

**Presentation at the 51st Annual Health Physics Society meeting in Providence, RI
June 25-29, 2006**

SELECTING USTUR CASES TO TEST ICRP MODELS PROBABILISTICALLY.

B. Timilsina and E.B. Farfan.
Idaho State University, Pocatello, ID 83209

The United States Transuranium and Uranium Registries (USTUR) is an organization studying the distribution, dosimetry, and possible biological effects of heavy radioactive metals such as plutonium, uranium, and americium. USTUR collects data obtained post-mortem from volunteer donors who were exposed to these metals. The main goal of the USTUR is to study the uptake, deposition, translocation, retention, and dosimetry of these metals in humans. This provides data critical to the verification, refinement, or future development of dosimetric models and radiation protection standards for these metals. In this study, USTUR cases involving nuclear weapons grade plutonium are reviewed to determine scenarios, which are the most appropriate for verification and validation of International Commission on Radiological Protection (ICRP) dosimetric models. Testing is performed using probabilistic methods, which are more appropriate when describing the differences in the results from USTUR autopsy data and ICRP models. The methodology considered in this study utilizes probabilistic computer codes based on ICRP models.

USTUR-A0218-06