This symposium is dedicated to Carl J. Vyborny, M.D., Ph.D., whose life (1950-2004) was cut short by lung cancer. Dr. Vyborny, both a radiologist and medical physicist, contributed uniquely to the understanding of the physical aspects of image quality and to the clinical usage of computer-aided diagnosis. Dr. Vyborny received bachelor and masters degrees in physics from University of Illinois, and a Ph.D. in medical physics and an M.D. with honors from University of Chicago. As a radiologist at LaGrange Memorial Hospital, Illinois, he was P.I. for the first Chicagoland clinical trial of mammographic CAD and for one of the sites for the ACRIN Digital Mammography Imaging Screening Trial. He served as Radiation Safety Officer at two hospitals and on the Illinois Radiation Protection Advisory Council. As a Clinical Professor at the University of Chicago, Dr. Vyborny actively advised medical physics Ph.D. graduate students and helped train radiology residents on the physics of radiographic image quality. Dr. Vyborny participated in the creation of the Mammography Accreditation Program of the ACR and, as an original member of the Academy of Radiology Research, in the efforts to establish the NIH National Institute of Biomedical Imaging and Bioengineering. He was lead author on the 2003 International Commission on Radiation Units and Measurement report, ICRU Report 70, "Image Quality in Chest Radiography", which will be used for many years by both medical physicists and radiologists. Dr. Vyborny was a fellow of the AAPM, the SBI, and the ACR. He received the Distinguished Service Award Gold Medal from the Chicago Radiological Society.