

# NEWSLETTER USTUR

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## DIRECT FROM THE DIRECTOR

Dear Registrants and Families.

This is a time of the year when I have an opportunity to tell you about the USTUR's activities and achievements.

This year continued to be challenging due to coronavirus pandemic. However, after 18 months working from home and reduced laboratory operations, we returned to normal activities and operations in July. Upon return, we submitted the U.S. DOE grant to manage and operate the Registries for the next 5 years (April 1, 2022 – March 31, 2027) with a request for about a 10% funding increase. If approved, this will allow us to keep up with inflation and bring stability to the Registries in the coming years.

During 2021 alone, 7 papers were published in scientific journals and 13 presentations were given. Specifically, I would like to highlight two papers. Martin Šefl received an award from the Czech Society for Radiation Protection for the best work written by a young scientist in the field of radiation protection for the paper "Inhalation of Soluble Plutonium: 53-year Follow-up of Manhattan Project Worker". Additionally, our collaborative research with Los Alamos National Laboratory "Regional Retention of Plutonium in the Respiratory Tract of Four Acutely-exposed Workers can be Described using Scar-tissue Compartments" has been nominated by the Health Physics Society for the International Radiation Protection Association's 2022 North American Regional Congress Young Scientists and Professionals Award.

The USTUR's research continued to contribute to the National Council on Radiation Protection and Measurements (NCRP). Scientific data and knowledge generated by the Registries were used in NCRP Commentary 31 "Development of Kinetic and Anatomical Models for Brain Dosimetry for Internally Deposited Radionuclides". This year, the USTUR expended its scientific involvement in NCRP research activities. Maia Avtandilashvili was appointed as a member of newly established NCRP Scientific Committee "Methods and Models for Estimating Organ Doses from Intakes of Radium".

More details about Registries progress and discoveries are included elsewhere in this Newsletter. Our thanks go out to you and we wish you a happy holiday season!

~ Sergei Tolmachev ~

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**U.S. Transuranium and Uranium Registries**

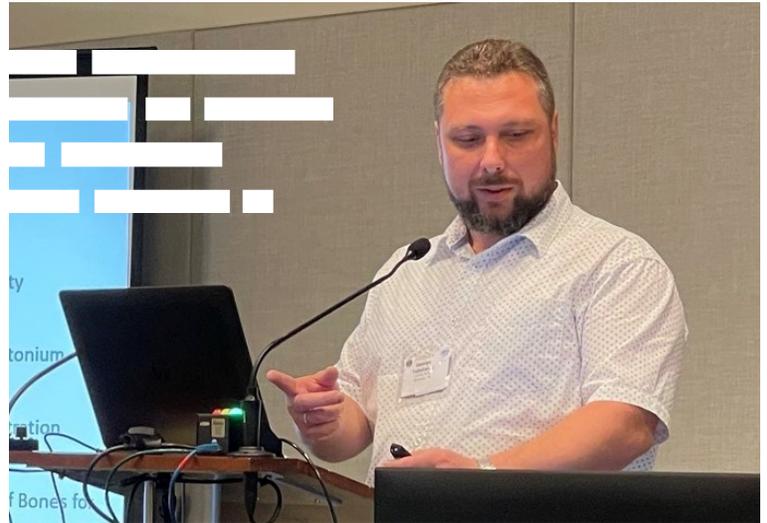
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## LEARNING FROM PLUTONIUM AND URANIUM WORKERS

During 2020, COVID restrictions meant that USTUR staff largely worked from home, and many scientific conferences were cancelled. Indeed, this slowed down certain operational aspects of the Registries, such as analyzing tissues for actinides. However, it also provided an unexpected opportunity to focus on research involving existing data. During 2021, seven papers were published in scientific journals, and seven more were being prepared for submission. Eight of the 14 total papers will have a USTUR faculty member as the lead author. Additionally, scientific conferences have resumed using virtual, in-person, or hybrid formats. This year, USTUR faculty have been authors on 13 presentations at five conferences.



*George Tabatadze at the Health Physics Society's Annual Meeting*

## A BIG Thank You to our Registrants and their families!

Papers and presentations are just two of the ways that we are making sure that what we learn from Registrant donations continues to inform modern research and practices in radiation safety. USTUR faculty are also members of various committees where USTUR research can be applied in the local community, as well as at national and international levels.

## SEVEN PAPERS PUBLISHED IN 2021

- \* Avtandilashvili and Tolmachev. Four-decade follow up of plutonium contaminated puncture wound treated with Ca-DTPA.
- \* Boice et al. A million persons, a million dreams: A vision for a national center of radiation epidemiology and biology.
- \* Martinez et al. Radium dial workers: Back to the future.
- \* Poudel et al. Long-term retention of plutonium in the respiratory tracts of two acutely-exposed workers: Estimation of bound fraction.
- \* Poudel et al. Modeling the long-term retention of plutonium in the human respiratory tract using scar-tissue compartments.
- \* Šefl et al. Inhalation of soluble plutonium: 53-year follow-up of Manhattan Project worker.
- \* Šefl et al. Plutonium in Manhattan Project workers: Using autopsy data to evaluate organ content and dose estimates based on urine bioassay with implications for radiation epidemiology.

## 13 PRESENTATIONS: 5 MEETINGS

- 7 Health Physics Society Annual Meeting
- 3 Health Physics Society Midyear Workshop
- 1 Annual American Public Health Association Meeting
- 1 Days of Radiation Protection (Czech Republic)
- 1 WSU College of Pharmacy and Pharmaceutical Sciences Research Day

## COMMITTEE MEMBERSHIP: A FEW EXAMPLES

### 01 U.S. Department of Energy Russian Health Studies

Sergei Tolmachev is an ad-hoc member of the scientific review group for Project 2.8: Mayak Worker Tissue Repository. This repository holds tissues from workers who were employed at the former Soviet Union's first nuclear weapons production facility.



S. Tolmachev

### 02 National Council on Radiation Protection and Measurements

Sergei Tolmachev and Maia Avtandilashvili contribute to several NCRP committees, which provide guidance on topics including: meeting the needs of the nation for radiation protection (ST), methods and models for estimating organ doses from intakes of radium (MA), and the development of models for brain dosimetry from internally incorporated radionuclides (ST, MA). The commentary on brain dosimetry will be published next year.



M. Avtandilashvili

### 03 Herbert M. Parker Foundation

Sergei Tolmachev and George Tabatadze serve on the Board of Trustees for the Parker Foundation. The Parker Foundation enhances public understanding of science and technology through outreach, education, and semi-annual public lectures. Dr. Tabatadze will be the general chair starting April 2022.



G. Tabatadze

### 04 Hanford Advisory Committee Board

Daniel Strom is a member of the Hanford Advisory Board, which provides "informed recommendations and advice to the U.S. Department of Energy (DOE), the U.S Environmental Protection Agency (EPA), and the Washington Department of Ecology (Ecology) on selected major policy issues related to the cleanup of the Hanford site."

Source: <https://www.hanford.gov/page.cfm/hab>



D. Strom

## USTUR RESEARCHER INTERVIEWED BY HEALTH PHYSICS SOCIETY



*Maia Avtandilashvili on research vessel*

Maia Avtandilashvili, a Research Assistant Professor at the USTUR, was interviewed by the Health Physics Society's (HPS) Public Information Committee for an article on their women in radiation protection website. Dr. Avtandilashvili is an integral part of the USTUR's research team, which she joined in 2012. She has published many interesting papers on the movement of actinides within the human body, and their deposition in organs and tissues. Dr. Avtandilashvili grew up in Tbilisi, the capital city of the Republic of Georgia. Prior to joining the USTUR team, Dr. Avtandilashvili worked at the Radiocarbon and Low-level Radioactivity Laboratory at Tbilisi State University. She

also had the opportunity to spend time on board a

research vessel in the North and Baltic Seas as a part of an International Atomic Energy Agency (IAEA) fellowship. While there, she worked with a team to collect environmental samples for radioactivity measurements. To read the full article and learn more about USTUR activities, visit our news page: [ustur.wsu.edu/news/](http://ustur.wsu.edu/news/)

## URINE SAMPLING REQUEST

Last year's newsletter mentioned that the USTUR plans to ask each living Registrant to submit a urine sample to the Registries. The urine samples would help us with our efforts to refine existing models and/or develop new models that will give radiation protection personnel the best possible tools for protecting future workers. Last September, the Central Department of Energy Institutional Review Board approved our plans to request urine samples and have them analyzed for actinides such as plutonium, americium, and uranium. We recently received bottles for the urine collection kits, and anticipate mailing additional information about this effort to our living Registrants in 2022.

Did you  
Know ?

Did you know that the Health Physics Society has an Ask the Experts page where members of the public can ask questions about radiation safety? The HPS has many topic editors representing 21 diverse categories of radiation protection, such as: consumer products, medical and dental patient issues, and security screening. Each question is directed to the appropriate topic editor and/or one of over 300 additional subject matter experts. Questions are personally answered by email. Many common questions and answers have been published to the site. These can be browsed by category or accessed using the "search" feature. [hps.org/publicinformation/ate/](http://hps.org/publicinformation/ate/)