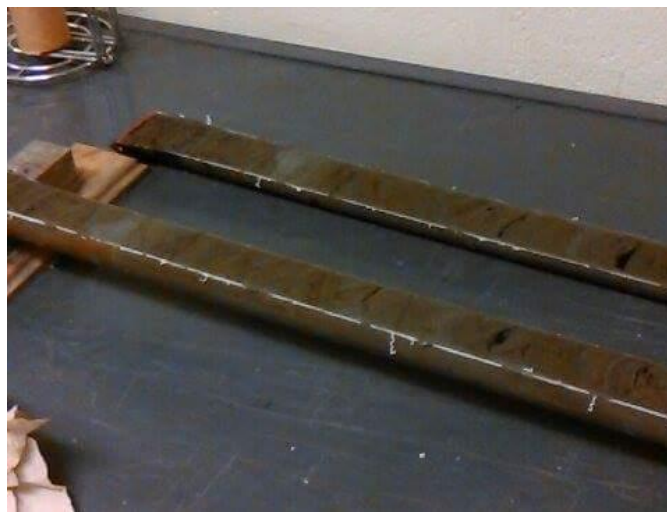


Geoscience Award Report by Nina Schulze

I received 688 dollars from the UMass geoscience department to help fund my summer research. The two previous semesters I had been analyzing sediment cores from Lake Ryujin and Lake Sunokawa, the latter exhibiting a continuous sand layer at the bottom of the core. I believed that this change in lithology from sand to mud in the lake was caused by a large storm event 1000 years ago, as was seen in another lake close to the site. Although it was the only visible sand layer in the core, we also found two dense deposits at about 107 centimeters and 142 centimeters. Since I was hoping to correlate the event of record, the 1707 Hiei tsunami, with Lake Sunokawa, I speculated that coupled with a low deposition rate or high amounts of erosion these layers could represent the 1707 tsunami. In order to find the age of these layers, organic samples have to be sent to the Woods Hole Oceanographic Institute and dated according to the carbon-14 method. The money provided by the geoscience department enabled me to purchase two radiocarbon ages that gave me valuable results for both depths. The dense layer at 107 centimeters gave me an age range between approximately AD 1300 and 1400 and the dense layer at 142 centimeters produced an age range between approximately AD 1100 and 1200. Although they did not correspond to the 1707 storm deposit, they provided a good estimate for the thick sand layer at 150 centimeters, which likely corresponds to a large flood that occurred about 1000 years ago. Even though I did not see evidence for the 1707 Hiei tsunami in Lake Sunokawa it does not mean that it didn't inundate the lake. Large amounts of erosion could have erased the storm deposit that I found in Lake Ryujin and that was present in other local lakes.



Examining a sediment core to find organic particles for radiocarbon dating