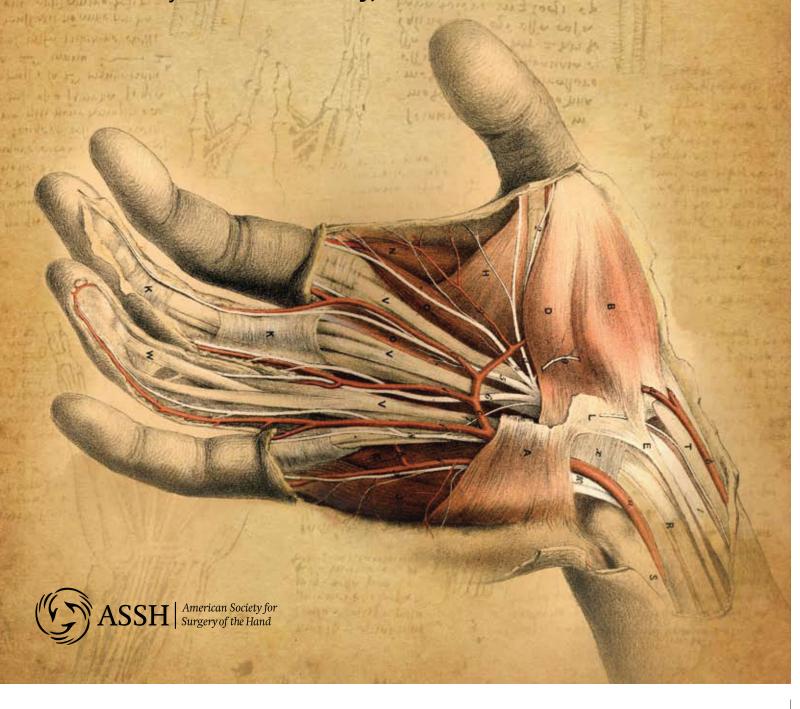


Edited by Kevin C. Chung, MD, MS Co-edited by Peter M. Murray, MD



Copyright ©2011 by American Society for Surgery of the Hand 6300 North River Road, Suite 600 Rosemont, IL 60018-4256

Published by American Society for Surgery of the Hand.

All rights reserved. This book is protected by copyright. No part of this book may be reproduced in any form or by any means, including photocopying, 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 review. Materials appearing in this book prepared by individuals as part of their official duets as U.S. government employees are not covered by the above mentioned copyright

ISBN: 978-1-935121-11-4

Library of Congress Control Number: 2011910687

Printed in the USA 10 9 8 7 6 5 4 3 2 1

Care has been taken to confirm the accuracy of the information presented and to describe generally accepted practices. However, the authors, editors, and publisher are not responsible for errors, omissions or for any consequences from application of the information in this book and make no warranty, expressed or implied, with respect to the currency, completeness, or accuracy of the contents of the publication. Application of this information in a particular situation remains the professional responsibility of the practitioners.

The authors, editors, and publisher have exerted every effort to ensure at drug selection and dosage set forth in this text are in accordance with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for adding warnings and precautions. This is particularly important when the recommended agent is a new or infrequently employed drug.

Some drugs and medical devices presented in this book have Food and Drug Administration (FDA) clearance for limited use in restricted research settings. It is the responsibility of the health care provider to ascertain the FDA status of each drug or device planned for use in their clinical practice.

Developmental Editors: Kevin C. Chung, MD and Peter M. Murray, MD

Executive Director: Mark C. Anderson, CAE

Publishing Director: Tara Havenga Cover Design: Jennifer Hanasz Compositor: Bookmasters To my uncle 林啟明 (Rin Kei-Mei) and my aunt 林陳素珍 (Rin Chen Su-Jen)

— Kevin C. Chung, MD

I would like to dedicate my work in memory of my mother and father, Charles E. Murray, Jr and Katherine D. Murray, whose love and support made my career possible.

— Peter M. Murray, MD



## Edward Akelman, MD

Professor and Vice Chairman Warren Alpert Medical School of Brown University Providence, RI

#### Mansour Alvi, MD

University of Toronto Toronto, ON, Canada

## James Andry, MD

Chief Resident St. Luke's-Roosevelt Hospital Center New York, NY

## Edward A. Athanasian, MD

Hospital for Special Surgery New York, NY

## Kodi Azari, MD, FACS

Associate Professor Chief, Section of Reconstrucive Transplantation David Geffen School of Medicine at UCLA Los Angeles, CA

#### Donald S. Bae, MD

Assistant Professor of Orthopaedic Surgery, Harvard Medical School; Associate in Orthopaedic Surgery, Children's Hospital Boston Institution Children's Hospital Boston Boston, MA

## Mark E. Baratz, MD

Attending Allegheny General Hospital Pittsburgh, PA

#### Andrea S. Bauer, MD

Fellow, Pediatric Hand Surgery Shriners Hospital for Children, Northern California Sacramento, CA

## Joseph M. Bellapianta, MD

Assistant Fellowship Director Plancher Orthopaedics & Sports Medicine Cos Cob, CT and New York, NY

## Kyle D. Bickel, MD, FACS

Clinical Assistant Professor of Surgery, Division of Plastic Surgery The Hand Center of San Francisco, San Francisco, CA University of California, San Francisco, CA

## Randip R. Bindra, MD, FRCS

Hand Fellowship Director Loyola University Health System Maywood, IL

#### Travis Blood, MS II

Research Associate Orthopaedic Foundation for Active Lifestyles Cos Cob, CT and New York, NY

#### David J. Bozentka, MD

Chief Department of Orthopedic Surgery Penn Presbyterian Medical Center Philadelphia, PA

#### Jeffrey E. Budoff, MD

Clinical Associate Professor of Orthopaedic Surgery University of Texas Health Science Center at Houston Medical School Houston, TX

## John T. Capo, MD

Professor, Department of Orthopaedics Chief, Division of Hand and Microvascular Surgery UMDNJ New Jersey Medical School Newark, NJ

#### Brian T. Carlsen, MD

Assistant Professor of Plastic Surgery Consultant, Division of Hand Surgery and Plastic Surgery Mayo Clinic Rochester, MN

#### Michelle G. Carlson, MD

Associate Attending Orthopaedic Surgeon Hospital for Special Surgery New York, NY Associate Professor of Clinical Orthopaedic Surgery Weill Cornell Medical College New York, NY

## Louis W. Catalano, III, MD

CV Starr Hand Surgery Center St. Luke's-Roosevelt Hospital New York, NY

## Benjamin Chang, MD

Associate Professor of Clinical Surgery Division of Plastic Surgery University of Pennsylvania School of Medicine Philadelphia, PA

#### James Chang, MD

Chief, Division of Plastic & Reconstructive Surgery Professor of Surgery (Plastic Surgery) & Orthopedic Surgery Stanford University Medical Center Palo Alto, CA

## Neal C. Chen, MD

Philadelphia Hand Center, PC King Of Prussia, PA

#### Ying Chi, MD

Assistant Professor
Department of Orthopaedic Surgery
Division of Hand Upper Extremity and
Microsurgery
University of Cincinnati Academic Health Center
Cincinnati, OH

#### Kevin C. Chung, MD, MS

Charles B.G. de Nancrede Professor in Surgery Section of Plastic Surgery, Department of Surgery Assistant Dean for Faculty Affairs Associate Director for Global REACH University of Michigan Medical School Ann Arbor, MI

#### Mark S. Cohen, MD

Director, Hand and Elbow Section Director, Orthopaedic Education Rush University Medical Center Chicago, IL

#### Patrick D. Combs, MD

Seattle, WA

## Cari L. Cordell, MD

#### Randall W. Culp

Philadelphia Hand Center, PC King Of Prussia, PA

## Catherine Curtin, MD

Assistant Professor of Plastic Surgery Stanford University Palo Alto, CA

## A. Rashard Dacus, MD

Assistant Program Director
University of Virginia Department of Orthopaedics
Co-Program Director
Combined Plastics/Orthopaedics Hand Fellowship
Charlottesville, VA

#### Lars B. Dahlin, MD, PhD

Professor

Malmö, Sweden

Department of Clinical Sciences Malmö—Hand Surgery, Lund University Malmö, Sweden Senior Consultant Department of Hand Surgery, Skåne University Hospital

#### Charles S. Day, MD, MBA

Chief, Hand Surgery
Beth Israel Deaconess Medical Center
Associate Professor in Orthopaedic Surgery
Harvard Medical School
Boston, MA

## E. Gene Deune, MD, MBA

Associate Professor Johns Hopkins Department of Orthopedic Surgery Co-Director Hand Surgery Division Johns Hopkins Plastic Surgery, Hand Surgery/ Microsurgery Baltimore, MD

## Gurpreet Dhaliwal, MD

NYU—HJD Department of Orthopaedic Surgery New York, NY

## William Dzwierzynski, MD, FACS

Professor Medical College of Wisconsin Milwaukee, WI

## Marybeth Ezaki, MD

UTSouthwestern Medical School Dallas, Texas Director of Hand Surgery Texas Scottish Rite Hospital for Children Dallas, Texas

#### Kevin W. Farmer, MD

Assistant Professor University of Florida Gainesville, FL

#### Ida K. Fox, MD

Division of Plastic Surgery Washington University School of Medicine St. Louis, MO

## Adam Z. Franklin, MD

San Clemente, CA

#### Jeffrey B. Friedrich, MD, FACS

Assistant Professor of Surgery and Orthopedics University of Washington Harborview Medical Center and Seattle Children's Hospital Seattle, WA

## Steven Z. Glickel, M.D.

Clinical Professor of Orthopaedic Surgery Columbia University New York, NY Director C.V. Starr Hand Surgery Center New York, NY

#### Charles A. Goldfarb, MD

Associate Professor of Orthopaedic Surgery Washington University School of Medicine St. Louis, MO

#### Charan Gowda, MD

Hand and Microsurgery Associates Columbus, OH

## Brent Graham, MD, MSc, FRCSC

Assistant Professor, Department of Surgery University of Toronto University Health Network - Toronto Western Hospital Toronto, ON, Canada

## Ruby Grewal, MD, MSc, FRCSC

Assistant Professor Division of Orthopedic Surgery University of Western Ontario Hand and Upper Limb Center St Joseph's Health Center London, ON, Canada

#### Warren C. Hammert, MD

Associate Professor of Orthopaedic and Plastic Surgery University of Rochester Medical Center Rochester, NY

## Michael Hausman, M.D.

Professor, Orthopedic Surgery Mount Sinai Medical Center New York, NY

#### Abhishek Julka, MD

Resident Orthopaedic Surgeon University of Michigan Department of Orthopaedic Surgery Ann Arbor, MI

#### Neil F. Jones, MD

Chief of Hand Surgery
University of California Irvine Medical Center
Professor Department of Orthopedic Surgery
Professor Division of Plastic and Reconstructive
Surgery
University of California Irvine
Orange, CA

## Thomas C. Keller, MD

Resident University of Virginia Medical Center Charlottesville, VA

## Graham JW King, MD, MSc, FRCSC

Professor, Department of Surgery University of Western Ontario London, Ontario, Canada Chief of Orthopaedic Surgery Hand and Upper Limb Centre St. Joseph's Health Centre London, ON, Canada

## Dawn M. LaPorte, MD

Associate Professor, Orthopaedic Surgery The Johns Hopkins University School of Medicine Baltimore, MD

## Jeffrey Lawton, MD

Associate Professor Chief, Division of Elbow, Hand and Microsurgery University of Michigan Department of Orthopaedic Surgery Ann Arbor, MI

## Daniel J. Lee, MD

Southern California Orthopaedic Center Pomona, CA

#### W. P. Andrew Lee, MD

The Milton T. Edgerton Professor and Chairman Department of Plastic and Reconstructive Surgery Johns Hopkins University School of Medicine Baltimore, MD

#### Ines C. Lin, MD

Assistant Professor, Division of Plastic Surgery Hospital of the University of Pennsylvania Philadelphia, PA Assistant Professor, Division of Plastic Surgery The Children's Hospital of Philadelphia Philadelphia, PA

#### Sameer Lodha, MD

Chicago, IL

#### Craig Lomita, MD

New York, NY

#### Susan Mackinnon, MD

Sydney M. Shoenberg Jr. and Robert H. Shoenberg Professor and Chief Washington University - Division of Plastic and Reconstructive Surgery St. Louis, MO

#### Mahesh H. Mankani MD, FACS

Associate Professor, Department of Surgery University of California, San Francisco San Francisco, CA

#### Paul R. Manske, MD

St. Louis, MO

#### Jonas L. Matzon, MD

Assistant Professor of Orthopedic Surgery Division of Hand Surgery The Rothman Institute Thomas Jefferson University Philadelphia, PA

## Gregory A Merrell, MD

Clinical Assistant Professor Indiana University Department Orthopaedics Clinical Assistant Professor The Indiana Hand to Shoulder Center Indianapolis, IN

#### David Mikolyzk, MD

Manitowoc, WI

#### Scott Mitchell, MD

Assistant Professor UCLA Department of Orthopaedic Surgery Los Angeles, CA

## Steven L. Moran, MD

Professor and Chair of Plastic Surgery Professor of Orthopedics Mayo Clinic Rochester, MN

## Amir Mostofi, MD

Hand Surgeon Risser Orthopaedic Group Pasadena, CA

## Peter M. Murray, MD

Director for Education Professor of Orthopaedic Surgery Mayo College of Medicine Mayo Clinic Jacksonville, FL

## George P. Nanos III, MD

Rockville, MD

## A. Lee Osterman, MD

Professor Hand & Orthopedics, Thomas Jefferson University Philadelphia Hand Center King of Prussia, PA

## M. Jason Palmer, MD

The Hand Center Greenville, SC

## Nilpesh M. Patel, MD

Orthopaedic Hand and Elbow Surgeon Lakewood Orthopaedics and Sports Medicine Dallas, TX

#### William C. Pederson, MD, FACS

President and Fellowship Director
The Hand Center of San Antonio
San Antonio, TX
Adjunct Professor of Surgery
The University of Texas Health Science Center at
San Antonio
San Antonio, TX

#### Gita Pillai, MD

Orthopedic Associates of Southern Delaware Lewes, DE

## Jeffrey M. Pike, MD, MPH, FRCSC

Assistant Professor University of British Columbia/Providence Health Care Vancouver, BC

#### Kevin D. Plancher, MD

Associate Clinical Professor Albert Einstein College of Medicine, NY Fellowship Director Plancher Orthopaedics & Sports Medicine/ Orthopaedic Foundation for Active Lifestyles Cos Cob, CT and New York, NY

## Brian Pridgen

Research Assistant Stanford, CA

#### Edward M. Reece, MD

Arizona Center for Hand Surgery, PC Phoenix, AZ

#### Kevin J. Renfree, MD

Assistant Professor Mayo Medical School/Banner Good Samaritan Integrated Orthopaedic Residency Mayo Clinic Arizona Phoenix, AZ

## David Ring, MD, PhD

Director of Research, MGH Orthopaedic Hand and Upper Extremity Service Massachusetts General Hospital Boston, MA Harvard Medical School Boston, MA

#### Alberto R. Rivera, MD

Fellow

Orthopaedic Foundation for Active Lifestyles/ Plancher Orthopaedics & Sports Medicine Cos Cob, CT and New York, NY

## Marco Rizzo, MD

Associate Professor Department of Orthopedic Surgery Mayo Clinic Rochester, MN

#### Tamara D. Rozental, MD

Assistant Professor in Orthopaedic Surgery Harvard Medical School Boston, MA

## Jerry A. Rubin, MD

Central Florida Hand Specialists Celebration, FL Associate Clinical Professor University of Central Florida College of Medicine Orlando, FL

## Douglas M. Sammer, MD

Assistant Professor of Plastic Surgery Co-Director Hand Surgery Fellowship Department of Plastic Surgery UT Southwestern Medical Center Dallas, TX

#### Jesse B. Seamon, MD

Charlottesville, VA

#### Adam B. Shafritz, MD

Associate Professor of Orthopaedic Surgery University of Vermont College of Medicine Burlington, VT

## Eon K. Shin, MD

Orthopedic Surgeon The Philadelphia Hand Center, PC Philadelphia, PA

#### Jaimie T. Shores, MD

Assistant Professor Clinical Director of Hand Transplantation Johns Hopkins University School of Medicine Baltimore, MD

## Jae W. Song, MD, MS

Research Fellow,

Department of Surgery, Section of Plastic Surgery University of Michigan Health System Ann Arbor, MI

## Peter J. Stern, MD

University of Cincinnati - College of Medicine Cincinnati, OH

## Amir H. Taghinia, MD

Staff Surgeon Children's Hospital Boston, MA Instructor in Surgery Harvard Medical School Boston, MA

#### Nathan Taylor, MD

Hand Surgery, Private Practice Orthopedic Surgery Associates of Marquette Marquette, Michigan

## Matthew M. Tomaino, MD, MBA

Founder, Tomaino Orthopaedic Care Tomaino Orthopaedic Care for Shoulder, Hand, and Elbow Rochester, NY

## Rull James Toussaint, MD

Resident in Orthopaedic Surgery Harvard Combined Orthopaedic Residency Boston, MA

## Jennifer Ty, MD

AI Dupont Hospital for Children Wilmington, DE

## Joseph Upton III, MD

Chestnut Hill, MA

## Kristin Kay Warner, MD

Orthopedic/Hand Surgeon Carolina Orthopedics and Sports Medicine New Bern, NC

#### Bradon J. Wilhelmi, MD

Professor and Chief of Plastic Surgery Plastic Surgery Program Director University of Louisville Louisville, KY

## Thomas W. Wright, MD

Professor of Orthopaedics University of Florida Gainesville, FL

## Robert W. Wysocki, MD

Chicago, IL

# **Contents**

CHAPTER 1	Section III: Distal Radius Fractures and DRUJ Injuries
	Chapter 10
Section I:	Distal Radius Fractures: Anatomy, Biomechanics, and
Hand Fractures and Joint Injuries	Classification
Chapter 2	Rull James Toussaint, MD and Tamara D. Rozental, MD
Extra-Articular Phalangeal and Metacarpal Fractures	Chapter 11
Nathan Taylor, MD, and Kevin C. Chung, MD, MS	Distal Radius Fractures  Kyle D. Bickel, MD, FACS
Chapter 3	130 21 2000, 112, 11100
Finger Joint Injuries, Excluding the Thumb	Chapter 12
Charles S. Day, MD	Malunions of the Distal Radius
0 /	Sameer J. Lodha, MD, Robert W. Wyscocki, MD, and Mark S.
CHAPTER 4	Cohen, MD
Jeffrey M. Pike, MD, MPH, FRCSC and Ruby Grewal, MD,	Chapter 13139
MSc, FRCSC	Bone Graft Substitutes in the Radius and Upper Limb
	Louis Catalano, MD and James Andry III, MD
Section II:	Chapter 14147
	Disorders of the Distal Radioulnar Joint
Carpal Injuries and Disorders	Peter M. Murray, MD
Chapter 543 Scaphoid Fractures and Nonunions	Chapter 15
Jae W. Song, MD, MS and Kevin C. Chung, MD, MS	Wrist Arthroscopy
ju 11. 5011g, 111D, 1115 unu 1000 G. Grung, 111D, 1110	Neal C. Chen, MD, A. Lee Osterman, MD, Randall W. Culp,
Chapter 655	MD, and Kevin C. Chung, MD, MS
Acute Carpal Ligamentous Injury	
Abhishek Julka, MD and Jeffrey Lawton, MD	Coation W
Chapter 7	Section IV:
Chronic Carpal Instability	Tendon Injuries and Conditions
Randy Bindra and Cari Cordell, MD	Chapter 16
y	Basic Science of Tendon Healing
Chapter 8	James Chang, MD and Brian Pridgen, MD
Kienbock's Disease	Chapter 17
Nilpesh M. Patel, MD and Kevin C. Chung, MD, MS	Flexor Tendon Injury
Chapter 9	Amir Mostofi, MD, Jason Palmer, MD, and Edward Akelman,
Wrist Fusion and Arthroplasty Procedures	MD
Eon K. Shin, MD and A. Lee Osterman, MD	Chapter 18
	Extensor Tendon Injury
	Jonas L. Matzon, MD and David J. Bozentka, MD

## Contents

CHAPTER 19	Chapter 30
CHAPTER 20	CHAPTER 31
Section V:	Section VII:
	Spastic Conditions
Nerve Injury and Repair	Chapter 32
Chapter 21	Tetraplegia
Physiology of Nerve Healing  Lars B. Dahlin, MD	Catherine Curtin, MD and Kevin C. Chung, MD, MS
Chapter 22241	Chapter 33
Carpal Tunnel Syndrome	Cerebral Palsy
Brent Graham, MD, MSc, FRCSC	Kristin Kay Warner, MD and Michelle Gerwin Carlson, MD
Chapter 23	Section VIII:
Cubital Tunnel Syndrome Charan Gowda, MD and Greg Merrell, MD	
	Soft Tissue Injuries
Chapter 24	Chapter 34
Adult Brachial Plexus Injuries	Steve Glickel, MD and Craig Lomita, MD
Susan E. Mackinnon, MD and Gurprett Dhaliwal, MD	outer during 11D and draig Lomina, 11D
-	Chapter 35
Chapter 25	Fingertip Injuries
Brachial Plexus Palsy—Pediatric	W. P. Andrew Lee, MD and Jaimie T. Shores, MD
Marybeth Ezaki, MD	Cycoron 26 270
Chapter 26	Chapter 36
Complex Regional Pain Syndrome and Repetitive Stress	Scott Mitchell, MD and Kodi Azari, MD
Injury	,
Warren C. Hammert, MD	Chapter 37
	Infections
	John T. Capo, MD
Section VI:	
Pediatric Hand	
Chapter 27	Section IX:
Syndactyly	Microsurgery
Benjamin Chang, MD and Ines C. Lin, MD	Chapter 38
Chapter 28	Management of Mutilating Hand Injuries
Thumb Duplication	William W. Dzwierzynski, MD
Jennifer Ty	Chapter 39
- •	Chapter 39411 Replantation
Chapter 29	Replantation Bradon J. Wilhelmi, MD
Thumb Hypoplasia	
Neil F. Jones, MD and Ying Chi, MD	

Chapter 40	Section XII:
Jeff Friedrich, MD and Patrick Combs, MD	Elbow and Forearm
5.00	Chapter 50
CHAPTER 41	Forearm Fractures and Reconstruction in Adults David Ring, MD, PhD
William C. Pederson, MD, FACS and Edward M. Reece, MD	6
Chapter 42	CHAPTER 51
Thumb Reconstruction  Brian T. Carlsen, MD and Steven L. Moran, MD	Graham King, MD
Brun 1. Curisen, MD and Sieven L. Moran, MD	Chapter 52
Chapter 43	Biceps Michael Hausman and Gita Pillai, MD
Amir H. Taghinia, MD and Joseph Upton III, MD	
	Chapter 53
6 V	Ryan Naujoks, MD and Mark Baratz
Section X:	
Arthritic Conditions	0 1! VIII-
Chapter 44	Section XIII:
Rheumatoid Arthritis of the Hand and Wrist	Shoulder and Arm
George P. Nanos III, MD and Marco Rizzo, MD	Chapter 54
Chapter 45	Fractures of the Proximal Humerus
Atypical Arthritic Conditions (Lupus, Scleroderma, and	Kevin W. Farmer, MD, and Thomas W. Wright, MD
Psoriasis)	Chapter 55
Mahesh H. Mankani, MD, FACS	Treatment of Humeral Shaft Fractures  Kevin Renfree, MD
Chapter 46	,
Treatment of Osteoarthritic Conditions of the Hand	Chapter 56
Thomas C. Keller, MD, Jesse B. Seamon, MD, and Angelo R. Dacus, MD	Rotator Cuff Disorders and Adhesive Capsulitis <i>Matthew M. Tomaino, MD, MBA</i>
	Chapter 57
Section XI:	Examination of the Shoulder
Tumors	Kevin D. Plancher, MD, Alberto R. Rivera, MD, Joseph M.
Chapter 47	Bellapianta, MD, and Travis Blood, MS
Squamous Cell Carcinoma, Basal Cell Carcinoma,	Chapter 58
Melanoma	Labral Tears
Dawn M. LaPorte, MD and E. Gene Deune, MD	Jeffrey E. Budoff, MD
Chapter 48535	Chapter 59
Soft Tissue Neoplasms: Benign and Malignant Peter M. Murray, MD	Shoulder Arthroplasty  Adam B. Shafritz, MD
Chapter 49	
Malignant and Metastatic Turmors of the Hand  Edward Athanasian, MD	



# **Preface**

I am honored to have the opportunity to be the editor for *Hand Surgery Update V* and to work closely with my co-editor, Dr. Peter Murray. The *Hand Surgery Update* series has been a constant companion for hand surgeons in keeping up-to-date on the current research in treating patients with hand and upper limb problems. This volume is particularly unique because all of our contributing authors were asked to consider the levels of evidence when synthesizing their updated chapters. The authors were chosen for their expertise in distilling the evidence from the literature; all of them have done a magnificent job in crafting succinct, yet practical, materials to help you stay current in the exponential growth of knowledge in the hand and upper limb specialty. As hand surgery continues to evolve in its scope of practice, many hand surgeons are becoming interested in elbow and shoulder surgery. Therefore, this particular volume has incorporated chapters relating to pathologies around the elbow and the shoulder, which will establish the comprehensiveness of hand surgery's contribution in conditions affecting the entire upper limb.

This volume would not have been possible without the dedicated assistance of my co-editor, Dr. Peter Murray, who is an outstanding educator and an ever-present leader in hand surgery educational events. Additionally, I want to acknowledge our ASSH staff, Tara Havenga, who diligently coordinated all of the activities around this textbook. My staff, Pouya Entezami, contributed immensely to the organization of this textbook. His dedicated work was invaluable and ensured that we produced the best product possible. Furthermore, this textbook is a true tribute to the selfless efforts by my friends and contributing authors, who readily agreed to contribute to this volume despite their taxing practices and overwhelming other responsibilities. Each of them has done an outstanding job in organizing the literature based on current scientific data rather than cursory changes of previous chapters. All of the chapters contain original material, and this book has taken the word "Update" to an even greater height by presenting the most current information for your examination.

I appreciate the confidence of the American Society for Surgery of the Hand in allowing me to lead this volume. I am certain that you will find this to be an informative and creative textbook—one that will be your constant companion in your continued medical education interests.

—Kevin C. Chung, MD, MS Charles B.G. de Nancrede Professor in Surgery Section of Plastic Surgery, Department of Surgery Assistant Dean for Faculty Affairs Associate Director for Global REACH University of Michigan Medical School

