

## SOCIETY FOR RISK ANALYSIS ANNUAL MEETING 2005

### **T2.4 Using Human Tissue Analysis to Estimate Community Exposures to Historical Releases of Plutonium from Los Alamos National Laboratory.** *Widner T.E., Flack\**

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**Abstract:** A team of scientists and engineers has been reviewing historical documents at Los Alamos National Laboratory since 1999 to extract information relevant to off-site releases. Information collected to date has been used to prioritize past releases of radionuclides and chemicals which are described in the Interim Report of the Los Alamos Historical Document Retrieval and Assessment (LAHDRA) project. Of particular interest are the early years of plutonium processing, when releases were unfiltered and unmonitored. Historical measurements of plutonium in tissue samples from non-worker residents of the Los Alamos area were evaluated as indicators of the potential magnitude of airborne plutonium releases. The ratio of deposited plutonium in the lung vs. that in the vertebrae was calculated for 97 non-LANL-worker residents. 24 individuals were easily identified from cemetery records and published death notices. Local phone directories were used to establish the range and bearing from LANL release points along with the years of occupancy at each residence. Project-team evaluation of data from the 35-year autopsy program conducted by LANL suggests that excess plutonium is present in non-worker residents of Los Alamos over what would be expected from global fallout from nuclear weapons testing. This research was performed under contract to CDC's Radiation Studies Branch.