

Dr. Atone (Tony) Brooks

Professor Emeritus

Tuesday,
FEB 18
12:00 p.m.

Center for
Undergraduate
Education (CUE)
Room 518
WSU Pullman

THE SCIENCE OF RADIATION BIOLOGY AND THE FEAR OF LOW-LEVEL RADIATION

The fear of low-level ionizing and non-ionizing radiation has been present almost since the discovery of radiation. This fear has often served as an impediment to the uses of radiation and radioactive material for purposes that range from medical treatments to the generation of electric power. Given this background, it is important to understand results from the science of radiation biology especially with respect to low-level ionizing radiation exposure. To this end, the following questions will be addressed. What is the radiation induced cancer risks following whole body acute radiation, including the potential effects of cancer and genetic damage? Are the risks of radiation induced genetic effects almost equal to the risks for cancer? Does radiation exposure increase the “genetic load”? What is the risk from internally deposited radioactive materials that have non-uniform distribution? What is the risk of bone cancer and birth defects induced by ^{90}Sr - ^{90}Y ? What is the risk for thyroid cancer induced by ^{131}I . Is ^{239}Pu the “most hazardous substance known to man”? What are the risks for liver, bone, and lung cancer from ^{239}Pu . Finally, there will be a discussion about the costs to society driven in part by the fear of radiation.

Dr. Brooks’ career includes roles as Laboratory Senior Scientist and Section Manager at PNNL, Manager of Cellular and Molecular Toxicology at Lovelace Inhalation Toxicology Research Institute, and Technical Representative for the U.S. DOE in Washington, D.C. His research focuses on cytogenetics, radiation-induced cancer, and the effects of low doses of ionizing radiation, as summarized in his WSU Press book, *Low Dose Radiation, The History of the U.S. DOE Energy Research Program*. Dr. Brooks, a Distinguished Emeritus Member of the National Council on Radiation Protection and Measurement, has authored over 170 publications.

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