The 12th Annual Space Radiation Health Investigators Workshop was held on June 27-29, 2001 at the Arlington Hilton hotel in Ballston, VA. This year the meeting was held jointly with the Second Department of Energy Low Dose II workshop, as a cooperative NASA/DOE venture. Approximately 160 scientists attended, including an estimated 60 NASA investigators. The workshop program was divided by scientific topics without regard for investigator affiliation. Approximately half of the plenary talks were given by NASA investigators. Previous work by NASA scientists, in particular work of NSCORT scientist Priscilla Cooper showing that DNA repair proceeds predominantly in the active transcription strand and Dr. Barcellos-Hoff's work on the effects of cell-tissue interactions, were quoted by several of the speakers, showing the importance of NASA-supported radiation research. The NASA Langley group also provided an impressive display of their virtual environment approach to radiation shielding, where it is possible to "walk" through the ISS and "measure" radiation levels at any location, as a function of changing rack equipment and other multifunctional materials.