockport, Texas, for an IODP exhibition which will run through September 2011.

Legacy Documentation

The USIO routinely archives electronic copies of Core Curation–related documents and reports produced on behalf of IODP.

Sample Request File Scanning Project

In October 2010, GCR staff began scanning ODP and DSDP paper sample request files, which contain some information not included in our database. The PDF file formats will reduce the physical storage space of these documents and will make content more accessible when there is a need to research extra information on old use of the cores. Work on this project continued during the quarter. As of the end of March 2011, all GCR thin sections from DSDP Legs 1–64 were scanned and available online, and 28% of the sample request paper file documentation was scanned and is available electronically.

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

Data collected on board the *JOIDES Resolution* during Expeditions 329 and 330 were added to the LIMS database on shore. These data are in moratorium and available to their respective Science Parties online with password protection. Expedition 317 data entered the public domain and were made available online and from the Data Librarian.

Log Database

The following data were processed and put online during the quarter:

- Expedition 330, Holes U1374A and U1376A: standard and image data (FMS)
- Expedition 334, Holes U1378A and U1379A: standard and image data (Azimuth Density Neutron)

As of 31 March 2011, USIO Expedition 317 is in the public domain.

The appropriate scripts that run the *JOIDES Resolution*'s online database were modified to eliminate links to shore that would use bandwidth (for example, links to the logging reports or to Frequently Asked Questions). Therefore, some of the scripts now exist in two forms that require separate maintenance. The decision was also made to run the scripts manually on board whenever new data are added or replaced, rather than relying on a sync job.

Expedition Data Requests

LIMS Database

Top 10 Countries Accessing LIMS Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	189
2	Japan	51
3	United Kingdom	30
4	Australia	17
5	Switzerland	17
6	Germany	16
7	South Korea	16
8	Unknown Country	15
9	Hong Kong	12
10	New Zealand	11
	Others	58
	Total	**432**

*Visits by USIO-TAMU employees were filtered out.

Top LIMS Web Queries*		
Rank	**Query**	**Uploads**
1	LIMS Client	350
2	Science Data	234
3	Samples	226
	Total	**810**

*Visits by USIO-TAMU employees were filtered out.

Janus Database

Top 10 Countries Accessing Janus Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	1,116
2	Germany	493
3	United Kingdom	481
4	Japan	203
5	Western Europe	104
6	China	83
7	The Netherlands	65
8	Spain	65
9	France	61
10	Italy	59
	Others	442
	Total	**3,172**

*Visits by USIO-TAMU employees were filtered out.

Top 20 Janus Web Queries*		
Rank	**Query**	**Uploads**
1	Samples	1,169
2	Imaging: photos	1,147
3	Pointcalc	889
4	Site summaries	481
5	Physical properties: GRA	441
6	Hole trivia	381
7	Core summaries	371
8	Requests	336
9	Physical properties: MSL	313
10	Paleo: paleo occurrances	303
11	Hole summaries	300
12	Physical properties: color data (RSC)	220
13	Leg summaries	198
14	Physical properties: PWL	192
15	Physical properties: MAD	174
16	Chemistry: rockeval	140
17	Chemistry: carbonate	131
18	Depth calculations	122
19	Site details	121
20	Site sum trivia	117
	Others	1,560
	Total	**9,106**

*Visits by USIO-TAMU employees were filtered out.

Other Web Statistics*		
Database query hits:		
	Entire site (successful)	17,126
	Average per day	190
Visitor sessions:		
	Total number of visitor sessions	3,172
	Average per day	35
	Average length of visit	00:12:16
	International visitor sessions	64.75%
	Visitor sessions of unknown origin	0.06%
	Visitor sessions from United States	35.18%
Visitors:		
	Unique visitors	1,875
	Visitors who only visited once	1,408
	Visitors who visited more than once	467
	Average visits per visitor	1.69

*Visits by USIO-TAMU employees were filtered out.

Data Requests to Data Librarian*	
Requests	**Total**
Country:	
United States	12
Japan	2
China	2
United Kingdom	1
France	1
New Zealand	1
Spain	1
Total	**20**
Data:	
Depth questions	4
Photo requests	7
Seismic	1
Sample data	2
Gas data	1
Hole data	3
GRA	1
Chemistry: ICPAES	1
Total	**20**

*Visits by USIO-TAMU employees were filtered out.

Log Database

Top 10 Countries Accessing Log Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	395
2	United Kingdom	155
3	Germany	101
4	France	72
5	Japan	66
6	China	59
7	Denmark	34
8	Canada	28
9	Spain	22
10	Austria	19
	All others	206
	Total	**1,157**

*Visits by USIO-LDEO employees were filtered out.

Other Log Web Statistics*		
Database query hits:		
	Entire site (successful)	7,941
	Average per day	6.88
Visitor sessions:		
	Total number of visitor sessions	1,157
	Average per day	12.87
	Average length of visit	7:28
	International visitor sessions	48.06%
	Visitor sessions of unknown origin	17.80%
	Visitor sessions from United States	34.14%
Visitors:		
	Unique visitors	764
	Visitors who only visited once	665
	Visitors who visited more than once	492
	Average visits per visitor	2.36

*Visits by USIO-LDEO employees were filtered out.

Data Requests to Log Data Supervisor		
Expedition	**Request Number, Name, Affiliation, Country**	**Type of Data**
	There were no data requests for this period.	

Program-wide Access Portal
LIMS Reports Development

The USIO is developing a LIMS Reports application that will provide scientists with a simple, intuitive web interface to extract data and generate reports for scientific analysis. Once completed, the new LIMS Reports will support drill-down access to LIMS data (see "Software Development" for more information).

Operation, Maintenance, and Security
Continuous Integration Server for Corelyzer

The Corelyzer core visualization tool is required for stratigraphic correlation on certain expeditions; however, its support was recently threatened by the departure of the primary developer. To ensure that IODP could provide support for at least the current version of Corelyzer, the USIO configured a Mac Pro system to work as a continuous integration server for the Corewall products. This system hosts all the tools needed to compile the Corelyzer and Corellator source code into usable products for IODP.

Regional Integration Test Facility

Work on the Regional Integration Test Facility (RITF) continued during the quarter. The server operations team configured storage services, which are the foundation for supporting other RITF services that require a storage area network (SAN) architecture. Plans were made for all hardware and software to be configured by 1 June 2011, after which the RITF will be placed off-site and test management procedures will be developed.

Software Development

LIMS Reports

During this quarter, TAMU rechartered the LIMS Reports project and formally assigned a new project manager and diverse project team with broad experience. The project scope and clarification of deliverables and nondeliverables are provided below.

Project Scope and Deliverables

Project Scope: During expeditions, laboratories on board the *JOIDES Resolution* produce a vast amount of data that are stored in the LIMS. The LIMS Reports application will provide scientists with a simple, intuitive web interface to extract data and generate reports for scientific analysis. Specifically, this project encompasses the development of ~30 tabular-data reports by September 2011, with each report displaying the primary data relevant for that system and providing a description, definitions, and examples to guide scientists unfamiliar with the data. User feedback will guide future interface and performance enhancements.

Deliverables: Deliverables for this project include a user interface with public access via web services and user guide; data encompassing summaries, samples, physical properties, magnetism, chemistry, and images; software; and project documents, including an enhancement list for the next project phase and a closeout report.

Nondeliverables: Issues related to but not addressed by this project include descriptive data (which fall under another project), fixing data errors prior to report release, reports for new instruments, reports for third-party tools, formal external testing by the science community (which will occur as a follow-on activity), instrument quality control, and web services performance tuning.

Project Status

Work done at the beginning of the quarter provided a strong foundation for the LIMS Reports project team to move forward quickly. Four summary reports and 14 physical properties reports were released this quarter, bringing the reports to 56% completion. The current set of reports can be accessed at http://webserv.iodp.tamu.edu:8080/UWQ/. Feedback from USIO staff was encouraged.

Enhanced DESCLogik Application

TAMU formally assigned a project manager and team for the Enhanced DESCLogik Application project, which officially kicked off on 21 March 2011. The scope and clarification of deliverables are provided below.

Project Scope and Deliverables

Project Scope: The purpose of this project is to significantly enhance the tabular data capture functionality and interfaces of DESClogik, resulting in a more reliable and feature-rich application that is simpler to use and support. Improvements to DESClogik should enable shipboard scientists to be more successful in using the application to capture descriptive information for all geological subdomains, including sedimentology, petrology, paleontology, structural geology, and so on.

The planned enhancements are based on more than 100 issue reports collected from science users and staff during the past two years. The issues were analyzed and classified into features, major developments, and support issues. The features category included repairs, changes, and additions mainly to the tabular data capture functions. The major developments included mainly graphic data capture capabilities that currently exist in a rudimentary implementation and that need to be addressed in a future project based on an enhanced tabular capture application. Support issues included inadequate configuration of templates, data quality control, and training. These issues will also be more easily addressed with the enhanced tabular data capture application delivered with this project.

The prioritization process identified a total of 50 issues for implementation. The purpose of this project is to implement as many of these feature changes as time and resource constraints permit.

Deliverables: The deliverable of this project is an enhanced DESClogik application that is easier to use, more reliable, and that features a critical user interface based on implementation of the majority of the 50 feature changes listed in a separate requirements document.

Project Status

The DESCLogik project team reviewed requirements, completed the scope, identified potential risks, completed the work breakdown structure, and established testing and communication procedures. The issues/features were prioritized into high (16), medium (19), and low (15), in anticipation that schedule constraints may not allow completion of all desired work.

Legacy Documentation

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

Development Projects

Checking and editing of the drop-modulated technology (DMT) scanned core images of ODP Legs 118, 149, 173, and 176 (in .tif and .jpeg format) was completed in January 2011. The files were incorporated into the permanent archive at LDEO Borehole Research Group, with the final destination of the files undetermined.

Log data and operational reports needed for the Operations Database were retrieved from end-of-expedition DVDs or obtained directly from Schlumberger.

IODP Inventory Update

The data inventory includes data from USIO Expeditions 301, 303–309/312, 317, 318, 320/321, 323, 324, 327–330, and 334; ESO Expeditions 302 and 310; and CDEX Expedition 314 (except Hole C0003A).

Other Projects and Activities

LDEO Operations Database Improvements

The Operations Database was improved by aligning its schema with that of the Log Database to allow better organization of the various operations reports and the development of a web-based data entry form for Logging Scientists. Database search capabilities are being improved to better navigate between Ops data and Log Data.

PUBLICATIONS

IODP Publication Services provides publication support services for IODP riserless and riser drilling expeditions; editing, production, and graphics services for all required reports, technical documentation, and scientific publications as defined in the USIO contract with IODP-MI; and warehousing and distribution of IODP, ODP, and DSDP publications.

IODP Scientific Publications

Publication	Release Date	Digital Object Identifier	Comments
Preliminary Reports:			
Expedition 326: NanTroSEIZE Stage 3: Plate Boundary Deep Riser: Top Hole Engineering	February 2011	doi:10.2204/iodp.pr.326.2011	Edited and formatted for CDEX
Expedition 322: NanTroSEIZE Stage 2: Riserless Observatory	March 2011	doi:10.2204/iodp.pr.332.2011	Edited and formatted for CDEX

Publication	Release Date	Digital Object Identifier	Comments
Proceedings of the Integrated Ocean Drilling Program:			
Volume 317			
Canterbury Basin Sea Level	4 January 2011	doi:10.2204/iodp.proc.317.2011	
Volume 323			
Bering Sea Paleoceanography	15 March 2011	doi:10.2204/iodp.proc.323.2011	

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

Statistics for IODP-MI

At IODP-MI's request, the USIO compiled Program-related publications statistics for use as highlights in the new Science Plan. Statistics reflected data from *Science*, *Nature*, and 28 other journals from the Ocean Drilling Citation Database for years 2001 through 2010, along with cumulative database overviews for the same period. Information regarding IODP Publications web site visits/page views and data on the number of times IODP publications were resolved through the CrossRef digital object identifier (DOI) resolver tool were also provided to demonstrate the accessibility of Program science.

IODP Publications Management

IODP 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 IODP Sample, Data, and Obligations Policy (http://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 FY11 Q2	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	8
307	13 June 2008		4	3
311	27 June 2008		12	8
309/312	28 August 2008		9	9
310	4 November 2008		16	7
314/315/316	4 October 2010		27	14

Synthesis papers

Expedition	Submission Deadline (26 Months Postmoratorium)	Deadline Extensions Approved in FY11 Q2	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*	

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

Scientific Publication Distribution

IODP scientific publications are the primary method of disseminating IODP research to the scientific community and the public. Initial distribution of IODP scientific publications includes more than 800 program member offices, universities, libraries, and geological organizations worldwide, and the USIO provides additional print or electronic copies of legacy publications upon request. No additional publications were requested this quarter.

IODP Publications Web Site

The IODP Publications web site is hosted at TAMU.

FY11 Q2 IODP Publications Web Site	
Parameter	www.iodp.org/ scientific-publications
Page views	233,367
Site visits	71,059

IODP Digital Object Identifiers

IODP is a member of CrossRef, the official 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 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			
		January 2011	February 2011	March 2011	FY11 Q2 Total
IODP	10.2204	2,026	2,383	2,886	7,295
ODP/DSDP	10.2973	2,367	3,429	6,986	12,782

Publications Support

The USIO provided Publications Assistant services during USIO Expeditions 330 and 334 and hosted postexpedition meetings for USIO Expedition 327 and CDEX Expedition 331.

Technical Documentation

Technical documents produced by the USIO are available to users via the Cumulus Web Client (http://iodp.tamu.edu/tasapps/) once they reach the technical draft stage. Technical documents in production during the first two quarters of FY11 are shown in the table below.

Technical Documentation	FY11 Q2 Status
Quick start guides	
ICP-AES quick start guide	Sent out for technical review
Coulometer quick start guide	Sent out for technical review
Discrete analyzer quick start guide	Sent out for technical review
Ion chromatograph quick start guide	Sent out for technical review
Strength quick start guide	Sent out for technical review
User guides	
Wayne Kerr component analyzer user guide	Sent out for technical review
Thermal conductivity (TK04) user guide	Sent out for technical review
Strength user guide	Sent out for technical review
Coulometer user guide	Sent out for final approval
ICP-AES user guide	Sent out for final approval
ICP Hard Rock preparation guide	Sent out for final approval

Technical Documentation	FY11 Q1 Status
XRD user guide	Sent out for final review
XRD EVA software quick start guide	Sent out for final review

Legacy Documentation

The USIO routinely archives electronic copies of documents, reports, and scientific publications produced on behalf of IODP. Documents archived this quarter included all scientific publications produced during the quarter, the FY11 Q1 report, the FY10 Annual Report, and planning documentation for reporting deliverables.

Other Projects and Activities

Society for Technical Communication Awards

The USIO won three awards in the Houston Chapter of the Society for Technical Communication (STC) annual awards competition, including Awards of Excellence in the category of informational materials for the IODP Expedition 317 *Preliminary Report* and the IODP-USIO FY09 Annual Report. Both entries will advance to the STC International Competition.

The Ion Chromatograph User Guide won an Award of Merit in the user support materials category. This user guide is one of the many shipboard laboratory instrument guides and manuals that are being developed through the USIO-TAMU technical documentation process approved in late 2007.

EDUCATION

USIO education activities are supported by NSF through other Program integration costs (OPIC). The USIO is responsible for developing and disseminating expedition-specific and thematic education activities and materials for elementary through post-secondary and free choice–learning 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. The USIO also conducts diversity outreach initiatives to allow minority students to pursue studies in earth systems sciences or to explore careers in scientific ocean drilling and large-scale science program management.

Professional Development

School of Rock 2011

Planning began for an all-years School of Rock review and assessment meeting during the summer of 2011. This meeting would bring together representatives from every School of Rock workshop to discuss the impact of the program on their teaching, review their School of Rock–related activities and accomplishments to date, and share ideas for improvements and innovations for the program moving forward.

Onboard Educator Program

School of Rock 2009 alumnus K. Kurtz and videographer L. Strong sailed as Onboard Education Officers during Expedition 330: Louisville Seamount Trail. During the expedition, Kurtz and Strong produced more than 25 live video events, three blogs, eight new videos featuring expedition science and life at sea, and a number of contests on the *JOIDES Resolution* Facebook page, leading to increased participation.

At the end of this quarter, J. Saltzman (Stanford University) set sail as the Onboard Education Officer for Expedition 334: CRISP. Saltzman planned a solid schedule of events focusing on groups of teachers and students with whom she works at Stanford.

Educational Outreach Events

The Educators Showcase

IODP was represented at The Educators Showcase held during the last two weeks of January 2011 at the Brazos Valley Museum of Natural History in Bryan, Texas. This event, which concluded with a teacher workshop on 5 February 2011, gave area teachers the opportunity to come in at their convenience, browse through materials, and take samples home. IODP materials featured at the event included posters, DVDs, bookmarks, pencils, and core replicas showing the Cretaceous/Tertiary boundary (ODP Leg 171B) and Paleocene–Eocene Thermal Maximum (ODP Leg 208).

Aggieland Saturday Outreach Event

On 19 February 2011, USIO staff manned a booth at TAMU's Aggieland Saturday outreach event to high school seniors, talked to interested students, displayed cores, and handed out DVDs and posters.

American Association for the Advancement of Science Family Science Days

USIO staff presented ocean drilling science at the American Association for the Advancement of Science (AAAS) Family Science Days event held 19 and 20 February 2010 as part of the AAAS Annual Meeting. Held in Washington, DC, this event attracted more than 2,000 families. In addition to staffing an IODP booth, the USIO hosted a live Skype connection to the *JOIDES Resolution* as a part of the stage show during the event.

National Science Teachers Association Conference

IODP had a strong presence at the annual National Science Teachers Association (NSTA) conference held 10–13 March 2011 in San Francisco, California, where USIO staff presented three workshops and four share-a-thons and staffed a newly designed booth with volunteers who distributed more than 500 packets of educational materials.

Engaging Early Career Scientists in Future Scientific Ocean Drilling

TAMU hosted a workshop from 30 March through 1 April 2011 for early career U.S. scientists to share ideas for new projects and experiments that fit within the new Science Plan, as well as learn about how to become an active member of the drilling community. USIO staff participated in the workshop, which was designed to foster the development of contacts, collaborations, and associations among participants that will enable future interactions and implementation of new and innovative applications of ocean drilling technology to problems in Earth, Ocean, and Life Sciences.

Virginia Museum of Natural History Workshops

In conjunction with the USSSP Distinguished Lecture Series, the Virginia Museum of Natural History hosted student programs on 25 February 2011 at which USIO staff members and School of Rock 2010 alumnus A. Swensrud shared the excitement and adventure of research done on board the *JOIDES Resolution* with 30 middle school students and 44 high school students from a local private school. The team also provided an all-day interactive workshop on 25 February 2011 for a small group of science educators who learned how to bring ocean drilling science to life in their classrooms through hands-on activities, educational materials, and social media tools.

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* web site, 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.

JOIDES Resolution Web Site and Social Networking

The joidesresolution.org web site 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, the site promoted Expeditions 330: Louisville Seamount Trail and 334: CRISP.

USIO Educational Web Site Statistics

FY11 Q2 Deep Earth Academy Web Sites*		
Web domain	**www.joidesresolution.org**	**www.oceanleadership.org/education/ deep-earth-academy**
Page views	56,504	23,678
Site visits	14,875	15,370

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

Videos and Video Broadcasts

The Expedition 330 team produced 27 live video events broadcast to a wide range of classrooms and museum programs. These events were all very positively reviewed. More than a dozen events werescheduled for Expedition 334, which will last just four weeks.

Educational Materials Development and Distribution

Materials developed this quarter included a new Tagging Microbe activity developed by Expedition 327 participants, a microbiology mini-poster, brand new K/T boundary core sticker pages, and a new booth backdrop for conferences and public events.

Materials were distributed at conferences and outreach activities and in response to requests received through the Deep Earth Academy web site (www.oceanleadership.org/education/deep-earth-academy/). Several USIO educational materials were published by unknown persons on a variety of "free for educators" sites, which resulted in more than 300 orders over the course of just a couple of days.

In addition, educational materials including large graphics, IODP videos, and a core replica were on display in an IODP exhibit mounted in the Oceans Gallery at the Auckland Museum from early January 2011 through the end of Expedition 330: Louisville Seamount Trail.

Scientists as Educators

The USIO provides regular opportunities for scientists to participate in educational programming. Numerous ship-based scientists participated in live ship-to-shore video broadcasts this quarter during Expedition 330—sharing their personal science experiences and stories with students worldwide. In addition, Expedition 327 Co-Chief Scientist A. Fisher and graduate student A. Turner worked at the USIO booth and presented at workshops during NSTA 2011 (see "Educational Outreach Events" for more information).

Strategic Partnerships

The USIO partnered with C-DEBI on developing a new microbiology poster, staffing the USIO booth at NSTA 2011, producing the J/aRt contest and new classroom activities, and planning for the provision of educational components for the post–Juan de Fuca expedition on the Atlantis during the summer of 2011.

Other activities this quarter include a partnership with the Texas Maritime Museum in Rockport, Texas, with facilitation from artist D. Bowman of the Expedition 327 outreach team to produce a temporary exhibition featuring the *JOIDES Resolution,* scheduled to open during the next quarter. A partnership with the Auckland Museum during Expedition 330 also resulted in a temporary exhibit there about the *JOIDES Resolution* and four live video events on the floor of the museum.

Outside Funding and Sponsorships

The USIO received notification of a $50,000 grant from C-DEBI for placing educators on a post–Juan de Fuca expedition on the R/V *Atlantis* during the summer of 2011.

Diversity Support Initiatives

IODP-USIO Diversity Internship

The call for applications for the Summer 2011 IODP-USIO Diversity Internship was widely published in February and March 2011 via the American Geophysical Union's *Eos* newsletter, several web sites that advertise internship opportunities, and internal and external listservs. The application deadline was set for 31 March 2011.

The Summer 2011 internship will begin in June 2011 in Science Communications at the Ocean Leadership office, where the selected intern will work closely with a mentor from the USIO communications group to conceive, develop, and disseminate new materials that help to heighten the Program's national and international visibility.

Future internship projects with a focus in science, engineering, education, or communications are in development and will take place at one of the institutions that comprise the USIO.

Legacy Documentation

Legacy Digital Library

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 the new Tagging Microbe activity developed by Expedition 327 participants, the microbiology mini-poster, new K/T boundary core sticker pages, and eight videos from Expedition 330.

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 large national concerns.

Communications Activities: Media and Public Outreach

Port Call Outreach

During the *JOIDES Resolution* port call in Auckland, New Zealand, in February 2011, the USIO coordinated and/or provided support for multiple outreach activities in cooperation with Australia-New Zealand IODP Consortium (ANZIC) colleagues. These activities ship tours for approximately 120 people from IODP New Zealand and the University of Macquarie, Australia, and an evening science lecture at the Auckland Museum.

Global Outreach Activities

USIO staff coordinated with IODP-MI before responding to a media query from *Nature* about the status of the *Chikyu* after the 11 March 2011 tsunami in Japan. The response appeared in a 16 March 2011 article (see Jones, 2011, in "News Articles, Programs, Media Citations, or Public Commentary").

The USIO also sent materials (brochures, newsletters) to ECORD for use in the 2011 European Geophysical Union spring 2011 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 (items below are press releases unless noted otherwise):

- Ancient undersea volcanoes yield clues to Earth dynamics. (15 February 2011) http://www.oceanleadership.org/2011/ancient-undersea-volcanoes-yield-clues-to-earth-dynamics/
- IODP-MI and *Chikyu* staff and visitors safe; upcoming *Chikyu* expedition canceled. (14 March 2011) http://www.oceanleadership.org/2011/iodp-mi-and-chikyu-staff-and-visitors-safe-upcoming-chikyu-expedition-canceled/ *(story for Ocean Leadership web site)*
- Celebrating the 50th anniversary of Project Mohole. (25 March 2011) http://www.oceanleadership.org/2011/celebrating-the-50th-anniversary-of-project-mohole/ *(story for Ocean Leadership web site)*

Communications Tools

Video clips produced during Expedition 330: Louisville Seamount Trail were linked to the expedition press release to help readers better understand the mission of the expedition. An example of this video is available on YouTube (www.youtube.com/watch?v=XA-2186YxC4).

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).

- John, C.M., Karner, G.D., Browning, E., Leckie, R.M., **Mateo, Z.,** Carson, B., and Lowery, C., 2011. Timing and magnitude of Miocene eustasy derived from the mixed siliciclastic-carbonate stratigraphic record of the northeastern Australian margin. *Earth Planet. Sci. Lett.*, 304(3–4):455–467. doi:10.1016/j.epsl.2011.02.013

News Articles, Programs, Media Citations, or Public Commentary

Examples of news articles, programs, media citations, or public commentary related to IODP expeditions published this quarter included the following. 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.

- Amos, J., 2011. Drillers propose deep-Earth quest. *BBC News*, 24 March 2011. http://www.bbc.co.uk/news/science-environment-12841150
- *Deep-Sea News*, 2011. Japan's drilling vessel Chikyu damaged by tsunami. *Deep-Sea News*, 22 March 2011. http://deepseanews.com/2011/03/japans-drilling-vessel-chikyu-damaged-by-tsunami/
- Dumo, G., 2011. Kids delve into deep. *The Aucklander*, 1 February 2011. http://www.theaucklander.co.nz/local/news/kids-delve-into-the-deep/3938190/
- Houtman, N., 2011. Hard-rock story: clues to the planet lie in rocks from underwater volcanoes. *terra*,17 February 2011. http://oregonstate.edu/terra/2011/02/hard-rock-story/
- Jones, N., 2011. Japanese research ship damaged by tsunami. *Nature.com*, 16 March 2011. http://blogs.nature.com/news/thegreatbeyond/2011/03/japanese_research_ship_damaged.html
- Kintisch, E., 2011. Quake scuttles mission to study deep-sea carbon. *Science*Insider, 21 March 2011. http://news.sciencemag.org/scienceinsider/2011/03/quake-scuttles-mission-to-study.html?ref=hp
- Minard, A., 2011. Probing the Moho boundary—Earth's own unexplored frontier. *Universe Today*, 23 March 2011. http://www.universetoday.com/84332/probing-the-moho-boundary-earths-own-unexplored-frontier/
- OurAmazingPlanet, 2011. Underwater volcanoes a hotbed of clues to Earth's movements. *Livescience.com*, 16 February 2011. http://www.livescience.com/12892-underwater-volcanoes-hotbed-clues-earth-movements.html
- *Physorg.com*, 2011. Volcano study lays foundation for ancient maps. 15 February 2011. *Physorg.com*, 15 February 2011. http://www.physorg.com/news/2011-02-volcano-foundations-ancient.html
- *redOrbit*, 2011. 'Hotspot' volcanoes yield clues to inner Earth dynamics. *redOrbit.com*, 16 February 2011. http://www.redorbit.com/news/science/1997650/hotspot_volcanoes_yield_clues_to_inner_earth_dynamics/index.html?source=r_science
- Teagle, D., and Ildefonse, B., 2011. Journey to the mantle of the Earth. *Nature (London, U. K.)*, 471:437–439. doi:10.1038/471437a
- *TerraDaily*, 2011. Ancient undersea volcanoes yield clues to Earth dynamics. *TerraDaily*, 21 February 2011. http://www.terradaily.com/reports/Ancient_Undersea_Volcanoes_Yield_Clues_To_Earth_Dynamics_999.html
- *UQ News*, 2011. Volcano study lays foundations for ancient maps. *UQ News*, 16 February 2011. http://www.uq.edu.au/news/?article=22680

Legacy Documentation

Legacy Digital Library

Routine legacy preservation activities for Outreach include archiving electronic copies of relevant products and publications produced by the USIO on behalf of IODP. This quarter, communications staff worked toward developing standardized file nomenclature, formatting standards, and procedures for uploading materials to the Legacy Digital Library. Plans were also made for reviewing Legacy Digital Library content during the next quarter and uploading all communications items developed since 2007.

Other Projects and Activities

USIO staff continued to write weekly updates on IODP activities for the Ocean Leadership newsletter, which is published electronically every Friday.

In addition, the USIO contributed content to a documentary produced by Wall to Wall Television called "Journey to the Earth's Core," which aired on the History Channel on 23 March 2011. This two-hour film highlighted the work of a diverse group of scientists, engineers, and explorers and included footage from Expedition 327: Juan de Fuca Ridge Flank Hydrogeology. Imagery provided by Expedition 327 Science Party members, along with computer animation that was commissioned by the USIO and produced during the expedition, complemented a section of the documentary that addresses the subsurface biosphere.

APPENDIX A: FINANCE REPORT

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

APPENDIX B: TRAVEL

Purpose*	Category	Dates	Location	Institution: Personnel
Expedition 317 Operations Review Task Force (ORTF) Meeting	Postexpedition Meeting	5–7 January 2011	College Station, Texas	Ocean Leadership: D. Divins LDEO: A. Malinverno, A. Slagle
IODP/ICDP Workshop: Carbon Capture and Storage	Conference Representation	6–13 January 2011	Muscat, Oman	Ocean Leadership: K. Ludwig LDEO: D. Goldberg TAMU: J. Miller
National Geophysical Data Center (NGDC) Publications Meeting	Planning	13–15 January 2011	Boulder, Colorado	Ocean Leadership: D. Divins
Science Advisory Structure Executive Committee (SASEC) Meeting	SAS	18 and 19 January 2011	Miami, Florida	Ocean Leadership: D. Divins LDEO: D. Goldberg TAMU: B. Clement
International Working Group Plus (IWG+) Meeting	SAS	20 and 21 January 2011	Miami, Florida	TAMU: B. Clement
Mohr Tool Testing	Tool Testing	21–25 January 2011	College Station, Texas	LDEO: G. Iturrino, E. Meissner
Visit to Region 4 Educational Services	Vendor Meeting	18 January 2011	Houston, Texas	TAMU: J. Gracia, K. Sherar, C. Wolfe
Solidworks World 2011	Training	22–24 January 2011	San Antonio, Texas	TAMU: E. Schulte
Motion decoupled hydraulic delivery system (MDHDS) test	Tool Testing	24 January 2011	Houston, Texas	TAMU: B. Aduddell
Sediment temperature/pressure (SETP) tool test	Tool Testing	25 January 2011	Houston, Texas	TAMU: B. Aduddell, L. Chen
Site Survey Panel (SSP) Meeting	SAS	30 January–5 February 2011	Zushi, Japan	TAMU: A. Klaus
Expedition 330T Port Call Activities	Port Call	8–15 February 2011	Auckland, New Zealand	Ocean Leadership: D. Divins TAMU: B. Clement, D. Houpt, B. Julson, J. Miller, R. Mitchell, D. Ponzio
Scientific Technology Panel (STP) Meeting	SAS	13–16 February 2011	Auckland, New Zealand	Ocean Leadership: G. Myers TAMU: D. Houpt, A. Miller, J. Miller
Ship Inventory	Port call	8–17 February 2011	Auckland, New Zealand	TAMRF: K. Lee, M. Strickland
2011 Annual TTVN Conference	Training	15–18 February 2011	Galveston, Texas	TAMU: J. Rosser
American Association for the Advancement of Science (AAAS) Annual Meeting	Training	17–21 February 2011	Washington, DC	TAMU: D. Partain
Engineering Development Panel (EDP) Meeting	SAS	22–24 February 2011	Grenoble, France	Ocean Leadership: G. Myers LDEO: G. Iturrino

Purpose*	Category	Dates	Location	Institution: Personnel
American Management Association Training Course	Training	23–25 February 2011	New York, New York	TAMU: J. Firth
Expedition 339 Pre-expedition Meeting	Planning	2–5 March 2011	College Station, Texas	Ocean Leadership: S. Saunders
Program Legacy Meeting	Planning	3 and 4 March 2011	Miami, Florida	Ocean Leadership: M. Morell
Society for Technical Communication (STC) Awards Banquet	Meeting	4 and 5 March 2011	Houston, Texas	TAMU: C. Wolfe
USIO Leadership Meetings	Meeting	10–12 March 2011	Washington, DC	LDEO: D. Goldberg TAMU: B. Clement
Expedition 318 Operations Review Task Force (ORTF) Meeting	Postexpedition Meeting	7–9 March 2011	Palisades, New York	TAMU: R. Grout, A. Klaus, M. Malone
Essentials of Export Controls	Training	7–10 March 2011	Irving, Texas	TAMU: T. Brashear, S. Dillard TAMRF: M. Strickland
FY12 Annual Program Plan Development and Publications Meetings	Report Coordination	7–24 March 2011	College Station, Texas	TAMU: G. Lowe
National Science Teachers Association (NSTA) Conference	Conference Representation	10–13 March 2011	San Francisco, California	Ocean Leadership: L.Peart, S. Cooper Other: J. Kane, S. Kasbati, J. Monaco, E. Poling, L. Strong, A. Turner, B. Waters (School of Rock Alumni and Education Officers); A. Fisher (Expedition 327 Co-Chief Scientist)
Expedition 334 Port Call Activities	Port call	13–17 March 2011	Puntarenas, Costa Rica	LDEO: S. Mrozewski TAMU: B. Julson, M. Malone, R. Mitchell, D. Partain
Expedition 334 Education and Communications Activities	Education/ Outreach	15 March–13 April 2011	Puntarenas, Costa Rica	Other: J. Saltzman (Onboard Education Officer)
Expedition 334 Port Call Activities	Port Call	22–25 March 2011	Puntarenas, Costa Rica	LDEO: G. Iturrino
Operations Task Force (OTF) Meeting	SAS	26 March 2011	Edinburgh, Scotland	TAMU: M. Malone
Science Planning Committee (SPC) Meeting	SAS	28–31 March 2011	Edinburgh, Scotland	Ocean Leadership: D. Divins TAMU: M. Malone

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

APPENDIX C: USIO QUARTERLY REPORT DISTRIBUTION

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