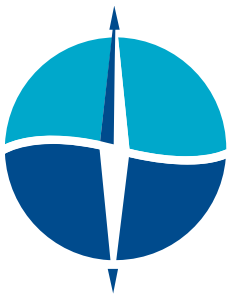


IODP
INTEGRATED OCEAN DRILLING PROGRAM

INTEGRATED OCEAN DRILLING PROGRAM
United States Implementing Organization

FY11 Quarterly Report 3

1 April–30 June 2011

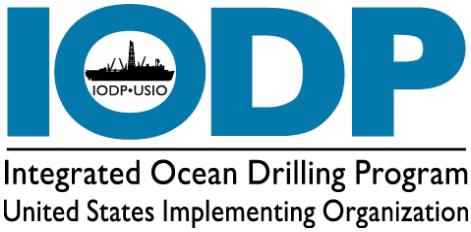
NSF Contract OCE-0352500

IODP-MI Contract IODP-MI-05-03

Submitted by the USIO

to

The National Science Foundation
and
IODP Management International, Inc.



12 August 2011

TABLE OF CONTENTS

INTRODUCTION 5

MANAGEMENT AND ADMINISTRATION 5
- USIO Reports 5
- Reporting and Liaison Activities 6
- Contract Services 7
- Personnel Status 8
- USIO Web Services 9
- Legacy Documentation 9
- Other Projects and Activities 10

TECHNICAL, ENGINEERING, AND SCIENCE SUPPORT 10
- USIO Expedition Schedule 10
- USIO Expeditions 11
- Transit Activities 16
- Analytical Systems 16
- Engineering Support 17
- Legacy Documentation 18

ENGINEERING DEVELOPMENT 18
- Multisensor Magnetometer Module 18
- MFTM for SCIMPI Deployment 19

CORE CURATION 19
- Curation Strategies and Expedition Core Sampling 19
- Sample Materials Curation System 19
- Core Curation 19
- Legacy Documentation 21
- Other Projects and Activities 22

DATA MANAGEMENT 22
- Expedition Data 22
- Expedition Data Requests 23
- Program-wide Access Portal 26
- Operation, Maintenance, and Security 26
- Software Development 26
- Legacy Documentation 27

PUBLICATIONS 28
- IODP Scientific Publications 28
- USIO Reports 28
- Program-Related Citations Data 29
- IODP Publications Management 29
- Publications Support 30
- Technical Documentation 30
- Legacy Documentation 31
- Other Projects and Activities 31

EDUCATION 31
Professional Development 32
Expedition-Based Learning Activities and Materials 32
Scientists as Educators 33
Strategic Partnerships 33
Outside Funding and Sponsorships 34
Diversity Support Initiatives 34
Legacy Documentation 34

OUTREACH 34
Communications to U.S. Legislative Audiences 35
Communications Activities: Media and Public Outreach 35
Communications Training 37

APPENDIX A: FINANCE REPORT 38

APPENDIX B: TRAVEL 39

APPENDIX C: USIO QUARTERLY REPORT DISTRIBUTION 42

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 Q2 IODP-USIO Quarterly Report

The USIO report for the second quarter of FY11 (January–March 2011) was submitted to NSF and the IODP central management office (IODP-MI) on 13 May 2011 (http://iodp.tamu.edu/publications/AR/FY11/FY11_Q2.pdf).

FY11 IODP-USIO Annual Report

The USIO continued FY11 IODP-USIO Annual Report planning and content collection activities during this quarter.

FY12 IODP-USIO Annual Program Plan to IODP-MI

On 3 June 2011, the USIO submitted for review and evaluation the IODP-USIO FY12 Annual Program Plan to IODP-MI, which outlines requests for science operating costs (SOC) and platform operating costs (POC) including the Mid-Atlantic Microbiology Expedition, Mediterranean Outflow Expedition, Lesser Antilles Expedition, a 181-day maintenance period, and an as-yet undetermined expedition; long–lead time planning costs for expeditions proposed for FY13; and continuing SOC shore-based activities during FY12. The IODP-USIO FY12 Annual Program Plan to IODP-MI budget totals $4,147,885 in SOC requested from IODP-MI and $64,614,407 requested from NSF for USIO operations.

FY12 IODP-USIO Annual Program Plan to NSF

On 3 June 2011, the USIO submitted for review and evaluation the IODP-USIO FY12 Annual Program Plan to NSF, which outlines requests for costs including the Mid-Atlantic Microbiology Expedition, Mediterranean Outflow Expedition, Lesser Antilles Expedition, a 181-day maintenance period, and an as-yet undetermined expedition; long–lead time planning costs for expeditions proposed for FY13; and USIO efforts for education and outreach and associated management and administrative support. The IODP-USIO FY12 Annual Program Plan to NSF budget totals $65,734,564.

The IODP-USIO FY11 Annual Program Plan to NSF also includes Appendix I: USIO IT Security Summary, Appendix II: Recommended IODP-USIO Program of Insurance, and Appendix III: USIO Science Operating Costs by Institution.

FY12 Annual Program Plan Revision

A fourth expedition (IODP Expedition 342: Newfoundland Sediment Drifts) was added to the FY12 USIO operations schedule at the end of this quarter. This expedition, which may include an engineering

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

test of the Motion Decoupled Hydraulic Delivery System (MDHDS), will be supported through commingled funds from IODP-MI. Planning efforts were initiated for revising the FY12 Annual Program Plan to include this additional expedition.

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/). IODP working group, task force, and other special meetings are described in this section.

IODP Symposium

The annual Netherlands IODP Symposium was held 29 April 2011 at the Royal Netherlands Institute for Sea Research, Texel, The Netherlands. The USIO provided the keynote address.

Operations Task Force

The IODP-MI Operations Task Force (OTF) met in Edinburgh, United Kingdom, on 10 and 11 June 2011 to review the FY12 expedition schedule and select a preferred FY13 schedule for Science Planning Committee approval in August.

International Working Group Plus/IODP Council

The International Working Group Plus (IWG+) and the IODP Council met in Amsterdam, The Netherlands, on 16 and 17 June 2011. The IODP Council agreed in principle to allow the use of commingled funds for IODP platform operations, specifically to add a fourth expedition to the FY12 USIO expedition schedule. Specific proposals for the use of these funds will be evaluated by the IODP Council through the FY12 Annual Program Plan. The IWG+ working group formally adopted the document *Illuminating Earth's Past, Present, and Future* as the science plan for the International Ocean Discovery Program (http://www.iodp.org/Science-Plan-for-2013-2023/). The IWG+ working group also agreed that commingled funds will need to pay for integrative activities in the new program and that surplus commingled funds can be used for platform operations and/or other strategic initiatives as recommended by the science community; however, the final disposition of surplus commingled funds rests with the Program Governing Board.

Detailed Planning Group on Rapid Response

The Detailed Planning Group (DPG) on Rapid Response met 18–20 June 2011 in Tokyo, Japan. Panel members, liaisons, and observers met to discuss the merits and feasibility of a rapid response drilling project within the region affected by the Tohoku, Japan, megathrust earthquake. The DPG concluded that the *JOIDES Resolution* is not an appropriate platform for deep response drilling.

Data Management Coordination Group

The USIO Data Management Coordination Group met 20–22 June 2011 in Washington, DC, to address the following topics: long- and short-term support for Correlator; SDRMv2; document management; support to Engineering, Education, and Outreach; and support to the new IODP Science Plan for 2013–2023.

Conference and Meeting Schedule

Conference/Meeting*	Date	Location
The Netherlands IODP Symposium	29 April 2011	Amsterdam, The Netherlands
Detailed Planning Group (DPG) on Rapid Response Meeting	18–20 May 2011	Tokyo, Japan
Environmental Protection and Safety Panel (EPSP) Meeting	1–3 June 2011	Edinburgh, United Kingdom
Operations Task Force (OTF) Meeting	10 and 11 June 2011	Edinburgh, United Kingdom
Science Advisory Structure Executive Committee (SASEC) Meeting	14 and 15 June 2011	Amsterdam, The Netherlands
International Working Group Plus (IWG+) and IODP Council Meeting	16 and 17 June 2011	Amsterdam, The Netherlands
Data Management Coordination Group (DMCG) Meeting	20–22 June 2011	Washington, DC

*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 50: Updated Ocean Leadership's indirect cost information and provided $18,375,204 in incremental funding, thereby fully funding the FY11 Annual Program Plan of $64,957,723.

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

- Modification 35: Provided $1,053,906 in incremental funding, thereby fully funding the FY11 Annual Program Plan SOC budget of $4,152,148.

Subcontract Activity

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

Ocean Leadership Subcontract JSC 4-03 with LDEO

- Modification 48: Increased the previously approved FY11 POC budget by $635,000 from $6,520,465 to $7,155,465 to cover $455,000 for logging-while-drilling (LWD) tools for Expedition 334: Costa Rica Seismogenesis Project, $80,000 for engineering oversight of the large pipe handling infrastructure development project, and $100,000 for the purchase of a borehole standby generator. Reduced previously approved FY10 Annual Program Plan by $323,401, de-obligated FY10 unobligated SOC Nonoperations funding in the amount of $17,082, and reduced incremental funding by $17,082 to $39,308,706.
- Modification 49: Provided $1,795,227 in incremental funding toward FY11 activities, thereby fully funding FY11 APP of $8,127,017.

Ocean Leadership Subcontract JSC 4-02 with TAMRF

- Modification 60: Provided $16,850,498 in incremental funding toward FY11 POC activities.
- Modification 61: Provided $822,929 in incremental funding toward FY11 SOC activities, thereby fully funding the FY11 Annual Program Plan of $58,358,297.

LDEO
Subcontract Activity

LDEO issued the following subcontract modifications during the reporting period.

LDEO Subcontract with Schumberger

- Amendment 16: Provided funding modification in the amount of $129,028.

LDEO Subcontract with Howard & Associated International Inc.

- Amendment 01: Provided $115,000 in funding for the IODP Large Diameter Pipe Handling Infrastructure Project (see "Engineering Support" in "Technical, Engineering, and Science Support" for more information).

TAMRF
Subcontract Activity

TAMRF issued the following subcontract modification during the reporting period.

TAMRF Subcontract with Overseas Drilling Limited

- Amendment 14: Increased operational funding by $13,400,000.

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

- 5 April 2011: Purchased tenite butyrate core liner and alligator boxes in the amount of $133,149 from Anaheim Custom Extruders.
- 14 April 2011: Purchased fabrication of lateral circulation obviation retrofit kit (L-CORK) wellheads in the amount of $128,910 from C&M Machining.

Miscellaneous Activity

- 8 April 2011: Entered into an agreement with the Texas Maritime Museum for the loan of the *JOIDES Resolution* ship model, core sections, core replicas, core trays, and drill bits for a four-month IODP exhibit (see "Strategic Partnerships" in "Education" for more information).
- 25 April 2011: Submitted the Individual Subcontractor Reports for Ocean Leadership's approval in accordance with TAMRF's Small Business Plans.

Personnel Status
Ocean Leadership

No positions were vacated, opened, or advertised during the quarter:

The following position was filled during the quarter:

- Part-time Administrative Assistant (Jessie Swanseen): 27 April 2011

LDEO

The following positions were vacated during the quarter:

- Secretary (Marsha Meyer): 30 June 2011

The following positions were opened and advertised during the quarter:

- Administrative Assistant [reclassified from vacated Secretary position]

TAMU

The following positions were vacated during the quarter:

- Supervisor of USIO-TAMU Human Resources (Kim Johnson): 31 May 2011
- Research Assistant (Lara Miles): 8 June 2011
- Marine Laboratory Specialist (Eric Jackson): 25 June 2011

The following positions were opened and advertised during the quarter:

- Supervisor of USIO-TAMU Human Resources
- Graphics Specialist II

The following positions were filled during the quarter:

- Applications Developer III (Long Nguyen): 18 April 2011
- Research Specialist (Sandra Hermann): 6 June 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 Q3 USIO Web Sites*				
Parameter	**www.iodp-usio.org**	**iodp.ldeo.columbia.edu**	**iodp.tamu.edu**	**Total**
Page views	18,757	7,758	294,294	320,809
Site visits	12,224	1,190	63,129	76,543

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

Legacy Documentation

The USIO routinely archives electronic copies of documents and reports produced on behalf of IODP.

Legacy Digital Library

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 the FY12 IODP-USIO Annual Program Plan to NSF, FY12 IODP-USIO Annual Program Plan to IODP-MI, FY11 Q2 IODP-USIO Quarterly Report, and executed 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 Q3 ODP Web Sites*			FY11 Q3 DSDP Web Site
Parameter	**www-odp.tamu.edu**	**www.odplegacy.org**	**Total ODP**	**www.deepseadrilling.org**
Page views	1,220,844	9,664	1,230,508	137,967
Site visits	327,376	3,725	331,101	32,597

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

Other Projects and Activities

USIO-TAMU Project Portfolio Management Program

Progress of the USIO-TAMU Project Portfolio Management (PPM) program continued as the portfolio list expanded to 52 projects. Multiple analytical projects were completed (see "Analytical Systems" in "Technical, Engineering, and Science Support" for more information) and steady progress continued on two major software development projects (see "Software Development" in "Data Management" for more information). At the end of the quarter, the top five funded projects for USIO-TAMU were defined as Laboratory Information Management System (LIMS) reports, bridge deck landing expansion (completed during the quarter), DESCLogik core description application enhancements, Regional Test & Integration Facility, and Correlator integration.

USIO-TAMU is also partnering with TAMU's Project Management Office to launch PowerSteering, a PPM application used to track project portfolios and manage active projects. TAMU intends to go live with PowerSteering by 1 August 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]
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^
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 (Portugal)	17 November–17 January 2012	61 (5/56)	56 (5/51)	J. Hernández‐Molina, D. Stow	TAMU: C. Alvarez Zarikian* LDEO: T. Williams^
Atlantis Massif Oceanic Core Complex	340T	Lisbon, Portugal	17 January–6 February 2012	20 (5/15)	15 (12/3)	D. Blackmon	LDEO: A. Slagle^

Expedition		Port (Origin)	Dates[1, 2]	Total Days (Port/ Sea)	Days at Sea (Transit[3]/ Ops)	Co-Chief Scientists	USIO Contacts[4]
Lesser Antilles Volcanism and Landslides[5]	340	Antigua	6 February–18 March 2012	41 (1/40)	40 (2/38)	A. Le Friant, O. Ishizuka	TAMU: N. Stroncik* LDEO: A. Slagle
Non-IODP							
Newfoundland Sediment Drifts[6]	342	Curaçao	18 June–17 August 2012	60 (4/56)	56 (11/45)	TBD	TAMU: P. Blum LDEO: TBD
Non-IODP							

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 www.iodp-usio.org.
[5] Expedition ends in Curaçao.
[6] Start port is tentative, end port is St. Johns, Canada. Expedition includes engineering test of the Motion Decoupled Hydraulic Delivery System.

USIO Expeditions

Expedition 329: South Pacific Gyre

Postexpedition Activities

The first Expedition 329: South Pacific Gyre postexpedition meeting was held in College Station, Texas, 2–6 May 2011.

Expedition 330: Louisville Seamount Trail

Postexpedition Activities

Expedition 330: Louisville Seamount Trail postexpedition activities focused on completion and publishing of the *Preliminary Report* and preparation for the first postexpedition meeting.

Expedition 334: Costa Rica Seismogenesis Project

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

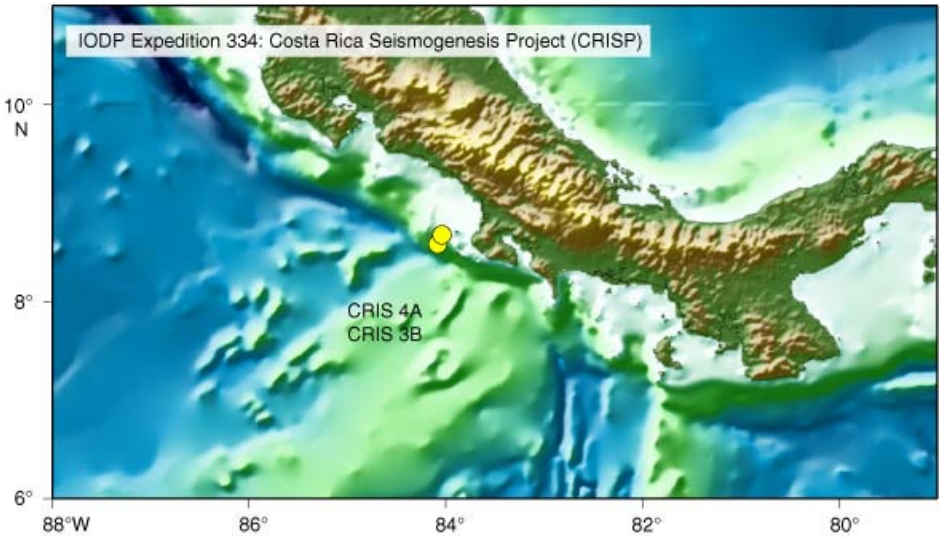
In addition, a Costa Rican scientist sailed as an observer.

Expedition Operations

The general strategy for Expedition 334: Costa Rica Seismogenesis Project was to drill with LWD tools and then core at slope Sites U1378 (CRIS-3B) and U1379 (CRIS-4A) to 900 and 950 meters below seafloor (mbsf), respectively. Logging while drilling and advanced piston coring (APC)/extended core barrel (XCB) coring at the upper slope Site U1379 successfully reached 963 and 949 mbsf, respectively.

At the middle slope Site U1378, LWD penetration was halted at 457 mbsf and APC/XCB coring at 524 mbsf due to unstable hole conditions. An attempt to rotary core barrel (RCB) drill/core at the middle slope alternate Site U1380 (CRIS-10A) was halted at 482 mbsf. With time remaining in the expedition, RCB coring advanced to 164 mbsf into basement at the incoming plate Site U1381 (CRIS-1A).

Expedition 334 Site Map



Expedition 334 Coring Summary

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1378	U1378A	08°35.5415'N	084°04.6313'W	536.6	0	0.0	0.00	0.0
	U1378B	08°35.5408'N	084°04.6415'W	533.2	63	523.9	526.39	100.5
				Site U1378 Totals:	**63**	**523.9**	**526.39**	**100.5**
U1379	U1379A	08°40.8501'N	084°02.0166'W	137.0	0	0.0	0.00	0.0
	U1379B	08°40.8502'N	084°02.0277'W	138.5	2	10.5	8.72	83.0
	U1379C	08°40.8605'N	084°02.0274'W	138.8	118	949.0	815.56	85.9
				Site U1379 Totals:	**120**	**959.5**	**824.28**	**85.9**
U1380	U1380A	08°35.9976'N	084°04.4032'W	515.0	9	85.4	52.37	61.3
				Site U1380 Totals:	**9**	**85.4**	**52.37**	**61.3**
U1381	U1381A	08°25.7150'N	084°09.4690'W	2080.2	29	164.1	73.86	45.0
	U1381B	08°25.7149'N	084°09.4805'W	2080.2	3	29.0	15.98	55.1
				Site U1381 Totals:	**32**	**193.1**	**89.84**	**46.5**
Expedition 334 Totals:					**224**	**1761.9**	**1492.88**	**84.7**

Science Results

Expedition 334 focused on the slope sediments and shallow portion of the upper plate basement. The main objectives were to characterize the composition, texture, physical, and frictional properties; the fluid system; and the stress field of the upper plate material. At upper slope Site U1379, both cores and LWD logs penetrated below the slope and upper plate basement interface for 50 and 70 m, respectively. At two middle slope sites (U1378 and U1380), penetration did not reach basement because of unstable hole conditions in the sedimentary section. Shipboard geochemical analysis documented fluid flow at all slope sites. LWD borehole radius images show clear evidence of borehole breakouts, which form when there are differences in the principal horizontal stresses. Analysis of this unique borehole image data set will provide estimates of the state of stress in the subsurface of the Costa Rica convergent erosive margin. At Site U1381, 80 m of Cocos Ridge basalts, which underlie ~100 m of siliceous and calcareous oozes on the

incoming plate, were successfully cored. In addition, the retrieval of ~170 tephra layers throughout the cored sediments with ages ranging from middle Miocene to the present will allow scientists to further constrain the volcanic evolution of the Central America arc.

Expedition 335: Superfast Spreading Rate Crust 4

Expedition Planning

Efforts immediately prior to Expedition 335: Superfast Spreading Rate Crust 4 focused on last-minute logistical issues mainly revolving around the port call, as well as planning for port call public relations activities.

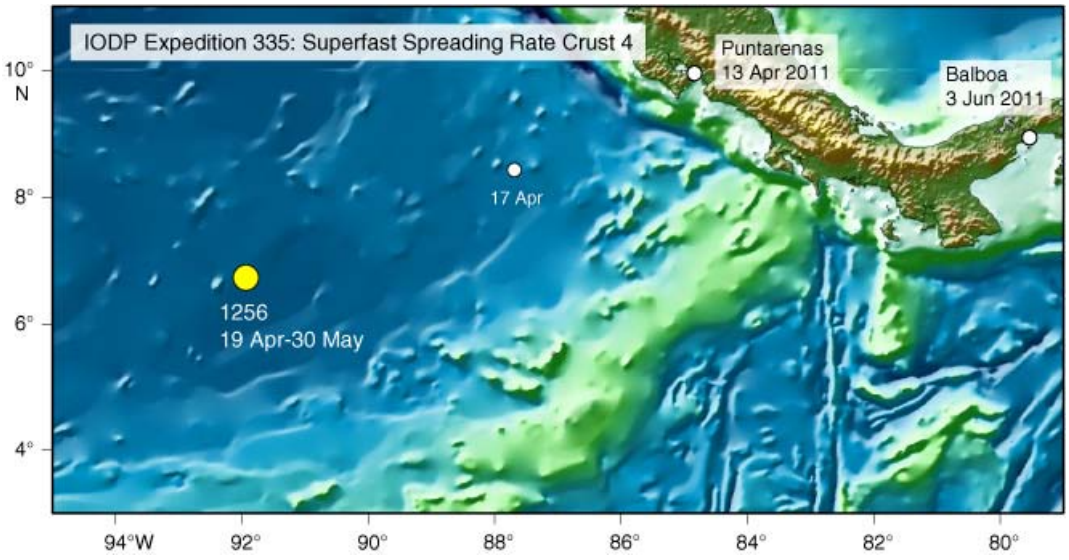
Expedition Staffing

Expedition 335 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)	9
South Korea: Korea Integrated Ocean Drilling Program (K-IODP)	1
People's Republic of China: IODP-China	0
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	1
India: Ministry of Earth Science (MoES)	1

Expedition Operations

Only five cores were taken during Expedition 335, with an average recovery of 11%. Significant effort by the rig-floor teams cleared a major obstruction at 920 mbsf that initially prevented reentry into the hole to its full depth of 1507 mbsf. The 920–960 mbsf interval was then cemented to stabilize the borehole wall. A short phase of coring deepened Hole 1256D approximately 13 m before the hard formation coring bit failed. A progressive course of action was undertaken to clear the bottom of the hole of metal junk from the failed bit, open up a short interval of undergauge hole, and remove drilling cuttings from the hole. This was successfully completed and the hole was opened to its full depth (1521.6 mbsf). A last core was taken following remedial cleaning efforts.

Expedition 335 Site Map



Expedition 335 Coring Summary

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
1256	1256D	06°44.1631'N	091°56.0612'W	3645.4	5	14.5	1.64	11.3
Site 1256 Totals:					**5**	**14.5**	**1.64**	**11.3**
Expedition 335 Totals:					**5**	**14.5**	**1.64**	**11.3**

Logging Summary: Because of technical difficulties and time constraints, the triple combination was the only logging tool string deployed during Expedition 335. It included several tools that had never been deployed in ODP/IODP expeditions: the High Resolution Laterolog Array, Enhanced Digital Telemetry Cartridge, and Logging Equipment Head with Tension and Mud Temperature. The tools all performed reliably and provided high-quality data to a maximum depth of 1520 mbsf, which is 80 m deeper than any log recorded during previous expeditions in Hole 1256D. A full-caliper log was recorded over the entire hole to assess the results of the cementing operations and to help plan the final cementing to stabilize Hole 1256D for future expeditions.

Deep resistivity measurements indicate a decrease in resistivity with depth starting below the first gabbro (~1460 mbsf). In contrast to the resistivity increase with depth expected in a plutonic section, this suggests that the deepest interval may be fractured or consist of sheeted dikes. Several low-temperature excursions, in particular around 925 and 1060 mbsf, coincide with low-resistivity intervals, suggesting more permeable intervals invaded by the drilling fluid. Numerical modeling based on temperature data and other logs may provide estimates of the permeability in these intervals.

Science Results

Operational difficulties precluded progress toward the expedition's scientific objectives with <15 m of advance achieved in Hole 1256D, increasing the total depth of the hole to 1521.6 mbsf (1271.6 meters subbasement). In addition to the few cores drilled, junk baskets deployed during the successive fishing runs to the bottom of the hole recovered a unique collection of samples including large cobbles (as large as 5 kg), angular rubble, and fine cuttings principally comprising strongly to completely recrystallized granoblastic basalt with minor gabbroic rocks and evolved plutonic rocks. The large blocks exhibit structural and textural relationships, metamorphic paragenetic sequences, and overprinting hydrothermal alteration, which previously have not been observed due to the narrow diameter nature of drill cores and the very low recovery of the granoblastic basalts cored so far.

Expedition 336: Mid-Atlantic Ridge Microbiology

Expedition Planning

Work continued on the three L-CORKs, with biweekly calls between the main CORK proponents and the TAMU team, which will be a model for future work. The hydraulics were plumbed on each of the three bays per CORK, and the new packers were received from TAM International and passed initial quality checks. The first three (of six) umbilicals were received, with the remainder scheduled for delivery in late July/early August. Ninety joints of 4½ inch fiberglass casing were also received, some of which are slotted to provide fluid access. Expedition 336 will be the first scientific ocean drilling expedition during which fiberglass casing is installed.

Expedition Staffing

Replacements were invited for three scientists who withdrew in April. A fourth scientist withdrew due to medical issues and discussions began regarding replacement.

Expedition 339: Mediterranean Outflow

Expedition Planning

The *Scientific Prospectus* was published, but some changes will be required resulting from subsequent actions by the Environmental Protection and Safety Panel (EPSP). The Expedition Project Manager initiated communication with the Science Party. Detailed reviewed research plans and support requirements will follow next quarter.

Expedition Staffing

Science staffing was nearly completed. A response is still pending to the invitation for the final scientific berth.

Environmental Assessment

Site locations and maximum penetration depths were finalized on 15 June 2011 at the EPSP meeting.

Clearance and Permitting Activities

The clearance application to operate in the Exclusive Economic Zone waters of Spain and Portugal was immediately submitted to the U.S. State Department after sites were finalized at the EPSP meeting in June.

Expedition 340T: Atlantis Massif Oceanic Core Complex

Expedition Planning

In May 2011, the OTF reviewed and added Ancillary Project Letter (APL) 779 onto the Lesser Antilles transit from Lisbon, Portugal, to Antigua. Because the Lesser Antilles Science Party would not be picked up until Antigua, it was decided to handle the APL implementation as a stand-alone operation. Initial efforts began toward planning an pre-expedition meeting videoconference and producing the expedition's *Scientific Prospectus*.

Expedition Staffing

The lead proponent was invited to participate as the Chief Scientist, and each program member office (PMO) was invited to submit one nomination.

Clearance and Permitting Activities

The expedition site is located in international waters and has been previously occupied.

Expedition 340: Lesser Antilles Volcanism and Landslides

Expedition Planning

An Expedition 340: Lesser Antilles Volcanism and Landslides pre-expedition meeting was held on 9 and 10 May 2011 in College Station, Texas, to finalize the operational and scientific plan. Finalization of the *Scientific Prospectus* was delayed until EPSP review of the sites.

Expedition Staffing

The list of PMO nominations was received in June and the initial invitation list was developed.

Environmental Assessment

Site locations and maximum penetration depths were finalized at the June EPSP meeting.

Clearance and Permitting Activities

The clearance application will be submitted in July.

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

Expedition Planning

An Expedition 341: Southern Alaska Margin Tectonics, Climate, and Sedimentation pre-expedition meeting was held on 5 and 6 May 2011 in College Station, Texas, at which a science presentation on the objectives of the cruise was presented. In May, the expedition was deferred to FY13 because of budget pressures related to rising fuel prices. Subsequent efforts focused on finalizing the expedition's *Scientific Prospectus*.

Expedition 342: Newfoundland Sediment Drifts

Expedition Planning

Initial proposal scoping was completed prior to the OTF meeting in June, and Expedition 342: Newfoundland Sediment Drift was placed on the USIO expedition schedule in June when the OTF and IODP Council approved use of commingled funds to support an expedition in the Atlantic. Subsequent planning efforts focused on refining schedule details and tentative port selections.

Expedition Staffing

Review of Co-Chief Scientist nominations was initiated, along with drafting of the science staffing schedule and the call for applications text.

Clearance and Permitting Activities

Expedition 342 sites are located in international waters, but still need to be reviewed by EPSP.

Transit Activities

Three significant infrastructure projects were initiated during the transit after Expedition 335. The 'tween deck storage area was reconfigured to increase storage space and improve access; improvements were made to the chemistry laboratory to increase working space for scientists and to reroute electrical and plumbing lines; and an extension was added to the landing on the bridge deck to facilitate pallet jack movement. These infrastructure improvements complete three priority projects from the PPM portfolio.

Analytical Systems

Analytical Systems Acquisitions and Updates

To fulfill a request for whole-round, hard-rock core imaging with a permanent solution, a whole-round core section sample holder was designed and constructed and the section-half imaging logger software was modified to allow imaging of the external surface of hard rock cores before splitting. This system was deployed to the *JOIDES Resolution* for use during Expedition 335 and completes a high-priority project from the PPM portfolio.

Two new systems were acquired that will be installed on the *JOIDES Resolution* during the maintenance period. New CoolLED™ light sources and filters for epifluorescence microscopy will generate significantly less heat and stray light on the sample and should improve the performance of the stained cell count method. This system completes a project from the PPM portfolio.

The new ASC Scientific Model TD-48-SC thermal demagnetizer has a high sample capacity (48 samples) compared to the Schonstedt's sample capacity (8 samples), and also loads and unloads from the same side, which makes the system easier to use. This system addresses comments from several recent expedition evaluations.

Laboratory Working Groups

All Laboratory Working Groups met during this quarter. The Geochemistry group made specific recommendations relative to Expedition 335 cruise evaluations and made recommendations for equipment acquisitions. The Curation and Core Handling group provided guidance on incorporating piece length into Sample Master. The Geology group is crafting a new proposal to develop LIMS reports for

descriptive and interpretive information. The Geophysics group recommended installing the towed magnetometer on the winch currently used to store the seismic streamer to ensure safer and more rapid deployment and recovery.

Projects and Other Activities
Project Management

USIO staff continued to work 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). A new project was added to the list (bridge deck landing improvement), ranked as high priority, and completed during the quarter. Only two projects from the Analytical Services top-twenty list have not been addressed, both of which require only scoping before further action.

Geosciences Laboratory (ODASES)

The TAMU Ocean Drilling and Sustainable Earth Science (ODASES) Geosciences Laboratory hosted four scientists for X-ray fluorescence (XRF) scanning projects during the quarter. The schedule for the XRF has continued to be greater than 50% of available days. As part of IODP's shipboard support infrastructure, a shore copy of the section-half imaging logger was constructed and is available for scientists to use when they are working with the cores for XRF scanning.

Engineering Support
Engineering Equipment Acquisitions and Updates

The recently modified Sediment and Temperature Pressure Probe (SETP) tool was deployed four times during Expedition 334 to collect temperature. The first run, in soft sediment, did not recover usable data. The next three runs provided excellent temperature profile data.

The Water Sampling and Temperature Probe (WSTP) was modified to accept the new electronics package and shipped a working tool to the *JOIDES Resolution*. Operational difficulties precluded deployment of the tool during Expedition 335, but the WSTP will be ready for use during Expedition 336.

Projects and Other Activities
Large Diameter Pipe Handling Infrastructure

Contracts were signed with Howard and Associates International, Inc., (HAI), for engineering oversight of the design, testing, and manufacturing of the 6-5/8 inch pipe handling equipment to be incorporated to the *JOIDES Resolution*'s infrastructure. Contracts are being finalized with Blohm & Voss for the design, manufacturing, testing, and delivery of the infrastructure. The USIO, HAI, and Overseas Drilling Limited will review the detailed engineering drawings in detail before proceeding with the manufacturing phase. The estimated time frame for reviewing the detailed engineering drawings is Fall 2011.

Magnetic Susceptibility Sonde Rebuild

Development of the low- and high-resolution sensors for the magnetic susceptibility sonde (MSS) rebuild was completed, and fabrication of the non-magnetic housing began. It is anticipated that the tools will be bench tested and deployed at the LDEO test well in Fall 2011, with the potential at-sea deployment of the MSS-B targeted during Expedition 340 in February 2012.

Multifunction Telemetry Module Projects

The multi-functional telemetry module (MFTM) transmits third-party tool downhole data back to the surface in real time. In upcoming expeditions, the MFTM will be deployed in combination with projects such as the Dark Energy Biosphere Investigation tool (DEBI-t), the MDHDS, and the Simple Cabled Instrument for Measuring In-Situ Parameters (SCIMPI) (see "MFTM for SCIMPI Deployment" in "Engineering Development" for more information).

The DEBI-t project is a collaborative effort between the USIO, University of Southern California, National Aeronautic and Space Administration Jet Propulsion Laboratory, and Photon Systems, Inc., wherein the MFTM will provide the means to monitor DEBI-t data in real time while in combination with other LDEO third-party and Schlumberger tools. Pressure tests of the DEBI-t housing and bottom sub were successfully performed this quarter at the LDEO testing facilities to a maximum pressure of 10,000 psi. Extensive bench testing of the MFTM and the Photon Systems communications microcontroller was successfully performed at LDEO. A final bench test in Webster, Texas, was scheduled for 21 and 22 July 2011 to test all the Schlumberger and LDEO tools in combination with the DEBI-t, representing the tool string planned for Expedition 336.

The MDHDS project is a collaborative development between the USIO, University of Texas–Austin, Massachusetts Institute of Technology, and Mohr Engineering, wherein the MFTM will allow real-time monitoring of formation temperatures and pressures while the penetrometer is decoupled from the drill string. The MFTM, the Electronic Release System (ERS), and the temperature-to-pressure (T2P) penetrometer were tested at the LDEO facilities in May 2011. A successful bench test was followed by functional pressure tests up to 5000 psi, where the ERS was actuated and released the T2P while the penetromenter maintained communications with the surface unit through a seven-conductor wireline. The ERS was then actuated under pressure to a locking position, simulating the retrieval process. Further testing continues and the entire system will be deployed at the Schlumberger Genesis rig in early September 2011 for final verification of its working condition. At-sea deployment of the entire MDHDS is targeted for the transit beginning Expedition 342.

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.

Engineering Development: Drilling Sensor Sub

Discussions were initiated with the vendor to resolve issues regarding tool calibration.

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 multisensor magnetometer module (MMM) is a new magnetometer tool under development at LDEO. The MMM will provide continuous downhole records of formation magnetization surrounding the borehole and the capability to work in both strongly magnetized hard rock formations and in sediments with weaker magnetizations. 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.

Project Status

All sensors for the tool were purchased, the design of non-magnetic pressure housing was completed, and machining began. The estimated timeline for completion of the tool and bench testing is Fall 2011, with test well deployment following in Spring 2012, and a subsequent first-expedition deployment could be targeted in late 2012.

MFTM for SCIMPI Deployment

The MFTM allows communication from the MDHDS to a surface panel in order to monitor the health and status of downhole tools deployed by the MDHDS. 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.

The FY11 MFTM for SCIMPI deployment project is a collaborative effort between the USIO; University of Rhode Island; Transcend Engineering & Technology, LLC; and Woods Hole Oceanographic Institute (WHOI), wherein an MFTM will be built to maintain communications with the SCIMPI string to confirm that all the instrument packages are functioning properly prior to deployment.

Project Status

The MFTM for the SCIMPI project has been finalized and future testing with the entire SCIMPI sub-seafloor package is pending.

CORE CURATION

The USIO provides services in support of IODP core sampling and curation of the core collection archived at the Gulf Coast Repository (GCR).

Curation Strategies and Expedition Core Sampling

The USIO planned sample and curation strategies for Expeditions 340 and 341. USIO Curatorial Specialists supervised shipboard core sampling during Expeditions 334 and 335 and reviewed all shipboard and moratorium-related requests in coordination with the other members of the expedition Sample Allocation Committees. A total of 17,387 samples were taken during Expedition 334 and 761 during Expedition 335, including shipboard and personal samples. There were 31 personal sample requests during Expedition 334 and 37 during Expedition 335.

Sample Materials Curation System

The USIO Curation group continued working with a third-party programmer to finalize the design and create the first test system of the new Sample/Data Request Database. Deployment of the new test version of the database is expected in early July for testing by IODP curatorial staff and others (e.g., Staff Scientists).

Core Curation

All IODP core sample requests are handled by the GCR, Bremen Core Repository, and Kochi Core Center. 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 following “Repository Activity” table 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
		21341I, Rafter, USA	22
	1	22293A, Inderbitzen, USA	core description
		22275A, Singh, India	10
		22177C, Dickens, Sweden	583
		22197B, Roark, USA	28
	26	22292A, Thomas, USA (education)	core description
	45	22287A, John, United Kingdom (education)	core description
	1	22268A, Flores, Spain	1,883
		1136IODP, Sangiorigi, Netherlands	30
		1150IODP, Bolton, Spain	31
		22286A, Groenveld, Germany	140
		22297A, Ingalls, USA	7
		22288A, Lopes, Portugal	329
		22305A, O'Conner, Germany	12
		22302A, Hoefig, Germany	19
		22011C, Pagani, USA	99
		22291A, Paytan, USA	12
		22113B, Jaccard, Switzerland	73
	1	22313A, Schubert, USA	5
		22260B, Ravizza, USA	24
		22306A, Katz, USA	252
		1167IODP, Veenstra, Netherlands	24
		22041B, Gill, USA	23
		22314A, Wang, USA	30
		22316A, Klein, USA	6
		22307A, Jung, Germany	154
		1177IODP, Erhardt, USA	30
		21882B, Cook, United Kingdom	8
		22326A, Rivera, Denmark	8
		22332A, Meynadier, France	100
	1	22322A, Ando, USA	8
		22325A, Ando, USA	48
		22243A, Robinson, USA	1,280
		22156B, Rogerson, United Kingdom	7
		22200B, Yamamoto, Japan	66
		22256B, Smart, United Kingdom	39
		22335A, Meynadier, France	25
		22302B, Hoefig, Germany	20
		22324A, Colwell, USA	22
		21640D, Paytan, USA	152
		22294A, Bralower, USA	50
		876IODP, Buchs, Germany	66
		1214IODP, Veenstra, Netherlands	12
	2	1189IODP, Drury, United Kingdom	2,239
		307IODP, Gussone, Germany	224
	1	22333B, Tominaga, USA	0

Gulf Coast Repository:	Visitors	Request Number, Name, Country	Number of Samples
	1	1184IODP, Evans, USA	20
	65	Public Relations Tours (6)	No samples
Total science	**8**	**45**	**5,477**
Total education:	**71**	**2**	**0**
Total public relations:	**65**	**0**	**0**

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. In addition, the GCR loaned three real core sections from the Gulf of Mexico and three core replicas to the Texas Maritime Museum in Rockport, Texas, for a museum exhibit titled "Getting to the Core, the *JOIDES Resolution*" (see "Strategic Partnerships" in "Education" for more information). The cores and core replicas will be returned to the GCR when the exhibit closes.

Legacy Documentation

The USIO routinely archives electronic copies of Core Curation–related documents and reports produced on behalf of IODP. Ongoing legacy documentation projects for the USIO Curation group are described below.

Sample Request File Scanning

In October 2010, the USIO began scanning ODP and DSDP paper sample request files, which contain some information that is not included in the database. The portable document format (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 and the project is now 40% complete.

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 has progressed to ODP Leg 139.

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. 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 "Repository Activity" table above). Resampling of previously imaged working halves also results in an updated image.

Inventory of Returned Sample Residues

Inventory of the collection of returned DSDP, ODP, and IODP sample residues from scientists continued. This collection is larger (tens of thousands of samples) than the returned residues from the ship, for which the inventory is up to date. More than 60% of the returned sample residues from scientists are now sorted by expedition into clearly labeled boxes. After all of the residues are sorted by expedition, the inventory of individual samples within each box will begin.

Other Projects and Activities

Curators of Marine and Lacustrine Geological Samples Meeting

IODP was represented at the 15–18 May 2011 biannual Curators of Marine and Lacustrine Geological Samples Meeting hosted by the Southampton Oceanographic Center, United Kingdom. A USIO presentation highlighted the latest work and innovations developed for core preservation and sampling both on ship and at the GCR, as well as the associated TAMU ODASES Geosciences Laboratory facilities adjacent to the GCR that are available for visiting scientists.

Climate and Biota of the Early Paleogene Conference

IODP was also represented at the Climate and Biota of the Early Paleogene conference held 5–8 June 2011 in Salzburg, Austria, where many scientists' presentations were based on IODP core material. A USIO representative spoke with scientists who are interested in further IODP core-related research projects, and helped coordinate several future interdisciplinary projects for legacy core material.

San Andreas Fault Observatory at Depth Workshop

The USIO hosted a San Andreas Fault Observatory at Depth (SAFOD) workshop on 16 May 2011 in conjunction with the 2011 EarthScope National Meeting held 17–20 May in Austin, Texas. Representatives from NSF/EarthScope, UNAVCO, and the U.S. Geological Survey, and scientists from many U.S. and international institutions visited TAMU, toured the GCR, examined the SAFOD core collection, and discussed sampling protocol, data management, and future research plans for the program.

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 334 and 335 were added to the LIMS database on shore. These data are in moratorium and available online to the Science Parties with password protection. No new data were placed out-of-moratorium in this quarter.

Log Database

Expedition 335 Hole 1256D standard and image data were processed and put online.

Representatives from DONG Energy in Denmark inquired about DSDP and ODP holes that were not logged, and a Schlumberger representative requested assistance with the following log data:

- Hole 504B (DSDP Legs 69, 70, and 83; ODP Legs 111, 137, 140, 148, and 176),
- Hole 735B (ODP Leg 176),
- Hole 1256D (ODP Leg 206 and IODP Expedition 309/312), and
- Hole U1309D (IODP Expedition 304/305).

Expedition Data Requests

LIMS Database

Top 10 Countries Accessing LIMS Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	570
2	Unknown Country	108
3	Japan	85
4	United Kingdom	71
5	Germany	57
6	South Korea	56
7	China	26
8	France	24
9	Australia	15
10	Western Europe	13
	Others	135
	Total	**1,160**

*Visits by USIO-TAMU employees were filtered out.

Top LIMS Web Queries*		
Rank	**Query**	**Uploads**
1	LIMS Client	317
2	Science data	268
3	Samples	133
	Total	**718**

*Visits by USIO-TAMU employees were filtered out.

Janus Database

Top 10 Countries Accessing Janus Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	1,227
2	Germany	443
3	United Kingdom	314
4	Japan	283
5	The Netherlands	121
6	France	112
7	China	108
8	Western Europe	77
9	Australia	67
10	Uruguay	57
	Others	451
	Total	**3,260**

*Visits by USIO-TAMU employees were filtered out.

Top 20 Janus Web Queries*		
Rank	**Query**	**Uploads**
1	Imaging: core photos	995
2	Samples	892
3	Site summaries	741
4	Hole trivia	494
5	Requests	371
6	Core summaries	308
7	Point calculations	285
8	Hole summaries	267
9	Paleo: age models	264
10	Physical properties: GRA	248
11	Physical properties: MAD	235
12	Chemistry: rock eval	221
13	Leg summaries	191
14	Paleo: age profile	178
15	Imaging: close-up	175
16	Physical properties: MSL	170
17	Chemistry: carbonate	149
18	Chemistry: IW	142
19	Depth calculation	141
20	Cryomag	138
	Others	1,903
	Total	**8,508**

*Visits by USIO-TAMU employees were filtered out.

Other Web Statistics*		
Database query hits:		
	Entire site (successful)	18,294
	Average per day	201
Visitor sessions:		
	Total number of visitor sessions	3,260
	Average per day	35
	Average length of visit	12:55
	International visitor sessions	61.93%
	Visitor sessions of unknown origin	0.43%
	Visitor sessions from United States	37.64%
Visitors:		
	Unique visitors	1,833
	Visitors who only visited once	1,342
	Visitors who visited more than once	491
	Average visits per visitor	1.78

*Visits by USIO-TAMU employees were filtered out.

Data Requests to Data Librarian*	
Requests	**Total**
Country:	
United States	10
United Kingdom	5
Australia	1
Columbia	1
Germany	1
Italy	1
Japan	1
United Arab Emirates	1
Total	22
Data:	
Depth questions	3
Sample data	3
Seismic	3
Usage questions	3
Data update questions	2
Photo requests	2
Chemistry	1
DSDP data questions	1
Formation factors	1
Paleomagnetics	1
Paleontology	1
Smear slides	1
Total	22

*Visits by USIO-TAMU employees were filtered out.

Log Database

Top 10 Countries Accessing Log Web Database*		
Rank	**Country**	**Visitor Sessions**
1	United States	63
2	Russia	2
3	China	1
4	South Korea	1
5	Spain	1
6	United Kingdom	1
	All others	1
	Total	**70**

*Visits by USIO-LDEO employees were filtered out.

Other Log Web Statistics*		
Database query hits:		
	Entire site (successful)	481
	Average per day	6.87
Visitor sessions:		
	Total number of visitor sessions	70
	Average per day	.77
	Average length of visit	4:14
	International visitor sessions	8.57%
	Visitor sessions of unknown origin	1.43%
	Visitor sessions from United States	90.00%
Visitors:		
	Unique visitors	40
	Visitors who only visited once	38
	Visitors who visited more than once	2
	Average visits per visitor	2.19

*Visits by USIO-LDEO employees were filtered out.

Program-wide Access Portal
LIMS Reports Development

The USIO continued work on development of LIMS Reports, an application that provides scientists with a simple, intuitive web interface with 32 reports to extract data and generate reports for scientific analysis. Once completed in September 2011, the new LIMS Reports will also support drill-down access to LIMS data (see “Software Development” for more information).

Operation, Maintenance, and Security
Regional Test and Integration Facility

Work on the Regional Test and Integration Facility continued, with completion of the server and network configuration as scheduled and initiation of the second phase of the project, which includes configuration of basic disaster recovery capability.

Software Development
LIMS Reports

The project scope and clarification of deliverables and nondeliverables for the LIMS Reports project 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

Thirty reports were released into production by the end of this quarter, bringing the reports to 97% 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

The scope and clarification of the Enhanced DESCLogik Application project 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 is ahead of schedule to meet the stated objectives by 1 September 2011, and will likely complete more of the issues than originally estimated.

Legacy Documentation

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

Following a data request, it was noted that the vertical seismic profile SEGY data of ODP Leg 166 (five holes) did not contain the correct information in the file header. New files were produced with the correct information, and both onshore and shipboard databases were updated.

ESO Expedition 302 Formation MicroScanner images of 20 m and 100 m intervals were replaced by images of 100 m and full intervals, respectively, to make them consistent with the presentation of USIO images.

Hole 735B (ODP Leg 118) Borehole Televiewer tool analog images were scanned and converted into PDF images. The database software was modified to include the new data set and the data were made available online.

IODP Inventory Update

Data from USIO Expeditions 319 and 335 and CDEX Hole C0003A were added to the data inventory.

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
Scientific Prospectus:			
Expedition 339: Mediterranean Outflow: environmental significance of the Mediterranean Outflow Water and its global implications	May 2011	doi:10.2204/iodp.sp.339.2011	
Preliminary Reports:			
Expedition 330 : Louisville Seamount Trail: implications for geodynamic mantle flow models and the geochemical evolution of primary hotspots	April 2011	doi:10.2204/iodp.pr.330.2011	
Expedition 333: NanTroSEIZE Stage 2: subduction inputs 2 and heat flow	May 2011	doi:10.2204/iodp.pr.333.2011	Edited and formatted for CDEX
Expedition 334: Costa Rica Seismogenesis Project (CRISP): sampling and quantifying input to the seismogenic zone and fluid output	June 2011	doi:10.2204/iodp.pr.334.2011	
Proceedings of the Integrated Ocean Drilling Program:			
Volume 314/315/316			
Data report: permeability, compressibility, stress state, and grain size of shallow sediments from Sites C0004, C0006, C0007, and C0008 of the Nankai accretionary complex	22 June 2011	doi:10.2204/iodp.proc.314315316.208.2011	Edited and formatted for CDEX

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 Citations Data

Program-Related Citations Submitted to AGI

In November 2008, the USIO began submitting Program-related and other 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, and IODP. The USIO submitted 481 citations to AGI this quarter.

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 Q3	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	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	15

Synthesis papers

Expedition	Submission Deadline (26 Months Postmoratorium)	Deadline Extensions Approved in FY11 Q3	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	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. Publications requested and distributed during the quarter are listed below.

Publication	Number Distributed
IODP Publications:	
Proceedings of the Integrated Ocean Drilling Program Expedition Report DVDs	4
ODP Publications:	
Proceedings of the Ocean Drilling Program, Initial Reports	1
Proceedings of the Ocean Drilling Program, Scientific Results	1

IODP Publications Web Site

The IODP Publications web site is hosted at TAMU.

FY11 Q3 IODP Publications Web Site	
Parameter	**www.iodp.org/ scientific-publications**
Page views	231,510
Site visits	53,128

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			
		April 2011	May 2011	June 2011	FY11 Q3 Total
IODP	10.2204	2,537	2,828	2,770	8,135
ODP/DSDP	10.2973	5,252	15,152	4,556	24,960

Publications Support

The USIO provided Publications Assistant services during USIO Expeditions 334 and 335 and hosted postexpedition meetings for USIO Expedition 329 and CDEX Expeditions 332 and 333.

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 third quarter of FY11 are shown in the table below.

Technical Documentation	FY11 Q3 Status
Quick start guides	
Superconducting Rock Magnetometer (SRM) long-core sample measurements	Sent out for technical review
SRM discrete sample measurements	Sent out for technical review
Thermal conductivity (TK04)	Sent out for final review
EVA X-ray diffraction (XRD) evaluation software	Released V1.0
User guides	
Paleontology lab spraying device for fixing fine fractions	Sent out for final review
Microscope Image and Metadata Capture (MIMEC)	Sent out for final review
Carbon, hydrogen, nitrogen, and sulfur (CHNS) analyzer	Released V1.0
Autotitrator	Released V1.1
XRD system	Released V1.0
Advanced user guides	
CHNS analyzer	Released V1.0

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 Q2 report, the first iteration of the FY12 IODP-USIO Annual Program Plan, and planning documentation for reporting deliverables.

Other Projects and Activities

Society for Technical Communication International Summit Award

In May 2011, the USIO won an Award of Excellence in the Society for Technical Communication (STC) International Summit Awards Competition. The winning contest entry, the IODP-USIO FY09 Annual Report, was one of two IODP entries that advanced to the international STC competition in February 2011 after winning awards in the Houston STC chapter's annual competition.

Digital Archive Consulting

L.N. Taylor, who develops and administers digitization efforts for the University of Florida's Digital Library Center, met with USIO representatives on 20 June 2011 in College Station, Texas. Taylor is advising the USIO on the development of a long-term archive and publication preservation strategy and expects to submit a report with her recommendations in July 2011.

EDUCATION

USIO education activities are supported by NSF through other Program integration costs. 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

2011 School of Rock Review Summit

Planning continued for a School of Rock review and assessment to be held 31 July–3 August 2011 on board the *JOIDES Resolution* while the ship is in port in Curaçao. This meeting will 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. Fifteen participants—three from each of the five workshops—were selected through a competitive process. USIO representatives and former School of Rock instructors will also attend.

Onboard Educator Program

Expedition 334 Onboard Education Officer J. Saltzman (Stanford University) conducted video broadcasts and other activities for a series of teacher groups with whom she works in her capacity as Director of Outreach Education at the School of Earth Sciences. During Expedition 335, Onboard Education Officer S. Saunders (USIO Communications Director, Ocean Leadership) conducted video broadcasts, wrote blogs and social media updates, and coordinated the work of S. McNaboe, a scientific illustrator hired by the USIO to create visual art products related to the expedition. Many of McNaboe's illustrations will be useful for the Science Party as they produce presentations and papers on their work; some of the illustrations will also be useful for future education products.

Educational Outreach Events

The top winners of the J/aRt awards receive a special program at their schools or community, including a visit by a guest scientist. One of these programs was conducted on 11 June 2011 at the Utica Children's Museum of History, Science and Technology in Utica, New York. Expedition 329 Co-Chief Scientist S. D'Hondt served as the guest speaker, presented the award to one of this year's J/aRt winners, showed core replicas and *JOIDES Resolution* floor puzzles, shared and distributed other educational materials, and spoke about his science to a diverse museum audience.

Deep Earth Academy was invited to present a program for winners of the Presidential Awards for Excellence in Math and Science Teaching (PAEMST) in May 2011 at NSF. At this program, USIO staff introduced IODP to the 100 award winners, showcased several teacher-developed activities with NSF Einstein Fellow, PAEMST winner, and School of Rock 2007 alumna T. King, and conducted a live ship-to-shore video broadcast with the Expedition 335 Co-Chief Scientists.

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 334 and 335.

USIO Educational Web Site Statistics

FY11 Q3 Deep Earth Academy Web Sites*		
Web domain	**www.joidesresolution.org**	**www.oceanleadership.org/education/deep-earth-academy**
Page views	46,198	26,818
Site visits	14,015	19,192

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

Videos and Video Broadcasts

J. Saltzman conducted 12 video broadcasts to teacher workshops, middle school students, and undergraduates during Expedition 334, reaching approximately 400 students and educators. S. Saunders conducted 12 video broadcasts to high schools, elementary schools, and colleges worldwide during Expedition 335, reaching approximately 450 students and teachers.

Educational Materials Development and Distribution

Materials developed this quarter included a new Pacific Equatorial Age Transect (PEAT) News Network (PNN) video about post-PEAT expedition meetings/activities in Paris, France; a new edition of the *Tales of the Resolution* (http://www.ldeo.columbia.edu/BRG/outreach/media/tales/index.html); an article about School of Rock published in *The Green Teacher* in May; and several video interviews with scientists produced by Expedition 330 videographer L. Strong.

Materials were distributed this quarter at conferences and outreach activities and in response to requests received through the Deep Earth Academy web site. At the end of FY11 Q2 (in late March), the Deep Earth Academy order form for free materials was posted by unknown parties on several "free stuff" web sites. Orders subsequently skyrocketed to four times the number of orders received in any previous quarter. The order process has been streamlined into standard grade-level packets in order to meet this new demand.

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 Expeditions 334 and 335—sharing their personal science experiences and stories with students worldwide. In addition, Expedition 329 Co-Chief Scientist S. D'Hondt served as guest speaker and IODP representative at a J/aRt award presentation special program at the Utica Children's Museum of History, Science and Technology in Utica, New York (see "Educational Outreach Events" for more information).

Strategic Partnerships

Texas Maritime Museum Partnership

The USIO partnered with the Texas Maritime Museum in Rockport, Texas, to develop and launch "Getting to the Core, the *JOIDES Resolution*," a temporary exhibit featuring scientific ocean drilling. The exhibit, initiated by IODP Expedition 327 participant and artist/illustrator D. Bowman, features real sediment cores, drilling artifacts, video, and activities for children. The exhibit also includes a montage of more than 50 spectacular photos and works of art created on board that tell the story of the expedition. "Getting to the Core" opened in April 2011 and is expected to run through October 2011. There is already interest from several other museums, including the North Museum in Lancaster, Pennsylvania, to borrow and display this exhibit once its run at Texas Maritime Museum is finished.

Center for Dark Energy Biosphere Investigations Partnership

The USIO partnered with the Center for Dark Energy Biosphere Investigations (C-DEBI) on the R/V *Atlantis* Expedition AT18-07 from 26 June–14 July 2011. The overall goal of this expedition was to understand hydrologic properties and processes within volcanic oceanic crust, including links between fluid flow, geochemistry, rock alteration, and subseafloor microbiology. The remotely operated vehicle *Jason* was used to enable onboard personnel to collect samples and data from the subseafloor observatories (CORKs) installed during IODP Expedition 327.

A team of five onboard educators (including a high school physics teacher, high school biology teacher, middle school science teacher, informal science educator, and videographer) coordinated by the USIO provided updates on Expedition AT18-07 via the *JOIDES Resolution* blog, Facebook, and Twitter, and offered 13 live video/audio events. Educational components of the expedition also included a web-based interactive module called "Adopt a Microbe From the Deep Biosphere" that allowed students and educators to follow the mission in real-time, virtually 'adopt' a microbe from the bottom of the ocean, and receive daily science updates from the vessel (https://sites.google.com/site/adoptamicrobe3/). The expedition spanned FY11 quarters three and four. During this quarter, education and outreach planning was conducted, a full video broadcast schedule was developed and confirmed, and the expedition launched from Astoria, Oregon.

Outside Funding and Sponsorships

The USIO received a grant from C-DEBI to proceed with its partnership for Expedition AT18-07 education and outreach coordination (see "Center for Dark Energy Biosphere Investigations Partnership" above).

Diversity Support Initiatives

IODP-USIO Diversity Internship

The first IODP-USIO Diversity Internship was awarded to A. Sutton in May 2011. The three-month internship, which this summer has a science communications focus, started in early June at the Ocean Leadership office. Sutton will work closely with a mentor from the USIO communications group to conceive, develop, and disseminate new materials that help to heighten IODP's national and international visibility.

Sutton holds a Bachelor's Degree in Biology from Howard University (Washington, DC) and a Master's Degree in Wildlife and Fisheries from TAMU. Her professional experience includes working in science policy, communications, marketing, and outreach.

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 scientist interviews produced by Expedition 330 videographer L. Strong, as well as the latest PNN video produced by Zcene Moving Media Company and the latest issue of the *Tales of the Resolution* series (Volume II, Number 1, June 2011).

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 to U.S. Legislative Audiences

The USIO co-sponsored three IODP scientists to participate in the 16th Annual Science Engineering and Technology Congressional Visits Days on 6 and 7 April 2011. IODP Scientists D. Blackman (Scripps Institute for Oceanography), B. John (University of Wyoming), and H. Mills (TAMU) attended geoscience-specific training held at American Geophysical Union headquarters and met with members of Congress and their staff to discuss the vital role NSF plays in the geosciences.

On 11 May 2011, Ocean Leadership participated in the 17th Annual Coalition for National Science Funding Exhibition and Reception. USIO staff, together with S. Humphris (WHOI), were at the booth to speak with congressional staff about IODP research and discoveries and distribute copies of IODP brochures and promotional materials.

Communications Activities: Media and Public Outreach

Port Call Outreach

During the *JOIDES Resolution*'s port call in Puntarenas, Costa Rica, in April 2011, the USIO collaborated with leading Costa Rican scientists and the National University of Costa Rica (UNA) to coordinate multiple outreach activities. These activities included a press conference hosted at UNA's Marine Biology Station in Puntarenas, featuring leading scientists from Expeditions 334 and 335. Ship tours were held for approximately 60 people, including reporters, members of the Costa Rican scientific community (including the Costa Rican Minister of Science and Technology), and university and high school students.

Global Outreach Activities

The USIO supported IODP-MI and the global Outreach Task Force in planning media outreach and preparing speakers for the 16 June 2011 public release of the New Science Plan in Amsterdam, The Netherlands.

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):

- Major U.S. scientific research vessel to visit Costa Rica 13–16 April (6 April 2011). http://www.oceanleadership.org/2011/major-us-scientific-research-vessel-to-visit-costa-rica/
- Importante barco científico de los Estados Unidos visitará Costa Rica del 13 al 16 de abril (6 April 2011) (San Jose, Costa Rica)
- Significant role of oceans in onset of ancient global cooling (26 May 2011). http://www.oceanleadership.org/2011/significant-role-of-oceans-in-onset-of-ancient-global-cooling/
- lluminating Earth's past, present, and future (16 June 2011 webcast presentation of 2013–2023 Science Plan). http://iodp.streamco.tv/IODP_-_Livestream_16th_of_June_2011.html
- Scientists set course for next decade of scientific ocean drilling (16 June 2011). http://www.oceanleadership.org/2011/scientists-set-course-for-next-decade-of-scientific-ocean-drilling/

- Heavy metal meets hard rock: battling through the ocean crust's hardest rocks to capture the boundary between magma and water (22 June 2011). http://www.oceanleadership.org/2011/heavy-metal-meets-hard-rock/
- Scientists study earthquake triggers in Pacific Ocean (30 June 2011). http://www.oceanleadership.org/2011/scientists-study-earthquake-triggers-in-pacific-ocean/

Communications Tools

The Spring 2011 issue of the IODP-USIO newsletter, *Core Discoveries*, was published and distributed this quarter and included articles on recent and upcoming expeditions, program renewal, USIO diversity initiatives, and updates from NSF. The full-color newsletter is available online (http://www.oceanleadership.org/wp-content/uploads/2009/03/CoreDiscoveries_Spring2011_Web2.pdf), and printed copies may be requested from Ocean Leadership (IODPCommunications@oceanleadership.org).

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).

- Sager, W.W., Sano, T., and **Geldmacher, J.,** 2011. How do oceanic plateaus form? Clues from drilling at Shatsky Rise. *Eos, Trans. Am. Geophys. Union*, 92(5):37–38. doi:10.1029/2011EO050001 [published during FY11 Q2, but not reported]

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.

- Astrobiology Magazine, 2011. Ocean 'mixmaster' moves global climate, *Astrobiol. Mag.*, 29 May 2011 http://www.astrobio.net/pressrelease/3998/ocean-mixmaster-moves-global-climate (based on IODP press release, "Significant role of oceans in onset of ancient global cooling." Also appeared on web pages for Rensselaer Polytechnic Institute, Science Daily, World Weather Post, Irish Weather Online, Environmental Research Web, e! Science News, PhysOrg.com, and Red Orbit)
- Black, R., 2011. Dino crater focus for ocean drilling plans. *BBC News*, 5 April 2011. http://www.bbc.co.uk/news/science-environment-12969599 (Also appeared on the Zhang Mei Mei web page)
- Caves, J.K., 2011. AGU members press for continued federal support for basic research on Capitol Hill. *Eos, Trans. Am. Geophys. Union*, 92(18):156.
- Choi, C.Q., 2011. Too hard for science? Journey to the core of the earth. *Sci. Am.*, 23 May 2011. http://www.scientificamerican.com/blog/post.cfm?id=too-hard-for-science--journey-to-th-2011-05-23
- Cooper, Q., 2011. Material World (IODP New Science Plan discussed on regular radio show). *BBC Radio 4*, 16 June 2011 http://www.bbc.co.uk/programmes/b011vhdh
- Heredero, L., 2011. Buscan develar los misterios del cráter de Chicxulub. *BBC Mundo*, 7 April 2011. http://www.bbc.co.uk/mundo/noticias/2011/04/110407_verde_crater_chicxulub_mexico_lh.shtml (Also appeared on the MSN Latino web page)

- Leff, A., 2011. Costa Rica rock hunt goes far below Pacific Ocean. *Reuters*, 18 April 2011. http://www.reuters.com/article/2011/04/18/us-costarica-geology-idUSTRE73H0O820110418 (Also appeared on web pages for Huffington Post, Yahoo! News, Planet Ark, Inside Costa Rica, and BWN Patagonia)
- Livingstone, P., 2011. Digging through the discontinuity. *R&D Mag.*, 30 March 2011. http://www.rdmag.com/Community/Blogs/RDBlog/Geology-Digging-through-the-discontinuity/
- Mayer, A., 2011. A trans-continental island. *The World*, 11 July 2011. http://www.theworld.org/2011/07/a-trans-continental-island/
- Mayer, A., 2011. Cool job: shipboard laboratory technician (curator). *Schools.com*, 28 June 2011. http://www.schools.com/articles/cool-job-shipboard-laboratory-technician-curator.html
- Mervine, E., 2011. Why we need scientific ocean drilling. *Georneys: Geological Musings, Wanderings and Adventures*, 8 June 2011. http://georneys.blogspot.com/2011/06/why-we-need-scientific-ocean-drilling.html (Also appeared on the Geobulletin web page)
- *R&D Magazine*, 2011. Deep ocean drillers battle the crust's hardest rocks. *R&D Mag.*, 30 June 2011 http://www.rdmag.com/News/2011/06/Environment-Geology-Machinery-Deep-ocean-drillers-battle-the-crust-s-hardest-rocks/ (based on IODP Press Release "Heavy metal meets hard rock: battling through the ocean crust's hardest rocks to capture the boundary between magma and water." Also appeared on web pages for PhysOrg.com, e! Science News, RedOrbit, Civil Engineering, and Geology.com)
- *Science Daily*, 2011. What lies beneath the seafloor? Results from first microbial subsurface observatory experiment. *Science Daily*, 5 May 2011. http://www.sciencedaily.com/releases/2011/05/110503081008.htm
- *Slate France*, 2011. Des scientifiques se lancent dans un voyage au centre de la Terre. *Slate.fr*, 5 April 2011. http://www.slate.fr/lien/36481/costa-rica-geologue-expedition-terre (Also appeared on the Yahoo! Quebec web page)
- Soto, M., 2011. Hoy zarpa del país barco que explorará el manto terrestre. La Nación, 16 April 2011. http://www.nacion.com/2011-04-16/AldeaGlobal/FotoVideoDestacado/AldeaGlobal2749715.aspx
- Swensrud, A., 2011. Rocking the classroom from the ocean. *Green Teacher Mag.*, 92 (Spring 2011). (Authored by School of Rock 2010 Alumnus)
- Thompson, K., 2011. The next big quake. *Men's J.*, June 2011.
- Wayman, E, 2011. Drilling into a hot spot. *EARTH Mag.*, 1 May 2011.

In addition to commentary featured in blogs on the *JOIDES Resolution* web site, IODP scientist and SAS Executive Committee Chair M. Raymo and writer C. Raymo wrote about their experiences on board the *JOIDES Resolution* during the transit from Panama to Curaçao in their personal blogs (http://wmmorrisfanclub.blogspot.com/ and http://blog.sciencemusings.com/, respectively). Other transit participants included artist W. Jacob and journalist A. Mayer (see "News Articles, Programs, Media Citations, or Public Commentary" section).

Communications Training

During Expedition 335, the USIO conducted a training session with the Co-Chief Scientists and members of the Science Party, reviewing the press embargo policies of *Science* and *Nature*, as well as the opportunities and risks of social media.

APPENDIX A: FINANCE REPORT

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

APPENDIX B: TRAVEL

Purpose*	Category	DATES	Location	Institution: Personnel
European Geosciences Union (EGU) Meeting	Meeting	3–8 April 2011	Vienna, Austria	TAMU: A. Klaus
IODP Management Meeting	Planning	4 and 5 April 2011	College Station, Texas	Ocean Leadership: D. Divins LDEO: D. Goldberg
Expedition 320 Second Postexpedition Meeting	Postexpedition Meeting	10–14 April 2011	Paris, France	Ocean Leadership: L. Peart LDEO: T. Williams TAMU: A. Klaus
Expedition 335 Port Call	Port Call Activities	12–18 April 2011	Puntarenas, Costa Rica	Ocean Leadership: D. Divins TAMU: B. Clement, D. Houpt, B. Julson, K. Johnson, J. Miller, R. Mitchell, J. Rosser
Expedition 334 Education and Outreach Activities	Education/ Outreach	13 April–3 June 2011	Puntarenas, Costa Rica	Ocean Leadership: S. Saunders Other: S. McNabe (Scientific Illustrator)
Relocation from Houston to College Station	Relocation	15 and 16 April 2011	College Station, Texas	TAMU: L. Nguyen
Expedition 320 Video Meeting with Zcene Moving Media	Education/ Outreach	15–17 April 2011	Amsterdam, The Netherlands	Ocean Leadership: L. Peart
IODP Symposium	Meeting	27 April–1 May 2011	Amsterdam, The Netherlands	TAMU: M. Malone
Council of Science Editors (CSE) 2011 Conference	Conference	30 April–3 May 2011	Baltimore, Maryland	TAMU: G. Lowe, E. O'Roke
Labview Training	Training	1–6 May 2011	Houstin, Texas	TAMU: L. Nguyen
Offshore Technology Conference (OTC)	Conference	2–6 May 2011	Houston, Texas	Ocean Leadership: G. Myers TAMU: B. Aduddell, S. Midgley
Expedition 329 Postexpedition Meeting	Postexpedition Meeting	2–6 May 2011	College Station, Texas	LDEO: H. Evans
Expedition 341 Pre-expedition Meeting	Planning	5 and 6 May 2011	College Station, Texas	LDEO: H. Evans
Business Writing Class	Training	8–10 May 2011	Houston, Texas	TAMRF: K. Lee
Expedition 340 Pre-expedition Meeting	Planning	8–11 May 2011	College Station, Texas	LDEO: A. Slagle
USIO Meeting	IT Development	10–13 May 2011	College Station, Texas	Ocean Leadership: D. Fils
Learning Tree Programming Training	Training	14–18 May 2011	New York, New York	TAMU: S. Nagarajan
Curators of Marine and Lacustrine Geological Samples Meeting	Conference Representation	14 May–4 June 2011	London, United Kingdom	TAMU: P. Rumford

*Travel associated with meetings, conferences, port call work, and nonroutine sailing activities.
Continued on next two pages.

Purpose*	Category	Dates	Location	Institution: Personnel
Oracle VM Server SPARC Adm Class	Training	15–18 June 2011	Denver, Colorado	TAMU: M. Mefferd
Contracts: Reading, Writing and Negotiating	Training	17 and 18 May 2011	Austin, Texas	TAMU: R. Watkins
Novell SUSE Linux Enterprise Server (SLES) 11 Fundamentals and Administration 1	Training	17–28 May 2011	Rockville, Maryland	TAMU: M. Cannon
Detailed Planning Group-Rapid Response Meeting	Planning	18–20 May 2011	Tokyo, Japan	Ocean Leadership: D. Divins
Meeting at Rensselaer Polytechnic Institute	IT Development	23–26 May 2011	Troy, New York	Ocean Leadership: D. Fils
Expedition 324 Second Postexpedition Meeting	Postexpedition Meeting	25 May–5 June 2011	Honolulu, Hawaii	LDEO: G. Iturrino TAMU: J. Geldmacher
Simple Cabled Instruments for Measuring Properties In-Situ (SCIMPI) Test	Testing	26 May 2011	Palisades, New York	Ocean Leadership: G. Myers
Operations Supervision Balboa–Curaçao	Tie-Up	28 May–22 July 2011	Montego Bay, Jamaica	TAMU: M. Storms
Environmental Protection and Safety Panel (EPSP)	SAS	1–3 June 2011	Edinburgh, Scotland	Ocean Leadership: D. Divins TAMU: G. Claypool, M. Malone, S. Midgley
Expedition 335T Port Call	Port Call Activities	2–5 June 2011	Panama City, Panama	TAMU: B. Clement, B. Wasson
Climate and Biota of the Early Paleogene (CBEP) Conference	Conference Representation	3–9 June 2011	Salzburg, Austria	TAMU: J. Firth
Operations Task Force (OTF) Meeting	SAS	10 and 11 June 2011	Edinburgh, Scotland	Ocean Leadership: D. Divins LDEO: M. Reagan TAMU: M. Malone
J/aRt Contest Award Presentation	Education/ Outreach	10–12 June 2011	Utica, New York	Other: S. D'Hondt (Presenter)
Dual Gradient Meeting	Engineering Planning	12–17 June 2011	Copenhagen, Norway	Ocean Leadership: G. Myers
Science Advisory Structure Executive Committee (SASEC) Meeting	SAS	14 and 15 June 2011	Amsterdam, The Netherlands	Ocean Leadership: D. Divins LDEO: D. Goldberg TAMU: B. Clement
International Working Group Plus (IWG+) Meeting	SAS	16 and 17 June 2011	Amsterdam, The Netherlands	Ocean Leadership: D. Divins
Google Web Toolkit (GWT) Training	Training	19–25 June 2011	Irvine, California	TAMU: J. Zhao
Deepstar Meeting	Engineering Planning	22 June 2011	Houston, Texas	Ocean Leadership: G. Myers
Microsoft Access Training	Training	22–24 June 2011	San Antonio, Texas	TAMRF: V. Day
Data Management Coordination Group (DMCG) Meeting	SAS	20–22 June 2011	Washington, DC	Ocean Leadership: D. Fils LDEO: D. Quoidbach TAMU: P. Foster, R. Mithal, J. Rosser

Continued on next page.

Purpose*	Category	Dates	Location	Institution: Personnel
Tie-Up Activities	Tie-Up	12 June–25 July 2011	Curaçao	TAMU: B. Julson, R. Gjesvold, K. Hillis
Institutional Commitment meeting with Ocean Leadership	Meeting	21–23 June 2011	Washington, DC	TAMRF: B. Neyses
The Voice of Leadership	Training	26–30 June 2011	Boston, Massachusetts	TAMU: C. Alvarez Zarikian
Reelwell Meeting	Engineering Planning	26–30 June 2011	Stavenger, Norway	Ocean Leadership: G. Myers
National Science Foundation (NSF) Meeting	Reporting	27 and 28 June 2011	Washington, DC	Ocean Leadership: D. Fils

APPENDIX C: USIO QUARTERLY REPORT DISTRIBUTION

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