

Center for Alaskan Coastal Studies: “Onboard Oceanography”
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The Center for Alaskan Coastal Studies conducted a revamped and revised On-Board Oceanography Program over the course of the spring and summer of 2011 to over 100 students. The Onboard Oceanography Program is a 4 hour inquiry-based hands-on educational program conducted onboard the 65' vessel, the Rainbow Connection. Through scientific observations and monitoring activities, students studied the health of Kachemak Bay by conducting plankton tows and water quality sampling and learning about the life cycle of key marine invertebrates found in Kachemak Bay beginning with the planktonic and ending with the adult stage. Students conducted plankton tows at a variety of depths from the boat and from the field station dock and then used compound and dissecting microscopes to identify the phyto- and zooplankton available in the bay. A camera scope attached to a HTV screen allowed more students to be involved in the identification of plankton and enhanced the learning experience. By being able to view the plankton on a large screen they could actually watch the interaction of the plankton and see greater details on the organisms. Students increased their awareness of the role of plankton in the ocean food and nutrient chain from its microbial and planktonic base up through ocean mammals that depend on it.

An underwater camera was used to investigate marine invertebrates under and around the field station dock. This was an especially effective tool for helping the students make the connection between planktonic life stages and adult life stages. Many students who participate in our on-board oceanography program have a difficult time visualizing life under the surface of the water, therefore any tools that we can use to help facilitate this learning process are very valuable. Students gain a sense of the “big picture” when they can actually see what is really happening beneath the surface of the ocean. An underwater camera also allows programs to run at any tidal range. Our ROV program went through a couple of different stages over the spring and the summer. The initial ROV unit that we used for our program ended up being too small to support the weight of our underwater camera, so we used the underwater camera to watch the ROV maneuver in the subtidal area and used this as an opportunity to investigate advances in technology that make exploring topics in oceanography possible. Students were able to navigate the ROVs after learning about how they are put together and evaluated the benefits and limitations of their potential use. Later in the summer, after receiving a new ROV, staff was able to put it together and experiment with using it to hold the underwater camera for subtidal investigations. Although we were not able to use this new system with an actual school group, we did experiment with its usage on our day tour participants and it was very effective. This new ROV will be used for our On-Board Oceanography and Alaska Coastal Ecology Programs during the spring and summer of 2012.

We are looking forward to implementing the improvements that we were able to pilot over the past spring and summer onboard oceanography season during our 2012 season where we already have 5 school groups scheduled and anticipate more bookings over the winter. Based on the success of this program we are working with the F/V Rainbow Connection to implement a regularly scheduled summer onboard oceanography program as well.