

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

NUCLEAR AND RADIATION STUDIES BOARD
Thirty-Ninth Meeting: December 14, 2021

PUBLIC AGENDA
(DRAFT: December 6, 2021)

All times are EST.

This meeting will be conducted ON-LINE with REMOTE ACCESS ONLY.

THIS MEETING WILL BE RECORDED.

Tuesday, December 14, 2021 (All times are ET.)

PUBLIC SESSION 1

Click [here](#) to register and obtain a personal link to the webinar.

10:00 AM – 12:00 PM [The Sixth Gilbert W. Beebe Webinar: Tracking Radiation Doses from Medical Diagnostic Procedures](#)

PUBLIC SESSION 2

OPEN SESSION connection details:

<https://nasem.zoom.us/j/93596077984>
Meeting ID: 935 9607 7984

Or iPhone one-tap :

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2:00 pm

Call to Order and Welcome to NRSB's Open Session
William H. Tobey, NRSB Chair

- 2:05 pm** ***Overview of DOE Climate Action Plan and implications/plans for EM sites***
[Betsy Forinash](#), Director, Office of Infrastructure Management and Disposition Policy (EM-4.1), Office of Environmental Management, U.S. Department of Energy (confirmed)
- 2:25 pm** ***Assessment of Climate Vulnerabilities at LM sites***
[David Shafer](#), Technical Director, Office of Legacy Management, Office of Environmental Management, U.S. Department of Energy (confirmed)
- 2:45 pm** **Q&A with NRSB's Board and Staff**
- 3:10 pm** ***Cyber Attacks and Nuclear Weapons***
[Herbert Lin](#), Ph.D., Senior Research Scholar at the Center for International Security and Cooperation, Stanford University and Hank J. Holland Fellow in Cyber Policy and Security, Hoover Institution (confirmed)
- 3:30 pm** **Q&A with NRSB's Board and Staff**
- 3:45 pm** ***Revision of the Current System of Radiological Protection by the ICRP***
[Werner Rühm](#), Head, Helmholtz Zentrum München, Munich (HZM) (confirmed)
- 4:05 pm** **Q&A with NRSB's Board and Staff**
- 4:30 pm** **Adjourn Open Session**

Click [here](#) to find more information about the Nuclear and Radiation Studies Board's members, staff, mission statement, and studies.

Speaker Biographies

[Betsy Forinash](#), Director, Office of Infrastructure Management and Disposition Policy (EM-4.1), Office of Environmental Management, U.S. Department of Energy

Betsy Forinash is the Director for Infrastructure Management and Disposition Policy in the U.S. Department of Energy's (DOE's) Office of Environmental Management. Her current role is focused on environmental remediation, facility decommissioning, and long-term stewardship at DOE sites. At DOE, Betsy previously led programs related to radioactive waste management and disposal. Prior to DOE, she spent 15 years in regulatory and oversight programs at the U.S. Environmental Protection Agency (EPA), including the Waste Isolation Pilot Plant and Yucca Mountain nuclear waste repositories, radioactive air emissions, contaminated site clean-up, naturally-occurring radioactive materials, and radiological emergency preparedness. She also worked for five years at the OECD Nuclear Energy Agency, based in Paris, with international expert groups on strategic and technical aspects of radioactive waste disposal. Betsy holds a BS degree from Duke University and an MS from Northwestern University, both in civil engineering.

David Shafer, Technical Director, Office of Legacy Management, Office of Environmental Management, U.S. Department of Energy

As of July 18, 2021, Dr. David Shafer was promoted to the position of Technical Director of LM from Deputy Director of Field Operations. In his new position, David will focus on incorporating results of science and technology development into LM's long-term surveillance and maintenance efforts and other activities; enhance its collaborations with laboratories, universities, and other agencies; and oversee LM's international programs. He works out of the LM Operations Center at Westminster, Colorado. Shafer joined LM in 2011, first as the supervisor of the Uranium Mill Tailings Radiation Control Act /Nevada Offsites Environment Team and the Grand Junction, Colorado, office manager. He has also been the supervisor of the Asset Management Team, and the director of the Office of Business Operations. Before joining LM, Shafer was an associate research professor at the Desert Research Institute (DRI)—the nonprofit environmental research division of the Nevada System of Higher Education. At DRI, he managed a research program in partnership with DOE and established and managed the Center for Environmental Remediation and Monitoring. In addition to his research for DOE, he also developed research projects and programs for the U.S. Department of Defense, the National Oceanic and Atmospheric Administration, the National Science Foundation, and universities and national labs in China and Australia. His work experience includes a previous stint with DOE from 1989 to 1998 in the former Office of Environmental Restoration, Southwest Area Programs of Environmental Management, and two years as the vadose zone program manager at the Hanford Site in Washington state. He was on the faculty of Colgate University (1984 and 1985) and was a seasonal ranger for the U.S. National Park Service from 1981 to 1988. He earned his doctorate degree in geosciences and quaternary sciences at the University of Arizona in 1989.

Herbert Lin, Ph.D., Senior Research Scholar at the Center for International Security and Cooperation, Stanford University and Hank J. Holland Fellow in Cyber Policy and Security, Hoover Institution

Dr. Herb Lin is senior research scholar for cyber policy and security at the Center for International Security and Cooperation and Hank J. Holland Fellow in Cyber Policy and Security at the Hoover Institution, both at Stanford University. His research interests relate broadly to policy-related dimensions of cybersecurity and cyberspace, and he is particularly interested in the use of offensive operations in cyberspace as instruments of national policy and in the security dimensions of information warfare and influence operations on national security. In addition to his positions at Stanford University, he is Chief Scientist, Emeritus for the Computer Science and Telecommunications Board, National Research Council (NRC) of the National Academies, where he served from 1990 through 2014 as study director of major projects on public policy and information technology, and Adjunct Senior Research Scholar and Senior Fellow in Cybersecurity (not in residence) at the Saltzman Institute for War and Peace Studies in the School for International and Public Affairs at Columbia University; and a member of the Science and Security Board of the Bulletin of Atomic Scientists. In 2016, he served on President Obama's Commission on Enhancing National Cybersecurity. Prior to his NRC service, he was a professional staff member and staff scientist for the House Armed Services Committee (1986-1990), where his portfolio included defense policy and arms control issues. He received his doctorate in physics from MIT.

Werner Rühm, Head, Helmholtz Zentrum München, Munich (HZM)

Werner Rühm leads the Medical and Environmental Dosimetry Group at the Helmholtz Center Munich, Institute of Radiation Medicine, Germany. In addition he is professor at the Medical Faculty of the University of Munich. Dr. Rühm has been a member of Committee 1 (C1) of the International

Commission on Radiological Protection (ICRP) since 2005. He served as C1 Secretary from 2012 to 2016, and has continued as C1 Chair since 2016. He was a member of ICRP Task Group (TG) 83 (Protection of Aircraft Crew Against Cosmic Radiation Exposure), and is currently chairing ICRP TG91 on Dose and Dose-Rate Effectiveness Factor, and of ICRP TG115 on Risk and Dose Assessment for Radiological Protection of Astronauts. Since 2005 he has served as Editor-in-Chief of the Radiation and Environmental Biophysics Journal. From 2014 – 2020 he was Chair of the European Radiation Dosimetry Group (EURADOS), and in 2020 he was elected Chair of the German Radiation Protection Commission (SSK). In 2020 Werner Rühm was elected by the German Federal Parliament and the Federal Council of Germany as a member of the National Civil Society Board, and in 2021 he was elected Chair of ICRP. Werner Rühm has published on various topics including quantification of neutron exposure of atomic-bomb survivors, cosmic-ray exposure of air crew, the role of neutrons in risk assessment of atomic-bomb survivors, risks from low dose low-dose-rate exposures, behavior of radionuclides in the environment, internal exposures from incorporated radionuclides, and radiation measurement techniques.