

## **Introducing Nuclear Geology: Course Modules and Student Research Using Gamma Spectrometry**

### **Executive Summary**

This project will create modules in environmental radiochemistry for three of the core courses in the undergraduate geology major at the University of North Carolina-Chapel Hill. Students will receive classroom and web-based instruction in the basics of radioactivity and radiation detection. They will apply these principles in the lab by packing and counting samples of natural materials on a gamma spectrometer, then reducing the data to quantify major gamma-emitting radionuclides. Interested students will be encouraged to pursue supervised research projects employing gamma spectrometry and complementary radiochemical and chemical techniques. Introducing environmental radiochemistry to geology majors will encourage some to seek careers in the nuclear industry, in environmental monitoring, or in regulatory agencies. The background they gain will also equip them to contribute usefully to discussions of the role of nuclear energy in the 21st century.

**Principal Investigator:** Larry K. Benninger, [lbenning@email.unc.edu](mailto:lbenning@email.unc.edu)