

Preface

To gain a greater understanding of the biological interactions and health effects of low doses of ionizing radiation, the National Council on Radiation Protection and Measurements (NCRP) had increased its activities on this subject in past years. The NCRP 2008 Annual Meeting was entitled *Low Dose and Low Dose-Rate Radiation Effects and Models* (NCRP, 2009a). In December 2008 NCRP held a workshop that involved 30 participants with expertise in the effects of low doses of radiation. After the workshop summary was completed,¹ a decision was made to convene a panel of experts to produce an NCRP commentary related to critical issues and research needs for gaining a better understanding of effects of low doses of radiation. The advisory panel met in August 2010, and NCRP began the preparation of a commentary in 2012. This Commentary provides general perspectives on the integration of results of basic science studies, including biomarkers and bioindicators of cancer and other diseases, with epidemiologic studies on health effects of low doses of radiation. Such integration may contribute to reducing uncertainty on the types and levels of effects that occur after exposure to low doses of ionizing radiation (*i.e.*, the presence or absence of adverse outcomes, or the possibility of a benefit) and under what conditions the various effects may occur. The Committee members have expertise and experience in the following areas related to low doses of ionizing radiation: epidemiology, radiation biology, radiation oncology, biostatistics, health physics, and dosimetry.

This Commentary was prepared by Scientific Committee 1-21 on Multiplatform National Program for Providing Guidance on Integrating Basic Science and Epidemiological Studies on Low-Dose Radiation Biological and Health Effects. Serving on the Committee were:

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¹NCRP (2008). National Council on Radiation Protection and Measurements. *Developing a Framework for Incorporating New Information in the Radiation Sciences to Understanding Potential Health Risks for Low Doses of Ionizing Radiation: Summary of NCRP Workshop held on December 1–2, 2008* (National Council on Radiation Protection and Measurements, Bethesda, Maryland).

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