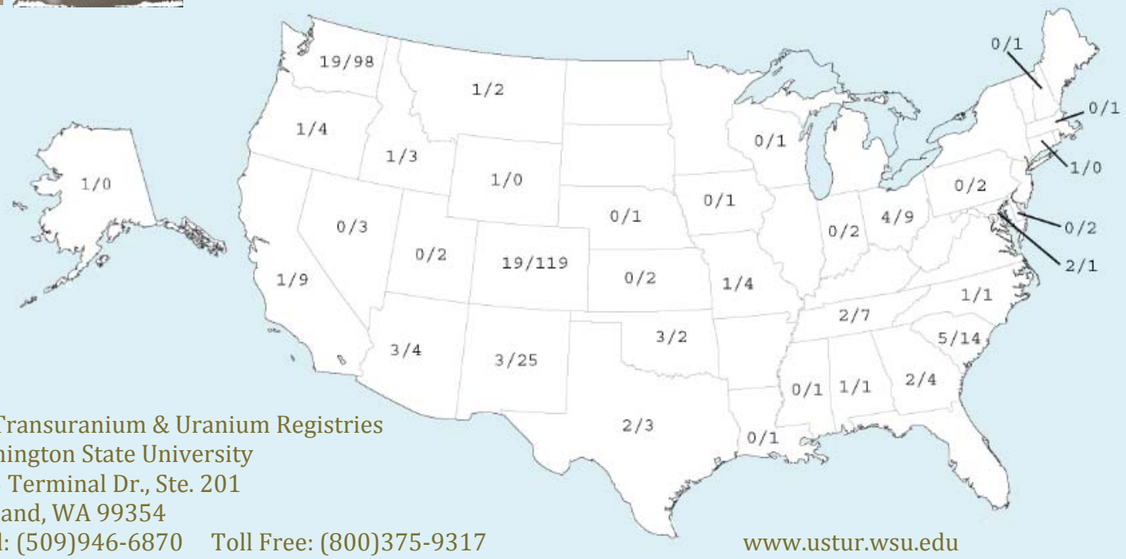
Did you know?

The Registries have **74 current** and **330 deceased** Registrants. The distribution of our Registrants is illustrated on the map. The first number for each state represents 'current' Registrants, and the second 'deceased.' We also have limited data from 12 individuals who did not participate in the autopsy program.



U.S. Transuranium & Uranium Registries
Washington State University
1845 Terminal Dr., Ste. 201
Richland, WA 99354
Local: (509)946-6870 Toll Free: (800)375-9317
www.ustur.wsu.edu

Website

Since May 2010, **3,512 individuals** from **69 countries** have visited the USTUR's website. The top five countries that these visitors originated from are the United States, Brazil, Germany, Japan, and Canada.

Accessed through flagcounter.com

in this photo >>>

Front: David McLain (WSU Nursing student/part-time USTUR), Sergei Tolmachev, Stacey McCord. Back: Chris Nielsen (PNNL), Margo Parker, Fred Miller, Florencio Martinez (part-time USTUR), Lorena Parra. Not Pictured: Shannon Bedell (Central Washington University student/part-time USTUR).

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the USTUR Newsletter

in this issue >>>

Direct from the Director

Greetings from Richland! I am pleased to report that the USTUR received no new budget cuts during 2011 and anticipates none for 2012. Although our budget remains tight, we will continue to move forward, making the most of the funding that we have been granted. We are excited to welcome our newly-hired health physicist, Maia Avtandilashvili, and we anticipate hiring a laboratory technician within the next few weeks. In addition, I am pleased to announce that the USTUR Radiochemistry Program has begun routine tissue samples analyses. However, due to staffing constraints, sample analysis throughput is currently limited.

Another bit of news is that WSU's Office of Marketing and Creative Services identified the USTUR Laboratory as a "*unique facility that is available to the students at WSU*".

Our scientific research and collaborations remain strong. I am particularly enthusiastic about Chris Nielsen's research on the microdistribution of plutonium nitrate in the respiratory tract. At an international level, we have worked closely with scientists from the European Radiation Dosimetry Group. In 2011, USTUR members authored one, and co-authored three scientific papers published in peer-reviewed journals. This newsletter will share the science that is being accomplished through collaborative work with local and international scientists, as well as introduce you to new faces at the USTUR.

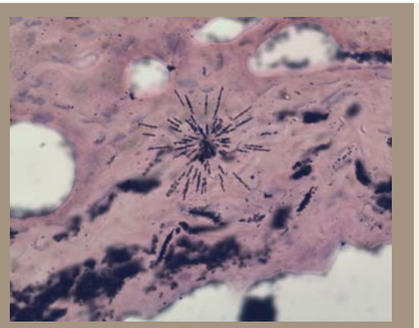
There is a note of sadness from the passing of Dr. Anthony C. James, the USTUR's retired director, who was a world-class scientist in the field of internal dosimetry.

I simply cannot say how indebted we are to our Registrants and their family members. It is my privilege and honor to express my gratitude to every person who participates in the USTUR's research, and to wish all of you a successful, healthy, and happy 2012!

Dr. Sergei Tolmachev

WSU Student Studies Microdistribution of Plutonium in Lungs

WSU Environmental Sciences student, **Chris Nielsen**, has employed a combination of histopathological stains and autoradiography to study the microdistribution of plutonium nitrate in the lungs of a USTUR Registrant. Mr. Nielsen's work found that 38 years post-intake, the retained Pu had congregated as "stars" that were predominantly located in the pleura. Mr. Nielsen's Master's thesis study titled, "An Analysis and Comparison of the Microdistribution and Long-Term Retention of $^{239}Pu(NO_3)_4$ in the Respiratory Tracts of a Hanford Worker and Experimental Beagles" was successfully defended in January 2012. He will submit his findings for publication in a peer-reviewed journal. Mr. Nielsen was employed by the Pacific Northwest National Laboratory (PNNL), Richland, WA, and is a member of Dr. Bill Morgan's Radiation Biology and Biophysics research team.



Plutonium encapsulated within sub-pleural connective scar tissue emits α particles in a "star" pattern, seen when the autoradiography film was developed. Black cigarette residues can also be seen in the surrounding

The European Radiation Dosimetry Group

An International Collaboration

The USTUR is continuing to collaborate with scientists from the European Radiation Dosimetry Group (EURADOS). In 2011, USTUR staff attended both the annual EURADOS meeting and the Internal Dosimetry Working Group's plenary meeting. The outcome of this collaboration includes:

- Intercomparison of ^{241}Am in-vivo counting systems in Europe and Canada using the **USTUR 0102 leg phantom**. This resulted in 2 scientific papers.
- Initiation of a second intercomparison study using the **USTUR 0102 skull phantom**. Thirteen in-vivo monitoring laboratories from 11 countries are interested in participating in this study.
- **Dr. Bastian Breustedt**'s 6-month sabbatical at the USTUR. Dr. Breustedt, of the Karlsruhe institute of Technology (KIT), studied the effects of DTPA chelation therapy in americium exposed Registrant 0846.

※ The **USTUR 0102 leg phantom** consists of tissue-equivalent plastic in the shape of a life-sized leg. Embedded in this plastic are the leg, foot, and ankle bones from the USTUR's first donor. The phantom is used to calibrate detectors.

With Great Sadness...

This year, the Registries lost a dear friend and past director, **Dr. Anthony C. James** (1943-2011). Dr. James worked with the Registries from 1994-1995, was an adjunct professor from 2001-2004, and was director from 2005 until his retirement in 2010. During his distinguished career, Tony made numerous scientific contributions in the field of radiation protection. These include studies on the biokinetics of plutonium in rats (his PhD work), radon, plutonium biokinetics in humans, the effects of chelation therapy, and contributions to the development of the IMBA software (Integrated Modules for Bioassay Analysis). Tony's enthusiasm was inspiring and he will be missed both as a friend and as a colleague.

New Faces at the USTUR!

Health Physicist

In January 2012, **Maia Avtandilashvili** joined the USTUR as a research associate. She received her PhD in Health Physics from Idaho State University in December. Maia's research utilized USTUR's data to validate proposed revisions to the International Commission on Radiation Protection (ICRP) human respiratory tract model. This involved modeling the translocation of "high-fired" PuO_2 in two USTUR Registrants who had been exposed during a fire.

Scientific Advisory Committee

Dr. Richard Toohey has accepted a 3-y term as a health physics representative on our Scientific Advisory Committee. Dr. Toohey currently manages the Oak Ridge Associated Universities (ORAU) Health Physics Services and Professional Training Programs. He is a fellow member and past President of the Health Physics Society; a member and a director of the National Council on Radiation Protection and Measurements (NCRP); the Treasurer of the International Radiation Protection Association (IRPA); and a consultant to the International Atomic Energy Agency (IAEA) on internal dosimetry. He has been a certified health physicist since 1992, and has thirty-five years of experience in internal radiation dosimetry and bioassay.

Fiscal Technician

In May 2011, **Margo Parker** joined the USTUR as a fiscal technician. Margo has over 20 years experience in providing support to various higher education programs, including Washington State University, University of Washington, and Central Washington University. We are excited to have her on staff!

THANK YOU to our Registrants and their Families!

Best Wishes for 2012

Advisory Committee Member Retires

In January 2011, **Bob Thomas** retired from the Scientific Advisory Committee (SAC). Dr. Thomas served as a SAC member for more than 13 years, enriching the program with his wisdom and experience. Thank you Bob for your service to the USTUR!