

英文影印版

血液病学 HEMATOLOGY

基本原理与实践
Basic Principles and Practice

第3版 上册

3rd Edition

Ronald Hoffman

Edward J. Benz, Jr.

Sanford J. Shattil

Bruce Furie

Harvey J. Cohen

Leslie E. Silberstein

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Ronald Hoffman, MD

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Edward J. Benz, Jr., MD

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Sanford J. Shattil, MD

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Harvey J. Cohen, MD, PhD

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Leslie E. Silberstein, MD

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Philip McGlave, MD

Contributors

Camille N. Abboud, MD, FACP

Professor of Medicine, Hematology–Oncology and Bone Marrow Transplant Unit, University of Rochester Medical School; Attending Physician, Department of Medicine, Director, Stem Cell Laboratory, Strong Memorial Hospital, Rochester, New York

Janis Abkowitz, MD

Professor of Medicine and Hematology, Hematology Division, Department of Medicine, University of Washington School of Medicine; Director, Hematology Clinic, University of Washington Medical Center, Seattle, Washington

Janet L. Abraham, MD

Associate Professor of Medicine, Hematology–Oncology Division, University of Pennsylvania School of Medicine; Attending Physician, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

Steven J. Ackerman, PhD

Professor of Medicine, Biochemistry, and Molecular Biology, University of Illinois College of Medicine, Chicago, Illinois

Junius G. Adams, III, PhD

Former Member of Sickle Cell Branch, Division of Blood Diseases and Resources, National Heart, Blood, and Lung Institute, National Institutes of Health, Bethesda, Maryland

Saundra N. Aker, RD, CD, BS

Clinical Instructor, Department of Behavioral Nursing and Health Systems, Clinical Affiliate, Interdisciplinary Graduate Degree Program in Nutritional Sciences, University of Washington; Director, Clinical Nutrition Department, Division of Clinical Research, Fred Hutchinson Cancer Research Center, Seattle, Washington

Jane Bradley Alavi, MD

Associate Professor, Department of Medicine, University of Pennsylvania Medical School; Attending Physician, Hematology–Oncology Division, Department of Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

Kenneth C. Anderson, MD

Associate Professor of Medicine, Harvard Medical School; Medical Director, Kraft Family Blood Donor Center, Dana-Farber Cancer Institute, Boston, Massachusetts

Stylianos E. Antonarakis, MD, DSc

Professor of Medical Genetics, Department of Medical Genetics, University of Geneva Medical School; Director, Division of Medical Genetics, University Hospital of Geneva, Geneva, Switzerland

Asok C. Antony, MD

Professor of Medicine, Division of Hematology–Oncology, Department of Medicine, Indiana University School of Medicine; Attending Physician and Consultant Indiana University Hospitals; Chief, Hematology–Oncology Section, Roudebush Veterans Affairs Medical Center, Indianapolis, Indiana

Robert L. Baehner, MD

Professor, Department of Pediatrics, University of Southern California School of Medicine; Director of Pediatric Hematology, Los Angeles County–University of Southern California Medical Center, Los Angeles, California

Grover C. Bagby, Jr., MD

Professor of Medicine, Director, Oregon Cancer Center, Oregon Health Sciences University; Head, Section of Hematology–Oncology, Veterans Affairs Medical Center, Portland, Oregon

Jack Ballantyne, PhD, MSc

Associate Professor, Department of Chemistry, University of Central Florida, Orlando, Florida

Kenneth A. Bauer, MD

Associate Professor of Medicine, Harvard Medical School, Boston, Massachusetts; Chief, Hematology–Oncology Section, Brockton–West Roxbury Veterans Affairs Medical Center, West Roxbury, Massachusetts

Vittorio Bellotti, MD

Assistant Professor of Biochemistry, Faculty of Pharmacy, University of Pavia, Pavia, Italy

Richard J. Benjamin, MBChB, PhD

Assistant Professor of Pathology, Harvard Medical School; Associate Medical Director, Blood Bank, Brigham and Women's Hospital, Boston, Massachusetts

Joel S. Bennett, MD

Professor of Medicine and Pharmacology, University of Pennsylvania School of Medicine; Attending Physician, Hematology–Oncology Division, Department of Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

Edward J. Benz, Jr., MD, FACP

Sir William Osler Professor of Medicine, Director, Department of Medicine, The Johns Hopkins University School of Medicine, Baltimore, Maryland

Stacey L. Berg, MD

Assistant Professor of Pediatrics, Hematology–Oncology Section, Department of Pediatrics, Baylor College of

Medicine; Associate, Texas Children's Hospital; Active, Harris County Hospital District, Houston, Texas

Eugene M. Berkman, MD

Professor of Medicine, Tufts University School of Medicine; Medical Director, Blood Bank, New England Medical Center, Boston, Massachusetts

Nancy Berliner, MD

Associate Professor, Internal Medicine and Genetics, Yale University School of Medicine; Attending in Medicine, Yale-New Haven Hospital, New Haven, Connecticut

Kapil N. Bhalla, MD

Professor of Medicine, Associate Director for Clinical and Translational Research, University of Miami School of Medicine and Sylvester Comprehensive Cancer Center; Professor of Medicine, Division of Hematology/Oncology, Jackson Memorial Hospital, Miami, Florida

David H. Bing, PhD

Scientific Director, DNA Repository, Genomics Collaborative, Inc., Cambridge, Massachusetts

Morey A. Blinder, MD

Associate Professor, Divisions of Hematology and Laboratory Medicine, Departments of Medicine and Pathology, Washington University Medical School, St. Louis, Missouri

Lawrence F. Brass, MD, PhD

Professor of Medicine and Pharmacology, University of Pennsylvania Medical Center, Philadelphia, Pennsylvania

Gary M. Brittenham, MD

Professor of Medicine and Pediatrics, Columbia University College of Physicians and Surgeons; Staff Physician, New York Presbyterian Hospital, New York, New York

Silvana Z. Bucur, MD

Assistant Professor, Department of Pathology and Laboratory Medicine, Instructor in Medicine, Division of Hematology and Oncology, Emory University; Assistant Director, Blood Bank, Emory University Hospital, Atlanta, Georgia

Samuel A. Burstein, MD

Professor of Medicine, Hematology-Oncology Division, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

James Bussel, MD

Associate Professor of Pediatrics, Cornell University College of Medicine; Attending in Pediatrics, Lenox Hill and Memorial Sloan Kettering Hospitals, New York, New York

Joseph H. Butterfield, MD

Associate Professor of Medicine, Mayo Graduate School of Medicine, Division of Allergy and Outpatient Infectious Disease, Mayo Clinic and Mayo Foundation, Rochester, Minnesota

Fernando Cabanillas, MD

Ashbel Smith Professor of Medicine, Chairman, Department of Lymphoma/Myeloma, University of Texas, MD Anderson Cancer Center, Houston, Texas

David C. Calverley, MD

Assistant Professor, Department of Medicine, University of Southern California, Los Angeles, California

Michael O. Carleton, PhD

Post-doctoral Fellow, Fox Chase Cancer Center, Philadelphia, Pennsylvania

Douglas Cines, MD

Professor, Departments of Medicine and Pathology and Laboratory Medicine, University of Pennsylvania; Director, Hematology and Coagulation Laboratories, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

David B. Clark, BS, MS, PhD

Manager, Technology Transfer, American Red Cross, Washington, DC

Carol Clayberger, PhD

Associate Professor of Immunology, Departments of Cardiothoracic Surgery and Pediatrics, Stanford University, Stanford, California

Thomas D. Coates, MD

Associate Professor of Pediatrics and Pathology, University of Southern California School of Medicine; Section Head, Hematology, Division of Pediatric Hematology-Oncology, Children's Hospital, Los Angeles, California

Harvey J. Cohen, MD, PhD

Professor and Chairman, Department of Pediatrics, Stanford University Medical Center, Stanford, California

Désiré Collen, MD, PhD

Professor, Department of Medicine, Center for Thrombosis and Vascular Research, University of Leuven Faculty of Medicine, Leuven, Belgium

Barry S. Collier, MD

Murray M. Rosenberg Professor and Chairman, Samuel Bronfman Department of Medicine, Mount Sinai School of Medicine; Director and Chief of Medicine, Mount Sinai Hospital, Mount Sinai-NYU Medical Center and Health System, New York, New York

Dennis L. Confer, MD

Clinical Professor of Medicine, University of Minnesota Medical School; Chief Medical Officer, National Marrow Donor Program, Minneapolis, Minnesota

Edward A. Copelan, MD

Associate Professor of Internal Medicine, College of Medicine, The Ohio State University; Director, Bone Marrow Transplantation Program, The Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, Attending Physician, The Ohio State University Hospital, Columbus, Ohio

Mark A. Crowther, MD, MSc, FRCPC

Research Fellow, McMaster University; Staff Hematologist, St. Joseph's Hospital, Hamilton, Ontario, Canada

John T. Curnutte, MD, PhD

Clinical Professor of Pediatrics, Stanford University School of Medicine, Stanford California; Senior Director of Immunology, Genentech, Inc., South San Francisco, California

Nicholas Dainiak, MD

Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Connecticut; Adjunct Professor of Medicine, McGill University, Montreal, Quebec, Canada; Chairman, Department of Medicine, Bridgeport Hospital, Bridgeport, Connecticut

Riccardo Dalla-Favera, MD

Joanne and Percy Uris Professor, Departments of Pathology and Genetics & Development, College of Physicians and Surgeons, Director, Institute of Cancer Genetics, Columbia University, New York, New York

Alan D. D'Andrea, MD

Associate Professor of Pediatrics, Harvard Medical School; Associate Professor, Dana-Farber Cancer Institute, Boston, Massachusetts

Chi V. Dang, MD, PhD

Professor of Medicine, Oncology, Pathology, and Molecular Biology and Genetics, Director, Division of Hematology, Department of Medicine, The Johns Hopkins University School of Medicine, Baltimore, Maryland

Philip R. Daoust, BS, MD

Associate Clinical Professor of Pathology, Tufts University School of Medicine; Senior Pathologist, Director, Clinical Laboratory, New England Medical Center, Boston, Massachusetts

H. Joachim Deeg, MD

Professor of Medicine, University of Washington Medical School; Member, Fred Hutchinson Cancer Research Center, Seattle, Washington

Emmanuel N. Dessypris, MD

Professor of Medicine, Medical College of Virginia, Virginia Commonwealth University; Chief, Hematology-Oncology Section, H. H. McGuire Department of Veterans Affairs Medical Center, Richmond, Virginia

Madhav V. Dhodapkar, MD

Assistant Professor/Clinical Scholar, Laboratory of Immunology and Cellular Physiology, Rockefeller University, New York, New York

Kenneth Dorshkind, PhD

Professor, Department of Pathology and Laboratory Medicine, Member, Janssen Comprehensive Cancer Center, University of California at Los Angeles School of Medicine, Los Angeles, California

William N. Drohan, PhD

Professor, Graduate Program in Genetics, George Washington University, Washington, DC; Adjunct Professor, Department of Chemistry and Biochemical Engineering, University of Maryland, Baltimore, Maryland; Senior Director, Plasma Development, American Red Cross, Rockville, Maryland

Thomas P. Duffy, MD

Professor of Medicine, Yale University School of Medicine; Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut

Walter H. Dzik, MD

Assistant Professor, Internal Medicine, Harvard Medical School; Co-director, Blood Transfusion Service, Massachusetts General Hospital, Boston, Massachusetts

Charles S. Eby, MD

Assistant Professor of Pathology and Medicine, St. Louis University School of Medicine; Associate Director, Hemostasis Laboratory, St. Louis University Health Sciences Center, St. Louis, Missouri

Stephen H. Embury, MD

Professor, Department of Medicine, University of California, San Francisco, School of Medicine; Chief, Hematology

Division of Medical Service, San Francisco General Hospital; Director, Adult Patient Services, Northern California Comprehensive Sickle Cell Center, San Francisco, California

Helen Enright, MD, FRCPI, FRCPath

Lecturer in Hematology, Trinity College; Consultant, Adelaide and Meath Hospitals Incorporating the National Children's Hospital, Dublin, Ireland

Charles T. Esmon, PhD

Adjunct Professor of Biochemistry, University of Oklahoma Health Sciences Center; Member and Head, Cardiovascular Biology Research Program, Lloyd Noble Chair in Cardiovascular Research, Oklahoma Medical Research Foundation; Investigator, Howard Hughes Medical Institute, Oklahoma City, Oklahoma

Elihu H. Estey, MD

Professor of Medicine, Chief, Section of Acute Leukemias and Myelodysplastic Syndromes, Internist, University of Texas, MD Anderson Cancer Center, Houston, Texas

Douglas V. Faller, MD, PhD

Professor of Medicine, Biochemistry, Pediatrics, Microbiology, and Pathology and Laboratory Medicine, Boston University School of Medicine; Director, Cancer Research Center, Boston University Medical Center, Boston, Massachusetts

Donald I. Feinstein, MD

Professor of Medicine, University of Southern California School of Medicine; Chief of Medicine, Emeritus, USC-Norris Comprehensive Cancer Center and USC-University Hospital, Los Angeles, California

James L.M. Ferrara, MD

Professor of Medicine and Pediatrics, University of Michigan Medical School; Director, Combined Adult and Pediatric Bone Marrow Transplant Program, University of Michigan Cancer Center, Ann Arbor, Michigan

Robert Flaumenhaft, MD, PhD

Instructor, Harvard Medical School; Howard Hughes Medical Institute, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Bernard G. Forget, MD

Professor of Internal Medicine and Genetics, Chief, Section of Hematology, Department of Medicine, Yale University School of Medicine; Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut

Stephen J. Forman, MD

Director, Department of Hematology and Bone Marrow Transplantation, City of Hope National Medical Center, Duarte, California

Charles W. Francis, MD

Professor of Medicine and Pathology and Laboratory Medicine, University of Rochester School of Medicine and Dentistry; Chief, Vascular Medical Unit, University of Rochester Medical Center, Rochester, New York

Melvin H. Freedman, MD, FRCPC, FAAP

Professor, Department of Pediatrics, University of Toronto Faculty of Medicine; Senior Associate Scientist, Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada

Alison G. Freifeld, MD

Chief, Clinical Infectious Diseases Service, National Cancer Institute, Bethesda, Maryland

Barbara C. Furie, PhD

Professor of Medicine, Harvard Medical School; Director, Center for Hemostasis and Thrombosis Research, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Bruce Furie, MD

Director, Beth Israel Deaconess Medical Cancer Center; Professor of Medicine, Harvard Medical School, Boston, Massachusetts

Gianluca Gaidano, MD, PhD

Assistant Professor of Internal Medicine, Division of Internal Medicine, Department of Medical Sciences, Amedeo Avogadro University of Eastern Piedmont, Novara, Italy

Patrick G. Gallagher, MD

Assistant Professor, Department of Pediatrics, Yale University School of Medicine; Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut

Lawrence B. Gardner, MD

Senior Clinical Fellow, Division of Hematology, Department of Medicine, The Johns Hopkins Oncology Center, The Johns Hopkins Hospital, Baltimore, Maryland

H.S.P. Garritsen, MD, PhD

Staff, Department of Transfusion Medicine, Head of Tissue Typing, University Hospital, Westfälische Wilhelms University, Münster, Germany

Sharon M. Geaghan, MD

Professor, Department of Pediatrics, Department of Pathology, Stanford University School of Medicine; Director Clinical Laboratories, Chief, Pathology, Lucile Salter Packard Children's Hospital at UCSF-Stanford, Palo Alto, California

Adrian P. Gee, PhD

Professor of Medicine and Pediatrics, Center for Cell & Gene Therapy, Baylor College of Medicine; Director, Clinical Applications Laboratory, Houston, Texas

James N. George, MD

Professor of Medicine, Chairman, Hematology-Oncology Section, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

Stanton L. Gerson, MD

Chief, Division of Hematology-Oncology, Shiverick Professor of Hematologic Oncology, Case Western Reserve University, University Hospitals of Cleveland, Cleveland, Ohio

Joan Cox Gill, MD

Professor, Department of Pediatrics, Medical College of Wisconsin; Investigator, Blood Research Institute, Blood Center of Southeastern Wisconsin; Medical Director, Great Lakes Hemophilia Foundation, Milwaukee, Wisconsin

Jeffrey S. Ginsberg, MD, FRCPC

Professor of Medicine, Department of Medicine, McMaster University; Director, Thromboembolism Unit, Chedoke and McMaster Sites, Deputy Chief of Medicine, Hamilton Health Sciences Corporation, Hamilton, Ontario, Canada

Mark H. Ginsberg, MD

Professor, The Scripps Research Institute, La Jolla, California; Adjunct Professor of Medicine, University of California at San Diego, San Diego, California

David Ginsburg, MD

Professor of Internal Medicine and Human Genetics, Chief, Division of Molecular Medicine and Genetics, Department of Internal Medicine, Investigator, Howard Hughes Medical Institute, University of Michigan Medical Center, Ann Arbor, Michigan

John Glick, MD

Professor of Medicine, Leonard and Madlyn Abramson Professor of Clinical Oncology, University of Pennsylvania School of Medicine; Director, University of Pennsylvania Cancer Center; Director, The Leonard and Madlyn Abramson Family Cancer Research Institute, Philadelphia, Pennsylvania

Michael S. Gordon, MD

Associate Professor of Medicine, Hematology-Oncology Division, Department of Medicine, Indiana University School of Medicine; Director, Clinical Hematology and Cytokine Program, Indiana University Medical Center, Indianapolis, Indiana

Gregory A. Grabowski, MD

Professor in Pediatrics, Director, Division and Program in Human Genetics, Children's Hospital Medical Center, Cincinnati, Ohio

Steven Grant, MD

Professor of Medicine, Pharmacology, and Microbiology, Virginia Commonwealth University, Medical College of Virginia, Richmond, Virginia

Peter L. Greenberg, MD

Professor of Medicine, Division of Hematology, Stanford University School of Medicine, Stanford, California; Head, Hematology Service, Palo Alto Veterans Affairs Health Care System, Palo Alto, California

Xylina T. Gregg, MD

Adjunct Assistant Professor, Division of Hematology-Oncology, University of Alabama at Birmingham, Birmingham, Alabama

Timothy C. Greiner, MS, MD

Associate Professor, Director, Immunoperoxidase Laboratory, Department of Pathology, University of Nebraska Medical Center, Omaha, Nebraska

Thomas G. Gross, MD, PhD

Associate Professor of Pediatrics, University of Cincinnati; Director, Stem Cell Transplant Program, Division of Hematology-Oncology, Children's Hospital Medical Center of Cincinnati, Cincinnati, Ohio

Joan Guitart, MD

Assistant Professor of Dermatology, Northwestern University Medical School, Chicago, Illinois

David Hakiman, MD

Consultant, Northwestern University Medical School, Chicago, Illinois; Attending Physician, Lutheran General Hospital, Park Ridge, Illinois

John M. Harlan, MD

Professor and Head, Division of Hematology, University of Washington School of Medicine, Seattle, Washington

Michael C. Heinrich, BS, MD

Associate Professor of Medicine, Oregon Health Sciences University; Staff Physician, Veterans Affairs Medical Center, Portland, Oregon

Christopher D. Hillyer, MD

Associate Professor, Department of Pathology and Laboratory Medicine, Assistant Professor of Medicine, Division of Hematology and Oncology, Director, Emory University Transfusion Medicine Program, Emory University, Atlanta, Georgia

Jack Hirsh, MD

Professor Emeritus, McMaster University School of Medicine; Director, Hamilton Civic Hospitals Research Centre, Hamilton, Ontario, Canada

Dieter Hoelzer, MD

Professor of Internal Medicine, Chief, Department of Hematology, Zentrum Der Inneren Medizin, Medizinische Klinik III, Johan Wolfgang Goethe University, Frankfurt, Germany

Maureane Hoffman, MD, PhD

Associate Professor, Duke University; Director, Hematology Laboratory Service, Durham Veterans Affairs Medical Center, Durham, North Carolina; Adjunct Assistant Professor, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Ronald Hoffman, MD

Eileen Heidrick Professor of Oncology, Chief, Section of Hematology-Oncology, Department of Medicine, University of Illinois College of Medicine, Chicago, Illinois

Mary M. Horowitz, MS, MD

Professor, Department of Medicine, Medical College of Wisconsin; Scientific Director, International Bone Marrow Transplant Registry, Milwaukee, Wisconsin

James A. Hoxie, MD

Professor of Medicine, Hematology-Oncology Division, University of Pennsylvania School of Medicine; Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

Richard A. Insel, MD

Professor of Pediatrics, Microbiology and Immunology, and Oncology, Department of Pediatrics, University of Rochester, Rochester, New York

Petr Jarolim, MD, PhD

Assistant Professor, Department of Pathology, Harvard Medical School; Associate Medical Director, Blood Bank, Brigham and Women's Hospital, Boston, Massachusetts

Marshall E. Kadin, MD

Associate Professor, Department of Pathology, Harvard Medical School; Senior Pathologist and Director of Hematopathology, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Hagop Kantarjian, MD

Professor of Medicine, Chairman (Ad Interim), Department of Leukemia, Internist, University of Texas, MD Anderson Cancer Center, Houston, Texas

Karen L. Kaplan, MD, PhD

Professor of Medicine, University of Rochester School of Medicine and Dentistry; Clinical Director, Vascular Medicine Unit, University of Rochester Medical Center, Rochester, New York

Aly Karsan, MD

Assistant Professor, Department of Pathology and Laboratory Medicine, University of British Columbia and St. Paul's Hospital, Vancouver, British Columbia, Canada

Randal J. Kaufman, PhD

Professor of Biological Chemistry, Department of Biochemistry, Howard Hughes Medical Institute, University of Michigan Medical School, Ann Arbor, Michigan

Michael J. Keating, BS, MB, MD

Professor of Medicine, Associate Head for Clinical Research, McCredie Chair-Leukemia Research, Internist, University of Texas, MD Anderson Cancer Center, Houston, Texas

Frank G. Keller, MD

Associate Professor of Pediatrics, West Virginia University School of Medicine; Chief, Pediatric Hematology-Oncology, Robert C. Byrd Health Sciences Center of West Virginia University, Morgantown, West Virginia

John G. Kelton, MD, FRCPC

Professor of Medicine and Pathology, Chairman, Department of Medicine, Faculty of Health Sciences, McMaster University, Hamilton, Ontario, Canada

Nancy A. Kernan, MD

Associate Professor of Pediatrics, Cornell University Medical College; Associate Member, Memorial Sloan-Kettering Cancer Center, New York, New York

Craig M. Kessler, MD

Professor of Medicine and Pathology, Division of Hematology-Oncology, Director, Hemophilia Comprehensive Treatment Center, Director, Division of Coagulation, Department of Clinical Pathology, Lombardi Cancer Center, Georgetown University Medical Center, Washington, DC

Thomas S. Kickler, MD

Professor of Pathology, Medicine, and Oncology, Johns Hopkins University School of Medicine; Director, Hematology and Coagulation Laboratory, Johns Hopkins Hospital, Baltimore, Maryland

Leslie B. King, PhD

Post-doctoral Researcher, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Harvey G. Klein, MD

Chief, Department of Transfusion Medicine, Warren G. Magnusson Clinical Center, National Institutes of Health, Bethesda, Maryland

Kim Kramer, MD

Instructor, Pediatric Hematology-Oncology Division, Memorial Sloan-Kettering Cancer Center, New York, New York

Alan M. Krensky, MD

Shelagh Galligan Professor of Pediatrics, Chief, Division of Immunology and Transplantation Biology, Department of Pediatrics, Stanford University, Stanford, California

Theodore G. Krontiris, MD, PhD

Professor of Molecular Medicine, Chairman, Division of Molecular Medicine, Beckman Research Institute of the City of Hope, Duarte, California

Margot S. Kruskall, MD

Associate Professor of Pathology and Medicine, Harvard Medical School; Director, Division of Laboratory and Transfusion Medicine, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Thomas J. Kunicki, PhD

Associate Professor, Departments of Molecular and Experimental Medicine and Vascular Biology, The Scripps Research Institute, La Jolla, California

Joanne Kurtzberg, MD

Professor of Pediatrics, Director, Pediatric Bone Marrow Transplant Program, Duke University Medical Center; Duke University Hospital, Durham, North Carolina

Timothy M. Kuzel, MD

Associate Professor of Medicine, Division of Hematology-Oncology, Department of Medicine, Northwestern University Medical School, Chicago, Illinois

Parviz Lalezari, MD

Professor of Medicine and Pathology, Albert Einstein College of Medicine, New York, New York; President and Medical Director, Bergen Community Regional Blood Center, Paramus, New Jersey

Richard A. Larson, MD

Professor, Hematology-Oncology Section, Department of Medicine, University of Chicago, Division of Biological Sciences, Pritzker School of Medicine; Director, Acute Leukemia Program, Hematology-Oncology Section, Department of Medicine, University of Chicago Medical Center, Chicago, Illinois

Ellen F. Lazarus, MD

Senior Staff Fellow, Department of Transfusion Medicine, Warren G. Magnusson Clinical Center, National Institutes of Health, Bethesda, Maryland

Michelle M. Le Beau, PhD

Professor, Hematology-Oncology Section, Department of Medicine, University of Chicago, Division of Biological Sciences, Pritzker School of Medicine, Chicago, Illinois

John P. Leddy, MD

Professor of Medicine, Emeritus, University of Rochester School of Medicine and Dentistry; Attending Physician, Strong Memorial Hospital, Rochester, New York

William M.F. Lee, MD, PhD

Associate Professor, Hematology-Oncology Division, Department of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania

Polly Lenssen, MS, RD, FADA

Assistant Director, Clinical Nutrition, Fred Hutchinson Cancer Research Center, Seattle, Washington

Nancy Leslie, MD

Assistant Professor, Department of Pediatrics, Division and Program in Human Genetics, Children's Hospital Medical Center, Cincinnati, Ohio

Howard A. Liebman, MD

Associate Professor, Departments of Medicine and Pathology, University of Southern California at Los Angeles, Los Angeles, California

Jane L. Liesveld, MD

Associate Professor of Medicine, Hematology-Oncology and Bone Marrow Transplant Unit, University of Rochester Medical School; Attending Physician, Department of Medicine, Director, Bone Marrow Transplantation Program, Strong Memorial Hospital, Rochester, New York

H. Roger Lijnen, PhD

Professor, Adjunct Director, Center for Molecular and Vascular Biology, University of Leuven, Leuven, Belgium

Jeffrey M. Lipton, MD, PhD

Associate Professor of Pediatrics, Mount Sinai School of Medicine; Chief, Pediatric Hematology-Oncology, Mount Sinai Medical Center, New York, New York

Johnson M. Liu, MD

Senior Investigator, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland

Michael W. Long, PhD

Professor, Department of Pediatrics and Communicable Diseases, University of Michigan School of Medicine, Ann Arbor, Michigan

A. Thomas Look, MD

Vice-Chair for Research, Department of Pediatric Oncology, Dana-Farber Cancer Institute; Professor, Department of Pediatrics, Harvard Medical School, Boston, Massachusetts

Jay Nelson Lozier, MD, PhD

Clinical Investigator, National Human Genome Research Institute, Clinical Gene Therapy Branch, Gene Transfer Technology Section, National Institutes of Health, Bethesda, Maryland

Jaroslav P. Maciejewski, MD, PhD

Staff Physician, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland

Marilyn J. Manco-Johnson, MD

Professor of Pediatrics, Department of Pediatrics, University of Colorado Health Sciences Center, Denver, Colorado; Director, Mountain States Regional Hemophilia & Thrombosis Center, Aurora, Colorado

Robert Mandle, PhD

Investigator, Center for Blood Research, Boston, Massachusetts

Victor J. Marder, MD

Director, Department of Vascular Medicine, Hemophilia Center, Orthopaedic Hospital, Los Angeles, California

José Martinez, MD

Professor of Medicine, Biochemistry, and Molecular Pharmacology, Associate Director, Cardeza Foundation for Hematologic Research, Jefferson Medical College of Thomas Jefferson University, Philadelphia, Pennsylvania

J. Adelia McBride, MD

Assistant Professor, Section of Hematopathology, University of Texas, MD Anderson Cancer Center, Houston, Texas

Ruth McCorkle, PhD

Professor and Director of Doctoral Studies, Director, Center for Excellence in Chronic Illness Management, Yale University School of Nursing, New Haven, Connecticut

Keith R. McCrae, MD

Associate Professor of Medicine, Hematology–Oncology Section, Case Western Reserve University School of Medicine; University Hospitals of Cleveland, Cleveland, Ohio

Rodger P. McEver, MD

George Lynn Cross Research Professor of Medicine and Biochemistry, University of Oklahoma Health Sciences Center; Member, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma

Philip McGlave, MD

Cecil J. Watson Professor of Medicine, Director, Division of Hematology, Oncology, and Transplantation, Department of Medicine, University of Minnesota, Minneapolis, Minnesota

Jay E. Menitove, MD

Clinical Professor of Internal Medicine, University of Kansas School of Medicine, Kansas City, Kansas; University of Missouri–Kansas City School of Medicine; Executive Director and Medical Director, Community Blood Center of Greater Kansas City, Kansas City, Missouri

Steven J. Mentzer, MD

Associate Professor of Surgery, Harvard Medical School; Department of Surgery, Brigham and Women's Hospital, Boston, Massachusetts

Giampaolo Merlini, MD

Associate Professor of Clinical Biochemistry, School of Medicine, University of Pavia; Director, Biotechnology Research Laboratories, University Hospital, IRCCS Policlinico San Matteo, Pavia, Italy

Dean D. Metcalfe, MD

Director, Allergy and Immunology Training Program, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland

Kenneth B. Miller, MD

Associate Professor of Medicine, Director of Bone Marrow Transplantation, Director of Leukemia Service, Tufts–New England Medical Center, Boston, Massachusetts

Narla Mohandas, DSc

Professor of Medicine, University of California at San Francisco, San Francisco, California; Senior Scientist, Lawrence Berkeley National Laboratory, Berkeley, California

John G. Monroe, PhD

Professor, Pathology and Laboratory Medicine, Chair, Immunology Graduate Program, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Robert R. Montgomery, MD

Professor and Vice Chair, Department of Pediatrics, Medical College of Wisconsin; Senior Attending and Director of Research, Children's Hospital of Wisconsin, Milwaukee, Wisconsin

Michael R. Moore, BSc, DSc

Professor, Department of Medicine, University of Queensland; Director, National Research Centre for Environmental Toxicology, Brisbane, Queensland, Australia

Jon S. Morrow, MD, PhD

Professor and Chair, Department of Pathology, Yale University School of Medicine; Chief of Pathology, Yale–New Haven Hospital, New Haven, Connecticut

Auayporn P. Nademanee, MD

Associate Clinical Director, Department of Hematology and Bone Marrow Transplantation, City of Hope National Medical Center, Duarte, California

Robert S. Negrin, MD

Associate Professor of Medicine, Bone Marrow Transplant Section, Stanford University, Stanford Hospital, Stanford, California

Paul M. Ness, MD

Professor of Pathology and Medicine, Johns Hopkins University School of Medicine; Director, Transfusion Medicine, Johns Hopkins Hospital; Chief Executive Officer, American Red Cross Blood Services, Greater Chesapeake and Potomac Region, Baltimore, Maryland

Arthur W. Nienhuis, MD

St. Jude Professor of Pediatrics and Medicine, University of Tennessee Medical School; Director, St. Jude Children's Research Hospital, Memphis, Tennessee

Yago Nieto, MD

Instructor, Bone Marrow Transplant Program, University of Colorado, Denver, Colorado

Thalia Papayannopoulou, MD, DMSc

Professor of Medicine/Hematology, University of Washington School of Medicine; Attending Physician, University Hospital, Seattle, Washington

Robert I. Parker, MD

Associate Professor and Vice Chairman for Academic Affairs, Department of Pediatrics, Director, Pediatric Hematology–Oncology, State University of New York at Stony Brook School of Medicine, Stony Brook, New York

Jeannie V. Pasacreta, PhD, RN

Associate Professor, Director, Psychiatric–Mental Health Nursing Specialty, Yale University School of Nursing, New Haven, Connecticut

Dilip V. Patel, MB, BS

Assistant Professor of Medicine, Albert Einstein College of Medicine, Bronx, New York; Fellowship Program Director, Division of Hematology–Oncology, Long Island Jewish Medical Center, New Hyde Park, New York

Sam L. Penza, MD

Assistant Professor of Clinical Medicine, Faculty, College of Medicine, The Ohio State University; Attending Physician, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, The Ohio State University Hospital, Columbus, Ohio

LoAnn C. Peterson, MD

Professor of Pathology, Northwestern University Medical School; Director of Hematopathology, Northwestern Memorial Hospital, Chicago, Illinois

Philip A. Pizzo, MD

Thomas Morgan Rotch Professor and Chair, Department of Pediatrics, Harvard Medical School; Physician-in-Chief,

Chair, Department of Medicine, Children's Hospital, Boston, Massachusetts

Edward F. Plow, PhD

Chairman, Department of Molecular Cardiology, Head of Research, Joseph J. Jacobs Center for Thrombosis and Vascular Biology, Cleveland Clinic Foundation, Cleveland, Ohio

David G. Poplack, MD

Professor of Pediatrics, Head, Hematology-Oncology Section, Department of Pediatrics, Baylor College of Medicine; Director, Texas Children's Cancer Center, Texas Children's Hospital, Houston, Texas

Carol S. Portlock, MD

Associate Professor of Clinical Medicine, Cornell University Medical College; Attending, Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, New York

Josef T. Prchal, MD

Professor of Medicine, Hematology, Biochemistry and Molecular Genetics, Senior Scientist, Cancer Center, Co-director, Comprehensive Sickle Cell Center, University of Alabama at Birmingham, Birmingham, Alabama

William C. Pugh, MD

Associate Professor and Chief (Former), Section of Hematopathology, University of Texas, MD Anderson Cancer Center; Pathologist, Memorial Pathology Consultants, Memorial Hospital Southwest, Houston, Texas

Ellen Puré, PhD

Professor, The Wistar Institute; University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Emmanuel A. Quaidoo, MD

Senior Instructor, Department of Medicine, University of Rochester, Rochester, New York

Kanti R. Rai, MB, BS

Professor of Medicine, Albert Einstein College of Medicine, Bronx, New York; Chief, Division of Hematology-Oncology, Long Island Jewish Medical Center, New Hyde Park, New York

A. Kim Ritchey, MD

Professor of Pediatrics, University of Pittsburgh; Chief, Pediatric Hematology-Oncology, Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania

Harold R. Roberts, MD

Sarah Graham Kenan Professor of Medicine, Department of Medicine, University of North Carolina at Chapel Hill; Attending Physician, Department of Medicine, University of North Carolina Hospitals, Chapel Hill, North Carolina

Glenn E. Rodey, MD

Professor, Department of Pathology and Laboratory Medicine, Baylor College of Medicine; Director, Histocompatibility Laboratory, The Methodist Hospital, Houston, Texas

Steven T. Rosen, MD

Genevieve Teuton Professor of Medicine, Director, Robert H. Lurie Comprehensive Cancer Center, Northwestern University School of Medicine, Chicago, Illinois

Naomi Rosenberg, PhD

Professor of Pathology, Department of Pathology, Tufts University School of Medicine, Boston, Massachusetts

Barry E. Rosenbloom, MD

Clinical Professor of Medicine, University of California at Los Angeles School of Medicine; Attending, Cedars-Sinai Medical Center, Los Angeles, California

David S. Rosenthal, MD

Henry K. Oliver Professor of Hygiene, Professor of Medicine, Harvard University Medical School; Director, Harvard University Health Services, Cambridge, Massachusetts

Wendell F. Rosse, MD

Florence McAllister Professor of Medicine, Department of Medicine, Duke University School of Medicine; Hematology-Oncology Division, Department of Medicine, Duke University Medical Center, Durham, North Carolina

Kate Rothko, MD

Assistant Professor, Johns Hopkins University School of Medicine, Baltimore, Maryland; Clinical Assistant Professor, George Washington School of Medicine; Clinical Associate Professor, Uniformed Services University of the Health Sciences; Department of Veterans Affairs-Pathology and Laboratory Medicine Division, Washington, DC

Scott D. Rowley, MD, FACP

Associate Professor, University of Washington School of Medicine; Associate Member, Fred Hutchinson Cancer Research Center, Seattle, Washington

Jeffrey E. Rubnitz, MD, PhD

Assistant Professor, Department of Pediatrics, University of Tennessee College of Medicine; Assistant Member, Department of Hematology-Oncology, St. Jude Children's Research Hospital, Memphis, Tennessee

Daniel H. Ryan, MD

Professor, Department of Pathology and Laboratory Medicine, University of Rochester School of Medicine; Director, Clinical Laboratories, Strong Memorial Hospital, Rochester, New York

Stephen E. Sallan, MD

Professor, Department of Pediatrics, Harvard Medical School; Chief of Staff, Dana-Farber Cancer Institute, Boston, Massachusetts

John T. Sandlund, Jr., MD

Associate Professor, University of Tennessee College of Medicine; Associate Member, St. Jude Children's Research Hospital, Memphis, Tennessee

Samuel A. Santoro, MD, PhD

Professor of Pathology and Medicine, Washington University School of Medicine; Director, Clinical Hematology Laboratory, Barnes-Jewish Hospital, St. Louis, Missouri

David T. Scadden, MD

Associate Professor, Harvard Medical School; Chief, Immunodeficiency Disease Center, Dana-Farber/Partners Cancer Care, Massachusetts General Hospital, Boston, Massachusetts

Sandra F. Schnall, MD

Associate Professor of Medicine, Division of Hematology–Oncology, Temple University School of Medicine, Philadelphia, Pennsylvania

Paul I. Schneiderman, MD

Associate Clinical Professor of Dermatology, Columbia University College of Physicians and Surgeons, New York, New York

Stanley L. Schrier, MD

Professor of Medicine and Hematology, Department of Medicine, Division of Hematology, Stanford University, Stanford, California

Cindy L. Schwartz, MD

Associate Professor of Oncology and Pediatrics, Associate Director for Clinical Programs, Johns Hopkins University School of Medicine, Baltimore, Maryland

Robert S. Schwartz, MD

New England Journal of Medicine, Waltham, Massachusetts

Sanford J. Shattil, MD

Professor, Departments of Vascular Biology and Molecular and Experimental Medicine, The Scripps Research Institute, La Jolla, California; Adjunct Professor of Medicine, University of California at San Diego, San Diego, California

Mark J. Shlomchik, MD, PhD

Department of Laboratory Medicine, Section of Immunobiology, Yale University School of Medicine; Associate Director, Blood Bank, Yale–New Haven Hospital, New Haven, Connecticut

Elizabeth J. Shpall, MD

Professor of Medicine, University of Colorado Health Sciences Center; Co-director, Bone Marrow Transplant Program, University Hospital, Denver, Colorado

Susan B. Shurin, MD

Professor of Pediatrics, Case Western Reserve University School of Medicine; Chief, Division of Pediatric Hematology–Oncology, Rainbow Babies and Children's Hospital, University Hospitals of Cleveland, Cleveland, Ohio

Leslie E. Silberstein, MD

Professor, Department of Pathology and Laboratory Medicine, University of Pennsylvania Medical Center, Philadelphia, Pennsylvania

Lewis B. Silverman, MD

Instructor in Pediatrics, Harvard Medical School; Clinical Associate in Pediatrics, Dana-Farber Cancer Institute; Assistant in Medicine, Children's Hospital, Boston, Massachusetts

Peter J. Sims, MD, PhD

Professor, Department of Molecular and Experimental Medicine, The Scripps Research Institute, La Jolla, California

Edward L. Snyder, MD

Professor Laboratory Medicine, Yale University School of Medicine; Director, Blood Bank, Yale–New Haven Hospital, New Haven, Connecticut

Jeffrey A. Sosman, MD

Associate Professor of Medicine, Director of Clinical Research, Section of Hematology–Oncology, University of Illinois College of Medicine, Chicago, Illinois

Patrice F. Spitalnik, MD

Senior Instructor, Department of Pathology and Laboratory Medicine, University of Rochester Medical Center, Rochester, New York

Steven L. Spitalnik, MD

Professor and Chair, Department of Pathology and Laboratory Medicine, University of Rochester Medical Center, Rochester, New York

Jerry L. Spivak, MD

Professor of Medicine and Oncology, Johns Hopkins University School of Medicine; Active Staff, Johns Hopkins Hospital, Baltimore, Maryland

Anthony S. Stein, MD

Staff Physician, Department of Hematology and Bone Marrow Transplantation, City of Hope National Medical Center, Duarte, California

Martin H. Steinberg, MD

Professor of Medicine, University of Mississippi School of Medicine; Associate Chief of Staff for Research, GV "Sonny" Montgomery Veterans Affairs Medical Center, Jackson, Mississippi

C. Philip Steuber, MD

Professor, Department of Pediatrics, Baylor College of Medicine; Texas Children's Hospital, Houston, Texas

Wendy Stock, MD

Assistant Professor of Medicine, Section of Hematology–Oncology, University of Illinois College of Medicine, Chicago, Illinois

Ronald G. Strauss, MD

Professor of Pathology and Pediatrics, University of Iowa College of Medicine; Medical Director, DeGowin Blood Center, University of Iowa Hospitals and Clinics, Iowa City, Iowa

Daniel M. Sullivan, MD

Associate Professor of Internal Medicine and Biochemistry and Molecular Biology, Division of Blood and Marrow Transplantation, Program Leader, Experimental Therapeutics, Moffitt Cancer Center and Research Institute, University of South Florida, Tampa, Florida

John L. Sullivan, MD

Professor, Department of Pediatrics, University of Massachusetts Medical School, Worcester, Massachusetts

Martin S. Tallman, MD

Associate Professor of Medicine, Director, Adult Leukemia Program, Director, Hematologic Malignancy Program, Robert H. Lurie Comprehensive Cancer Center, Northwestern University Medical School; Attending Physician, Northwestern Memorial Hospital, Chicago, Illinois

Marilyn J. Telen, MD

Professor of Medicine, Associate Professor of Pathology, Chief, Division of Hematology, Co-director, Transfusion Service, Duke University, Durham, North Carolina

Michael J. Thirman, MD

Assistant Professor of Medicine, Section of Hematology-Oncology, University of Chicago Medical Center, Chicago, Illinois

Douglas M. Tollefsen, MD, PhD

Professor, Hematology Division, Department of Medicine, Washington University Medical School, St. Louis, Missouri

Guido Tricot, MD, PhD

Professor of Medicine and Pathology, Director, Blood/Marrow Transplant, Greenbaum Cancer Center, University of Maryland School of Medicine, Baltimore, Maryland

Koen van Besien, MD

Associate Professor of Medicine and Pathology, Hematology-Oncology Section Director, Stem Cell Transplant Unit, University of Illinois, Chicago, Illinois

Catherine M. Verfaillie, MD

Professor of Medicine, Director, Stem Cell Biology Program, Cancer Center, University of Minnesota Medical School, Minneapolis, Minnesota

Elliott P. Vichinsky, MD

Adjunct Professor, Department of Pediatrics, University of California at San Francisco, San Francisco, California; Chief, Division of Hematology-Oncology, Director, Department of Hematology-Oncology, Children's Hospital Oakland, Oakland, California

Denisa D. Wagner, PhD

Professor of Pathology, Harvard Medical School; Senior Investigator, Center for Blood Research, Boston, Massachusetts

John E. Wagner, MD

Associate Professor of Pediatrics, University of Minnesota Medical School; Attending Staff Physician, University of Minnesota Hospital and Clinics, Minneapolis, Minnesota

Christopher E. Walsh, MD, PhD

Assistant Professor, Department of Medicine, University of North Carolina Medical School, Chapel Hill, North Carolina

Thomas J. Walsh, MD

Professor of Medicine, University of Maryland School of Medicine, Baltimore, Maryland; Senior Investigator, Chief, Immunocompromised Host Section, Pediatric Oncology Branch, National Cancer Institute, Bethesda, Maryland

Theodore E. Warkentin, MD

Associate Professor, Departments of Medicine and Pathology and Molecular Medicine, McMaster University; Associate Head, Transfusion Medicine, Hamilton Regional Laboratory Medicine Program, Hamilton Health Sciences Corporation, Hamilton, Ontario, Canada

Howard J. Weinstein, MD

Professor of Pediatrics, Harvard Medical School; Chief of Pediatric Hematology and Oncology, Massachusetts General Hospital, Boston, Massachusetts

Irwin M. Weinstein, MD

Clinical Professor of Medicine, University of California at Los Angeles School of Medicine; Attending, Cedars-Sinai Medical Center, Los Angeles, California

Daniel J. Weisdorf, MD

Professor of Medicine, Director, Adult Blood and Marrow Transplant Program, University of Minnesota Medical School, Minneapolis, Minnesota

Gilbert C. White, II, MD

Professor of Medicine and Pharmacology, Division of Hematology-Oncology, Director, Center for Thrombosis and Hemostasis, University of North Carolina School of Medicine; Attending Physician, University of North Carolina Hospitals, Chapel Hill, North Carolina

Therese Wiedmer, PhD

Associate Professor, Department of Molecular and Experimental Medicine, The Scripps Research Institute, La Jolla, California

David L. Wiest, BS, PhD

Associate Member, Division of Basic Sciences, Fox Chase Cancer Center, Philadelphia, Pennsylvania

James S. Wiley, MD, FRACP

Professor of Hematology, Department of Medicine, Sydney University, Sydney, Australia

David A. Williams, MD

Professor, Departments of Pediatrics and Medical and Molecular Genetics, Indiana University School of Medicine; Kipp Investigator of Pediatrics, Herman B. Wells Center for Pediatric Research; Associate Investigator, Howard Hughes Medical Institute; Pediatric Hematology-Oncology Division, James Whitcomb Riley Hospital for Children, Indianapolis, Indiana

Robert M. Winslow, MD

President, Sangart, Inc., San Diego, California

Neal S. Young, MD

Chief, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland

Ralph Zalusky, MD

Professor of Medicine, Department of Medicine, Albert Einstein College of Medicine of Yeshiva University, Bronx, New York; Chief, Division of Hematology-Oncology, Department of Medicine, Beth Israel Medical Center, New York, New York

Dorothea Zucker-Franklin, MD, PhD

Professor of Medicine, New York University School of Medicine; Attending Physician, Bellevue Hospital; Manhattan Veterans Affairs Hospital; Tisch University Hospital of New York University, New York, New York

Preface to the Third Edition

Over four years have elapsed since the second edition of this book was published. During this period, an enormous amount of new scientific information has been generated in the area of hematology. This knowledge has been the result of both laboratory-based research and clinical trials. Exciting new data have been reported in virtually all areas of preclinical and clinical hematology research. This new edition serves as a resource for students, residents, fellows, scientists, and practicing physicians who are eager to learn about the science and practice of hematology. This third edition of *Hematology: Basic Principles and Practice* should be viewed as a work in progress; since the appearance of the first edition of this textbook in 1991, the book has evolved as it relates to content, focus, and size. This evolution reflects, in large part, the new directions and growth of hematology as an academic and clinical discipline. In order to retain the quality and vitality displayed in the first two editions, over thirty new primary authors have been added to this book. This "changing of the guard" is healthy for a text in order to ensure its timeliness and freshness. A significant number of new chapters appear in this volume. These new chapters represent a commitment by the editorial group to constructive change in order to create an excellent book. The authors have continued to update their chapters several times during the 24 months it has taken to complete this volume. The editors would like to thank the authors for these additional efforts, which assure that the text is up to date and comprehensive.

The editors have recognized the increasing importance of transplantation to hematologists; the section on Stem Cell Transplantation in this volume has been expanded in size, almost threefold since the second edition. As many as 14 chapters in this edition are devoted to stem cell transplantation. This emphasis reflects the growth and importance of this area to the discipline of hematology. Phil McGlave from the University of Minnesota was added to our editorial board for the purposes of enhancing our expertise in transplantation. He has selected a wonderful group of authors who have made important contributions to the text. The area of stem cell transplantation has blossomed over the last decade. The indications for high-dose chemo-radiotherapy and stem cell transplantation have been extended and the management of transplant recipients markedly improved. The use of alternative donor grafts and the engineering of allogeneic and autologous grafts have been areas of particular focus. This information is summarized in this edition and is important to all practicing hematologists.

The editors have remained responsive to the readership. Before embarking on this edition, we analyzed reviews of the book that appeared in a variety of journals, as well as solicited and unsolicited criticisms, and corrected any deficiencies or weaknesses. This edition represents the culmination of such efforts and results in a more readable and informative text. In addition, areas of overlap have been eliminated. Many of the readers of the text have appreciated the inclusion of personal strategies provided by many authors for the diagnosis and treatment of hematologic disorders. The number of personal strategy boxes has been expanded to provide a text that is useful not only to academic scientists but also to practicing physicians.

Some mention should be made of the debt that the editors owe to the contributing authors. As we all realize, the world of academic medicine has changed over the last decade. Physician accountability has become the new buzz word in many institutions. Contributions to textbooks are not valued by some institutions since such efforts fail to contribute to an institutional balance sheet in a positive fashion. The contributors to this book continue, however, to adhere to the traditional values of academic scholarship. In the sometimes frenetic world of institutional mergers and institutional mission statements this return to core values is refreshing and greatly appreciated. Only with the aid of such altruistic contributors can *Hematology: Basic Principles and Practice* remain the creative, dynamic, scholarly book that our readership has come to expect. We as a group remain committed to these ideals and standards. We are hopeful that our readership enjoys this text and continues to provide us with the constructive criticism needed to generate the creative energy required for future editions.

Ronald Hoffman, MD

Edward J. Benz, Jr, MD

Sanford J. Shattil, MD

Bruce Furie, MD

Harvey J. Cohen, MD, PhD

Leslie E. Silberstein, MD

Philip McGlave, MD

Preface to the Second Edition

The first edition of *Hematology: Basic Principles and Practice* appeared in 1991. This work was intended to be a comprehensive and up-to-date textbook developed to serve a diverse group of individuals ranging from practicing general hematologists, students of the field, basic scientists involved in hematologic research, as well as practicing internists and pediatricians. During the past four years, the science and practice of hematology have continued to evolve. The rapid advancement of this field has necessitated the creation of a second edition, in order that the book remain current and useful to our readers as the field of hematology progresses.

We retained the features of the first edition that were regarded by our audience as most effective, but altered the second edition as required to further enhance the quality of the book. In response to the constructive criticisms offered in numerous positive reviews of the first edition, we have added an entirely new section titled *Immunology*. It is organized in a manner resembling the section titled *Molecular and Cellular Basis of Hematology*, which provides an overview of the basic science needed to gain insight into the field. Some chapters have been eliminated in the interest of reducing redundancy and balancing the content. The editors met twice for extended work sessions during the inception of this edition in order to organize the information to be included. These meetings led to the development of close relationships between the editors and staff which has, we believe, led to the generation of a more cohesive and comprehensive text.

The growing importance of transfusion medicine has been recognized by the appointment of Leslie E. Silberstein, MD to the editorial group. The second edition has 16 chapters that deal exclusively with transfusion medicine. This section provides a concise review of an increasingly significant and complex area. An understanding of transfusion medicine is required of all practicing hematologists. We hope this primer will serve as a framework by which students of hematology can gain mastery of this rapidly evolving area.

In the first edition we asked authors to contribute their personal strategies for managing difficult clinical problems in sections set apart from the main text. These boxed paragraphs were highlighted by a shaded tint so the reader could easily identify these clinical points. Such contributions now appear in an expanded form in most of the chapters dealing with clinical hematology.

The remarkably rapid progress of both experimental and clinical hematology, coupled with the accelerated entry of molecular and cellular concepts and techniques into clinical practice, has resulted in an entirely new set of terminologies relevant to the clinical hematologist. Oncogenes, chromosomal translocations, cell-surface antigens, growth factors, and specialized cellular receptors comprise but a few examples of entities that were identified only by the arcane jargon of research laboratories a few years ago, but are now important for the classification, diagnosis, and treatment of hematologic diseases. The translation of knowledge from research laboratory to the bedside has been so rapid that the names of these substances and phenomena have often remained in the shorthand of the basic

research community. A formidable challenge facing the editors and publisher of this volume has been the development of a coherent approach to the terms used to identify these materials. In some cases, loose rules of usage have been developed. For example, the abbreviations used to designate human and mouse proto-oncogenes, their oncogene derivatives, and the proteins resulting from their expression are distinguished by differential use of lower case and upper case letters, italics, and so forth. However, these rules are not universally honored in either the primary research literature, or in reviews or textbooks. We have tried to conform to recommended usage in every situation in which a recommended terminology has been developed. However, we have deferred to the best judgment and preference of the authors of individual chapters whenever they thought the conventional terminology was inappropriate for the subjects they discuss. We have attempted to alert the reader to the use of alternative terminologies, and to define potentially confusing terms.

The contributors to this edition have done an outstanding job, and the editors are indebted to them for their diligence, perseverance, and scholarly presentations.

Ronald Hoffman, MD

Edward J. Benz, Jr., MD

Sanford J. Shattil, MD

Bruce Furie, MD

Harvey J. Cohen, MD, PhD

Leslie E. Silberstein, MD

Preface to the First Edition

The past several decades have seen an exponential increase in new medical knowledge related to hematology. New disease entities, new diagnostic methods, and novel therapeutic modalities have been introduced into the discipline. These clinical advances have largely been based on insights into the pathophysiology of hematologic disorders and have been gained by applying the tools of cell biology, biochemistry, immunology, and molecular genetics to this discipline. Inevitably, this explosion of knowledge has also led to further subspecialization within hematology, with the appearance of experts in transfusion medicine, red cell disorders, platelet and coagulation disorders, neoplastic diseases, and immunohematology.

The practicing general hematologists, whether operating at a university or in private practice, faces the challenge of caring for patients who have a variety of hematologic disorders. It has become increasingly difficult for one individual to remain current in all aspects of this expanding discipline, yet clinical care requires intimate familiarity with the enlarging knowledge base. In addition, basic scientists without clinical training have been attracted to hematology research. To put their work in a clinical context, these scientists require a broad background in the fundamentals of hematology and comprehension of clinical presentations, diagnostics, and therapy of specific diseases. Furthermore, students of the field, including medical residents, hematology fellows, and internists with special needs for understanding hematologic diseases have a requirement for an up-to-date source of information. *Hematology: Basic Principles and Practice* is a comprehensive textbook developed to serve these diverse groups.

The structure of the book reflects the diversity of its readership. *Hematology: Basic Principles and Practice* was designed during a meeting of the editors with Bob Hurley and Beth Barry of Churchill Livingstone in Woods Hole, Massachusetts, during the summer of 1988. As our starting point, all of the Editors stressed the importance of emphasizing the scientific underpinnings of modern hematology. Part I, *Molecular and Cellular Basis of Hematology*, is the foundation of the book and provides the overview of basic science needed to gain insight into the practice of hematology during the 1990s and into the next century. The next six parts are devoted to the major subspecialty areas, *Hematopoiesis*, *Red Blood Cells*, *White Blood Cells*, *Hematologic Malignancies*, *Hemostasis and Thrombosis*, and *Transfusion Medicine*. Each part contains an up-to-date review of the scientific fundamentals, followed by the description of specific hematologic diseases and their diagnosis and treatment. To further extend the book's clinical usefulness, Part VIII deals with *Consultative Hematology*. With nine chapters covering general medicine and surgery, we hope this section will be especially valuable to the clinician performing consultations on patients who do not have a primary hematologic disorder but whose primary disorder results in hematologic abnormalities. The book closes with a section on *Special Tests and Procedures* that are integral to the practice of hematology.

To strike a balance between the scientific and clinical, we believe the text should be academic and scholarly, yet still offer a practical approach to diagnosis and patient management. To

reconcile these objectives and provide a forum for sharing clinical approaches, we asked authors to contribute their personal strategies for managing difficult problems in nonreferenced editorial sections set off from the main text. The boxed paragraphs are highlighted by a shaded tint so the reader can easily identify these clinical pearls.

We also asked the contributors to seek out and create helpful illustrations to make difficult concepts easier to understand. We have redrawn much of the artwork to render primary visual material in a uniform style throughout the book, and have added color and tints to emphasize the more important points in the illustrations. We hope this makes our overall presentation more comprehensible and greatly enhances the heuristic value of these illustrations.

Ultimately, the quality of this project is closely related to the quality of the contributions received from the many participants in this multi-authored textbook. The preparation of each chapter has taken considerable effort and time, and we are grateful that the experts in the field agreed to participate in this undertaking. The contributors have done an outstanding job in writing comprehensive and timely treatises on specialized subjects, and we have responded by minimizing the delay between the preparation of each chapter and publication. We want to especially thank Les Silberstein at the University of Pennsylvania School of Medicine and Ed Snyder at the Yale University School of Medicine, who organized the section on blood banking. Their knowledge and guidance have been indispensable in editing this major section of the book.

Each of the editors brings to the book different interests and perspectives. We all worked together as equal partners to create a shared vision of a hematology text for a new generation of scientists and clinicians. We hope that we have accomplished this lofty goal, and that this will be the initial edition of a book that will continue to serve its varied readership for many editions to come.

Ronald Hoffman, MD

Edward J. Benz, Jr., MD

Sanford J. Shattil, MD

Bruce Furie, MD

Harvey J. Cohen, MD, PhD