

## **The Impact of Human Activities on Radiation in the Environment and Exposure of the Public: Curriculum Development**

### **Executive Summary**

The graduate academic program in the Massachusetts Institute of Technology (MIT) Nuclear Science and Engineering Department currently offers an extensive program in reactor technology, reactor engineering and nuclear fusion, but offers no classes devoted to an understanding of radionuclides in the environment, radionuclide's stemming from human activities, the biological consequences of such radiations, or societal regulations dealing with radiation-producing activities. We also offer no course in nuclear security, nuclear forensics, and the strategies employed or under development for the detection, identification, and consequences of radiological terrorism. We propose here to address this deficiency by the development of three new graduate-level courses. Each course combines lecture presentations with active learning via team projects and/or hands-on experimentation. The ultimate goal of the curriculum development is to educate and train students in those issues having the potential to greatly affect the future expansion of the nation's nuclear energy initiatives: environmental impact, public safety, and nuclear security.

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