International Ocean Discovery Program
JOIDES Resolution Science Operator

Texas A&M University

FY16 Annual Program Plan Addendum

for the time period
1 October 2015–30 September 2016

Respectfully submitted to
The National Science Foundation:

JOIDES Resolution
Science Operator

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10 June 2016

Addendum: XRF Core Scanner acquisition

JOIDES Resolution expeditions increasingly require X-ray fluorescence (XRF) scanning data in order to create stratigraphic splices of cored sections and/or to develop sampling plans that make the most efficient use of the recovered materials. As a result, both the expedition science parties and the JRSO have been faced with the logistical/funding challenges of shipping core sections to multiple XRF scanning facilities in order to obtain the requisite data in time to be useful for the expeditions' sampling parties.

The JRSO proposes facilitating these efforts by conducting XRF scanning at the Gulf Coast Repository (GCR) as an IODP programmatic measurement. To accomplish this, the JRSO will acquire a second XRF Core Scanner (XRF-CS) in FY16, and in FY17 will add a partial full-time equivalent (0.75 FTE) position to aid with scanning and curatorial requirements. The JRSO will then scan as many core sections as is practical in time for the data to be useful in developing the sampling plans for expedition sampling parties. In practice, expeditions requiring scanning measurements for their sampling parties will nominally have between 6 and 8 weeks of scanning time available, depending upon the time required for the core shipments to arrive at the GCR, to ensure that the sampling party timing does not adversely impact the 18-month postexpedition moratorium extension. The time available to each expedition for scanning is also constrained by the storage/staging space available in the GCR, particularly when receiving cores from successive high-recovery expeditions. The JRSO estimates that on the order of 1 km of core sections may be scanned within this time window. This estimate may increase once the new detectors are tested under real conditions. The JRSO will also make the XRF scanning facilities available to science party members during this time, so they can participate in the effort, run the scanner for more hours per day, and increase output. IODP will provide the scanner facilities but cannot provide additional support (per diem and housing) for science party members.

In this addendum to the JRSO FY16 Annual Program Plan, we propose adding the task of acquiring a second XRF scanner and developing the implementation plan (including a quality control/assurance plan) for making scanning services available as an IODP programmatic measurement. By conducting the prioritized scanning measurements at the GCR, the program will reduce risk of damage to core sections during shipment, reduce shipping costs, and increase efficiency in obtaining the necessary measurements to ensure that cores are sampled efficiently. The XRF-CS scanner is projected to cost about $350,000. No additional FY16 funds are being requested for the purchase of the XRF-CS scanner.