

# The Enhancement of the Radiochemistry Program at Florida Memorial University by Infrastructural and Educational Improvements

## Executive Summary

The objectives for the goal of this proposal have a three-pronged approach: 1) recruit five students from area high schools to enter Florida Memorial University's School of Health and Natural Sciences as freshmen into the nascent but successful Bachelor of Chemistry with Concentration in Radiochemistry program (henceforth called the radiochemistry program); 2) hire two undergraduate students enrolled in the School of Health and Natural Sciences as laboratory aids/technicians who will be trained on various instruments to assist the professors in conducting laboratories and research experiments; and 3) purchase an  $\alpha$ -spectrometer, a safe for containment of radioactive sources, and lead shielding for protection, all of which will be used to enhance the current instrumentation catalog.

The radiochemistry program was developed through funding from the National Nuclear Security Administration (NNSA). This program consists of new courses in radiochemistry, such as *Concepts of Radiochemistry*, *Introduction to Radiochemistry*, and *Principles of Radiation Health*, to name a few, as well as associated laboratories (Principles of Radiation Health Laboratory and Advanced Radiochemistry/Nuclear Chemistry Laboratory).

Additionally, the program should continue to flourish through the liaison developed between the university and the consultant from the University of Texas at Austin, Dr. Sheldon Landsberger. Through this collaborative effort, there is an opportunity for the radiochemistry students to train at the University of Texas at Austin, as well as obtain paid internships at various national laboratories or research institutes. Such training at the undergraduate level will aid in creating a continuous supply of well-qualified students into either graduate school or into the nuclear/radiochemistry workforce, such as the U.S. Nuclear Regulatory Commission (NRC).

Given that many students at Florida Memorial must either take out loans or work, hiring two students as lab technicians will provide them the latitude of working within the school and learning at the same time. In this program, they would then receive training on equipment such as the NaI Scintillation counter, the high purity Germanium counter and the  $\alpha$ -spectrometer, which are typically found in research and national laboratories. Further, the two students will learn how to maintain and operate the new and existing equipment/instrumentation.