

## How can researchers request the tissues and data?

The unique materials from the USTUR/NHRTR are available to reputable investigators for scientific research purposes. Scientific investigators may request, in writing, tissues or tissue samples from the NHRTR for legitimate research purposes.

Investigators must agree to maintain privacy of the registrants and to follow all ethical human subjects considerations and legal requirements as well as the published policies of the Registries. If available, the Registries will provide the most suitable tissue requested (e.g. frozen, formalin-fixed, or dried) for study. The only stipulations are that the Registries be acknowledged as the source of the samples, radiochemical analysis, or other data used in scientific proposals or manuscripts submitted for publication, and that a USTUR faculty member be included as a coauthor if previously unpublished data generated by the USTUR are included in a manuscript. Scientific collaboration with the USTUR is encouraged as appropriate.

## Where are the NHRTR materials kept?

The NHRTR is located in a modern laboratory research facility in Richland, Washington.

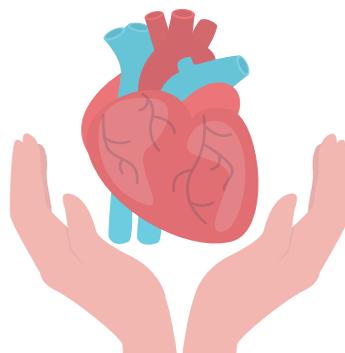


The facility includes an autopsy room and a radiochemistry laboratory for tissue preparation and analysis. Tissue samples are vacuum-packed and stored frozen at -30° or -70° C.

## For more information

about the United States Transuranium and Uranium Registries please contact:

Sergey Y. Tolmachev, PhD  
Professor and Director  
US Transuranium and Uranium Registries  
Washington State University  
College of Pharmacy and Pharmaceutical Sciences  
1845 Terminal Drive, Suite 201  
Richland, WA 99354  
Phone: 509-946-6870  
or toll-free 1-800-375-9317  
Email: [stolmachev@wsu.edu](mailto:stolmachev@wsu.edu)  
Web: [ustur.wsu.edu](http://ustur.wsu.edu)



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## United States Transuranium and Uranium Registries & National Human Radiobiology Tissue Repository



Learning from plutonium and uranium workers



WASHINGTON STATE UNIVERSITY  
**College of Pharmacy and  
Pharmaceutical Sciences**

[ustur.wsu.edu](http://ustur.wsu.edu)

## The USTUR

The United States Transuranium and Uranium Registries (USTUR) is a federal-grant program funded by the US Department of Energy Office of Domestic and International Health Studies. Established in 1968 and operated by the College of Pharmacy and Pharmaceutical Sciences at Washington State University since 1992, the USTUR was designed as a research program to improve radiation protection of nuclear workers. It studies the biokinetics and internal dosimetry of incorporated actinide elements such as plutonium, americium, and uranium in occupationally exposed workers and individuals medically exposed to Thorotrast. Tissues are obtained from voluntary donors (registrants) who have authorized the Registries to obtain their individual medical and radiation exposure records for research purposes and to collect tissue samples posthumously. More than 340 individuals have donated tissue to the program.

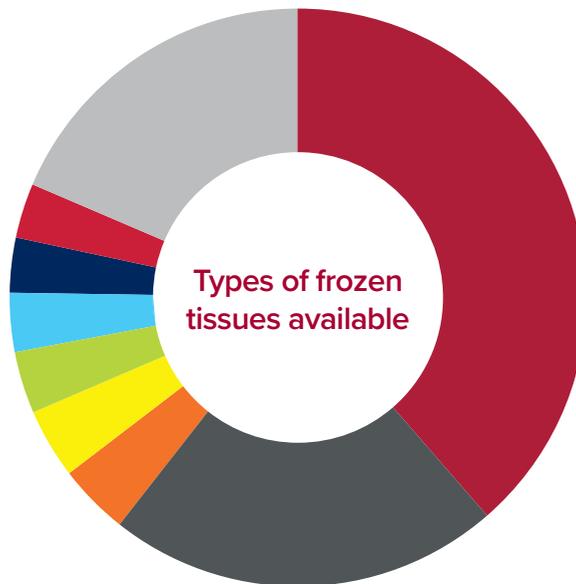
## Is information available about the cases?

Information on each registrant such as radiation exposure history, work history, bioassay and measurement results, chemical exposures, smoking history, cause of death, and results of radiochemical tissue analysis is available. Exposure and medical histories are available for the majority of the cases from whom tissues or related materials have been obtained. However, the identity of all cases is strictly protected and confidentiality is maintained in accordance with legal and ethical requirements.

## What kinds of human tissues have been collected?

The USTUR receives, preserves, and catalogs each organ and bone from whole-body donors as well as selected tissue and organ samples from partial-body donors. Samples are typically stored in a frozen state; however, the Registries also houses formalin-fixed tissues, paraffin embedded tissue blocks, and histopathology slides, as well as acid solutions from previously analyzed samples.

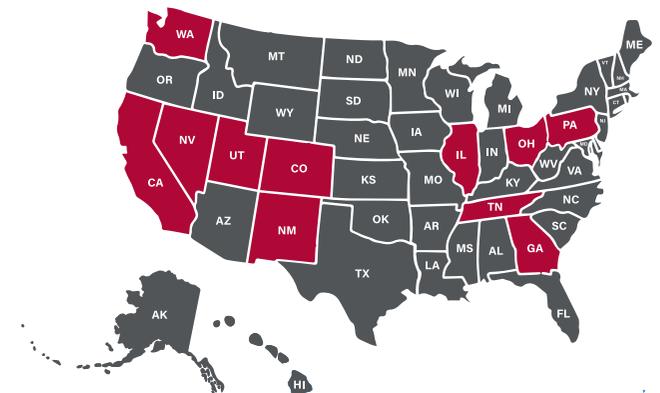
Currently, the NHRTR holds more than 10,000 frozen and formalin-fixed tissue samples from approximately 50 whole- and 120 partial-body USTUR donors (see figure below), and approximately 7,000 acid-digested tissue samples. A wide range of tissues is available including samples from the bone, lung, lymph node, liver, kidney, and brain.



- Skeletal (39%)
- Muscle, skin, fat (22%)
- Circulatory (4%)
- Alimentary (4%)
- Nervous (2%)
- Respiratory (3%)
- Gland (3%)
- Lymph nodes (3%)
- Other (19%)

## The NHRTR

The National Human Radiobiology Tissue Repository (NHRTR) is a human tissue collection associated with the Registries. The NHRTR is comprised primarily of tissues obtained at autopsy from USTUR registrants; however, it also houses materials from the historical plutonium injection studies and as well as a large volume of materials from the radium studies, which were originally carried out by Argonne National Laboratory/Argonne Cancer Research Hospital, the Massachusetts Institute of Technology, and the New Jersey Radium Research Project. These materials include frozen, ashed, plastic-embedded, dried, and/or paraffin-embedded bone and tissue samples, as well as histopathological slides. These unique collections of tissues, records, and related materials are available to other researchers studying radiation effects, cancer, and other biological phenomena.



■ Registrant Worksites