

The Role of the Scientific Review Group in the Russian Health Studies Programs: Key Contributions, Influence and Impact on Radiation Protection (US SRG)

RHSP – Celebrating 30 Years of Scientific Achievements



**Nolan E. Hertel,
Co-Chair, U.S.
Scientific Review
Group**

Scientific Review Group Purpose

- **Projects conducted under the auspices of the JCCRER were reviewed by independent United States and Russian Scientific Review Groups (SRG) over the course of the program**
- **The primary purpose of the SRGs was to critically review and evaluate technical progress reports and proposals and recommend research priorities to U. S. Department of Energy (DOE) and Federal Medical Biological Agency (FMBA)**

U. S. Scientific Review Group, Co-Chair



Nolan E. Hertel, Ph.D., P.E.

**Professor Emeritus of Nuclear and
Radiological Engineering**

Georgia Institute of Technology

- Radiation Protection Dosimetry
- Computational External Radiation Dosimetry
- Radiation Transport and Shielding

U. S. Scientific Review Group, Member



William Griffith, Ph.D.

**Senior Research Scientist
Director of Biostatistics, Institute for
Risk Analysis and Risk Communication
University of Washington**

- Biostatistics for Inhalation Toxicology
- Distribution of Internal Emitters

U. S. Scientific Review Group, Member



Benjamin French, Ph.D.

Professor of Biostatistics

**Vanderbilt University Medical
Center**

- Radiation epidemiology and biostatistics
- Longitudinal and survival data analysis
- Analysis of observational studies

U. S. Scientific Review Group, Member



Derek Jokisch, Ph.D., CHP

**Chair, Department of Physics and
Engineering**

Professor, Physics

Francis Marion University

- Radiation Protection
- Computational Dosimetry
- Dosimetry Of The Skeleton
- Internal Dosimetry

U. S. Scientific Review Group, Member



Roy Shore, Ph.D., Dr. PH

**Professor Emeritus, Epidemiology Division,
New York University Grossman School of
Medicine**

**Vice Chairman and Chief of Research,
Radiation Effects Research Foundation 2005-
2015**

- Radiation effects on both cancer and noncancer disease incidence
- Epidemiologic and biological modification of radiation effects by various environmental, genetic and age factors

U. S. Scientific Review Group, Ex-Officio Member



Sergey Tolmachev, Ph.D.

**Professor & Director
U.S. Transuranium and Uranium
Registries
Washington State University**

- Actinide radiochemistry and measurements
- Internal dosimetry of actinides
- Human tissue repository

U. S. Scientific Review Group Former Members

Harold Beck

Bruce Boecker

Scott Davis

Marvin Goldman

Jeffrey Howe

William Morgan

John Poston, Sr.

Michael Ryan

David Rush

Jonathan Samet

Peter Shields

John Till

Rod Withers

Lydia Zablotska

U.S. Scientific Review Group

- **Review the progress reports of the ongoing projects and provides feedback to the research teams**
 - Usually met twice in a year following closely to the date of the submission of the investigator progress reports
 - Provided written summary of progress report reviews with questions and comments for investigators
 - Reviewed the responses to any questions from the previous SRG meeting
 - Invited U.S. Investigators to make presentations at these meetings at least once a year
- **Provides evaluations of research proposals to DOE**
- **Provided input to the strategic plan for future work (5-year plans)**

Joint Meetings of Russian and US SRGs

- **June 2013 – SUBI and URCRM**
- **May 2014 – Exploratory visit, Siberian Chemical Combine (Seversk)**
- **Attendance at select JCCRER meetings**
 - Moscow 2008
 - San Francisco 2012
 - St. Petersburg 2013 – /SRG Review of research concepts

Impact of SRG: Mayak Worker Cancer Mortality

- Encouraged the development of a statistical approach that incorporated both individual and shared uncertainties which helped to advance the state of epidemiologic data analysis
- Emphasized importance of obtaining individual data on cancer risk factors (smoking, alcohol, socioeconomic status)
- Encouraged and supported efforts to develop a unified database for the epidemiological, clinical, and dosimetric data
- Encouraged efforts to assess the quality of the cause of death and cancer diagnosis coding

Impact of SRG: Mayak Worker Dosimetry

- Encouraged a path to completion of the study using existing data when the Mayak Production Association did not re-engage in the dosimetry study
- Suggested use of a mixed-effects model to evaluate the data on EDTA-enhanced excretion
- Encouraged the development and evaluation of a job-exposure-matrix (JEM) to estimate plutonium exposures for those without plutonium measurements, to permit improved epidemiologic assessments of plutonium-related health effects

Impact of SRG: Mayak Worker Dosimetry

- Encouraged comparisons of the multiple internal dosimetry computer codes being used to demonstrate results are compatible
- Encouraged the Project team to resurrect and build on an earlier idea of creating an artificial cohort to scientifically test the whole process of the new dosimetry reconstruction process
- Encouraged the addition of Am ingrowth in internal dosimetry

Impact of SRG: Techa River Population Cancer Morbidity and Mortality

- **Emphasized importance of obtaining individual data on cancer risk factors (smoking, alcohol, socioeconomic status)**
- **Advocated review and more realistic determination of individual dose uncertainties for the epidemiologic analyses**
- **Supported enlargement of the cohort by adding East Urals Radioactive Trace and *in utero* exposed individuals**
- **Encouraged efforts to assess the quality of the cause of death and cancer diagnosis coding**

Impact of SRG: Techa River Population Dosimetry

- **Support for continued Whole Body Counter Operations**
- **Discouraged study of radon background for lower Techa River**
- **Provided advice on skeletal dosimetry**

Impact of SRG: Human Radiobiology Tissue Repository

- **Encouraged increased dissemination of information about the availability of the human biological samples for scientific studies**
 - Advertised in multiple journals
 - Website created with a user interface which was a real time catalog of tissues and other specimens that users could peruse

Impact of SRG: General

- **Promoted interactions between dosimetry teams and epidemiological/biostatistical teams**

The Future

The U.S. SRG looks forward to

- **Appropriate archiving of data with respect to propriety constraints with the hope that the collaboration can be restarted in the future**
- **The final report summarizing the 30 years of scientific effort**
- **Additional publications**

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