

CECIL



TEXTBOOK *of*  
MEDICINE

WYNGAARDEN AND SMITH



SIXTEENTH EDITION

**CECIL**

**TEXTBOOK *of*  
MEDICINE**

*Edited by*

**JAMES B. WYNGAARDEN, M.D.**

Director, National Institutes of Health,  
Bethesda, Maryland.  
Professor of Medicine, Duke University,  
Durham, North Carolina

**LLOYD H. SMITH, Jr., M.D.**

Professor and Chairman, Department of Medicine,  
University of California,  
San Francisco, California

**W.B. SAUNDERS COMPANY**

Philadelphia London Toronto  
Mexico City Rio de Janeiro Sydney Tokyo

W. B. Saunders Company: West Washington Square  
Philadelphia, PA 19105

1 St. Anne's Road  
Eastbourne, East Sussex BN 21 3UN, England

1 Goldthorne Avenue  
Toronto, Ontario M8Z 5T9, Canada

Apartado 26370—Cedro 512  
Mexico 4, D.F., Mexico

Rua Coronel Cabrita, 8  
Sao Cristovao Caixa Postal 21176  
Rio de Janeiro, Brazil

9 Waltham Street  
Artarmon, N.S.W. 2064, Australia

Ichibancho, Central Bldg., 22-1 Ichibancho  
Chiyoda-Ku, Tokyo 102, Japan

Listed here is the latest translated edition of this book together with the language of the translation and the publisher.

Chinese (7th Edition)—Chinese Medical Association, Shanghai, China

Italian (9th Edition)—Societa Editrice Universo, Rome, Italy

(15th Edition, in preparation)—Piccin Editore, Padova, Italy

Japanese (14th Edition)—Igaku Shoin Ltd., Tokyo, Japan

Polish (9th Edition)—Panstwowy Zaklad Wydawnictw Lekarskich, Warsaw, Poland

Portuguese (14th Edition)—Editora Interamericana Ltda., Rio de Janeiro, Brazil

Serbo-Croat (11th Edition)—Medicinska Knjiga, Belgrade, Yugoslavia

Spanish (14th Edition)—Nueva Editorial Interamericana Ltda., Mexico City

(15th Edition, in preparation)—Nueva Editorial Interamericana Ltda., Mexico City

#### Library of Congress Cataloging in Publication Data

Main entry under title:

Textbook of medicine.

Simultaneously published in 1 v.

Includes bibliographical references and index.

I. Internal medicine. I. Cecil, Russell

La Fayette, 1881-1965. II. Wyngaarden, James B.

III. Smith, Lloyd Holly, 1924- [DNLM:

1. Medicine. WB 100 T3531]

[RC46.T35 1982b] 616 80-53515

ISBN 0-7216-9619-8 (v. 1) AACR2

ISBN 0-7216-9620-1 (v. 2)

#### Library of Congress Cataloging in Publication Data

Main entry under title:

Textbook of medicine.

Simultaneously published in 2 v.

Includes bibliographical references and index.

I. Internal medicine. I. Cecil, Russell

La Fayette, 1881-1965. II. Wyngaarden, James B.

III. Smith, Lloyd Holly, 1924- [DNLM:

1. Medicine. WB 100 T3531]

RC46.T35 1982 616 80-53514

ISBN 0-7216-9618-X AACR2

ISBN 0-7216-9618-X Single Volume

ISBN 0-7216-9619-8 Volume 1

ISBN 0-7216-9620-1 Volume 2

ISBN 0-7216-9621-X Set

Textbook of Medicine

© 1982 by W. B. Saunders Company. Copyright 1927, 1930, 1933, 1937, 1940, 1943, 1947, 1951, 1955, 1959, 1963, 1967, 1971, 1975 and 1979 by W. B. Saunders Company. Copyright under the Uniform Copyright Convention. Simultaneously published in Canada. All rights reserved. This book is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher. Made in the United States of America. Press of W. B. Saunders Company. Library of Congress catalog card number 80-53514 (single volume), 80-53515 (volumes 1 and 2).

Last digit is the print number: 9 8 7 6 5 4 3 2

Editor for Neurologic and Behavioral Diseases

FRED PLUM, M.D.

*Anne Parrish Titzell Professor of Neurology,  
Cornell University Medical College; Neurologist-in-Chf,  
The New York Hospital, New York, New York*

The Consulting Editors

Immunology and Rheumatology

K. FRANK AUSTEN, M.D.

*Theodore B. Bayles Professor of Medicine, Harvard  
Medical School, Boston, Massachusetts*

Protozoan and Helminthic Diseases

PHILIP D. MARSDEN, M.D.

*Professor of Medicine, University of Brasilia, Brazil*

Respiratory Diseases

JOHN F. MURRAY, M.D.

*Professor of Medicine, University of California, San  
Francisco, California*

Hematology and Oncology

DAVID G. NATHAN, M.D.

*Robert A. Stranahan Professor of Pediatrics, Harvard  
Medical School, Boston, Massachusetts*

Renal Diseases

ROSCOE R. ROBINSON, M.D.

*Florence McAlister Professor of Medicine, Duke University  
School of Medicine, Durham, North Carolina*

Gastrointestinal Disease

MARVIN H. SLEISENGER, M.D.

*Professor and Vice Chairman, Department of Medicine,  
University of California San Francisco, California*

Cardiovascular Diseases

ANDREW G. WALLACE, M.D.

*Walter Kempner Professor of Medicine, Duke University  
School of Medicine; Associate Vice President and Chief  
Executive Officer, Duke University Medical Center,  
Durham, North Carolina*

Microbial Diseases

SHELDON M. WOLFF, M.D.

*Endicott Professor and Chairman, Department of Medicine,  
Tufts University School of Medicine, Boston, Massachusetts*

The 16th Edition of the *Cecil Textbook of Medicine* is affectionately dedicated to its two recently retired editors



**Paul B. Beeson**

Born 1908

Who loves medicine and the spirit of free inquiry



**Walsh McDermott**

1909–1981

Who loved humanity and hated inhumanity

## BOOKS ASSOCIATED WITH THE CECIL TEXTBOOK OF MEDICINE

### **The International Textbook of Medicine**

*General Editors: A. H. Samiy, M.D., Lloyd H. Smith, Jr., M.D., James B. Wyngaarden, M.D.*

The International Textbook of Medicine (ITM) is designed to give a broad coverage of general internal medicine and its relevant medical sciences. It comprises three books, which are linked by design and editorial policy to achieve that purpose. Each book is also complete in itself and can "stand alone" as a treatment of its specific topic.

### **Volume I. Pathophysiology: The Biological Principles of Disease**

*Editors: Lloyd H. Smith, Jr., M.D., Samuel O. Thier, M.D.*

This book contains 16 chapters devoted to the pathophysiology of various organ systems. Following introductory chapters on cell biology, genetics, immunology, and neoplasia, there are specific chapters on the hematopoietic system, metabolism and nutrition, endocrinology, connective tissue, the kidney, respiration, the cardiovascular system, neurology, the gastrointestinal tract, the liver, and the skin. The concluding chapter is concerned with the principles of clinical pharmacology.

### **Volume II. Medical Microbiology and Infectious Diseases**

*Editor: Abraham I. Braude, M.D.*

Volume II is truly an international textbook to which 58 participants from 27 countries outside the United States have contributed. More than any other single book now available, it describes the world experience with the infectious and parasitic diseases. The section on medical microbiology is also available in a paperback edition titled *Microbiology*.

### **Volume III. The Cecil Textbook of Medicine, 16th Edition.**

*Editors: James B. Wyngaarden, M.D., Lloyd H. Smith, Jr., M.D.*

### **Review of General Internal Medicine: A Self-Assessment Manual, 2nd Edition**

*Editors: Lloyd H. Smith, Jr., M.D., James B. Wyngaarden, M.D.*

The second edition of this self-assessment book contains approximately 1500 questions covering all the specialty areas of internal medicine. The answers are linked to the Cecil Textbook of Medicine and to other readily available sources.

Available from W. B. Saunders Company  
West Washington Square  
Philadelphia, Pa. 19105

## DOSAGE NOTICE

Extraordinary efforts have been made by the authors, the editors, and the publisher of this book to ensure that dosage recommendations are precise and in agreement with the highest standards of practice.

It does happen, however, that dosage schedules are changed from time to time in the light of accumulating clinical experience and continuing laboratory studies. This is most likely to occur in the case of recently introduced products.

It is urged, therefore, that you check the package informa-

tion data for the manufacturer's recommended dosage. In addition, there are some quite serious situations, each encountered only rarely, in which drug therapy must be individualized and expert judgment advises the use of a higher dosage or administration by a different route than is included in the manufacturer's recommendations. Throughout the text many such instances are indicated by a footnote.

THE EDITORS

# CONTRIBUTORS

## FRANCOIS M. ABBOUD, M.D.

Professor of Medicine and Physiology, University of Iowa College of Medicine. Head, Department of Internal Medicine, University of Iowa Hospitals and Clinics, Iowa City, Iowa.

*Shock*

## DAVID F. ALTMAN, M.D.

Assistant Clinical Professor of Medicine, University of California, San Francisco. Associate Director, Gastrointestinal Clinic, University of California Hospitals, San Francisco, California.

*Food Poisoning; Diseases of the Rectum and Anus*

## WILLIAM J. AMEND, Jr., M.D.

Associate Clinical Professor of Medicine and Surgery, University of California, San Francisco, California.

*Renal Transplantation*

## THOMAS E. ANDREOLI, M.D.

Professor and Chairman, Department of Internal Medicine, Director, Division of Nephrology, and Professor of Physiology, University of Texas Medical School, Houston. Chief of the Medical Service, Hermann Hospital, Houston, Texas.

*Disorders of Fluid Volume, Electrolyte, and Acid-Base Balance; Posterior Pituitary*

## CLAUDE D. ARNAUD, M.D.

Professor of Medicine and Physiology, University of California, San Francisco. Chief, Endocrinology, San Francisco Veterans Administration Medical Center, San Francisco, California.

*The Parathyroid Glands; The Ultimobranchial Cells and Calcitonin*

## K. FRANK AUSTEN, M.D.

Theodore B. Bayles Professor of Medicine, Harvard Medical School. Chairman, Department of Rheumatology and Immunology, Brigham and Women's Hospital, Boston, Massachusetts.

*Polyarteritis Nodosa Group*

## LOUIS V. AVIOLI, M.D.

Shoenberg Professor of Medicine and Director, Division of Bone and Mineral Metabolism, Washington University School of Medicine, The Jewish Hospital of St. Louis. Attending Physician, Jewish Hospital of St. Louis, Barnes Hospital, and St. Louis Children's Hospital, Director, Metabolic Clinic, Shriner's Hospital of St. Louis, Missouri.

*Bone Diseases*

## ROBERT W. BALOH, M.D.

Associate Professor of Neurology and Surgery (Head and Neck Division), University of California at Los Angeles, School of Medicine. Director, Neurotology Clinic and Laboratory; Attending Neurologist, UCLA Hospital, Los Angeles, California.

*Hearing Loss*

## J. RICHARD BARINGER, M.D.

Professor of Neurology and Pathology, University of California, San Francisco. Chief, Neurology Service, Veterans Administration Medical Center, San Francisco, California.

*Herpes Simplex Encephalitis*

## H. J. M. BARNETT, M.D., F.R.C.P. (C), F.A.C.P., F.R.C.P.

Professor of Neurology, University of Western Ontario. Chairman, Department of Clinical Neurological Sciences, University Hospital, London, Ontario, Canada.

*Cerebrovascular Diseases*

## DAVID W. BARRY, M.D.

Adjunct Associate Professor of Medicine, Duke University School of Medicine, Durham, North Carolina. Head, Department of Clinical Investigation, Wellcome Research Laboratories, Burroughs Wellcome Company.

*Antiviral Therapy*

## JOHN G. BARTLETT, M.D.

Professor of Medicine, The Johns Hopkins University School of Medicine. Chief, Infectious Disease Division, The Johns Hopkins Hospital, Baltimore, Maryland.

*Pseudomembranous Colitis; Botulism*

## MICHAEL BARZA, M.D.

Associate Professor of Medicine, Tufts University School of Medicine. Attending Physician, Infectious Disease Division, New England Medical Center Hospital, Boston, Massachusetts.

*Diseases Caused by Pseudomonads; Listeriosis; Erysipeloid*

## DAVID A. BASS, M.D., D.Phil.

Associate Professor of Medicine, Division of Infectious Diseases and Immunology, Bowman Gray School of Medicine. Attending, Infectious Diseases, North Carolina Baptist Hospital, Winston-Salem, North Carolina.

*Eosinophilic Syndromes*

## JOHN D. BAXTER, M.D.

Professor of Medicine and Biochemistry and Biophysics; Investigator, Howard Hughes Medical Institute; Director, Metabolic Research Unit; Chief, Section of Endocrinology, Moffitt Hospital, University of California, San Francisco, California.

*Principles of Endocrinology*

## WILLIAM S. BECK, M.D.

Professor of Medicine, Harvard Medical School. Physician, Director, Hematology Research Laboratory, Massachusetts General Hospital, Boston, Massachusetts.

*Megaloblastic Anemias*

## DONALD P. BECKER, M.D.

Professor and Chairman, Division of Neurological Surgery, Medical College of Virginia, Virginia Commonwealth University. Chief of Neurosurgery, Medical College of Virginia Hospitals, Richmond, Virginia.

*Injury to the Head, Injury to the Spine, and Care of the Resulting Neurologic Disability*

## PAUL B. BEESON, M.D.

Professor of Medicine, Emeritus, University of Washington, Seattle, Washington.

*Multifocal Fibrosclerosis; Relapsing Polychondritis*

## VICTOR S. BEHAR, M.D.

Professor of Medicine, Duke University Medical Center. Director, Cardiovascular Laboratory, Duke University Medical Center, Durham, North Carolina.

*Diseases of the Myocardium*

## ROBERT N. BERK, M.D.

Professor and Chairman, Department of Radiology, University of California, San Diego, School of Medicine. Chief, Department of Radiology, University of California, San Diego, Medical Center, San Diego, California.

*Diagnostic Imaging Procedures in Gastroenterology*



**ERNEST BEUTLER, M.D.**

Head, Division of Hematology/Oncology, Scripps Clinic and Research Foundation, La Jolla, California.  
*Galactosemia*

**EDWIN L. BIERMAN, M.D.**

Professor of Medicine and Head, Division of Metabolism and Endocrinology, University of Washington School of Medicine. Attending Physician, University of Washington Affiliated Hospitals, Seattle, Washington.  
*Obesity*

**ALAN L. BISNO, M.D.**

Chief, Division of Infectious Diseases, and Professor of Internal Medicine, University of Tennessee College of Medicine. Attending Physician, Memphis Veterans Administration Hospital, Memphis, Tennessee.  
*Rheumatic Fever*

**D. MONTGOMERY BISSELL, M.D.**

Associate Professor of Medicine, University of California, San Francisco. Attending Physician, University of California Hospitals and San Francisco General Hospital, San Francisco, California.  
*Porphyria*

**IRA B. BLACK, M.D.**

Professor of Neurology, Cornell University Medical College. Attending Neurologist, The New York Hospital-Cornell Medical Center, New York, New York.  
*Idiopathic Autonomic Insufficiency*

**LEO F. BLACK, M.D.**

Professor of Internal Medicine, Mayo Medical School, Rochester, Minnesota.  
*Neoplasms of the Lung*

**DANIEL S. BLUMENTHAL, M.D.**

Associate Professor, Department of Community Medicine and Family Practice, Morehouse School of Medicine. Attending Physician, Southwest Community Hospital, Atlanta, Georgia.  
*Strongyloidiasis; Hookworm Disease; Ascariasis; Trichuriasis; Enterobiasis*

**DANE R. BOGGS, M.D.**

Professor of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania.  
*The Leukopenic State*

**THOMAS H. BOTHWELL, M.D., D.Sc., F.R.C.P., F.R.S.(S.A.), F.A.C.P.(Hon.)**

Professor and Head, Department of Medicine, University of the Witwatersrand Medical School. Chief Physician, Johannesburg Hospital, Johannesburg, South Africa.  
*Hemochromatosis*

**THOMAS D. BOYER, M.D.**

Assistant Professor of Medicine, University of California, San Francisco. Acting Chief of Clinical Gastroenterology, Veterans Administration Hospital, San Francisco, California.  
*Cirrhosis of the Liver; Major Sequelae of Cirrhosis*

**PHILIP S. BRACHMAN, M.D.**

Clinical Associate Professor of Preventive Medicine and Community Health, and Clinical Instructor in Medicine, Emory University. Director, Epidemiology Program Office, Centers for Disease Control, Atlanta, Georgia.  
*Anthrax*

**MICHAEL C. BRAIN, D.M., F.R.C.P., F.R.C.P.(C)**

Professor of Medicine, McMaster University. Physician, McMaster University Medical Centre and Hamilton Civic Hospitals, Hamilton, Ontario, Canada.  
*Introduction to the Anemias; Anemia Due to Progenitor Failure*

**RUBIN BRESSLER, M.D.**

Professor and Head, Internal Medicine, Professor of Pharmacology, and Chief, Clinical Pharmacology, Health Sciences Center, University of Arizona, Tucson, Arizona.  
*Interactions Between Drugs; Adverse Reactions to Drugs*

**JEROME S. BRODY, M.D.**

Professor of Medicine, Boston University School of Medicine. Chief, Pulmonary Section, University and Boston City Hospitals, Boston, Massachusetts.  
*Diseases of the Pleura, Mediastinum, Diaphragm, and Chest Wall*

**ELMER B. BROWN, M.D.**

Professor of Medicine and Associate Dean for Continuing Medical Education, Washington University School of Medicine. Associate Physician, Barnes Hospital, St. Louis, Missouri.  
*Normochromic Normocytic Anemias; Hypochromic Anemias*

**ANTHONY D. M. BRYCESON, M.D., F.R.C.P.E., D.T.M. & H.**

Senior Lecturer, London School of Hygiene and Tropical Medicine. Consultant Physician, Hospital for Tropical Diseases, London, England.  
*Relapsing Fever; Tropical Phagedenic Ulcer; Leishmaniasis: Introduction; Visceral Leishmaniasis; Cutaneous Leishmaniasis of the Old World*

**THOMAS M. BUCHANAN, M.D.**

Professor of Medicine, University of Washington School of Medicine. Assistant Chief, Division of Infectious Diseases, and Attending Physician, U.S. Public Health Service Hospital, Seattle; Attending Physician, Harborview Medical Center, Seattle, Washington.  
*Brucellosis*

**REBECCA H. BUCKLEY, M.D.**

J. B. Sidbury Professor of Pediatrics, Professor of Immunology, Duke University School of Medicine. Chief, Division of Allergy, Immunology, and Pulmonary Diseases, Department of Pediatrics, Duke University Medical Center, Durham, North Carolina.  
*Primary Immunodeficiency Diseases*

**WARD E. BULLOCK, M.D.**

Arthur Russell Morgan Professor of Medicine and Director, Division of Infectious Diseases, University of Cincinnati College of Medicine, Cincinnati, Ohio.  
*Leprosy*

**BENJAMIN BURROWS, M.D.**

Professor of Internal Medicine, Director, Division of Respiratory Sciences, and Staff Physician, Health Sciences Center, University of Arizona, Tucson, Arizona.  
*Chronic Airways Diseases; Abnormalities of Lung Aeration*

**GEORGE F. CAHILL, Jr., M.D.**

Professor of Medicine, Harvard Medical School. Director of Research, Howard Hughes Medical Institute; Physician, Brigham and Women's Hospital, Boston, Massachusetts; Vice President, Joslin Diabetes Center.  
*Diabetes Mellitus*

**GEORGE P. CANELLOS, M.D.**

Associate Professor of Medicine, Harvard Medical School. Chief, Medical Oncology Division, Sidney Farber Cancer Institute, Brigham and Women's Hospital, Boston, Massachusetts.  
*Carcinoma of the Breast*

**PAUL P. CARBONE, M.D.**

Professor and Chairman, Department of Human Oncology, Professor of Medicine, University of Wisconsin. Attending, University Hospitals and Middleton Veterans Administration Hospital, Madison, Wisconsin.  
*Introduction to Lymphoreticular Neoplasms; Burkitt's Lymphoma*

**CHARLES C. J. CARPENTER, M.D.**

Professor and Chairman, Department of Medicine, Case Western Reserve University. Physician-in-Chief, University Hospitals of Cleveland, Ohio.  
*Shigellosis*

**JOHN P. CELLO, M.D.**

Assistant Professor of Medicine, University of California, San Francisco. Chief, Gastroenterology, San Francisco General Hospital, San Francisco, California.  
*Carcinoma of the Pancreas*

**BRUCE A. CHABNER, M.D.**

Director, Clinical Oncology Program, National Cancer Institute,  
National Institutes of Health, Bethesda, Maryland.  
*Principles of Cancer Therapy*

**HUGH CHAPLIN, Jr., M.D.**

Professor of Medicine and Preventive Medicine, Washington  
University School of Medicine. Associate Physician, Barnes Hospital,  
St. Louis, Missouri.  
*Hemoglobinuria*

**CHARLES L. CHRISTIAN, M.D.**

Professor of Medicine, Cornell University Medical College. Physician-  
in-Chief, Hospital for Special Surgery; Attending Physician, The New  
York Hospital, New York, New York.  
*Approach to the Patient with Musculoskeletal Disease: The Major  
Syndromes; Rheumatoid Arthritis; Joint Diseases*

**NICHOLAS P. CHRISTY, M.D.**

Professor of Medicine, Downstate Medical Center, State University of  
New York; Lecturer in Medicine, Columbia University College of  
Physicians and Surgeons. Chief of Staff, Brooklyn Veterans  
Administration Medical Center; Attending Physician, The  
Presbyterian Hospital, New York, New York.  
*The Anterior Pituitary*

**BAYARD CLARKSON, M.D.**

Professor of Medicine, Cornell University Medical College. Chief,  
Hematology/Lymphoma Service, Memorial Hospital, New York, New  
York.  
*The Chronic Leukemias*

**CHARLES G. COCHRANE, M.D.**

Member, Department of Immunopathology, Scripps Clinic and  
Research Foundation; Adjunct Professor, Department of Pathology,  
University of California, San Diego, California.  
*Immune Complex Diseases*

**JAY D. COFFMAN, M.D.**

Professor of Medicine, Boston University School of Medicine. Section  
Head, Peripheral Vascular Department, University Hospital, Boston  
University Medical Center, Boston, Massachusetts.  
*Diseases of the Peripheral Vessels*

**ALAN S. COHEN, M.D.**

Conrad Wesselhoef Professor of Medicine, Boston University School  
of Medicine. Chief of Medicine and Director, Thorndike Memorial  
Laboratory, Boston City Hospital; Director, Arthritis Center of Boston  
University Medical Center, Boston, Massachusetts.  
*Specialized Diagnostic Procedures in the Rheumatic Diseases*

**ROBERT B. COUCH, M.D.**

Professor of Microbiology and Immunology and Medicine, Baylor  
College of Medicine. Attending Physician, Baylor Affiliated Hospitals:  
The Methodist Hospital, Ben Taub General Hospital, and Veterans  
Administration Hospital, Houston, Texas.  
*Mycoplasmal Diseases*

**JAMES D. CRAPO, M.D.**

Associate Professor of Medicine, Duke University Medical Center.  
Chief, Division of Allergy and Respiratory Diseases, Duke University  
Medical Center, Durham, North Carolina.  
*Physical, Chemical, and Aspiration Injuries*

**RONALD P. DANIELE, M.D.**

Associate Professor of Medicine and Pathology, University of  
Pennsylvania School of Medicine. Attending Physician, Hospital of  
the University of Pennsylvania, Philadelphia, Pennsylvania.  
*Asthma*

**THOMAS E. DAVIS, M.D.**

Associate Professor of Human Oncology and Medicine, University of  
Wisconsin School of Medicine. Attending Physician, University  
Hospitals, Madison, Wisconsin.  
*Non-Hodgkin's Lymphomas*

**VINCENT W. DENNIS, M.D.**

Associate Professor of Medicine, Duke University School of  
Medicine. Chief, Division of Nephrology, Duke University Medical  
Center, Durham, North Carolina.  
*Investigations of Renal Function: Standard and Specialized Diagnostic  
Procedures*

**ROGER DES PREZ, M.D.**

Professor of Medicine, Vanderbilt University School of Medicine.  
Chief, Medical Service, Veterans Administration Medical Center,  
Nashville, Tennessee.  
*Tuberculosis; Extrapulmonary Tuberculosis*

**CHARLES A. DINARELLO, M.D.**

Associate Professor of Medicine and Pediatrics, Tufts University  
School of Medicine. Staff Physician, Tufts-New England Medical  
Center Hospital, Boston, Massachusetts.  
*Pathogenesis of Fever*

**RAPHAEL DOLIN, M.D.**

Professor of Medicine and Director, Infectious Disease Unit,  
University of Vermont College of Medicine. Attending Physician,  
Medical Center Hospital of Vermont, Burlington, Vermont.  
*Enteroviral Diseases; Viral Gastroenteritis*

**C. T. DOLLERY, M.B., F.R.C.P.**

Professor of Clinical Pharmacology, Royal Postgraduate Medical  
School, University of London. Consultant Physician, Hammersmith  
and Ealing Hospitals, London, England.  
*Arterial Hypertension*

**R. GORDON DOUGLAS, Jr., M.D.**

Professor of Medicine and Microbiology and Head, Infectious  
Diseases Unit, University of Rochester School of Medicine and  
Dentistry. Physician, Strong Memorial Hospital, Rochester, New  
York.  
*Immunization; Herpes Simplex Virus Infections*

**DAVID A. DRACHMAN, M.D.**

Professor and Chairman, Department of Neurology, University of  
Massachusetts Medical School. Chief, Neurology Service, University  
of Massachusetts Hospital, Worcester, Massachusetts.  
*Dizziness and Vertigo*

**PIERRE M. DREYFUS, M.D.**

Professor and Chairman, Department of Neurology, University of  
California, Davis, School of Medicine. Chief of Neurology,  
Sacramento Medical Center, Sacramento, California.  
*Nutritional Disorders of the Nervous System*

**DAVID J. DRUTZ, M.D.**

Professor of Medicine and Microbiology and Chief, Division of  
Infectious Diseases, University of Texas Health Science Center. Staff  
Physician, Bexar County Hospital, Audie L. Murphy Memorial  
Veterans Administration Hospital, and St. Luke's Lutheran Hospital,  
San Antonio, Texas.  
*Actinomycosis; Nocardiosis; The Mycoses*

**BRIAN O. L. DUKE, M.D., S.D., D.T.M. & H.**

Chief, Unit for Filarial Infections, World Health Organization,  
Geneva, Switzerland.  
*Onchocerciasis; Streptocerciasis*

**DAVID T. DURACK, M.D.**

Associate Professor of Medicine and Associate Professor of  
Microbiology and Immunology, Duke University. Chief, Division of  
Infectious Diseases, Duke University Medical Center, Durham, North  
Carolina.  
*Pneumococcal Pneumonia*

**PETER JAMES DYCK, M.D.**

Professor of Neurology, Mayo Medical School, Rochester, Minnesota.  
*Diseases of the Peripheral Nervous System*

**THEODORE C. EICKHOFF, M.D.**

Professor and Vice Chairman, Department of Medicine, University of  
Colorado School of Medicine, Denver, Colorado.  
*Bartonellosis; Trench Fever; Q Fever; Colorado Tick Fever*

**BRYAN T. EMMERSON, M.D., Ph.D., F.R.A.C.P.**

Professor of Medicine, University of Queensland. Chairman, Division  
of Medicine, Princess Alexandra Hospital, Brisbane, Queensland,  
Australia.  
*Toxic Nephropathy*

**KARL ENGELMAN, M.D.**

Associate Professor of Medicine and Pharmacology, University of Pennsylvania School of Medicine. Chief of Hypertension and Clinical Pharmacology Section, Director of Clinical Research Center, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

*The Adrenal Medulla and the Sympathetic Nervous System; The Carcinoid Syndrome*

**ALAN J. ERSLEV, M.D.**

Cardeza Research Professor of Medicine and Director, Cardeza Foundation for Hematologic Research. Attending Physician, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania.

*Polycythemia*

**STANLEY FAHN, M.D.**

H. Houston Merritt Professor of Neurology, Columbia University College of Physicians and Surgeons. Attending Neurologist, Neurological Institute of New York, Presbyterian Hospital, New York, New York.

*The Extraparallel Disorders: Introduction; Parkinsonism; Essential Tremor; Senile Tremor; The Chorea; Myoclonus; Tics; Athetosis; Torsion Dystonia; Spasmodic Torticollis*

**ANTHONY S. FAUCI, M.D.**

Chief, Laboratory of Immunoregulation, and Deputy Clinical Director, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

*Glucocorticosteroid Therapy; The Vasculitic Syndromes; Wegener's Granulomatosis; Midline Granuloma; Familial Mediterranean Fever*

**DOUGLAS T. FEARON, M.D.**

Associate Professor of Medicine, Harvard Medical School. Associate Physician, Brigham and Women's Hospital, Boston, Massachusetts.

*Complement*

**HARVEY FEIGENBAUM, M.D.**

Distinguished Professor of Medicine and Director, Hemodynamic Laboratory, Indiana University School of Medicine. Associate, Department of Medicine, Marion County General Hospital; Research Associate, Krannert Heart Research Institute; Senior Research Associate, Krannert Institute of Cardiology, Indianapolis, Indiana.

*Echocardiography*

**F. ROBERT FEKETY, Jr., M.D.**

Professor of Internal Medicine, University of Michigan School of Medicine. Attending Physician and Chief, Infectious Disease Service, University Hospital, Ann Arbor, Michigan.

*Staphylococcal Infections*

**PHILIP FELIG, M.D.**

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

*Nutritional Maintenance and Diet Therapy in Acute and Chronic Disease*

**THOMAS F. FERRIS, M.D.**

Professor and Chairman, Department of Internal Medicine, University of Minnesota School of Medicine. Physician-in-Chief, University Hospitals, Minneapolis, Minnesota.

*Renal Disease in Pregnancy*

**PHILIP J. FIALKOW, M.D.**

Professor and Chairman, Department of Medicine, University of Washington. Physician-in-Chief, University Hospital, Seattle, Washington.

*Clonal Development and Stem Cell Origin of Proliferative Disorders*

**SYDNEY M. FINEGOLD, M.D.**

Professor of Medicine, UCLA School of Medicine. Chief, Infectious Disease, Veterans Administration Wadsworth Medical Center, Los Angeles, California.

*Lung Abscess and Bronchiectasis; Cystic Fibrosis; Disease Due to Non-spore-forming Anaerobic Bacteria*

**ALFRED P. FISHMAN, M.D.**

William Maul Measey Professor of Medicine, University of Pennsylvania School of Medicine. Director, Cardiovascular-Pulmonary Division, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

*Heart Failure*

**KATHLEEN M. FOLEY, M.D.**

Associate Professor of Neurology and Pharmacology, Cornell University Medical College. Chief, Pain Service, Memorial Sloan-Kettering Cancer Center, New York, New York.

*Neurologic Diagnostic Procedures*

**JOHN S. FORDTRAN, M.D.**

Professor of Medicine, The University of Texas Health Science Center at Dallas, Southwestern Medical School. Chief of Medicine, Baylor University Medical Center, Dallas, Texas.

*Diarrhea*

**BERNARD G. FORGET, M.D.**

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

*Sickle Cell Anemia and Associated Hemoglobinopathies*

**NOBLE O. FOWLER, M.D.**

Professor of Medicine and Director, Division of Cardiology, University of Cincinnati College of Medicine. Active Medical Staff, University of Cincinnati Hospitals: Holmes Hospital Division and Cincinnati General Division, Cincinnati, Ohio.

*Diseases of the Aorta*

**EDWARD C. FRANKLIN, M.D.**

Professor of Medicine, Director, Irvington House Institute, and Chairman, Rheumatic Diseases Study Group, Department of Medicine, New York University Medical Center, New York, New York.

*The Amyloid Diseases*

**DAVID W. FRASER, M.D.**

Bacterial Diseases Division, Center for Infectious Diseases, Centers for Disease Control, Atlanta, Georgia.

*Legionellosis*

**JOSEPH F. FRAUMENI, Jr., M.D.**

Chief, Environmental Epidemiology Branch, National Cancer Institute, National Institutes of Health. Adjunct Professor of Epidemiology, Department of Preventive Medicine and Biometrics, School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

*Epidemiology of Cancer*

**DONALD S. FREDRICKSON, M.D.**

Scholar in Residence, National Academy of Sciences, Washington, D.C.; Former Director, National Institutes of Health, Bethesda Maryland.

*Gaucher's Disease; Niemann-Pick Disease*

**NORBERT FREINKEL, M.D.**

Kettering Professor of Medicine; Director, Center for Endocrinology, Metabolism and Nutrition; and Chief, Section of Endocrinology, Metabolism and Nutrition, Northwestern University Medical School. Attending Physician, Northwestern Memorial Hospital, Chicago, Illinois.

*Hypoglycemic Disorders*

**JOHN J. GALLAGHER, M.D.**

Edward S. Organ Professor of Medicine, Duke University School of Medicine. Director of the Clinical Electrophysiology Laboratory, Duke University Medical Center, Durham, North Carolina.

*Cardiac Arrhythmias*

**JOHN I. GALLIN, M.D.**

Senior Investigator and Head, Bacterial Diseases Section, Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

*The Compromised Host*

**KENNETH D. GARDNER, Jr., M.D.**

Professor of Medicine, University of New Mexico School of Medicine. Chief, Division of Renal Diseases, University of New Mexico Hospital and Bernalillo County Medical Center, Albuquerque, New Mexico.

*Cystic Diseases of the Kidney*

**JEFFREY A. GELFAND, M.D.**

Assistant Professor of Medicine, Tufts University School of Medicine.  
Assistant Physician, Tufts-New England Medical Center, Boston,  
Massachusetts.

*Advice to Travelers*

**PARK GERALD, M.D.**

Professor of Pediatrics, Harvard Medical School. Chief, Clinical  
Genetics Division, Children's Hospital Medical Center, Boston,  
Massachusetts.

*Chromosomes and Their Disorders; Congenital Malformations*

**NORMAN GESCHWIND, M.D.**

James Jackson Putnam Professor of Neurology, Harvard Medical  
School; Professor of Psychology and Health Sciences and Technology,  
Massachusetts Institute of Technology. Director, Neurological Unit,  
Beth Israel Hospital, Boston, Massachusetts.

*Focal Disturbances of Higher Nervous Function*

**GILBERT H. GLASER, M.D., Med.Sc.D.**

Professor of Neurology, Yale University School of Medicine. Chief of  
Neurology, Yale-New Haven Hospital Medical Center, New Haven,  
Connecticut.

*The Epilepsies*

**RICHARD J. GLASSOCK, M.D.**

Professor of Medicine, University of California at Los Angeles School  
of Medicine. Chair, Department of Medicine, Harbor-UCLA Medical  
Center, Torrance, California.

*Mechanisms of Renal Injury*

**JAMES F. GLENN, M.D.**

Professor of Surgery (Urology) and Dean, Emory University School of  
Medicine, Atlanta, Georgia. Attending Urologic Surgeon, Emory  
University Hospital, Henrietta Eggleston Children's Hospital, Grady  
Memorial Hospital, and Crawford W. Long Hospital, Atlanta,  
Georgia.

*Anomalies of the Urinary Tract; Tumors of the Kidney*

**ROBERT M. GLICKMAN, M.D.**

Professor of Medicine, Columbia University College of Physicians  
and Surgeons. Chief, Gastroenterology Division, Presbyterian  
Hospital, New York, New York.

*Malabsorption: Pathophysiology and Diagnosis*

**MARTIN GOLDBERG, M.D.**

Gordon and Helen Hughes Taylor Professor of Medicine, University  
of Cincinnati College of Medicine. Physician-in-Chief, University of  
Cincinnati Hospital, Cincinnati, Ohio.

*Introduction to Interstitial Nephritis and Interstitial Nephropathy;  
Chronic Gouty and Other Urate Nephropathies; Analgesic-Associated  
Nephropathy; Balkan Nephropathy*

**DAVID W. GOLDE, M.D.**

Professor of Medicine, UCLA School of Medicine. Attending  
Physician, UCLA Hospitals, Los Angeles, California.

*Development and Morphology of Granulocytes and Macrophages*

**RALPH GOLDMAN, M.D.**

Professor of Medicine in Residence, UCLA School of Medicine.  
Associate Chief of Staff for Education, VA Wadsworth Medical  
Center, Los Angeles, California.

*Aging and Geriatric Medicine*

**ROBERT A. GOODWIN, Jr., M.D.**

Emeritus Professor of Medicine, Vanderbilt University. Formerly  
Chief, Pulmonary Diseases, Nashville Veterans Administration  
Medical Center, Nashville, Tennessee.

*Pulmonary Tuberculosis; Diseases Due to Mycobacteria Other Than  
M. tuberculosis and M. leprae*

**SHERWOOD L. GORBACH, M.D.**

Professor of Medicine and Microbiology and Chief, Infectious  
Disease Division, Tufts University School of Medicine. Chief,  
Infectious Disease Division, Department of Medicine, New England  
Medical Center, Boston, Massachusetts.

*Typhoid Fever*

**GARETH M. GREEN, M.D.**

Professor and Chairman, Department of Environmental Health  
Sciences, and Professor of Medicine, The Johns Hopkins University,  
Baltimore, Maryland.

*Infiltrative Diseases of the Lung*

**JOSEPH C. GREENFIELD, Jr., M.D.**

James B. Duke Professor of Medicine, Duke University; Chief of  
Cardiovascular Division, Department of Medicine, Duke University  
Medical Center, Durham, North Carolina.

*Electrocardiography*

**B. M. GREENWOOD, M.D., F.R.C.P.**

Director, Medical Research, Council Laboratories, Fajara, Banjul, The  
Gambia.

*Malaria in the Semi-immune Subject; African Trypanosomiasis*

**MORTON I. GROSSMAN, M.D., Ph.D.**

Late Professor of Medicine and Physiology, UCLA School of  
Medicine. Late Senior Medical Investigator, Veterans Administration  
Wadsworth Hospital Center; Late Director, Center for Ulcer Research  
and Education, Los Angeles, California.

*Peptic Ulcer: Pathogenesis and Pathophysiology*

**ROGER GUILLEMIN, M.D., Ph.D.**

Professor and Chairman, Laboratories for Neuroendocrinology, The  
Salk Institute, La Jolla, California.

*Endorphins and Enkephalins: Their Significance in Physiology and  
Medicine*

**J. CAULIE GUNNELLS, Jr., M.D.**

Professor of Medicine, Duke University Medical Center, Durham,  
North Carolina.

*Vascular Disorders of the Kidney*

**THORSTEIN GUTHE, M.D.**

Former Chief Medical Officer, Venereal Diseases and  
Treponematoses, World Health Organization, Geneva, Switzerland.  
Director, Institute of Medicine, Alken-Spigerverket, Oslo, Norway.

*Nonsyphilitic Treponematoses*

**JAMES B. HANSHAW, M.D.**

Professor and Chair, Department of Pediatrics, University of  
Massachusetts Medical School; Lecturer in Pediatrics, Harvard  
Medical School. Pediatrician-in-Chief, University of Massachusetts  
Medical Center, Worcester, Massachusetts.

*Cytomegalovirus Infections*

**EDWARD D. HARRIS, Jr., M.D.**

Eugene W. Leonard Professor of Medicine and Chief, Connective  
Tissue Disease Section, Dartmouth-Hitchcock Medical Center,  
Hanover, New Hampshire.

*Scleroderma*

**DONALD C. HARRISON, M.D.**

Chief, Cardiology, and William G. Irwin Professor of Cardiology,  
Stanford University School of Medicine. Chief of Cardiology,  
Stanford University Hospital, Stanford, California.

*Cardiac Catheterization and Cineangiography*

**DONALD H. HARTER, M.D.**

Charles L. Mix Professor of Neurology and Chairman, Department of  
Neurology, Northwestern University Medical School. Chairman,  
Department of Neurology, and Attending Neurologist, Northwestern  
Memorial Hospital, Chicago, Illinois.

*Parameningeal Infections*

**MICHAEL A. W. HATTWICK, M.D.**

Clinical Assistant Professor, Department of Medicine, Georgetown  
University. Attending Physician, Fairfax Hospital, Fairfax, and  
Arlington Hospital, Arlington, Virginia.

*Rabies*

**RICHARD J. HAVEL, M.D.**

Director, Cardiovascular Research Institute, and Professor of  
Medicine, University of California, San Francisco. Attending  
Physician, H. C. Moffitt Hospital, San Francisco, California.

*Disorders of Lipid Metabolism*



**LOUIS A. HEALEY, M.D.**

Clinical Professor of Medicine, University of Washington School of Medicine. Rheumatologist, The Mason Clinic, Seattle, Washington.  
*Polymyalgia Rheumatica and Giant Cell Arteritis*

**DONALD A. HENDERSON, M.D., M.P.H.**

Dean and Professor of Health Services Administration, The Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland.  
*Variola and Vaccinia*

**LEE W. HENDERSON, M.D.**

Professor of Medicine, University of California at San Diego. Associate Chief of Staff for Research, Veterans Administration Medical Center, San Diego; Staff Physician, University Hospital at San Diego, California.  
*Dialysis*

**J. ALLAN HOBSON, M.D.**

Professor of Psychiatry, Harvard Medical School. Director, Laboratory of Neurophysiology, Massachusetts Mental Health Center, Boston, Massachusetts.  
*Sleep and Its Disorders*

**RICHARD B. HORNICK, M.D.**

Professor of Medicine, University of Rochester School of Medicine and Dentistry. Chairman, Department of Medicine, Strong Memorial Hospital, Rochester, New York.  
*Salmonella Infections Other Than Typhoid Fever; Tularemia*

**DONALD W. HOSKINS, M.D.**

Clinical Associate Professor of Medicine, Cornell University Medical College. Associate Attending Physician (Medicine), The New York Hospital; Attending Physician and Chief of Medicine, Doctors Hospital, New York, New York.  
*Trichinellosis*

**R. RODNEY HOWELL, M.D.**

Professor and Chairman, Department of Pediatrics, University of Texas Medical School. Pediatrician-in-Chief, Hermann Hospital, Houston, Texas.  
*The Glycogen Storage Diseases; Pentosuria; Essential Fructosuria and Hereditary Fructose Intolerance*

**JON I. ISENBERG, M.D.**

Professor of Internal Medicine, University of California at San Diego. Head, Gastroenterology Division, University of California at San Diego; Attending Gastroenterologist, University Hospital and La Jolla Veterans Administration Hospital, San Diego, California.  
*Peptic Ulcer: Diagnosis; Peptic Ulcer: Medical Treatment*

**GEORGE GEE JACKSON, M.D.**

Robert Wood Keeton Professor of Medicine and Chief, Section of Infectious Diseases, Abraham Lincoln School of Medicine. Attending Physician, University of Illinois Hospital, Chicago, Illinois.  
*The Common Cold; Rhinoviral Respiratory Disease; Viral Pharyngitis, Laryngitis, Croup, and Bronchitis; Respiratory Syncytial Viral Disease; Parainfluenza Viral Diseases; Adenoviral Infections*

**HARRY S. JACOB, M.D.**

Professor of Internal Medicine and Chief, Division of Hematology, University of Minnesota Medical School. Chief of Hematology and Attending Physician, University of Minnesota Hospital. Attending Physician, Veterans Administration Hospital, Minneapolis, Minnesota.  
*Hemolysis Due to Intracorpuscular Abnormalities*

**D. GERAINT JAMES, M.A., M.D. (Cantab.), F.R.C.P. (Lond.)**

Consultant Physician and Dean, Royal Northern Hospital, London; Consultant Ophthalmic Physician, St. Thomas' Hospital, London; Consulting Physician, Royal Navy. Adjunct Professor of Medicine and Epidemiology, University of Miami School of Medicine, Miami, Florida.  
*Sarcoidosis*

**ERNEST JAWETZ, M.D., Ph.D.**

Professor of Microbiology and Medicine, University of California Medical Center, San Francisco, California.  
*Diseases Caused by Chlamydiae: Introduction; Trachoma and Inclusion Conjunctivitis*

**KARL M. JOHNSON, M.D.**

Program Director, Hazardous Viruses, U.S. Army Medical Research Institute for Infectious Diseases, Ft. Detrick, Frederick, Maryland.  
*Arthropod-Borne Viral Fevers; Viral Encephalitides, and Viral Hemorrhagic Fevers: Introduction; Viral Hemorrhagic Fevers: Introduction; Hemorrhagic Fever Caused by Dengue Viruses; Tick-Borne Flavivirus Diseases; Crimean Hemorrhagic Fever; Hemorrhagic Diseases Caused by Arenaviruses; African Hemorrhagic Fever; Epidemic Hemorrhagic Fever*

**KENNETH P. JOHNSON, M.D.**

Professor of Neurology, University of Maryland, School of Medicine. Chairman, Department of Neurology, University of Maryland Hospital; Acting Chief, Neurology Service, Veterans Administration Medical Center, Baltimore, Maryland.  
*Syphilitic Infections of the Central Nervous System*

**MARIE-LOUISE JOHNSON, M.D., Ph.D.**

Clinical Professor of Dermatology, Yale University School of Medicine. Attending, Yale-New Haven Medical Center, New Haven, Connecticut; Director of Medical Education, Vice President for Medical Affairs, Benedictine Hospital, Kingston, New York.  
*Cutaneous Manifestations of Internal Malignancy; Skin Diseases*

**RICHARD T. JOHNSON, M.D.**

Eisenhower Professor of Neurology and Professor of Microbiology, The Johns Hopkins University School of Medicine. Neurologist, The Johns Hopkins Hospital, Baltimore, Maryland.  
*Viral Infections of the Nervous System: Introduction; Viral Meningitis and Encephalitis; Herpes Zoster; Slow Infections of the Nervous System*

**THOMAS C. JONES, M.D.**

Professor of Medicine and Associate Professor of Public Health, Cornell University Medical College. Physician, The New York Hospital, New York, New York.  
*Malaria in the Nonimmune Subject; Toxoplasmosis; Babesiosis; Trichomoniasis*

**ALBERT R. JONSEN, Ph.D.**

Professor of Ethics in Medicine, Department of Medicine, School of Medicine, University of California, San Francisco, California.  
*Ethics in the Practice of Internal Medicine*

**FRED S. KANTOR, M.D.**

Professor of Medicine, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut.  
*Allergic Rhinitis; Serum Sickness; Drug Allergy*

**HERANT A. KATCHADOURIAN, M.D.**

Professor of Psychiatry and Behavioral Sciences, Stanford University School of Medicine. Vice Provost and Dean of Undergraduate Studies, Stanford University, Stanford, California.  
*The Life-Cycle Perspective in Medicine; Development to Adulthood; Adulthood*

**SAMUEL L. KATZ, M.D.**

Wilburt C. Davison Professor and Chairman, Department of Pediatrics, Duke University School of Medicine, Durham, North Carolina.  
*Whooping Cough; Measles; Rubella*

**DONALD KAYE, M.D., F.A.C.P.**

Professor and Chairman, Department of Medicine, The Medical College of Pennsylvania. Chief of Medicine, The Hospital of the Medical College of Pennsylvania, Philadelphia, Pennsylvania.  
*Infective Endocarditis*

**HUGH L. KEEGAN, Ph.D.**

Late Professor of Preventive Medicine, University of Mississippi School of Medicine, Jackson, Mississippi.  
*Arthropods as Environmental Agents of Disease; Pentastomiasis; Leeches as Agents of Disease; Snakebite; Venomous Marine Animals*

**JOHN H. KERR, D.M., F.F.A., R.C.S.**

Clinical Lecturer in Anaesthetics and Fellow of Green College, University of Oxford. Consultant in Anaesthetics and Intensive Care, Oxford District Health Authority (Teaching), Nuffield Department of Anaesthetics, John Radcliffe Hospital, Oxford, England.  
*Tetanus*

**SIDNEY KIBRICK, M.D., Ph.D.**

Professor of Pediatrics and Microbiology, Boston University School of Medicine. Visiting Physician for Pediatrics, Boston City Hospital, Boston, Massachusetts.

*Varicella and Herpes Zoster*

**EDWIN D. KILBOURNE, M.D.**

Professor and Chairman, Department of Microbiology, Mount Sinai School of Medicine of the City University of New York, New York.

*Introduction to Viral Diseases; Influenza*

**BENJAMIN KISSIN, M.D.**

Professor in Psychiatry, Downstate Medical Center, State University of New York. Attending in Psychiatry, Kings County Hospital Center, Brooklyn, New York.

*Alcohol Abuse and Alcohol-Related Illnesses*

**SAULO KLAHR, M.D.**

Professor of Medicine and Director, Renal Division, Washington University School of Medicine. Physician, Barnes Hospital, St. Louis, Missouri.

*Structure and Function of the Kidneys*

**S. J. KLEBANOFF, M.D., Ph.D.**

Professor of Medicine, University of Washington School of Medicine, Seattle, Washington.

*Neutrophil and Macrophage Function; Neutrophil Dysfunction Syndromes*

**JUHA KOKKO, M.D., Ph.D.**

Professor of Internal Medicine, University of Texas Health Science Center at Dallas. Chief of Nephrology, Parkland Memorial Hospital, Dallas, Texas.

*Chronic Renal Failure*

**STEPHEN M. KRANE, M.D.**

Professor of Medicine, Harvard Medical School. Physician and Chief, Arthritis Unit, Massachusetts General Hospital, Boston, Massachusetts.

*Connective Tissue Structure and Function*

**DONALD J. KROGSTAD, M.D.**

Assistant Professor of Medicine and Pathology, Washington University School of Medicine. Attending Physician, Barnes Hospital and The Jewish Hospital of St. Louis, Missouri.

*Amebiasis; Amebic Meningoencephalitis*

**CALVIN M. KUNIN, M.D.**

Professor and Chairman of Internal Medicine, Ohio State University College of Medicine. Attending Physician and Chief of Medicine, Ohio State University Hospital, Columbus, Ohio.

*Urinary Tract Infections and Pyelonephritis; Enteric Bacterial Infections*

**HENRY G. KUNKEL, M.D.**

Professor of Immunology and Medicine, Rockefeller University; Adjunct Professor, Cornell University Medical School. Senior Physician, Rockefeller University Hospital, New York, New York.

*Immune Diseases: Introduction*

**MAURICE B. LANDERS, III, M.D.**

Professor of Ophthalmology, Duke University School of Medicine. Attending Ophthalmologist, Duke University Medical Center, Durham, North Carolina.

*Eye Diseases*

**P. REED LARSEN, M.D.**

Associate Professor of Medicine, Harvard Medical School; Investigator, Howard Hughes Medical Institute. Physician, Brigham and Women's Hospital, Boston, Massachusetts.

*The Thyroid*

**JOHN LASZLO, M.D.**

Professor of Medicine, Duke University Medical Center; Director, Clinical Programs, Duke Comprehensive Cancer Center, Durham, North Carolina.

*Oncology: Introduction*

**GERALD S. LAZARUS, M.D.**

J. Lamar Callaway Professor of Dermatology, Duke University Medical School. Chief of Dermatology, Department of Medicine, Duke University Medical Center, Durham, North Carolina.

*Panniculitis and Disorders of the Subcutaneous Fat*

**ROBERT J. LEFKOWITZ, M.D.**

Investigator, Howard Hughes Medical Institute. Professor of Medicine and Assistant Professor of Biochemistry, Duke University, Durham, North Carolina.

*Pharmacologic Principles Related to the Autonomic Nervous System*

**BERNARD LEVIN, M.B., B.Ch.**

Associate Professor of Medicine, University of Chicago. Attending Physician and Director, Gastrointestinal Oncology Unit, University of Chicago Hospital, Chicago, Illinois.

*Ulcerative Colitis*

**MICHAEL D. LEVITT, M.D.**

Professor of Medicine, University of Minnesota Medical School. Assistant Chief of Staff for Research, Veterans Administration Hospital, Minneapolis, Minnesota.

*Pancreatitis*

**ROBERT I. LEVY, M.D.**

Dean, Tufts University School of Medicine; Vice President for Health Sciences, Tufts University, Boston, Massachusetts.

*Prevalence and Epidemiology of Cardiovascular Disease*

**ROBERT A. LEWIS, M.D.**

Assistant Professor of Medicine, Harvard Medical School. Assistant Physician, Department of Rheumatology and Immunology, and Junior Associate, Department of Medicine, Brigham and Women's Hospital, Boston, Massachusetts.

*Mastocytosis*

**LAWRENCE M. LICHTENSTEIN, M.D., Ph.D.**

Professor of Medicine, The Johns Hopkins University School of Medicine. Active Staff, The Johns Hopkins Hospital and The Good Samaritan Hospital, Baltimore, Maryland.

*Anaphylaxis; Insect Sting Allergy*

**GRANT W. LIDDLE, M.D.**

Professor and Chairman, Department of Medicine, Vanderbilt University School of Medicine. Physician-in-Chief, Vanderbilt University Hospital, Nashville, Tennessee.

*Adrenal Cortex*

**PHILIP H. LIEBERMAN, M.D.**

Professor of Pathology, Cornell University Medical School. Chief, Surgical Pathology Service, and Attending Pathologist, Memorial Hospital for Cancer and Allied Diseases, New York, New York.

*Langerhans Cell (Eosinophilic) Granulomatosis and Related Syndromes*

**HAROLD I. LIEF, M.D.**

Professor of Psychiatry, University of Pennsylvania School of Medicine. Departments of Psychiatry, The Pennsylvania Hospital and Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

*Medical Aspects of Sexuality*

**MORTIMER B. LIPSETT, M.D.**

Professor, Department of Medicine, Uniformed Services University of the Health Sciences. Director, Clinical Center, National Institutes of Health, Bethesda, Maryland.

*The Testis*

**JOHN N. LOEB, M.D.**

Professor of Medicine, Columbia University College of Physicians and Surgeons; Adjunct Professor, The Rockefeller University.

Attending Physician, Presbyterian Hospital, New York, New York.

*Polyglandular Disorders*

**D. LYNN LORIAUX, M.D., Ph.D.**

Chief, Developmental Endocrinology Branch, National Institute of Child Health and Development, National Institutes of Health, Bethesda, Maryland.

*Hirsutism*

**DONALD B. LOURIA, M.D.**

Professor and Chairman, Department of Preventive Medicine and Community Health, College of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, New Jersey.  
*Trace Metal Poisoning*

**DANIEL S. LUKAS, M.D.**

Associate Professor of Medicine, Cornell University Medical College. Emeritus Physician, The New York Hospital, New York, New York; Vice President of Medical Affairs, Elliot Hospital, Manchester, New Hampshire.  
*Pulmonary Hypertension*

**VANIZE MACEDO, M.D.**

Professor of Tropical Medicine, University of Brasilia. Physician, University Hospital, Brasilia, Brazil.  
*Chagas' Disease*

**ADEL A. F. MAHMOUD, M.D., Ph.D.**

Professor of Medicine and Director, Division of Geographic Medicine, Department of Medicine, Case Western Reserve University. Physician, University Hospitals, Cleveland, Ohio.  
*Schistosomiasis*

**AARON J. MARCUS, M.D.**

Professor of Medicine, Cornell University Medical College. Chief, Hematology-Oncology Division, New York Veterans Administration Medical Center; Attending Physician, The New York Hospital, New York, New York.  
*Hemorrhagic Disorders: Abnormalities of Platelet and Vascular Function*

**ANDREW M. MARGILETH, M.D.**

Professor and Vice Chairman, Department of Pediatrics, Uniformed Services University of the Health Sciences. Senior Attending Physician, National Naval Medical Center, Bethesda, Maryland, and Walter Reed Army Medical Center and Children's Hospital National Medical Center, Washington, D.C.  
*Cat Scratch Disease*

**PHILIP D. MARSDEN, M.D.**

Professor of Medicine, University of Brasilia, Brazil.  
*Protozoan and Helminthic Diseases: Introduction; Protozoan Diseases: Introduction; Trypanosomiasis: Introduction; Cutaneous Leishmaniasis of the New World; Other Protozoan Diseases: Introduction; Isosporiasis; Sarcosporidiosis; Helminthic Diseases: Introduction; The Nematodes: Introduction; Capillariasis; Cutaneous Larva Migrans; Trichostrongyliasis; Gnathostomiasis; Oesophagostomiasis; Toxocariasis; Anisakiasis; Angiostrongyliasis; Filariasis: Introduction; Dracontiasis; Loiasis; Mansonella Ozzardi; Dipetalonema Perstans; Dirofilariasis; Possible Human Meningoencephalitis*

**ROBERT J. MASON, M.D.**

Professor of Medicine, University of Colorado School of Medicine, Denver, Colorado.  
*Occupational Pulmonary Disease*

**HENRY MASUR, M.D.**

Assistant Professor of Medicine, Cornell University Medical College. Assistant Physician, The New York Hospital, New York, New York.  
*Pneumocystosis*

**WALSH McDERMOTT, M.D.**

Late Emeritus Professor of Public Health and Medicine, Cornell University Medical College. Late Special Advisor to the President, Robert Wood Johnson Foundation, Princeton, New Jersey.  
*Chemical Contamination of Water and Air*

**HUGH O. McDEVITT, M.D., Ph.D.**

Professor of Medical Microbiology and Medicine, Stanford University School of Medicine. Staff Member, Stanford University Hospital, Stanford, California.  
*The Major Histocompatibility Complex and Disease Susceptibility*

**PAUL R. McHUGH, M.D.**

Henry Phipps Professor of Psychiatry, The Johns Hopkins University School of Medicine. Psychiatrist-in-Chief, The Johns Hopkins Hospital, Baltimore, Maryland.  
*Dementia; Psychologic Illness in Medical Practice*

**PATRICK A. McKEE, M.D.**

Investigator, Howard Hughes Medical Institute, and Professor of Medicine and Assistant Professor of Biochemistry, Duke University Medical Center. Chief, Division of General Medicine, Duke University Medical Center, Durham, North Carolina.  
*Disorders of Blood Coagulation*

**BYRON D. McLEES, M.D., Ph.D.**

Professor of Medicine, Bowman Gray School of Medicine. Chief, Division of Pulmonary Medicine, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, North Carolina.  
*Critical Care Medicine*

**RONALD P. MESSNER, M.D.**

Professor of Medicine, University of Minnesota, Minneapolis, Minnesota.  
*Dermatomyositis and Polymyositis*

**JAMES H. MEYER, M.D.**

Associate Professor of Medicine, UCLA School of Medicine. Chief, Gastroenterology, UCLA-San Fernando Valley Program and Veterans Administration Hospital, Sepulveda, California.  
*Peptic Ulcer: Complications and Surgical Treatment*

**ROBERT B. MILLMAN, M.D.**

Clinical Professor of Public Health and Associate Professor of Clinical Psychiatry, Cornell University Medical College. Director, Alcohol and Drug Abuse Programs, The New York Hospital-Cornell Medical Center, New York, New York.  
*Drug Abuse, Dependence, and Intoxication: Introduction; The Opiates; Central Nervous System Depressants; Central Nervous System Stimulants; Cannabis; Psychedelics; Miscellaneous Inhalants*

**THOMAS P. MONATH, M.D.**

Director, Vector-Borne Viral Diseases Division, Center for Infectious Diseases, Centers for Disease Control, U.S. Public Health Service, Fort Collins, Colorado.  
*Arthropod-Borne Viral Encephalitides; Yellow Fever*

**ARNO G. MOTULSKY, M.D.**

Professor of Medicine and Genetics, University of Washington. Attending Physician, University Hospital and Providence Medical Center, Seattle, Washington.  
*Genetic Counseling*

**JOHN F. MURRAY, M.D.**

Professor of Medicine and Member of the Senior Staff, Cardiovascular Research Institute, University of California, San Francisco. Chief of Chest Service, San Francisco General Hospital Medical Center, San Francisco, California.  
*Respiratory Diseases: Introduction; Respiratory Structure and Function; Respiratory Failure*

**DAVID G. NATHAN, M.D.**

Robert A. Stranahan Professor of Pediatrics, Harvard Medical School. Chief, Division of Hematology and Oncology, Children's Hospital Medical Center; Pediatrician-in-Chief, Sidney Farber Cancer Institute, Boston, Massachusetts.  
*Hematologic and Hematopoietic Diseases: Introduction*

**JAMES C. NIEDERMAN, M.D.**

Clinical Professor of Epidemiology and Medicine, Yale University School of Medicine. Medical Staff Member, Yale-New Haven Medical Center, New Haven, Connecticut.  
*Infectious Mononucleosis*

**ARTHUR W. NIENHUIS, M.D.**

Chief, Clinical Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland.  
*Hemoglobin Synthesis; The Thalassemias*

**ALAN S. NIES, M.D.**

Professor of Medicine and Pharmacology, University of Colorado School of Medicine. Attending Physician, University Hospital, Denver, Colorado.  
*Principles of Drug Therapy*

**JOHN A. OATES, M.D.**

The Joe and Morris Werthan Professor, Departments of Medicine and Pharmacology, Vanderbilt University School of Medicine. Attending Physician, The Vanderbilt University Hospital, Nashville, Tennessee.

*Prostaglandins, Thromboxane A<sub>2</sub>, and the Leukotrienes*

**ROBERT K. OCKNER, M.D.**

Professor of Medicine, University of California, San Francisco. Attending Physician, University of California-Moffitt, Veterans Administration, and San Francisco General Hospitals, San Francisco, California.

*Vascular Diseases of the Intestine; Diseases of the Peritoneum; Diseases of the Mesentery and Omentum; Clinical Approach to Liver Disease; Hepatic Metabolism in Liver Disease; Laboratory Tests in Liver Disease; Approaches to the Diagnosis of Jaundice; Acute Viral Hepatitis; Toxic and Drug-Induced Liver Disease; Chronic Hepatitis*

**WILLIAM D. ODELL, M.D., Ph.D.**

Professor of Medicine and Physiology, University of Utah School of Medicine. Chairman, Department of Medicine, University of Utah School of Medicine, Salt Lake City, Utah.

*Endocrine Manifestations of Tumors: Ectopic Hormone Production*

**ERIC A. OTTESEN, M.D.**

Clinical Center, National Institutes of Health; Children's Hospital National Medical Center, Washington, D.C.

*Lymphatic Filariasis; Tropical Eosinophilia*

**CHARLES Y. C. PAK, M.D.**

Professor of Internal Medicine and Chief, Section on Mineral Metabolism, University of Texas Southwestern Medical School, Dallas, Texas.

*Renal Calculi*

**WILLIAM W. PARMLEY, M.D.**

Professor of Medicine, University of California, San Francisco. Chief of Cardiology, H. C. Moffitt Hospital, San Francisco, California.

*Circulatory Function and Control*

**HERBERT A. PERKINS, M.D.**

Clinical Professor of Medicine, University of California, San Francisco. Scientific Director, Irwin Memorial Blood Bank of the San Francisco Medical Society, San Francisco, California.

*Blood Transfusion*

**JOSEPH K. PERLOFF, M.D.**

Professor of Medicine and Pediatrics, School of Medicine, University of California, Los Angeles, California.

*Congenital Heart Disease*

**WALTER L. PETERSON, M.D.**

Associate Professor of Medicine, University of Texas Health Science Center at Dallas. Assistant Chief, Medical Service, Dallas Veterans Administration Medical Center, Dallas, Texas.

*Gastrointestinal Hemorrhage*

**SIDNEY PHILLIPS, M.D.**

Professor of Medicine, Mayo Medical School. Consultant in Gastroenterology, Mayo Clinic, Rochester, Minnesota.

*Disorders of Gastrointestinal Motility*

**NATHANIEL F. PIERCE, M.D.**

Professor of Medicine, The Johns Hopkins University School of Medicine. Chief, Infectious Diseases, Baltimore City Hospitals, Baltimore, Maryland.

*Cholera*

**SHELDON R. PINNELL, M.D.**

Professor of Medicine (Dermatology), Duke University Medical Center, Durham, North Carolina.

*Marfan's Syndrome; Ehlers-Danlos Syndrome*

**FRED PLUM, M.D.**

Anne Parrish Titzell Professor of Neurology, Cornell University Medical College. Neurologist-in-Chief, The New York Hospital, New York, New York.

*Neurologic and Behavioral Diseases: Approach to the Patient and*

*Principles of Diagnosis; The Neurologic Examination; Management of the Neurologic Patient; The Pathogenesis of Stupor and Coma; Sustained Impairment of Consciousness; Differential Diagnosis; Acute Sedative Drug Poisoning; Prognosis and Outcome in Severe Coma; Brief or Episodic Loss of Consciousness; Headache; Visual and Ocular Abnormalities; Ataxia and Related Gait Disorders; Asthenia, Fatigue, and Weakness; Acute Anterior Poliomyelitis*

**CHARLES E. POPE II, M.D.**

Professor of Medicine, University of Washington. Chief, Gastroenterology, Veterans Administration Medical Center, Seattle, Washington.

*Diseases of the Esophagus*

**JEROME B. POSNER, M.D.**

Professor of Neurology, Cornell University Medical College. Chairman, Department of Neurology, Memorial Sloan-Kettering Cancer Center, New York, New York.

*Nonmetastatic Effects of Cancer on the Nervous System; The Neurologic History; General Causes of Delirium, Stupor, and Coma; Approach to the Patient with Altered Consciousness; Emergency Management of the Patient in Coma; Pain; Differential Diagnosis of Muscle, Nerve Root, and Spinal Disorders; Mechanical Lesions of Nerve Roots and Spinal Cord*

**BASIL A. PRUITT, Jr., M.D.**

Commander and Director, US Army Institute of Surgical Research, Brooke Army Medical Center, Fort Sam Houston, Texas.

*Electric Injury*

**CHARLES E. PUTMAN, M.D.**

Professor and Chairman, Department of Radiology, Duke University Medical Center, Durham, North Carolina.

*Radiography of the Heart*

**FLOYD C. RECTOR, Jr., M.D.**

Professor of Medicine and Physiology and Senior Scientist, Cardiovascular Research Institute, University of California, San Francisco, California.

*Obstructive Nephropathy*

**SEYMOUR REICHLIN, M.D., Ph.D.**

Professor of Medicine, Tufts University School of Medicine. Chief, Endocrine Division, New England Medical Center Hospital, Boston, Massachusetts.

*The Control of Anterior Pituitary Secretion; The Pineal*

**HERBERT Y. REYNOLDS, M.D.**

Professor of Medicine and Head of Pulmonary Section, Department of Medicine, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, and West Haven Veterans Hospital, West Haven, Connecticut.

*Introduction to Pneumonia; Pneumonia Due to Klebsiella; Pneumonia Caused by Other Aerobic Gram-Negative Bacilli; Aspiration Pneumonia*

**CHARLES T. RICHARDSON, M.D.**

Associate Professor of Internal Medicine, University of Texas Southwestern Medical School. Chief of Gastroenterology, Veterans Administration Medical Center, Dallas, Texas.

*Gastritis*

**RONALD F. RIEDER, M.D.**

Professor of Medicine and Director, Division of Hematology and Oncology, State University of New York, Downstate Medical Center. Attending Physician, State University Hospital and Kings County Hospital, Brooklyn, New York.

*Unstable Hemoglobins; Abnormal Hemoglobins with Altered Oxygen Affinity; Methemoglobinemia and Sulfhemoglobinemia*

**RICHARD A. RIFKIND, M.D.**

Member, Sloan-Kettering Institute; Director, Sloan-Kettering Division, Graduate School of Medical Sciences, Cornell University. Attending Physician, Department of Medicine, Memorial Hospital, New York, New York.

*Diseases of the Spleen*



**RICHARD B. ROBERTS, M.D.**

Professor of Medicine and Head, Division of Infectious Diseases, Cornell University Medical College. Attending Physician, The New York Hospital, New York, New York.

*Antimicrobial Therapy*

**WILLIAM O. ROBERTSON, M.D.**

Professor and Acting Chairman, Department of Pediatrics, University of Washington. Director, Northwest Regional Poison Center, Children's Orthopedic Hospital and Medical Center, Seattle, Washington.

*Common Accidental Poisonings*

**ROSCOE R. ROBINSON, M.D.**

Florence McAlister Professor of Medicine, Duke University School of Medicine. Chief, Division of Nephrology, Duke University Medical Center, Durham, North Carolina.

*Approach to the Patient with Renal Disease; The Nephrotic Syndrome; Hereditary Chronic Nephritis*

**HEONIR ROCHA, M.D.**

Professor of Medicine, Faculty of Medicine, Federal University of Bahia, Salvador-Bahia, Brazil.

*Diphtheria*

**IRWIN H. ROSENBERG, M.D.**

Professor of Medicine and Co-Director, Section of Gastroenterology, University of Chicago, Chicago, Illinois.

*Inflammatory Bowel Disease: Introduction; Crohn's Disease*

**ROGER N. ROSENBERG, M.D.**

Professor of Neurology and Physiology and Chairman, Department of Neurology, University of Texas Health Science Center, Southwestern Medical School. Chief, Neurological Services, Parkland Hospital and Children's Medical Center, Dallas, Texas.

*Inherited, Congenital, and Idiopathic Degenerative Diseases of the Nervous System*

**SAUL A. ROSENBERG, M.D.**

Professor of Medicine and Radiology, Stanford University School of Medicine. Chief, Division of Oncology, Stanford Medical Center, Stanford, California.

*Hodgkin's Disease*

**GRIFF T. ROSS, M.D., Ph.D.**

Professor of Medicine and Associate Dean for Clinical Affairs, College of Medicine, University of Texas Health Sciences Center, Houston, Texas.

*The Ovaries*

**JOHN ROSS, Jr., M.D.**

Professor of Medicine and Head, Division of Cardiology, University of California, San Diego. Attending Physician, University of California, San Diego, Medical Center, San Diego, California.

*Acquired Valvular Heart Disease*

**WENDELL F. ROSSE, M.D.**

Florence McAlister Professor of Medicine, Duke University. Chief, Division of Hematology and Oncology, Duke University Medical Center, Durham, North Carolina.

*Hemolytic Disorders: Introduction; Hemolysis Due to Acquired Abnormalities of Erythrocytes or Their Circulation*

**LEWIS P. ROWLAND, M.D.**

Henry and Lucy Moses Professor and Chairman, Department of Neurology, College of Physicians and Surgeons, Columbia University. Director, Neurology Service, Presbyterian Hospital in the City of New York.

*Diseases of Muscle and Neuromuscular Junction*

**GERALD F. M. RUSSELL, M.D., F.R.C.P., F.R.C.P.(Ed), F.R.C.Psych., D.P.M.**

Professor of Psychiatry, Institute of Psychiatry, University of London. Honorary Consultant Psychiatrist, Bethlem Royal and Maudsley Hospitals, London, England.

*Anorexia Nervosa*

**DAVID C. SABISTON, Jr., M.D.**

James B. Duke Professor of Surgery and Chairman of the Department, Duke University Medical Center. Chief of Staff, Duke Hospital, Durham, North Carolina.

*Surgical Treatment of Coronary Artery Disease*

**SYDNEY E. SALMON, M.D.**

Professor of Internal Medicine and Director of Cancer Center, University of Arizona College of Medicine. Attending Oncologist/Hematologist, Health Sciences Center, University of Arizona, Tucson, Arizona.

*Plasma Cell Disorders*

**JAY P. SANFORD, M.D.**

Professor of Medicine and Dean, Uniformed Services University School of Medicine. Attending Physician, Walter Reed Army Medical Center and National Naval Medical Center, Bethesda, Maryland.

*Plague; Rat-Bite Fever; Leptospirosis*

**WILLIAM SCHAFFNER, M.D.**

Professor of Medicine and Preventive Medicine, Vanderbilt University School of Medicine, Nashville, Tennessee.

*Psittacosis*

**BRUCE F. SCHARSCHMIDT, M.D.**

Associate Professor of Medicine, University of California, San Francisco. Attending Physician, University of California, San Francisco, Affiliated Hospitals, San Francisco, California.

*Bilirubin Metabolism and Hyperbilirubinemia; Parasitic, Bacterial, Fungal, and Granulomatous Liver Disease; Inherited, Infiltrative, and Metabolic Disorders Involving the Liver; Acute and Chronic Hepatic Failure with Encephalopathy; Hepatic Tumors*

**ALAN N. SCHECHTER, M.D.**

Chief, Laboratory of Chemical Biology, National Institute of Arthritis, Metabolic, and Digestive Diseases, National Institutes of Health, Bethesda, Maryland.

*Hemoglobin Structure and Function*

**PHILIP S. SCHEIN, M.D.**

Professor of Medicine and Pharmacology, Georgetown University School of Medicine. Assistant Director, Vincent T. Lombardi Cancer Research Center, Georgetown University Medical Center, Washington, D.C.

*Biologic Effects of Tumors; Tumor Markers*

**ROBERT W. SCHRIER, M.D.**

Professor and Chairman, Department of Medicine, University of Colorado School of Medicine, Denver, Colorado.

*Hypokalemic Nephropathy; Hypercalcemic Nephropathy; Nephrogenic Diabetes Insipidus; Renal Tubular Acidosis; Bartter's Syndrome; Liddle's Syndrome; Renal Glycosuria; Renal Phosphate Wasting; Fanconi's Syndrome*

**PETER H. SCHUR, M.D.**

Professor of Medicine, Harvard Medical School. Physician, Brigham and Women's Hospital, Boston, Massachusetts.

*Systemic Lupus Erythematosus*

**NEVIN S. SCRIMSHAW, Ph.D., M.D., M.P.H.**

Institute Professor and Director, Clinical Research Center, Massachusetts Institute of Technology, Cambridge, Massachusetts.

*Nutrient Requirements; Assessment of Nutritional Status; Nutrition and Infection; Kwashiorkor, Marasmus, and Intermediate Forms of Protein-Calorie Malnutrition; Undernutrition, Starvation, and Hunger Edema; Deficiencies of Individual Nutrients: Vitamin Diseases*

**CHARLES R. SCRIVER, M.D.C.M., F.R.S.C.**

Professor, Biology, Human Genetics, and Pediatrics, McGill University. Director, DeBelle Laboratory for Biochemical Genetics, Montreal Children's Hospital, Montreal, Quebec, Canada.

*Hyperaminoaciduria*

**S. K. K. SEAH, M.D.**

Associate Professor of Medicine, McGill University. Associate Physician, The Montreal General Hospital, Montreal, Quebec, Canada.

*Hermaphroditic Flukes*

**WILLIAM R. SHAPIRO, M.D.**

Professor of Neurology, Cornell University Medical College. Head, George C. Cotzias Laboratory of Neuro-Oncology, and Attending Neurologist, Memorial Sloan-Kettering Cancer Center and The New York Hospital, New York, New York.

*Intracranial Tumors and States Causing Increased Intracranial Pressure*