

# 729<sup>th</sup> ASRC Seminar

Time/Date : 10:30~12:00 Thu., Sep 27  
Location : 103 Meeting Room, ASRC Bldg.

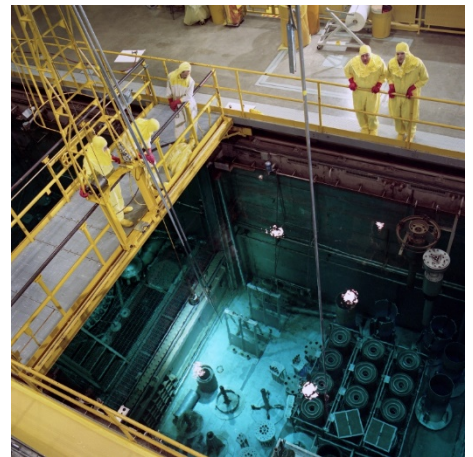
Speaker : Dr. Rose Ann Boll  
(Oak Ridge National Laboratory)

Title : *Production of Transcurium Elements and Medical (TAT) Isotopes at ORNL*

## Abstract:

Oak Ridge National Laboratory has been providing radioisotopes for research and industry for almost seventy years. With the construction and commissioning of the High Flux Isotope Reactor in 1965, production of transcurium elements became possible. Today ORNL can provide milligram quantities of Cf and Bk as well as microgram quantities of Es. This presentation will discuss the production of these elements involving curium target fabrication, irradiation, dissolution, chemical separation, and analysis. A process that takes significant amounts of expertise, planning, coordination, equipment, and over one year to complete.

Medical isotopes for use in Targeted Alpha Therapy (TAT) are also produced and purified at ORNL. TAT is based on the attachment of alpha emitters to carrier molecules. These carrier molecules have the ability to selectively attach to antigens on cancer cells. Once the carrier molecule is linked to the cell antigen, the emitted alpha particle can destroy the cancer cell. Actinium-225 is currently being used in clinical research worldwide for treatment of various cancers such as leukemia, glioblastoma, and metastasized prostate cancer. The second part of the seminar will discuss targeted alpha therapy and actinium production and purification.



<Contact>

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