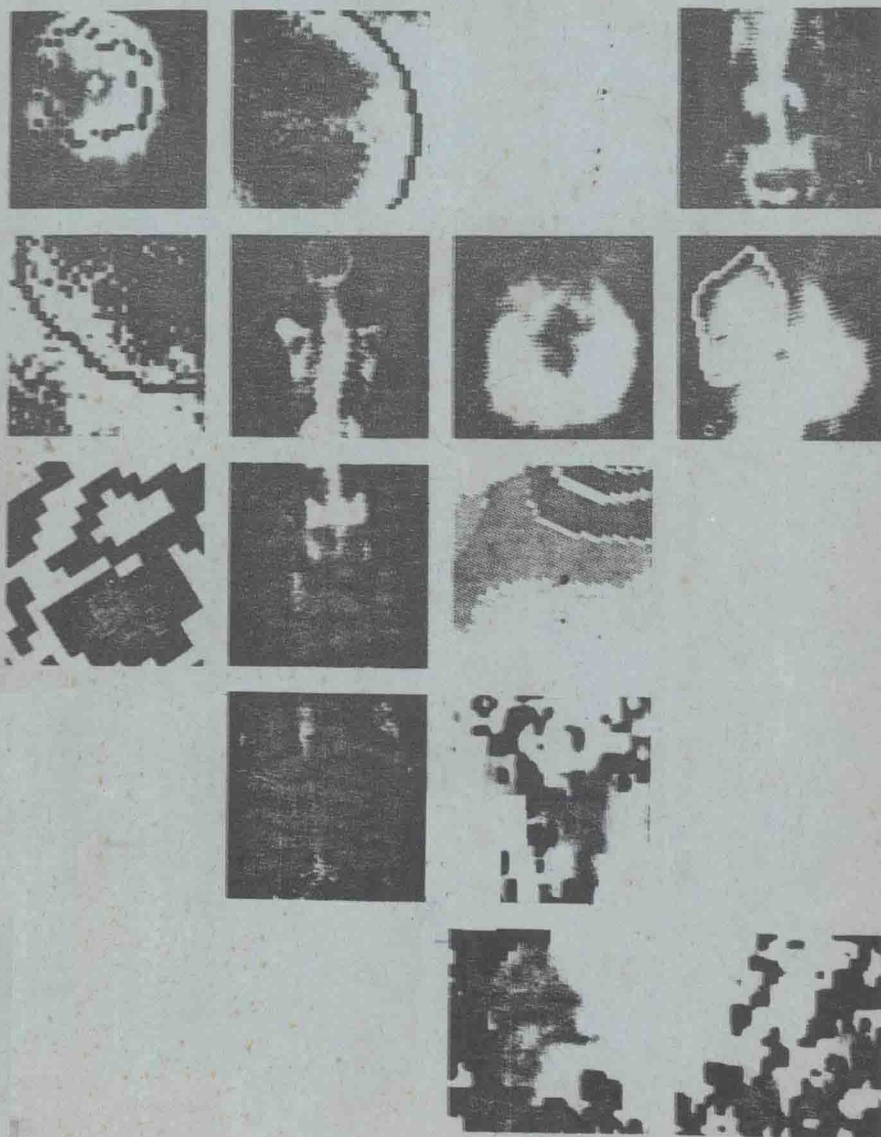


# **DIGITAL IMAGING**

## **Clinical Advances in Nuclear Medicine**



**Edited by Peter D. Esser, Ph.D.**

# **DIGITAL IMAGING**

## **Clinical Advances in Nuclear Medicine**

12th Annual Symposium on the Sharing of  
Computer Programs and Technology in Nuclear Medicine

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## PREFACE

Digital imaging computer systems are now used clinically in nuclear medicine departments around the world. The current state of sophistication of the clinical methodology, software, and hardware is the result of contributions from nuclear medicine clinicians, scientists, and programmers in numerous hospitals, universities, and corporations. Dedicated systems in nuclear medicine now support large memories; multi-platter, megabyte disk drives; array processors; and high-resolution video displays. Furthermore, this rapidly growing technology has spread to other imaging areas, demonstrating impressive capabilities in such diverse fields as digital radiography and ultrasound.

As participants in the growth and development of digital imaging, the members of the nuclear medicine community need to be kept abreast of the rapid changes in this field. This volume of papers from the 1982 Society of Nuclear Medicine Midwinter Symposium has been compiled to meet this need; each of the 26 papers illuminates some aspect of digital imaging and demonstrates the advances that have occurred over the last several years.

The four sections of this book contain a broad range of topics related to digital imaging: from renal function to time-domain imaging, from tomography to cardiac imaging, and from optical memories to system architecture. The first section, "Digital Imaging Technology," contains seven papers that approach digital imaging from diverging points of view, covering perception, system design, and scientific management. Several articles deal with the technical aspects of clinical computer systems and image processing. The material in this section is indicative of future trends in digital imaging, for example, the optical mass memory being developed by Itek Corporation and the area networks that interconnect various digital modalities. In Section II, the important area of digital radiography is represented by three papers, including an overview by Dennis D. Patton and Gerald D. Pond. Sections III and IV cover topics of current clinical interest: cardiac imaging, tomography, and functional imaging. Typically noteworthy are papers by Barbara Y. Croft et al., which discuss the implementation of tomographic imaging with body contouring, and Axel Bossuyt and Maynard L. Freeman et al., which explore the use of time-domain functional images as an alternative to the amplitude and phase images derived from the Fourier transform.

*Digital Imaging: Clinical Advances in Nuclear Medicine* represents the hard work and time of many individuals: the authors, who have contributed their papers; the associate editors (Barbara Croft, Jon Erickson, William MacIntyre, James Patton, and David Seldin), who have assisted with editing and reviewing the manuscripts; the Book Coordinator, James Sorenson, representing the Society of Nuclear Medicine; Julee Richardson, the typist, who so expertly prepared the manuscripts; and finally, the staff in the National Office, in particular Laura Kosden, Karen Schools, and Laura Schraub.

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# **DIGITAL IMAGING TECHNOLOGY**



