BOOKS AND PUBLICATIONS

All interested medical physicists are encouraged to have their names added to a list of available reviewers. Please rank your interest among radiation therapy, x-ray imaging, nuclear medicine imaging, ultrasound imaging, MR imaging, radiation injury, radiation protection, and others. Make your interest known to Chester Reft, Ph.D., Books Review Editor (creft@radonc.uchicago.edu). Include your name and e-mail address in the body of the response.

Book Reviews


This is the first in a new series of reports from the International Commission on Radiation Units and Measurements (ICRU), which will focus on physical–medical aspects of various diagnostic radiology exams. Appropriately, the ICRU has selected chest radiography, a mainstay of modern clinical medicine, for the initial report. The report is directed to radiologists, referring physicians, physicists, and technologists. With such a broad audience, the authors faced the significant challenge of making the subject matter accessible, relevant, and interesting to all readers. The report is a well-written tutorial covering the clinical aspects of chest radiography, production of chest radiographs, basic image quality parameters, observer performance, laboratory assessment of image quality, and field assessment of image quality. The appendices deal with portable chest radiography, equalization techniques, digital chest radiography, and computer-based image interpretation. The report also includes a glossary of imaging terms and an extensive list of references. The chapters on the clinical aspects of chest radiography and observer performance should be of particular interest to the practicing medical physicist. The report includes a nicely written discussion of the role of chest radiography in clinical medicine which describes, in detail, the anatomical, physiological, and pathological features accessible in a properly produced and displayed chest radiograph. The report provides considerable detail on the range of medical conditions readily detected in both the symptomatic and asymptomatic patient, provides a schema for categorizing radiographic abnormalities, and a rationale for striving to improve the visualization of these various types of radiographic abnormalities. This information should help the medical physicist to more fully understand the clinical questions asked by the referring physicians as well as aid radiologists and technologists in optimizing the exam to the benefit of the patient. The “physics” portions of the report are well organized and factual—the authors have done an excellent job of bringing highly technical concepts to a level comprehensible to the intended audience. Nonphysicists will find the chapters dealing with production of radiographic images and basic image quality parameters useful in understanding radiographic equipment design, technique selection, and patient positioning considerations. The report serves all readers by clearly and carefully defining numerous technical terms related to image quality, by including basic information on digital chest radiography, and by describing advanced techniques such as dual-energy imaging, temporal subtraction, and computer-aided diagnosis. This inaugural report by the ICRU deserves a place on your medical library’s reference shelf.

Reviewed by William R. Ruck II

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