Preface

The constantly changing landscape of oncology makes it challenging for experts and practitioners to stay informed of the field’s most up-to-date research. That is why Medical Information Science Reference is pleased to offer this two-volume reference collection that will empower students, researchers, and academicians with a strong understanding of critical issues within oncology by providing both broad and detailed perspectives on cutting-edge theories and developments. This reference is designed to act as a single reference source on conceptual, methodological, and technical, as well as provide insight into emerging trends and future opportunities within the discipline.

Oncology: Breakthroughs in Research and Practice is organized into four sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Design Methodologies;
2. Technologies and Applications;
3. Organizational Implications and Critical Issues;
4. Emerging Trends;

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, “Fundamental Concepts and Design Methodologies,” serves as a foundation for this extensive reference tool by addressing crucial theories and presents in-depth coverage of the conceptual design and architecture essential to the understanding of oncology. Introducing the book is Palliative Care by May Hua a great foundation laying the groundwork for the basic concepts and theories that will be discussed throughout the rest of the book. Through case studies, this section lays excellent groundwork for later sections that will get into present and future applications for oncology. The section concludes, and leads into the following portion of the book with a nice segue chapter, Proposed Threshold Algorithm for Accurate Segmentation for Skin Lesion by T. Y. Satheesh, D. Sathyanarayana, and M. N. Giri Prasad.

Section 2, “Technologies and Applications,” presents extensive coverage of the various tools and technologies used along with describing how the broad range of oncology efforts has been utilized and offers insight on and important lessons for their applications and impact. The first chapter Nanotechnology, Metal Nanoparticles, and Biomedical Applications of Nanotechnology by M. Amin Bhat, B. K. Nayak, Anima Nanda, and Imtiyaz H. Lone, lays a framework for the types of works that can be found in this section. This section includes the widest range of topics because it describes tools at place in the modeling, planning, and applications along with case studies, research, methodologies, frameworks, architectures, theory, analysis, and guides for implementation of oncology. We conclude the section with A Study on Automatic Segmentation and Classification of Skin Lesions in Dermoscopic Images by Ebtilhal Abdullah Al-Mansour and Arfan Jaffar a well-rounded transitional chapter into the next section.
Section 3, “Organizational Implications and Critical Issues,” includes chapters discussing the organizational and social impact of oncology as well as coverage of academic and research perspectives on oncology tools and applications. The section opens with Role of Supercomputers in Bioinformatics by Anamika Singh, Rajeev Singh, and Neha Gupta. This section focuses on how these technologies affect human lives, either through the way they interact with each other, or through how they affect behavioral/workplace situations and also looks into theoretical approaches and offer alternatives to crucial questions on the subject of oncology. The section concludes with Risk, Activism, and Empowerment: Women’s Breast Cancer in Venezuela by Mahmoud Eid and Isaac Nahon-Serfaty.

Section 4, “Emerging Trends,” highlights areas for future research within the field of oncology, opening with Molecular Docking at a Glance by Maryam Hamzeh-Mivehroud, Babak Sokouti, and Siavoush Dastmalchi. This section contains chapters that look at what might happen in the coming years that can extend the already staggering amount of applications for oncology. The final chapter of the book looks at an emerging field within oncology, in the excellent contribution, Mapping Population Health Management Roadmap into Cervical Cancer Screening Programs by Anastasius Mountzoglou and Abraham Poulakis.

Although the primary organization of the contents in this work is based on its four sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end. As a comprehensive collection of research on the latest findings related to using technology to providing various services, Oncology: Breakthroughs in Research and Practice, provides researchers, administrators and all audiences with a complete understanding of the development of applications and concepts in oncology. Given the vast number of issues concerning usage, failure, success, policies, strategies, and applications of oncology in countries around the world, Oncology: Breakthroughs in Research and Practice addresses the demand for a resource that encompasses the most pertinent research in technologies being employed to globally bolster the knowledge and applications of oncology.