Academic surgery has gained considerable importance over the last century, and it continues to benefit from the significant advances in science and technology. Its role in the continually evolving world of modern healthcare is becoming increasingly influential. Many of the recent innovations in our surgical practice such as minimally invasive surgery, telerobotic surgery and metabolic surgery have been spearheaded by academic surgeons. This has only been possible through significant efforts in the implementation of cutting-edge research and the adoption of evidence-based practice. Much of this has been realised through judicious surgical leadership and academic departmental organisations who foster an environment where the best candidates can be selected. Individuals central to this approach are surgeons who are not only technically proficient but also academically productive.

Creating a dynamic exchange between research and clinical expertise has not always existed in the surgical profession. There are numerous operative practices that have few standards or have paradigms that are not wholly based on the best available science or evidence. The solution is self-explanatory and requires the adoption of educational excellence, technical proficiency and continual innovative research. Academic surgeons are key to implementing many of these strategic goals and will require an understanding of many disciplines that range from basic laboratory research to statistical awareness of complex analytical methods. These proficiencies need to be accompanied by academic leadership, expertise in communication and non-technical skills.

The aim of this book is to equip surgeons across all disciplines and specialties to enhance their academic know-how in order to successfully work within a surgical academic unit and to maximise their academic potential. The goals are to endow the fundamental scientific tents of surgical science, and also to increase the awareness of the equally important areas of departmental collaboration, the adoption of business acumen, engineering knowledge and industrial know-how. It addresses a whole range of topics ranging from how to incorporate best surgical evidence, applying for grants, performing a research study, applying ethics to research, setting-up a surgical education programme and running an academic department. It also communicates many of the surgical technological highlights that are considered important in modern surgical practice and presents some of the most significant bimolecular concepts of the present and future.

Surgical research has improved in quality over the past few decades, and we present this book to advocate further the use of high-quality research in the form of clinical research trials. We strongly emphasise the importance of randomised studies with clearly defined, clinically relevant endpoints. Many of the chapters also focus on the increasing developments of biomedical technology in modern surgical practice.
They clarify the increasing need to understand and adopt these developments to augment surgical practice and patient outcomes.

The role of evidence-based surgery is also given particular focus. Although reading, interpreting and applying the best knowledge from the literature is one aspect of this field, it does not represent “all the evidence” available. This book considers a broader concept of evidence, and by doing so, specifies the central role of patients themselves within evidence-based practice. This is best understood through an equilibrium between the surgeon, the patient and the healthcare institution.

The concepts presented will require application within the context of healthcare organisations and institutions worldwide. Many of these are already large or are in the process of significant growth, requiring visionary leadership strategies. An example includes the Academic Health Science Centre model, where collaboration, research networking and global cooperation are imperative.

The scope of this book has been targeted to allow academic surgeons to exploit their local advantages whilst bridging the gap between surgical practice, patient safety and laboratory research. It will give an oversight of the importance of surgical research both locally and internationally. Many of the topics covered also highlight the importance of surgical research to governmental departments and policy makers. It will enable surgeons to clarify and prioritise the continuous influx of knowledge within the international literature. It strives to define the characteristics of talented individuals whilst also specifying the importance of market forces and administrative management. As such, we present it as a dedicated guide of modern academic surgery.

The future of the surgical profession lies in the development of our knowledge, treatment resources and our most prized asset, surgeons themselves. We cannot only enhance our current strengths, but we require the continual advancement of the next generation of our trainees. A roadmap for the development of our future surgeons can be achieved through academic curricula. We therefore envisage this book as a foundation guide for the training of academic surgeons.

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