

Monday, April 19, 2021

Opening Session

- 10:00 am **Singing of the National Anthem**
Kimberly Jordan
U.S. Nuclear Regulatory Commission
- 10:05 am **NCRP Welcome**
Kathryn D. Held
President, NCRP
- 10:20 am **Introduction**
Jacqueline P. Williams
University of Rochester Medical Center
Cary J. Zeitlin
NASA Johnson Space Center Program Co-Chairs

Seventeenth Annual Warren K. Sinclair Keynote Address

- 10:30 am **Introduction of the Speaker**
Kathryn D. Held
- Perception of Radiation Risk from the Astronaut Office**
Serena M. Auñón-Chancellor
NASA Johnson Space Center

Flight Environments & Combined Stressors

Mark Shavers & Cary J. Zeitlin, *Session Co-Chairs*

- 11:00 am **NASA Space Radiation Laboratory Galactic Cosmic Ray Simulator**
Lisa C. Simonsen
NASA Langley Research Center
- 11:20 am **Characterization & Prediction of the Aircraft Ionizing Radiation Environment**
Christopher J. Mertens
NASA Langley Research Center

- 11:40 am **Flight Doses & Associated Health Implications at Civil, Commercial & Military Altitudes**
Kyle Copeland
U.S. Air Force School of Aerospace Medicine/Occupational and Environmental Health Analytical Services Division

- 12:00 pm **It's Not Just Radiation: Other Environmental Factors Affecting Space Flight Health Risks**
Marianne B. Sowa
NASA Ames Research Center

- 12:20 pm **Q&A**

- 12:35 pm **Lunch**

Cancer Risks

Michael D. Story & Michael M. Weil,
Session Co-Chairs

- 1:20 pm **Cancer Risk Assessment for Astronauts Participating in Deep-Space Missions**
Tony Slaba
NASA Langley Research Center

- 1:40 pm **Space Radiation Cancer Biology: Individualizing Risk**
Michael M. Weil
Colorado State University

- 2:00 pm **Radiation Dose & Risks to Flight Crews: The European Perspective**
Werner Rühm
German Research Center for Environmental Health, Munich

- 2:20 pm **Cancer in U.S. Pilots & Flight Attendants: NIOSH Aircrew Studies**
Lynne Pinkerton
National Institute for Occupational Safety & Health, Centers for Disease Control & Prevention

- 2:40 pm **Q&A**

- 2:55 pm **Break**

Noncancer Risks

Janice L. Huff & Jacqueline P. Williams,
Session Co-Chairs

- 3:05 pm **Radiation in the Context of Human System Risks in Exploration Spaceflight**
Erik L. Antonsen
NASA Johnson Space Center
- 3:25 pm **Long-Term Effects of Space Radiation on Cognition**
Antiño R. Allen
University of Arkansas for Medical Sciences
- 3:45 pm **Cosmic Radiation & Human Health: Evidence from Aircrews & Astronauts**
Robert J. Reynolds
Mortality Research & Consulting, Inc.
- 4:05 pm **Effects of the Space Flight Environment on Bone Health**
Jeffrey Willey
Wake Forest School of Medicine
- 4:25 pm **Q&A**

Forty-Fourth Lauriston S. Taylor Lecture on Radiation Protection & Measurements

- 4:35 pm **Introduction of the Lecturer**
Michael M. Weil
- Taking Up Space: The Path to Understanding Radiation Risks**
Robert L. Ullrich
Radiation Effects Research Foundation

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Noncancer Risks (continued)

Zarana Patel & Gayle E. Woloschak,
Session Co-Chairs

- 10:00 am **Fight-or-Flight: Immune Status & Radiation Resilience**
Dörthe Schaub
University of California - Los Angeles
- 10:20 am **Reproductive Hazards in Flight Crew: Radiation & Beyond**
Candice Johnson
National Institute for Occupational Safety & Health, Centers for Disease Control & Prevention
- 10:40 am **Cardiovascular Effects of Low-Dose Ionizing Radiation**
Marjan Boerma
University of Arkansas for Medical Sciences
- 11:00 am **Sleep, Circadian Rhythms, and Workload in Spaceflight**
Ajitkumar Mulavara
Alexandra Whitmire
NASA Johnson Space Center
- 11:20 am **Q&A**

Fourth Thomas S. Tenforde Topical Lecture

- 11:30 am **Introduction of the Lecturer**
Donald A. Cool
- Collision or Cooperation? The Law, Ethics & Science of Personalized Risk Assessments for Space & Air Travel**
Paul A. Locke
Johns Hopkins Bloomberg School of Public Health
- 12:00 pm **Lunch**

Biomarkers & Countermeasures

Polly Y. Chang & Evagelia C. Laiakis, *Session Co-Chairs*

- 1:00 pm **Hibernation & Radioprotection: Reduced Tissue Damage in Rats Under Synthetic Torpor**
Walter Tinganelli
GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt
- 1:20 pm **Strategy for Maturing Active Radiation Shielding Concepts**
Dan Fry
NASA Johnson Space Center
- 1:40 pm **Using DNA Damage to Investigate the Individual Variability of Human & Mouse Sensitivity to Ionizing Radiation**
Sylvain Costes
NASA Ames Research Center
- 2:00 pm **Mitigation Strategy for Health Risks Induced by Space Radiation**
Janice L. Huff
NASA Langley Research Center
- 2:20 pm **Q&A for All Speakers**

Conclusions

- 2:50 pm **Flying High - Program Wrap-Up**
Jacqueline P. Williams & Cary J. Zeitlin
Program Committee Co-Chairs
- 3:00 pm **NCRP Vision for the Future & PAC Activities**
Kathryn D. Held
President, NCRP
- 3:15 pm **Adjourn**



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