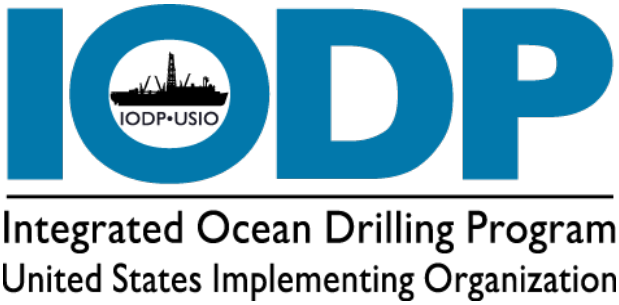
INTEGRATED OCEAN DRILLING PROGRAM

United States Implementing Organization



FY12 Quarterly Report 4

1 July–30 September 2012

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.

30 November 2012

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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) FY12 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. In this document, references to TAMU include Texas A&M Research Foundation (TAMRF).

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

FY12 Q3 IODP-USIO Quarterly Report

The USIO report for the third quarter of FY12 (January–March 2012) was submitted to NSF and the IODP central management office (IODP-MI) on 14 August 2012 (http://iodp.tamu.edu/publications/AR/FY12/FY12_Q3.pdf).

FY13 IODP-USIO Annual Program Plan to IODP-MI

On 3 July 2012, the USIO submitted for review and evaluation the revised IODP-USIO FY13 Annual Program Plan to IODP-MI, which outlines requests for science operating costs (SOC) and platform operating costs (POC) including the Costa Rica Seismogenesis Project (CRISP) 2 Expedition; Hess Deep Plutonic Crust Expedition; Southern Alaska Margin Tectonics, Climate, and Sedimentation Expedition; Asian Monsoon Expedition; Simple Cabled Instrument for Measuring In-Situ Parameters (SCIMPI) test deployment; non-IODP periods totaling 108 days; long–lead time planning costs for expeditions proposed for FY14; and continuing SOC shore-based activities during FY13. This IODP-USIO FY13 Annual Program Plan to IODP-MI budget totaled $2,991,353 in SOC requested from IODP-MI and $67,242,567 requested from NSF for USIO operations.

FY13 IODP-USIO Annual Program Plan to NSF

On 3 July 2012, the USIO submitted for review and evaluation the revised IODP-USIO FY13 Annual Program Plan to NSF, which outlines requests for costs including the Costa Rica Seismogenesis Project 2 Expedition; Hess Deep Plutonic Crust Expedition; Southern Alaska

Margin Tectonics, Climate, and Sedimentation Expedition; Asian Monsoon Expedition; SCIMPI test deployment; non-IODP periods totaling 108 days; long–lead time planning costs for expeditions proposed for FY14; and USIO efforts for education and outreach and associated management and administrative support. This IODP-USIO FY13 Annual Program Plan to NSF budget totaled $67,980,170. The IODP-USIO FY13 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.

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 (PMOs), 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 meetings of standing committees and task forces are available online (http://www.iodp.org/meeting-reports). Other special meetings for which minutes will not be available online are described in this section.

Conference and meeting schedule

Conference/Meeting*	Date	Location
International Geological Congress (IGC) and IODP Session	5–10 August 2012	Brisbane, Australia
Site Characterization Panel (SCP) Meeting	7–9 August 2012	Barcelona, Spain
Expedition 336 Operations Review Task Force (ORTF)	12–14 September 2012	College Station, Texas
Scientific Technology Panel (STP) Meeting	4–6 September 2012	Portland, Oregon
Program Member Office (PMO) Meeting: Observatories in Scientific Ocean Drilling	10 and 11 September 2012	Houston, Texas

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

OTHER LIAISON ACTIVITIES

New membership activities

The USIO-TAMU Director of Science Services, B. Clement, accompanied Dr. Rodey Batiza (NSF) to an 8 August 2012 meeting at the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) Office in Brasilia, Brazil, to officially announce Brazil's full membership in IODP. Approximately 40 scientists, university, and government officials attended. Clement and Batiza also traveled to Jakarta, Indonesia, in September 2012 to attend a series of meetings with government agencies and marine research institutions to discuss membership in IODP.

CONTRACT SERVICES

Ocean Leadership

Contract activity

Ocean Leadership received the following modifications during the reporting period.

NSF Contract OCE-0352500 with Ocean Leadership

- Modification 56: Provided $4,761,673 in funding toward FY12 activities, thereby fully funding the FY12 Annual Program Plan of $63,409,175.
- Modification 57: Updated the indirect rate chart, extended the contract's period of performance through 30 September 2014, approved the FY13 Annual Program Plan of $67,445,307, and provided $12,430,000 in funding towards FY13 Annual Program Plan activities.

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

No modifications were received during this reporting period.

Subcontract activity

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

Ocean Leadership Subcontract JSC 4-03 with LDEO

- Modification 58: Provided $314,230 in SOC nonoperations (SOC nonops) funding, thereby fully funding FY12 SOC nonops activities.
- Modification 59: Provided $698,776 in POC funding, thereby fully funding FY12 POC activities.

Ocean Leadership Subcontract JSC 4-02 with TAMRF

- Modification 71: Provided $4,091,431 in POC funding, thereby fully funding FY12 POC activities.
- Modification 72: Increased the FY12 Annual Program Plan from $57,248,250 to $57,648,250 to budget POC costs associated with coating the 5 inch and 5-1/2 inch drill pipe and provided the corresponding funding of $400,000.

LDEO

Subcontract activity

LDEO issued the following subcontract modifications during the reporting period.

LDEO subcontract with Schlumberger

- Amendment #04: Provided the final FY12 funding increment of $471,876.

TAMRF

Contracts/procurement activity ($100,000 or greater)

- 18 July 2012: Purchased an electro-optical mechanical (EOM) cable in the amount of $350,674.34 from Umbilicals International.
- 23 August 2012: Purchased 5 inch and 5-1/2 inch drill pipe in the amount of $1,385,240 from VAM Drilling USA, Inc.
- 14 September 2012: Purchased coating services for new 5 inch and 5-1/2 inch drill pipe in the amount of $453,950 from Thermal Spray Specialists LLC.
- 26 September 2012: Purchased two gas chromatograph systems in the amount of $147,705.74 from Agilent Technologies Inc.

Miscellaneous activity

- 17 July 2012: Submitted a Request for Approval to purchase an electro-optical mechanical (EOM) cable.
- 15 August 2012: Updated Section II. Vehicle Cost/Mileage Data by Vehicle for years 2012, 2013, and 2014 and submitted to NSF.
- 15 August 2012: Submitted the Annual Motor Vehicle Report (projections) to Ocean Leadership for submission to NSF.
- 20 August 2012: Submitted a prior approval letter for the purchase of new 5 inch and 5-1/2 inch drill pipe.
- 26 August 2012: Submitted a Request for Approval to purchase coating services for new 5 inch and 5-1/2 inch drill pipe.
- 26 September 2012: Submitted a Request for Prior Technical Approval to purchase a scanning electron microscope.

Insurance related to Ocean Leadership subcontracts

As a result of negotiations finalized this quarter, the premium totals for all insurance policies within the FY13 program of insurance will decrease 1.5% over FY12 premiums.

PERSONNEL STATUS

Ocean Leadership

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

LDEO

The following positions were vacated during the quarter:

- Geetika Gurbuxani (Electrical Engineer): 30 June 2012
- Eric Meissner (Senior Electrical Engineer): 15 July 2012
- Stefan Mrozewski (Senior Mechanical Engineer): 15 September 2012

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

TAMU

The following positions were vacated during the quarter:

- Graphics Specialist II (Paul Pleasant): 24 August 2012
- Research Specialist III (Trevor Cobine): 31 August 2012
- Staff Scientist (Nicole Stroncik): 14 September 2012

The following positions were opened and advertised during the quarter:

- Applications Developer I
- Graphics Specialist II

The following positions were filled during the quarter:

- Staff Scientist (Leah Schneider): 9 July 2012
- Marine Laboratory Specialist I (Emily Fisher): 31 July 2012

USIO WEB SERVICES

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

USIO website statistics

USIO website	FY12 Q4 page views*	FY12 Q4 site visits*
www.iodp-usio.org	14,799	9,493
iodp.ldeo.columbia.edu	12,776	3,270
iodp.tamu.edu	416,103	67,861
Total	**443,678**	**80,624**

*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 archive

Legacy preservation activities include storing electronic copies of relevant management and administration–related documents and reports produced by the USIO. Documents and publications archived this quarter in a dedicated Content Management System (CMS) included the FY12 Q3 IODP-USIO Quarterly Report to NSF and IODP-MI, FY13 IODP-USIO Annual Program Plan to NSF, FY13 IODP-USIO Annual Program Plan to IODP-MI, and contract modifications.

Additionally, the USIO completed posting electronic copies of a wealth of missing pre-1998 Ocean Drilling Program (ODP) and Deep Sea Drilling Project (DSDP) SAS agenda books, minutes, and reports to the ODP Legacy website (www.odplegacy.org). Hard copies of these documents were previously stored at the former ODP JOIDES office (Rosenstiel School of Marine and Atmospheric Science [RSMAS], University of Miami).

Legacy web services

Key data, documents, and publications produced during DSDP and ODP are preserved in the legacy websites, which highlight the scientific and technical accomplishments of these ground-breaking precursors to IODP. The legacy websites contain downloadable documents that cover a wide spectrum of Program information, from laboratory and instrument manuals to all of the Program's scientific publications, journals, and educational materials.

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

Legacy website statistics

Legacy website	FY12 Q4 page views*	FY12 Q4 site visits*
www-odp.tamu.edu	1,365,819	263,139
www.odplegacy.org	8,210	3,543
www.deepseadrilling.org	181,533	56,923
Total	**1,555,562**	**323,605**

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

Updated FY12 Q3 statistics

The following table had incorrect totals in the FY12 Q3 report.

USIO website	FY12 Q3 page views*	FY12 Q3 site visits*
www-odp.tamu.edu	1,330,545	282,294
www.odplegacy.org	8,492	3,348
www.deepseadrilling.org	199,050	47,130
Total	**1,538,087**	**332,772**

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

OTHER PROJECTS AND ACTIVITIES

TAMU Project Portfolio Management program

The TAMU Project Portfolio Management (PPM) process was adjusted during a supervisor's meeting on 31 August based on lessons learned over the last two years. The most significant change to the PPM process front-loads much of the project planning work before it is prioritized and placed on the portfolio list, particularly for small projects. This modified process helps the Issues Management Team (+) make more informed decisions regarding project importance, creates a prioritized work queue of work-ready projects, and empowers our supervisors to collaborate on and complete small projects when time and resources permit, without having to wait for the development of project requirements, specifications, and so on.

TECHNICAL, ENGINEERING, AND SCIENCE SUPPORT

The USIO is responsible for planning, managing, coordinating, and performing activities and providing services, materials, platforms, and ship- and shore-based laboratories for USIO expeditions; long-range operational planning for out-year USIO expeditions; and technical advice and assistance for European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO) and Center for Deep Earth Exploration (CDEX) expeditions.

USIO EXPEDITION SCHEDULE

Expedition		Port (Origin)	Dates[1, 2]	Total Days (Port/ Sea)	Days at Sea (Transit[3]/ Ops)	Co-Chief Scientists	USIO Contacts[4]
Lesser Antilles Volcanism and Landslides[5]	340	San Juan, Puerto Rico	2 March–17 April 2012	45 (3/42)	42 (3/39)	A. Le Friant, O. Ishizuka	TAMU: A. Klaus* LDEO: A. Slagle
Non-IODP [17 April–2 June 2012]							
Newfoundland Sediment Drifts[6]	342	Bermuda	2 June–1 August 2012	60 (2/58)	58 (8/50)	R. Norris P. Wilson	TAMU: P. Blum* LDEO: A. Fehr^
Non-IODP [1 August–23 October 2012]							
Costa Rica Seismogenesis Project (CRISP) 2	344	Balboa, Panama	23 October–11 December 2012	49 (2/47)	47 (3/44)	R. Harris A. Sakaguchi	TAMU: K. Petronotis* LDEO: A. Malinverno^
Hess Deep Plutonic Crust	345	Puntarenas, Costa Rica	11 December 2012–12 February 2013	63 (7/56)	56 (11/45)	K. Gillis J. Snow	TAMU: A. Klaus* LDEO: G. Guerin^
Non-IODP [12 February–25 May 2013]							
SCIMPI deployment	341S	Victoria, British Columbia (Canada)	25–29 May 2013	4 (0/4)	4 (2/2)		
Southern Alaska Margin Tectonics, Climate & Sedimentation	341	Victoria, British Columbia (Canada)	29 May–29 July 2013	61 (3/58)	58 (5/53)	J. Jaeger, S. Gulick	TAMU: L. Schneider* LDEO: H. Evans^
Asian Monsoon	346	Valdez, Alaska	29 July–28 September 2013	60 (5/55)	55 (14/41)	R. Tada R. Murray	TAMU: C. Alvarez Zarikian* LDEO: J. Lofi^

Notes: TBD = to be determined.
[1] Dates for expeditions may be adjusted pending non-IODP activities.
[2] The start date reflects the initial port call day. The vessel will sail when ready.
[3] Transit total is the transit to and from port call and does not include transit between sites.
[4] The USIO contact list includes both the Expedition Project Manager (*), who is the primary contact for the expedition, and the Logging Staff Scientist (^). In addition, further expedition information can be obtained at http://iodp.tamu.edu/scienceops/expeditions.html.
[5] Expedition includes engineering test of the Motion Decoupled Hydraulic Delivery System.

USIO EXPEDITIONS

Expedition 340: Lesser Antilles Volcanism and Landslides

Postexpedition activities

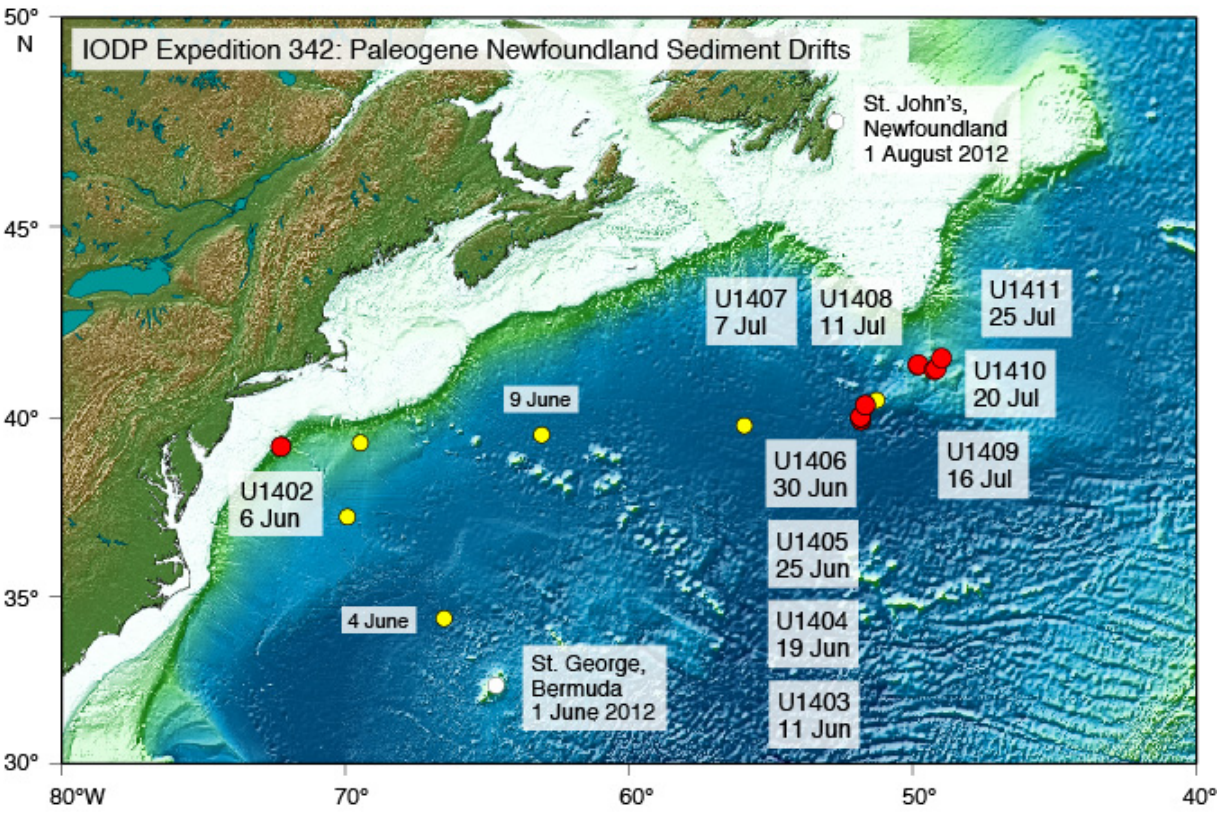
The Expedition 340 sampling party was held 13–17 August 2012, and the postexpedition meeting was held 20–24 August 2012 in College Station, Texas.

Expedition 342: Newfoundland Sediment Drifts

Staffing

Expedition 342 Science Party staffing breakdown	
Member country/consortium	**Participants**
USA: United States Science Support Program (USSSP)	9
Japan: Japan Drilling Earth Science Consortium (J-DESC)	7
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	9
Republic of Korea: Korea Integrated Ocean Drilling Program (K-IODP)	1
People's Republic of China: IODP-China	2
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	1
India: Ministry of Earth Science (MoES)	1

Site map



Coring summary

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1402	U1402A	39°13.5182'N	72°16.5488'W	638.6	0	0.0	0.05	0.0
	U1402B	39°13.5183'N	72°16.5354'W	639.1	2	15.0	15.05	100.7
				Site U1402 totals:	**2**	**15.0**	**15.10**	**100.7**
U1403	U1403A	39°56.5997'N	51°48.1998'W	4944.3	29	253.3	231.82	91.5
	U1403B	39°56.5993'N	51°48.1855'W	4948.7	32	265.1	229.81	86.7
				Site U1403 totals:	**61**	**518.4**	**461.63**	**89.0**
U1404	U1404A	40°00.7997'N	51°48.5990'W	4742.3	36	308.8	281.02	91.0
	U1404B	40°00.7999'N	51°48.5856'W	4747.6	27	228.7	228.04	99.7
	U1404C	40°00.7890'N	51°48.5857'W	4747.5	3	28.5	28.98	101.7
				Site U1404 totals:	**66**	**566.0**	**538.04**	**95.0**
U1405	U1405A	40°8.3001'N	51°49.1996'W	4285.8	33	308.6	270.34	87.6
	U1405B	40°8.2995'N	51°49.1845'W	4284.5	23	218.5	219.60	100.5
	U1405C	40°8.2890'N	51°49.1847'W	4287.3	25	232.0	227.77	98.2
				Site U1405 totals:	**81**	**759.1**	**717.71**	**94.5**
U1406	U1406A	40°20.9992'N	51°38.9994'W	3814.8	34	283.3	267.30	94.4
	U1406B	40°20.9995'N	51°38.9851'W	3813.7	30	253.6	241.34	95.2
	U1406C	40°20.9892'N	51°38.9853'W	3813.0	27	236.4	223.02	94.3
				Site U1406 totals:	**91**	**773.3**	**731.66**	**94.6**
U1407	U1407A	41°25.4993'N	49°48.7987'W	3073.1	35	308.7	205.64	66.6
	U1407B	41°25.4990'N	49°48.7840'W	3073.5	26	241.3	234.54	97.2
	U1407C	41°25.5000'N	49°48.8137'W	3075.2	27	237.6	244.36	102.8
				Site U1407 totals:	**88**	**787.6**	**684.54**	**86.9**
U1408	U1408A	41°26.2985'N	49°47.1483'W	3021.6	27	246.5	243.92	99.0
	U1408B	41°26.2989'N	49°47.1361'W	3022.1	25	214.5	224.09	104.5
	U1408C	41°26.2878'N	49°47.1345'W	3022.5	22	184.5	181.52	98.4
				Site U1408 totals:	**74**	**645.5**	**649.53**	**100.6**
U1409	U1409A	41°17.7501'N	49°13.9996'W	3503.2	26	200.1	183.33	91.6
	U1409B	41°17.7493'N	49°13.9852'W	3501.0	19	170.5	167.09	98.0
	U1409C	41°17.7392'N	49°13.9853'W	3500.4	21	160.8	160.98	100.1
				Site U1409 totals:	**66**	**531.4**	**511.40**	**96.2**
U1410	U1410A	41°19.6987'N	49°10.1995'W	3387.2	28	259.8	256.88	98.9
	U1410B	41°19.6993'N	49°10.1847'W	3386.9	28	245.2	244.84	99.9
	U1410C	41°19.6885'N	49°10.1854'W	3386.9	27	243.8	238.81	98.0
				Site U1410 totals:	**83**	**748.8**	**740.53**	**98.9**
U1411	U1411A	41°37.0992'N	48°59.9990'W	3298.8	1	9.5	9.87	103.9
	U1411B	41°37.0993'N	48°59.9839'W	3298.8	28	254.2	233.94	92.0
	U1411C	41°37.0890'N	48°59.9856'W	3300.2	16	133.1	118.62	89.1
				Site U1411 totals:	**45**	**396.8**	**362.43**	**91.3**
Expedition 342 totals:					**657**	**5741.9**	**5412.57**	**94.3**

Science Summary

Expedition 342 was designed to recover Paleogene sedimentary sequences with unusually high deposition rates across a wide range of water depths (Sites U1403–U1411). The drilling area is positioned to capture sedimentary and geochemical records of ocean chemistry and overturning circulation beneath the flow of the Deep Western Boundary Current in the

northwest Atlantic Ocean. In addition, two operational days were dedicated to a sea trial of the Motion Decoupled Hydraulic Delivery System (MDHDS) developmental tool (Site U1402).

The expedition was primarily targeted at reconstructing the Paleogene carbonate compensation depth (CCD) in the North Atlantic for reference to recently obtained high-fidelity records of the CCD in the equatorial Pacific. The site located in the deepest water (Site U1403) was at a paleodepth of ~4.5 km 50 m.y. ago, whereas the site located in the shallowest water (Site U1408) can be backtracked to a paleodepth of 2.5 km at the same time. The combination of sites yields a record of the history of CCD change over a 2 km depth range from the ocean abyss to middle range water depths. Notable findings include the discovery of intermittent calcareous sediments in the Cretaceous, Paleocene, and early to middle Eocene at 4.5 km paleodepth, suggesting a deep Atlantic CCD during these times. There is evidence of carbonate deposition events following the Cretaceous/Paleogene (K/Pg) boundary mass extinction, the Paleocene/Eocene Thermal Maximum, and the Eocene–Oligocene transition. These deposition events may reflect the rebalancing of ocean alkalinity after mass extinctions or abrupt global climate change. Intervals during which the CCD appears to have been markedly shallow in the North Atlantic include the Early Eocene Climatic Optimum, the late Eocene, and the middle Oligocene.

A second major objective of Expedition 342 was to recover clay-rich sequences with well-preserved microfossils and high rates of accumulation in comparison to the modest rates of accumulation (~0.5–1 cm/k.y. in the Paleogene) typically encountered at pelagic sites. As anticipated, Expedition 342 recovered sequences with sedimentation rates of as much as 10 cm/k.y.—high enough to enable studies of the dynamics of past abrupt climate change, including both transitions into “greenhouse” and “icehouse” climate states, the full magnitudes of hyperthermal events, and rates of change in the CCD. The thickest central parts of the various sediment drifts typically record similar depositional packages to those recovered in the thin “noses” and “tails” of these drifts, but these central parts are often massively expanded with clay, especially near the CCD. Times of rapid accumulation of drift deposits include the early Eocene to late middle Eocene, the late Eocene to early Oligocene, the late Oligocene and early Miocene, the later Miocene to probable late Pliocene, and the Pleistocene. Widespread hiatuses are present near the Paleocene/Eocene boundary into the middle early Eocene and the middle Oligocene. The Eocene/Oligocene boundary is a period of slow sedimentation at most sites but is expanded at Site U1411. A marked change in the geometry of drift formation is observed in the ?late Pliocene, as has been observed in drift deposits elsewhere.

An unexpected finding was the recovery of a number of Cretaceous “critical boundaries.” These include the K/Pg boundary, the Campanian–Coniacian interval, the Cenomanian–Turonian boundary and oceanic anoxic Event (OAE) 2, and the Albian/Cenomanian boundary OAE 1d. These intervals were drilled opportunistically when they were encountered near or above our target depth for a given site. The K/Pg boundary was recovered at Site U1403, where it proved

to have a well-preserved, normally graded spherule bed and unusually well preserved earliest Danian planktonic foraminifer community. The Campanian–Coniacian interval was cored at Site U1407 and is unusual mainly for the relative biostratigraphic completeness of a sequence that elsewhere commonly shows hiatuses in the early Campanian. The Cenomanian–Turonian transition was also cored at Site U1407 and consists of a series of organic black shales in nannofossil chalk with as much as 11 wt% total organic carbon (TOC). The Cenomanian–Turonian sequence at Site U1407 is broadly similar in biostratigraphy, sequence of black shales, and sediment color to classic Italian and northern German outcrop sections. Finally, coring at Site U1407 also recovered a lower Cenomanian nannofossil chalk and nannofossil claystone record that extends into the biozones associated with OAE 1d. The Albian–Cenomanian sequence is notable for the generally high quality of microfossil preservation and its gradational contact with underlying Albian shallow-marine carbonate grainstone and packstone.

A sea trial of the Motion-Decoupled Hydraulic Delivery System (MDHDS) with the temperature-dual-pressure probe (T2P) was conducted at Site U1402 on the New Jersey margin from 6 to 8 June 2012, at the beginning of the expedition. The benefit of this system over its predecessor is the complete decoupling of the penetrometer from the drill string, negating the effect of ship heave on the quality of data. The system was successfully deployed and acquired in situ data with complete decoupling from the ship, fulfilling the mission goals. The in situ pore pressure measured at Site U1402 was 7.536 MPa, just slightly above hydrostatic pressure. This is the first in situ pressure measurement made on the Atlantic margin in scientific ocean drilling history and confirms previous indirect pressure estimates. Accelerometer data collected within the T2P electronic housing showed perfect decoupling from the drill string. We now have a dependable method to deploy pore pressure penetrometers successfully, which will allow the rapid measurement of in situ pressure in sediment. This new capability opens an exciting range of future science for the drilling program.

Expedition 344: Costa Rica Seismogenesis Project (CRISP) 2

Planning

Expedition 344 sample requests were received and evaluated and substantial overlap/ collaboration with the Expedition 334 Science Party was observed, as expected. Operational and laboratory supplies including third-party analytical equipment were acquired and shipped to the re-supply port call in St. Johns, Newfoundland. Some Expedition 334 cores were identified for shipment to the expedition along with all of the Expedition 334 data.

Staffing

One of the scientists withdrew and was replaced. In addition, the first scientist applications from Brazil were received and two Brazilian scientists accepted invitations to participate in the expedition.

Environmental assessment

The USIO submitted an Environmental Evaluation to NSF use acoustic sources as part of check shot surveys.

Expedition 345: Hess Deep Plutonic Crust

Planning

Design modifications to the hammer-drill–like funnels and free-fall funnels to increase options for establishing re-entry capabilities were completed and submitted for fabrication. Use of a 3.5 kHz profiler to be deployed on the camera system to determine sediment thickness was discussed and one of the chief scientists reported on locating a third-party system that can be made available for the expedition. Science planning for the expedition continued, including review of science and research plans and developing a plan for description of select Leg 147 cores and thin sections at the beginning of the expedition.

Staffing

Science staffing was completed in May before Brazil joined IODP. Nominations from Brazil for this expedition are pending.

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

Planning

After review of the site-visit details and discussion of risks with the ship owner, the end port was switched from Victoria, British Columbia (Canada), to Valdez, Alaska, which will reduce overall transit time and add 3 days of operations to the expedition.

Staffing

One science party member withdrew from participation and will need to be replaced, and two Brazilian scientists will be added to the expedition. Nominations from Brazil for this expedition are pending.

Expedition 346: Asian Monsoon

Planning

The change in beginning port call locations (from Victoria to Valdez) added ~4 days of operations to Expedition 346. The Science Party will now board in Valdez, eliminating the need for a port call in Japan.

The Expedition 346 precruise meeting was held 10 and 11 September 2012 in College Station, Texas.

ANALYTICAL SYSTEMS

Analytical Systems acquisitions and updates

The following items were purchased this quarter either as part of operational support, to address customer comments and/or quality issues, or to replace pieces of equipment that are reaching the end of their useful life cycles.

- Two additional Zeiss Discovery V8 stereomicroscopes were purchased to provide the same quality of stereoscopes throughout the core laboratory; scientists having to use the older SV-8 and SV-11 microscopes were dissatisfied with using less capable equipment. The two new stereoscopes have polarizing lighted bases for thin section examination and SPOT Idea MP3 cameras for the acquisition of digital images.
- Replacements for the 10+ year-old SPOT cameras were purchased as part of a capital replacement strategy. The new cameras and their software are compatible with Windows 7 and perform much more quickly than the older cameras. Purchase of these replacement cameras will resolve the issue of recent failures of some of the older SPOT cameras and will greatly enhance the user experience.
- A benchtop scanning electron microscope (SEM) was purchased from Hitachi to replace an older, lower-magnification microscope. Hitachi has successfully deployed such a system to an oceanographic vessel, so there is confidence that it will function properly on the *JOIDES Resolution.* This purchase addresses complaints from nannofossil and foraminifer paleontologists that magnifications higher than 630x have not been practical with the light microscopes in the shipboard environment. The new SEM system can be expanded in the future to include energy dispersive spectroscopy (EDS) capability for elemental analysis of specimens.
- Additional wider aperture (10 mm) integrating spheres for the color spectrophotometer were purchased after tests on the one existing wide-aperture sphere showed improved data quality.
- A pair of Mettler-Toledo XP56DR balances was purchased for weighing very small (sub-milligram) masses on board the ship. This purchase is part of a project to replace the capability of aging Cahn electrobalances for which an equivalent system no longer exists on the market.
- Additional TeKa Berlin half-space needle probes were purchased to provide spares for shipboard thermal conductivity measurements. Existing half-space probes had been failing due to seawater infiltration to the electronics after a very small number of uses; spares were purchased after TeKa Berlin solved their faulty epoxy issue.

- Two new UIC CM5015 coulometers were purchased to replace the aging CM5011 models used on the ship.
- Components were purchased for a narrow-footprint Section Half Imaging Logger (SHIL) to replace the shipboard SHIL, with the aim of freeing up additional floor space in the core description area.
- Helium pycnometer cells were purchased to provide an additional 6-cell system on board the ship to enable greater sample throughput. This acquisition addresses customer comments requesting the ability to perform more moisture and density tests on sediment cruises.
- Two new 7890 gas chromatographs (GCs) were purchased from Agilent to replace the gas chromatograph (GC3) and natural gas analyzer (NGA) systems in the chemistry laboratory. Because of technological improvements in chromatographic columns and specialized inert switching valves, the new GCs will provide fully separated C1 to C3 hydrocarbons and are capable of analyzing fixed gases and hydrocarbons out to C7, all within a faster time window than the existing instruments.

Laboratory working groups

Geology

The Geology Laboratory Working Group (LWG) did not meet this quarter; although a number of meetings for the DESClogik Report project covered some of the LWG-related issues (see "Software Development" in "Data Management").

Geophysics

The Geophysics LWG met this quarter to discuss Expedition 342 cruise evaluations and evaluate the status of Geophysics laboratory issues. In addition to recommending and prioritizing several improvements to the natural gamma radiation logger (NGRL) including laser positioning, density correction, and absolute elemental data reduction, the committee made the following recommendations:

- The smaller 80 mm loop should be mounted on the Whole-Round Multisensor Logger (WRMSL) in order to provide greater sensitivity for magnetic susceptibility measurements.
- The larger 90 mm magnetic susceptibility loop should be mounted on the Special Task Multisensor Logger (STMSL) to provide the capability to analyze cores that are too wide to pass through the 80 mm loop.
- Instrument filtering capability should be added to the Laboratory Information Management System (LIMS) reports to allow easy differentiation of WRMSL and STMSL data in cases where both loggers are used.

- A simpler X-, Y-, or Z-axis definition should be adopted for torvane and penetrometer strength measurements, instead of ±X, ±Y, and ±Z, as the direction along the axis is set based on the sample being examined.
- Further investigation of the low-level magnetic susceptibility (MS) artifact on the point susceptibility measurements is required; the issue requires the availability of low-MS core sections, so it could possibly be tested during Expedition 345 if such sections can be sent to the ship.
- Developers should confirm the code being used to calculate and report standard deviation on the moisture-and-density (MAD) balances.
- All programs for which units are either entered or displayed must clearly label such fields.

Geochemistry

The Geochemistry LWG met this quarter to discuss issues from Expedition 342 as well as ongoing issues. The S3 parameter problem with the Source Rock Analyzer was identified as CO_2 contamination in the laboratory air supply, so a CO_2 scrubber was jury-rigged during the expedition and parts were ordered for a permanent replacement. A decision was made to address lighting issues in the chemistry laboratory by transferring older LED lights from the core laboratory into the chemistry laboratory. A preventive maintenance schedule was proposed and developed over the summer, with a focus on ensuring that instruments not used during an expedition are still being maintained and fully checked out. The LWG also explored ongoing precision issues with the ion chromatograph.

Curation and Core Handling

The Curation and Core Handling LWG met this quarter to discuss requirements for the LIMS Editing tool project. The group agreed that some editing capabilities should remain in the Sample Master application, while others should be deprecated from that program and rebuilt in the new program. No outstanding core curation issues arose from Expedition 342.

Projects and other activities

Geosciences Laboratory (ODASES)

The TAMU Ocean Drilling and Sustainable Earth Science (ODASES) Geosciences Laboratory hosted three scientists for X-ray fluorescence (XRF) scanning projects during the quarter. The usage represented approximately one-third of the available time during the quarter. The shore-based imaging logger continues to be used heavily by the XRF customers as well as Gulf Coast Repository (GCR) staff.

ENGINEERING SUPPORT

Engineering equipment acquisitions and updates

Vendors were selected and purchase orders issued for the vibration-isolated television (VIT) underwater connectors, telemetry system, and camera, sonar, and lighting systems. The

installation of the new VIT system is scheduled for the Victoria, British Columbia (Canada), tie-up period in FY13.

Projects and other activities

Large diameter pipe-handling infrastructure

USIO, Howard and Associates Inc. (HAI), and Blohm & Voss (B&V) representatives reviewed revised engineering drawings for the 350- and 500-ton elevators, the handler, and the stool for tolerances and weight specification. Interactions began with the Siem Offshore drilling crew to finalize the engineering drawings for this equipment and begin manufacturing the various components. The USIO began exploring potential targets for at-sea testing of the new equipment.

Magnetic Susceptibility Sonde rebuild

Two replacement Magnetic Susceptibility Sonde (MSS)-B tools were shipped to the *JOIDES Resolution* and made ready for deployment in future IODP expeditions. The next expeditions that will potentially use these tools are IODP Expeditions 345 and 341.

Multifunction telemetry module projects

The Multifunction Telemetry Module (MFTM), which transmits third-party tool downhole data back to the surface in real time, was successfully deployed this quarter during Expedition 342 as part of the MDHDS initiative. The MFTM had already been successfully deployed during Expedition 336 as part of the Dark Energy Biosphere Investigative Tool (DEBI-t) project and is currently scheduled for use in May 2013 during Expedition 341S as part of the SCIMPI deployment.

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 include storing electronic copies of expedition daily, weekly, and site summary reports; appropriate operations and engineering reports; and other technical documentation.

Survey and re-entry archive

A project was initiated to convert VIT camera system surveys and re-entries to a common format and archive them digitally on a time-available basis. Plans were made to convert older VHS tapes to digital format in the next quarter.

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

FY12 deliverables for this multi-year project include tool delivery, modifications to extend LDEO and Schlumberger telemetry systems and surface panel software, completion of third-party tool certification requirements, bench and field tests at the test well at LDEO, and at-sea deployment.

Project status

The MMM tool was assembled and all sensors are operational. All nonmagnetic housings were successfully pressure tested during the quarter. Complete systems integration testing will be scheduled after reevaluation of the timeline for completion of this tool.

USIO TECHNICAL PANEL

The new USIO Technical Panel (UTP) will include external members from industry and academia who will participate in bi-annual meetings to review engineering and operations issues within the USIO. The UTP was created during FY12, and is administered and operated by Ocean Leadership, the USIO Systems Integration Contractor, with assistance from the USIO partners.

Project status

Preparations were made to convene the second UTP meeting at LDEO on 3 and 4 October 2012.

CORE CURATION

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

CURATION STRATEGIES AND EXPEDITION CORE SAMPLING

The USIO planned sample and curation strategies for Expeditions 344 and 345. USIO Curatorial Specialists supervised shipboard core sampling during Expedition 342 and reviewed all shipboard and moratorium-related requests in coordination with the other members of the expedition Sample Allocation Committee (SAC).

SAMPLE MATERIALS CURATION SYSTEM

The IODP Sample and Data Request application was fully tested in the Regional Test and Integration Facility environment this quarter, and will be deployed on the production server in early October. It is expected that the application will be used to accept Expedition 341 sample request submissions.

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.

Repository activity

The following "Sample requests" table provides a summary of the 6,104 samples that were taken during the quarter. Sample requests that show zero samples taken may represent cores that were viewed by visitors during the quarter, used for educational purposes, or requested for XRF analysis. Public relations tours and educational visits to the repository are shown in the "GCR tours/visitors" table.

Sample requests

Sample request number, name, country	Number of samples taken	Number of visitors
22616A, Norris, USA	132	
22618A, Honnorez, France	5	
22620a, Francis, United Kingdom	2	
22589A, Imai, Japan	289	
22641A, Skora, United Kingdom	3	
22645A, Marindale, Canada	9	
1602IODP, Ciummelli, Italy	139	
22627A, Woodard, USA	182	

Sample request number, name, country	Number of samples taken	Number of visitors
22132B, Yu, USA	215	
22623A, Wright, USA	81	
22647A, John, USA	15	
21554C, Sexton, United Kingdom	20	1
21826B, Sinha, India	400	
22360C, Riesselman, USA	35	
22653A, Dickens, USA	299	
1610IODP, Cortese, New Zealand	183	
22632A, Serno, USA	334	
22185B, Pierce, USA	22	
22062B, Griffith, USA	24	
22626A, St. John, USA	43	
22634A, Lees, United Kingdom	184	
22644A, Kulhanek, New Zealand	207	2
22660A, Roberts, United Kingdom	11	
22656A, Huck, United Kingdom	15	
22279D, Sanchez, Spain	12	
22668A, Amigo, Chile	1	
22662A, Kelly, USA	84	
1378IODP, Zarikian, USA	18	1
1662IODP, Rumford, USA	10	
22657A, Thomas, USA	0	
1672IODP, Collins, USA	4	
22591A, Imai, Japan	864	
22644A, Stepanova, USA	207	1
22400B, O'Connel, USA	182	3
17679D, Dameron, USA	193	2
1730IODP, Thomas, USA	23	5
22608A, Thomas, USA	59	1
22675A, Rolewicz, USA	29	2
1695IODP, Fulton, USA	30	
22667A, Phillips, USA	164	
22669A, Higgins, USA	30	
22687A, Miller, USA	30	
22671A, Fauth, USA	41	
22279E, Ramirez, Spain	14	
1756IODP, Etourneau, France	39	
22673A, Blair, USA	61	
1782IODP, Jaeger, USA	11	1
1783IODP, Robinson, USA	40	
22678A, Thierens, USA	224	
1673IODP, Backman, Sweden	412	
22696A, Weislogel, USA	3	
1784IODP, DeCesare, USA	20	
229670A, Herbert, USA	295	
22693A, Duchesne, USA	7	

Sample request number, name, country	Number of samples taken	Number of visitors
1701IODP, Rouselle, France	128	
22692A, Dupont, Germany	20	
Expedition 340 sampling party	9,269	25
Tours/demonstrations (6)	0	94
Totals	**15,373**	**138**

GCR tours/visitors

Type of tour or visitor	Number of Visitors
Science visitors	44
Educational tours/demonstrations (5)	79
Public relations tours (1)	15
Totals	**138**

USE OF CORE COLLECTION

The USIO promotes outreach use of the GCR core collection by conducting tours of the repository (see "GCR tours/visitors" table above) and providing materials for display at meetings and museums. The repository and core collection are also used for classroom exercises. In addition to hosting 19 visiting scientists this quarter, GCR staff gave tours to the Summer Science Safari (a summer camp for high school students), TAMU Human Resources employees, a TAMU Technical Editing class, and a TAMU Oceanography 251 class.

LEGACY DOCUMENTATION

The USIO routinely archives electronic copies of documents and reports produced on behalf of IODP, as well as DSDP and ODP legacy materials.

Core working half imaging

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

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

OTHER PROJECTS AND ACTIVITIES

The Expedition 340 postexpedition sampling party was held 13–17 August 2012 at the GCR with 25 scientists in attendance. A total of 9,269 samples were taken over the one-week period. The

Summer Pre-College Ocean Research Experience (SCORE) was also hosted 24–26 July at the GCR (http://joidesresolution.org/node/2685). Among other activities, students from John Jay High School participated in a video conference with shipboard scientists and learned how to make smear slides, describe cores, and interpret XRF and Physical Properties data to reveal climatic cycles in cores.

DATA MANAGEMENT

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

EXPEDITION DATA

LIMS database

Expedition 342 data were added to the LIMS database on shore. These data are currently under moratorium and available only to the scientists who sailed on this expedition. No new data were placed out-of-moratorium during this quarter.

Log database

During this quarter, ESO Expedition 325 data were received from the Leicester group and formatted for inclusion in the online database and CDEX Expedition 332 data were reviewed. Online posting of Expedition 332 data is pending detailed documentation of the processing performed by the Japanese logging group.

EXPEDITION DATA REQUESTS

The following tables provide information on USIO web data requests from the scientific community. Where possible, visits by USIO employees were filtered out.

Top 10 countries accessing USIO web databases						
	Janus database		LIMS database		Log database	
Rank	Country	Visitor sessions	Country	Visitor sessions	Country	Visitor sessions
1	USA	1,149	USA	588	USA	394
2	United Kingdom	493	Germany	56	United Kingdom	131
3	Germany	383	United Kingdom	46	China	101
4	Japan	260	Japan	42	Japan	66
5	France	186	China	30	Italy	59
6	China	100	Unknown	23	Brazil	58
7	Italy	92	France	23	France	56
8	Canada	69	Republic of Korea	12	India	49
9	The Netherlands	62	Canada	11	Germany	45
10	Spain	50	New Zealand	11	Australia	35
	Others	356	Others	68	Others	245
	Total	**3,200**	**Total**	**910**	**Total**	**1,240**

Janus database web queries		
Rank	Query	Uploads
1	Samples	1,190
2	Imaging –photos	772
3	Point calculations	535
4	Site summaries	523
5	Hole trivia	407
6	Core summaries	351
7	Paleo–age model	264
8	Paleo–investigations	192
9	Hole summaries	166
10	Paleo–species	144
11	Chemistry–carbonates	141
12	Requests	133
13	Physical properties–GRA	127
14	Leg summaries	115
15	Physical properties–MSL	103
16	Site details	101
17	Depth calculations	92
18	Physical properties–MAS	88
19	Paleo–age profile	87
20	Chemistry–interstitial water	85
	Others	1,279
	Janus database total	**6,895**

LIMS database web queries	
Query type	Views
LIMS Reports	2,285
Web Tabular Reports	375
LIMS database total	**2,260**

Data requests submitted to the TAMU Data Librarian	
Requests	**Total**
Photographs	9
Other	3
Seismic	2
How to access	2
Depth	1
VCD	1
MAD	1
Color data	1
GRA	1
Samples	1
XRD	1
Hole trivia	1
Total	**24**

Countries submitting data requests to the TAMU Data Librarian	
Country	**Total**
USA	14
Iceland	2
New Zealand	2
United Kingdom	2
Australia	1
China	1
Malaysia	1
Unknown	1
Total	**24**

Other USIO web statistics*			
	Janus database	**LIMS database**	**Log database**
Database query hits:			
Entire site (successful)	15,730	14,771	8,527
Average per day	170	160	92.69
Visitor sessions:			
Total number of visitor sessions	3,200	910	1,240
Average per day	34	9	13.48
Average length of visit	00:10:35	00:29:28	00:07:12
International visitor sessions	64.06%	32.86%	68.23%
Visitor sessions of unknown origin	0.03%	2.53%	0.00%
Visitor sessions from United States	35.91%	64.62%	31.77%
Visitors:			
Unique visitors	1,636	615	688
Visitors who only visited once	1,180	496	613
Visitors who visited more than once	456	119	75
Average visits per visitor	1.96	1.48	1.80

PROGRAM-WIDE DATA QUERY SERVICES

TAMU completed the following work on LIMS Reports from August through September:

- Fixed a problem with superconducting rock magnetometer (SRM) offsets (depths) of discrete samples;
- Fixed a problem with discrete *P*-wave velocity measured by caliper (PWC) offsets (depths) of discrete samples and section measurements;
- Fixed a problem with thermal conductivity (TCON) offsets (depths) of pieces and section measurements;

- Changed the TCON uploader so it does not compute data separate from TeKa software (reverted to 327 state);
- Added a descriptive information section and link to DESC Reports in the web report list (link now opens a new window with the DESC report that has different parameter selection options but a similar look and behavior to LIMS reports); and
- Added a filter to gamma ray attenuation (GRA) and MS reports to differentiate WRMSL and STMSL data (in response to Expedition 342 and Geophysics LWG recommendation).

OPERATION, MAINTENANCE, AND SECURITY

The USIO replaced nine first-generation Mac Pro workstations at LDEO that were unable to run current versions of OSX. New wireless access points were deployed throughout the Borehole Building to provide improved reliability, security, and connection speed. The transition from old RAID storage units on both Solaris servers to iSCSI volumes hosted on NAS units began. A Cummins 85 KW whole-building generator for the Borehole Building was purchased and delivered this quarter and installation and associated gas and electrical work was scheduled to begin in the next quarter.

SOFTWARE DEVELOPMENT

DESC Reports

Project scope

DESC Reports will provide online access to all descriptive data, including macroscopic and microscopic core descriptions, paleontological investigations, stratigraphic unit definitions, and so on, that were collected aboard the *JOIDES Resolution* since Expedition 320. The primary objective is to report the data collected using the DESClogik data capture application, but other spreadsheet or form-based data captured outside of DESClogik, or generated based on DESClogik data exports, are also included in DESC Reports (secondary objective). Data is accessed from links on the LIMS Reports interface, where the USIO already provides access to numerous reports of instrumental data.

Deliverables

1. *DESC asset management.* This project delivers a DESC asset manager application that allows authorized users to register DESC assets, add a specific set of metadata that will allow searches or that are used for data management purposes, and upload files. The application also allows authorized users to edit or cancel metadata.
2. *DESC asset search and retrieval.* This project delivers an extension of the LIMS Reports that allows users to search the DESC assets, be presented with a list of DESC asset files that match the search criteria, and download single assets or batch download all assets on the list.

3. *DESC assets.* The project scope includes generation and loading of a basic set of DESC assets for past expeditions. The types of assets are limited to Excel workbooks generated with DESClogik. The workbooks are generally in the form of the DESClogik templates and tabs that were used for data capture. Cleanup was applied, including elimination of redundant templates and books where data could be merged with other workbooks.
4. *Operational requirements.* The project defines protocols and workflows for the generation of DESC assets, adding metadata, and uploading them. The project also delivers user documentation for DESC asset generation and management, and for searching DESC assets.

Project status

This project was completed on 28 September 2012.

LEGACY DOCUMENTATION

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

OTHER PROJECTS AND ACTIVITIES

TAMU completed a redesign of the *JOIDES Resolution*'s video distribution system in August 2012 and scheduled system reconfiguration to take place during the Expedition 341T transit.

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

USIO publications

Scientific Prospectus

Jaeger, J., Gulick, S., Mix, A., and Schneider, L., 2012. Southern Alaska margin: interactions of tectonics, climate, and sedimentation. *IODP Sci. Prosp.,* 341 addendum. doi:10.2204/iodp.sp.341add.2012

Preliminary Report

Expedition 339 Scientists, 2012. Mediterranean outflow: environmental significance of the Mediterranean Outflow Water and its global implications. *IODP Prel. Rept.,* 339. doi:10.2204/iodp.pr.339.2012

Data Report

Moore, T.C., and Kamikuri, S., 2012. Data report: radiolarian stratigraphy across the Eocene/Oligocene boundary in the equatorial Pacific, Sites 1218, U1333, and U1334. *In* Pälike, H., Lyle, M., Nishi, H., Raffi, I., Gamage, K., Klaus, A., and the Expedition 320/321 Scientists, *Proc. IODP,* 320/321: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.320321.204.2012

CDEX publications

Data Report

Ikari, M.J., Knuth, M.W., Marone, C., and Saffer, D.M., 2012. Data report: frictional healing and compressibility of sheared sediment from fault zones, Sites C0004 and C0007. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemant, S., Screaton, E.J., Curewitz, D., Masago, H., Moe, K.T., and the Expedition 314/315/316 Scientists, *Proc. IODP,* 314/315/316: Washington, DC (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.314315316.219.2012

USIO REPORTS

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

PROGRAM-RELATED CITATION STATISTICS

Citation statistics special request

A request was submitted to IODP Publication Services this quarter for IODP mission-specific platform citation statistics to be used in a presentation to the 2012 International Geological Congress (IGC). The resulting data reflected publications, presentations, and dissertations derived from the science of Expeditions 302, 310, 313, and 325, and highlighted the number of articles in the high-profile journals *Science* and *Nature*.

Ocean Drilling Citation Database Annual Study

IODP Publication Services produces an annual study of the Ocean Drilling Citation Database to present information on how Program-related research is disseminated into the scientific community through publications. This report emphasizes the impact of Program science using

figures that show citations in high-impact journals, master's and doctoral dissertations based on Program science, and citations related to research undertaken in areas of continued interest throughout DSDP, ODP, and IODP. A new figure was added this year to show the number of times non-Program articles that contain primary research from IODP Phase I expeditions have been cited by other research articles.

This year's study was conducted on citations published through December 2011 that were contained in the database as of June 2012. The study was completed this quarter and is available online at http://iodp.tamu.edu/publications/AGI_studies/AGI_study_2012.pdf.

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 (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 FY12 Q4	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
313	4 August 2012	4	4	
314/315/316	4 October 2010		27	17
317	4 September 2012	12	12	2
318	2 March 2013			
319	30 April 2012	6	6	3
320/321	30 June 2012	3	26	15
322	10 June 2012	0	10	6

Expedition	Submission deadline (20 months postmoratorium)	Deadline extensions approved in FY12 Q4	Overall extension status	
			Number approved	Number fulfilled
323	10 August 2012	3	6	3
324	4 July 2012	3	10	6
325	16 March 2013			

Synthesis papers

Expedition	Submission deadline (26 months postmoratorium)	Deadline extensions approved in FY12 Q4	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*	
313	4 February 2013			
314/315/316	5 April 2011		1*	
317	4 March 2013			
318	2 September 2013			
319	30 October 2012			
320/321	30 December 2012			
322	10 December 2012			
323	10 February 2013			
324	4 January 2013			
325	16 September 2013			

*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	24

Publication	Number distributed
ODP Publications:	
Proceedings of the Ocean Drilling Program, Scientific Results	1

IODP publications website

The IODP Publications website is hosted at TAMU. Traffic accessing USIO publications is monitored through publications.iodp.org.

Publications website	FY12 Q4 page views	FY12 Q4 site visits
www.iodp.org/scientific-publications	337,502	61,687

IODP digital object identifiers

IODP is a member of CrossRef, the official digital object identifiers (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			
		July 2012	August 2012	September 2012	FY12 Q4 total
IODP	10.2204	4,645	6,117	4,098	**14,860**
ODP/DSDP	10.2973	6,429	4,842	7,152	**18,423**

PUBLICATIONS SUPPORT

The USIO provided Publications Specialist services during USIO Expedition 342 and Publications Assistant services during CDEX Expedition 343 and hosted the postexpedition meeting for USIO Expedition 340.

TECHNICAL DOCUMENTATION

Technical documents produced by the USIO are available to users via the Cumulus web client (iodp.tamu.edu/tasapps/) once they reach the technical draft stage. Technical documents in production during the fourth quarter of FY12 are shown in the table below.

Technical documentation	FY12 Q4 status
Quick start guides	
Section-Half Imaging Logger (SHIL)	Under technical review
Section-Half Multisensor Logger	Under technical review
Whole-Round Multisensor Logger	Under technical review
Discrete Analyzer	Under final review
Ion Chromatograph	Under final review

Technical documentation	FY12 Q4 status
User guides	
Moisture and Density (MAD)	Under technical review
Natural Gamma Radiation Logger	Under technical review
SHIL	Under technical review
Source Rock Analyzer	Under technical review
Advanced User Guides	
MAD	Under technical review
Source Rock Analyzer	Under technical review

LEGACY DOCUMENTATION

The USIO routinely archives electronic copies of documents, reports, and scientific publications produced on behalf of IODP. Documents archived this quarter included all scientific publications produced during the quarter, the FY12 Q3 report, the FY13 Annual Program Plans submitted to NSF and IODP-MI on 3 July 2012, and planning documentation for reporting deliverables.

OTHER PROJECTS AND ACTIVITIES

IODP scientific publications survey

A survey on IODP scientific publications was launched online on 12 September 2012 to gain feedback from the international scientific community about currently offered publication features and functionality, as well as suggestions for improvement. Feedback from the survey will be used to shape publication efforts in support of the International Ocean Discovery Program. The survey will remain open through October 2012. It was promoted internationally through IODP listservers, newsletters, and expedition participant mailing lists.

Cited-by linking project

As a member of CrossRef, IODP is eligible to participate in CrossRef's free "Cited-by Linking" service. In order for this service to function, participating members must submit metadata listing the works their publications cite. The USIO completed depositing reference lists from all IODP scientific publications this quarter; when authors run the "cited-by" query in Science Direct or on other articles, our chapters will show up as having cited their papers.

In July 2012, the USIO began a web-based cited-by linking project that, once implemented, would enable users to learn which journals or books have cited IODP publications. This project would parse information from an automated query from Cross-Ref and make that information available to readers through a link from IODP publications table of contents pages. A working prototype of the USIO cited-by linking service was developed and deployed on an Ocean Leadership server for testing this quarter. Additional programming effort is required to implement a production-level service at TAMU, where IODP publications are housed.

Technical Editing class visit

IODP Publications hosted a visit from a TAMU ENGL 320: Technical Editing class on 20 September 2012. The 23 students toured the GCR before learning about the types of documents produced through IODP Publications, how the respective sections of the Publication Services department work together, and how USIO editors work with IODP scientists both during and after expeditions.

EDUCATION

USIO education activities are supported by NSF through other Program integration costs (OPIC). The USIO is responsible for developing and disseminating expedition-specific and thematic education activities and materials for elementary through post-secondary and free choice–learning audiences, promoting diversity programs and partnerships, and supporting legacy resources.

The USIO facilitates education activities through Deep Earth Academy (funded jointly by the USIO and the United States Science Support Program [USSSP]) in cooperation with other U.S. education and outreach groups, conducting teacher education activities; developing, testing, and disseminating educational curriculum that highlights IODP science programs; and implementing live and near-real-time programs that highlight and use the *JOIDES Resolution* as a platform for education. The USIO also conducts diversity outreach initiatives to allow minority students to pursue studies in earth systems sciences or to explore careers in scientific ocean drilling and large-scale science program management.

PROFESSIONAL DEVELOPMENT

2013 Schools of Rock

Planning began for the 2013 Schools of Rock, both of which will be held on board the *JOIDES Resolution* while it is at port in Victoria, British Columbia (Canada). The first School of Rock is scheduled for 1–9 April 2013; the second will begin in port and extend through the SCIMPI operation at the end of May 2013. The call for applications for the April 2013 School of Rock was released 19 September 2012.

Onboard educator program

Expedition 342 Onboard Education Officer C. Scully (Scripps Institute of Oceanography) successfully coordinated 28 ship-to-shore broadcasts that reached more than 700 participants, gained 250 new Facebook followers, and garnered some high-reach press opportunities with Deep Sea News, BoingBoing, and PBS Newshour (see “Program related publications” in “Outreach”)

In a departure from previous years' staffing methods, applications were invited simultaneously for Onboard Education Officers for all four FY13 expeditions: 344: CRISP 2; 345: Hess Deep Plutonic Crust; 341: Southern Alaska Margin Tectonics, Climate, and Sedimentation; and 346: Asian Monsoon. Reviews and interviews were conducted for each expedition with the respective Expedition Project Managers, Co-Chief Scientists, and USIO staff. Applications were also considered from ECORD and other member countries for additional berths available on Expeditions 344, 345, and 341. As a result of this approach, educational staffing for all four FY13 expeditions was completed this quarter, including four Onboard Education Officers from the United States, two from ECORD, and one from New Zealand (the non-U.S. positions will be funded by their respective countries). Group training was planned for the first quarter of FY13 College Station, Texas.

Educational outreach events

On 25 July, the USIO facilitated a professional development workshop for the 2012 Smithsonian Science Education Academies for Teachers: Earth's History and Global Change. The workshop included 23 educators ranging from elementary through high school level and several graduate students. Participants learned about the role scientific ocean drilling plays in understanding Earth's history and how "we know what we know" about earth science. Participants were able to connect with the *JOIDES Resolution* for a live broadcast with the Expedition 342 Onboard Education Officer and sample several of Deep Earth Academy's online classroom activities.

In August 2012, a three-day workshop titled *2012 Summer Workshop for Teachers: Teaching Earth's History and Earth Processes—Exploring Science from Below the Seafloor and Resources to Teach It* was hosted at the Ocean Leadership offices in Washington, D.C. Facilitators included L. Pace (NSF Geosciences Division), C. McHugh, (Queens College, New York), V. Westbrook (Westbrook Consulting, Texas), L. Peart (USIO), E. Powell (USSSP), J. Collins (USIO), and several USIO staff. Workshop participants comprised high school, middle school, and elementary level educators from New York, South Carolina, Delaware, and the Washington, D.C., area. The program included overviews of the scientific ocean drilling program and Deep Earth Academy resources, classroom activities, video presentations, tours of the National Museum of Natural History, and discussions of adapting for diverse audiences, exploring the process of science, and the Next Generation Science Standards.

EXPEDITION-BASED LEARNING ACTIVITIES AND MATERIALS

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

JOIDES Resolution website and social networking

The joidesresolution.org website promotes each expedition with expedition pages, blogs, videos, and images and serves as the hub for Program social networking on Facebook, Twitter, and YouTube sites. The site promoted Expedition 342 during this quarter. The USIO completed a refresh of the home page and navigation and worked on a new interactive ship flyover tour that will be posted during the next quarter. The "likes" on the *JOIDES Resolution* Facebook page surpassed 3,000 this quarter and the number of *JOIDES Resolution* Twitter followers approached 1,000. The Expedition 342 Onboard Education Officer also initiated a *JOIDES Resolution* Tumblr page (http://joidesresolution.tumblr.com/).

USIO educational website statistics

USIO educational website*	FY12 Q4 page views	FY12 Q4 site visits
www.joidesresolution.org	41,628	14,615
www.oceanleadership.org/education/deep-earth-academy	14,497	10,139
Total	**56,125**	**24,754**

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

Videos and video broadcasts

Each Onboard Education Officer connects with numerous classrooms, museums, professional development programs, and special events to provide live ship-to-shore video broadcasts lasting 30–45 minutes each. This quarter featured Expedition 342, during which 28 video broadcasts reached a wide variety of audiences, including middle schools, high schools, museums, aquariums, professional development workshops, conferences, and summer camps.

The USIO also engaged the services of videographer D. Brinkhuis during Expedition 342. Brinkhuis produced six expedition video updates, including segments for younger children and segments focusing on connections to the 100th anniversary of the sinking of the *Titanic*. These videos had almost 9,000 views on the Ocean Leadership YouTube channel by the end of the quarter. Brinkhuis is also producing a 20-minute summary documentary of the expedition that will be completed during the next quarter.

The USIO selected professional videographer T. Fatouros to sail during Expedition 344 and collaborate with Onboard Education Officer D. Rosenberger (El Capitan High School, San Diego, California). Fatouros will produce four video updates focused on animation resources and six mini videos for children.

Educational materials development and distribution

Materials developed this quarter included six new videos produced during Expedition 342 and a new 2012–2013 Expedition Overview brochure. Materials were distributed at conferences and outreach activities and in response to requests received through the Deep Earth Academy

website. The USIO filled 405 orders for approximately 15,000 print pieces and DVDs that were distributed to all 50 U.S. states and 12 countries, including Canada, Mexico, Russia, France, England, and Portugal.

SCIENTISTS AS EDUCATORS

The USIO provides regular opportunities for scientists to participate in educational programming. During this quarter, Expedition 342 Co-Chief Scientists and Science Party members participated in live ship-to-shore video broadcasts and videos. C. McHugh (Professor of Oceanography at Queens College, New York) participated as a facilitator in the 2012 Summer Teacher workshop (see "Educational outreach events").

USIO Logging Scientists L. Anderson and J. Inwood were involved in educational programming opportunities this quarter. Anderson presented at the GEOCEAN Symposium and Summer School held 27–30 August in Brest, France, specifically providing a session on the acquisition and interpretation of downhole measurements. Inwood presented a lecture and practical on 'Introduction to Downhole Logging' on 11 September at the ECORD Summer School in Bremen, Germany.

STRATEGIC PARTNERSHIPS

Center for Dark Energy Biosphere Investigations

The USIO continued to partner with the Center for Dark Energy Biosphere Investigations (C-DEBI) to produce microbiology-related materials and projects. During this quarter, USIO staff prepared for the Summer 2012 Juan de Fuca CORKS expedition, which was subsequently postponed until 2013 due to damage to the R/V *Thompson* (see "Activities related to existing grants" below).

OUTSIDE FUNDING AND SPONSORSHIPS

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

Activities related to existing grants

C-DEBI grant

The USIO partnered with C-DEBI during FY11 on the education and outreach components of the R/V *Atlantis* Expedition AT18-07, which collected samples and data from subseafloor observatories (CORKS) installed during IODP Expedition 327: Juan de Fuca Ridge-Flank Hydrogeology. A continuation was awarded during the second quarter to support USIO-managed education and outreach programs during the second phase of this project, including an expedition to the same sites on the R/V *Thompson* 29 July–11 August 2012. During this quarter, planning took place for this expedition—including the start of an expedition web page

on the C-DEBI site, communication with shore-based partners to produce a video broadcast schedule, and creation of an evaluation plan with C-DEBI's evaluation consultant B. Rabin. Unfortunately, the R/V *Thompson* suffered extensive damage during an expedition just prior to this scheduled cruise and the cruise had to be postponed to the 2013 season.

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

During this quarter, key staff involved in the four funded pilot projects moved forward with their respective projects, creating timelines and schedules, advancing partnerships, developing plans, and creating drafts and storyboards.

Opportunities for Enhancing Diversity in the Geosciences grant

Planning began for using feedback from the participants in last quarter's "Opportunities for Enhancing Diversity in the Geosciences" School of Rock to write a full-scale implementation proposal for a 10 October 2012 deadline that has been postponed. With a new solicitation anticipated in Spring 2013, the project team prepared to submit its findings in response to the NSF Geo Education solicitation for community input.

DIVERSITY SUPPORT INITIATIVES

IODP-USIO Diversity Internship

H. Tesoro, a recent graduate from Mills College, was the IODP-USIO's second Diversity Intern. Tesoro's 12-week internship, which ended in early September, focused on working with the USIO Communications group at Ocean Leadership in Washington, D.C., to help develop and implement initiatives that effectively communicate science news and information related to IODP expeditions, publications, and other activities. An article written by Tesoro will be published in the winter issue of the IODP *Core Discovery* newsletter.

LDEO Summer Internship

In partnership with LDEO, the USIO cosponsored the participation of two undergraduate students in the 10-week LDEO Summer Internship program: C. Yeh (Hofstra University) and A. Duchesne (Brown University). Both students worked until mid-August with mentors from LDEO on research projects that used scientific ocean drilling data and/or cores. Research results for their projects are available at http://www.ldeo.columbia.edu/education/programs/summer-internship/ldeo-interns.

Diversity Outreach

The USIO sponsored the participation of V. Westbrook, an education consultant from Kyle, Texas, and C. McHugh, from Queens College, as facilitators in the 2012 Summer Teacher workshop (see "Educational outreach events"). Workshop participants comprised K–12 educators that teach a diverse student population.

LEGACY DOCUMENTATION

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

Legacy digital archive

Legacy preservation activities include storing electronic copies of relevant educational products and materials produced by the USIO each quarter in a dedicated CMS. Products and materials archived this quarter include six new videos from Expedition 342 and the new 2012–2013 expedition brochure.

OUTREACH

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

COMMUNICATIONS ACTIVITIES: MEDIA AND PUBLIC OUTREACH

Port call outreach

This quarter, the USIO began planning outreach activities for the December 2012 port call in Puntarenas, Costa Rica, that will take place during the crossover between Expeditions 344 and 345.

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):

- New *Nature* study illuminates 55 million years of the carbon cycle and climate history (29 August, 2012). http://www.oceanleadership.org/2012/new-nature-study-illuminates-55-million-years-of-the-carbon-cycle-and-climate-history/
- Scientists use ocean drilling data to connect seawater chemistry with climate change and evolution (23 July 2012). http://www.oceanleadership.org/2012/scientists-use-ocean-drilling-data-to-connect-seawater-chemistry-with-climate-change-and-evolution/
- Brazil joins international marine research effort (21 August 2012) http://www.nsf.gov/news/news_summ.jsp?cntn_id=125234&org=OLPA&from=news

Communications tools

The Summer 2012 issue of *Core Discoveries* was published during this quarter (http://www.oceanleadership.org/programs-and-partnerships/scientific-ocean-drilling/core-discoveries-newsletter/). This issue features the National Science Board (NSB) approval for continued *JOIDES Resolution* operations, paleoclimate news release highlights, as well as an update on logging tools research and development.

The USIO's outreach-focused Twitter account, @SeafloorSci, continued to gain followers by posting news from expeditions and links to related media. At the end of September, the account had approximately 250 followers. More are being added weekly.

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).

- Pälike, H., Lyle, M.W., Nishi, H., Raffi, I., Ridgwell, A., Gamage, K., **Klaus, A.,** Acton, G., Anderson, L., Backman, J., Baldauf, J., Beltran, C., Bohaty, S.M., Bown, P., Busch, W., Channell, J.E.T., Chun, C.O.J., Delaney, M., Dewangan, P., Dunkley Jones, T., Edgar, K.M., Evans, H., Fitch, P., Foster, G,L., Gussone, N., Hasegawa, H., Hathorne, E.C., Hayashi, H., Herrle, J.O., Holbourn, A., Hovan, S., Hyeong, K., Iijima, K., Ito, T., Kamikuri, S., Kimoto, K., Kuroda, J., Leon-Rodriguez, L., **Malinverno, A.,** Moore, T.C., Jr., Murphy, B.H., Murphy, D.P., Nakamura, H., Ogane, K., Ohneiser, C., Richter, C., Robinson, R., Rohling, E.J., Romero, O., Sawada, K., Scher, H., **Schneider, L.,** Sluijs, A., Takata, H., Tian, J., Tsujimoto, A., Wade, B.S., Westerhold, T., Wilkens, R., **Williams, T.,** Wilson, P.A., Yamamoto, Y., Yamamoto, S., Yamazaki, T., and Zeebe, R.E., 2012. A Cenozoic record of the equatorial Pacific carbonate compensation depth. *Nature (London, U. K.),* 488(7409):609–614. doi:10.1038/nature11360
- Pross, J., Contreras, L., Bijl, P.K., Greenwood, D.R., Bohaty, S.M., Schouten, S., Bendle, J.A., Röhl, U., Tauxe, L., Raine, J.I., Huck, C.E., van de Flierdt, T., Jamieson, S.S.R., Stickley, C.E., van de Schootbrugge, B., Escutia, C., Brinkhuis, H., and Integrated Ocean Drilling Program Expedition 318 Scientists [includes **A. Klaus, A. Fehr,** and **T. Williams**], 2012. Persistent near-tropical warmth on the Antarctic continent during the early Eocene epoch. *Nature (London, U. K.),* 488(7409):73–77. doi:10.1038/nature11300
- **Malinverno,** A., Hildebrandt, J., Tominaga, M., and Channell, J.E.T., 2012. M-sequence geomagnetic polarity time scale (MHTC12) that steadies global spreading rates and incorporates astrochronology constraints. *J. Geophys. Res. [Solid Earth],* 117:B06104. doi:10.1029/2012JB009260
- Tauxe, L., Stickley, C.E., Sugisaki, S., Bijl, P.K., Bohaty, S.M., Brinkhuis, H., Escutia, C., Flores, J.A., Houben, A.J.P., Iwai, M., Jiménez-Espejo, F., McKay, R., Passchier, S., Pross, J.,

Riesselman, C.R., Röhl, U., Sangiorgi, F., Welsh, K., **Klaus, A., Fehr, A**., Bendle, J.A.P., Dunbar, R., Gonzàlez, J., Hayden, T., Katsuki, K., Olney, M.P., Pekar, S.F., Shrivastava, P.K., van de Flierdt, T., **Williams, T.**, and Yamane, M., 2012. Chronostratigraphic framework for the IODP Expedition 318 cores from the Wilkes Land Margin: constraints for paleoceanographic reconstruction. *Paleoceanography,* 27(2):PA2214. doi:10.1029/2012PA002308

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

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

- Goldstein, M., 2012. Drilling for dinosaur death: the *JOIDES Resolutio*n finds extinction in deep sea mud. *Deep Sea News,* 10 July 2012. http://deepseanews.com/2012/07/drilling-for-dinosaur-death-the-joides-resolution-finds-extinction-in-deep-sea-mud/
- Koerth-Baker, M., 2012. At sea for science. *BoingBoing.net*, 5 September 2012. http://boingboing.net/2012/09/05/at-sea-for-science.html
- Pelcyger, D., 2012. Drilling for clues to ancient climate. *PBS.org,* 16 August 2012. http://www.pbs.org/newshour/rundown/2012/08/climate-ship-interview.html

LEGACY DOCUMENTATION

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

Legacy digital archive

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

APPENDIX A: FINANCE REPORT

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

APPENDIX B: TRAVEL

Purpose	Category	Date	Location	Institution: Personnel
American Management Association (AMA) training: 7 Habits of Highly Effective People	Training	6–12 July 2012	New York, NY	TAMU: G. Maxwell
An Event Apart Web Design Conference 2012	Conference	9–11 July 2012	Austin, TX	TAMU: K. Sherar, C. Wolfe
AMA training: Negotiating to Win	Training	10–14 July 2012	Atlanta, GA	TAMU: C. Broyles
Bruker X-ray Diffraction (XRD) Training	Training	15–23 July 2012	Madison, WI	TAMU: K. Bronk
USIO Leadership Meeting	Meeting	16–19 July 2012	Palisades, NY	Ocean Leadership: D. Divins TAMU: B. Clement
Labview Performance Course	Training	19 and 20 July 2012	Austin, TX	TAMU: B. Mills
Oracle Support Tasks	Work	19–21 July 2012	College Station, TX	TAMU: R. Elumalai
Global Business Travel Association (GBTA) Convention 2013	Conference	22–25 July 2012	Boston, MA	TAMRF: K. Bass, B. Neyses
Solaris System Administration	Training	22–28 July 2012	Frisco, TX	TAMU: J. Hutchinson
Expedition 341 Port Call	Port Call Activities	30 July–5 August 2012	St. Johns, Newfoundland	Ocean Leadership: D. Divins TAMU: P. Gates
Schlumberger-Doll Research Meeting	Planning	31 July 2012	Cambridge, Massachusetts	LDEO: A. Malinverno
USIO Meeting with Overseas Drilling Limited (ODL)	Meeting	3–6 August 2012	St. Johns, Newfoundland	Ocean Leadership: G. Myers
Liaison to IODP Site Characterization Panel	SAS	4–10 August 2012	Barcelona, Spain	TAMU: A. Klaus
Meetings regarding Program membership per NSF request	Meeting	6–10 August 2012	Brasilia, Brazil	TAMU: B. Clement
International Geological Congress (IGC)	Conference	5–10 August 2012	Brisbane, Australia	Ocean Leadership: M. Morell LDEO: T. Williams
IODP Teacher Workshop	Education/ Outreach	6–8 August 2012	Washington, DC	External Participants/Instructors: V. Westbrook, C. McHugh
NIWeek 2012 (National Instruments conference)	Training	6–9 August 2012	Austin, TX	TAMU: L. Chen, T. Cobine, S. Herrmann
Expedition 340 First Postexpedition Meeting	Planning	18–22 August 2012	College Station, Texas	LDEO: S. Morgan
National Geophysical Data Center (NGDC) meeting/ data delivery	Meeting	19–24 August 2012	Boulder, CO	TAMU: D. Sims
VMware Training	Training	19–24 August 2012	Round Rock, TX	TAMU: J. Flores

Purpose	Category	Date	Location	Institution: Personnel
Visit to Myramid Analytical (instrument specs)	Vendor meeting	29 August 2012	Austin, TX	TAMU: D. Houpt
Meet with government representative re: Program membership	Meeting	4–12 September 2012	Jakarta, Indonesia	TAMU: B. Clement
Publications support for CDEX Expedition 337	CDEX support	1–25 September 2012	Tokyo, Japan	TAMU: R. Kappler
Iceland Deep Drilling Project (IDDP)/ International Continental Drilling Program (ICDP) Workshop	Workshop	3–5 September 2012	Svartsengi, Iceland	Ocean Leadership: G. Myers
Expedition 330 second postexpedition meeting	Meeting	3–6 September 2012	La Palma, Spain	LDEO: L. Anderson TAMU: J. Geldmacher
Scientific Technology Panel (STP) Meeting	SAS	4–6 September 2012	Portland, OR	LDEO: G. Iturrino TAMU: D. Houpt, J. Miller
IODP Workshop: Observatories in Scientific Ocean Drilling	Conference	10 and 11 September 2012	Houston, TX	LDEO: L. Anderson TAMU: K. Grigar
LabView Core Course 1 and 2	Training	9–14 September 2012	Houston, TX	TAMU: S. Herrmann
Expedition 336 Operations Review Task Force (ORTF)	SAS	12–14 September 2012	College Station, TX	Ocean Leadership: D. Divins, G. Myers LDEO: L. Anderson
International Continental Scientific Drilling Program (ICDP) Workshop: Oman Drilling Project	Workshop	13–17 September 2012	Palisades, NY	TAMU: J. Miller
AMA Leadership Workshop	Training	16–19 September 2012	Houston, TX	TAMU: L. Schneider
MINExpo International 2012	Conference/ Exposition	23–26 September 2012	Las Vegas, NV	TAMU: K. Grigar
Expedition 343 ORTF	SAS	23–27 September 2012	Yokohama, Japan	Ocean Leadership: D. Divins, G. Myers
AMA Professional Seminar	Training	23–29 September 2012	San Francisco, CA	TAMU: J. Firth
IODP Short Course on Sedimentology	Training	30 September–5 October 2012	College Station, Texas	LDEO: A. Slagle

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

APPENDIX C: USIO QUARTERLY REPORT DISTRIBUTION

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M. Malone, TAMU, malone@iodp.tamu.edu
K. Miller, TAMU, kcmiller@tamu.edu
B. Neyses, TAMRF, neyses@iodp.tamu.edu