

## DEVELOPING NEW RADIOCHEMISTRY, HEALTH PHYSICS, AND OTHER NUCLEAR PROGRAMS AT FLORIDA INTERNATIONAL UNIVERSITY

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Florida International University (FIU), a public institution of higher education with over 55,000 students, is a leader in postsecondary education for under-represented minority students. Since 2011 the Applied Research Center along with the Physics, Chemistry & Biochemistry, and Biomedical Engineering Departments have worked to develop multidisciplinary R&D and a new Applied Radiological Sciences degree program. The initial focus is on graduating radiochemists and health physicists, two careers with huge shortages in the US labor force. The US Nuclear Regulatory Commission (NRC) regulates safety of nuclear facilities and it also supports the development education for nuclear science and engineering careers via new nuclear courses, degree programs and the support for STEM students and new faculty. FIU has initiated a unique workforce development program that relies on nuclear expertise of the FIU faculty and staff in: 1) Nuclear Energy with emphasis on closed-cycle nuclear fuel separations; 2) radioactive waste management; 3) environmental remediation of radionuclides and metals; 4) Nuclear Physics; and 5) Nuclear Forensics. FIU has developed 10 new nuclear courses in Chemistry and Physics with NRC funding and is continuing to add nuclear science lessons into other existing STEM courses. An undergraduate FIU Nuclear Scholars (FNS) Program was initiated in 2013 and a graduate FIU Nuclear Fellows (FNF) Program was initiated in 2014 with support from the US NRC. In 2015 a new Radiochemistry Track within the Chemistry Ph.D. Program was approved and students are enrolling for the inaugural Fall 2015 semester.

Over 45 members of the faculty and staff to date have joined the FIU Interdisciplinary Nuclear Research Program. FIU has created an external Nuclear Board of Advisors for Science, Engineering and Medicine composed of world-class nuclear experts from industry, academia, national laboratories, and the U.S. government. FIU has also established the Florida Power & Light Company (FP&L) Distinguished Nuclear Speaker Seminar series with FP&L support. Collaborative teams have brought over a million dollars in new nuclear funding to FIU in the past 3 years. Twelve major nuclear proposals are developed annually for research, education, curriculum development and instrumentation from sources as diverse as: the US NRC; the US Dept. of Energy, the US Dept. of Homeland Security, and the US National Nuclear Security Administration. FIU has a broad radiation license from the State of Florida and continues to increase the breadth of R&D with radioactive materials with over 30 users in over 20 laboratories. New nuclear instrumentation was purchased in 2015 to serve both the nuclear radiation detection and measurements laboratory and several nuclear courses. FIU has over 100 teaming agreements with industry. Two consulting contracts related to nuclear waste expertise are active. It is our vision to collaborate with many leading universities and industry leaders in nuclear sciences to train our large, diverse student body to meet shortages in the nuclear workforce for tomorrow.