Mission

To promote the best interests of patients by advancing the knowledge and professionalism of the physician community.

Editor-in-Chief

Karl A. Nath, MBChB
Mayo Clinic, Rochester, MN

Section Editors

James C. Andrews, MD
Radiology
Mayo Clinic, Rochester, MN

Samuel J. Asirvatham, MD
Cardiovascular Diseases, Innovations in Medicine and Surgery
Mayo Clinic, Rochester, MN

David J. Ballard, MD, MSPH, PhD
Health Care Policy
University of North Carolina at Chapel Hill
J. Michael Bostwick, MD
Psychiatry
Mayo Clinic, Rochester, MN

Timothy B. Curry, MD, PhD
Anesthesiology and Perioperative Medicine
Mayo Clinic, Rochester, MN

John M. Davis, III, MD
Rheumatology
Mayo Clinic, Rochester, MN

Mark Denis P. Davis, MD
Dermatology
Mayo Clinic, Rochester, MN

Jennifer E. DeVoe, MD, DPhil
Family Medicine
Oregon Health & Science University, Portland, OR

Matthew T. Drake, MD, PhD
Endocrinology
Mayo Clinic, Rochester, MN

Matthew T. Gettman, MD
Urology, Men's Health
Mayo Clinic, Rochester, MN

Matthew Griffin, MBChB
Nephrology and Transplantation
National University of Ireland, Galway, Ireland

Elizabeth B. Habermann, PhD
Health Care Policy and Research
Mayo Clinic, Rochester, MN

Daniel K. Hall-Flavin, MD, MS
Addiction Medicine, Humanities
Mayo Clinic, Rochester, MN

W. Michael Hooten, MD
Pain Medicine
Mayo Clinic, Rochester, MN

Paul B. Klaas, JD
Legal
North Coast Arbitration Chambers, Minneapolis, MN

Manish Kohli, MD
Medical Oncology
 Moffitt Cancer Center, Tampa, FL

Alex Krist, MD
Family Medicine
Virginia Commonwealth University, Richmond, VA

Jay Mandrekar, PhD
Biomedical Statistics and Informatics
Mayo Clinic, Rochester, MN

Michelle L. Maxeiner, MD
Neurology
Mayo Clinic, Rochester, MN

James F. Meschia, MD
Neurologic Diseases (Stroke)
Mayo Clinic, Jacksonville, FL

M. Hassan Murad, MD
Guidelines, Systematic Reviews, and Meta-analysis
Mayo Clinic, Rochester, MN

Joseph A. Murray, MD
Gastroenterology and Hepatology
Mayo Clinic, Rochester, MN

Robert J. Pignolo, MD, PhD
Aging and Geriatric Medicine
Mayo Clinic, Rochester, MN

Kannan Ramar, MBBS, MD
Pulmonary Medicine
Mayo Clinic, Rochester, MN

Andrew D. Rule, MD
Nephrology and Hypertension
Mayo Clinic, Rochester, MN

Tait D. Shanafelt, MD
Physician and Health Care Professional Engagement and Fulfillment
Stanford Medicine, Stanford, CA

Richard Sharp, PhD
Medical Ethics
Mayo Clinic, Rochester, MN

Robert J. Sperner, MD
Neurologic Surgery, Orthopaedics
Mayo Clinic, Rochester, MN

Thomas D. Thacher, MD
Family Medicine
Mayo Clinic, Rochester, MN

Christopher M. Wittich, MD
General Internal Medicine, Medical Education
Mayo Clinic, Rochester, MN

Mary A. Wujek, MD
Gastroenterology
Mayo Clinic, Rochester, MN

Ceridwen C. U. Zuckerman, MD
Pediatrics, Developmental Medicine
Mayo Clinic, Rochester, MN

Associate Editors

Thomas J. Redman, MD
Residents’ Clinics, Concise Reviews, General Internal Medicine
Mayo Clinic, Rochester, MN

Lori A. Erikson, MD
Laboratory Medicine and Pathology, Medical Imaging
Mayo Clinic, Rochester, MN

Veena D. Ganoo, MD
Women’s Health and Medicine of Sex Differences
Mayo Clinic, Rochester, MN

Carl J. Lauer, MD
Cardiovascular Diseases
John Ochsner Heart and Vascular Institute, New Orleans, LA

S. Vincent Rajkumar, MD
Review Articles, Hematology
Mayo Clinic, Rochester, MN

Priya Sampathkumar, MD
Infectious Control, Infectious Diseases
Mayo Clinic, Rochester, MN

Ayse Tufan, MD
Hematology
Mayo Clinic, Rochester, MN

R. Scott Wright, MD
Cardiovascular Diseases
Mayo Clinic, Rochester, MN

Editorial Board

Sarah L. Berg, MD
Reproductive Endocrinology and Infertility
Utah Center for Reproductive Medicine, Salt Lake City, UT

Mohamed Bydon, MD
Neurorlogic Surgery
Mayo Clinic, Rochester, MN

Daniel Claassen, MD, MS
Neurology
Vanderbilt University Medical Center, Nashville, TN

Steven P. Cohen, MD
Pain Medicine
The Johns Hopkins University, Baltimore, MD

Douglas B. Courcoubetis, MD
Anesthesiology, Critical Care Medicine
University of Wisconsin-Madison

Martha Grogan, MD
Anesthesiology, Critical Care Medicine
University of Wisconsin-Madison

Manel Grogan, MD
Cardiovascular Diseases
Mayo Clinic, Rochester, MN

Anish J. S. Gudapati, MD
Cardiovascular Diseases
Mayo Clinic, Rochester, MN

John Ochsner Heart and Vascular Institute, New Orleans, LA

Carl J. Lavie, MD
Cardiovascular Diseases
John Ochsner Heart and Vascular Institute, New Orleans, LA

J. Michael Bostwick, MD
Hematology
University of North Carolina

David J. Ballard, MD, MSPH, PhD
Medicine and Surgery
Cardiovascular Diseases, Innovations in Medicine and Surgery

Timothy B. Curry, MD, PhD
Medicine and Surgery
Cardiovascular Diseases, Innovations in Medicine and Surgery

J. Michael Bostwick, MD
Hematology
University of North Carolina

Joseph I. Sirven, MD
Cardiovascular Diseases
Mayo Clinic, Rochester, MN

Aminah Jatoi, MD
Gastroenterology and Hepatology
Mayo Clinic, Rochester, MN

Craig G. Jarow, MD
Urology, Men
Mayo Clinic, Rochester, MN

Joyce Auld, MD
Surgical Pathology
Mayo Clinic, Rochester, MN

Vesna D. Garovic, MD
Pathology, Medical Images
Mayo Clinic, Rochester, MN

Thomas D. Thacher, MD
Medical Education
Mayo Clinic, Rochester, MN

Virend Somers, MD, PhD
Sleep Disorders
John Ochsner Heart and Vascular Institute, New Orleans, LA

Joseph D. Zaccaro, MD
Hematology
Mayo Clinic, Rochester, MN

Siddharth Singh, MD
Gastroenterology, Systematic Reviews, and Meta-analysis
University of California San Diego, La Jolla, CA

Brett A. Rosenthal, MD
Cardiovascular Diseases
Mayo Clinic, Rochester, MN

Jeffrey A. Sparks, MD, MMSc
Rheumatology, Inflammation, and Immunity
Brigham and Women’s Hospital, Boston, MA

Vindu Somers, MD, PhD
Cardiovascular Diseases and Sleep Disorders
Mayo Clinic, Rochester, MN

Adrian Vella, MD
Endocrinology
Mayo Clinic, Rochester, MN

Statistical Reviewers

Yu-Hui H. Chang, PhD, MS, Mayo Clinic, Scottsdale, AZ
William S. Harmsen, MD, Mayo Clinic, Rochester, MN
Byron C. Jaeger, PhD, University of Alabama at Birmingham, AL
Heidi E. Kosiorek, MS, Mayo Clinic, Scottsdale, AZ
Dirk R. Larson, MS, Mayo Clinic, Rochester, MN
Nafizur Rahman, PhD, University of Alabama at Birmingham, AL
Hani Zhang, MS, Mayo Clinic, Scottsdale, AZ

Proceedings Staff

Managing Editor: Terry Jopke, BA
Editorial Processing Specialist: Kimberly D. Sankey
Editorial Assistant: Margaret R. Wentz, BA
Business Manager: Delta M. Eagle, MBA
Digital Editor: Lisa Muenkel

Editorial Offices
Mayo Clinic Proceedings, Room 770 Siebens Building, Rochester, MN 55905
Telephone: (507) 284-2094; Fax: (507) 284-0252; E-mail: proceedings@mayo.edu
Direct editorial information and inquiries to the above offices.