



IODP
INTEGRATED OCEAN
DRILLING PROGRAM



Integrated Ocean Drilling Program
United States Implementing Organization

INTEGRATED OCEAN DRILLING PROGRAM

United States Implementing Organization

FY10 Quarterly Report 2

1 January–31 March 2010

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.**

14 May 2010

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INTRODUCTION

The organization of this quarterly report reflects activities and deliverables that are outlined in the Integrated Ocean Drilling Program (IODP) U.S. Implementing Organization (USIO) FY10 Annual Program Plan as implemented by the USIO, which comprises the Consortium for Ocean Leadership, Inc. (Ocean Leadership), and its partners, Texas A&M University (TAMU) and Lamont-Doherty Earth Observatory (LDEO) of Columbia University.¹

MANAGEMENT AND ADMINISTRATION

Contractual Activities

Ocean Leadership

Contract Activity

Ocean Leadership received the following modifications during the reporting period.

NSF Contract OCE-0352500 with Ocean Leadership:

- Modification 44: Approved the revised FY10 Annual Program Plan submitted 4 December 2009 for \$39,375,966.
- Modification 45: Approved the FY09 carryforward of \$485,412 as submitted 29 January 2010, thereby reducing the FY09 Annual Program Plan from \$52,615,371 to \$50,122,565 and increasing the prior-approved FY10 Annual Program Plan from \$39,375,966 to \$39,861,378.

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

- Modification 26: Approved Ocean Leadership's FY09 obligated carryforward request of \$233,966, approved Ocean Leadership's revised FY10 Annual Program Plan budget in the amount of \$3,952,852, deobligated \$326,255 of the FY09 unobligated operating budget, and reprogrammed \$160,356 from the IODP Management International, Inc. (IODP-MI), FY10 Engineering Development budget to the USIO FY10 science operating costs (SOC) budget in order to fund the FY10 scope and budget for the Multi-Sensor Magnetometer Module (MMM) logging tool project.

Subcontract Activity

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

Ocean Leadership Subcontract JSC 4-03 with LDEO:

- Modification 37: Provided \$4,395,079 in incremental funding toward FY10 platform operating costs (POC) activities.

Ocean Leadership Subcontract JSC 4-02 with TAMRF:

- Modification 47: Provided \$18,911,883 in incremental funding toward FY10 POC activities.

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

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- Modification 48: Provided \$12,500,000 in incremental funding toward the FY10 Annual Program Plan supplement titled American Recovery and Reinvestment Act Funds Spending Plan, thereby fully funding this plan.
- Modification 49: Approved the revised FY10 Annual Program Plan to NSF submitted on 4 December 2009 for \$33,594,979, added \$202,000 in FY09 unobligated carryforward, shifted \$1,818,969 that was previously funded under FY09 to FY10 POC, deobligated \$250,572 of FY09 unobligated SOC nonoperations funding, revised the FY09 Annual Program Plan from \$47,344,669 to \$45,275,128, and reduced FY09 funding to \$45,275,128.

LDEO

Subcontract Activity

LDEO issued the following subcontract modifications during the reporting period.

LDEO Subcontract with Leicester University:

- Modification 11: Provided the second FY10 funding increment in the amount of \$91,678.

LDEO Subcontract with Schlumberger:

- Modification 14: Provided the second FY10 funding increment in the amount of \$679,609.

TAMRF

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

- 2 March 2010: Purchase of 10-3/4 inch casing, 16 inch casing, and 20 inch casing in the amount of \$236,784.11.
- 23 March 2010: Purchase of 4-1/2 inch, 10-3/4 inch, and 16 inch casing in the amount of \$106,365.60.

Miscellaneous Activity

- 25 February 2010: Submitted a request for approval to dispose of a positioning beacon and 14 × 66 foot trailer and for Texas A&M Research Foundation (TAMRF) to be relieved of accountability.

Insurance Related to Ocean Leadership Subcontracts

TAMRF was successful in negotiating a discounted rate on certain sections of the Hull and Machinery coverage for the period during which the ship will be tied up Victoria, British Columbia. An assumed 80-day tie-up period resulted in a premium cost reduction of \$125,000. This reduction was anticipated in the approved FY10 Annual Program Plan budget based on TAMRF's historical success rate in achieving similar discounts

Personnel Status

Ocean Leadership

The following positions were vacated during the quarter:

- Associate Director: (Sean Higgins): 15 January 2010

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

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LDEO

No positions were vacated during the quarter.

The following positions were opened and advertised during the quarter:

- Electrical Engineer

The following positions were filled during the quarter:

- Electrical Engineer (Geetika Kapoor): 15 March 2010

TAMU

The following positions were vacated during the quarter:

- Database Administrator (Layne Westover): 12 February 2010
- Research Specialist (Kazuho Fujine): 14 March 2010

The following positions were opened and advertised during the quarter:

- Manager of Business Services
- System Analyst II
- Laboratory Specialist
- Staff Scientist

The following positions were filled during the quarter:

- Manager of Technical and Analytical Services (D. Jay Miller): 1 February 2010
- Supervisor of Engineering Services (William Rhinehart): 15 March 2010
- Temporary Systems Support Specialist (John Baldwin): 22 March 2010

USIO Web Services

Web Site Statistics

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

USIO Web Site

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

FY10 Q2 USIO Web Site				
Parameter	www.iodp-usio.org	iodp.ldeo.columbia.edu	iodp.tamu.edu	Total
Page views	18,007	9,992	271,812	299,811
Site visits	10,929	1,419	50,060	62,408

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IODP Publications Web Site

The IODP Publications Web site is hosted at TAMU. New online publications are shown in the “Publications” section of this report.

FY10 Q2 IODP Publications Web Site	
Parameter	publications.iodp.org
Page views	134,455
Site visits	22,398

USIO Educational Web Sites

FY10 Q2 Deep Earth Academy Web Sites*		
Web domain	www.joidesresolution.org	www.oceanleadership.org/education/deep-earth-academy
Page views	70,456	8,940
Site visits	18,168	6,470

*Ocean Leadership’s educational Web sites are funded jointly by the USIO and USSSP.

Legacy Web Sites

The Ocean Drilling Program (ODP) Science Operator Web site and the Deep Sea Drilling Project (DSDP) Publications Web site are hosted at TAMU. The ODP Legacy Web site is hosted at Ocean Leadership.

Parameter	FY10 Q2 ODP Web Site			FY10 Q2 DSDP Web Site
	www-odp.tamu.edu	www.odplegacy.org	Total ODP	www.deepseadrilling.org
Page views	1,003,054	11,765	1,014,819	124,267
Site visits	240,218	5,482	245,700	23,975

Stakeholder Web Sites

New and updated Web pages	Release date	URL
JOIDES Resolution Transocean	ongoing	http://deepwater.com/fw/main/JOIDES-Resolution-128.html
JOIDES Resolution TAMU College of Geosciences	ongoing	http://geosciences.tamu.edu/communications/geosciences-highlights/ocean-drilling
TAMU ODASES	ongoing	http://odases.tamu.edu/

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TECHNICAL, ENGINEERING, AND SCIENCE SUPPORT

USIO Expedition Schedule

Expedition		Port (Origin)	Dates ^{1,2}	Total Days (Port/Sea)	Days at Sea (Transit ³ /Ops)	Co-Chief Scientists	USIO Contacts ⁴
Canterbury Basin Sea Level	317	Townsville, Queensland	4 November 2009–4 January 2010	61 (5/56)	56 (10/46)	C. Fulthorpe, K. Hoyanagi	TAMU: P. Blum* LDEO: A. Slagle^
Wilkes Land Glacial History ⁵	318	Wellington, New Zealand	4 January–9 March 2010	64 (5/59)	59 (16/43)	C. Escutia, H. Brinkhuis	TAMU: A. Klaus* LDEO: T. Williams^
Transit/Maintenance ⁶		Hobart, Australia	9 March–5 July 2010				
Juan de Fuca Hydrogeology	327	Victoria, British Columbia	5 July–4 September 2010	61 (5/56)	56 (2/54)	A. Fisher, T. Tsuji	TAMU: K. Petronotis* LDEO: S. Mrozewski^
Cascadia CORK	328	Victoria, British Columbia	4 September–18 September 2010	15 (5/10)	10 (2/8)	E. Davis	TAMU: K. Gamage*
Transit	N/A	Victoria, British Columbia	18 September–8 October 2010	20 (2/18)			
South Pacific Gyre	329	Papeete, Tahiti	8 October–12 December 2010	65 (4/61)	61 (9/52)	S. D'Hondt, F. Inagaki	TAMU: C. Alvarez-Zarikian* LDEO: H. Evans^
Louisville Seamount Trail	330	Auckland, New Zealand	12 December 2010–11 February 2011	61 (5/56)	56 (8/48)	A. Koppers, T. Yamazaki	TAMU: J. Geldmacher* LDEO: J. Inwood^
Transit		Auckland, New Zealand	11 February–15 March 2011	32 (5/27)			
Costa Rica Seismogenesis Project	TBD	Balboa, Panama	15 March–16 April 2011	32 (4/28)	28 (3/25)	P. Vannucchi, K. Ujiie	TAMU: K. Gamage* LDEO: A. Malinverno^
Superfast Spreading Rate Crust	TBD	Puntarenas, Costa Rica	16 April–19 May 2011	33 (2/31)	31 (6/25)	D. Teagle, B. Ildefonse	TAMU: P. Blum* LDEO: G. Guerin^
Non-IODP							
Mid-Atlantic Ridge Microbiology	TBD	TBD	18 September–mid-November 2011	TBD	TBD	TBD	TAMU: A. Klaus* LDEO: L. Anderson^

Notes: TBD = to be determined; N/A = not applicable.

¹ Dates for expeditions may be adjusted pending non-IODP activities.

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

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

⁴ The USIO contact list includes both the Expedition Project Manager (*), who is the primary contact for the expedition, and the Logging Staff Scientist (^). In addition, further expedition information can be obtained at www.iodp-usio.org.

⁵ The Wilkes Land Expedition includes operations at Adelie Drift (Ancillary Project Letter [APL] 638).

⁶ The maintenance period will be in Victoria, British Columbia (~13 April–5 July)

Expedition Planning and Implementation Activities USIO Bering Sea Paleoceanography Expedition

Postexpedition Activities

USIO staff prepared for and hosted the first postexpedition meeting held 15–19 February 2010 in College Station, Texas.

USIO Wilkes Land Glacial History Expedition

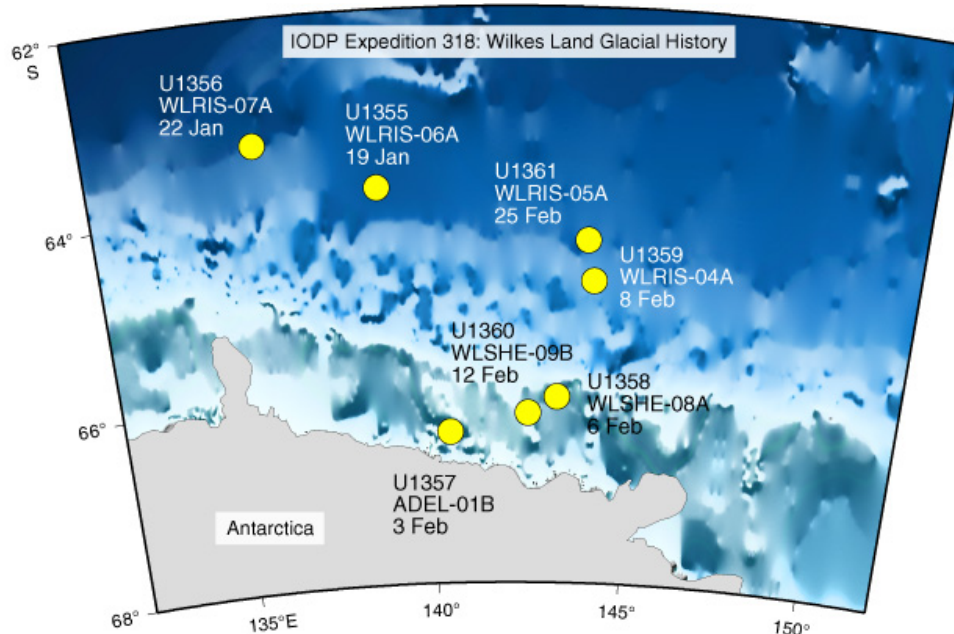
Expedition Staffing

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

Expedition Operations

Operations during Expedition 318 were conducted in 14 holes at 7 sites, with 3,071 meters cored and 1,972 meters recovered. Downhole logs were collected in 2 holes. The overall time distribution included 5.85 days in port, 22.7 days in transit, and 35.6 days on site. Operations ceased during 4.9 days of on-site time because of the severe Antarctic weather and ice conditions. Transit time also includes more than 4 days spent trying to reach some of the shelf sites only to be turned back by ice conditions.

Expedition 318: Wilkes Land Glacial History Site Map.



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Expedition 318: Wilkes Land Glacial History Coring Summary.

Site	Hole	Latitude	Longitude	Water depth (m)	Cores (m)	Interval cored (m)	Core recovered (m)	Recovery (%)
U1355	U1355A	63°50.4704'S	168°49.4270'E	3734.0	4	31.7	14.95	47.2%
Site U1355 Totals:					4	31.7	14.95	47.2%
U1356	U1356A	63°18.6138'S	168°59.9376'E	4003.0	106	1,006.4	350.14	34.8%
Site U1356 Totals:					106	1,006.4	350.14	34.8%
U1357	U1357A	66°24.7991'S	140°25.5008'E	1025.9	21	186.6	183.87	98.5%
	U1357B	66°24.7990'S	140°25.5705'E	1028.0	19	170.7	172.44	101.0%
	U1357C	66°24.8013'S	140°25.4651'E	1027.7	11	103.8	110.71	106.7%
Site U1357 Totals:					51	461.1	467.02	101.3%
U1358	U1358A	66°05.4247'S	143°18.7674'E	512.0	1	2.0	1.10	55.0%
	U1358B	66°05.4244'S	143°18.7666'E	512.0	4	35.6	8.00	22.5%
Site U1358 Totals:					5	37.6	9.10	24.2%
U1359	U1359A	64°54.2377'S	143°57.6825'E	3020.9	22	193.5	154.08	79.6%
	U1359B	64°54.2431'S	143°57.6553'E	3018.8	28	252.0	198.92	78.9%
	U1359C	64°54.2477'S	143°57.6248'E	3022.3	18	168.7	150.73	89.3%
	U1359D	64°54.2596'S	143°57.5624'E	3023.0	47	450.0	269.72	59.9%
Site U1359 Totals:					115	1,064.2	773.45	72.7%
U1360	U1360A	66°22.0395'S	142°44.7050'E	506.0	7	70.8	7.04	9.9%
Site U1360 Totals:					7	70.8	7.04	9.9%
U1361	U1361A	64°24.5728'S	143°53.1992'E	3465.5	41	388.0	338.86	87.3%
	U1361B	64°24.5454'S	143°53.1966'E	3466.9	2	12.1	12.04	99.5%
Site U1361 Totals:					43	400.1	350.90	87.7%
Expedition 318 Totals:					331	3071.9	1972.60	64.2%

Science Results

Understanding the evolution and dynamics of the Antarctic cryosphere from its inception during the Eocene–Oligocene transition (~34 Ma) through the significant subsequent periods of likely coupled climate and atmospheric CO₂ changes is of major scientific interest and great importance for society. Drilling in the Antarctic Wilkes Land margin was designed to provide a long-term record of the sedimentary archives along an inshore to offshore transect of Cenozoic Antarctic glaciation and its intimate relationships with global climatic and oceanographic change.

The Wilkes Land drilling program was developed to constrain the age, nature, and paleoenvironment of deposition of glacial sequences that were previously only seismically inferred. The unique advantage of drilling the Wilkes Land margin is that seismic Unconformity WL-U3, inferred to separate preglacial strata from glacial strata in the continental shelf, can be traced to continental rise deposits, allowing sequences to be linked from shelf to rise. Seven site were occupied during Expedition 318, with ~2,000 m of high-quality middle Eocene–Holocene sediments recovered at Sites U1355, U1356, U1359, and U1361 on the Wilkes Land rise and Sites U1358, U1360, and U1357 on the Wilkes Land shelf at water depths between ~400 and 4000 m. Together, the recovered cores represent ~53 m.y. of Antarctic history and successfully date the inferred seismic units (WL-S4–WL-S9).

The cores reveal the history of the Wilkes Land Antarctic margin from an ice-free “greenhouse Antarctica” to the first cooling, the onset and erosional consequences of the first glaciation, the subsequent dynamics of waxing and waning ice sheets, and thick, unprecedented “tree-ring

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style” records with seasonal resolution of the last deglaciation that began ~10,000 years ago. The cores also reveal details of the tectonic history of the Australo-Antarctic Gulf (at 53 Ma) from the onset of the second phase of rifting between Australia and Antarctica to ever-subsidizing margins and deepening, and on to the present continental and ever-widening ocean/continent configuration. Tectonic and climatic change turned the initially shallow broad subtropical Antarctic Wilkes Land shelf into a deeply subsided basin with a narrow, ice-infested margin. The erosional power of waxing and waning ice sheets and deep ocean currents is evident in the thick Oligocene and notably Neogene deposits, including turbidites, contourites, and larger and smaller scaled debris mass flows. The recovered clays, silts, and sands and their microfossils also reveal the transition of subtropical ecosystems and a vegetated Antarctica into sea ice-dominated ecosystems bordered by calving glaciers.

Logging Summary: Two holes (U1359C and U1361A) on the continental rise of Antarctica were logged during Expedition 318. The triple combination (triple combo) and Formation MicroScanner (FMS)-Sonic tool strings were run in both holes, and the Vertical Seismic Imager (VSI)-check shot tool was run only at the base of Hole U1359C. Approaching storms and high-heave conditions caused cancellation of logging in Holes U1356A and U1357C. Hole conditions were good at both logged sites, with the tool strings reaching very close to the base of each hole. The overall character and values of the logs at the two sites are similar; the sites were separated by about 50 km. The logs have high-amplitude 1 to 5 m-scale variability superimposed on a downhole compaction trend.

The natural gamma logs reflect lithology, with diatom-rich layers having lower natural gamma radiation than the alternating silty-clay layers. In the upper part of the holes, this lithological alternation is also tracked by the density log because of the intragranular porosity is retained by diatoms. The pattern reverses in the lower part of the holes, with high resistivity values corresponding to low natural gamma values, because the diatom-rich layers appear to be preferentially cemented.

FMS resistivity images document both gradual and sharp transitions between the alternating resistive and conductive beds and dropstones (ice-rafted debris) larger than ~0.5 cm. The dropstones appear as resistive (light-colored) spots in the image, and it will be possible to map their occurrence downhole.

Seismic traveltime was determined for a single check shot station in Hole U1359C. The VSI tool’s caliper arm failed to open, but good waveforms were recorded with the tool resting at the bottom of the hole, which gave an important tie to the seismic section. Full marine mammal monitoring was carried out; the air-gun cluster was shut down once because of whales passing through the exclusion zone, and was later restarted.

USIO Juan de Fuca Hydrogeology Expedition

Expedition Planning

The Expedition 327: Juan de Fuca Hydrogeology Pre-expedition Meeting was held 28 and 29 January 2010 in College Station, Texas. The 762-Ancillary Project Letter (APL) sites were incorporated as the highest priority alternate sites, and a plan for deepening of Hole 1027C and 762-APL sites was submitted to the Environmental Protection and Safety Panel (EPSP), which recommended approval.

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Major design issues were completed for the three circulation obviation retrofit kits (CORKs) for Expedition 327. The CORKs are being manufactured or modified, and major, long-lead items were ordered.

Expedition Staffing

Science applicants were reviewed and first-round invitations were issued. Two declines were received.

Clearance and Permitting Activities

The clearance application to Canada for Juan de Fuca Hydrogeology operations was submitted to the State Department.

USIO Cascadia CORK Expedition

Expedition Planning

Minor redesign of the advanced CORK (ACORK) for Expedition 328 began, consisting of adding a small reentry cone and lengthening the head of the ACORK. Major long-lead items were ordered.

Expedition Staffing

The lead proponent was invited as Chief Scientist, and plans were made for inviting two more scientists from the proponent group. Because this short expedition is purely operational with no samples or data collected and scientists sailing to assist the USIO with operational oversight, participating scientists will not incur publication obligations, nor will their participation count toward program member office (PMO) quotas.

Clearance and Permitting Activities

The clearance application to Canada for Cascadia CORK operations was submitted to the State Department.

USIO South Pacific Gyre Expedition

Expedition Planning

The Expedition 329: South Pacific Gyre Pre-expedition Meeting was held 8 and 9 February 2010 in College Station, Texas. The Co-Chief Scientists and USIO project team worked to finalize the prospectus draft for submission to IODP Publication Services.

Expedition Staffing

Forty-eight scientist applications were received and reviewed by the Co-Chief Scientists, who developed a first-round invitation list.

USIO Louisville Seamount Trail Expedition

Expedition Planning

The Expedition 330: Louisville Seamount Trail Pre-expedition Meeting was held 22 and 23 February 2010 in College Station, Texas. The Co-Chief Scientists and USIO project team worked to finalize the prospectus draft for submission to IODP Publication Services.

Expedition Staffing

Forty-four applications were received and the Co-Chief Scientists began the review process to develop a list for first-round invitations.

USIO Costa Rica Seismogenesis Project (CRISP) Expedition

Expedition Planning

USIO staff provided information to the Operations Task Force (OTF) to assist in developing scientific priorities for implementing the expedition. The pre-expedition meeting was scheduled for 20 and 21 May 2010.

Expedition Staffing

Invitations to Co-Chief Scientists were issued and accepted and a call for applications was released.

USIO Superfast Spreading Rate Crust 4 Expedition

Expedition Planning

Communications were initiated with the Co-Chief Scientists after their acceptance, and the process of laying out expedition planning timelines and events began.

Expedition Staffing

Invitations to Co-Chief Scientists were issued and accepted and a call for applications was released.

USIO Mid-Atlantic Ridge Microbiology Expedition

Expedition Planning

Proponents continued to order long-lead completion hardware from externally funded grants and projected a budget shortfall based on cost increases since proposal development. USIO staff began working on an overall operations plan based on last quarter's planning meeting.

Expedition Staffing

A call for applications was released, and invitations to Co-Chief Scientists will be issued at the beginning of the next quarter.

Operational Hiatus/Maintenance Period Planning

The USIO worked to develop and implement a plan for optimal productivity during the operational hiatus. The planning process included developing and prioritizing a list of more than 70 tasks to target for completion prior to resuming international science operations. The highest priority was given to safety, step functions in performance, and improved customer satisfaction. Work breakdown structures and cost estimates were developed assuming minimal staffing provided in the Annual Program Plan and assigning as many tasks as possible to the staff funded therein. Only tasks that required expertise outside of the laboratory maintenance teams were assigned personnel costs, and resource-loaded implementation plans were developed assuming full funding of the Annual Program Plan and supplemental funding requests.

Maintenance projects that were planned for completion during the operational hiatus include

- placing a protective barrier between the mission-specific van mezzanine and the moonpool,
- reorganizing the core description area in response to user issues with ergonomics and configuration,
- repairing damage to the floors,

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- reorganizing refrigerated space on the hold deck,
- replacing the cooling system in the cold laboratory prior to the next heavy microbiology expedition,
- remodeling the thin section laboratory,
- repairing the analytical gas line system,
- improving the performance of core loggers,
- performing major upgrades to information technology (IT) systems,
- painting all laboratory areas,
- organizing science stores,
- replacing soiled carpet, and
- making repairs to staterooms.

Shipboard Maintenance Activities

Beginning with the March 2010 port call, projects were initiated according to the resource-loaded implementation plan as the *JOIDES Resolution* began the transit from Hobart, Australia, to Victoria, British Columbia. By 31 March 2010, only finish work remained in the thin section laboratory and painting was virtually complete. Reorganization of the core laboratory began, and analytical gas line leaks were corrected. Damage to staterooms was cataloged, and most instrument hosts and other computers on board were upgraded.

Projects and Other Activities

Large Diameter Pipe Handling Infrastructure

Howard and Associates, Inc., was contracted to provide their expertise in the large diameter pipe handling infrastructure project, and was charged with the following tasks:

- Produce a draft request for quotes (RFQ) by 21 April 2010 for vendors to fabricate the necessary infrastructure for safely and efficiently handling large diameter (6-5/8 inch) pipe on board the *JOIDES Resolution*;
- Assist in final selection of vendors for fabrication of the necessary components after USIO technical personnel have reviewed the RFQ draft and identified potential vendors;
- Oversee potential modifications and testing of the elevator handler and bails, as necessary;
- Determine what additional infrastructure procurements or modifications will be needed as part of this project; and
- Provide advice and assistance to the USIO during installation of the system onboard the *JOIDES Resolution*, as necessary.

Motion Decoupled Hydraulic Delivery System Telemetry Project

USIO telemetry module development is progressing as scheduled. Fabrication of the multi-functional telemetry module (MFTM) sonde and surface panel neared completion. Testing of the MFTM, surface panel, and temperature to pressure (T2P) probe from the University of Texas was scheduled for 10 May 2010 at the LDEO test well facility. Stress Engineering continued

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working on the necessary hardware for control of the release motor in the electronic release system, with system testing anticipated in June 2010.

Geosciences Laboratory (ODASES)

The IODP X-ray fluorescence (XRF) core scanner in the Geosciences Laboratory was used by both TAMU faculty and external users as a cost center. In addition, USIO staff began constructing two core loggers that will provide a bed for testing improvements before they are deployed to the operational environment. These loggers, when not being used for development, will be made available for use by visiting scientists as part of the ODASES laboratory.

Wireline Heave Compensating System

The USIO began analyzing all wireline heave compensator data acquired during recent expeditions to determine the system's effectiveness and identify potential improvements. The assessment and future recommendations are expected in June 2010.

ENGINEERING DEVELOPMENT

There are no Engineering Development deliverables scheduled for FY10.

DATA MANAGEMENT

IODP Databases

LIMS Database

Data collected during Expeditions 317 and 318 were successfully transferred to shore, merged with the cumulative LIMS database, and made available online to the participating scientists. These data are in moratorium and not yet available to the public.

Log Database

The following data from IODP-USIO Expedition 318 were processed and put online:

- Hole U1359D: standard and FMS data; vertical seismic profile (VSP) data
- Hole U1361A: standard and FMS data

Starting with Expedition 317, composite plots (PDF format) of processed FMS and standard non-image data will also be available online. Once available on the ship, these plots may be printed by the Schlumberger engineer upon request. Analog copies of the raw data will no longer be produced on board, and only a digital version will be included in the DVD.

A Frequently Asked Questions (FAQ) list was prepared and put online in response to recurring questions from Web users.

IODP Inventory Update

The data inventory includes data from Expedition 301 through 324, including IODP-European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO) Expeditions 302 and 310 and IODP-Center for Deep Earth Exploration (CDEX) Expedition 314 (except Hole C0003A). Starting with Leg 318, analog copies of the raw data will no longer be archived.

IODP Database Data Requests LIMS Database

Visits by USIO-TAMU employees were filtered out.

Top 10 Countries Accessing LIMS Web Database*		
Rank	Country	Visitor Sessions
1	United States	240
2	United Kingdom	39
3	Germany	36
4	Japan	35
5	South Korea	17
6	Australia	8
7	China	7
8	Netherlands	6
9	France	6
10	Uruguay	5
	Other	61
	Total	460

Top LIMS Web Queries*		
Rank	Query	Uploads
1	LIMS home page	190
2	Samples	103
3	Science data	79
	Total	372

Janus Database

Visits by USIO-TAMU employees were filtered out of the data in the tables below.

Top 10 Countries Accessing Janus Web Database*		
Rank	Country	Visitor Sessions
1	United States	1,121
2	United Kingdom	546
3	Germany	507
4	Japan	246
5	Western Europe—unspecified	105
6	Australia	99
7	France	94
8	China	77
9	Norway	66
10	Netherlands	63
	Other	675
	Total	3,599

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Top 20 Janus Web Queries*		
Rank	Query	Uploads
1	Imaging/photo	1,547
2	Sample	1,506
3	Point calculation	1,095
4	Requests	625
5	Coring summaries: hole trivia	466
6	Coring summaries: site summaries	397
7	Imaging: prime data images	361
8	Coring summaries: core summary	338
9	Paleomagnetism: age model	322
10	Physical properties: GRA data	268
11	Physical properties: MSL data	195
12	Coring summaries: site summary trivia	163
13	Physical properties: MAD data	158
14	Chemistry: rockeval	153
15	Coring summaries/leg summary	150
16	Coring summaries/site details	145
17	Physical properties: color data	145
18	Imaging: close-up	144
19	Coring summaries: hole summary	142
20	Chemistry: interstitial water	132
	Others	1,835
	Total	10,287

Other Janus Web Statistics*		
<i>Database query hits:</i>		
	Entire site (successful)	19,666
	Average per day	218
<i>Visitor sessions:</i>		
	Total number of visitor sessions	3,599
	Average per day	39
	Average length of visit	13:10
	International visitor sessions	68.82%
	Visitor sessions of unknown origin	0.03%
	Visitor sessions from United States	31.15%
<i>Visitors:</i>		
	Unique visitors	1,913
	Visitors who only visited once	1,350
	Visitors who visited more than once	563
	Average visits per visitor	1.88

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Data Requests to Data Librarian*	
Requests	Total
<i>Country:</i>	
United States	8
United Kingdom	3
Chile	1
Czech Republic	1
Germany	1
Portugal	1
New Zealand	1
South Korea	1
Spain	1
Total	18
<i>Data:</i>	
Samples	4
Photos	3
RSC	2
Seismics	2
Smear slides	1
Grain size	1
Paleomagnetics	1
Ash layers/sediment type	1
Hole trivia	1
Hole locations	1
Specific holes data	1
Total	18

Log Database

A request was received in January 2010 to release data to a student of one of the Expedition 317 scientists. Permission was granted by the Co-Chief Scientists and Expedition Project Manager, and a copy of the permission was e-mailed to Ocean Leadership.

Visits by USIO-LDEO employees were filtered out of the data in the tables below.

Top 10 Countries Accessing Log Web Database*		
Rank	Country	Visitor Sessions
1	United States	408
2	United Kingdom	215
3	Japan	136
4	China	81
5	Germany	55
6	Australia	53
7	South Korea	47
8	Norway	43
9	France	42
10	Brazil	37
	All others	255
	Total	1,372

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Other Log Web Statistics*		
<i>Database query hits:</i>		
	Entire site (successful)	9,992
	Average per day	7.00
<i>Visitor sessions:</i>		
	Total number of visitor sessions	1,419
	Average per day	15.75
	Average length of visit	6:28
	International visitor sessions	51.68%
	Visitor sessions of unknown origin	18.59%
	Visitor sessions from United States	29.74%
<i>Visitors:</i>		
	Unique visitors	806
	Visitors who only visited once	664
	Visitors who visited more than once	755
	Average visits per visitor	1.88

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

Projects and Other Activities

Computer System Upgrades on the *JOIDES Resolution*

In February 2010, the USIO initiated work on several high-priority projects to enhance IT infrastructure and science system services on board the *JOIDES Resolution*. Projects included

- adding “canned” Web data reporting capability for the Laboratory Information Management System (LIMS);
- adding Web graphic reporting (LIMSpeak) to enhance the core description process;
- reconfiguring depth management capability in support of additional depth modules;
- upgrading shipboard non-instrument host workstations to Windows 7 and Snow Leopard with updated office productivity software;
- upgrading all instrument host workstations to Windows 7;
- upgrading storage area network, Tomcat application server, and CommVault backup software; and
- updating and patching server operating systems and applications.

Planning continued for logging system computer maintenance during the tie-up period, with preparations being made remotely via very small aperture terminal (VSAT).

Computer System Upgrades for the Borehole Research Group

A second Xserve was installed in the borehole server room to manage user home directories. The existing server was reconfigured as a hot backup for the main unit with intranet services. A Network Attached Storage (NAS) appliance was purchased to host out-of-building backups for all Borehole Research Group (BRG) users. Migration from the campus Legato backup system to the in-house CrashPlan system was accomplished for all users, with files stored to this new NAS.

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CORE CURATION

Sample Requests

IODP Expedition/ Repository	Visitors	Request Number, Name, Country	Number of Samples
Gulf Coast Repository:			
		21944A, Dedert, Netherlands	44
		21341F, Rafter, USA	651
		21915A, Yu, USA	11
		21932A, Paez, Canada	263
		21450B, Ford, USA	14
		21945A, Kutterolf, Germany	139
		21954A, Robinson, United Kingdom	155
		21648B, Foster, United Kingdom	24
		21946A, Haley, USA	11
		20960C, Hollis, New Zealand	26
		21613B, Matinez-Boti, Spain	42
		17861B, Meister, Germany	4
	1	21998A, Torres, USA	33
		21974A, Rivera, Denmark	24
		21962A, Kordesch, USA	61
		21979A, Erhardt, USA	16
		21987A, Griffith, USA	25
		21975A, Rickaby, United Kingdom	7
		21919B, Walker, USA	3
		21912B, Studer, Switzerland	35
		21984A, Elderfield, United Kingdom	87
		21995A, Lu, United Kingdom	64
	1	22004A, Gao, USA	52
	58	21993A, Kennicutt, USA (Educational)	No Samples
	1	22000A, Sawyer, USA	10
		21804A, Wang, USA	3
		21983A, Yu, USA	271
		22011A, Pagani, USA	19
		21852A, Jin, China	229
	1	22013A, Lund, USA	45
	4	22024A, Covault, USA	No Samples
		21967A, Tripathi, United Kingdom	407
		21602D, Scott, New Zealand	10
		21398D, Paquay, USA	10
		21581B, Westerhold, Germany	86
		22021A, Schneider Mor, USA	38
		21992A, Peterson, USA	2,286
		22027A, Elliot, United Kingdom	13
		22019A, Hirokawa, USA	135
		22038A, Foley, Australia	2
		22039A, Yu, USA	122
	24	Public Relations Tours (4)	No Samples
Expedition 318:		39 sample requests	9,026
Total science:	8	79	14,503
Total education:	58	0	0
Total public relations:	24	0	0
Total:	90	79	14,503

PUBLICATIONS

USIO Reports

FY10 Q1 IODP-USIO Quarterly Report

The USIO report for the first quarter of FY10 (October–December 2009) was submitted to the National Science Foundation (NSF) and IODP-MI on 22 February 2010. An extension to the 15 February 2010 due date was granted by the respective NSF and IODP-MI contracts officers.

FY09 IODP-USIO Annual Report

The FY09 IODP-USIO Annual Report was submitted to NSF and IODP-MI on 28 January 2010 (iodp.tamu.edu/publications/AR/FY09AR.pdf).

IODP Scientific Publications

Publication	Release Date	Digital Object Identifier	Comments
<i>Scientific Prospectus:</i>			
Expedition 327 (Juan de Fuca ridge-flank hydrogeology: the hydrogeologic architecture of basaltic oceanic crust: compartmentalization, anisotropy, microbiology, and crustal-scale properties on the eastern flank of Juan de Fuca Ridge, eastern Pacific Ocean)	March 2010	doi:10.2204/iodp.sp.327.2010	
Expedition 328 (Cascadia subduction zone ACORK observatory)	March 2010	doi:10.2204/iodp.sp.328.2010	
<i>Preliminary Reports:</i>			
Expedition 324 (Testing plume and plate models of ocean plateau formation at Shatsky Rise, northwest Pacific Ocean)	January 2010	doi:10.2204/iodp.pr.324.2010	
Expedition 323 (Bering Sea paleoceanography: Pliocene–Pleistocene paleoceanography and climate history of the Bering Sea)	February 2010	doi:10.2204/iodp.pr.323.2010	
Expedition 317 (Canterbury Basin sea level: global and local controls on continental margin stratigraphy)	February 2010	doi:10.2204/iodp.pr.317.2010	

IODP Scientific Publication Deadline Extension Requests

The IODP Sample, Data, and Obligations Policy requires all Science Party members to conduct research and publish the results of their work. To fulfill this obligation, scientists must have their papers published in a peer-reviewed scientific journal or book that publishes in English, or as a peer-reviewed data report in the *Proceedings of the Integrated Ocean Drilling Program*. Manuscripts must be submitted within 20 months postmoratorium (26 months for synthesis papers). Science Party members may request a deadline extension of up to one year. The Platform Curator reviews and approves these extension requests, and IODP Publication Services monitors fulfillment of the publishing obligation. The tables below show extensions requested during the quarter and the status of all deadline extensions approved during the life of each volume.

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Initial papers/data reports

Expedition	Submission Deadline (20 Months Postmoratorium)	Deadline Extensions Approved in FY10 Q2	Overall Extension Status	
			Number Approved	Number Fulfilled
301	20 April 2007			
302	23 July 2007			
304/305	4 February 2008		14	12
308	7 March 2008		8	7
303/306	9 May 2008		13	8
307	13 June 2008		4	3
311	27 June 2008		12	8
309/312	28 August 2008		9	9
310	4 November 2008		16	7

Synthesis papers

Expedition	Submission Deadline (26 Months Postmoratorium)	Deadline Extensions Approved in FY10 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	
303/306	10 November 2008		1	1
307	15 December 2008		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

Publication	Number Distributed
IODP Publications:	
<i>Proceedings of the Integrated Ocean Drilling Program</i> Expedition Report DVDs	1
ODP Publications:	
<i>Proceedings of the Ocean Drilling Program, Initial Reports</i>	2
<i>Proceedings of the Ocean Drilling Program, Scientific Results</i>	3
DSDP Publications:	
DSDP <i>Initial Reports</i> (books)	1

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IODP Digital Object Identifiers

IODP is a member of CrossRef, the official digital object identifier (DOI) registration agency for scholarly and professional publications. All IODP scientific reports and publications are registered with CrossRef and assigned a unique DOI that facilitates online access. DOIs have also been assigned to ODP and DSDP scientific reports and publications. CrossRef tracks the number of times a publication is accessed, or resolved, through the DOI system. Statistics for the reporting quarter are shown in the table below.

Reports and Publications	DOI Prefix	Number of Resolutions			
		January 2010	February 2010	March 2010	FY10 Q2 Total
IODP	10.2204	1,924	1,645	4,168	7,737
ODP/DSDP	10.2973	3,735	3,285	4,554	11,574

Projects and Other Activities

External Review

The IODP Publication Services department organized and scheduled an external review to take place during the third quarter. Three reviewers were invited to participate in a site visit and intensive review of the department. The review team members have broad professional and academic experience with government, technical, and scholarly publications and communications and experience with ocean drilling science and the committees that advise, manage, and review IODP and other ocean sciences programs.

Briefing materials distributed to the reviewers via ftp included a general IODP Publication Services overview, instructions, proofing guidelines, workflow charts, and other in-house tools. The reviewers were asked to address the following questions:

- Can the efficiency of the Publication Services work flow be improved?
- Does the department make appropriate use of technology?
- From your perspective, is the department's infrastructure (human, physical, and financial) sufficient to achieve its mission and goals?
- What are your specific recommendations relevant to the department?

EDUCATION

U.S. education activities are supported by NSF through other Program integration costs (OPIC).

Deep Earth Academy

Deep Earth Academy Web Site

Deep Earth Academy continued to refine its Web site (www.oceanleadership.org/education/deep-earth-academy), including updating older activities and streamlining the process for finding classroom activities. Deep Earth Academy staff worked with the Ocean Leadership Webmaster to develop a new searchability function. Applications were posted on the Web site for the 2010 School of Rock and the Call to Sail for Expedition 329.

JOIDES Resolution Web Portal and Social Networking

Visits to the joidesresolution.org Web portal increased by almost 40% during the second quarter, resulting in part from activities related to the Wilkes Land Expedition to Antarctica. Expedition scientists blogged regularly, attracting comments and questions. Weekly video updates were posted, including the attention-grabbing mini episodes of “Penguin TV.” The *JOIDES Resolution* Facebook fan base grew to 1,500 during the quarter, with increased interaction among fans, and *JOIDES Resolution* Twitter followers surpassed 250.

Winners of the J/aRt contest were announced this quarter, and a page was created to display images of their entries (<http://joidesresolution.org/node/1120>).

Educational Materials Distribution

Deep Earth Academy distributed materials at conferences and outreach activities and in response to requests received through the Deep Earth Academy Web site. During this quarter, Deep Earth Academy distributed 3,940 posters, 535 DVDs, and 6,703 other materials including bookmarks, pencils, and *JOIDES Resolution* magnets. Materials were distributed at the following meetings.

Conference/Meeting/Workshop	Date	Location
Parque de Las Ciencias Live Ship-to-Shore event	19 February 2010	Granada, Spain
Maryland Science Center Ship-to-Shore	27 February 2010	Baltimore, Maryland
Rock my World Science Olympiad Training	18 February 2010	Princeton, New Jersey
Science Olympiad Training	15 February 2010	Princeton, New Jersey
Museum Day	20 March 2010	Gainesville, Florida
American Meteorological Society Annual Meeting	17–21 January 2010	Atlanta, Georgia

Materials Development and Education Programs

Materials Development

Deep Earth Academy developed a new “*JOIDES Resolution* in Film” DVD to replace the outdated version. The new DVD includes five new educational videos about the *JOIDES Resolution* and scientific ocean drilling, as well as weekly updates produced during the Pacific Equatorial Age Transect (PEAT) expedition.

ZceneMovingMedia produced seven new high-quality video updates featuring paleoclimate topics and Wilkes Land science objectives during Expedition 318. The weekly updates contain material that will be edited along with footage from Expeditions 302, 320, and 321 to produce a new documentary-style video for high school and older audiences titled “From Ocean Floor to Climate Reconstruction.” Delivery is expected in early May 2010.

In partnership with the U.S. Science Support Program (USSSP), Deep Earth Academy worked with an artist to produce a set of large visual pieces printed on fabric that tell the story of the K/T boundary asteroid impact through hands-on, interactive audience techniques. The project debuted at the National Science Teachers’ Association (NSTA) National Conference held 18–21 March 2010 in Philadelphia, Pennsylvania, and was designed to serve as an interactive piece for younger classrooms, museum settings, English as a Second Language (ESL) classrooms, and/or in combination with a traveling core kit.

Videoconferencing

Expedition 318 ship-to-shore events included nine live webinars for more than 2,000 teachers and students via U.S. Satellite Laboratory, Inc.’s Student Polar Research with IPY National (and

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International) Teacher Training (SPRINTT) network (<http://www.us-satellite.net/sprintt/>). Science Party members presented an additional 30 live programs for university, school, and museums in the United States, India, Australia, Scotland, the Netherlands, and Spain.

USSSP staff also facilitated two special event ship-to-shore programs. In January 2010, Deep Earth Academy was invited to present a live broadcast about Wilkes Land climate change objectives for the 100 winners of the Presidential Awards for Excellence in Mathematics and Science Teaching (<http://recognition.paemst.org/>) assembled for a day of recognition and programming at the National Science Foundation. In February, USSSP and Deep Earth Academy worked with the American Association for the Advancement of Science (AAAS) to organize a ship-to-shore video connection for AAAS's Family Science Days at the AAAS Annual Meeting held 12–16 February 2010 in San Diego, California. In keeping with the family theme, H. Staudigal (ODP Leg 185 scientist) was on hand to link the 100 children and parents in the audience to his wife, L. Tauxe (IODP Expedition 318 scientist), who discussed her work as a paleomagnetist and life aboard the *JOIDES Resolution*.

Deep Earth Academy also coordinated a ship-to-shore broadcast from the *JOIDES Resolution* to NSF, where winners of the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) spoke with scientists on the ship. USIO staff worked with onboard Zcene MovingMediaCompany videographer D. Brinkhuis to edit a short video documenting the broadcast, which was featured on NSF's PAEMST Web site (<http://recognition.paemst.org/nsf-day-clip>).

Educational Outreach School of Rock 2010

Planning continued for School of Rock 2010, which will take place on board the *JOIDES Resolution* during Expedition 328: Cascadia CORK, departing from and returning to Victoria, British Columbia. USIO staff will serve as instructors and most participants will be informal educators or Deep Earth Academy strategic partners.

Port Call Educational Activities

Planning began for fourth-quarter port call activities in Victoria, British Columbia.

Onboard Educator Program

Onboard Education Officer J. Pollard completed her service on 4 January 2010 with the end of Expedition 317: Canterbury Basin Sea Level. During Pollard's tenure, she coordinated and conducted 17 live video events to onshore audiences at the Maryland Science Center and schools in Texas, Nebraska, and California. Several of these events were facilitated by the Global Nomads Group (www.gng.org).

Onboard Education Officer calls to sail were posted for Expedition 327: Juan de Fuca Hydrogeology and Expedition 329: South Pacific Gyre. Expedition 327 presents a unique opportunity to place a team of educators and outreach specialists, which will include a scientific illustrator, a digital visualization specialist, a high school physics teacher, and a student from a Historically Black Colleges and University (HBCU) (see “**HBCU Fellowship**” below for more information). USIO and Deep Earth Academy staff will work with this team to create innovative plans and products for this expedition. Application acceptance for Expedition 329 began, and a candidate will be selected during the third quarter.

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Educational Outreach Events

Planning began for three outreach events at the schools of the J/aRt contest winners. These events will be held during the third quarter in Lancaster, Pennsylvania; Ava, New York; and Baltimore, Maryland. Educational outreach events that took place during the second quarter are listed below.

Event*	Target Audience	Date	Location
Expedition 317 Port Call	Middle school students	5–9 January 2010	Wellington, New Zealand
Aggieland Saturday (Texas A&M University)	High school juniors and seniors	20 February 2010	College Station, Texas
Ocean Sciences Meeting	College-level educators	22–26 February 2010	Portland, Oregon
Expedition 318 Port Call	Students and teachers	10 and 11 March 2010	Hobart, Australia
National Science Teachers Association (NSTA) National Conference	K-12 teachers	17-21 March	Philadelphia, Pennsylvania
Cypress Grove Intermediate School Staff Scientists Visit	6th grade students	22 March 2010	College Station, Texas

*Teacher workshops, lectures, presentations, or meetings that were conducted by representatives of the Deep Earth Academy or at which representatives of Deep Earth Academy gave presentations.

Diversity Support Activities Historically Black Colleges and Universities Programs

HBCU Fellowship

The USIO continues to explore mechanisms that will improve the recruitment of faculty/research mentors and HBCU students in the USIO HBCU Fellowship initiative.

In an effort to provide HBCU students with a meaningful educational experience that conveys both the excitement and wide range of career opportunities available in scientific ocean drilling, Ocean Leadership and the USIO offered a fellowship opportunity for an HBCU student to sail on board the *JOIDES Resolution* during the summer 2010 IODP Expedition 327: Juan de Fuca Hydrogeology. The call for applications was widely published in March 2010 via several internal and external listservs and in flyers distributed at the NSTA National Conference, and the application deadline was set for 2 April 2010. The onboard HBCU Fellowship is open to undergraduate (rising junior or senior preferred) or graduate students from a science, education, communications, or engineering department at an HBCU. The selected HBCU Fellow will work with the education/science communication team and alongside scientists and engineers from IODP member nations to help develop and implement innovative ways to bring scientific ocean drilling to students and teachers (particularly at HBCUs) and to the general public.

S. Compton, the FY09 HBCU Fellow from Savannah State University, received an award from the Southeast Paleontological Society for a poster she presented at the GSA Southeastern Section Meeting held 13–16 March 2010 in Baltimore, Maryland. Compton's poster featured research funded by her HBCU Fellowship.

HBCU Educator-at-Sea Program

Dr. N. Idrisi (University of the Virgin Islands [UVI] Center for Marine and Environmental Studies), the first HBCU Educator-at-Sea, gave a presentation at the February AGU 2010 Ocean Sciences Meeting in Portland, Oregon, titled "HBCU Educator at Sea: Integrated Ocean Drilling

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Program.” Idrisi discussed his experiences as the first HBCU Educator at Sea and the use of ship-to-shore live broadcasts from an ocean drilling research vessel conducting active research to classes at HBCUs in the United States.

Idrisi also participated in the March 2010 U.S. Virgin Islands Governor’s Program for Career Day, where he had the opportunity to introduce high school students to IODP and careers in scientific ocean drilling.

Strategic Partnerships

Deep Earth Academy continued its partnership with the Maryland Science Center to produce additional ship-to-shore programming during the remainder of 2010. Deep Earth Academy also continued to seek programming commitments from other museums and informal education venues and programs across the nation, many of which will result from invited School of Rock participants, expedition-specific plans, and development of an NSF Informal Science Education proposal.

Deep Earth Academy staff began investigating new programming partnerships with the Aerospace Education, Research, and Operations (AERO) Institute and the American Meteorological Society, among others.

Outside Funding and Sponsorships

Deep Earth Academy partnered with the National Ocean Sciences Bowl (NOSB) to submit a nationwide marine careers program proposal under the NSF Innovative Technology Experiences for Students and Teachers (ITEST) program solicitation 09-506.

Deep Earth Academy also submitted two ocean drilling proposals to NSF to include significant educational components in expeditions returning to the CORKS that will be installed in 2010. Those expeditions would take place in the summer of 2011 and 2012. Both proposals are pending.

OUTREACH

Communications Outreach Activities

USIO communications and outreach activities this quarter focused on opportunities to publicize scientific ocean drilling through related publications and events with the goal of raising public and media awareness.

Highlights include the following events:

- A total of 150 visitors toured the *JOIDES Resolution* during the 5–9 January 2010 port call in Wellington, New Zealand, including representatives from the New Zealand government, scientists from local research institutes, and 30 middle school students. In conjunction with the port call, the USIO and the Australia-New Zealand IODP Consortium (ANZIC) hosted a shipboard press conference for local media and dignitaries. The USIO distributed a newly developed frequently asked questions (FAQ) document and a set of media “Key Talking Points” designed to tell the expedition’s story in clear and compelling language to a wide audience. This press outreach resulted local newspaper, radio, and television coverage. Representatives from the Expeditions 317 and 318 Science Parties were featured in the press conference and in an evening lecture and reception at the University of Victoria in

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Wellington. Also during the port call, guests from the U.S. Senate Appropriations Committee, NSF, and the U.S. Embassy in New Zealand joined the USIO for a day-long program that included a tour of the *JOIDES Resolution* and discussions with USIO expedition scientists.

- Multiple public and media outreach events coordinated by the USIO and ANZIC staff were conducted during the *JOIDES Resolution* 8–12 March 2010 port call in Hobart, Australia. As many as 150 students, teachers, and researchers toured the *JOIDES Resolution*, and a science lecture was held at the University of Tasmania featuring the Wilkes Land Expedition Co-Chief Scientists, who shared their preliminary results with approximately 80 attendees. A shipboard press conference was hosted for local media and dignitaries, where an Expedition 318 Co-Chief Scientist and Australian Minister of Science and Innovation Senator Kim Carr were featured speakers. Stories resulting from port call outreach activities appeared in local newspapers and on local radio and television stations.
- USIO staff helped man a booth featuring IODP at the Ocean Sciences Meeting held 22–26 February 2010 in Portland, Oregon. The booth showcased video about Expedition 318: Wilkes Land Glacial History, which was in process during the conference.

Public Relations Materials

During this quarter, the Communications Team either developed and published or played a role in developing the following press releases and media advisories:

- Perspectives on global change from beneath the ocean floor, 3 January 2010.
- Texas students to participate in live broadcast with scientists in Antarctica, 23 January 2010.
- Record-breaking expedition may help predict changes in global sea level, 25 January 2010.
- CUNY scientist in Antarctica will teach Texas students via live videoconference, 24 February 2010.
- Mines scientist in Antarctica will teach Texas students via live videoconference, 24 February 2010.
- Ocean research ship returns from Antarctica, 5 March 2010.
- Australian Minister of Science to visit ocean research vessel in Hobart, 10 March 2010.
- Research ship arrives with 54 million-year-old samples, 12 March 2010.

Note: Postexpedition press releases regarding IODP Expedition 323: Bering Sea Paleooceanography and IODP Expedition 324: Shatsky Rise Formation were delayed into the next quarter to allow both science parties to pursue publication in *Science*, which imposes strict press embargoes while manuscripts are in review.

Program-related Publications Articles Authored by USIO Staff

Science and other articles authored by USIO staff published during this quarter include the following. Bold type indicates USIO staff. Other Program-related science articles are available online through the Ocean Drilling Citation Database (iodp.tamu.edu/publications/citations/database.html) and the IODP Expedition-related bibliography (iodp.tamu.edu/publications/citations.html).

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- **Williams, T.**, 2010. On thick ice: live from an Antarctic drilling trip. *Popular Mechanics*, 18 February 2010. <http://www.popularmechanics.com/science/environment/climate-change/4346464>
- **Williams, T.**, 2010. Iceberg forensics: predicting the planet's future with Antarctic ice. *Popular Mechanics*, 30 March 2010. <http://www.popularmechanics.com/science/environment/climate-change/4349415>
- **Williams, T.**, Van de Flierdt, T., Hemming, S.R., Chung, E., Roy, M., and Goldstein, S.L., 2010. Evidence for iceberg armadas from East Antarctica in the Southern Ocean during the late Miocene and early Pliocene. *Earth Planet. Sci. Lett.*, 290(3–4)351–361. [doi:10.1016/j.epsl.2009.12.031](http://dx.doi.org/10.1016/j.epsl.2009.12.031)

News Articles, Programs, Media Citations, or Public Commentary

A total of 105 known articles referencing IODP were published in the international media during this quarter. These articles focused on the success of Expedition 317, Deep Earth Academy's ship-to-shore broadcasts, and the port calls in Wellington, New Zealand, and Hobart, Australia.

Examples of news articles, programs, media citations, or public commentary related to IODP expeditions published this quarter include the following. See the "IODP in the news" Web page (www.iodp-usio.org/Newsroom/news.html) for other articles that raise the profile of the Program.

Media Coverage Highlight: R. Boyd's article for McClatchy News, "Buried alive: half of Earth's life may lie below land, sea," focused on the microbiology studies of three upcoming IODP expeditions (Juan de Fuca, South Pacific Gyre, and Mid-Atlantic Ridge Microbiology). The McClatchy Company is the third-largest newspaper publisher in the United States, with 30 daily papers. Boyd's article appeared in multiple papers including the *Fort Worth Star Telegram* and *Philadelphia Inquirer*, as well as numerous blogs and Web sites worldwide.

- ABC News [Australia], 2010. Antarctica once had tropical climate, scientists say. *ABC News*, 8 March 2010. <http://www.abc.net.au/news/stories/2010/03/12/2844117.htm>
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USIO INTERACTIONS WITH IODP-MI, ESO, AND CDEX

Interactions

IODP-CDEX Expedition 319 Postexpedition Meeting

The USIO provided meeting facilities and publications support for the IODP-CDEX Expedition 319 first postexpedition meeting on 22–26 March 2010. The meeting was held in College Station, Texas, to allow access to the Publication Services staff, which is responsible for formatting and editing scientific reports and publications from all IODP implementing organizations (IOs).

Publications Staff Exchange between the USIO and CDEX

A Marine Works Japan (MWJ) technician who works on the *Chikyu* continued onsite training with TAMU Publication Services in College Station, Texas, to learn about IODP seagoing and shore-based publications duties. The training period, which began in October 2009 and was scheduled for a minimum of six months, was extended through May 2010 to enable the visiting technician to learn about publications duties associated with IODP postexpedition meetings.

USIO and CDEX Engineering and Operations Meeting

A meeting was held 18 January 2010 in Yokohama between USIO and CDEX operations and engineering staff. The goal of the meeting was to discuss operational and engineering experiences and challenges on the *Chikyu* and *JOIDES Resolution* and to establish a closer working relationship between the groups.

Meetings

IODP working group, task force, and other special meetings are described in this section. Standard Science Advisory Structure (SAS) committee and panel meetings are listed in **Appendix B: Conference and Meeting Schedule**. USIO attendees to all meetings are listed in **Appendix C: Travel**.

APPENDIX A: FINANCE REPORT

Finance Report Format

The first quarter of FY10 marked a change in how the USIO quarterly report’s **Appendix A: Finance Report** is organized.

From FY04 through FY09, the USIO Annual Program Plan budget request was partitioned into categories determined by a complex set of cost definitions. Over the years, these definitions have been adjusted and finally simplified to the current structure. The FY10 quarterly report **Appendix A: Finance Report** correlates to the FY10 Annual Program Plans to NSF and IODP-MI in a structure that dramatically reduces the number of pages in the appendix. To accommodate this correlation, the prior years’ costs in the finance report appendix have been combined as noted in the table below.

FY10 Definition	Prior Years’ Definitions
Science Operating Costs (SOC)	SOC, SOC nonoperations
Platform Operating Costs (POC)	POC, SOC operations
Other Program Integration Costs (OPIC)	U.S. Systems Integration Contract costs (SIC) demobilization, SIC nondemobilization
Systems Integration Contract (SIC) costs	POC, SOC Operations, SIC demobilization, SIC nondemobilization

Adjustments were also made within and between work breakdown elements (WBEs). Prior years’ costs from the defunct Education and Outreach WBE have been merged with the Education WBE, and prior years’ costs from the DSDP/ODP Core Redistribution Project have been rolled up into the Core Curation WBE. In addition, the line-item FY08 budget adjustments reported in the FY09 Q4 report have been rolled up into the Salaries and Wages line item within their relative WBEs.

Beginning with the FY10 Q1 report, the finance report appendix provided to NSF includes SIC costs as defined above and the finance report appendix provided to IODP-MI includes SOC and POC costs as defined above.

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

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APPENDIX B: CONFERENCE AND MEETING SCHEDULE

Conference/Meeting*	Date	Location
Engineering Development Panel (EDP) Meeting	13–15 January 2010	Sendai, Japan
Science Advisory Structure Executive Committee (SASEC) Meeting	18 and 19 January 2010	Seoul, Korea
Site Survey Panel (SSP) Meeting	27–29 January 2010	Wellington, New Zealand
American Geophysical Union (AGU) 2010 Ocean Sciences Meeting	22–25 February 2010	Portland, Oregon
Scientific Technology Panel (STP) Meeting	17–19 March 2010	Sydney, Australia
National Science Teachers Association (NSTA) National Conference	18–21 March 2010	Philadelphia, Pennsylvania
Science Planning Committee (SPC)	23–26 March 2010	Sydney, Australia

*Implementing organization meetings, IODP-MI task force meetings, Science Advisory Structure (SAS) panel meetings, Program-sponsored conferences, and scientific and educational conferences at which the USIO had a booth or exhibit.

APPENDIX C: TRAVEL

Purpose*	Dates	Location	Affiliation: Traveler
Expedition 318 Port Call	4–9 January 2010	Wellington, New Zealand	Ocean Leadership: K. Ludwig, M. Morell TAMU: M. Malone, R. Mitchell, B. Julson
Expedition 318 video documentation	4 January–9 March 2010	Wellington, New Zealand	Educational Materials Development: D. Brinkhaus (Zcene)
Engineering Development Panel (EDP) Meeting	13–15 January 2010	Sendai, Japan	Ocean Leadership: G. Myers LDEO: G. Iturrino TAMU: K. Grigar, S. Midgley, M. Storms
AMS Weatherfest	17 January 2010	Savannah, Georgia	Onboard Educator Program: D. LaVigne
USIO-CDEX operations and engineering meeting	18 January 2010	Yokohama, Japan	TAMU: K. Grigar, S. Midgley, M. Storms
Science Advisory Structure Executive Committee (SASEC) Meeting	18 and 19 January 2010	Seoul, South Korea	Ocean Leadership: D. Divins
Expedition 328 Planning Meeting	21–23 January 2010	College Station, Texas	Expedition 328: E. Davis (Chief Scientist)
Training: Balanced Score Card	22–24 January 2010	Austin, Texas	TAMU: A. Crane
Education Meeting at Lamont-Doherty Earth Observatory (LDEO)	25–27 January 2010	Palisades, New York	Ocean Leadership: S. Cooper
Site Survey Panel (SSP) Meeting	27–29 January 2010	Wellington, New Zealand	TAMU: K. Petronotis
Expedition 327 Pre-expedition Meeting	27–29 January 2010	College Station, Texas	Ocean Leadership: S. Cooper LDEO: S. Mrozewski
Expedition 329 Pre-expedition Meeting	8 and 9 February 2010	College Station, Texas	Ocean Leadership: K. Ludwig, S. Saunders LDEO: H. Evans

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Purpose*	Dates	Location	Affiliation: Traveler
Employee Relocation	10 February 2010	College Station, Texas	TAMU: S. Jackett
U.S. Advisory Committee (USAC) Meeting	10 and 11 February 2010	Austin, Texas	TAMU: B. Clement
Expedition 323 Postexpedition Meeting	14–18 February 2010	College Station, Texas	LDEO: G. Guerin
CTREC Training Course MS6292	21–24 February 2010	Houston, Texas	TAMU: M. Petersen
American Geophysical Union (AGU) 2010 Ocean Sciences Meeting	22–26 February 2010	Portland, Oregon	Ocean Leadership: S. Cooper, M. Morell, S. Saunders [†] Onboard Educator Program: D. LaVigne School of Rock: P. Cleary, L. Sautter HBCU Programs: S. Horsford, N. Idrisi
Transit/Maintenance Period Port Call	8–13 March 2010	Hobart, Australia	Ocean Leadership: D. Divins, K. Ludwig LDEO: T. Williams TAMU: B. Clement, R. Mitchell, J. Miller
Scientific Technology Panel (STP) Meeting	17–19 March 2010	Sydney, Australia	Ocean Leadership: G. Myers LDEO: H. Evans TAMU: J. Miller
National Science Teachers Association (NSTA) National Conference	18–21 March 2010	Philadelphia, Pennsylvania	Ocean Leadership: S. Cooper, A. Divins, L. Peart, Teacher-in-Residence Program: J. Pollard School of Rock: R. King, T. King, L. McMinn, B. Waters LDEO: C. Brenner, M. Reagan TAMU: J. Geldmacher
Science Planning Committee (SPC) Meeting	23–26 March 2010	Sydney, Australia	Ocean Leadership: D. Divins LDEO: A. Malinverno TAMU: M. Malone
Expedition 327 Engineering Meeting; Circulation Obviation Retrofit Kit (CORK) Presentation	31 March and 1 April 2010	College Station, Texas	Expedition 327: A. Fisher (Co-Chief Scientist)
Panalpina Meeting/ Facility Visit	29 and 30 March 2010	Houston, Texas	TAMU: S. Dillard, R. Mitchell

*Travel associated with meetings, conferences, port call work, nonroutine sailing activities, and other activities included in the Annual Program Plan budget narratives.

[†]Travel costs funded by other source.

APPENDIX D: USIO QUARTERLY REPORT DISTRIBUTION LIST

J. Allan, NSF, jallan@nsf.gov
R. Batiza, NSF, rbatiza@nsf.gov
M. Rouse, NSF, mrouse@nsf.gov
J. Emmitte, IODP-MI, jemmitte@iodp.org
K. Suyehiro, IODP-MI, ksuyehiro@iodp.org
D. Divins, Ocean Leadership, ddivins@oceanleadership.org
R. Gagolian, Ocean Leadership, rgagolian@oceanleadership.org
J. Hubler, Ocean Leadership, jhubler@oceanleadership.org
M. Morell, Ocean Leadership, mmorell@oceanleadership.org
G. Myers, Ocean Leadership, gmyers@oceanleadership.org
Y. Xing, Ocean Leadership, yxing@oceanleadership.org
D. Goldberg, LDEO, goldberg@ldeo.columbia.edu
D. Grames, LDEO, grames@ldeo.columbia.edu
M. Purdy, LDEO, purdy@ldeo.columbia.edu
M. Reagan, LDEO, reagan@ldeo.columbia.edu
M. Respo, LDEO, mrespo@admin.ldeo.columbia.edu
L. Cifuentes, TAMU, cifuentes@tamu.edu
B. Clement, TAMU, clement@iodp.tamu.edu
A. Crane, TAMU, crane@iodp.tamu.edu
S. Garrett, TAMRF, srg@rf-mail.tamu.edu
B. Lancaster, TAMRF, lancaster@iodp.tamu.edu
K. Miller, TAMU, kcmiller@tamu.edu
L. Schulze, TAMRF, schulze@iodp.tamu.edu
W. Wasson, TAMU, wasson@iodp.tamu.edu