

Editor in Chief: **Daniel B. Mark, MD, MPH**, Durham, NC
Executive Editor: **Patricia K. Hodgson**, Durham, NC
Managing Editor: **Rebecca L. Hines**, Durham, NC
Issue Manager: **Ian Leo Bertoldo**

AHJ

American Heart Journal

www.ahjonline.com

Founded in 1925

Associate Editors

Tariq Ahmad, MD New Haven	Justin A. Ezekowitz, MBChC, MSc Alberta, Canada	Renato D. Lopes, MD, PhD, MHS Durham	Jonathan P. Piccini, MD, MHS Durham
Thomas M. Bashore, MD, MPH Durham	Emil Fosbol, MD, PhD Denmark	Kenneth W. Mahaffey, MD Durham	Thomas J. Povsic, MD, PhD Durham
Gerald S. Bloomfield, MD, MPH Durham	John K. Harrison, MD Durham	Robert McGarrah, MD Durham	Sudarshan Rajagopal, MD Durham
Melissa Burroughs-Pena, MD, MS San Francisco	Paul A. Heidenreich, MD, MS Palo Alto	Rajendra H. Mehta, MD Durham	Sunil V. Rao, MD Durham
Tara Chang, MD, MS Palo Alto	Kevin D. Hill, MD Durham	Ann Marie Navar, MD, PhD Durham	Matthew T. Roe, MD, MHS Durham
Melissa A. Daubert, MD Durham	Padma Kaul, PhD Alberta, Canada	Jonathan D. Newman, MD, MPH New York	Zainab Samad, MD, MBBS, MHS Durham
Adam DeVore, MD, MHS Durham	Jennifer S. Li, MD, MHS Durham	Manesh R. Patel, MD Durham	Matthew Sherwood, MD Falls Church
			Sean van Diepen, MD, MSc Alberta

Editorial Board

David Aguilar, MD	Alexandre Schaan de Quadros, MD, MSc, PhD	Adnan Kastrati, MD	Pamela N. Peterson, MD, MSPH
Frank V. Aguirre, MD	Elizabeth R. DeLong, PhD	Dean J. Kereiakes, MD	Marc A. Pfeffer, MD, PhD
John H. Alexander, MD, MHSc	J. Michael DiMaio, MD	Morton J. Kern, MD	Matthias E. Pfisterer, MD, PhD
Karen P. Alexander, MD	Mark P. Donahue, MD, MHS	Prateeti Khazanie, MD, MPH	Karen S. Pieper, MS
Larry A. Allen, MD, MHS	Pamela S. Douglas, MD	Michel G. Khouri, MD	Louise Pilote, MD, MPH, PhD
Hussein Al-Khalidi, PhD	Shannon Dunlay, MD, MS	Ajay Kirtane, MD, SM	Bertram Pitt, MD
Sana M. Al-Khatib, MD, MHS	Vladimir Dzavik, BSc MD	Neal S. Kleiman, MD	Sean D. Pokorney, MD
Larry A. Allen, MD, MHS	Kim A. Eagle, MD	George J. Klein, MD	Jeanne E. Poole, MD
Kevin J. Anstrom, PhD	Zubin Eapen, MD, MHS	Robb Kociol, MD	Jeffrey J. Popma, MD
Paul W. Armstrong, MD	Kenneth A. Ellenbogen, MD	Richard A. Krasuski, MD	Eric N. Prystowsky, MD
Wilbert S. Aronow, MD	Stephen G. Ellis, MD	William E. Kraus, MD	Paolo Raggi, MD
Alvaro Avezum, MD, PhD	David P. Faxon, MD	Joel Kupersmith, MD	Harmony Reynolds, MD
Akshay Bagai, MD, MHS	G. Mike Felker, MD, MHS	Gervasio A. Lamas, MD	Vera H. Rigolin, MD
Steven R. Bailey, MD	T. Bruce Ferguson Jr., MD	Kerry L. Lee, PhD	Joseph G. Rogers, MD
Subhash Banerjee, MD	Jerome Fleg, MD	Thomas H. Lee Jr., MD	Melvyn Rubenfire, MD
Gust H. Bardy, MD	Gregg C. Fonarow, MD	Sergio Leonardi, MD, MHS	John S. Rumsfeld, MD, PhD
Piers Barker, MD	Christopher Fordyce, MD	A. Michael Lincoff, MD	Thomas Ryan, MD
Gregory W. Barsness, MD	Gary S. Francis, MD	Gregory Y.H. Lip, MD	Uche Sampson, MD, MPH, MBA, MSc
Eric R. Bates, MD	James Freeman, MD	James E. Lock, MD	Gillian D. Sanders, PhD
Jeroen J. Bax, MD, PhD	John K. French, PhD, MBChB	Jared Magnani, MD, MS	Hartzell V. Schaff, MD
Richard C. Becker, MD	Thomas C. Gerber, MD, PhD	Thomas H. Marwick, MD, PhD, MBBS, MPH	Kevin A. Schulman, MD
George A. Beller, MD	Bernard J. Gersh, MB, ChB, DPhil	Frederick A. Masoudi, MD, MSPH	Michelle O'Shaughnessy, MD
Jeffrey S. Berger, MD, MS	Myron C. Gerson, MD	Charles Maynard, PhD	Svati H. Shah, MD, MHS
Deepak L. Bhatt, MD, MPH	Jeffrey B. Geske, MD	Darren K. McGuire, MD, MHSc	Leslee Shaw, PhD
Kenneth Bitchick, MD, MS	Jalal K. Ghali, MD	Robert E. Michler, MD	Chetan Shenoy, MBBS
Philip F. Binkley, MD, MPH	Raymond J. Gibbons, MD	D. Douglas Miller, MD	Adhir Shroff, MD, MPH
John A. Bittl, MD	C. Michael Gibson, MS, MD	Julie M. Miller, MD	Thomas N. Skelton, MD
Vera Bittner, MD, MSPH	Ian Gilchrist, MD	Todd D. Miller, MD	Steven R. Steinhilber, MD
Roger S. Blumenthal, MD	Robert P. Giugliano, MD, MS	David J. Moliterno, MD	Lynne W. Stevenson, MD
Eric Boersma, MSc, PhD	Donald D. Glower, MD	Fred Morady, MD	William G. Stevenson, MD
Salvador Borges-Neto, MD	Christopher B. Granger, MD	David A. Morrow, MD, MPH	Carla A. Sueti, MD, PhD
Sorin J. Brener, MD	Paul A. Gurbel, MD	Joseph Brent Muhlestein, MD	Toru Suzuki, MD
Ralph G. Brindis, MD, MPH	Hitinder S. Gurm, MBBS	Debabrata Mukherjee, MD, MS	V.V.H. Wilson Tang, MD
Christopher E.H. Buller, MD	John R. Guyton, MD	Brahmaje Nallamothu, MD	Allen J. Taylor, MD
T. Jared Bunch, MD	Frank E. Harrell Jr., PhD	L. Kristin Newby, MD, MHS	James E. Tcheng, MD
Javed Butler, MD, MPH, MBA	Robert A. Harrington, MD	Peter A. Noseworthy, MD	Alan N. Tenaglia, MD
Alfred E. Buxton, MD	David Hasdai, MD	Emily C. O'Brien, PhD	Pierre Theroux, MD
Christopher P. Cannon, MD	Edward P. Havranek, MD	Sean M. O'Brien, PhD	Laine Thomas, PhD
Warren J. Cantor, MD	Robert C. Hendel, MD	Christopher M. O'Connor, MD	Jack V. Tu, MD, PhD
Blase A. Carabello, MD	Timothy D. Henry, MD	Elizabeth O. Ofili, MD	Mintu Turakhia, MD, MAS
Matthew Cavender, MD, MPH	Adrian F. Hernandez, MD, MHS	E. Magnus Ohman, MD	Jacob A. Udell, MD, MPH
Mark Y. Chan, MBBS, MHSc	Charles A. Herzog, MD	Peter M. Okin, MD	Frans J.J. Van de Werf, MD, PhD
Melvin D. Cheitlin, MD, MACC	Connie N. Hess, MD, MHS	Brian Olshansky, MD	Sreekanth Vemulapalli, MD
W. Randolph Chitwood Jr., MD	Paul Hess, MD, MHS	Catherine M. Otto, MD	Hector O. Ventura, MD
David J. Cohen, MD, MSc	James A. Hill, MD, MS	Douglas L. Packer, MD	Mladen Vidovich, MD
Marc Cohen, MD	Mark A. Hlatky, MD	Richard L. Page, MD	David A. Vorchheimer, MD
Mauricio G. Cohen, MD	Judith S. Hochman, MD	Neha Pagidipati, MD	Lars Wallentin, MD, PhD
Adrian Coles, PhD	David R. Holmes Jr., MD	Chetan B. Patel, MD	Andrew Wang, MD
Heidi M. Connolly, MD	Michael P. Hudson, MD, MHSc	Uptal Patel, MD	Tracy Y. Wang, MD, MHS, MSc
Stuart J. Connolly, MD	Alice K. Jacobs, MD	Carl J. Pepine, MD	Jeffrey Washam, PharmD
Patricia Cowper, PhD	Stefan James, MD, PhD	John L. Petersen II, MD, MHS	W. Douglas Weaver, MD
Anne B. Curtis, MD	James L. Januzzi, MDMarc E. Jolicœur, MD, MSc, MHS	Eric D. Peterson, MD, MPH	William S. Weintraub, MD
Ralph J. Damiano, MD	David E. Kandzari, MD		Cynthia M. Westerhout, PhD
James P. Daubert, MD			J. Marcus Wharton, MD
Charles J. Davidson, MD			David J. Whellan, MD, MHS
			Harvey D. White, DSc
			Clyde W. Yancy, MD, MSc
			James B. Young, MD