We found out this morning why we were rocking and rolling much of last night. We were sailing through an area of the Amundsen Gulf that was under a gale warning for winds of 25–30 knots. Donovan Tremblay and Guillaume Paradis, members of the Canadian Ice Service, shared this weather information and ice forecasts with us in the morning science meeting (11:00am everyday!). Donovan and Guillaume will be providing both weather and ice forecasts daily for the entirety of the cruise, so you can expect some updates on those conditions in subsequent dispatches.

After lunch, we finally approached our first science station of the trip, AG-5. Chief Scientist, Sarah Zimmerman decided that we would do two CTD rosette casts and also a “bongo” cast. But these aren’t your average fishing casts, the CTD rosette easily weighs a few hundred pounds. A carefully controlled lowering of the CTD rosette would be a better description (in the opinion of a formerly frequent fisherman). The CTD rosette is the central piece of instrumentation on this cruise. It measures Conductivity, Temperature, and Depth, and also has twenty-four water samplers laid out in a circle. Those samplers are primed before each rosette cast, which leaves the samplers open to allow seawater to flow through them. When the CTD operators want to take a seawater sample, they click a button to close one specific water sampler. This gives them the precise control to take seawater samples at many different depths. After the CTD rosette returns to the surface, a carefully coordinated ballet of sampling takes place in the CTD shack. I’ll go into more detail on what samples are taken in future dispatches.

Today’s first cast was one of five specially devoted to the microbiologists who are using DNA/RNA too study ocean microbes; Thomas Gervesse, Deo Onda, and Adam Monier. They need a larger volume of water than other measurements, so extra water was taken at different depths. Thomas then filtered the water from each depth until all the microbes collected at each depth resided on one small filter. Those filters are then preserved before being analyzed for DNA/RNA back in laboratories at their home institutions. Their work will give us an idea of what microbes live in the Arctic Ocean and their function in the environment.

After the CTD rosette casts, a “bongo” cast was completed on the bow, looking for zooplankton. Bongo casts are named because the nets they use resemble bongo drums. I missed the bongo cast but was able to find Matt Miller in the lab carefully processing his zooplankton samples. He preserves the samples as soon as possible with either ethanol or formalin to ensure that the zooplankton do not start to degrade after being out of their natural environment. There is a picture of them in the slideshow. They are fun to watch, and their movement (in the lab at least) could best be described as underwater grasshoppers. They are largely still until a sudden flurry of movement, only to drift back to the bottom of the sample jar.

The sole goal of tomorrow morning is to recover one of two wayward Ice-Tethered Profilers. If that goes well, we will start a 20-hour steam towards the next science station, CB-1.