Success in Academic Surgery
The mission of the Association for Academic Surgery (AAS) is to provide opportunities to aspiring surgeon scientists so that they can conduct important research and achieve their career goals [1]. Because education is a key component of this mission, the AAS leads several programs designed to teach young surgeons about surgical research and career development. In addition to organizing educational sessions at the annual Academic Surgical Congress in collaboration with the Society of University Surgeons, the AAS teaches surgical trainees and junior faculty the fundamentals of surgical research and academic career development at our annual Fall Courses. Building on the success of these courses in the United States, the AAS has partnered with international surgical organizations to conduct similar courses in Africa, Australasia, South America, Europe, and Asia [2–4]. In 2012, to further expand the reach of our educational effort, our current president, Dr. Lillian Kao, and past president, Dr. Herb Chen, published the first volume of Success in Academic Surgery, a new series of textbooks that aims to provide comprehensive authoritative information that will help young investigators build their research expertise and develop their academic programs [5]. Following the successful launch of the series with a broad introduction to key concepts in surgical research and program development, the AAS is now releasing four additional volumes, each of which provides in-depth coverage of a different type of research. In addition to the current volume covering basic science research, there are three separate new textbooks available focusing on clinical trials, health services research, and education research.

This book begins with several chapters that provide specific details about getting started in basic science research. In these first few chapters, readers will gain perspective on how to set up and run a laboratory, how to choose an effective mentor, how to manage time to maximize productivity, how to develop hypotheses and design related experiments, and how to maintain a laboratory notebook. The next set of chapters covers details about specific experimental approaches and techniques, including cell culture; assessment of DNA, RNA, and proteins; flow cytometry; immunohistochemistry; stem cell studies; and knockout and transgenic mouse models. The book concludes with a set of chapters that discuss several key practical
issues in basic science research. The topics covered in the final section provide advice about getting institutional approval for animal protocols, protecting intellectual property, performing statistical analysis, and considering pertinent ethical issues.

We wish to thank the series editors, Drs. Kao and Chen, for giving us the opportunity to develop the basic science volume. Further, we are extremely grateful to the contributing authors for taking the time to share their expertise in clearly written chapters that are current and concise. We also appreciate the invaluable assistance of Flora Kim, the developmental editor at Springer who worked tirelessly throughout the publication process to keep the project on track and ensure that the quality of the final product exceeded expectations.

In closing, we wish you every success in your academic career and sincerely hope that the information in this book will help you design and complete basic science projects that will advance the field of surgical science and improve the treatment of patients with surgical disease.

IL, USA   Melina R. Kibbe, MD
TX, USA   Scott A. LeMaire, MD

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Contributors

Marc D. Basson, MD, PhD, MBA  Department of Surgery, College of Human Medicine, Michigan State University, Lansing, MI, USA

Harvey L. Bumpers, MD  Department of Surgery, College of Human Medicine, Michigan State University, Lansing, MI, USA

Herbert Chen, MD  Division of General Surgery, Department of Surgery, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

Clifford S. Cho, MD, FACS  Section of Surgical Oncology, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

Alan Dardik, MD, PhD  Department of Surgery, Yale University School of Medicine, New Haven, CT, USA

Rebecca M. Dodson, MD  Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Anne C. Fischer, MD, PhD  Department of Surgery, Oakland University William Beaumont School of Medicine, Rochester, MI, USA

Department of Surgery, Beaumont Children’s Hospital, Royal Oak, MI, USA

Vivian Gahtan, MD  Department of Surgery, SUNY Upstate University Hospital, Syracuse, NY, USA

Division of Vascular Surgery and Endovascular Services, Department of Surgery, SUNY Upstate Medical University, Syracuse, NY, USA

Department of Surgery, Veterans Affairs Healthcare Network Upstate New York at Syracuse, Syracuse, NY, USA

Ankush Gosain, MD, PhD, FACS, FAAP  Division of Pediatric Surgery, Department of Surgery, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

Michael R. Hall, MD  Department of Surgery, Yale University School of Medicine, New Haven, CT, USA
Michael G. House, MD  Department of Surgery, Indiana University School of Medicine, Indianapolis, IN, USA

Benjamin Kautza, MD  Department of General Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Gregory D. Kennedy, MD, PhD  Department of Surgery, University of Wisconsin, Madison, WI, USA

Thomas M. Krummel, MD  Department of Surgery, Stanford University School of Medicine, Palo Alto, CA, USA

David W. Mathes, MD  Department of Surgery – Plastic Surgery, University of Washington Medical Center, Seattle, WA, USA

Kerry-Ann McDonald, MD  Department of Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Edward S. Moreira, PhD  Division of Vascular Surgery, Department of Surgery, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA

Vanessa Nomellini, MD, PhD  Department of Surgery, University of Wisconsin, Madison, WI, USA

Timothy M. Pawlik, MD, MPH, PhD  Division of Surgical Oncology, Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Carla M. Pugh, MD, PhD  Department of Surgery, University of Wisconsin Hospital and Clinics, Madison, WI, USA

Barbara Robinson, MD, MS  Division of Cardiothoracic Surgery, SUNY Upstate University Hospital, Syracuse, NY, USA

Ulka Sachdev, MD  Department of Surgery, University of Pittsburgh, Pittsburgh, PA, USA

Bruce J. Swearingen, MD  Division of Plastic Surgery, Department of Surgery, University of Washington Medical Center, Seattle, WA, USA

Gale L. Tang, MD  Division of Vascular Surgery, Department of Surgery, VA Puget Sound Health Care System, Seattle, Washington, USA

Nick D. Tsihlis, PhD  Division of Vascular Surgery, Department of Surgery, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA

Allan Tsung, MD  Division of Hepatobiliary and Pancreatic Surgery, Department of Surgery, University of Pittsburgh Medical Center, Montefiore Hospital, Pittsburgh, PA, USA

Edith Tzeng, MD  Department of Surgery, Veterans Administration Pittsburgh Healthcare System, University of Pittsburgh, Pittsburgh, PA, USA

Wei Zhou, MD  Department of Surgery, Stanford University, Stanford, CA, USA

Brian S. Zuckerbraun, MD  Department of General Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA