



CHEST

For specialists in: Pulmonology, Critical Care Medicine, Sleep Medicine, Thoracic Surgery, Cardiorespiratory Interactions, and related specialists

Editor in Chief: Richard S. Irwin, MD, FCCP, Worcester, MA

Associate Editors

Peter J. Barnes, DM
London, England

Christopher E. Brightling, MBBS, FCCP
Leicester, England

Nancy A. Collop, MD, FCCP
Baltimore, MD

Bruce L. Davidson, MD, MPH, FCCP
Seattle, WA

Jesse B. Hall, MD, FCCP
Chicago, IL

Nicholas S. Hill, MD, FCCP
Boston, MA

Mary Sau-Man Ip, MD, FCCP
Hong Kong, China

Surinder K. Jindal, MD, FCCP
Chandigarh, India

Robert G. Johnson, MD, FCCP
St. Louis, MO

Scott Manaker, MD, PhD, FCCP
Philadelphia, PA

Susan Murin, MD, FCCP
Sacramento, CA

Paul M. O'Byrne, MBBCh, FCCP
Hamilton, ON, Canada

Dario Olivieri, MD, FCCP
Parma, Italy

Bruce K. Rubin, MD, FCCP
Winston-Salem, NC

Marvin I. Schwarz, MD, FCCP
Denver, CO

Virend K. Somers, MD
Rochester, MN

Section Editors

Recent Advances in Chest Medicine

Jesse B. Hall, MD, FCCP, Chicago, IL
Nicholas S. Hill, MD, FCCP, Boston, MA

Translating Basic Research into Clinical Practice

Peter J. Barnes, DM, London, England
Paul M. O'Byrne, MBBCh, FCCP,
Hamilton, ON, Canada

Medical Ethics

Constantine A. Manthous, MD, FCCP,
Bridgeport, CT

Global Medicine

Mary Sau-Man Ip, MD, FCCP, Hong Kong, China
Surinder K. Jindal, MD, FCCP, Chandigarh, India

Topics in Practice Management

Scott Manaker, MD, PhD, FCCP, Philadelphia, PA

Contemporary Reviews in Sleep Medicine

Nancy A. Collop, MD, FCCP, Baltimore, MD
Virend K. Somers, MD, Rochester, MN

Contemporary Reviews in Critical Care Medicine

Howard L. Corwin, MD, FCCP, Lebanon, NH
Curtis N. Sessler, MD, FCCP, Richmond, VA

Chest Imaging for Clinicians

David P. Naidich, MD, FCCP, New York, NY
Suhail Raoof, MD, FCCP, Brooklyn, NY
William D. Travis, MD, FCCP, New York, NY

Pulmonary and Critical Care Pearls

John E. Heffner, MD, FCCP, Charleston, SC
Steven A. Sahn, MD, FCCP, Charleston, SC

Case Records from the University of Colorado

Marvin I. Schwarz, MD, FCCP, Denver, CO

Medical Writing Tips of the Month

J. Patrick Barron, Tokyo, Japan

International Edition Editors and Coordinators

China

NanShan Zhong, MD, FCCP, Guangzhou, China

India

Surinder K. Jindal, MD, FCCP, Chandigarh, India

Italy

Francesco de Blasio, MD, FCCP, Naples, Italy

Mexico

Leon S. Green, MD, FCCP, Mexico City, Mexico

Spain

A collaborative Editorial Board

Turkey

Gunseli Kilinç, MD, FCCP, Istanbul, Turkey

Publisher

Alvin Lever, MA, FCCP (Hon)

Executive Editor

Stephen J. Welch

Managing Editor

Jean Rice

Assistant Editor, Editor in Chief Office

Cynthia T. French, NP, MS (Worcester, MA)

Advertising and Production Manager

Patricia A. Micek

Circulation/Editorial Coordinator

Barbara J. Anderson

Editorial Coordinators

Laura Lipsey, Carla Miller

National Advertising Sales Representatives

The Walchli Tauber Group, Inc.

2225 Old Emmorton Road, Suite 201

Bel Air, MD 21015

Telephone: (443)512-8899

Fax: (443)512-8909

Gary Walchli: ext 102

Steve Tauber: ext 103

CHEST (USPS 157-860 ISSN 0012-3692) is published monthly by the American College of Chest Physicians, 3300 Dundee Rd, Northbrook, IL 60062-2348. The ACCP may be contacted by telephone: (847)498-1400; Fax: (847)498-5460; e-mail: editor@chestnet.org or through the World Wide Web home page: <http://www.chestnet.org>. Periodicals postage paid at Northbrook, IL and additional mailing offices.

COPYRIGHT © 2006 by the American College of Chest Physicians

POSTMASTER: Send address changes to: CHEST, 3300 Dundee Rd, Northbrook, IL 60062-2348.

ANNUAL SUBSCRIPTION RATES (Rates effective January 1, 2006.)

Personal: U.S. and Puerto Rico \$150.00; Other countries \$180.00.

Institution (Single): U.S. and Puerto Rico \$192.00; Other countries \$228.00.

Institution Plus (Institution Plus is for institutions with multiple buildings or remote users. It includes one print copy sent to the primary headquarters' location): U.S. and Puerto Rico \$384.00; Other countries \$456.00.

Special rates for fellows, residents, interns, nursing or respiratory therapy students, physicians-in-training: U.S. and Puerto Rico \$60.00; Other countries \$84.00.

Special international air-shipment rate: Members \$60.00; Nonmembers \$75.00.

SINGLE COPIES (Rates effective January 1, 2006.) **CHEST:** ACCP member \$16.00; nonmember \$20.00. **Supplements:** ACCP member \$14.00; nonmember \$18.00. To order, please call (847)498-1400 or (800)343-2227.

DISCLAIMER: The statements and opinions contained in editorials and articles in this journal are solely those of the authors thereof and not of the American College of Chest Physicians, or of its officers, regents, members, and employees. The appearance of advertisements or services advertised or of their effectiveness, quality, or safety are solely those of the advertisers. The Editor-in-Chief, the American College of Chest Physicians, its officers, regents, members, and employees disclaim all responsibility for any injury to persons or property resulting from any ideas or products referred to in articles or advertisements contained in this Journal.

Editorial Board

Ellinor Ådelroth, MD, PhD, Umea, Sweden	Ronald F. Grossman, MD, FCCP, Mississauga, ON, Canada	Parameswaran Nair, MD, PhD, Hamilton, ON, Canada
W. Michael Alberts, MD, FCCP, Tampa, FL	Gordon H. Guyatt, MD, FCCP, Hamilton, ON, Canada	Krzysztof Narkiewicz, MD, PhD, Gdansk, Poland
Raouf Amin, MD, Cincinnati, OH	Ann C. Halbower, MD, Baltimore, MD	Michael S. Niederman, MD, FCCP, Mineola, NY
Ezra A. Amsterdam, MD, Sacramento, CA	Timothy W. Harrison, MD, Nottingham, United Kingdom	Imre Noth, MD, FCCP, Chicago, IL
Daniel E. Banks, MD, MS, FCCP, Shreveport, LA	Paul M. Hassoun, MD, FCCP, Baltimore, MD	Patrick T. O'Gara, MD, Boston, MA
J. Patrick Barron, Tokyo, Japan	Stephen O. Heard, MD, FCCP, Worcester, MA	Harold I. Palevsky, MD, FCCP, Philadelphia, PA
Robert P. Baughman, MD, FCCP, Cincinnati, OH	John E. Heffner, MD, FCCP, Charleston, SC	Scott M. Palmer, MD, MHS, FCCP, Durham, NC
Brian A. Boehlecke, MD, MSPH, FCCP, Chapel Hill, NC	Hitoshi Hirose, MD, PhD, FCCP, Philadelphia, PA	Polly E. Parsons, MD, FCCP, Burlington, VT
Maria R. Bonsignore, MD, Palermo, Italy	Jack Hirsh, MD, FCCP, Hamilton, ON, Canada	Alan L. Plummer, MD, FCCP, Atlanta, GA
Louis-Philippe Boulet, MD, Quebec City, QC, Canada	Leslie A. Hoffman, PhD, RN, Pittsburgh, PA	Naresh M. Punjabi, MD, PhD, FCCP, Baltimore, MD
Kevin K. Brown, MD, FCCP, Denver, CO	Steven M. Hollenberg, MD, FCCP, Camden, NJ	Suhail Raoof, MD, FCCP, Brooklyn, NY
Lee K. Brown, MD, FCCP, Albuquerque, NM	Rolf D. Hubmayr, MD, FCCP, Rochester, MN	Stephen I. Rennard, MD, FCCP, Omaha, NE
Andrew Bush, MD, London, United Kingdom	Ferdinando Iellamo, MD, Rome, Italy	M. Patricia Rivera, MD, FCCP, Chapel Hill, NC
Sean M. Caples, DO, Rochester, MN	James R. Jett, MD, FCCP, Rochester, MN	Jesse Roman, MD, FCCP, Atlanta, GA
Shannon S. Carson, MD, FCCP, Chapel Hill, NC	Paul W. Jones, PhD, London, United Kingdom	Mark J. Rosen, MD, FCCP, New York, NY
Bartolome R. Celli, MD, FCCP, Boston, MA	Jyotsna M. Joshi, MD, Mumbai, India	John C. Ruckdeschel, MD, FCCP, Detroit, MI
Alfredo Chetta, MD, FCCP, Parma, Italy	Marc A. Judson, MD, FCCP, Charleston, SC	Jay H. Ryu, MD, FCCP, Rochester, MN
Prashant N. Chhajed, MBBS, DNB, MD, FCCP Basel, Switzerland	Eitan Kerem, MD, Jerusalem, Israel	Steven A. Sahn, MD, FCCP, Charleston, SC
Jason D. Christie, MD, MS, FCCP, Philadelphia, PA	Dong Soon Kim, MD, Seoul, Korea	Mark H. Sanders, MD, FCCP, Pittsburgh, PA
Donald W. Cockcroft, MD, FCCP, Saskatoon SK, Canada	Hardy Kornfeld, MD, FCCP, Worcester, MA	Gregory A. Schmidt, MD, FCCP, Iowa City, IA
Gene L. Colice, MD, FCCP, Washington, DC	Kevin L. Kovitz, MD, MBA, FCCP, New Orleans, LA	Curtis N. Sessler, MD, FCCP, Richmond, VA
Howard L. Corwin, MD, FCCP, Lebanon, NH	John P. Kress, MD, FCCP, Chicago, IL	Surendra K. Sharma, MD, PhD, FCCP New Delhi, India
Gregory P. Cosgrove, MD, FCCP, Denver, CO	Mark Larché, PhD, London, United Kingdom	Jay S. Steingrub, MD, FCCP, Springfield, MA
William G. Cotts, MD, Chicago, IL	Teofilo L. Lee-Chiong, MD, FCCP, Denver, CO	Robert A. Stockley, MD, DSc, Birmingham, United Kingdom
Robert J. O. Davies, DM, Oxford, United Kingdom	Stephanie M. Levine, MD, FCCP, San Antonio, TX	Mary E. Strek, MD, Chicago, IL
Ivor S. Douglas, MD, FCCP, Denver, CO	Craig M. Lilly, MD, FCCP, Worcester, MA	Harold M. Szerlip, MD, FCCP, Augusta, GA
Roland M. du Bois, MD, MA, FCCP, London, United Kingdom	Carlos M. Luna, MD, FCCP, Buenos Aires, Argentina	Victor Tapon, MD, FCCP, Raleigh, NC
C. Gregory Elliott, MD, FCCP, Salt Lake City, UT	Neil R. MacIntyre, MD, FCCP, Durham, NC	Antoni Torres, MD, FCCP, Barcelona, Spain
Paul L. Enright, MD, Tucson, AZ	J. Mark Madison, MD, FCCP, Worcester, MA	William D. Travis, MD, FCCP, New York, NY
Armin Ernst, MD, FCCP, Boston, MA	Atul Malhotra, MD, FCCP, Boston, MA	Donald P. Tashkin, MD, FCCP, Los Angeles, CA
Kevin R. Flaherty, MD, MS, Ann Arbor, MI	David M. Mannino, MD, FCCP, Lexington, KY	Philippe van de Borne, MD, PhD, Brussels, Belgium
Kenneth E. Fletcher, PhD, Worcester, MA	Constantine A. Manthous, MD, FCCP, Bridgeport, CT	Jean-Louis Vincent, MD, PhD, FCCP Brussels, Belgium
Antonio Foresi, MD, Sesto San Giovanni, Italy	Carole L. Marcus, MBBCh, FCCP, Philadelphia, PA	V. K. Vijayan, MD, FCCP, Delhi, India
Barry A. Franklin, PhD, Royal Oaks, MI	Vallerie V. McLaughlin, MD, FCCP, Ann Arbor, MI	Emiel F. M. Wouters, MD, FCCP Maastricht, Netherlands
Apoor S. Gami, MD, FCCP, Rochester, MN	Atul C. Mehta, MBBS, FCCP, Cleveland, OH	Kwok Yung Yuen, MD, Hong Kong, China
Samuel Z. Goldhaber, MD, FCCP, Boston, MA	Lawrence C. Mohr, MD, FCCP, Charleston, SC	Dani S. Zander, MD, Houston, TX
Roger S. Goldstein, MD, FCCP, Toronto, ON, Canada	Nicholas W. Morrell, MD, Cambridge, United Kingdom	Joseph B. Zwischenberger, MD, FCCP, Galveston, TX
James R. Gossage, MD, FCCP, Augusta, GA	David P. Naidich, MD, FCCP, New York, NY	

Future Sites for CHEST

CHEST—Annual International Scientific Assembly and the Clinical World Congress on Diseases of the Chest

CHEST 2007	Chicago, IL - October 20-25, 2007
CHEST 2008	Philadelphia, PA - October 25-30, 2008
CHEST 2009	San Diego, CA - October 31 - November 5, 2009