

**DISSOLVING THE OCEAN FLOOR IN THREE HOURS:
To Sonicate or not to Sonicate**

Melissa Bost
Appalachian State University
ASU Box 17366
Boone, North Carolina 28608

In order to determine levels of radioactivity in ocean sediment, complete dissolution must be achieved. Current methods of dissolution with acids are caustic, expensive, time consuming, and intricate. In the search for a faster, easier, and “greener” method, the effects of ultrasonic dissolution were studied along with effects due to other confounding variables such as mass of sample, temperature, and time. Surprising results led to further analysis for short times of dissolution, from fifteen minutes to three hours. Final results indicated that greater than 85 percent of the silica was dissolved within 15 minutes, and greater than 99.5 percent was dissolved in less than 3 hours. H.F. to sample ratio also played an important role in the efficiency of dissolution. Residual material consisted of minor H.F. resistant phases that could be separated and treated more harshly if total sample dissolution was desired.