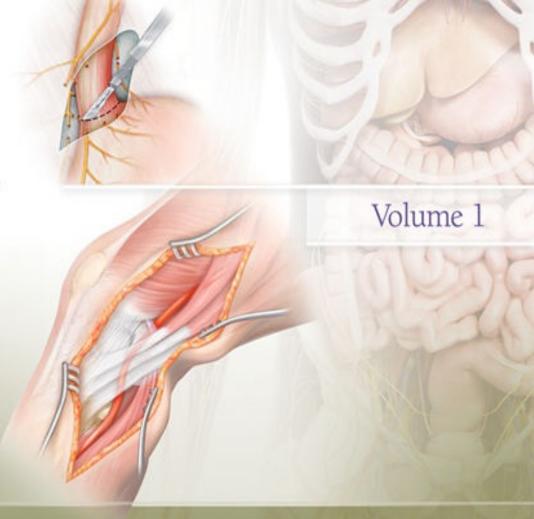
Fischer's Mastery of Surgery Seventh Edition

Editor Josef E. Fischer

Associate Editors

E. Christopher Ellison
Gilbert R. Upchurch Jr.
Susan Galandiuk
Jon C. Gould
V. Suzanne Klimberg

Assistant Editors Peter K. Henke Steven N. Hochwald Gregory M. Tiao



Editor

Josef E. Fischer, MD, FACS, DM(Hon) Lund, FRCS(E)(Hon)

William V. McDermott Distinguished Professor of Surgery Harvard Medical School

Christian R. Holmes Professor of Surgery and Chair Department of Surgery

University of Cincinnati College of Medicine, Emeritus Chair, Department of Surgery Beth Israel Deaconess Medical Center, Emeritus Boston, Massachusetts

Associate Editors

E. Christopher Ellison, MD

The Robert M. Zollinger Professor of Surgery The Ohio State University Columbus, Ohio

Gilbert R. Upchurch Jr., MD

Chief of Vascular and Endovascular Surgery William H. Muller, Jr. Professor of Surgery University of Virginia Charlottesville, Virginia

Susan Galandiuk, MD

Professor of Surgery
Program Director, Section of Colon & Rectal Surgery
Hiram C. Polk, Jr. MD Department of Surgery
Director, Price Institute of Surgical Research
University of Louisville
Louisville, Kentucky

Jon C. Gould, MD

Chief of General Surgery Walker Chair in General Surgery Professor of Surgery Medical College of Wisconsin Milwaukee, Wisconsin

V. Suzanne Klimberg, MD, PhD

Courtney M. Townsend, Jr., MD Distinguished Chair in Surgical Oncology

Vice Chair of the Department of Surgery

Chief of Surgical Oncology

Medical Director for the University of Texas Medical Branch Cancer Institute

Galveston, Texas

Assistant Editors

Peter Henke, MD

Leland Ira Doan Professor of Surgery Section of Vascular Surgery Department of Surgery University of Michigan Ann Arbor, Michigan

Steven N. Hochwald, MD, MBA

Professor of Oncology Vice Chair and Chief of GI Surgery Roswell Park Cancer Institute Professor of Surgery University at Buffalo Buffalo, New York

Gregory M. Tiao, MD

Ryckman Chair of Pediatric Surgery
Division Chief of Pediatric Surgery
Director of Pediatric Liver Transplantation
Cincinnati Children's Hospital and Medical Center
Professor of Surgery
University of Cincinnati
Cincinnati, Ohio

Manuscript Editor
Erica N. Slavin

FISCHER'S MASTERY OF SURGERY

SEVENTH EDITION

Volume 1-2



Philadelphia • Baltimore • New York • London Buenos Aires • Hong Kong • Sydney • Tokyo Acquisitions Editor: Keith Donnellan

Development Editors: Brendan Huffman and Kristina Oberle Editorial Coordinators: Emily Buccieri and Tim Rinehart

Strategic Marketing Manager: Dan Dressler

Senior Production Project Manager: Alicia Jackson

Senior Designer: Joan Wendt

Senior Manufacturing Coordinator: Beth Welsh

Prepress Vendor: Aptara, Inc.

7th edition

Copyright © 2019 Wolters Kluwer.

Copyright © 2012 by LIPPINCOTT WILLIAMS & WILKINS, a WOLTERS KLUWER business

All rights reserved. This book is protected by copyright. No part of this book may be reproduced or transmitted in any form or by any means, including as photocopies or scanned-in or other electronic copies, or utilized by any information storage and retrieval system without written permission from the copyright owner, except for brief quotations embodied in critical articles and reviews. Materials appearing in this book prepared by individuals as part of their official duties as U.S. government employees are not covered by the above-mentioned copyright. To request permission, please contact Wolters Kluwer at Two Commerce Square, 2001 Market Street, Philadelphia, PA 19103, via email at permissions@lww.com, or via our website at lww.com (products and services).

987654321

Printed in China

Library of Congress Cataloging-in-Publication Data

Names: Fischer, Josef E., 1937- editor.

Title: Fischer's mastery of surgery / editor, Josef E. Fischer;

associate editors, E. Christopher Ellison, Gilbert R.

Upchurch Jr., Susan Galandiuk, Hiram C. Polk Jr., Jon C.

Gould, V. Suzanne Klimberg ; assistant editors, Peter K.

Henke, Steven N. Hochwald, Gregory M. Tiao.

Other titles: Mastery of surgery

Description: Seventh edition. | Philadelphia : Wolters

Kluwer, [2019] | Includes bibliographical references and

index.

Identifiers: LCCN 2017041639 | ISBN 9781469897189

Subjects: | MESH: Surgical Procedures, Operative

Classification: LCC RD11 | NLM WO 500 | DDC 617–dc23

LC record available at https://lccn.loc.gov/2017041639

This work is provided "as is," and the publisher disclaims any and all warranties, express or implied, including any warranties as to accuracy, comprehensiveness, or currency of the content of this work.

This work is no substitute for individual patient assessment based upon healthcare professionals' examination of each patient and consideration of, among other things, age, weight, gender, current or prior medical conditions, medication history, laboratory data and other factors unique to the patient. The publisher does not provide medical advice or guidance and this work is merely a reference tool. Healthcare professionals, and not the publisher, are solely responsible for the use of this work including all medical judgments and for any resulting diagnosis and treatments.

Given continuous, rapid advances in medical science and health information, independent professional verification of medical diagnoses, indications, appropriate pharmaceutical selections and dosages, and treatment options should be made and healthcare professionals should consult a variety of sources. When prescribing medication, healthcare professionals are advised to consult the product information sheet (the manufacturer's package insert) accompanying each drug to verify, among other things, conditions of use, warnings and side effects and identify any changes in dosage schedule or contraindications, particularly if the medication to be administered is new, infrequently used or has a narrow therapeutic range. To the maximum extent permitted under applicable law, no responsibility is assumed by the publisher for any injury and/or damage to persons or property, as a matter of products liability, negligence law or otherwise, or from any reference to or use by any person of this work.

LWW.com

To Karen
Erich and Hallie
Alexandra and Peter
and
The late Dr. Howard I. Down

COMMENTARY EDITORS

Kirby I. Bland, MD, FACS

Professor of Surgery and Chair *Emeritus*Distinguished Faculty Scholar, UAB School of Medicine
Advisor to Director, UAB Comprehensive Cancer Center
UAB Department of Surgery
UAB University Hospital and The Kirklin Clinic
Birmingham, Alabama

Charles H. Cook, MD

Associate Professor of Surgery
Harvard Medical School
Division Chief, Acute Care Surgery, Trauma, Surgical Critical Care
Beth Israel Deaconess Medical Center
Boston, Massachusetts

A. Roshni Dasgupta, MD, MPH

Pediatric Surgeon Division of Pediatric General and Thoracic Surgery Cincinnati Children's Cincinnati, Ohio

Katherine J. Deans, MD, MHSc

Associate Professor of Surgery The Ohio State University Columbus, Ohio

Karen Deveney, MD, FACS

Professor of Surgery Emerita
Vice-Chair of Surgical Education
Department of Surgery
Oregon Health and Science University
Portland, Oregon

Mary Dillhoff, MD, MS, FACS

Assistant Professor of Surgery Division of Surgical Oncology

James Cancer Center The Ohio State University Columbus, Ohio

R. Bruce Donoff, DMD, MD

Dean and Walter C. Guralnick Distinguished Professor of Oral and Maxillofacial Surgery Harvard School of Dental Medicine Boston, Massachusetts

E. Christopher Ellison, MD

The Robert M. Zollinger Professor of Surgery The Ohio State University Columbus, Ohio

Douglas B. Evans, MD

Donald C. Ausman Family Foundation Professor in Surgery and Chair Department of Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Josef E. Fischer, MD, FACS, DM(Hon) Lund, FRCS(E)(Hon)

William V. McDermott Distinguished Professor of Surgery Harvard Medical School

Christian R. Holmes Professor of Surgery and Chair Department of Surgery

University of Cincinnati College of Medicine, Emeritus Chair, Department of Surgery Beth Israel Deaconess Medical Center, Emeritus Boston, Massachusetts

Susan Galandiuk, MD

Professor of Surgery
Program Director, Section of Colon & Rectal Surgery
Hiram C. Polk, Jr. MD Department of Surgery
Director, Price Institute of Surgical Research
University of Louisville
Louisville, Kentucky

Ryan Gobble, MD

Assistant Professor of Plastic Surgery University of Cincinnati College of Medicine University of Cincinnati Cincinnati, Ohio

Leonard G. Gomella, MD, FACS

The Bernard W. Godwin Professor of Prostate Cancer Chairman, Department of Urology Senior Director for Clinical Affairs Sidney Kimmel Cancer Center Thomas Jefferson University/Thomas Jefferson University Hospital Philadelphia, Pennsylvania

Gayle M. Gordillo, MD, FACS

Associate Professor of Plastic Surgery Medical Director of Wound Services The Ohio State University Columbus, Ohio

Jon C. Gould, MD

Chief of General Surgery
Walker Chair in General Surgery
Professor of Surgery
Medical College of Wisconsin
Milwaukee, Wisconsin

Vishal Gupta, MD

Assistant Professor Staff Physician Department of Head and Neck/ Plastic Reconstructive Surgery Roswell Park Cancer Institute Buffalo, New York

Douglas W. Hanto, MD, PhD

Deputy Chief of Surgery
VA St. Louis Health Care System
St. Louis, Missouri
Lewis Thomas Professor of Surgery Emeritus
Harvard Medical School
Boston, Massachusetts

Peter Henke, MD

Leland Ira Doan Professor of Surgery Section of Vascular Surgery Department of Surgery University of Michigan Ann Arbor, Michigan

Steven N. Hochwald, MD, MBA

Professor of Oncology
Vice Chair and Chief of GI Surgery
Roswell Park Cancer Institute
Professor of Surgery
University at Buffalo
Buffalo, New York

Eric S. Hungness, MD, FACS

Associate Professor of Surgery S. David Stulberg Research Professor Northwestern University Chicago, Illinois

Syed G. Husain, MD, FACS, FACRS

Assistant Professor of Surgery-Clinical The Ohio State University Wexner Medical Center Columbus, Ohio

Daniel B. Jones, MD, MS, FACS

Professor of Surgery
Harvard Medical School
Vice Chair of Surgery
Director of the Bariatric Program
Beth Israel Deaconess Medical Center
Boston, Massachusetts

V. Suzanne Klimberg, MD, PhD

Courtney M. Townsend, Jr., MD Distinguished Chair in Surgical Oncology

Vice Chair of the Department of Surgery

Chief of Surgical Oncology

Medical Director for the University of Texas Medical Branch Cancer Institute

Galveston, Texas

Bodo Knudsen, MD, FRCSC

Henry A. Wise II Endowed Chair in Urology Associate Professor, Department of Urology The Ohio State University Wexner Medical Center

Columbus, Ohio

Moshim Kukar, MD, FACS

Assistant Professor of Oncology Department of Surgical Oncology Roswell Park Cancer Institute Buffalo, New York

Russell R. Lonser, MD

Professor and Chair Dardinger Family Chair in Oncological Neurosurgery Department of Neurological Surgery The Ohio State University Wexner Medical Center Columbus, Ohio

Robert E. Merritt, MD, FACS

Associate Professor of Surgery
Director, Division of Thoracic Surgery
Associate Program Director, Cardiothoracic Surgery
The Ohio State University Wexner Medical Center
Columbus, Ohio

R. Lawrence Moss, MD Surgeon-in-Chief

Nationwide Children's Hospital E. Thomas Boles, Jr., Professor of Surgery The Ohio State University College of Medicine Columbus, Ohio

John T. Mullen, MD, FACS

Associate Professor of Surgery Harvard Medical School Program Director, General Surgery Residency Massachusetts General Hospital Boston, Massachusetts

Richard J. Mullins, MD, FACS

Professor of Surgery Oregon Health & Science University Portland, Oregon

Khalid Mumtaz, MBBS, MSc

Assistant Professor, Director Research, Section of Hepatology

The Ohio State University Wexner Medical Center Columbus, Ohio

Theodore N. Pappas, MD

Distinguished Professor of Surgical Innovation
Chief, Advanced Oncologic & GI Surgery
Department of Surgery
Duke University Medical Center
Vice Dean for Medical Affairs, School of Medicine
Duke University School of Medicine
Durham, North Carolina

Kamal S. Pohar, MD, FRCSC

Julius and Diana Skestos Endowed Chair Associate Professor of Urology The Ohio State University Columbus, Ohio

Vanessa Teaberry Schroder, MD

Assistant Professor Department of Surgery Duke University Medical Center Durham, North Carolina

John H. Stewart, IV, MD, MBA

Chief of Surgery
Durham Veterans Administration Health System
Associate Professor of Surgery
Duke University School of Medicine
Durham, North Carolina

Gregory M. Tiao, MD

Ryckman Chair of Pediatric Surgery
Division Chief of Pediatric Surgery
Director of Pediatric Liver Transplantation
Cincinnati Children's Hospital and Medical Center
Professor of Surgery
University of Cincinnati
Cincinnati, Ohio

Gilbert R. Upchurch Jr., MD

Chief of Vascular and Endovascular Surgery William H. Muller, Jr. Professor of Surgery

University of Virginia Charlottesville, Virginia

Hunter Wessells, MD, FACSProfessor and Nelson Chair of Urology
University of Washington
Seattle, Washington

CONTRIBUTORS

Naji N. Abumrad, MD, FACS

Professor of Surgery
Section of Surgical Sciences
Vanderbilt University School of Medicine
Chairman Emeritus
Department of Surgery
Vanderbilt University Medical Center
Nashville, Tennessee

Steven Agle, MD, MPH

Assistant Professor
Department of Surgery
Division of Surgical Oncology
University of Texas Medical Branch
Galveston, Texas

Bestoun H. Ahmed, MD, FACS, FASMBS

Associate Professor
Department of Surgery
University of Pittsburgh School of Medicine
Attending Surgeon and Associate Director MIS/Bariatrics Fellowship
Program
Department of Surgery

Magee-Women's Hospital of UPMC

Pittsburgh, Pennsylvania

Vance L. Albaugh, MD, PhD

Fellow in Surgical Metabolism and Metabolic Surgery Section of Surgical Sciences Vanderbilt University School of Medicine Instructor Department of Surgery Vanderbilt University Medical Center Nashville, Tennessee

Mohamad Allaf, MD

Professor of Urology, Oncology, and Biomedical Engineering Vice-Chairman

Department of Urology James Buchanan Brady Urological Institute Johns Hopkins Hospital Baltimore, Maryland

Robert J. Allen, SR, MD, FACS

Clinical Professor of LSUHSC Ochsner Baptist Medical Center New Orleans, Louisiana

Fernando Andrés Alvarez, MD

Staff Surgeon General Surgery Service Clínica Universitaria Reina Fabiola Córdoba, Argentina

Parviz K. Amid, MD

Clinical Professor
Department of Surgery
University of California
Attending Staff
Department of Surgery
Ronald Reagan UCLA Medical Center
Los Angeles, California

Benjamin O. Anderson, MD

Director, Breast Health Clinic Seattle Cancer Care Alliance Professor of Surgery and Global Health Medicine University of Washington Seattle, Washington

Shalini Arora, MD, FACS

Assistant Professor
Department of General Surgery
Icahn School of Medicine at Mount Sinai
Director of Endocrine Surgery
Department of General Surgery
Kings County Hospital
New York, New York

Stanley W. Ashley, MD

Chief Medical Officer Senior Vice President for Clinical Affairs Brigham and Women's Hospital

Boston, Massachusetts

Salman Ashruf, MD

Plastic Surgeon Cosmetic Plastic Surgery of Maryland Hanover, Maryland

Sam B. Atallah, MD, FACS, FASCRS

Associate Professor
Department of Surgery
University of Central Florida College of Medicine
Chairman
Department of Colorectal Surgery
Florida Hospital
Orlando, Florida

Toms Augustin, MD, MPH, FACS

Staff, Department of General Surgery Digestive Disease Institute Cleveland Clinic Cleveland, Ohio

Bernadette Aulivola, MD, MS, RVT, RPVI, FACS

Director, Division of Vascular Surgery and Endovascular Therapy Professor, Department of Surgery Medical Director, Vascular Non-Invasive Lab Loyola University Chicago Stritch School of Medicine Maywood, Illinois

Dr. Kirk K. S. Austin, BSc, MBBS, BAO, AFRCSI, FRACS

Research Affiliate
The Surgical Outcomes Research Centre
Colorectal Surgeon
Department of Colorectal Surgery
Royal Prince Alfred Hospital
Camperdown, Australia

Edward D. Auyang, MD, FACS

Assistant Professor of Surgery University of New Mexico Staff Surgeon University of New Mexico Hospital Albuquerque, New Mexico

Faisal Aziz, MD

Vascular Surgery Assistant Professor, Surgery Penn State College of Medicine Hershey, Pennsylvania

Brian D. Badgwell, MD, MS

Associate Professor Department of Surgical Oncology MD Anderson Cancer Center Houston, Texas

Charles E. Bagwell, MD, FACS, FAAP

Arnold M Salzberg Professor of Surgery Chair, Division of Pediatric Surgery Virginia Commonwealth University/Medical College of Virginia Richmond, Virginia

Michael Bahr, MD

Assistant Professor Department of Surgery University of Louisville Louisville, Kentucky

Chad G. Ball, MD, MSC, FRCSC, FACS

Associate Professor of Surgery Departments of Surgery and Oncology University of Calgary Foothills Medical Center Calgary, Alberta

Hans G. Beger, MD, MD hon., FACS hon., JSS hon., CSS hon.-Prof.em. of Surgery

Chairman em.

Department of General- and Visceralsurgery University of Ulm
Ulm, Federal Republic of Germany

Robert Bendavid, MD

Advisory Council Member American Hernia Society Haifa, Israel

Parag Bhanot, MD, FACS

Associate Professor Department of Surgery Georgetown University School of Medicine Vice-Chairman
Department of Surgery
MedStar Georgetown University Hospital
Washington, DC

Elisa H. Birnbaum, MD

Professor
Department of Surgery
University of Colorado
Division of GI
Trauma and Endocrine Surgery
Denver, Colorado

Kirby I. Bland, MD, FACS

Professor of Surgery and Chair *Emeritus*Distinguished Faculty Scholar, UAB School of Medicine
Advisor to Director, UAB Comprehensive Cancer Center
UAB Department of Surgery
UAB University Hospital and The Kirklin Clinic
Birmingham, Alabama

Joseph-Vincent V. Blas, MD

Assistant Program Director of Vascular Surgery
Division of Vascular Surgery
Department of Surgery
Greenville Health System & University of South Carolina School of Medicine
Greenville, South Carolina

David A. Bloom, MD

Division of Pediatric Urology Department of Urology University of Michigan Health System Ann Arbor, Michigan

Jonathan M. Bock, MD, FACS

Associate Professor
Division of Laryngology and Professional Voice Department of
Otolaryngology & Communication Sciences
Medical College of Wisconsin
Milwaukee, Wisconsin

Branko Bojovic, MD

Assistant in Surgery Massachusetts General Hospital Chief of Plastic, Reconstructive and Laser Surgery Shriners Hospitals for Children—Boston Boston, Massachusetts

Cristiano Boneti, MD, FACS

Assistant Professor DeWitt Daughtry Department of Surgery Leonard M. Miller School of Medicine Miami, Florida

Jonathan Boone, MD

Department of Obstetrics and Gynecology University of Alabama at Birmingham School of Medicine Birmingham, Alabama

Daniel Borja-Cacho, MD

Assistant Professor of Transplant Surgery Department of Surgery University of Arkansas for Medical Sciences Little Rock, Arkansas

Thomas C. Bower, MD

Chair, Division of Vascular and Endovascular Surgery Professor of Surgery Mayo Clinic College of Medicine Rochester, Minnesota

Richard Branson, MSc, RRT, FCCM, FAARC

Professor of Surgery Division of Trauma & Critical Care University of Cincinnati Cincinnati, Ohio

Karen J. Brasel, MD, MPH

Professor and Program Director, General Surgery
Department of Surgery
Division of Trauma/Critical Care
Oregon Health and Science University
Portland, Oregon

Igal Breitman, MD

Assistant Professor Department of Surgery University of Illinios Director
Bariatric and Metabolic Surgery
Department of Surgery
Rockford Memorial Hospital
Rockford, Illinois

David C. Brewster, MD

Clinical Professor of Surgery Harvard Medical School Senior Attending Surgeon Division of Vascular Surgery Massachusetts General Hospital Boston, Massachusetts

L. Michael Brunt, MD

Professor of Surgery Section Chief, Minimally Invasive Surgery Washington University School of Medicine Attending Surgeon Barnes-Jewish Hospital St. Louis, Missouri

Henry Buchwald, MD, PhD

Professor Department of Surgery University of Minnesota Minneapolis, Minnesota

Rudolf Bumm, MD

Professor of Surgery Chief, Department of Surgery Klinik Weilheim Germany

Richard A. Burkhart, MD

Assistant Professor Department of Surgery John Hopkins Hospital Baltimore, Maryland

Bryan M. Burt, MD

Associate Professor of Surgery Associate Chief, Division of Thoracic Surgery Director of Thoracic Surgery Research Department of Surgery Baylor College of Medicine Attending Surgeon Department of Surgery Baylor St. Luke's Medical Center Houston. Texas

Ronald W. Busuttil, MD, PhD, FACS

The Dumont-UCLA Liver Transplant Center University of California Los Angeles Los Angeles, California

Aileen Caceres, MD, MPH

Clerkship Director
Assistant Professor
University of Central Florida College of Medicine
Director
Minimally Invasive Gynecologic Surgery
Florida Hospital Celebration Health
Celebration, Florida

Kristine E. Calhoun, MD, FACS

Associate Professor Department of Surgery, Division of Surgical Oncology University of Washington Seattle, Washington

Richard P. Cambria, MD

Professor of Surgery Harvard Medical School Chief, Division of Vascular and Endovascular Surgery Massachusetts General Hospital Boston, Massachusetts

Jeremy W. Cannon, MD, SM, FACS

Associate Professor

Division of Trauma, Surgical Critical Care & Emergency Surgery Perelman School of Medicine at the University of Pennsylvania Philadelphia, Pennsylvania

Tobias Carling, MD, PhD

Associate Professor of Surgery (Endocrine Surgery)
Director
Yale Endocrine Neoplasia Laboratory
New Haven, Connecticut

Azadeh A. Carr, MD

Department of Surgery Division of Surgical Oncology Medical College of Wisconsin Milwaukee, Wisconsin

William R. Carroll, MD

George W Barber, Jr., Professor and Chair Department of Otolaryngology University of Alabama at Birmingham Department of Otolaryngology UAB Hospitals Birmingham, Alabama

Jane V. Carter, MB ChB, MRCS, PGCE

Price Institute of Surgical Research
Department of Surgery
University of Louisville School of Medicine
511 South Floyd Street
Medical Dental Research Building
Louisville, Kentucky

Robert J. Cerfolio, MD, MBA, FACS, FCCP

Professor of Cardiothoracic Surgery NYU Langone Medical Center Chair of Clinical Division Thoracic Surgery NYU Inaugural Director of the Lung Cancer Service Line Senior Advisor Robotic Committee New York, New York

William C. Chapman, MD, FACS

Eugene M. Bricker Chair of Surgery
Professor and Chief, Section of Transplantation
Chief, Division of General Surgery
Surgical Director, Transplant Center
Washington University School of Medicine
Attending Physician
General Surgery
Barnes Jewish Hospital
St. Louis, Missouri

Eric J. Charles, MD

Department of Surgery University of Virginia Charlottesville, Virginia

Clark C. Chen, MD, PhD

Professor of Neurosurgery University of Minnesota Minneapolis, Minessota

David C. Chen, MD

Assistant Clinical Professor Department of Surgery University of California at Los Angeles Los Angeles, California

Margaret Chen, MD, FACS

New York-Presbyterian/Columbia University Medical Center Herbert Irving Pavilion New York, New York

Dennis S. Chi, MD

Professor
Department of OB/GYN
Weill Cornell Medical College
Attending
Gynecology Service
Department of Surgery
Memorial Sloan Kettering Cancer Center
New York, New York

Kathleen K. Christians, MD

Professor Division of Surgical Oncology Department of Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Kristin Chrouser, MD, MPH

Assistant Professor
Department of Urology
University of Minnesota
Section of Urology
Minneapolis VA Health Care System
Minneapolis, Minnesota

Ronald H. Clements, MD

Professor of Surgery Vice-Chairman of Business Development Vanderbilt University Medical Center

Nashville, Tennessee

G. Travis Clifton, MD, FACS

Department of Surgical Oncology University of Texas MD Anderson Cancer Center Houston, Texas

W. Darrin Clouse, MD, FACS

Professor of Surgery
Uniformed Services University of the Health Sciences
Bethesda, Maryland
Associate Professor of Surgery
Harvard Medical School
Division of Vascular and Endovascular Surgery
Massachusetts General Hospital
Boston, Massachusetts

Dawn M. Coleman, MD

Associate Professor Department of Surgery University of Michigan Ann Arbor, Michigan

Kelly M. Collins, MD

Attending Physician General Surgery Henry Ford Hospital Detroit, Michigan

Anthony J. Comerota, MD, FACS, RVT

Director, Jobst Vascular Center The Toledo Hospital Toledo, Ohio

Robert E. Condon, MD[†]

Department of Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Mark F. Conrad, MD, MMSc

Associate Professor of Surgery
Harvard Medical School
Director of Clinic Research and Program Director
Division of Vascular and Endovascular Surgery
Massachusetts General Hospital

Boston, Massachusetts

Willy Coosemans, MD, PhD

Professor

Department of Clinical and Experimental Medicine: Thoracic Surgery

KU Leuven University

Clinical Head

Thoracic Surgery

University Hospital Gasthuisberg

Leuven, Belgium

Alain Corcos, MD, FACS

Clinical Assistant Professor of Surgery

Division Chief & Trauma Medical Director

Chief, Surgical Critical Care

Academic Chief, Surgical Residency

UPMC Mercy

Faculty

McGowan Institute for Regenerative Medicine (MIRM)

Pittsburgh, Pennsylvania

Michael S. Cowher, MD

Breast Surgeon

Quality Assurance Director

Breast Surgical Oncology Co-Director

Breast Surgical Fellowship

Department of Surgery

Allegheny Health Network

Pittsburgh, Pennsylvania

Gregory Dakin, MD, FACS

Associate Professor

Department of Surgery

Weill Cornell Medicine

Division of GI, Metabolic, & Bariatric Surgery

Associate Attending Surgeon

New York Presbyterian Hospital

New York, New York

Mani A. Daneshmand, MD

Associate Professor

Department of Surgery

Duke University Medical Center

Durham, North Carolina

Siamak Daneshmand, MD

Associate Professor of Urology (Clinical Scholar)
Director of Clinical Research
Keck School of Medicine of USC
Los Angeles, California

Brian R. Davis, MD

Department of Surgery Texas Tech University School of Medicine El Paso, Texas

Herbert Decaluwe, MD

Joint Clinical Head Department of Thoracic Surgery University Hospital Gasthuisberg Leuven, Belgium

Malcolm M. DeCamp, MD, FACS

Fowler McCormick Professor of Surgery Chief, Division of Thoracic Surgery Department of Surgery Northwestern University Feinberg School of Medicine Chicago, Illinois

Georges Decker, MD

Thoracic Surgeon Groupe Chirurgical Zithaklinik Zithaklinik-Hôpitaux Robert Schuman Luxembourg, Luxembourg

Amy C. Degnim, MD

Joe M. & Ruth Roberts Professor of Surgery Consultant, Department of Surgery Division of Breast, Endocrine, Metabolic, and GI Surgery Mayo Clinic Rochester, Minnesota

Jorge I. de la Torre, MD, MSHA

Professor University of Alabama at Birmingham Director, Division of Plastic Surgery Birmingham, Alabama

Paul De Leyn, MD, PhD

Professor

Department of Clinical and Experimental Medicine: Thoracic Surgery KU Leuven University
Chief of Surgery
Chairman, Department of Thoracic Surgery
University Hospital Gasthuisberg
Leuven, Belgium

Eric J. DeMaria, MD, FACS, FASMBS

Bariatric Surgeon Bon Secours General Surgery at St Mary's Hospital Richmond, Virginia

Tom R. DeMeester, MD

Emeritus Professor Department of Surgery University of Southern California Los Angeles, California

Daniel T. Dempsey, MD

Professor of Surgery at the Hospital of the University of Pennsylvania Chief, Gastrointestinal Surgery Surgeon Assistant Director, Peri-Operative Services Hospital of the University of Pennsylvania Philadelphia, Pennsylvania

Lieven De Pypere, MD

Joint Clinical Head Thoracic Surgery University Hospital Gasthuisberg Leuven, Belgium

Sapan S. Desai, MD, PhD, MBA

Assistant Professor of Vascular Surgery and Vice Chair of Research Southern Illinois University School of Medicine Springfield, Illinois

Eduardo de Santibañes, MD, PhD

Professor and Chairman Liver Transplant Unit Hospital Italiano de Buenos Aires Buenos Aires, Argentina

Sarah M. DeSnyder, MD, FACS

Assistant Professor

Department of Breast Surgical Oncology The University of Texas MD Anderson Cancer Center Houston, Texas

J. Michael Dixon, MD, MB ChB, FRCS, FRCP Hon

Professor of Surgery
Institute of Genetics and Molecular Medicine
University of Edinburgh
Consultant Surgeon
Edinburgh Breast Unit
Western General Hospital
Edinburgh, Scotland

R. Bruce Donoff, DMD, MD

Dean and Walter C. Guralnick Distinguished Professor of Oral and Maxillofacial Surgery Harvard School of Dental Medicine Boston, Massachusetts

Eric J. Dozois, MD

Program Director Department of Colon and Rectal Surgery Mayo Medical School Rochester, Minnesota

Roger R. Dozois, MD

Department of Colon and Rectal Surgery Mayo Clinic Rochester, Minnesota

Richard L. Drake, PhD, FAAA

Director of Anatomy Professor of Surgery Cleveland Clinic Lerner College of Medicine Cleveland, Ohio

David J. Dries, MSE, MD

Professor of Surgery

John F. Perry, Jr., Chair of Trauma Surgery Clinical Adjunct Professor of Emergency Medicine

Surgery and Emergency Medicine

University of Minnesota

Minneapolis, Minnesota

Division Medical Director

Department of Surgery

Regions Hospital/HealthPartners Medical Group St. Paul, Minnesota

Matthew Edwards, MD, MS, RVT, FACS

Professor and the Richard H. Dean, MD Chair in Vascular Surgery Vascular and Endovascular Surgery Winston-Salem, North Carolina

John F. Eidt, MD

Professor

Department of Surgery

Texas A&M College of Medicine

Bryan, Texas

Vice-Chairman

Vascular Surgical Services

Baylor Scott & White Health

Baylor Jack and Jane Hamilton Heart and Vascular Hospital

Dallas, Texas

Brian H. Eisner, MD

Assistant Professor of Surgery Co-Director, Kidney Stone Program Harvard Medical School Department of Urology Massachusetts General Hospital Boston, Massachusetts

Kevin El-Hayek, MD, FACS

Assistant Professor of Surgery
Cleveland Clinic Lerner College of Medicine
Staff Physician
Digestive Disease Institute
Cleveland Clinic
Cleveland, Ohio
Cleveland Clinic Abu Dhabi
Abu Dhabi, UAE

Jonathan L. Eliason, MD

Associate Professor Section of Vascular Surgery Department of Surgery University of Michigan Ann Arbor, Michigan

Mustapha El-Lakis, MD

Department of Surgery Virginia Mason Medical Center Seattle, Washington

E. Christopher Ellison, MD, AFCS

Robert M Zollinger Professor of Surgery and Vice-Dean of Clinical Affairs Department of Surgery The Ohio State University College of Medicine Columbus, Ohio

Guillermo A. Escobar, MD, FACS

Assistant Professor of Surgery University of Arkansas for Medical Sciences Little Rock, Arkansas

Mohammad H. Eslami, MPH, MD

Visiting Professor of Surgery
Division of Vascular Surgery
Department of Surgery
University of Pittsburgh School of Medicine
Chief of Vascular Surgery
UPMC Mercy Hospital
Pittsburgh, Pennsylvania

Douglas B. Evans, MD

Donald C. Ausman Family Foundation Professor of Surgery and Chair Department of Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Stephen R.T. Evans, MD

Professor
Department of Surgery
Georgetown University Medical Center
Washington, DC
Executive Vice-President/Chief Medical Officer
MedStar Health
Columbia, Maryland

Amy R. Evenson, MD

Instructor
Department of Surgery
Beth Israel Deaconess Medical Center
Harvard Medical School
Boston, Massachusetts

Russell W. Farmer, MD, FACS, FASCRS

Assistant Professor of Surgery/Colon and Rectal Surgery Hiram C. Polk, Jr., MD Department of Surgery University of Louisville School of Medicine Louisville, Kentucky

Oluwadamilola (Lola) Fayanju, MD, MA, MPHS

Assistant Professor of Surgery Duke University School of Medicine Durham, North Carolina

Robert J. Feezor, MD, FACS, RPVI

Associate Professor of Surgery University of Florida UF Health Heart and Vascular Surgery—Halifax Health Daytona Beach, Florida

Sheldon Feldman, MD, FACS

New York-Presbyterian/Columbia University Medical Center Herbert Irving Pavilion New York, New York

David V. Feliciano, MD

Clinical Professor
Department of Surgery
University of Maryland
Attending Surgeon
Department of Surgery
Shock Trauma Center at University of Maryland Medical Center
Baltimore, Maryland

Linda Ferrari, MD

Department of Surgery University of Washington University of Washington Medical Center Seattle, Washington

Alessandro Fichera, MD

Professor
Department of Surgery
University of Washington
Section Chief Gastrointestinal Surgery
University of Washington Medical Center
Seattle, Washington

Josef E. Fischer, MD, FACS, DM(Hon) Lund, FRCS(E)(Hon)

William V. McDermott Distinguished Professor of Surgery

Harvard Medical School

Christian R. Holmes Professor of Surgery and Chair Department of Surgery University of Cincinnati College of Medicine, Emeritus

Chair, Department of Surgery

Beth Israel Deaconess Medical Center, Emeritus

Boston, Massachusetts

Laura E. Fischer, MD, MS

Department of Surgery Oregon Health and Science University Portland, Oregon

Robert J. Fitzgibbons, Jr., MD, FACS

Harry E. Stuckenhoff Professor and Chairman Department of Surgery Creighton University School of Medicine Omaha, Nebraska

R. Jobe Fix, MD, FACS

Professor Division of Plastic Surgery University of Alabama at Birmingham Birmingham, Alabama

Spiros G. Frangos, MD, MPH

Professor, Department of Surgery

Professor, Department of Anesthesiology, Perioperative Care, and Pain Medicine

Chief of Surgery

Director of Trauma/Critical Care

Bellevue Hospital Center

Director, Division of Acute Care Surgery

NYU Langone Medical Center

New York, New York

Herbert R. Freund, MD

Hadassah University Medical Center Jerusalem, Israel

Michael R. Freund, MD

Department of General Surgery, Shaare Zedek Medical Center The Hebrew University School of Medicine Jerusalem, Israel

Arlan F. Fuller, Jr., MD

Irene and Telemachus Demoulas Chair in Women's Health Chief of Gynecologic Oncology Associate Professor of OB/GYN Tufts University School of Medicine Winchester, Massachusetts

Wolfgang B. Gaertner, MD, MSc

Assistant Professor
Colon & Rectal Surgery
University of Minnesota
Staff Surgeon
Colon & Rectal Surgery
University of Minnesota Medical Center
Minneapolis, Minnesota

Susan Galandiuk, MD

Professor of Surgery
Program Director, Section of Colon & Rectal Surgery
Hiram C. Polk, Jr. MD Department of Surgery
Director, Price Institute of Surgical Research
University of Louisville
Louisville, Kentucky

Norman J. Galbraith, BSc, MBChB, MRCS

Price Institute of Surgical Research Department of Surgery University of Louisville School of Medicine Medical Dental Research Building Louisville, Kentucky

lan Ganly, MD, PhD, MS, FRCS, FRCS-ORL

Associate Professor
Department of Otolaryngology—Head and Neck Surgery
Weill Cornell Medical College
Cornell University
Associate Attending Surgeon
Surgery, Head, and Neck Service
Memorial Sloan Kettering Cancer Center
New York, New York

Julio Garcia-Aguilar, MD, PhD

Surgeon Chief, Colorectal Service Benno C. Schmidt Chair in Surgical Oncology Department of Surgery Memorial Sloan Kettering Cancer Center New York, New York

Manuel Garcia-Toca, MD, FACS

Clinical Associate Professor of Surgery Stanford University Stanford, California

O. James Garden, CBE, MD, FRCSEd, FRCPEd, FRCScan(Hon), FRACS(Hon), FACS(Hon), FRSE

Regius Professor of Clinical Surgery University of Edinburgh Honorary Consultant Hepatobiliary Surgeon Royal Infirmary of Edinburgh Edinburgh, Scotland

Keith S. Gersin, MD, FACS, FASMBS

Clinical Professor of Surgery
UNC—Chapel Hill
Chapel Hill, North Carolina
Chief, Bariatric Surgery
Specialty Medical Director of Bariatrics & Metabolic Surgery
Carolinas HealthCare System Medical Group
Carolinas Medical Center
Charlotte, North Carolina

Karthik Ghosh, MD

Associate Professor of Medicine Consultant, General Internal Medicine Breast Diagnostic Clinic Mayo Clinic Rochester, Minnesota

Arthur I. Gilbert, MD, FACS

Voluntary Associate Professor DeWitt Daughtry Family Department of Surgery Leonard M. Miller School of Medicine Miami, Florida

Ana Luiza Mandelli Gleisner, MD

Assistant Professor Department of Surgery University of Colorado Anschutz Medical Campus Aurora, Colorado

Peter Gloviczki, MD, FACS

Roberts Professor of Surgery and Chair, Emeritus Division of Vascular and Endovascular Surgery Mayo Clinic Rochester, Minnesota

Philip H. Gordon, MD, FRCS(C), FACS, FASCRS, FCSCRS, FRSM(Hon), FACPGBI(Hon)

Professor of Surgery and Oncology Director, Colon & Rectal Surgery McGill University Montreal, Quebec

Jon C. Gould, MD

Chief of General Surgery
Walker Chair in General Surgery
Professor of Surgery
Medical College of Wisconsin
Milwaukee, Wisconsin

Clive S. Grant, MD

Professor, Emeritus Department of Surgery Mayo Clinic Rochester, Minnesota

Arin K. Greene, MD, MMSc

Associate Professor
Department of Plastic and Oral Surgery
Boston Children's Hospital
Harvard Medical School
Boston, Massachusetts

Gwen M. Grimsby, MD

Assistant Professor
Department of Urology
Mayo Clinic Hospital
Pediatric Urologist
Division of Urology
Department of Surgery
Phoenix Children's Hospital
Phoenix, Arizona

Lukasz Filip Grochola, MD, PhD

Department of Visceral and Transplantation Surgery

Swiss HPB and Transplant Center University Hospital of Zurich Zurich, Switzerland

Shawn S. Groth, MD

Assistant Professor of Surgery
Division of General Thoracic Surgery
Assistant Professor of Surgery
Division of Surgical Research
Director of Esophageal Surgical Services
Division of General Thoracic Surgery
Baylor College of Medicine
Attending Surgeon
Surgery
Baylor St. Luke's Medical Center
Houston, Texas

Jose G. Guillem, MD, MPH

Professor of Surgery
Weill Cornell Medical College
Attending
Department of Surgery
Memorial Sloan Kettering Cancer Center
New York, New York

Juan P. Gurria, MD

Department of Surgery University of Cincinnati Division of Pediatric General and Thoracic Surgery Cincinnati Children's Hospital Medical Center Cincinnati, Ohio

Khurshid A. Guru, MD

Professor of Oncology Director of Robotic Surgery Department of Urology Roswell Park Cancer Institute Buffalo, New York

Ellen Hagopian, MD, FACS

Associate Professor
Department of Surgery
Seton Hall-Hackensack Meridian School of Medicine
South Orange, New Jersey
Hepato-Pancreato-Biliary Surgery

Department of Surgery Hackensack University Medical Center Hackensack, New Jersey

Michael E. Halkos, MD

Assistant Professor of Surgery
Division of Cardiothoracic Surgery
Department of Surgery
Emory University School of Medicine
Atlanta, Georgia

Karem C. Harth, MD

Clinical Assistant Professor, Surgery Department of Vascular Surgery Case Western Reserve University School of Medicine Cleveland, Ohio

Per-Olof Hasselgren, MD, PhD

George H.A. Clowes, Jr.,
Professor of Surgery
Harvard Medical School
Vice Chairman—Research
Director of Endocrine Surgery
Department of Surgery
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Bruce H. Haughey, MD

Otolaryngology-Head and Neck Surgery Washington University School of Medicine St. Louis, Missouri

Robert J. Havlik, MD

Chairman and George Korkos Professor Department of Plastic Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Jeffrey W. Hazey, MD, FACS

Memorial Health Columbus, Ohio

R.J. Heald, CBE

Surgical Director
Pelican Cancer Foundation

United Kingdom

Peter Henke, MD

Leland Ira Doan Professor of Surgery Section of Vascular Surgery Department of Surgery University of Michigan Ann Arbor, Michigan

Patrick C. Hettinger, MD

Assistant Professor Plastic Surgery Medical College of Wisconsin Milwaukee. Wisconsin

Frank Hinman, Jr., MD[†]

Clinical Professor Department of Urology University of California San Francisco, California

Steven N. Hochwald, MD, MBA

Professor of Oncology Vice Chair and Chief of GI Surgery Roswell Park Cancer Institute Professor of Surgery University at Buffalo Buffalo, New York

Mitchel S. Hoffman, MD

Senior Member Moffitt Cancer Center Professor USF Morsani College of Medicine Tampa, Florida

George W. Holcomb III, MD, MBA

Katharine Berry Richardson Professor of Pediatric Surgery University of Missouri—Kansas City School of Medicine Senior Vice-President Director, Center for Minimally Invasive Surgery Chief, Section of General Surgery Children's Mercy Hospital Kansas City, Missouri

James Jason Hoth, MD, PhD, FACS

Professor Department of Surgery Trauma Medical Director Wake Forest Baptist Medical Center Winston-Salem, North Carolina

Jeffrey D. Howard, Jr., MD

Department of Surgery University of Louisville Louisville, Kentucky

Thomas S. Huber, MD, PhD

Division of Vascular Surgery and Endovascular Therapy Department of Surgery University of Florida College of Medicine Gainesville, Florida

Franziska Huettner, MD, PhD

Assistant Professor Institute for Plastic Surgery Southern Illinois University School of Medicine Springfield, Illinois

Warner Huh, MD

Professor and Division Director of Gynecologic Oncology University of Alabama at Birmingham Birmingham, Alabama

Eric S. Hungness, MD, FACS

Associate Professor of Surgery Northwestern University Evanston, Illinois Staff Surgeon Northwestern Memorial Hospital Chicago, Illinois

John G. Hunter, MD, FACS, FRCS(Edin)(hon)

Chief Clinical Officer
Mackenzie Professor
Department of Surgery
OHSU School of Medicine
Portland, Oregon

Ahmed A. Hussein, MD

Assistant Lecturer
Department of Urology
Cairo University
Cairo, Egypt

Elias S. Hyams, MD

Assistant Professor of Urology Columbia University Medical Center New York, New York

Neil H. Hyman, MD, FACS

Professor Chief, Section of Colon and Rectal Surgery Department of Surgery University of Chicago Pritzker School of Medicine Chicago, Illinois

Corey W. Iqbal, MD, FAAP, FACS

Medical Director of Pediatric and Fetal Surgery Overland Park Women and Children's Specialty Services Overland Park Regional Medical Center Overland Park, Kansas

Arjun Jayaraj, MBBS, MPH, RPVI

Vascular Surgeon RANE Center for Venous and Lymphatic Disease St. Dominic's Hospital Jackson, Mississippi

Jeffrey Jim, MD, MS

Associate Professor Vascular Surgery Washington University School of Medicine St. Louis, Missouri

Jay A. Johannigman, MD, FACS, FCCM

Professor of Surgery
Director, Division of Trauma, Critical Care, & Acute Care Surgery
University of Cincinnati
Cincinnati, Ohio
Attending Surgeon
University Hospital Inc
Cincinnati, Ohio
Col, US Army (R)

Daniel B. Jones, MD, MS, FACS

Professor of Surgery
Harvard Medical School
Vice-Chair of Surgery
Chief, Minimally Invasive Surgical Services
Director of the Bariatric Program
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Edward L. Jones, MD, FACS

Assistant Professor of Surgery Section Chief, General Surgery Denver Veterans Affairs Medical Center Anschutz Medical Campus University of Colorado Denver, Colorado

Jeffrey R. Jorden, MD

Director of Robotic & Minimally Invasive Surgery Hiram C. Polk, Jr., MD Department of Surgery University of Louisville School of Medicine Louisville, Kentucky

Thomas B. Julian, MD

Allegheny Health Network Cancer Institute
Allegheny General Hospital
National Surgical Adjuvant Breast and Bowel Project (NSABP)
Pittsburgh, Pennsylvania

Enjae Jung, MD

Assistant Professor Vascular Surgery OHSU Knight Cardiovascular Institute Oregon Health & Science University Portland, Oregon

Vikram S. Kashyap, MD

Professor, Surgery, Case Western Reserve University School of Medicine Division Chief, Vascular Surgery, University Hospitals Cleveland Medical Center

Co-Director, Harrington Heart and Vascular Institute, University Hospitals Cleveland Medical Center Cleveland. Ohio

Burkhard S. Kasper, MD

Privadozent, Neurologische Klinik Stellvertretender Sektionsleiter Epilepsie Universitaet Erlangen Germany

Ekkehard M. Kasper, MD, PhD

Associate Professor in Neurosurgery Harvard Medical School Director, Neurosurgical Oncology Beth Israel Deaconess Medical Center Boston, Massachusetts

Louis R. Kavoussi, MD, MBA

Waldbaum Gardiner Professor and Chairman of Urology Hofstra-Northwell School of Medicine Hempstead, New York

Ahmed Kayssi, MD

Limb Preservation Fellow Inova Health System, IFMC Falls Church, Virginia

Michael R. B. Keighley, MBBS, FRCS (Edin), FRCS (Eng), MS

Emeritus Professor University of Birmingham President of the MASIC Foundation Trustee, Bowel Disease Research Foundation London, United Kingdom

Scott R. Kelley, MD, FACS, FASCRS

Assistant Professor of Surgery Division of Colon and Rectal Surgery Mayo Clinic Rochester, Minnesota

Edward Kelly, MD

Assistant Professor
Department of Surgery
Harvard Medical School
Attending Surgeon
Department of Surgery
Brigham and Women's Hospital
Boston, Massachusetts

Michael P. Kim, MD

Assistant Professor

Department of Surgical Oncology MD Anderson Cancer Center Houston, Texas

Dennis Y. Kim, MD

Associate Professor of Clinical Surgery
David Geffen School of Medicine at UCLA
Division of Trauma/Acute Care Surgery/Surgical Critical Care
Department of Surgery
Harbor-UCLA Medical Center
Torrance, California

Cindy Kin, MD

Colorectal Surgeon Surgical Oncologist Assistant Professor of Surgery (General Surgery) Department of Surgery Stanford University School of Medicine Stanford, California

Allan D. Kirk, MD, PhD

David C. Sabiston, Jr., Professor and Chairman Department of Surgery Duke University Medical Center Surgeon-in-Chief Duke University Health System Durham, North Carolina

V. Suzanne Klimberg, MD, PhD

Courtney M. Townsend, Jr., MD Distinguished Chair in Surgical Oncology Vice Chair of the Department of Surgery Chief of Surgical Oncology Medical Director for the University of Texas Medical Branch Cancer Institute

Badrinath R. Konety, MD, FACS, MBA

Galveston, Texas

Professor and Chair
Department of Urology
Dougherty Family Chair in Uro-Oncology
Associate Director for Clinical Affairs
Masonic Cancer Center
University of Minnesota
Minneapolis, Minnesota

Matthew C. Koopmann, MD

Assistant Professor of Surgery
Division of Vascular Surgery
Oregon Health and Science University
Staff Vascular Surgeon
VA Portland Health Care System
Portland, Oregon

Kate H. Kraft, MD

Division of Pediatric Urology Department of Urology University of Michigan Health System Ann Arbor, Michigan

Mukta Krane, MD

Associate Professor
Department of Surgery
University of Washington
Outpatient Medical Director—Surgical Specialties
University of Washington Medical Center
Seattle, Washington

Jake E. J. Krige, MBChB, MSc, FACS, FRCS, FCS (SA)

Professor Department of Surgery University of Cape Town Health Sciences Faculty Cape Town, South Africa

Matthew Kroh, MD, FACS

Institute Chief, Associate Professor of Surgery Digestive Disease Institute Cleveland Clinic Abu Dhabi Cleveland Clinic Lerner College of Medicine Abu Dhabi, United Arab Emirates

Irving L. Kron, MD

Professor and Chair Department of Surgery University of Virginia Charlottesville, Virginia

Helen Krontiras, MD

Professor of Surgery UAB School of Medicine Birmingham, Alabama

Robert D. Kugel, MD

Surgeon, Inventor Hernia Treatment Center Northwest Olympia, Washington

Moshim Kukar, MD

Assistant Professor Department of Surgical Oncology Roswell Park Cancer Institute Buffalo, New York

Michael E. Kupferman, MD, MBA

Senior Vice-President, Clinical and Academic Network Development Professor, Department of Head & Neck Surgery The University of Texas MD Anderson Cancer Center Houston, Texas

Moon O. Kwoun, MD, RVT, RPVI

Instructor in Surgery Harvard Medical School Cambridge Health Alliance Cambridge, Massachusetts

Gregory J. Landry, MD

Professor Vascular Surgery Oregon Health & Science University OHSU Knight Cardiovascular Institute Portland, Oregon

Erin O. Lange, MD

Department of Surgery University of Washington Medical Center Seattle, Washington

Jacob C. Langer, MD

Professor
Department of Surgery
University of Toronto
Attending Pediatric Surgeon
Hospital for Sick Children
Toronto, Ontario

David W. Larson, MD, MBA, FACS, FASCRS

Chair of Colorectal Surgery

Director of Enterprise Cancer Quality Mayo Clinic Rochester, Minnesota

Michael Latzko, MD

Assistant Professor
Department of Surgery
University of Florida College of Medicine—Jacksonville
Jacksonville, Florida

Yosef Laviv, MD

Attending Neurosurgeon Department of Neurosurgery Rabin Medical Center Tel Aviv, Israel

Simon Law, MBBChir, MS (HK), MA (Cantab), FRCSEd, FCSHK, FHKAM, FACS

Cheung Kung-Hai Professor in Gastrointestinal Surgery Chief, Division of Esophageal and Upper Gastrointestinal Surgery Department of Surgery The University of Hong Kong Queen Mary Hospital Hong Kong

Anna M. Ledgerwood, MD

Professor
Department of Surgery
Wayne State University School of Medicine
Staff
Department of Surgery
Detroit Receiving Hospital & Harper University Hospital
Detroit, Michigan

Cheong J. Lee, MD, FACS

Division of Vascular Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Dr Peter J. Lee, MBBS, MSc (Med), MS, FRACS

Research Affiliate

The Institute of Academic Surgery at RPA & The Surgical Outcomes Research Centre

Colorectal Surgeon

Department of Colorectal Surgery

Royal Prince Alfred Hospital Camperdown, Australia

Ken Lee, MD

Department of Surgery George Washington University Washington, DC

Toni Lerut, MD, PhD

Emeritus Professor
Department of Clinical and Experimental Medicine: Thoracic Surgery
KU Leuven University
Emeritus Chairman
Thoracic Surgery
University Hospital Gasthuisberg
Leuven, Belgium

Mark Levin, MD, MS

Fellow in Vascular Surgery Section of Vascular & Endovascular Surgery Department of Surgery University of Texas Southwestern Medical Center Dallas, Texas

Edward A. Levine, MD

Professor of Surgery Chief, Surgical Oncology Wake Forest University Winston-Salem, North Carolina

Carol M. Lewis, MD, MPH, FACS

Associate Professor
Department of Head and Neck Surgery
University of Texas MD Anderson Cancer Center
Houston, Texas

Kui-Hin Liau, MBBS, MMed(Surgery), FRCS(Edin), FAMS (Surgery)

Medical Director & Senior Consultant Surgeon Department of Surgery & Surgical Oncology Nexus Surgical Associates Pte Ltd Singapore

Keith D. Lillemoe, MD

W. Gerald Austen Professor Harvard Medical School Chief of Surgery Surgeon in Chief Massachusetts General Hospital Boston, Massachusetts

Foong-Yen Lim, MD

Associate Professor
Department of Surgery
Cincinnati Children's Hospital and Medical Center
Surgical Director
Cincinnati Fetal Center
Cincinnati, Ohio

Ryan Little, MD

Department of Otolaryngology & Communication Sciences Medical College of Wisconsin Milwaukee, Wisconsin

Chung Mau Lo, MS, FRCS (Edin), FRACS, FACS

Department of Surgery
The University of Hong Kong
Queen Mary Hospital
Hong Kong, China

James N. Long, MD

Magnolia Regional Health Center Corinth, Mississippi

Marios Loukas, MD, PhD

Chair and Professor Department of Anatomical Sciences School of Medicine at St George's University Grenada, West Indies

Donald E. Low, MD, FACS, FRCS(C)

Head, Thoracic Oncology and Thoracic Surgery, Department of Surgery Virginia Mason Medical Center Clinical Assistant Professor of Surgery University of Washington School of Medicine Seattle, Washington

Ann C. Lowry, MD

Clinical Professor Division of Colon and Rectal Surgery Department of Surgery University of Minnesota Minneapolis, Minnesota

Layla C. Lucas, MD

Arizona Vascular Specialists Tucson, Arizona

Charles E. Lucas, MD

Professor

Department of Surgery

Wayne State University School of Medicine

Staff

Department of Surgery

Detroit Receiving Hospital & Harper University Hospital

Detroit, Michigan

Anthony Lucci, MD, FACS

Professor of Surgery

Departments of Breast Surgical Oncology and Surgical Oncology The University of Texas MD Anderson Cancer Center Houston, Texas

Natalie Lui, MD, MAS

Assistant Professor Department of Cardiothoracic Surgery Stanford University Stanford, California

James D. Luketich, MD, FACS

Henry T. Bahnson Professor of Cardiothoracic Surgery Chair, Department of Cardiothoracic Surgery Chief, Division of Thoracic & Foregut Surgery University of Pittsburgh Medical Center Pittsburgh, Pennsylvania

Junji Machi, MD, PhD

Professor

Department of Surgery

Assistant Director, Office of Global Health and Medicine

John A. Burns School of Medicine

University of Hawaii

Honolulu, Hawaii

Robyn A. Macsata, MD

Chief, Vascular Surgery Associate Professor of Surgery The George Washington University Washington, DC

Robert D. Madoff, MD

Professor and Stanley M. Goldberg Chair in Colon & Rectal Surgery University of Minnesota Staff Surgeon and Chief of the Division of Colon & Rectal Surgery Colon & Rectal Surgery University of Minnesota Medical Center Minneapolis, Minnesota

James W. Maher, MD

Professor
Department of Surgery
Division of Bariatric and Gastrointestinal Surgery
Virginia Commonwealth University
Richmond Veterans Administration Medical Center
Richmond, Virginia

Brian A. Mailey, MD

Assistant Professor Department of Surgery Southern Illinois University School of Medicine Springfield, Illinois

Mohan K. Mallipeddi, MD

Clinical Instructor Department of Surgery Cedars-Sinai Medical Center Los Angeles, California

Eleftherios P. Mamounas, MD

National Surgical Adjuvant Breast and Bowel Project (NSABP) Pittsburgh, Pennsylvania UF Health Cancer Center at Orlando Health Orlando, Florida

Paul Mansfield, MD, FACS

Professor Department of Surgical Oncology University of Texas MD Anderson Cancer Center Houston, Texas

Christopher R. Mantyh, MD, FACS, FASCRS

Professor

Department of Surgery

Duke University School of Medicine

Chief

Section of Colon and Rectal Surgery

Duke University Medical Center

Durham, North Carolina

Jeffrey M. Marks, MD, FACS, FASGE

Professor of Surgery

Director, Surgical Endoscopy

Program Director

Jeffrey L. Ponsky Professorship in Surgical Education

Case Western Reserve University School of Medicine/University Hospitals

Cleveland Medical Center

Cleveland, Ohio

David J. Maron, MD, MBA

Vice Chair, Department of Colorectal Surgery Director, Colorectal Surgery Residency Program Cleveland Clinic Florida Weston, Florida

Robert G. Martindale, MD, PhD

Professor of Surgery
Department of Surgery
Oregon Health & Science University
Chief and Director of Hospital Nutrition Services
Division of General and Gastrointestinal Surgery
Oregon Health & Science University
Portland, Oregon

Viraj Master, MD, PhD, FACS

Professor of Urology Emory University School of Medicine Atlanta, Georgia

Douglas J. Mathisen, MD

Hermes C. Grillo Professor of Surgery Harvard Medical School Chief of Thoracic Surgery Massachusetts General Hospital Boston, Massachusetts

James L. Mayo, MD

Aesthetic and Reconstructive Surgery Institute Orlando Health University of Florida Health Cancer Center Orlando, Florida

Jack W. McAninch, MD, FACS (Eng)(Hon)

Professor of Urology University of California, San Francisco San Francisco, California

Jennifer M. McBride, PhD

Director of Virtual Anatomy Education Director of Histology Associate Professor of Surgery Cleveland Clinic Lerner College of Medicine Cleveland, Ohio

Daniel P. McCarthy, MD, MBA, MEM

Assistant Professor
Division of Cardiothoracic Surgery
Department of Surgery
University of Wisconsin School of Medicine and Public Health
Madison, Wisconsin

John B. McCraw, MD

Crossgates River Oaks Hospital University of Mississippi Medical Center Jackson, Mississippi

Sarah A. McLaughlin, MD

Associate Professor
Department of Surgery
Medical Director, Robert and Monica Jacoby Center for Breast Health
Mayo Clinic
Jacksonville, Florida

James T. McPhee, MD

Assistant Professor
Department of Surgery
Boston University School of Medicine
Staff Surgeon
Vascular and Endovascular Surgery
VA Boston Healthcare System
Boston, Massachusetts

David S. Medich, MD, FACS, FASCRS

Division of Colon and Rectal Surgery University of Pittsburg Medical Center Pittsburgh, Pennsylvania

Manish Mehta, MD, MPH

Professor of Surgery Albany Medical College Albany Medical Center, Vascular Surgery Albany, New York

W. Scott Melvin, MD

Department of Surgery Montefiore Medical Center Bronx, New York

Matthew T. Menard, MD

Assistant Professor of Surgery Brigham and Women's Hospital Boston, Massachusetts

Emanuele Lo Menzo, MD, PhD

Associate Professor of Surgery
Florida International University
Miami, Florida
Florida Atlantic University
Boca Raton, Florida
Director, Research Department
Staff Surgeon
The Bariatric and Metabolic Institute
Weston, Florida

Miguel A. Mercado, MD

Professor of Surgery
Post-Graduate School of Medicine
Universidad Nacional Autónoma de México
Professor and Chairman
Department of Surgery
Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán
Mexico City, Mexico

J. Wayne Meredith, MD

Professor
Department of Surgery
Wake Forest University Health Sciences

Winston-Salem, North Carolina

Fabrizio Michelassi, MD

Professor
Department of Surgery
Weill Cornell Medicine
Chairman and Surgeon-in-Chief
NewYork-Presbyterian Weill Cornell Medical Center
New York, New York

Dean J. Mikami, MD, FACS

Associate Professor of Surgery Division Chief, General Surgery John A. Burns School of Medicine University of Hawaii Honolulu, Hawaii

Miroslav N. Milicevic, MD, PhD

Professor of Surgery The First Surgical Clinic, Clinical Center of Serbia University of Belgrade Belgrade, Serbia

Keith R. Miller, MD, FACS

Assistant Professor
Hiram C. Polk, Jr., MD Department of Surgery
University of Louisville
Director of Surgical Nutrition
Department of Surgery
University of Louisville Hospital
Louisville, Kentucky

Joseph L. Mills, Sr., MD

Reid Professor of Surgery Chief Division of Vascular Surgery and Endovascular Therapy Baylor College of Medicine Chief, Vascular Surgery CHI St. Luke's Medical Center Houston, Texas

Petros Mirilas

Clinical Professor of Surgical Anatomy and Technique Centers for Surgical Anatomy and Technique Emory University School of Medicine Atlanta, Georgia Attending Pediatric Surgeon Agia Sophia Children's Hospital Athens, Greece

Gregory L. Moneta, MD

Professor of Surgery Oregon Health & Science University Chief, Vascular Surgery OHSU Knight Cardiovascular Institute Portland, Oregon

John R.T. Monson, MD, FRCS (Ire, Eng, Ed (Hon) Glas (Hon)), FASCRS, FACS

Professor of Surgery
University of Central Florida College of Medicine
Executive Director, Colorectal Surgery
Centre for Colon and Rectal Surgery
Florida Hospital
Orlando, Florida

Stephen G. Moon, MS

Instructor, Pathophysiology and Medical Illustration (former) The School of Health and Rehabilitation Sciences The Ohio State University College of Medicine Columbus, Ohio

Harvey G. Moore, MD, FACS, FASCRS

Assistant Professor
Department of Surgery
Duke University School of Medicine
Durham, North Carolina
Attending Surgeon
Department of Surgery
Duke University Medical Center
Durham, North Carolina

Thomas R. Moore, MD

Professor of Maternal Fetal Medicine Dean for Clinical Affairs CEO of Faculty Practice UC San Diego Health San Diego, California

Wesley S. Moore, MD

Professor and Chief

Emeritus

Division of Vascular and Endovascular Surgery David Geffen School of Medicine at UCLA Professor and Chief Emeritus Division of Vascular and Endovascular Surgery Ronald Reagen UCLA Medical Center Los Angeles, California

John T. Moore, MD, FACS

Program Director, Surgery Residency Program Chair Department of Surgery Exempla Saint Joseph Hospital Denver, Colorado

Christopher R. Morse, MD

Assistant Professor Harvard Medical School Associate Visiting Surgeon Massachusetts General Hospital Boston, Massachusetts

John T. Mullen, MD, FACS

Associate Professor of Surgery
Harvard Medical School
Program Director, General Surgery Residency
Department of Surgery
Massachusetts General Hospital
Boston, Massachusetts

John B. Mulliken, MD

Professor of Surgery
Harvard Medical School
Director, Craniofacial Center
Co-Director, Vascular Anomalies Center
Department of Plastic and Oral Surgery
Boston Children's Hospital
Boston, Massachusetts

Noriko Murase, MD

Adjunct Associate Professor of Surgery University of Pittsburgh Pittsburgh, Pennsylvania

Zuri Murrell, MD

Medical Director, Colon and Rectal Cancer Program Samuel Oschin Comprehensive Cancer Institute Department of Surgery Cedars-Sinai Medical Center Los Angeles, California

Peter Muscarella, MD

Director of Pancreatic Surgery Department of Surgery Montefiore Medical Center Bronx, New York

Philippe Nafteux, MD, PhD

Assistant Professor
Department of Clinical and Experimental Medicine: Thoracic Surgery
KU Leuven University
Clinical Head
Thoracic Surgery
University Hospital Gasthuisberg
Leuven, Belgium

Jaimie D. Nathan, MD

Associate Professor
Department of Surgery
University of Cincinnati
Surgical Director, Kidney and Intestinal Transplant Programs
Surgical Director, Pancreas Care Center, Division of Pediatric General and
Thoracic Surgery
Cincinnati Children's Hospital Medical Center
Cincinnati, Ohio

William H. Nealon, MD

Executive Director Perioperative Services Clinical Chief Yale New Haven Health System Yale School of Medicine New Haven, Connecticut

Mark R. Nehler, MD

Professor of Surgery University of Colorado Denver, Colorado

Uri Netz, MD

Department of Surgery
Price Institute of Surgical Research
Hiram C. Polk, Jr., MD Department of Surgery
University of Louisville School of Medicine
Louisville, Kentucky
Faculty of Health Sciences
Ben-Gurion University of the Negev
Department of Surgery
Soroka University Medical Center
Beersheba, Israel

Michael W. Neumeister, MD, FRCSC, FACS

Chair and Professor, Department of Surgery Chairman of the Division of Plastic Surgery Southern Illinois University School of Medicine Springfield, Illinois

Richard F. Neville, MD

Associate Director
Inova Heart and Vascular Institute
Director, Vascular Services
Vice-Chairman, Department of Surgery
Inova Health System
Inova Fairfax Medical Center
Falls Church, Virginia

Kelvin K. Ng, MS, PhD, FRCS (Edin)

Department of Surgery
The University of Hong Kong
Queen Mary Hospital
Hong Kong, China

Heather R. Nolan, MD

Fetal Surgery Fellow Division of Pediatric General and Thoracic Surgery Cincinnati Children's Hospital Medical Center Cincinnati, Ohio

Steven Nurkin, MD, MS, FACS

Assistant Professor Department of Surgical Oncology Roswell Park Cancer Institute Buffalo, New York

Michael S. Nussbaum, MD, FACS

Professor and Chair
Department of Surgery
Virginia Tech Carilion School of Medicine
Senior Vice-President and Chair
Department of Surgery
Carilion Clinic
Roanoke, Virginia

Lloyd M. Nyhus, MD[†]

Department of Surgery University of Illinois College of Medicine Peoria, Illinois

Paul E. O'Brien, BBS(Hons), FRACS, MD

Emeritus Professor of Surgery Emeritus Director Centre for Obesity Research and Education Monash University Melbourne, Australia

Gustavo S. Oderich, MD

Associate Program Director and Director of Endovascular Therapy Division of Vascular and Endovascular Surgery Professor of Surgery Mayo Clinic College of Medicine Rochester, Minnesota

Kelly Olino, MD

Assistant Professor
Department of Surgery
Division of Surgical Oncology
University of Texas Medical Branch
Galveston, Texas

Marshall J. Orloff, MD

Distinguished Professor of Surgery, Emeritus Founder of School of Medicine Founder of Department of Surgery University of California, San Diego San Diego, California

Mark B. Orringer, MD

Cameron Haight Distinguished University Professor Active Professor Emeritus of Surgery University of Michigan

Ann Arbor, Michigan

Marc C. Osborne, MD

Clinical Associate Professor Department of Surgery University of Minnesota Minneapolis, Minnesota Staff Surgeon Fairview Southdale Hospital Edina, Minnesota

Harald C. Ott, MD

Associate Professor in Surgery Harvard Medical School Assistant Surgeon Massachusetts General Hospital Boston, Massachusetts

C. Keith Ozaki, MD

John A. Mannick Professor of Surgery
Department of Surgery
Harvard Medical School
Associate Surgeon
Department of Surgery
Brigham and Women's Hospital
Boston, Massachusetts

H. Leon Pachter, MD, FACS

The George David Stewart Professor Chairman of the Department of Surgery NYU Langone Medical Center New York, New York

Theodore N. Pappas, MD

Professor
Department of Surgery
Duke University School of Medicine
Chief, Division of Advanced Oncologic & GI Surgery
Department of Surgery
Duke University Medical Center
Durham, North Carolina

Catherine Caldwell Parker, MD

Assistant Professor Division of Surgical Oncology Department of Surgery UAB School of Medicine Birmingham, Alabama

Himanshu J. Patel, MD

Joe D. Morris Collegiate Professor Section Head, Adult Cardiac Surgery Department of Cardiac Surgery University of Michigan Medical School Ann Arbor, Michigan

Philip S. K. Paty, MD

Professor of Surgery Albany Medical College Albany Medical Center, Vascular Surgery Albany, New York

Eric M. Pauli, MD, FACS, FASGE

Associate Professor of Surgery
Director of Endoscopic Surgery
Department of Surgery
Division of Minimally Invasive and Bariatric Surgery
Penn State Milton S. Hershey Medical Center
Hershey, Pennsylvania

Timothy M. Pawlik, MD, MPH, PhD

Professor and Chair, Department of Surgery
The Urban Meyer III and Shelley Meyer Chair for Cancer Research
The Ohio State University Wexner Medical Center
Columbus, Ohio

Jonathan P. Pearl, MD

Associate Professor Department of General Surgery University of Maryland Baltimore, Maryland

Andrew B. Peitzman, MD

Distinguished Professor of Surgery
Mark M. Ravitch Chair in Surgery
Executive Vice-Chair, Department of Surgery
Vice-Chair, General/Community Surgery, Department of Surgery
Chief, Division of General Surgery
Vice-President for Trauma and Surgical Services University of Pittsburgh
Medical Center

Pittsburgh, Pennsylvania

Kyle A. Perry, MD, FACS

Associate Professor of Surgery Division of General & Gastrointestinal Surgery The Ohio State University Columbus, Ohio

Laura A. Peterson, MD, MPH

Professor Health Services Research Baylor College of Medicine Associate Chief of Staff for Research Michael E. DeBakey VA Medical Center Houston, Texas

Carrie Y. Peterson, MD, MS

Assistant Professor Division of Colorectal Surgery Medical College of Wisconsin Milwaukee, Wisconsin

Henrik Petrowsky, MD, FACS

Department of Visceral and Transplantation Surgery Swiss HPB and Transplant Center University Hospital of Zurich Zurich, Switzerland

Henry A. Pitt, MD

Associate Vice-Dean for Clinical Affairs
Professor of Surgery
Lewis Katz School of Medicine at Temple University
Chief Quality Officer
Temple University Health System
Philadelphia, Pennsylvania

Bertram Poch, MD

Priv.Doz.-Zentrum of Oncologic, Endocrine and Minimal-invasive Surgery, Donau Klinikum, Neu-Ulm/Germany-Surgeon-in Chief of the Department

Neu-Ulm, Germany

Javier Salgado Pogacnik, MD

Assistant Professor of Surgery Division of Colon and Rectal Surgery University of Pittsburg Medical Center Pittsburgh, Pennsylvania

Hiram C. Polk, Jr., MD

Ben A. Reid, Sr. Professor of Surgery, Emeritus Department of Surgery University of Louisville Louisville, Kentucky

Alfons Pomp, MD, FACS, FRCSC

Leon C. Hirsch Professor of Surgery Vice-Chairman, Department of Surgery Chief, GI, Metabolic, and Bariatric Surgery Weill Cornell Medicine Division of GI, Metabolic, & Bariatric Surgery New York Presbyterian Hospital New York, New York

Frank B. Pomposelli, MD

Professor of Surgery
Tufts School of Medicine
Chair
Department of Surgery
St. Elizabeth's Medical Center
Director of Surgery
Steward Health Care Network
Boston, Massachusetts

Jeffrey L. Ponsky, MD, MBA, FACS

Professor of Surgery
Lynda and Marlin Younker Chair in Endoscopy
Cleveland Clinic Lerner College of Medicine
Director of Development Endoscopy
Digestive Disease & Surgery Institute
Cleveland Clinic
Cleveland, Ohio

Benjamin K. Poulose, MD, MPH, FACS

Associate Professor of Surgery Vanderbilt University Medical Center Nashville, Tennessee

Richard Powell, MD

Professor of Surgery Section Chief of Vascular Surgery Heart and Vascular Center Dartmouth–Hitchcock Medical Center Geisel School of Medicine Lebanon, New Hampshire

Richard A. Prinz, MD, FACS

Clinical Professor
Department of Surgery
The University of Chicago Pritzker School of Medicine
Chicago, Illinois
Vice-Chairman
Department of Surgery
NorthShore University HealthSystem
Evanston, Illinois

Timothy L. Pruett, MD

John S. Najarian Surgical Chair in Clinical Transplantation Chief, Division of Transplantation Department of Surgery University of Minnesota Minneapolis, Minnesota

Bettina M. Rau, MD

Prof. of Surgery Klinikum Neumark, Germany Surgeon-in-Chief Department of Surgery Neumark/Oberpfalz, Germany

John E. Rectenwald, MD, MS

Associate Professor Chief, Division of Vascular & Endovascular Surgery Department of Surgery University of Texas Southwestern Medical Center Dallas, Texas

KMarie Reid, MD, MS, FACS

Department of Surgery Mayo Clinic Rochester, Minnesota

Richard R. Ricketts, MD

Emory University Children's Healthcare of Atlanta Atlanta, Georgia

Michael L. Ritchey, MD

Professor Department of Urology Mayo Clinic Hospital Phoenix, Arizona

Patricia L. Roberts, MD

Professor of Surgery
Tufts University School of Medicine
Medford, Massachusetts
Chair, Department of Surgery
Lahey Hospital and Medical Center
Burlington, Massachusetts

Kara Long Roche, MD

Assistant Professor
Department of OB/GYN
Weill Cornell Medical College
Assistant Attending
Gynecology Service
Department of Surgery
Memorial Sloan Kettering Cancer Center
New York, New York

John Rodriguez, MD

Assistant Professor Section of Surgical Endoscopy Department of General Surgery Cleveland Clinic Lerner College of Medicine Cleveland, Ohio

Sanziana Roman, MD, FACS

Professor of Surgery
Associate Chief, Division of Advanced Oncologic and GI Surgery
Director
Endocrine Surgery Fellowship Program
Duke University Medical Center
Durham, North Carolina

Alexander S. Rosemurgy, MD

Director, Surgical Digestive Disorders and GERD Center
Director, HPB Surgery and Fellowship Program
The Southeastern Center for Digestive Disorders & Pancreatic Cancer,
Advanced Minimally Invasive & Robotic Surgery
Florida Hospital Tampa

Tampa, Florida

Raul J. Rosenthal, MD, FACS, FASMBS

Chairman, Department of General Surgery
Director, The Bariatric and Metabolic Institute
Cleveland Clinic Florida
Weston, Florida
Professor of Surgery
Herbert Wertheim School of Medicine
Florida International University
Miami, Florida

Ornob P. Roy, MD, MBA

Assistant Professor of Urology Levine Cancer Institute Carolinas Medical Center Charlotte, North Carolina

Michael Ruebhausen, MD

Institute for Plastic Surgery Southern Illinois University School of Medicine Springfield, Illinois

Aaron Ruhalter, MD, FACS†

Professor of Anatomy University of Cincinnati College of Medicine Executive Director of Medical Education Johnson & Johnson Endo-Surgery Institute Cincinnati, Ohio

Michael S. Sabel, MD

William W. Coon Collegiate Professor of Surgical Oncology Chief, Division of Surgical Oncology University of Michigan Ann Arbor, Michigan

Jacqueline M. Saito, MD

Assistant Professor of Surgery
Division of Pediatric Surgery
Washington University School of Medicine
Attending Surgeon
Department of Pediatric Surgery
St. Louis Children's Hospital
St. Louis, Missouri

Atef A. Salam, MD

Professor
Division of Vascular Surgery
Department of Surgery
Emory University School of Medicine
Chief of Vascular Service
Atlanta VA Medical Center
Atlanta, Georgia

Arghavan Salles, MD, PhD

Assistant Professor of Surgery Washington University School of Medicine Attending Surgeon Barnes-Jewish Hospital St. Louis, Missouri

Dawn Sander, MSN, ANP-BC

Nurse Practitioner Nursing Administrator Department of Surgery, Section of Vascular Surgery Washington University in St. Louis St. Louis, Missouri

Michael G. Sarr, MD

Department of Surgery Mayo Clinic Rochester, Minnesota

Aaron Saunders, MD

Clinical Fellow Department of Surgical Oncology Roswell Park Cancer Institute Buffalo, New York

Lara W. Schaheen, MD

Department of Cardiothoracic Surgery University of Pittsburgh Medical Center Pittsburgh, Pennsylvania

Randall Scheri, MD

Associate Professor
Section of Endocrine Surgery
Department of Surgery
Duke University Medical Center
Durham, North Carolina

Richard Schulick, MD, MBA

The Aragón/Gonzalez-Gíustí Chair Professor & Chair of the Department of Surgery

University of Colorado

Aurora, Colorado

Jatin P. Shah, MD, PhD

Professor

Department of Otolaryngology—Head and Neck Surgery

Weill Cornell Medical College

Cornell University

Attending Surgeon

Surgery, Head, and Neck Service

Memorial Sloan Kettering Cancer Center

New York, New York

Rupen Shah, MD

Clinical Fellow

Surgical Oncology

Roswell Park Cancer Institute

Buffalo, New York

Courtney Shepard, MD

Division of Pediatric Urology

Department of Urology

University of Michigan Health System

Ann Arbor, Michigan

Gregorio A. Sicard, MD

Emeritus Professor

Vascular Surgery

Washington University School of Medicine

St. Louis. Missouri

Anton N. Sidawy, MD, FACS

Professor and Lewis B. Saltz Chair

Vascular Surgery

Department of Surgery

George Washington University School of Medicine & Health Sciences

Washington, DC

J. Rüdiger Siewert

Univ.-Prof. Dr. Dr. h.c. mult. J. R. Siewert

Chief Medical Director and CEO

Medical Center University of Freiburg

Freiburg, Germany

Celso Silva, MD, MS

Associate Professor University of Central Florida College of Medicine Orlando, Florida

Parul Sinha, MD

Otolaryngology Head & Neck Surgery St. Louis, Missouri

LaShondria Simpson-Camp, MD

Allegheny Health Network Cancer Institute Allegheny General Hospital Pittsburgh, Pennsylvania

Lee J. Skandalakis, MD, FACS

Clinical Professor of Surgical Anatomy and Technique Centers for Surgical Anatomy and Technique Emory University School of Medicine Attending Surgeon Piedmont Hospital Atlanta, Georgia

Eila C. Skinner, MD

Thomas A. Stamey Research Professor in Urology Stanford University School of Medicine Stanford, California

Alexis D. Smith, MD

Children's Healthcare of Atlanta Emory University Scottish Rite Hospital Atlanta, Georgia

J. Joshua Smith, MD, PhD

Assistant Member
Attending Surgeon
Colorectal Service Department of Surgery
Memorial Sloan Kettering Cancer Center
Assistant Professor of Surgery
Weill Cornell Medical College
New York, New York

J.S. Solomkin, MD, FACS, FIDSA

Professor of Surgery (Emeritus) University of Cincinnati College of Medicine Cincinnati, Ohio

Professor Michael Solomon, MB Bch BAO (Hons), MSc, DMedSc, LRCPI, FRACS, FRCSI (Hons)

Professor of Surgical Research

Sydney Medical School

University of Sydney

Chairman, Institute of Academic Surgery at RPA

Director & Head, Surgical Outcomes Research Centre

Sydney Local Health District & University of Sydney

Academic Head

Department of Colorectal Surgery

Royal Prince Alfred Hospital

Camperdown, Australia

Nathaniel J. Soper, MD, FACS

Loyal and Edith Davis Professor and Chair of Surgery

Northwestern University

Evanston, Illinois

Chief of Surgery

Northwestern Memorial Hospital

Chicago, Ilinois

Julie Ann Sosa, MD, FACS

Professor of Surgery and Medicine

Chief, Section of Endocrine Surgery

Leader, Endocrine Neoplasia Diseases Group and Solid Tumor Therapeutics Program

Duke Cancer Institute and Duke Clinical Research Institute

Duke University Medical Center

Durham, North Carolina

Matthew D. Spann, MD

Assistant Professor

Department of Surgery

Vanderbilt University Medical Center

Nashville, Tennessee

Michael J. Stamos, MD, FACS, FASCRS

Professor of Surgery and the John E. Connolly Chair Department of Surgery University of California, Irvine Irvine. California

Thomas E. Starzl, MD, PhD

Distinguished Service Professor of Surgery Thomas E. Starzl Transplantation Institute University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania

David J. Sugarbaker, MD

The Olga Keith Wiess Chair of Surgery
Department of Surgery
Baylor College of Medicine
Chief, Division of Thoracic Surgery
Director, The Lung Institute
Baylor St. Luke's Medical Center
Houston, Texas

Ryan M. Svoboda, MD

Division of Vascular Surgery Department of Surgery Dartmouth-Hitchcock Medical Center Lebanon, New Hampshire

John D. Symbas, MD

Plastic Surgeon Department of Surgery WellStar Kennestone Hospital Marietta, Georgia

Panagiotis N. Symbas, MD

Emory University School of Medicine Atlanta, Georgia

Samuel Szomstein, MD, FACS, FASMBS

Associate Professor of Surgery Florida International University Miami, Florida Associate Director The Bariatric and Metabolic Institute Director Fellowship Advance MIS General and Vascular Surgery Cleveland Clinic Florida Weston, Florida

Kenneth K. Tanabe, MD

Professor of Surgery Harvard Medical School Chief, Surgical Oncology and Deputy Clinical Director Massachusetts General Hospital Cancer Center Boston, Massachusetts

Giorgio Tarchini, MD, FIDSA

Chairman
Department of Infectious Diseases
Cleveland Clinic Florida
Weston, Florida

Mehdi J. Teymouri, BS

Center for Vascular Awareness Syracuse University Albany, New York

Robert Thompson, MD

Departments of Surgery (Section of Vascular Surgery), Radiology, and Cell Biology and Physiology Washington University School of Medicine Barnes-Jewish Hospital St. Louis, Missouri

Sandie R. Thomson, ChM, FRCS (Eng&Ed), FRCP (Ed)

Professor & Chair of Gastroenterology Department of Medicine University of Cape Town Division Head Gastroenterology Gastrointestinal Unit Groote Schuur Cape Town, South Africa

Gregory M. Tiao, MD

Professor of Surgery
University Of Cincinnati
Ryckman Chair of Pediatric Surgery
Division Chief of Pediatric Surgery
Director of Liver Transplantation
Cincinnati Children's Hospital and Medical Center
Cincinnati, Ohio

Joshua S. Tierney, MD

Interventional Endoscopy and Pancreaticobiliary Surgery Fellow Department of Surgery University of Louisville Louisville, Kentucky

Parag P. Tolat, MD

Assistant Professor of Radiology
Chief, Section of Abdominal/Body Imaging
Division of Diagnostic Radiology
Medical Director
Imaging IT Strategy
Section of Informatics
Division of Imaging Sciences
Department of Radiology
Medical College of Wisconsin
Milwaukee, Wisconsin

Gonzalo Torres-Villalobos, MD, PhD

Associate Professor Department of Surgery Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán Mexico City, Mexico

Megan Tracci, MD, JD

Assistant Professor of Surgery Division of Vascular and Endovascular Surgery University of Virginia Charlottesville, Virginia

Thomas F. Tracy, MD, MBA

Professor of Surgery and Pediatrics Penn State College of Medicine Senior Vice President Chief Medical Officer Penn State Milton S. Hershey Medical Center Hershey, Pennsylvania

Nam T. Tran, MD

Associate Professor of Surgery Program Committee University of Washington Seattle, Washington

Donald D. Trunkey, MD

Professor Emeritus
Department of Surgery
Oregon Health and Science University
Portland, Oregon

Kiran K. Turaga, MD, MPH, FACS

Vice Chief, Surgery and Surgical Oncology (Strategy and Finance)
Director, Complex General Surgical Oncology Program
Associate Professor of Surgery, Department of Surgery
University of Chicago
Chicago, Illinois

Douglas Tyler, MD

John Woods Harris Distinguished Professor Chairman Department of Surgery University of Texas Medical Branch Galveston, Texas

Robert Udelsman, MD, MBA

William H. Carmalt Professor Department of Surgery Yale University School of Medicine New Haven, Connecticut

Konstantin Umanskiy, MD, FACS, FASCRS

Associate Professor Section of Colon and Rectal Surgery Department of Surgery University of Chicago Pritzker School of Medicine Chicago, Illinois

Heidi Umphrey, MD

Associate Professor UAB Department of Radiology Birmingham, Alabama

Gilbert R. Upchurch Jr., MD

Chief of Vascular and Endovascular Surgery William H. Muller, Jr. Professor of Surgery University of Virginia Charlottesville, Virginia

Dirk Van Raemdonck, MD, PhD

Professor

Department of Clinical and Experimental Medicine: Thoracic Surgery KU Leuven University
Clinical Head
Thoracic Surgery
University Hospital Gasthuisberg
Leuven, Belgium

Hans Van Veer, MD

Assistant

Department of Clinical and Experimental Medicine: Thoracic Surgery

KU Leuven University

Joint Clinical Head

Thoracic Surgery

University Hospital Gasthuisberg

Leuven, Belgium

Luis O. Vásconez, MD

Clinical Professor Mountain Brook Plastic Surgery University of Alabama at Birmingham Birmingham, Alabama

Vic Velanovich, MD

Division of General Surgery University of South Florida Tampa, Florida

Dionysios K. Veronikis, MD

Female Pelvic Medicine & Reconstructive Surgery Mercy Hospital St. Louis Saint Louis, Missouri

Gary C. Vitale, MD

Department of Surgery University of Louisville School of Medicine Louisville, Kentucky

Daniel von Allmen, MD

Surgeon-in-Chief Lester W. Martin Chair of Pediatric Surgery Senior Vice President, Surgical Services Cincinnati Children's Hospital and Medical Center Cincinnati, Ohio

Michel Wagner, MD, FACS

Assistant Professor Division of Trauma Department of Surgery Creighton University School of Medicine Omaha, Nebraska

John C. Wain, MD

St. Elizabeth's Medical Center Brighton, Massachusetts

Jessica Wallaert, MD, MS

Division of Vascular Surgery Department of Surgery Dartmouth-Hitchcock Medical Center Lebanon, New Hampshire

R. Matthew Walsh, MD, FACS

Professor of Surgery
Rich Family Distinguished Chair of Digestive Diseases
Chairman, Department of General Surgery
Digestive Disease Institute
Chairman, Academic Department of Surgery
Education Institute
Cleveland Clinic
Cleveland, Ohio

Tracy S. Wang, MD, MPH

Department of Surgery Division of Surgical Oncology Medical College of Wisconsin Milwaukee. Wisconsin

Brad W. Warner, MD

Jessie L. Ternberg, MD, PhD, Distinguished Professor of Pediatric Surgery Surgeon-in-Chief St. Louis Children's Hospital St. Louis. Missouri

David I. Watson, MBBS, MD, PhD, FRACS, FAHMS

Professor and Head of Department
Department of Surgery
Flinders University
Senior Consultant Surgeon
Oesophago-Gastric Surgery Unit
Flinders Medical Centre
Adelaide, Australia

Kaare J. Weber, MD

Member of Montefiore Health System White Plains Hospital New York, New York Director of Surgery Associate Medical Director, Surgical Services Department of Surgery White Plains Hospital White Plains, New York

Martin R. Weiser, MD

Surgical Oncologist
Vice Chair for Education and Faculty Development
Department of Surgery
Stuart H.Q. Quan Chair in Colorectal Surgery
Memorial Sloan Kettering Cancer Center
New York, New York

Mark Welton, MD

Chief of Colorectal Surgery Department of Surgery Stanford University School of Medicine Stanford, California

Hadley Katharine Wesson, MD, MPH

Assistant Professor Department of Surgery Johns Hopkins University Baltimore, Maryland

Steven Wexner, MD, PhD (Hons), FACS, FRCS, FRCS(Ed)

Director, Digestive Disease Center
Chair, Department of Colorectal Surgery Cleveland Clinic Florida
Affiliate Professor
Florida Atlantic University College of Medicine
Clinical Professor
Florida International University College of Medicine
Weston, Florida

Julia White, MD

Department of Radiation Oncology The Ohio State University Comprehensive Cancer Center Columbus, Ohio

T. Jeffrey Wieman, MD

Formerly Professor of Surgery Department of Surgery University of Louisville Louisville, Kentucky

Hale E. Wills, MD, MS

Trauma Medical Director
Director of Pediatric Surgical Critical Care
Hasbro Children's Hospital
Assistant Professor of Surgery and Pediatrics
Division of Pediatric Surgery
Alpert Medical School
Brown University
Providence, Rhode Island

Chad T. Wilson, MD, MPH, FACS

Associate Professor Department of Surgery Baylor College of Medicine Houston, Texas

Alan C. Wittgrove, MD, FACS, FASMBS

Department of Surgery Scripps Memorial Hospital La Jolla San Diego, California

Bo Yang, MD, PhD

Assistant Professor of Cardiac Surgery Department of Cardiac Surgery University of Michigan Medical School Ann Arbor, Michigan

Jerrold Young, MD, FACS

Voluntary Associate Professor DeWitt Daughtry Family Department of Surgery Leonard M. Miller School of Medicine Miami, Florida

Jonathan S. Zager, MD, FACS

Chair of Graduate Medical Education
Director of Regional Therapies
Senior Member, Moffitt Cancer Center
Departments of Cutaneous Oncology and Sarcoma
Professor of Surgery, University of South Florida School of Medicine
Moffitt Cancer Center
Tampa, Florida

Steven M. Zeitels, MD

Chief

Center for Laryngeal Surgery & Voice Rehabilitation

Massachusetts General Hospital Boston, Massachusetts

Nicholas J. Zyromski, MD

Associate Professor Department of Surgery Indiana University School of Medicine Indianapolis, Indiana

[†]Deceased.

PREFACE

I am writing from my favorite place in the world—Nantucket Island. I have only a few instruments with me—an ink pen, a pencil, and a pad of paper. An American flag is flying over the water, and a few boats are making their way through the harbor.

The scene is special to me. Our house, discovered by our son Erich after my wife Karen and I returned from Cincinnati to Boston after 23 years, is blessed by a 40-foot Osprey pole where the female is right now standing guard after feeding two rapidly growing chicks. And I am fortunate having some of my family here with me; Alexandra, who is resting a broken foot, and her husband Peter.

I recently turned 80 years old as did Karen. I have been blessed both professionally and personally. As one who slept on the couch when 8 to 10 years old living on the lower east side of New York City in the 1930s and 1940s in my grandparents' apartment, I have been privileged to have been able to work my way to a position where I hope that I have contributed at least somewhat to expanding the knowledge of surgical science and practice. It has indeed been a privilege to have taken a part in educating and mentoring some 105 Fellows from the United States and abroad and to know that today 22 of those Fellows have their own departments. It is also a privilege to have been part of great institutions during the course of my career—from the Massachusetts General Hospital to 23 years as Chairman of Surgery at the University of Cincinnati, then 8 years as Chairman of Surgery at Harvard at the Beth Israel Deaconess in Boston.

I also have been blessed personally. None of my professional accomplishments would have been possible without my wife Karen, a beautiful and very bright and articulate social worker whom I met on my first Saturday as an intern at the Massachusetts General Hospital in 1961. Karen and I have been together for 56 years and married for 52. She has been a source of advice, has played a central role in building my departments, and has raised two wonderful children—Erich and

Alexandra.

Erich, 50, is a successful business consultant who, with his wife Hallie, has given us two grandchildren—Asher and Aleksei. Asher, 4, is a very bright and articulate little boy who shows early signs of fascination with the medical profession (we can only hope!). When not swimming he is exploring the outside and playing with my vintage Lionel train set that has 32 engines, many cars and a huge number of accessories. He is also somewhat of a conman and very good at it. On the second day of camp this summer he ran down for breakfast exclaiming, "No camp today." At 7:30 AM of the same day Erich came down to the kitchen asking Asher if he was ready to leave for camp. Asher left without an apology. He is also a caring and vigilant older brother to Aleksei. At 2 months old, Aleksei is the newest member of the family, a relaxed baby (except when hungry!), he has started to smile—and we have all the best hopes for him. Our daughter-in-law Hallie recently "retired" from the financial world and is a graphic designer. She is very beautiful, very bright, and is an extremely attentive mother. She is currently progressing with her own graphic design business.

Alexandra, 47, did not fall far from the tree medically and chose to care for animals. She has been named one of the top veterinarians in Washington, DC and is married to Peter, an award-winning anesthesiologist who pilots his own plane and recently joined the Naval Reserves. They have no human children by choice but foster several dogs and cats—many of whom may outlive us all thanks to her.

The good Lord has been kind to us indeed. It has been a pleasure to contribute as editor to the third and fourth editions as well as produce the fifth, sixth and now seventh edition. I am pleased for how relevant the *Mastery of Surgery* remains despite radical changes in learning and media influence on our own society.

Principal mentors in my career, although there are many luminaries who have helped and supervised my development of my career, there are three who stand out:

Professor Claude Welch

As a surgeon and human being Claude Welch was my idol. He was a

quick, very accurate surgeon and very knowledgeable. He was especially quick in removing cancer. When I undertook cancer of the rectum I tried to allow patients to retain their rectum. He said I was wrong. But when I did not have recurrence he stopped criticizing but never adopted this approach himself.

Professor Julias Axelrod

He was a role model for me at the National Institutes of Health. He started as a technician and became the head of the Laboratory section. He never forgot his past. He was a great teacher and only had one technician who ground up the tissues and washed the glassware. Helen was African American, rare at that time.

Reuven Katz, Esquire

Mr. Katz was a wonderful attorney and head of a major Cincinnati law firm. He was a brilliant teacher and was a major influence on my success, for the 23 years I was chair of the Department of Surgery, and as how to relate to various people. He became a major influence in the 23 years I was chair of the Department of Surgery at the University of Cincinnati.

Josef E. Fischer

August 2017 Nantucket, Massachusetts

CONTENTS



Chapters with icon are web-only

VOLUME I

SECTION I

PERIOPERATIVE CARE OF THE SURGICAL PATIENT

CHAPTER 1: Metabolic and Inflammatory Responses to Trauma and Infection

Vance L. Albaugh • Igal Breitman Naji N. Abumrad

CHAPTER 2: Perioperative Management: Practical Principles, Molecular Basis of Risk, and Future Directions

Per-Olof Hasselgren • Jeremy W. Cannon Josef E. Fischer

CHAPTER 3: Enteral Nutrition Support

Keith R. Miller • Robert G. Martindale

CHAPTER 4: Cardiovascular Monitoring and Support

Eric J. Charles • Irving L. Kron

CHAPTER 5: Pulmonary Risk and Ventilatory Support

Jay A. Johannigman • Richard Branson

CHAPTER 6: Hemorrhagic Risk and Blood Components

Karen J. Brasel

CHAPTER 7: Perioperative Antimicrobial Prophylaxis and Treatment of Surgical Infection

Kui-Hin Liau • Giorgio Tarchini J.S. Solomkin

CHAPTER 8: Multiple Organ Dysfunction Syndrome: Prevention and Clinical Management

David J. Dries

CHAPTER 9: Immunosuppression in Organ Transplantation

Mani A. Daneshmand • Allan D. Kirk



CHAPTER 10: Surgeons and the Opioid Epidemic

Jeffrey D. Howard, Jr. • Hiram C. Polk, Jr.

SECTION II

BASIC SURGICAL SKILLS: NEW AND EMERGING TECHNOLOGY

CHAPTER 11: Ventral Abdominal Hernia: Open and Minimally Invasive and Component Separation Release

Stephen R.T. Evans • Parag Bhanot

CHAPTER 12: Laparoscopic Suturing and Stapling

Jon C. Gould

CHAPTER 13: Ultrasonography by Surgeons

Ellen Hagopian • Junji Machi

CHAPTER 14: Tumor Ablation: Technologies and Clinical Applications

Michael S. Sabel

CHAPTER 15: Upper and Lower Gastrointestinal Endoscopy

Jeffrey L. Ponsky • Jonathan P. Pearl

CHAPTER 16: Soft Tissue Reconstruction With Flap Techniques

Luis O. Vásconez • Salman Ashruf Franziska Huettner • Michael Ruebhausen

CHAPTER 17: Hand Surgery: Traumatic and Infectious Emergencies

Brian A. Mailey • Michael W. Neumeister

CHAPTER 18: Robotic Surgery

Michael S. Nussbaum • Michael Latzko

CHAPTER 19: Surgical Energy

Edward L. Jones • Dean J. Mikami

SECTION III

THE HEAD AND NECK

CHAPTER 20: Anatomy of the Head and Neck

Aaron Ruhalter

CHAPTER 21: Surgery of the Major Salivary Glands

Carol M. Lewis • Michael E. Kupferman

CHAPTER 22: Anatomy of the Parotid Gland, Submandibular Triangle, and

Floor of the Mouth

Aaron Ruhalter

CHAPTER 23: Lip Reconstruction

Patrick C. Hettinger • Robert J. Havlik

CHAPTER 24: Surgery for Cancer of the Oral Cavity

William R. Carroll

CHAPTER 25: Neck Dissection

Ian Ganly •Jatin P. Shah

CHAPTER 26: Congenital Lesions: Thyroglossal Duct Cysts, Branchial

Cleft Anomalies, and Cystic Hygromas

Juan P. Gurria • Jaimie D. Nathan

CHAPTER 27: Vascular Anomalies of Infancy and Childhood

Arin K. Greene • John B. Mulliken

CHAPTER 28: Surgical Treatment of Laryngeal Cancer: A Legacy of Minimally Invasive Innovation and the Preservation of Airway, Swallowing,

and Vocal Function

Steven M. Zeitels • John C. Wain

CHAPTER 29: Surgical Treatment of Pharyngeal Cancer

Bruce H. Haughey • Parul Sinha

CHAPTER 30: Malignant Melanoma and Skin Cancer

Hiram C. Polk, Jr. • Jane V. Carter • Uri Netz

CHAPTER 31: Melanoma

Douglas Tyler • Kelly Olino

CHAPTER 32: Inquinal Lymph Node Dissection: Indications and Surgical

Technique

Steven Agle • Douglas Tyler

CHAPTER 33: Evaluation and Repair of Common Facial Injuries

Branko Bojovic

CHAPTER 34: Resection and Reconstruction of the Trachea

Natalie Lui • Harald C. Ott • Douglas J. Mathisen

CHAPTER 35: Penetrating Neck Injuries

Alain Corcos • Andrew B. Peitzman

CHAPTER 36: Neurosurgical and Neurologic Emergencies for Surgeons

Ekkehard M. Kasper • Yosef Laviv • Clark C. Chen • Burkhard S. Kasper

CHAPTER 37: Tracheotomy

Ryan Little • Jonathan M. Bock

SECTION IV

ENDOCRINE SURGERY

CHAPTER 38: Surgical Anatomy of the Thyroid, Parathyroid, and Adrenal Glands

Clive S. Grant

CHAPTER 39: Biopsy, Lobectomy, Total Thyroidectomy, and Lymph Node Dissection for Thyroid Cancer

Randall Scheri • Sanziana Roman • Julie Ann Sosa

CHAPTER 40: Comprehensive Parathyroidectomy for the Treatment of PHPT, Including Intraoperative Parathyroid Hormone Assay–Guided Parathyroidectomy

Azadeh A. Carr • Tracy S. Wang

CHAPTER 41: Minimally Invasive Parathyroidectomy

Robert Udelsman • Tobias Carling

CHAPTER 42: Secondary and Tertiary Hyperparathyroidism

Richard A. Prinz • Kaare J. Weber • Shalini Arora

CHAPTER 43: Transsternal, Transcervical, and Minimally Invasive Thymectomy for Benign and Malignant Disease

Daniel P. McCarthy • Malcolm M. DeCamp

CHAPTER 44: Adrenalectomy—Minimally Invasive and Open

L. Michael Brunt • Arghavan Salles

CHAPTER 45: Pancreatic Neuroendocrine Tumors

Michael P. Kim • Brian D. Badawell

SECTION V

THE BREAST, CHEST, AND MEDIASTINUM

CHAPTER 46: Embryology and Anatomy of the Breast

Kirby I. Bland

CHAPTER 47: Benign Disease and Breast Pain

Amy C. Degnim • Karthik Ghosh

CHAPTER 48: Diagnostic Approach to Breast Abnormalities

Catherine Caldwell Parker • Heidi Umphrey Helen Krontiras • Kirby I. Bland

CHAPTER 49: Breast-Conserving Surgery

J. Michael Dixon

CHAPTER 50: Radiation Treatment, Whole and Partial Breast and Intraoperative Irradiation

Julia White

CHAPTER 51: Ablative Techniques for Benign and Malignant Breast

Tumors

Sheldon Feldman • Margaret Chen

CHAPTER 52: Sentinel Lymph Node Biopsy in Breast Cancer

Anthony Lucci • Sarah M. DeSnyder • Oluwadamilola (Lola) Fayanju

CHAPTER 53: Lymphedema—Pathophysiology, Prevention, and

Treatment

Sarah A. McLaughlin

CHAPTER 54: Modified Radical Mastectomy and Radical Mastectomy

Kirby I. Bland

CHAPTER 55: Oncoplastic Techniques for Breast Conservation Surgery

Kristine E. Calhoun • Benjamin O. Anderson

CHAPTER 56: Breast Reconstruction Following Mastectomy

James N. Long • John B. McCraw • Jorge I. de la Torre • Luis O. Vásconez

CHAPTER 57: Chest Wall Resection and Reconstruction for

Advanced/Recurrent Carcinoma of the Breast

Kirby I. Bland • Cristiano Boneti • R. Jobe Fix • Robert J. Cerfolio

CHAPTER 58: Clinical Trials and Follow-Up for Breast Cancer

Michael S. Cowher LaShondria Simpson-Camp Eleftherios P. Mamounas • Thomas

B. Julian

CHAPTER 59: The Deep Inferior Epigastric Perforator Flap for Breast

Reconstruction

Robert J. Allen • James L. Mayo

CHAPTER 60: Applied Anatomy of the Chest Wall and Mediastinum

Petros Mirilas • Michael E. Halkos • John D. Symbas • Panagiotis N. Symbas • Lee J.

Skandalakis

CHAPTER 61: Thoracic Trauma

J. Wayne Meredith • James Jason Hoth

CHAPTER 62: Pulmonary Resection

Bryan M. Burt • Shawn S. Groth • David J. Sugarbaker

SECTION VI

THE DIAPHRAGM

CHAPTER 63: Surgical Anatomy of the Diaphragm

Petros Mirilas • Lee J. Skandalakis • Richard R. Ricketts • Marios Loukas

CHAPTER 64: Congenital Diaphragmatic Hernia

Corey W. Igbal

CHAPTER 65: Eventration of the Diaphragm

Heather R. Nolan • Daniel von Allmen • Foong-Yen Lim

CHAPTER 66: Traumatic Injury to the Diaphragm

H. Leon Pachter • Chad T. Wilson • Spiros G. Frangos

CHAPTER 67: Paraesophageal Hernia—Open Repair

W. Scott Melvin • Kyle A. Perry

CHAPTER 68: Gastroesophageal Reflux Disease in Infants and Children

George W. Holcomb III • Brad W. Warner

SECTION VII

THE GASTROINTESTINAL TRACT

Part A: The Esophagus

CHAPTER 69: The Anatomy of the Esophagus

Toni Lerut • Willy Coosemans • Herbert Decaluwe • Georges Decker • Paul De Leyn • Lieven De Pypere • Philippe Nafteux • Dirk Van Raemdonck • Hans Van Veer

CHAPTER 70: Transthoracic Antireflux Procedures

Tom R. DeMeester

CHAPTER 71: Laparoscopic Esophagectomy

James D. Luketich • Lara W. Schaheen

CHAPTER 72: Nissen–Rossetti Antireflux Fundoplication (Open Procedure)

David I. Watson

CHAPTER 73: Modified Hill Repair for Gastroesophageal Reflux

Donald E. Low • Mustapha El-Lakis

CHAPTER 74: Laparoscopic Antireflux Surgery

Nathaniel J. Soper • Eric S. Hungness

CHAPTER 75: Peroral Endoscopic Myotomy for Achalasia and

Endoluminal Approaches for GERD

Edward D. Auyang • Eric S. Hungness

CHAPTER 76: Minimally Invasive Treatment of Achalasia and Other Esophageal Dysmotility

Michael S. Nussbaum • Bestoun H. Ahmed • Jeffrey L. Ponsky

CHAPTER 77: Esophagogastrectomy for Carcinoma of the Esophagus

Simon Law

CHAPTER 78: Transhiatal Esophagectomy Without Thoracotomy

Mark B. Orringer

CHAPTER 79: Esophageal Perforation

Eric M. Pauli • Jeffrey M. Marks

CHAPTER 80: Repair of Esophageal Atresia and Tracheoesophageal

Fistula

George W. Holcomb III

CHAPTER 81: Pathology and Treatment of Zenker Diverticulum

Christopher R. Morse

Part B: The Stomach and Duodenum

CHAPTER 82: Anatomic Considerations in Gastroduodenal Surgery

Petros Mirilas • Marios Loukas • Lee J. Skandalakis

CHAPTER 83: Percutaneous Endoscopic Gastrostomy

Jeffrey L. Ponsky • Benjamin K. Poulose

CHAPTER 84: Distal Gastrectomy With Billroth I or Billroth II

Reconstruction

Rudolf Bumm • J. Rüdiger Siewert

СНА

CHAPTER 85: Selective Vagotomy, Antrectomy, and

Gastroduodenostomy for the Treatment of Duodenal Ulcer

Lloyd M. Nyhus

CHAPTER 86: Selective and Nonselective Vagotomies

Theodore N. Pappas • Mohan K. Mallipeddi

CHAPTER 87: Duodenal Ulcer Disease: Pathogenesis and Management of

Complications

James W. Maher • Daniel T. Dempsey • E. Christopher Ellison

CHAPTER 88: Gastric Cancer

John T. Mullen

CHAPTER 89: Distal Gastrectomy With Roux-en-Y Reconstruction and

Laparoscopic Gastrectomy

Miguel A. Mercado Gonzalo Torres-Villalobos

CHAPTER 90: Postgastrectomy Syndromes in the Current Era

KMarie Reid • Michael G. Sarr

CHAPTER 91: Congenital Pyloric Stenosis and Duodenal Obstruction

Hale E. Wills • Alexis D. Smith • Thomas F. Tracy

CHAPTER 92: Diabetes and Other Metabolic Diseases

Kevin El-Hayek • R. Matthew Walsh

CHAPTER 93: Vascular Compression of the Duodenum

Stanley W. Ashley • Matthew T. Menard

Part C: Bariatric and Metabolic Diseases

CHAPTER 94: Gastrointestinal Stromal Tumors

G. Travis Clifton • Paul Mansfield

CHAPTER 95: The Laparoscopic Gastric Band Technique of Placement

Paul E. O'Brien

CHAPTER 96: Revision and Conversion of Vertical Banded Gastroplasty

Eric J. DeMaria • Daniel B. Jones

CHAPTER 97: Laparoscopic Gastric Bypass

Alan C. Wittgrove

CHAPTER 98: Laparoscopic Gastric Sleeve

Emanuele Lo Menzo • Samuel Szomstein • Raul J. Rosenthal

CHAPTER 99: Laparoscopic Biliopancreatic Diversion With Duodenal

Switch

Gregory Dakin • Alfons Pomp

CHAPTER 100: EndoBarrier for the Treatment of Morbid Obesity and Type

II Diabetes

Keith S. Gersin

CHAPTER 101: Revisional Bariatric Surgery

John Rodriguez • Matthew Kroh

CHAPTER 102: Management of Complications of Gastric Bypass and

Repair

Ronald H. Clements • Matthew D. Spann

VOLUME II

Part D: The Liver and Biliary Tract

CHAPTER 103: Surgical Anatomy of the Liver and Bile Ducts

Chung Mau Lo • Kelvin K. Ng

CHAPTER 104: Diagnostic Considerations in Biliary and Liver Disease

Kelly M. Collins • William C. Chapman

CHAPTER 105: Approaches to Drainage of Hepatic, Perihepatic, and

Subhepatic Abscesses

Timothy L. Pruett • Daniel Borja-Cacho

CHAPTER 106: Echinococcal Cyst—Open and Laparoscopic Approach

Miroslav N. Milicevic

CHAPTER 107: Hepatic Resection for Primary and Metastatic Tumors

Richard Schulick • Ana Luiza Mandelli Gleisner

CHAPTER 108: Treatment of Major Hepatic Trauma

Donald D. Trunkey

CHAPTER 109: Cholecystostomy, Cholecystectomy, and Intraoperative

Evaluation of the Biliary Tree

O. James Garden

CHAPTER 110: Laparoscopic Cholecystectomy, Intraoperative

Cholangiography, and Common Bile Duct Exploration

John G. Hunter • Laura E. Fischer

CHAPTER 111: Reconstruction of the Bile Duct: Anatomic Principles and

Surgical Techniques

Toms Augustin • R. Matthew Walsh

CHAPTER 112: Current Application of Endoscopic Sphincterotomy, Lateral Choledochoduodenostomy, and Transduodenal Sphincteroplasty

E. Christopher Ellison • Jeffrey W. Hazey • W. Scott Melvin • Stephen G. Moon

CHAPTER 113: Primary Sclerosing Cholangitis

Nicholas J. Zyromski • Henry A. Pitt

CHAPTER 114: High Malignant Biliary Tract Obstruction

Richard A. Burkhart • Timothy M. Pawlik

CHAPTER 115: Cholecystojejunostomy and

Choledocho/Hepaticojejunostomy

Herbert R. Freund • Michael R. Freund

CHAPTER 116: Operative Treatment for Choledochal Cysts

Charles E. Bagwell Hadley Katharine Wesson

CHAPTER 117: Biliary Atresia—Portoenterostomy

Gregory M. Tiao

CHAPTER 118: Liver Transplantation

Henrik Petrowsky • Lukasz Filip Grochola • Ronald W. Busuttil

CHAPTER 119: Special Comment: The Unfinished Legacy of Liver

Transplantation

Thomas E. Starzl • Noriko Murase

CHAPTER 120: The Associating Liver Partition and Portal Vein Ligation

for Staged Hepatectomy (ALPPS) Approach

Kenneth K. Tanabe Fernando Andrés Alvarez Eduardo de Santibañes

Part E: The Pancreas

CHAPTER 121: Surgical Anatomy of the Pancreas

Petros Mirilas • Marios Loukas • Lee J. Skandalakis

CHAPTER 122: Selection of Surgical Therapy for Chronic Pancreatitis

Peter Muscarella • William H. Nealon

CHAPTER 123: Operative Interventions for Chronic Pancreatitis

Keith D. Lillemoe • Chad G. Ball

CHAPTER 124: Parenchyma-Sparing, Limited Partial and Total Pancreatic Head Resection for Inflammatory Tumor, Cystic Neoplasia,

Neuroendocrine Adenoma, and Low-Risk Periampullary Malignant Tumor

Hans G. Beger • Bettina M. Rau • Bertram Poch

CHAPTER 125: Necrosectomy for Acute Necrotizing Pancreatitis

Peter Muscarella • E. Christopher Ellison

CHAPTER 126: Management of Complications of Acute and Chronic

Pancreatitis: Endoscopic, Laparoscopic, and Open Approaches to

Pancreatic Pseudocysts and Pancreatic Necrosis

Gary C. Vitale • Brian R. Davis • Michael Bahr

CHAPTER 127: Pancreaticoduodenectomy and Total Pancreatectomy for

Cancer

Douglas B. Evans • Parag P. Tolat • Kathleen K. Christians

CHAPTER 128: Operative Management of Pancreatic Trauma

David V. Feliciano

CHAPTER 129: Splanchnic Denervation of the Pancreas for Intractable

Pain

Joshua S. Tierney • Gary C. Vitale • Keith D. Lillemoe

Part F: Introduction to Portal Hypertension

Josef E. Fischer

CHAPTER 130: Anatomy of the Portal System and Experience With

Portacaval Shunt

Marshall J. Orloff

CHAPTER 131: Small-Diameter Prosthetic Interposition Shunt

Alexander S. Rosemurgy



CHAPTER 132: Distal Splenorenal Shunts: Hemodynamics of Total

Versus Selective Shunting

Atef A. Salam



CHAPTER 133: Central Splenorenal Shunts

Josef E. Fischer

CHAPTER 134: Endoscopic Therapy in the Management of Esophageal

Varices

Jake E. J. Krige • Sandie R. Thomson

Part G: Surgery of the Small Intestine

CHAPTER 135: Small Bowel Obstruction

Susan Galandiuk



CHAPTER 136: Metabolic Surgery and Intestinal Bypass for

Hypercholesterolemia

Henry Buchwald



CHAPTER 137: The Continent Ileostomy

Eric J. Dozois • Roger R. Dozois

CHAPTER 138: Technique of Ileostomy Construction and Closure

Harvey G. Moore • Christopher R. Mantyh

CHAPTER 139: Gastrointestinal-Cutaneous Fistulas

Josef E. Fischer • Amy R. Evenson

CHAPTER 140: Surgical Treatment of Small Bowel Crohn Disease

Erin O. Lange • Linda Ferrari • Mukta Krane • Fabrizio Michelassi • Alessandro

Fichera

Part H: Surgery of the Colon

CHAPTER 141: Clinical Anatomy for Procedures Involving the Small

Bowel, Colon, Rectum, and Anus

Uri Netz • Susan Galandiuk

CHAPTER 142: The Appendix

Vic Velanovich

CHAPTER 143: Large Bowel Obstruction

Neil H. Hyman • Konstantin Umanskiy

CHAPTER 144: Surgical Treatment of Colonic and Perianal Crohn Disease

Linda Ferrari • Erin O. Lange • Mukta Krane • Fabrizio Michelassi • Alessandro

Fichera

CHAPTER 145: Surgery for Toxic Megacolon

Scott R. Kelley • David W. Larson

CHAPTER 146: Total Proctocolectomy and Inter-Sphincteric Proctectomy for Benign Disease

Javier Salgado Pogacnik David S. Medich

CHAPTER 147: Ileoanal Pouch Procedure for Ulcerative Colitis and Familial Adenomatous Polyposis

Susan Galandiuk • Jeffrey R. Jorden • Russell W. Farmer • Josef E. Fischer

CHAPTER 148: Total Colectomy and Ileorectal Anastomosis

David J. Maron • Steven Wexner

CHAPTER 149: Surgery for Diverticulitis

Patricia L. Roberts

CHAPTER 150: Technique of Colostomy Construction and Closure

Aaron Saunders • Moshim Kukar

CHAPTER 151: Care of Stomas

Marc C. Osborne • Ann C. Lowry

CHAPTER 152: Open and Minimally Invasive Right Hemicolectomy for

Cancer

Martin R. Weiser

CHAPTER 153: Open and Minimally Invasive Left Hemicolectomy for Neoplasms of the Descending Colon, Sigmoid, and Upper Rectum

Zuri Murrell • Michael J. Stamos

CHAPTER 154: Historical Perspectives on Total Mesorectal Excision

R.J. Heald

CHAPTER 154A: Advances in Total Mesorectal Excision

Steven Nurkin • Rupen Shah Aaron Saunders • Steven N. Hochwald

CHAPTER 155: Open and Minimally Invasive Sphincter-Preserving Radical Resection for Malignant Disease of the Middle and Lower Thirds of the Rectum

Wolfgang B. Gaertner • Robert D. Madoff

CHAPTER 156: Abdominoperineal Resection for Rectal Cancer

Carrie Y. Peterson • Julio Garcia-Aguilar

CHAPTER 157: Abdominoperineal Resection for Rectal Cancer

Steven Nurkin • Aaron Saunders • Rupen Shah • Steven N. Hochwald

CHAPTER 158: The Approach to Reoperative Pelvic Surgery in Rectal Cancer

J. Joshua Smith • Jose G. Guillem

CHAPTER 159: Sacral Resection for Recurrent Rectal Cancers

Peter J. Lee • Michael Solomon • Kirk K. S. Austin

CHAPTER 160: Cytoreductive Surgery and Hyperthermic Intraperitoneal

Chemotherapy for Cancers of the Appendix and Colon

Edward A. Levine

CHAPTER 161: Management of Retrorectal Tumors

Cindy Kin • Mark Welton

CHAPTER 162: Rectal Prolapse: The Open Abdominal Approach

Philip H. Gordon

CHAPTER 163: Rectal Prolapse

Elisa H. Birnbaum

CHAPTER 164: Anorectal Disorders

Michael R. B. Keighley

CHAPTER 165: Transanal Excision of Rectal Neoplasms

Sam B. Atallah • John R.T. Monson

CHAPTER 166: Functional Bowel Disorders

Michael R. B. Keighley

CHAPTER 167: Groin Dissection *Kiran K. Turaga* • *Jonathan S. Zager*

CHAPTER 168: Transanal Pull-Through for Hirschsprung Disease

Jacob C. Langer

CHAPTER 169: Neonatal Enterocolitis and Short Bowel Syndrome

Brad W. Warner • Jacqueline M. Saito

SECTION VIII

NONGASTROINTESTINAL TRANSABDOMINAL SURGERY

Part A: The Spleen

CHAPTER 170: Laparoscopic Splenectomy

Charles E. Lucas • Anna M. Ledgerwood

Part B: The Urinary Tract and Bladder

CHAPTER 171: Anatomy of the Kidneys, Ureter, and Bladder

Jennifer M. McBride • Richard L. Drake

CHAPTER 172: Surgical Management of Nephrolithiasis

Brian H. Eisner



CHAPTER 173: Operations on the Ureteropelvic Junction

Frank Hinman, Jr.

CHAPTER 174: Radical Nephrectomy for Renal Cell Cancer

Elias S. Hyams • Mohamad Allaf

CHAPTER 175: Radical Cystectomy and Orthotopic Urinary Diversion for Bladder Cancer

Eila C. Skinner • Siamak Daneshmand

CHAPTER 176: Laparoscopic Pelvic and Retroperitoneal Lymph Node Dissection

Ornob P. Roy • Louis R. Kavoussi

CHAPTER 177: Robot-Assisted Radical Prostatectomy

Ahmed A. Hussein • Khurshid A. Guru

CHAPTER 178: The Undescended Testis

Courtney Shepard • Kate H. Kraft • David A. Bloom

CHAPTER 179: Surgical Management of Wilms Tumor

Gwen M. Grimsby • Michael L. Ritchey

CHAPTER 180: Genitourinary Tract Trauma

Jack W. McAninch • Viraj Master

CHAPTER 181: Supravesical Urinary Diversion

Kristin Chrouser • Badrinath R. Konety

Part C: Gynecologic Surgery

CHAPTER 182: Cesarean Delivery

Thomas R. Moore

CHAPTER 183: Abdominal Hysterectomy

Mitchel S. Hoffman • Celso Silva • Aileen Caceres

CHAPTER 184: Radical Hysterectomy

Jonathan Boone • Warner Huh

CHAPTER 185: Surgical Management of Ovarian Carcinoma

Kara Long Roche • Arlan F. Fuller, Jr. • Dennis S. Chi

CHAPTER 186: Anterior and Posterior Colporrhaphy

Dionysios K. Veronikis

Part D: Surgery of the Hernia

CHAPTER 187: Surgical Anatomy of the Hernial Rings

Petros Mirilas • Lee J. Skandalakis

CHAPTER 188: Overview of Inguinal and Femoral Hernia Repairs

Robert J. Fitzgibbons, Jr. • Michel Wagner



CHAPTER 189: The Shouldice Method of Inguinal Herniorrhaphy

Robert Bendavid



CHAPTER 190: Iliopubic Tract Repair of Inguinal Hernia: The Anterior

(Inguinal Canal) Approach

Robert E. Condon



CHAPTER 191: Iliopubic Tract Repair of Inguinal and Femoral Hernia:

The Posterior (Preperitoneal) Approach

Lloyd M. Nyhus



CHAPTER 192: Kugel Technique of Groin Hernia Repair

Robert D. Kugel • John T. Moore

CHAPTER 193: Generations of the Plug-and-Patch Repair: Its

Development and Lessons From History

Jerrold Young • Arthur I. Gilbert

CHAPTER 194: Postherniorrhaphy Inquinodynia: Causes, Prevention, and

Surgical Treatment: Triple Neurectomy

Parviz K. Amid • David C. Chen

SECTION IX

VASCULAR SURGERY

Part A: Cerebrovascular Disease

CHAPTER 195: Carotid Bifurcation Disease: Carotid Endarterectomy and

Stenting

Sapan S. Desai

CHAPTER 196: Brachiocephalic Reconstruction: Open and Endovascular

Joseph-Vincent V. Blas • John F. Eidt

CHAPTER 197: Carotid Body Tumors

Wesley S. Moore

Part B: Aneurysmal Disease

CHAPTER 198: Open Thoracoabdominal Aortic Aneurysm Repair

Mark F. Conrad • Richard P. Cambria

CHAPTER 199: Open Infrarenal and Pararenal Aortic Aneurysm Repair

Gregorio A. Sicard • Jeffrey Jim

CHAPTER 200: Endovascular Repair of Abdominal Aortic Aneurysms

Gregorio A. Sicard • Dawn Sander

CHAPTER 201: Ruptured Abdominal Aortic Aneurysms

Manish Mehta • Philip S. K. Paty • Mehdi J. Teymouri

CHAPTER 202: Femoral and Popliteal Artery Aneurysms

Mohammad H. Eslami

CHAPTER 203: Treatment of Splenic Artery Aneurysms: Open and

Endovascular

Dawn M. Coleman • Gilbert R. Upchurch, Jr.

Part C: Chronic Lower Extremity Occlusive Disease

CHAPTER 204: Aortofemoral Bypass

David C. Brewster

CHAPTER 205: Aortoiliac Occlusive Disease: Extraanatomic Bypass

Enjae Jung • Gregory J. Landry • Gregory L. Moneta

CHAPTER 206: Endovascular Procedures for Aortoiliac Occlusive Disease

Vikram S. Kashyap • Karem C. Harth

CHAPTER 207: Reversed Vein Bypass Grafts to Popliteal, Tibial, and

Peroneal Arteries

Joseph L. Mills • Layla C. Lucas

CHAPTER 208: Peripheral Arterial Disease: Prosthetic Bypass

Ahmed Kayssi • Ken Lee • Richard F. Neville

CHAPTER 209: Dorsalis Pedis, Tarsal, and Plantar Artery Bypass

Bernadette Aulivola • Frank B. Pomposelli

CHAPTER 210: Peripheral Vascular Occlusive Disease: Endovascular

Richard Powell • Ryan Svoboda • Jessica Wallert

CHAPTER 211: Minor Amputations

Peter Henke

CHAPTER 212: Major Lower Extremity Amputation

Mark R. Nehler

CHAPTER 213: The Prevention and Treatment of Problems With the

Diabetic Foot

Norman J. Galbraith • T. Jeffrey Wieman Hiram C. Polk, Jr.

Part D: Acute Lower Extremity Ischemia