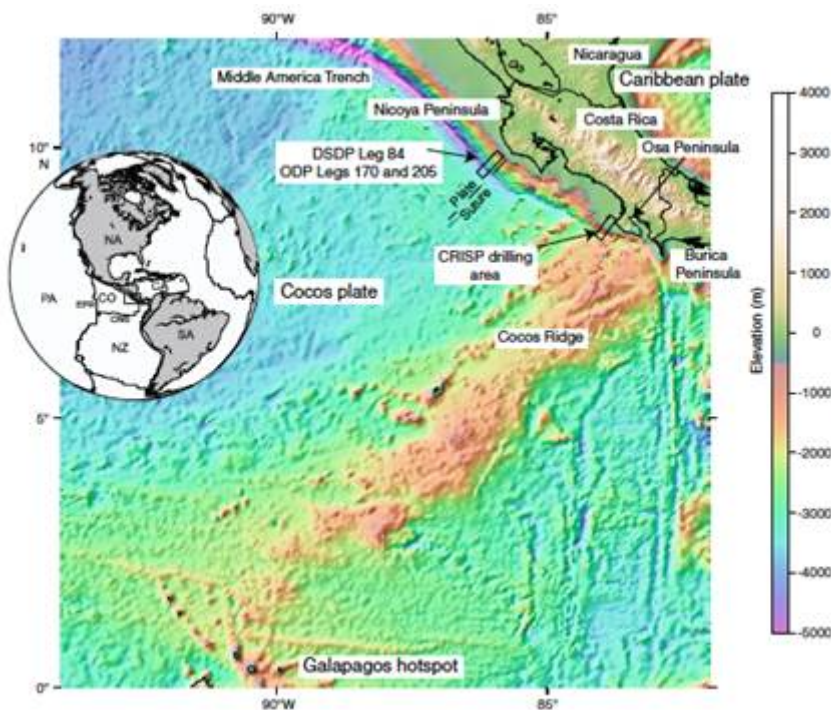


Report from Maria I. Sandoval, PhD student at Université de Lausanne  
Shipboard Micropaleontologist on IODP Drilling Vessel Joides Resolution  
Costa Rica Seismogenesis Project (CRISP)

## Expedition 344 "CRISP Program A Stage 2"

**I had the opportunity to participate as a micropaleontologist (radiolarist) in the IODP 344 Expedition (Costa Rica Seismogenesis Project: CRISP 2); it was seven weeks of wonderful experiences aboard Joides Resolution (JR).**

The expedition started on October 23rd 2012 in Balboa, Panama, and ended on December 11th in Puntarenas, Costa Rica. Five sites were drilled; two in the incoming (Cocos) plate and three in the upper (Caribbean) plate. Offshore the western margin of Costa Rica, the oceanic Cocos plate subducts under the Caribbean plate, forming the southern end of the Middle America Trench (figure 1)



**Figure 1:** Topographic and bathymetric map of the Costa Rica area, showing location of the proposed drilling area. Taken from Expedition 344 Scientific Prospectus (Harris *et al*, 2012)

The purpose of the project is to have a better understanding of the processes that have been generating earthquakes along the subduction thrust at erosive margins. Many samples were taken in order to satisfy different objectives and future research.

I take the opportunity as a micropaleontologist to let you know how work on board JR looks like with the eyes of a fossil specialist. I will give you some information of my job on board and show you the methods and equipment that we used.

Core on deck!...that is the first phrase that marked our experience. The micropaleontologists received the first sample of the core: the core catcher sample (figure 2). The core catcher consists in one-way device analogous to a check valve that prevents core from falling from the inner core barrel once it had entered.



**Figure 2:** Observing the core catcher sample with the petrologist Christopher Smith-Duque from University of Southampton, United Kingdom

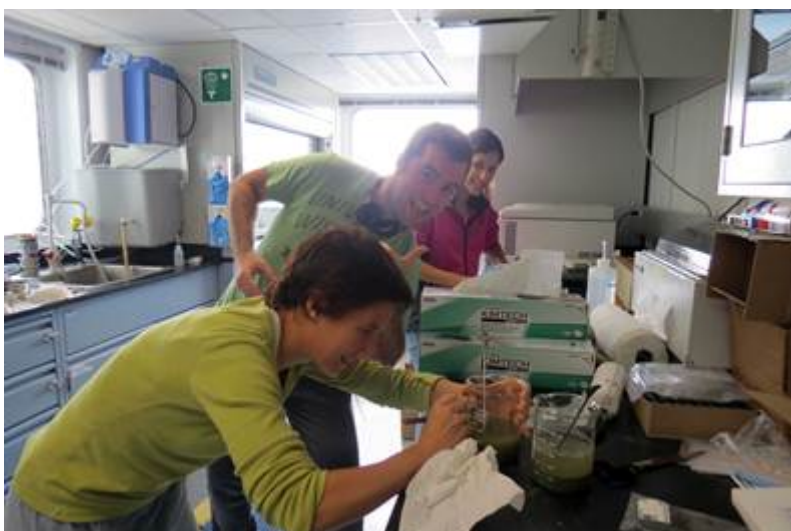
After receiving the sample, we divide it into pieces in order for each micropaleontologist to have a piece and follow the procedure in the laboratory. Samples are prepared by different techniques for nannofossil, benthic foraminifera and radiolarians. Then, they are analyzed by a microscope for each objective to be met. The laboratories are well equipped with several microscopes, a complete library for paleontology and chemical products to accomplish the onboard goals (figure 3, 4 and 5).

As a micropaleontology group we discuss and share all the information with the purpose to assign an age, environment and changes in the sedimentary sequence that is drilled.



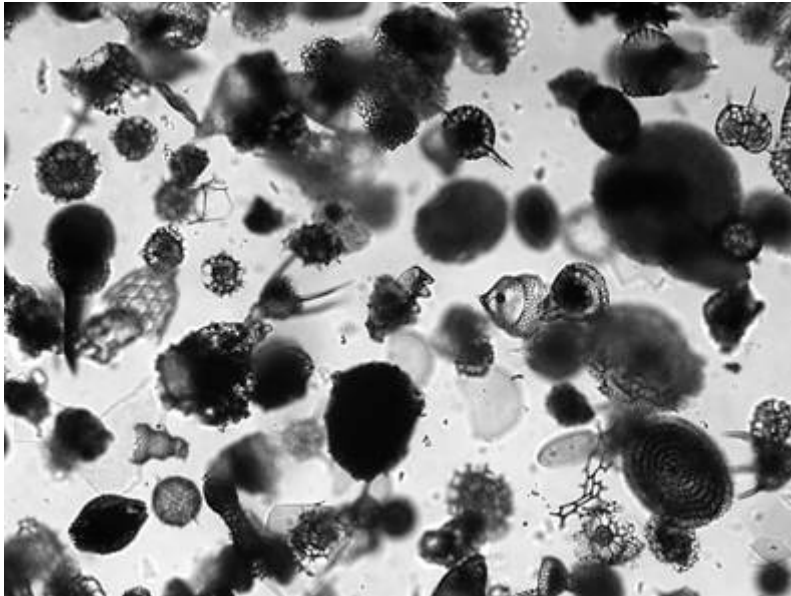
**Figure 3:** Paleontology Laboratory of Joides Resolution.

Benthic foraminifers specialists:  
Ashley Burkett from Indiana State University, USA (left) and Paula Diz from the Department of Marine Geosciences of University of Vigo, Spain.



**Figure 4:** Preparing samples in the laboratory with Débora Nascimento Petrologist of

Geology Department from University Federal from Rio de Janeiro, Brazil and Allan Baxter nannofossil specialist of University of New England, Australia.



**Figure 5:** Holocene Radiolarians assemblages from Site U1414 (Cocos Plate)

I really enjoyed sailing on the Joides Resolution and I am very thankful for this expedition. It allowed me to learn more about the tectonics of Costa Rica (country where I came from) and also to share with all different kind scientific parties. Together we made this experience very interesting for our professional careers and also we made it feel at home. Thanks to the Swiss IODP to take me to this wonderful experience.

Best Regards,

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