



International Commission on Radiation Units and Measurements, Inc.

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21st Gray Medal Recipient: Professor Lester Peters



The International Commission on Radiation Units and Measurements (ICRU) is pleased to announce that the 21st Gray Medal was presented to Professor Lester Peters at the 62nd Annual ASTRO Meeting which was held virtually in October 2020.

Lester Peters was born in rural Queensland, the northernmost state of Australia. He attended high school in the country town of Maryborough where his physics teacher first awakened his life-long interest in physics that he later adopted into his medical career. He graduated from the University of Queensland Medical School in 1966 winning the University's gold medal for his graduating class and underwent radiation oncology training at the former Queensland Radium Institute in Brisbane. He subsequently completed a research fellowship in radiobiology at the CRC Gray Laboratory, London (1972-5). His first faculty appointment was in the Department of Radiotherapy at the University of Texas M D Anderson Cancer Center, Houston in 1975, where he became Professor and Chairman in 1982. In 1995 he returned to Australia to take up the inaugural Chair in Radiation Oncology at Peter MacCallum Cancer Centre in Melbourne.

Lester has authored in excess of 400 peer-reviewed articles and book chapters and has provided enduring research findings that have influenced the practice of radiation oncology, especially in head and neck cancer management, for generations of radiation oncologists and influenced the care of countless patients throughout the world. His contributions broadly include exploration of in vitro assays of response to ionizing radiation; demonstration of fraction size dependence of tumor and normal tissue response to ionizing radiation and implementing the clinical iso-effect formula that included the alpha/beta ratio and need to appreciate radiation as an ablative tool in hypofractionation versus providing differential effects on tumor and normal tissue achieved through greater fractionation. His work especially explored the immutable linkage of overall treatment time with radiation dose and dose per fraction in the response of head and neck cancers to ionizing radiation; and conduct of clinical trials to address altered fractionation as well as risk stratified approaches for differential dose time prescriptions for postoperative treatment. His landmark randomized trial addressing risk stratification in 1993 remains the guiding standard by which adjuvant

radiotherapy for head and neck cancer is administered to this day. He also conducted a pivotal randomized trial that prospectively quantitated the effect of radiotherapy quality using blinded assessment of protocol deviations. This study showed that poor radiotherapy could outweigh the potential benefit of concurrent chemotherapy, a finding that has influenced radiation oncology practice globally.

Lester has held many leadership positions, including the Presidency of ASTRO and was Dean of the Royal Australian and New Zealand College of Radiologists (RANZCR) Faculty of Radiation Oncology, and is the recipient of prominent awards that are too numerous to acknowledge in this brief summary. However, some highlights include the Regaud Medal of ESTRO; the Gold Medal of The Juan A del Regato Foundation; the Award of Honor and Annual Oration in Radiation Oncology of RSNA, and the ASTRO Gold Medal. In 2001, he was appointed Member of the Order of Australia (AM).