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Anita Mahadevan-Jansen
Tuan Vo-Dinh
Warren S. Grundfest
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Introduction

This volume continues the publication of advances in biomedical optical and related technologies for surgical applications and assist devices. The technologies presented in this volume represent the state-of-the-art in a field that is becoming increasingly important to patient care. These papers also represent the growth and success of interdisciplinary teams and demonstrate the benefits of interdisciplinary collaboration in the application of new technologies to the solutions of medical problems. Many of the papers in this volume have relied heavily on government funding and support for their development, but the transition to clinical practice requires productive capacity and industrial support. These papers illustrate the need for increased support of translational activities and development of academic, industry, and government partnerships to facilitate translation from proof of principle into clinical practice. Demonstration of feasibility is only the first step in the process of technology development and implementation. Many of the reports in this volume provide initial confirmation or verification of device feasibility. The reader is cautioned that translation of these technologies into clinical practice takes time and funding. However, these studies are an essential step in the process and provide a platform for future development.

Over the years this conference has seen an array of technologies evolve. Investigations presented in this volume represent continued steps in this evolutionary process. This evolution is driven by clinical need and may be limited by technical barriers, insufficient funds, and clinical practice patterns. Regulatory issues and intellectual property rights also influence technology development. The reader is advised to take these factors into account in assessing the impact of the technologies presented in this volume on clinical practice.

We hope the knowledge gained from this volume not only offers useful information for fundamental research and translational studies but also raises more questions than it answers, and thus provides the reader with a basis for future investigations.

Anita Mahadevan-Jansen
Tuan Vo-Dinh
Warren S. Grundfest