

# **INTEGRATED OCEAN DRILLING PROGRAM**

## **United States Implementing Organization**



**Integrated Ocean Drilling Program  
United States Implementing Organization**

**FY12 Quarterly Report 2**

**1 January–31 March 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.**



**15 May 2012**



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## **INTRODUCTION**

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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**

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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**

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### **FY12 Q1 IODP-USIO Quarterly Report**

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The USIO report for the first quarter of FY12 (October–December 2011) was submitted to NSF and IODP-MI on 14 February 2012 ([iodp.tamu.edu/publications/AR/FY12/FY12\\_Q1.pdf](http://iodp.tamu.edu/publications/AR/FY12/FY12_Q1.pdf)).

### **FY11 Annual Report**

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The IODP-USIO FY11 Annual Report was completed and submitted to NSF and IODP-MI on 25 January 2012 ([iodp.tamu.edu/publications/AR/FY11AR.pdf](http://iodp.tamu.edu/publications/AR/FY11AR.pdf)).

### **FY13 Annual Program Plan**

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Preliminary planning and budget development for the IODP-USIO FY13 Annual Program Plan began this quarter.

## **REPORTING AND LIAISON ACTIVITIES**

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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**

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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

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committee and panel links from the meeting schedule web page ([www.iodp.org/meeting-schedule/](http://www.iodp.org/meeting-schedule/)). IODP working group, task force, and other special meetings are described in this section.

### Conference and meeting schedule

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Conference/Meeting*	Date	Location
IODP Council/International Working Group Plus (IWG+) Meeting	18 and 19 January 2012	Goa, India
Science Implementation and Policy Committee (SIPCom) Meeting	19 and 20 January 2012	Goa, India
IODP Workshop: Unlocking the Opening Processes of the South China Sea	31 January and 1 February 2012	Shanghai, China
IODP Workshop: Coordinated Scientific Drilling in the Beaufort Sea	12–15 February 2012	Kananaskis, Alberta (Canada)
Expedition 335 Operations Review Task Force (ORTF) Meeting	6–9 March 2012	Washington, DC
Gemeinsames IODP/ICDP Kolloquium 2012	7–9 March 2012	Kiel, Germany
Scientific Technology Panel (STP) Meeting	19–22 March 2012	Kochi, Japan
USIO Technical Panel (UTP) Meeting	27 and 28 March 2012	College Station, Texas
Environmental Protection and Safety Panel (EPSP) Meeting	29 and 30 March 2012	College Station, Texas

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

### CONTRACT SERVICES

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#### Ocean Leadership

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##### *Contract activity*

Ocean Leadership received the following modifications during the reporting period.

##### **NSF Contract OCE-0352500 with Ocean Leadership**

- Modification 53: Reduced the FY11 Annual Program Plan by \$800,389, incrementally funded the FY12 Annual Program Plan by \$800,389, and decreased the total value of the contract by \$800,389, to \$555,158,279.

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

- Modification 39: Incrementally funded the FY12 Annual Program Plan in the amount of \$1,000,000.

##### *Subcontract activity*

Ocean Leadership issued no subcontract modifications during the reporting period.

### LDEO

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##### *Subcontract activity*

LDEO issued no subcontract modifications during the reporting period.

## TAMRF

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### *Subcontract activity*

TAMRF issued the following subcontract modification during the reporting period.

### **TAMRF subcontract with Overseas Drilling Limited**

- Amendment 18: Deleted the Scope of Work dated 1 December 2005 and replaced it with the Scope of Work dated 5 December 2011.

## PERSONNEL STATUS

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### Ocean Leadership

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The following position was vacated during the quarter:

- Science Communications Director (Sarah Saunders): 24 February 2012

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

### LDEO

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

### TAMU

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The following positions were vacated during the quarter:

- Editor II (Erin Gregory): 31 January 2012
- Administrative Assistant (Barbara McCannon): 31 January 2012
- Research Specialist II (Maxim Vasilyev): 17 February 2012
- Operations Superintendent (Ron Grout): 29 February 2012
- Marine Laboratory Specialist I (Ryan McKenna): 3 March 2012
- Research Specialist III (Christopher Bennight): 30 March 2012

The following positions were opened and advertised during the quarter:

- Administrative Assistant
- Marine Laboratory Specialist I
- Laboratory Specialist I

The following positions were filled during the quarter:

- Marine Laboratory Specialist I (Ryan McKenna): 11 January 2012
- Administrative Assistant (Diane Bertinetti): 13 February 2012

## USIO WEB SERVICES

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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](http://iodp.tamu.edu/scienceops/expeditions.html).

### USIO website statistics

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USIO website	FY12 Q2 page views*	FY12 Q2 site visits*
<a href="http://www.iodp-usio.org">www.iodp-usio.org</a>	20,582	13,174
<a href="http://iodp.ldeo.columbia.edu">iodp.ldeo.columbia.edu</a>	8,078	1,372
<a href="http://iodp.tamu.edu">iodp.tamu.edu</a>	350,132	69,143
	<b>378,792</b>	<b>83,689</b>

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

## LEGACY DOCUMENTATION

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

### Legacy digital archive

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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) include the IODP-USIO FY11 Annual Report, IODP-USIO FY12 Q1 report to NSF, IODP-USIO FY12 Q1 report to IODP-MI, and contract modifications.

Numerous Deep Sea Drilling Project (DSDP) and pre-1998 Ocean Drilling Program (ODP) legacy documents previously stored at the former ODP JOIDES office (Rosenstiel School of Marine and Atmospheric Science [RSMAS], University of Miami) were digitized by a document scanning vendor and stored in a dedicated CMS. Plans were made to post relevant documents on the ODP legacy website ([www.odplegacy.org](http://www.odplegacy.org)) by the end of the third quarter of FY12.

### Legacy web services

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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 groundbreaking 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.



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### Legacy website statistics

Legacy website	FY12 Q2 page views*	FY12 Q2 site visits*
www-odp.tamu.edu	1,351,437	305,630
www.odplegacy.org	10,230	3,676
www.deepseadrilling.org	192,255	51,163
	<b>1,553,922</b>	<b>360,469</b>

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

## OTHER PROJECTS AND ACTIVITIES

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### TAMU Project Portfolio Management program

The TAMU management team reviewed charters for two major projects this quarter: the User Data Editing Tool and DESClogik Reports. Following charter review and discussion, the decision was made to pursue further detailed planning on the DESClogik Reports project first, followed by the User Data Editing Tool project during the fourth quarter of FY12. The DESClogik Reports project management plan was reviewed and approved during a subsequent meeting in March and project execution was scheduled to begin on 4 April.

## TECHNICAL, ENGINEERING, AND SCIENCE SUPPORT

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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

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A revised schedule was released on 13 January 2012 to insert a dry dock to repair the ship's sea chests. Cruise schedule dates were shifted but no operational days were lost because of the required repairs.

Expedition	Port (Origin)	Dates <sup>1, 2</sup>	Total Days (Port/ Sea)	Days at Sea (Transit <sup>3</sup> / Ops)	Co-Chief Scientists	USIO Contacts <sup>4</sup>
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^
Dry dock/non-IODP [17 January–15 February 2012]						
Atlantis Massif Oceanic Core Complex	340T Lisbon, Portugal	15 February–3 March 2012	17 (0/17)	17 (14/3)	D. Blackmon	LDEO: A. Slagle^
Lesser Antilles Volcanism and Landslides	340 San Juan, Puerto Rico	3 March–17 April 2012	45 (3/42)	42 (3/39)	A. Le Friant, O. Ishizuka	TAMU: N. Stroncik* LDEO: A. Slagle^
Non-IODP [17 April–2 June 2012]						

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Expedition		Port (Origin)	Dates <sup>1, 2</sup>	Total Days (Port/ Sea)	Days at Sea (Transit <sup>3</sup> / Ops)	Co-Chief Scientists	USIO Contacts <sup>4</sup>
Newfoundland Sediment Drifts <sup>5</sup>	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]							
Costa Rica Seismogenesis Project (CRISP) 2	344	Balboa, Panama	23 October–11 December 2012	61 (5/56)	56 (11/45)	R. Harris A. Sakaguchi	TAMU: K. Petronotis* LDEO: A. Malinverno^
Hess Deep Plutonic Crust	345	Puntarenas, Costa Rica	11 December 2012–10 February 2013	61 (5/56)	56 (11/45)	K. Gillis J. Snow	TAMU: A. Klaus* LDEO: G. Guerin^
Non-IODP [10 February–29 May 2013]							
Southern Alaska Margin Tectonics, Climate & Sedimentation <sup>6</sup>	341	Victoria, British Columbia (Canada) <sup>6</sup>	29 May–29 July 2013	61 (3/58)	58 (8/50)	J. Jaeger, S. Gulick	TAMU: N. Stroncik* LDEO: H. Evans^
Transit	346T	Victoria, British Columbia (Canada) <sup>6</sup>	29 July–20 August 2013	21 (4/17)			
Asian Monsoon	346	Hakodate, Japan	20 August–28 September 2013	39 (1/38)	38 (2/36)	R. Tada R. Murray	TAMU: C. Alvarez Zarikian* LDEO: TBD^

Notes: TBD = to be determined.

<sup>1</sup> Dates for expeditions may be adjusted pending non-IODP activities.

<sup>2</sup> The start date reflects the initial port call day. The vessel will sail when ready.

<sup>3</sup> Transit total is the transit to and from port call and does not include transit between sites.

<sup>4</sup> 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](http://www.iodp-usio.org).

<sup>5</sup> Expedition includes engineering test of the Motion Decoupled Hydraulic Delivery System.

<sup>6</sup> The end port for Expedition 341 is tentative. Alternative ports that may reduce transit times are being investigated.

## USIO EXPEDITIONS

### Expedition 335: Superfast Spreading Rate Crust 4

#### *Postexpedition activities*

The first Expedition 335: Superfast Spreading Rate Crust 4 postexpedition meeting was held 16–20 January 2012 in College Station, Texas.

### Expedition 336: Mid-Atlantic Ridge Microbiology

#### *Postexpedition activities*

The first Expedition 336: Mid-Atlantic Ridge Microbiology postexpedition meeting was held 27 February–2 March 2012 in College Station, Texas.

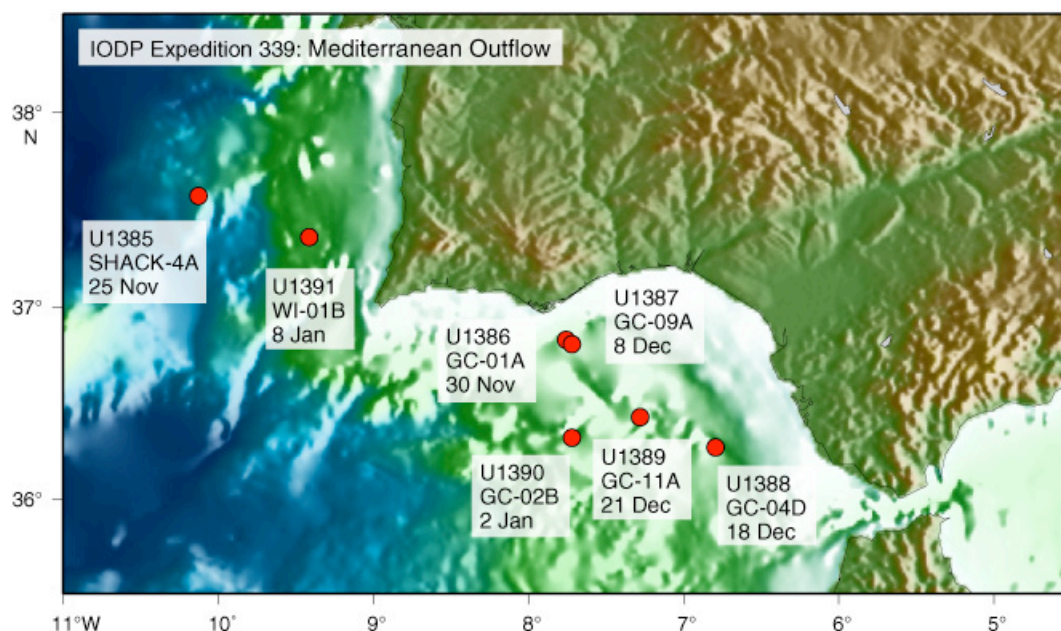
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### Expedition 339: Mediterranean Outflow

#### Staffing

Expedition 339 Science Party staffing breakdown	
Member country/consortium	Participants
USA: United States Science Support Program (USSSP)	8
Japan: Japan Drilling Earth Science Consortium (J-DESC)	6
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	10
Republic of 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

#### Site map



#### Coring summary

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1385	U1385A	37°34.2894'N	10°7.5708'W	2586.7	17	151.5	155.87	1.0
	U1385B	37°34.2892'N	10°7.5561'W	2586.6	16	146.3	150.73	1.0
	U1385C	37°34.2892'N	10°7.5561'W	2586.6	1	9.5	9.87	1.0
	U1385D	37°34.2784'N	10°7.5559'W	2583.8	16	146.4	153.95	1.1
	U1385E	37°34.2785'N	10°7.5692'W	2588.7	17	148.7	151.32	1.0
<b>Site U1385 totals:</b>					<b>67</b>	<b>602.4</b>	<b>621.74</b>	<b>103.2</b>
U1386	U1386A	36°49.6885'N	007°45.3309'W	560.4	39	349.3	347.04	99.4
	U1386B	36°49.6880'N	007°45.3168'W	561.9	50	464.9	421.60	90.7
	U1386C	36°49.6773'N	007°45.3165'W	561.8	15	140.2	82.00	58.5
<b>Site U1386 totals:</b>					<b>104</b>	<b>954.4</b>	<b>850.64</b>	<b>89.1</b>

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Site	Hole	Latitude	Longitude	Water depth (m)	Cores (n)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1387	U1387A	36°48.3246'N	007°43.1408'W	559.1	38	352.4	347.84	98.7
	U1387B	36°48.3246'N	007°43.1278'W	558.2	36	338.3	327.61	96.8
	U1387C	36°48.3139'N	007°43.1277'W	558.4	61	580.0	409.50	70.6
<b>Site U1387 totals:</b>					<b>135</b>	<b>1270.7</b>	<b>1084.95</b>	<b>85.4</b>
U1388	U1388A	36°16.1378'N	006°47.6602'W	663.6	1	3.4	3.64	107.1
	U1388B	36°16.1383'N	006°47.6413'W	662.9	24	225.7	107.00	47.4
	U1388C	36°16.1495'N	006°47.6411'W	662.5	3	24.0	10.36	43.2
<b>Site U1388 totals:</b>					<b>28</b>	<b>253.1</b>	<b>121.00</b>	<b>47.8</b>
U3189	U1389A	36°25.5183'N	007°16.6907'W	644.7	39	354.9	335.60	94.6
	U1389B	36°25.5199'N	007°16.6772'W	643.9	1	9.5	9.72	102.3
	U1389C	36°25.5199'N	007°16.6772'W	642.9	38	350.0	328.48	93.9
	U1389D	36°25.5092'N	007°16.6772'W	644.0	11	94.0	97.41	103.6
	U1389E	36°25.5084'N	007°16.6906'W	643.4	69	655.0	352.28	53.8
<b>Site U1389 totals:</b>					<b>158</b>	<b>1463.4</b>	<b>1123.49</b>	<b>76.8</b>
U1390	U1390A	36°19.0387'N	007°43.0812'W	993.4	38	350.0	326.26	93.2
	U1390B	36°19.1460'N	007°43.0815'W	990.7	21	194.1	189.93	97.9
	U1390C	36°19.1466'N	007°43.0674'W	992.4	19	175.4	170.08	97.0
<b>Site U1390 totals:</b>					<b>78</b>	<b>719.5</b>	<b>686.27</b>	<b>95.4</b>
U1391	U1391A	37°21.5392'N	009°24.6601'W	1073.7	38	353.1	342.62	97.0
	U1391B	37°21.5288'N	009°24.6604'W	1073.3	38	353.5	346.93	98.1
	U1391C	37°21.5286'N	009°24.6468'W	1073.3	35	331.5	269.02	81.2
<b>Site U1391 totals:</b>					<b>111</b>	<b>1038.1</b>	<b>958.57</b>	<b>92.3</b>
<b>Expedition 339 totals:</b>					<b>681</b>	<b>6301.6</b>	<b>5446.66</b>	<b>86.4</b>

### *Logging summary*

During Expedition 339: Mediterranean Outflow, three holes were logged with the triple combination (triple combo) and Formation MicroScanner (FMS)-Sonic tool strings (Holes U1389E, U1390A, and U1391C). The High-Resolution Laterolog Array (HRLA) resistivity tool was run in low-resistivity formations for the first time during Expedition 339, and compared favorably to results from the older Dual Induction Tool (DIT) resistivity tool. Downhole logging results were useful to characterize the sedimentary successions, which mostly consist of sand-rich and mud-rich layers alternating on a scale of several meters (contourite sequence). The high contrast in properties between the two main lithologies gave a rich character to the logs. In addition, the natural gamma ray logs helped in establishing site-to-site correlations, electrical resistivity measurements characterized salty pore waters at two of the sites, and sonic and density logs provided key data to link drilling results with seismic reflection sections.

### *Science results*

During Expedition 339, five sites were drilled in the Gulf of Cádiz and two sites were drilled off the West Iberian margin, recovering 5,447 m of core, with an average recovery of 86.4%. The Gulf of Cádiz was targeted for drilling as a key location for the investigation of Mediterranean Outflow Water (MOW) through the Strait of Gibraltar gateway and its influence on global circulation and climate. The gulf is also a prime area for understanding the effects of tectonic

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activity on evolution of the Strait of Gibraltar gateway and margin sedimentation. Drilling penetrated into the Miocene at two sites in the Gulf of Cádiz, where sedimentary record showed a strong MOW signal following the opening of the Strait of Gibraltar gateway. Preliminary results indicate contourite deposition from 4.2 to 4.5 Ma, although subsequent research will establish whether this deposition dates from the first onset of MOW. The Pliocene succession, penetrated at four sites, displays characteristics consistent with low bottom-current activity linked with weak MOW. Significant widespread unconformities at 3.0–3.2 and 2.2–2.4 Ma are interpreted as a signal of intensified MOW, especially from ~2.4 Ma. The Quaternary succession displays characteristics consistent with a much more pronounced phase of contourite drift development, with two distinct periods of increased MOW activity separated by a widespread unconformity at ~0.9 Ma related to even higher MOW. Following this unconformity, the final phase of drift evolution established the contourite depositional system architecture we see today.

There is significant climate control on this evolution of MOW and bottom-current activity. However, from the closure of the Atlantic-Mediterranean gateways in Spain and Morocco at around 6 Ma to the opening of the Strait of Gibraltar gateway at 5.3 Ma, even stronger tectonic control affected margin development, downslope sediment transport, and contourite drift evolution. Based on the timing of events recorded in the sedimentary record, we propose tectonic pulsing in the region linked with small movements of the African and Iberian plates. The Gulf of Cádiz is the world's premier contourite laboratory and thus presents an ideal testing ground for the contourite paradigm. Following recovery of >4.5 km of contourite cores, existing models for contourite deposition are found to be sound.

Further study of these models will undoubtedly allow us to resolve outstanding issues of depositional processes, drift budgets, and recognition of fossil contourites in the ancient record onshore. The expedition also verified the presence of a larger than expected quantity and extensive distribution of contourite sands that are clean and well sorted. These sands represent a new and important exploration target for potential oil and gas reservoirs. Preliminary work has shown a remarkable record of orbital-scale variation in bulk sediment properties of contourites at several of the drift sites and good correlation between all sites. Climate control on contourite sedimentation is clearly significant at this scale; further work will determine the nature of controls at the millennial scale.

### **Expedition 340T: Atlantis Massif Oceanic Core Complex**

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#### ***Planning***

Expedition 340T: Atlantis Massif Oceanic core Complex had to be delayed three weeks by the insertion of a dry dock. All participants were able to adjust their schedules and sail.



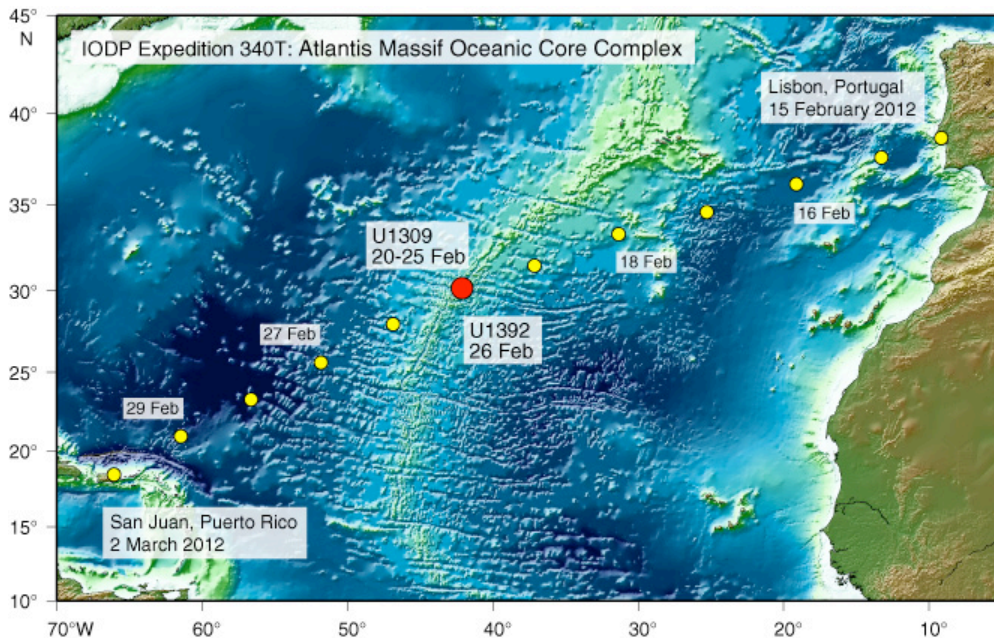
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### Staffing

Expedition 340T Science Party staffing breakdown	
Member country/consortium	Participants*
USA: United States Science Support Program (USSSP)	2
Japan: Japan Drilling Earth Science Consortium (J-DESC)	0
Europe and Canada: European Consortium for Ocean Research Drilling (ECORD) Science Support and Advisory Committee (ESSAC)	0
Republic of Korea: Korea Integrated Ocean Drilling Program (K-IODP)	0
People's Republic of China: IODP-China	0
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	0
India: Ministry of Earth Science (MoES)	0

\*Because this was only a 3-day operation to execute an Ancillary Project Letter (APL) during a transit, participants are not counted against the staffing quota based on a previous precedent set at the beginning of IODP.

### Site map



### Logging operations and science results

The operational goal of Expedition 340T was to complete the wireline logging of Hole U1309D on the Central Dome of Atlantis Massif, just west of the spreading axis of the Mid-Atlantic Ridge at 30°N. The borehole logging program focused on temperature and acoustic velocity measurements and a zero-offset vertical seismic profile (VSP). Expedition 340T obtained the first seismic coverage of the portion of Hole U1309D that is 800–1,400 meters below seafloor (mbsf). VSP station coverage at zero offset now extends the full length of the hole, including the uppermost 150 mbsf, where detachment processes are expected to have left their strongest imprint. Prior seismic imaging from Hole U1309D showed considerable reflectivity within the footwall of this oceanic core complex, and new results from Expedition 340T document the geologic explanation for at least some of the impedance contrast. The dominantly gabbroic

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section, cored to 1,415 mbsf during IODP Expedition 304/305, did not inherently contain density/seismic contrasts sufficient to reflect seismic energy. Expedition 340T aimed to test the hypothesis that highly altered intervals and/or fluid-bearing fault zones at depth might be responsible for these contrasts, thus allowing interpretation of the reflectivity patterns in terms of hydration pathways within young oceanic crust. Expedition 340T results confirm that the borehole velocity of altered olivine-rich troctolite intervals at Site U1309 is sufficiently distinct from surrounding rock ( $V_p \sim 0.5$  km/s slower) to produce a multichannel seismic reflection given their thickness (several tens of meters). Small dips in temperature ( $0.3^\circ\text{--}0.5^\circ\text{C}$ ) were measured in borehole fluid adjacent to known faults at 750 and 1,100 mbsf. These suggest that percolation of seawater along the fault zone is still active, not just a past process that produced the alteration documented in Expedition 305 core from these intervals. In addition, other standard logging data acquired during Expedition 340T were in good agreement with Expedition 304/305 borehole measurements. The deep-reading sensor of the new Magnetic Susceptibility Sonde (MSS) was deployed in the upper, cooler  $\sim 800$  mbsf at Hole U1309D, showing repeatable measurements that were in excellent agreement with multisensor track data from Expedition 304/305 cores. Opportunistic sampling of a seafloor feature located a few meters from Hole U1309D, now designated IODP Site U1392, recovered fragments of possible cap rock that may provide information on processes within the exposed detachment.

### Expedition 340: Lesser Antilles Volcanism and Landslides

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#### *Planning*

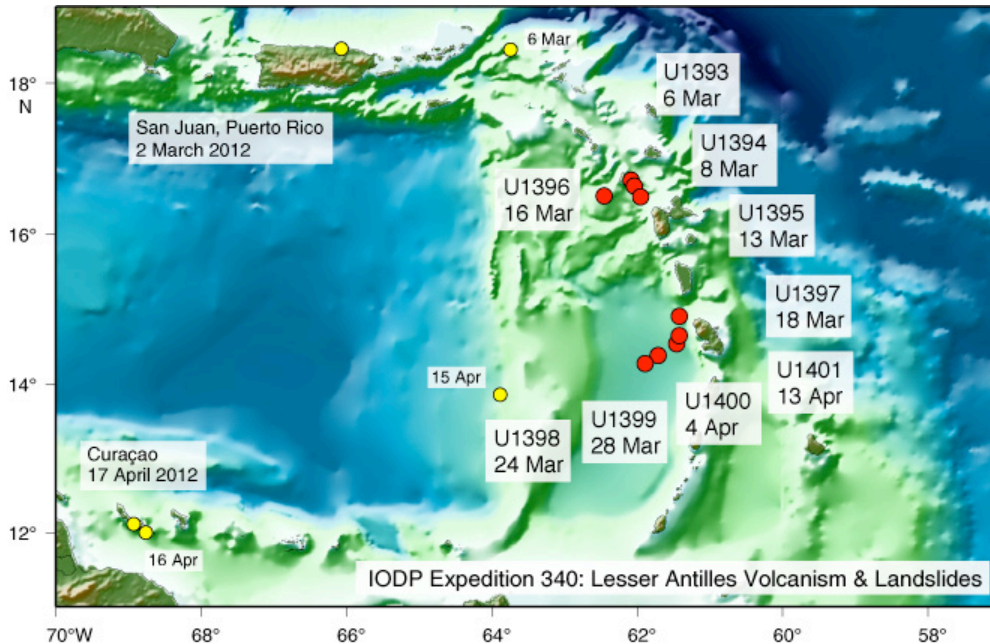
Expedition 340: Lesser Antilles Volcanism and Landslides was delayed 3 weeks due to the insertion of the dry dock. The start port was changed to San Juan, Puerto Rico, because of increased logistics that could not be achieved in Antigua, which was designed as a stopover to pick up the Science Party. Final logistical arrangements and shipping were completed during the quarter.

#### *Staffing*

Because of the schedule change, two scientists had to withdraw and were replaced. Another scientist withdrew with a medical issue and could not be replaced within the time available.

Expedition 340 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
Republic of Korea: Korea Integrated Ocean Drilling Program (K-IODP)	0
People's Republic of China: IODP-China	1
Australia and New Zealand: Australia/New Zealand IODP Consortium (ANZIC)	1
India: Ministry of Earth Science (MoES)	1

*Site map*



**Logging summary:** Three holes were logged (Holes U1394B, U1395B, and U1397B) during Expedition 340 using two tool strings: the triple combo-MSS (gamma ray, caliper, electrical resistivity, and magnetic susceptibility) and the FMS-Sonic (electrical resistivity images and elastic wave velocity). Due to poor hole conditions, radioactive sources necessary for a density measurement in the triple combo-MSS were included only in Hole U1395B. Logging data provide a continuous record through the drilled deposits, allowing geophysical characterization of the volcanoclastic debris avalanche deposits that are a key scientific target for this expedition. The Site U1394 logged interval covers a region with nearly full core recovery and provides a complementary data set. Conversely, at Sites U1395 and U1397, the logged intervals correspond to intervals of poor core recovery and thus provide characterization of lithologies that were not recovered in cores.

**Expedition 342: Newfoundland Sediment Drifts**

*Planning*

Research planning and review of sample requests, shipboard laboratory requirements, and technical support requirements for Expedition 342: Newfoundland Sediment Drifts began in March. Motion-Decoupled Hydraulic Delivery System (MDHDS) mechanical testing was successfully completed in the Schlumberger test well in January, with full testing of all components scheduled for early April. The charter to be used for personnel transfer after completion of MDHDS testing operations was secured.



### ***Staffing***

Science Party staffing and finalization of MDHDS participant staffing was completed this quarter.

### ***Clearance and permitting activities***

On 13 March, the USIO notified U.S. authorities of the schedule change for MDHDS testing at Site 1073 due to dry dock repairs. Sites were reviewed by the Environmental Protection and Safety Panel (EPSP) and the TAMU Safety Panel at the March EPSP meeting.

## **Expedition 344: Costa Rica Seismogenesis Project (CRISP) 2**

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### ***Planning***

The Expedition 344: Costa Rica Seismogenesis Project (CRISP) 2 pre-expedition meeting was held 18–20 January 2012 in College Station, Texas, to finalize the operational and science plan and develop a draft *Scientific Prospectus*. Several new alternate sites and one primary site were developed based on new seismic data. Publication of the *Scientific Prospectus* is on hold pending resolution of new sites at the next EPSP meeting.

### ***Staffing***

Expedition 344 Science Party staffing neared completion this quarter, with 23 scientists accepting, 1 invitation pending, and a call issued for a benthic foraminifer specialist.

### ***Clearance and permitting activities***

The EPSP and TAMU Safety Panel reviewed sites at the end of March, resulting in several changes. Application to drill in the Costa Rica exclusive economic zone (EEZ) will be submitted next quarter after finalization of the EPSP review.

### ***Environmental assessment***

The USIO began developing an Environmental Evaluation (EE) in preparation for VSP work. The completed EE report is scheduled to be available by July.

## **Expedition 345: Hess Deep Plutonic Crust**

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### ***Planning***

The Expedition 345: Hess Deep Plutonic Crust pre-expedition meeting was held 11 and 12 January 2012 in College Station, Texas, to finalize the operational and science plan and develop a draft *Scientific Prospectus*. Operations and engineering staff began finalizing flexible options to provide initiation and re-entry to advance a deep hole depending on conditions encountered.

### ***Staffing***

The first round of invitations was issued in late March. A journalist was invited to sail and has accepted.

### *Clearance and permitting activities*

Drilling anywhere within a rectangular area encompassing all three primary sites was recommended for approval by the EPSP and TAMU Safety Panel. The alternate site was also recommended for approval.

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

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### *Planning*

Finalization of the end port for Expedition 341: Southern Alaska Margin Tectonics, Climate, and Sedimentation is on hold pending a site visit by ship's logistics manager.

### *Staffing*

Expedition 341 Science Party staffing was completed during the quarter.

### *Clearance and permitting activities*

Two new sites were reviewed by EPSP in March.

### *Environmental assessment*

The USIO began developing an EE in preparation for VSP work. The completed EE report is scheduled to be available by the end of summer.

## **Expedition 346: Asian Monsoon**

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### *Planning*

The Expedition 346: Asian Monsoon pre-expedition meeting was scheduled for 10 and 11 September 2012.

### *Staffing*

Both Co-Chief Scientists invitees accepted, and plans were made to develop staffing timelines for review by the PMOs at the beginning of the next quarter.

## **DRY-DOCK/TRANSIT ACTIVITIES**

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The aft end of the sonar dome was damaged when the *JOIDES Resolution* was set down on the blocks entering dry dock, resulting in extensive structural damage to the hull attachment point, flange, and neck of the sonar dome. The USIO took advantage of the dry-dock period to repair the sonar dome and to make other required repairs and important modifications to laboratory and other shipboard science-use spaces. The sonar dome was removed, new flanges were machined and welded back on, and the dome was re-installed. In the microbiology cold room, a new split-level drop ceiling with LED lighting was installed to provide better lighting and help control noise from the fan coil unit. Ceiling light fixtures in the conference room were removed, the black bezels were repainted, and the lights were re-installed and rotated to face the correct

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direction. In the core refrigeration space, brackets were installed and a new fan coil was hung. An outside contractor repaired damage to some of the floors in the laboratories.

The USIO worked with the various groups that will participate in the Curaçao maintenance period to schedule berthing space and operations onboard the ship. Operations will include routine crew changes, vendor visits for Siem Offshore and the USIO, other USIO activities (e.g., computer upgrades in Logging Services), planning sessions for work for others, an upcoming School of Rock program, and laboratory remobilization.

### **ANALYTICAL SYSTEMS**

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#### **Analytical Systems acquisitions and updates**

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Two MS2C-90 mm Bartington magnetic susceptibility loops were purchased to replace the 80 mm loops currently deployed on the Whole-Round Multisensor Logger (WRMSL) and Special Task Multisensor Logger (STMSL). These new loops will help prevent jams caused by liner patches and twisted liners.

The repaired Agico JR-6A spinner magnetometer was returned from A.S.C. and was installed on the ship for use. In addition, a new Gaussmeter and Hall Probe was deployed to the ship to assist in improving superconducting rock magnetometer (SRM) measurements.

#### **Laboratory working groups**

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The Laboratory Working Group (LWG) technical and science leads will begin attending bimonthly TAMU Issues Management Team meetings in order to allow management to better prioritize the LWG efforts. In addition, the *IODP Laboratory Working Groups Newsletter* was initiated to communicate LWG activities to the general TAMU staff. The first issue of the newsletter was produced this quarter.

The Curation and Core Handling LWG met during this quarter in order to discuss core laboratory layout issues raised by the technical staff. The Geology, Geochemistry, and Geophysics LWGs did not meet this quarter due to logistical conflicts. The LWGs will meet during the April–May Curaçao maintenance period and will analyze cruise evaluations and technical reports from Expeditions 339 and 340.

#### **Projects and other activities**

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##### ***Geosciences Laboratory (ODASES)***

The Ocean Drilling and Sustainable Earth Science (ODASES) Geosciences Laboratory at TAMU hosted four scientists for X-ray fluorescence (XRF) scanning projects during the quarter. The schedule for use of the XRF accounted for 51 calendar days during the quarter and continues to be greater than 50% of available days. The shore-based Section Half Imaging Logger (SHIL) continues to be used for imaging cores when they are prepared for XRF analysis. The shore-

based WRMSL is now functional for magnetic susceptibility measurements, and work continues on a time-available basis to add density by gamma ray attenuation and  $p$ -wave velocity capabilities. Both the WRMSL and the SHIL are part of the shipboard support infrastructure, but are available on a time-available basis for the use of visiting scientists.

### **ENGINEERING SUPPORT**

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#### **Engineering equipment acquisitions and updates**

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The scope, budget, and schedule for the vibration-isolated television (VIT) camera, sonar, and transmission electronics were finalized and requests for quotes were issued for the various components.

#### **Projects and other activities**

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##### ***Large diameter pipe-handling infrastructure***

Blohm & Voss (B&V) worked on the detailed engineering drawings of the insert version of the 350- and 500-ton elevators. When these designs are completed, USIO and Howard and Associates (HAI) personnel will review the drawings before proceeding to the manufacturing stage. The purchase order to B&V was modified to reflect the fact that the new elevators will be used with the current handler. A meeting was scheduled for 8 May 2012 on board the *JOIDES Resolution* for USIO, HAI, and Siem Offshore personnel to review the detailed engineering drawings.

##### ***Magnetic Susceptibility Sonde rebuild***

The deep reading sensor (DR3) and electronics sections were successfully deployed during Expeditions 340T and 340. The second completed MSS-B tool was also successfully deployed in the test well at LDEO. This test included the deep-reading and high-resolution sensors with bow springs. Fabrication of an inline nonmagnetic housing continued and is expected to be finalized and pressure tested by the beginning of May 2012. If the pressure tests are successful, the USIO will manufacture additional nonmagnetic housings that will be used for projects involving measuring formation magnetic properties.

##### ***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 used in a land test at the Sugar Land, Texas, Schlumberger facilities as part of the MDHDS project. Two MFTMs and a surface panel were then shipped to TAMU from Sugar Land to be included in the shipment to Curaçao in late April 2012. The MFTM will be part of the field testing operations that will take place off the coast of New Jersey at the beginning of 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*

The final quotation to repair and calibrate the two drilling sensor sub (DSS) tools was received. Based on the estimated repair and calibration cost and the historical reliability issues with this generation of tools, which are now 10 years old, the decision was made to discontinue efforts to test and re-deploy these tools.

## **LEGACY DOCUMENTATION**

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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.

## **ENGINEERING DEVELOPMENT**

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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**

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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

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Bench testing of the MMM sensors and electronics is expected to begin in May 2012. Pressure testing of the nonmagnetic housings is the pacing item. If the next round of pressure tests are successful, manufacturing additional housings for the MMM will be the final step in this development. A subsequent first-expedition deployment could be targeted in early FY13.

## USIO TECHNICAL PANEL

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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 will be created during FY12, and will be administered and operated by Ocean Leadership, the USIO Systems Integration Contractor, with assistance from the USIO partners.

## Project status

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The first UTP meeting was held 27 and 28 March in College Station, Texas, with excellent attendance and participation. Plans were made to circulate proceedings from the discussion within the USIO during the next quarter.

## CORE CURATION

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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

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The USIO planned sample and curation strategies for Expedition 342. USIO Curatorial Specialists supervised shipboard core sampling during Expeditions 339 and 340 and reviewed all shipboard and moratorium-related requests in coordination with the other members of the expedition Sample Allocation Committees (SACs).

## SAMPLE MATERIALS CURATION SYSTEM

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The first phase of external testing for the new sample request submission software was completed this quarter. The software is now hosted at TAMU and running on Oracle.

## CORE CURATION

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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

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The following "Sample requests" table provides a summary of the 3,605 samples that were taken during the quarter. Sample requests that show zero samples taken may represent cores

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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	Number of Visitors
22501A, Suto, Japan	1,619	
22499A, Hoogakker, United Kingdom	245	
21886B, Chanda, USA	25	
22520A, Teagle, United Kingdom	29	1
22472B, Inglis, United Kingdom	5	
22521A, Jackson, USA	8	
22495A, Tiedemann, Germany	20	
22170E, Stepanova, Russia	24	1
1397IODP, Shackford, USA	94	1
22532A, Mack, USA	13	1
1380IODP, Sghibartz, United Kingdom	21	
1406IODP, Shackford, USA	85	1
22523A, Monechi, Italy	109	
1411IODP, Cook, United Kingdom	2	
22106A, Peterson, USA	112	
22509A, Kozdon, USA	54	
22531A, Erhardt, USA	36	
21613C, Martinez-Boti, United Kingdom	42	
22534A, Toney, United Kingdom	6	
22542A, Stott, USA	48	
22527A, Jacobel, USA	2	
21841C, Egan, United Kingdom	12	
22544A, Flores, Spain	192	
22551A, Morgan, United Kingdom	2	
1424IODP, Sosdian, United Kingdom	26	
1422IODP, Hauptvogel, USA	228	
22554A, Harrison, Canada	10	
1428IODP, Beltran, France	48	
22279C, Bolton, Spain	19	
1509IODP, Pierce, USA	1	
22553A, DeCesare, USA	57	
22256E, Smart, United Kingdom	3	
20086D, Haley, USA	3	
22556A, Norris, USA	31	
22571A, Woodard, USA	179	1
22564A, Reich, Germany	8	
22533A, Harwood, USA	63	
21554A, Sexton, United Kingdom	103	1
22170G, Stepanova, Russia	21	1
Tours/demonstrations (6)	0	103
<b>Totals</b>	<b>3,605</b>	<b>111</b>

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### *GCR tours/visitors*

Type of tour or visitor	Number of Visitors
Scientist visitors	8
Educational tours/demonstrations (5)	93
Public relations tours (1)	10
<b>Total</b>	<b>111</b>

### USE OF CORE COLLECTION

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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. See “Strategic Partnerships” in “Education” for information about sediment cores on display at the Brazos Valley Museum of Natural History in Bryan, Texas. The repository and core collection are also used for classroom exercises.

### LEGACY DOCUMENTATION

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

#### Sample request file scanning

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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 50% complete.

#### Thin section archive sample scanning

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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 165.

#### Core working half imaging

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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.

## **Inventory of returned sample residues**

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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 labeled boxes. After all of the residues are sorted by expedition, the inventory of individual samples within each box will begin.

## **DATA MANAGEMENT**

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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**

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### **LIMS database**

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Expedition 339 data were added to the LIMS database on shore. These data are currently under moratorium and available only to the Expedition 339 Science Party. Expedition 330 data were placed out-of-moratorium during this quarter.

### **Log database**

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The following data from USIO expeditions were processed and put online this quarter:

- USIO Expedition 339, Holes U1389E, U1390A, and U1391C: standard and image data
- USIO Expedition 340T, Hole U1309D: standard and image data
- USIO Expedition 340, Holes U1394B, U1395B, U1397B, and U1399C: standard and image data

## **EXPEDITION DATA REQUESTS**

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

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Top 10 countries accessing USIO web databases						
Rank	Janus database		LIMS database		Log database	
	Country	Visitor sessions	Country	Visitor sessions	Country	Visitor sessions
1	USA	1,501	USA	648	USA	502
2	United Kingdom	413	Unknown	179	China	122
3	Germany	334	Japan	80	United Kingdom	120
4	Japan	197	Germany	76	Germany	94
5	France	167	United Kingdom	67	Japan	75
6	China	151	South Korea	47	France	64
7	Australia	143	Italy	44	Canada	38
8	The Netherlands	93	France	37	Russia	38
9	Western Europe	58	Australia	29	Australia	35
10	Spain	54	Spain	26	The Netherlands	29
	Others	430	Others	149	Others	255

Janus database web queries		
Rank	Query	Uploads
1	Imaging—photos	1,482
2	Sample	1,009
3	Point calculation	892
4	Site summaries	685
5	Hole trivia	379
6	Core summaries	311
7	Requests	229
8	Paleo—age models	226
9	Physical properties—GRA	225
10	Physical properties—MSL	200
11	Site details	186
12	Leg summaries	179
13	Hole summaries	171
14	Images—prime data	167
15	Paleo—paleo investigations	155
16	Site summary trivia	126
17	Paleo—age profile	120
18	Chemistry—interstitial water	114
19	Depth calculations	106
20	Physical properties—color	102
	Others	1,332
	<b>Janus database total</b>	<b>8,396</b>

LIMS database web queries	
Query type	Views
LIMS Reports	4,083
Web Tabular Reports	567
<b>LIMS database total</b>	<b>4,650</b>

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Data requests submitted to the TAMU Data Librarian	
Requests	Total
Core photos	12
How to	9
Heat flow	2
Isotopes	2
Thermo conductivity	1
MAD	1
Fluids	1
Paleo mag	1
Site locations	1
Thin sections	1
GRA	1
Seismic data	1
Samples	1
Data questions	2
Shear strength	1
<b>Total</b>	<b>37</b>

Countries submitting data requests to the TAMU Data Librarian	
Country	Total
USA	15
United Kingdom	6
Unknown	4
New Zealand	3
Germany	2
South Korea	2
Denmark	1
Mexico	1
India	1
Ireland	1
Canada	1
<b>Total</b>	<b>37</b>

Other USIO web statistics*			
	Janus database	LIMS database	Log database
<b>Database query hits:</b>			
Entire site (successful)	16,810	2,170	8,078
Average per day	184	23	88.77
<b>Visitor sessions:</b>			
Total number of visitor sessions	3,541	1,418	1,372
Average per day	38	15	15.08
Average length of visit	10:48	6:38	5:32
International visitor sessions	57.58%	39.14%	63.41%
Visitor sessions of unknown origin	0.03%	12.62%	0.00%
Visitor sessions from United States	42.39%	48.24%	36.59%
<b>Visitors:</b>			
Unique visitors	2,169	900	786
Visitors who only visited once	1,635	741	708
Visitors who visited more than once	534	159	78
Average visits per visitor	1.63	1.58	1.75

## SOFTWARE DEVELOPMENT

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The USIO conducted routine software maintenance on SampleMaster, LIMS Reports, LIMS Overview, MADMax, LIMS2Excel, and DESCLogik during the quarter.

## LEGACY DOCUMENTATION

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

### Other legacy projects

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All IODP logging data from Expeditions 314–340 were revised to include a header complete with units for each measurement. Work continued on the project to manually edit the headers of all ASCII logging tables from ODP Legs 101–209 to include units and depth reference, a step that makes them consistent with all USIO ASCII files. Legs 101–198 were revised as of 31 March 2012.

## OTHER PROJECTS AND ACTIVITIES

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New computers for the Logging Office were shipped via TAMU to Curaçao for installation, along with a Network Attached Storage unit to replace the aging redundant array of independent disks (RAID) system in the server room. Plans were made for installation and configuration to be done during the tie-up period.

Late word that IOCOM Integrated Communications was shutting down the servers for their IGMeeting videoconferencing system initiated a search for a replacement product. After much discussion between USIO partner organizations, it was decided to upgrade to the new IOCOM Visimeet system to maintain current capabilities, while evaluation of other videoconferencing systems continues.

## PUBLICATIONS

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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

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#### USIO publications

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##### *Scientific Prospectus*

- Gillis, K., Snow, J.E., and Klaus, A., 2012. Hess Deep plutonic crust: exploring the plutonic crust at a fast-spreading ridge: new drilling at Hess Deep. *IODP Sci. Prosp.*, 345. [doi:10.2204/iodp.sp.345.2012](https://doi.org/10.2204/iodp.sp.345.2012)

### **Preliminary Report**

- Expedition 336 Scientists, 2012. Mid-Atlantic Ridge microbiology: initiation of long-term coupled microbiological, geochemical, and hydrological experimentation within the seafloor at North Pond, western flank of the Mid-Atlantic Ridge. *IODP Prel. Rept.*, 336. doi:10.2204/iodp.pr.336.2012

### **IODP Proceedings**

- Koppers, A.A.P., Yamazaki, T., Geldmacher, J., and the Expedition 330 Scientists, 2012. *Proc. IODP*, 330: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.330.2012

### **Data Reports**

- Lyle, M., Olivarez Lyle, A., Gorgas, T., Holbourn, A., Westerhold, T., Hathorne, E., Kimoto, K., and Yamamoto, S., 2012. Data report: raw and normalized elemental data along the Site U1338 splice from X-ray fluorescence scanning. *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.320321.203.2012
- Westerhold, T., Röhl, U., Wilkens, R., Pälike, H., Lyle, M., Jones, T.D., Bown, P., Moore, T., Kamikuri, S., Acton, G., Ohneiser, C., Yamamoto, Y., Richter, C., Fitch, P., Scher, H., Liebrand, D., and the Expedition 320/321 Scientists, 2012. Revised composite depth scales and integration of IODP Sites U1331–U1334 and ODP Sites 1218–1220. *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.320321.201.2012

## **CDEX publications**

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### **Scientific Prospectus**

- Mori, J., Chester, F.M., Eguchi, N., and Toczko, S., 2012. Japan Trench Fast Earthquake Drilling Project (JFAST). *IODP Sci. Prosp.*, 343. doi:10.2204/iodp.sp.343.2012

### **Data Reports**

- Guo, J., and Underwood, M.B., 2012. Data report: clay mineral assemblages from the Nankai Trough accretionary prism and the Kumano Basin, IODP Expeditions 315 and 316, NanTroSEIZE Stage 1. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemand, S., Sreaton, 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.314315316.202.2012
- Louis, L., Humbert, F., Robion, P., Henry, P., Knuth, M., and Likos, W., 2012. Data report: joint analysis of acoustic and magnetic susceptibility anisotropies in the Nankai accretionary prism. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemand, S., Sreaton, 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.314315316.216.2012

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- Su, X., 2012. Data report: occurrence of age-diagnostic nannofossil and biostratigraphic datums at IODP Expedition 316 Sites C0004 and C0008, Nankai Trough. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemand, 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.314315316.210.2012
- Tomaru, H., and Fehn, U., 2012. Data report: distribution of iodine concentration and 129I in interstitial fluid in the Nankai Trough accretionary prism collected during IODP Expeditions 315 and 316. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemand, 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.314315316.220.2012
- Yue, L., Likos, W.J., Guo, J., and Underwood, M.B., 2012. Data report: permeability of mud(stone) samples from Site C0001, IODP Expedition 315, Nankai Trough: NanTroSEIZE Stage 1. *In* Kinoshita, M., Tobin, H., Ashi, J., Kimura, G., Lallemand, 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.314315316.204.2012

## USIO REPORTS

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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

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### Citations submitted to AGI

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In November 2008, the USIO began submitting Program-related ocean drilling citations to the American Geological Institute (AGI) for inclusion in the GeoRef database and the subset Ocean Drilling Citation Database, which includes publication records related to DSDP, ODP, and IODP. The USIO submitted 538 citations to AGI this quarter.

## IODP PUBLICATIONS MANAGEMENT

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### IODP scientific publication deadline extension requests

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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/](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

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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 Q2	Overall extension status	
			Number approved	Number fulfilled
301	20 April 2007			
302	23 July 2007			
304/305	4 February 2008		14	12
308	7 March 2008		8	7
303/306	9 May 2008		13	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	17

### *Synthesis papers*

Expedition	Submission deadline (26 months postmoratorium)	Deadline extensions approved in FY12 Q2	Overall extension status	
			Number approved	Number fulfilled
301	22 October 2007		1	1
302	21 January 2008		1	1
304/305	4 August 2008		1	1
308	8 September 2008		1	1
303/306	10 November 2008		1	1
307	15 December 2008		1*	1
311	29 December 2008		1	1
309/312	27 February 2009		1*	
310	4 May 2009		1*	

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

### **Scientific publication distribution**

IODP scientific publications are the primary method of disseminating IODP research to the scientific community and the public. Initial distribution of IODP scientific publications includes more than 800 program member offices, universities, libraries, and geological organizations worldwide, and the USIO provides additional print or electronic copies of legacy publications upon request. Publications requested and distributed during the quarter included 21 *Proceedings of the Integrated Ocean Drilling Program Expedition Report* DVDs.

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### IODP publications website

The IODP Publications website is hosted at TAMU. Traffic accessing USIO publications is monitored through [publications.iodp.org](http://publications.iodp.org).

Publications website	FY12 Q2 page views	FY12 Q2 site visits
<a href="http://www.iodp.org/scientific-publications">www.iodp.org/scientific-publications</a>	279,575	57,766

### 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			
		January 2012	February 2012	March 2012	FY12 Q2 total
IODP	10.2204	5,138	4,094	3,671	<b>12,903</b>
ODP/DSDP	10.2973	5,236	4,193	8,155	<b>17,584</b>

### PUBLICATIONS SUPPORT

The USIO provided Publications Specialist services during USIO Expeditions 339, 340T, and 340 and hosted postexpedition meetings for USIO Expeditions 335 and 336.

### TECHNICAL DOCUMENTATION

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

Technical documentation	FY12 Q2 status
<b>Quick start guides</b>	
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
<b>User guides</b>	
Moisture and Density (MAD)	Under technical review
Natural Gamma Radiation Logger	Under technical review
SHIL	Under technical review
Source Rock Analyzer	Under technical review
<b>Advanced User Guides</b>	
MAD	Under technical review



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Technical documentation	FY12 Q2 status
Source Rock Analyzer	Under technical review

### LEGACY DOCUMENTATION

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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 Q1 report, the FY11 Annual Report, and planning documentation for reporting deliverables.

### EDUCATION

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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

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#### 2012 School of Rock

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Planning efforts began for two School of Rock programs for Summer 2012. Each program is supported by USIO funds and personnel plus a supplementary grant. The first program, as part of the Ship to Shore Science Informal Science Education grant, will run 23 May–2 June 2012 on board the *JOIDES Resolution* in Curaçao and during a transit to Bermuda. The second program, which will run 3–7 June 2012 at the GCR in College Station, Texas, is part of an Opportunities for Enhancing Diversity in the Geosciences (OEDG) grant for faculty members of minority-serving institutions. (See “Activities related to existing grants” in “Outside funding and sponsorships” for more information.)

## Onboard educator program

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The USIO facilitated the work of Expedition 339 Onboard Education Officer H. Pereira, who was sponsored by ECORD and assisted in his duties by shore-based USIO staff. Pereira worked closely with ECORD teacher audiences and museums.

V. Jones, a School of Rock 2005 alumnus from Idaho Falls, Idaho, sailed as the Expedition 340T Onboard Education Officer and worked with minority-serving classrooms. Jones also produced nearly 25 video broadcasts and facilitated deployment of the winning J-aRt styrofoam sculptures to the seafloor.

T. Greely, an education program director at the University of South Florida, sailed as the Expedition 340 Onboard Education Officer, reaching out to global audiences and completing more than 30 video broadcasts to a wide range of international groups in France, Guadeloupe, the United Kingdom, and Canada, and numerous groups in the United States.

## Educational outreach events

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School of Rock alumnus M. Passow represented the USIO at the American Meteorological Society's 11th Annual WeatherFest science fair in New Orleans, Louisiana, in January 2012. The booth featured cake coring, real core samples, and activity giveaways.

In February, the USIO chaired a thematic session titled "Live from the Ocean: Engaging Students and the Public in Active Research Projects at Sea" during American Geophysical Union's Ocean Sciences 2012 meeting in Salt Lake City, Utah. This thematic session had the maximum number of oral sessions (8) and 10 posters as part of the associated poster session. There were 50–100 attendees at all times and many follow-up discussions.

USIO representatives distributed educational materials and gave a presentation titled "Ever Dreamed about Oceans? Take a Cruise to Leadership, Learn about Integrated Ocean Drilling Program at Texas A&M" at Aggieland Saturday, a TAMU high-school student recruiting/orientation event. Materials were also provided for the second annual Educator's Showcase, an exhibit and open house at the Brazos Valley Museum of Natural History in Bryan, Texas, for Bryan/College Station area teachers.

In March, USIO education staff participated in the National Science Teachers Association (NSTA) 2012 National Conference in Indianapolis, Indiana, distributing educational materials from a well-staffed booth and supporting School of Rock alumni and other teachers in 11 workshops and share-a-thons.

D. Bowman, the Expedition 327 Onboard Education Officer, participated in the Expedition 327 post-expedition science meeting in Hawaii in March, showcasing many of the products and programs that have resulted from the Expedition 327 education and outreach team's work. Bowman also conducted a public show of her expedition-themed art works.

## EXPEDITION-BASED LEARNING ACTIVITIES AND MATERIALS

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

### Deep Earth Academy website

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The Deep Earth Academy website ([deearthacademy.org](http://deearthacademy.org)) continued to serve as the hub for information on professional development and classroom activities. No major changes were made to the website this quarter.

### JOIDES Resolution website and social networking

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The [joidesresolution.org](http://joidesresolution.org) website promotes each expedition with expedition pages, blogs, videos, images, and more, and serves as the hub for Program social networking on Facebook, Twitter, and YouTube sites. During this quarter, the site promoted Expeditions 339, 340T, and 340. A number of aesthetic and navigational updates were implemented this quarter, including the initiation of a major redesign to the site’s overall look and feel.

### USIO educational website statistics

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USIO educational website*	FY12 Q2 page views	FY12 Q2 site visits
<a href="http://www.joidesresolution.org">www.joidesresolution.org</a>	64,650	18,023
<a href="http://www.oceanleadership.org/education/deep-earth-academy">www.oceanleadership.org/education/deep-earth-academy</a>	16,872	12,047
<b>Total</b>	<b>81,522</b>	<b>30,070</b>

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

### Videos and video broadcasts

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Each Onboard Education Officer connects with numerous classrooms, museums, professional development programs and special events to provide live ship-to-shore 30–45 minute video broadcasts. This quarter featured 30 video events during Expedition 339, 25 video events during Expedition 340T (only 17 total days), and 35 video events during Expedition 340. These events reached more than 3000 individuals.

### Educational materials development and distribution

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Materials developed this quarter include a new *JOIDES Resolution* passport for use primarily at port call tours; a newly designed five-stop, one-hour ship tour used during the January 2012 Lisbon, Portugal, port call; a *How Science Works* poster developed from Expedition 327 and follow-up science, featuring the work of expedition Science Party member B. Orcutt; five new table coverings featuring fabric illustrations of the *JOIDES Resolution*, cores, and microfossils for conferences and workshops; and a series of “stuffed” giant microfossil models for use at public

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and educational outreach events. The *How Science Works* poster is a collaboration between the USIO, C-DEBI, University of California at Berkeley (UCMP), and the Coalition for the Public Understanding of Science (COPUS) (<http://undsci.berkeley.edu/>).

Materials were distributed this quarter at conferences and outreach activities and in response to requests received through the Deep Earth Academy website. The office received 267 requests from 44 states and 12 countries, and a total of about 16,000 items were distributed.

### SCIENTISTS AS EDUCATORS

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The USIO provides regular opportunities for scientists to participate in educational programming. During this quarter, scientists S. Hovan (Indiana University of Pennsylvania) and G. Fillipelli (Indiana University-Purdue University Indianapolis) gave featured lectures and helped to staff the booth at the NSTA 2012 National Conference.

### STRATEGIC PARTNERSHIPS

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#### Brazos Valley Museum of Natural History

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The “Getting to the Core: the *JOIDES Resolution*” exhibit featuring scientific ocean drilling was transferred from The North Museum in Lancaster, Pennsylvania, to the Brazos Valley Museum of Natural History in Bryan, Texas, where it opened on 2 February 2012 with a USIO presentation titled *Science in Search of Earth’s Secrets*. The exhibit features large-scale banner graphics, real sediment cores, drilling artifacts, video, a 3D model of the ship, activities for children, and a montage of more than 50 spectacular photos and works of art created on board that tell the story of the expedition. Exhibit-related activities thus far have included live ship-to-shore events and a children’s (ages 4–12) spring-break science camp called “Adventures in Oceanography: *Exploring the Deep Blue Sea*” focused on marine/oceanographic geology. USIO representatives participated in the mini-camp by providing talks and demonstrations on oceanic volcanoes and IODP science.

#### Center for Dark Energy Biosphere Investigations

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The USIO continued to partner with the Center for Dark Energy Biosphere Investigations (C-DEBI) to produce microbiology-related materials and projects. The new poster *How Science Works* was a collaborative project with C-DEBI and USIO, and plans were made for additional supporting materials to be developed to accompany this unit. (See “Activities related to existing grants” below for more information.)

### OUTSIDE FUNDING AND SPONSORSHIPS

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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

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### *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. During this quarter, funds from the C-DEBI grant supported the printing of the *How Science Works* poster and travel for several participants to make presentations at the Deep Earth Academy session during AGU's Ocean Sciences 2012 meeting in Salt Lake City, Utah.

The USIO received an additional \$36,000 for continuation of this grant to support education and outreach components of the Summer 2012 follow-on expedition on the R/V *Thompson*, during which similar work will be done. Planning for the education and outreach component of this expedition began during this quarter.

### *Ship-to-Shore Science grant*

The kick-off meeting for the "Ship-to-Shore Science—the *JOIDES Resolution* as a Platform for Education" grant was held 29 February and 1 March in Washington, DC. Using a technique called "Open Space" and a professional facilitator, the meeting brought together 55 educators, scientists, media specialists, and program managers to brainstorm topics related to using the *JOIDES Resolution* as a platform for informal science education. During the course of the meeting, participants generated more than 34 sessions and hundreds of ideas, and then prioritized them. Groups of participants then began to form around proposals. Two weeks following the meeting, 14 project proposals were submitted. USIO staff and a review panel selected four of these proposals for funding.

### *Opportunities for Enhancing Diversity in the Geosciences grant*

The "Planning Grant to Bring Cutting Edge Scientific Ocean Drilling Research on Past Climate Change into Minority-Serving Institution Geoscience Classrooms" is supporting a short School of Rock for faculty from minority-serving institutions with the goal of writing a full-scale implementation grant. This \$40,000 planning grant was awarded through NSF's OEDG program in collaboration with the American Meteorological Society (AMS). Planning began this quarter for the School of Rock to be held 3–8 June 2012 at the GCR in College Station, Texas.

## DIVERSITY SUPPORT INITIATIVES

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### *IODP-USIO Diversity Internship*

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A call for applications for the IODP-USIO Diversity Internships scheduled for Summer 2012 was widely published during this quarter via internal and external listserves, including several targeting Minority Serving Institutions (MSIs) with communications, geoscience, or education departments. The application deadline was set for 30 April 2012.

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Two internship opportunities are available for the 2012 summer session: (1) Science Education and (2) Science Communications. Both interns will work at the Consortium for Ocean Leadership in Washington, DC, beginning in June 2012. The selected Intern(s) will work closely with a mentor from the USIO's Communications or Education group for 12 weeks to help heighten the national and international visibility of IODP.

Details about the IODP-USIO Diversity Internship initiative, including details about the Summer 2012 internship projects, are available online (<http://www.oceanleadership.org/education/diversity/iodp-usio-diversity-internship/>).

### Minorities in Scientific Ocean Drilling Fellowship

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A call for applications for the second Minorities in Scientific Ocean Drilling Fellowship, scheduled for Fall 2012, was widely published this quarter through a mailing to MSIs and internal and external listserves and an ad in the Geological Society of America's *GSA Today* journal. This 12-month, \$30,000 fellowship will be awarded to a minority graduate student enrolled full time in a U.S. university or college geoscience or engineering program to complete research in topics related to scientific ocean drilling or to develop technology that will help advance science or engineering in scientific ocean drilling research. The application deadline for the Fall 2012 fellowship is 30 April 2012.

### LEGACY DOCUMENTATION

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

### Legacy digital archive

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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 a new *JOIDES Resolution* passport, the *How Science Works* poster, and USIO diversity initiative announcements.

### OTHER PROJECTS AND ACTIVITIES

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#### J/aRt 2012 contest

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Ten winners were announced in the J-aRt contest titled "Art Under Pressure." The winning 3-D styrofoam sculptures were shipped to the *JOIDES Resolution*, where they were deployed to the seafloor and then retrieved during Expedition 340T. The Onboard Education Officer created a short video to show the journey of the sculptures and how they fared ([http://youtu.be/uP\\_aq0IjtUk](http://youtu.be/uP_aq0IjtUk)).

## OUTREACH

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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

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#### Port call outreach

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During the *JOIDES Resolution's* January 2012 port call in Lisbon, Portugal, the USIO collaborated with ECORD to coordinate several outreach activities . Approximately 800 local and regional high school and college-level students, scientists, and political dignitaries (including a former President of Portugal, the Portuguese Secretary of State for Science, and several members of Portuguese Parliament) toured the *JOIDES Resolution* and nearly 30 regional journalists attended a press briefing organized by ECORD and co-supported by USIO.

#### Global outreach activities

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The USIO continued discussions with ECORD and IODP Canada to support outreach activities at the *JOIDES Resolution's* August 2012 port call in St. John's, Newfoundland.

#### Public relations materials

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##### *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):

- Scientists look to microbes to help unlock Earth's deep secrets (9 January 2012).  
[www.oceanleadership.org/2012/scientists-look-to-microbes-to-help-unlock-earths-deep-secrets/](http://www.oceanleadership.org/2012/scientists-look-to-microbes-to-help-unlock-earths-deep-secrets/)
- In an underwater river of sand and mud off the Iberian Coast, six million years of Earth history (18 January 2012).  
[iodp.org/index.php?option=com\\_content&task=view&id=609&Itemid=1297](http://iodp.org/index.php?option=com_content&task=view&id=609&Itemid=1297)
- Quick Expedition to Undersea Mountain Yields Rich Information About Sub-Seafloor Structure, Formation, and Alteration Processes (21 March 2012).  
<http://www.oceanleadership.org/2012/quick-expedition-to-undersea-mountain-yields-rich-information/> [Reproduced at <http://www.sciencedaily.com/releases/2012/03/120326160919.htm>]



### *Communications tools*

This quarter, USIO's outreach-focused Twitter account, @SeafloorSci, gained many followers by posting news from expeditions and links to related media. The account had approximately 120 followers at the end of March, and more are being added weekly.

### **Program-related publications**

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#### *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](http://iodp.tamu.edu/publications/citations/database.html)) and the IODP Expedition-related bibliography ([iodp.tamu.edu/publications/citations.html](http://iodp.tamu.edu/publications/citations.html)).

- Fisher, A.T., Tsuji, T., **Petronotis, K.**, Wheat, C.G., Becker, K., Clark, J.F., Cowen, J., Edwards, K., Jannasch, H., and the IODP Expedition 327 and Atlantis Expedition AT18-07 Shipboard Parties, 2012. IODP Expedition 327 and Atlantis Expedition AT 18-07: observatories and experiments on the eastern flank of the Juan de Fuca Ridge. *Sci. Drill.*, 13:4–11. doi:10.2204/iodp.sd.13.01.2011
- McKay, R., Naish, T., Powell, R., Barrett, P., Scherer, R., Talarico, F., Kyle, P., Monien, D., Kuhn, G., Jackolski, C., and **Williams, T.**, 2012. Pleistocene variability of Antarctic Ice Sheet extent in the Ross Embayment. *Quat. Sci. Rev.*, 34:93–112. doi:10.1016/j.quascirev.2011.12.012
- Teagle, D.A.H., Ildefonse, B., **Blum, P.**, and the IODP Expedition 335 Scientists, 2012. IODP Expedition 335: deep sampling in ODP Hole 1256D. *Sci. Drill.*, 13:28–34. doi:10.2204/iodp.sd.13.04.2011
- **Williams, T.**, Morin, R.H., Jarrard, R.D., Jackolski, C.L., Henrys, S.A., Niessen, F., Magens, D., Kuhn, G., Monien, D., and Powell, R.D., 2012. Lithostratigraphy from downhole logs in Hole AND-1B, Antarctica. *Geosphere*, 8(1):1–14. doi:10.1130/GES00655.1

#### *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](http://www.iodp-usio.org/Newsroom/news.html)) for other articles that raise the profile of the Program.

- *Discovery News*, 2012. Ocean expedition gets rare glimpse of Earth's guts. *Discovery News*, 21 March 2012. <http://news.discovery.com/earth/lost-city-guts-explored-120321.html>
- Ferreira, N., 2012. Há um pulsar tectónico no estreito de Gibraltar que afecta o clima [There is a tectonic pulse in the Strait of Gibraltar which affects the climate]. *Público* (Portugal), 18 January 2012. <http://ecosfera.publico.pt/noticia.aspx?id=1529695>



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- Lage, S., 2012. 'Laboratório flutuante' escala o Porto de Lisboa: *Joides Resolution* é um dos maiores navios oceanográfico do mundo [Floating laboratory scales the Port of Lisbon: *Joides Resolution* is one of the largest oceanographic vessels of the world]. *Ciência Hoje* (Portugal), 19 January 2012. <http://www.cienciahoje.pt/index.php?oid=52626&op=all>
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## COMMUNICATIONS TRAINING

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The USIO provided communications training for the Expedition 339 Co-Chief Scientists in preparation for their press conference in Lisbon, Portugal.

## LEGACY DOCUMENTATION

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

### Legacy digital archive

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Legacy preservation activities include storing electronic copies of relevant outreach products and publications produced by the USIO each quarter in a dedicated CMS. Products and publications archived this quarter include press releases for Expeditions 336, 339, and 340T, as well as Lisbon port call–related documents.

## APPENDIX A: FINANCE REPORT

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Please contact [info@oceanleadership.org](mailto:info@oceanleadership.org) for hard copies of financial pages.

## FY12 QUARTERLY REPORT 2

### APPENDIX B: TRAVEL

Purpose*	Category	Dates	Location	Institution: Personnel
JOIDES Resolution tie-up USIO Meeting	Planning	14–16 January 2012	College Station, Texas	Ocean Leadership: G. Myers
Expedition 339 Port Call	Education/ Outreach	15–20 January 2012	Lisbon, Portugal	Ocean Leadership: D. Divins, L. Peart, S. Saunders, M. Wright
Science Implementation and Policy Committee (SIPCom) meeting	Meeting	18–20 January 2012	Goa, India	Ocean Leadership: D. Divins TAMU: B. Clement
Visit to printer to approve print for FY11 Annual Report	Meeting	17 January 2012	Houston, Texas	TAMU: J. Gracia
IODP Workshop: Unlocking the Opening Processes of the South China Sea	Planning	31 January and 1 February 2012	Shanghai, China	Ocean Leadership: D. Divins
Configuration Management Training: Foundations/Structures	Training	22–27 January 2012	Panama City, Florida	TAMU: D. Ponzio
Expedition 344 Pre-expedition meeting	Planning	23 and 24 January 2012	College Station, Texas	LDEO: A. Malinverno
Motion-Decoupled Hydraulic Delivery System (MDHDS) testing	Meeting	24 and 25 January 2012	Sugarland, Texas	TAMU: R. Aduddell, K. Grigar
Hotel negotiations	Meeting	29 January–4 February 2012	San Juan, Puerto Rico	TAMRF: K. Bass
Canrig Drilling Technology meeting	Meeting	2 February 2012	Houston, Texas	TAMU: L. Chen, M. Meiring
Expedition 340 Onboard Education Program	Training	7 February 2012	Washington, DC	Onboard Education Officer: T. Greely
Expedition 340T Onboard Education Program	Education/ Outreach	15 February–3 March 2012	Lisbon, Portugal/San Juan, Puerto Rico	Onboard Education Officer: V. Jones
American Geophysical Union (AGU) 2012 Ocean Sciences Meeting	Education/ Outreach	20–24 February 2012	Salt Lake City, Utah	Ocean Leadership: S. Cooper External Participants: A. Haddad, J. Magnusson
Center for Creative Leadership program	Training	27 February–2 March 2012	San Diego, California	Ocean Leadership: G. Myers
Coordinated Scientific Drilling in the Beaufort Sea Workshop	Workshop	12–15 February 2012	Kananaskis, Alberta (Canada)	TAMU: B. Clement
TAMU TTVN 2012 Annual Conference	Conference	21–24 February 2012	Galveston, Texas	TAMU: J. Rosser
Configuration Management training	Training	26 February–2 March 2012	Stafford, Virginia	TAMU: Pamela Ponzio
Ship-to-Shore Science Education Grant Meeting†	Education/ Outreach	28 and 29 February 2012	Washington, DC	TAMU: J. Firth

## FY12 QUARTERLY REPORT 2

Purpose*	Category	Dates	Location	Institution: Personnel
Expedition 340 Onboard Education Program	Education/ Outreach	3 March–17 April 2012	San Juan, Puerto Rico	Onboard Education Officer: T. Greely
Expedition 335 Operations Review Task Force (ORTF) Meeting	Meeting	6–9 March 2012	Washington, D.C.	TAMU: P. Blum, R. Grout, M. Malone, M. Storms
Ocean Leadership Meeting	Meeting	8 March 2012	Washington, DC	LDEO: D. Goldberg
Deep Sea and Sub-Seafloor Frontier Conference (ECORD)	Conference Representation	11–14 March 2012	Sitges, Spain	Ocean Leadership: G. Myers
Expedition 327 Second Postexpedition Meeting	Meeting	11–15 March 2012	Honolulu, Hawaii	TAMU: K. Petronotis
Expedition 327 Second Postexpedition Meeting	Education/ Outreach	12 and 13 March 2012	Honolulu, Hawaii	Onboard Education Officer: D. Bowman
Scientific Technology Panel (STP) Meeting	Meeting	19–22 March 2012	Kochi, Japan	Ocean Leadership: G. Myers TAMU: D. Houpt, A. Miller
Gordon Research Conference: Natural Gas Hydrate Systems	Conference	18–23 March 2012	Ventura, California	LDEO: A. Malinverno
USIO Budget Meeting	Meeting	21–23 March 2012	College Station, Texas	Ocean Leadership: D. Divins
JOIDES Resolution exhibit at the North Museum	Education/ Outreach	26 March 2012	Lancaster, Pennsylvania	LDEO: S. Mrozewski
SQL Server training	Training	26–28 March 2012	Tampa, Florida	TAMU: C. Broyles
USIO Technical Panel (UTP) Meeting	Panel Meeting	27 and 28 March 2012	College Station, Texas	Ocean Leadership: G. Myers LDEO: G. Iturrino External Participants: B. Edwards, N. Frisbee, S. Howard, B. Prevedel, F. Williford
Environmental Protection and Safety Panel (EPSP) Meeting	Panel Meeting	29 and 30 March 2012	College Station, Texas	Ocean Leadership: D. Divins TAMU Safety Panel: G. Claypool, N. De Silva, T. McHargue
National Science Teacher Association (NSTA) Conference	Education/ Outreach	29 March–1 April 2012	Indianapolis, Indiana	Ocean Leadership: S. Cooper, L. Peart, L. Swanseen External Participants: E. Cohen, S. Hovan, S. Kasbati, B. Simon, J. Sode, J. Van Housen, A. Work

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

†Travel in support of USIO activities but paid from another source.

## APPENDIX C: USIO QUARTERLY REPORT DISTRIBUTION

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