**NOAA Ship Ronald H. Brown A16N Leg 1 Weekly Scientific Report 03**
**Molly Baringer, Chief Scientist, and Denis Volkov, Co-Chief Scientist**

32.5°N, 19.7°W
9:00 p.m., Sunday, August 22, 2013 (local time & date)

The first leg of A16N cruise is coming to an end and the ship is heading to the port of Funchal, Madeira. The estimated time of arrival at Funchal is 10:00 a.m. on August 23, but the ship should be within the visibility range starting from about 9:00 a.m. Overall, the mission was extremely successful. We completed all 66 planned stations and an additional 4 unplanned stations (giving Leg 2 a head start). We deployed 10 surface drifters and 2 Argo floats. The data quality and quantity collected is excellent. There are many interesting features in the data that will take a while to analyze, but we expect this will be an excellent data set. We were also lucky to have favorable weather along the way.

There was no significant loss of instrumentation or failures of any kind. This wouldn't have been possible without professionalism of the science team and the crew. We had an issue with some GoFlow Niskin bottles used to collect uncontaminated trace metal samples. During heavy seas two bottles were damaged, but Andy Stefanick, with help from Bruce Cowden, managed to rebuild them.

The ship's crew provided excellent communications on standard operating procedures, including regular briefings with the Captain, Operations Officer and department heads. During this cruise, the science party witnessed a unique and valuable interaction between the bridge crew and engineering department aimed at optimizing the efficient operation of the ship. This included relatively fast transit speeds (and engine RPMs) between stations (about 10.5 knots) using only one large generator operated in the most fuel-efficient manner. The bridge crew set up a competition between different shifts to achieve the best time of arrival/departure to/from stations. We were recording times for the ship's slowing down to 9 knots, 5 knots, arriving on station and lowering CTD, then bringing CTD on deck, securing it, and then speeding up to 5 and 9 knots. This led to a dramatic improvement of the on station/off station arrival, set-up and departure times and resulted in substantial savings to NOAA, both in fuel, sea days and increased science time. On average, during the first half of the cruise the arrival on station time was 6.5 min and the departure time was 8 min. During the second half of the cruise the arrival on station time decreased to 4 min 20 sec and the departure time decreased to 6 min 20 sec. Before the competition, we anecdotally noted set-up times more like 15 minutes before the start of each cast.

We gave out awards for the bridge shifts with the fastest arrival time (the “Slamin on the Brake Award” and for the Fastest departure times (the “Petal to the Metal award”). We also gave a “To the Rescue” award to Kevin Sullivan, who not only spent hours helping to diagnose the malfunctioning alkalinity water bath, but in the end lent his spare bath to the Alkalinity group for the cruise. Kevin was a role model of collegiality, helping other groups at sea and reminded us of the importance of bringing spares!

John Bullister will be reporting shortly on the progress of the remainder of this cruise (Leg 2).

It has been a pleasure.