

Circulation

Editor-in-Chief

Joseph A. Hill

Executive Editor

James A. de Lemos

Deputy Editor

Darren K. McGuire

Senior Associate Editors

Biykem Bozkurt

Laura Mauri

Associate Editors

Sana M. Al-Khatib, *Durham*

Joshua A. Beckman, *Nashville*

Jarett D. Berry, *Dallas*

Emmanouil S. Brilakis, *Minneapolis*

Kelly Chin, *Dallas*

Sandeep R. Das, *Dallas*

Victoria Delgado, *Leiden*

Deborah B. Diercks, *Dallas*

Mark H. Drazner, *Dallas*

Thomas Eschenhagen, *Hamburg*

Justin Ezekowitz, *Edmonton*

Timothy J. Gardner, *Newark*

Shinya Goto, *Kanagawa*

Gerald Greil, *Dallas*

W. Gregory Hundley, *Winston-Salem*

Graeme J. Hankey, *Perth*

Stefan James, *Uppsala*

Dharam Kumbhani, *Dallas*

Sergio Lavandero, *Santiago*

Mark S. Link, *Dallas*

Charles J. Lowenstein, *Rochester*

Chang-Sheng Ma, *Beijing*

Bongani M. Mayosi, *Cape Town*

Torbjørn Omland, *Oslo*

Peipei Ping, *Los Angeles*

Wendy S. Post, *Baltimore*

Anand Rohatgi, *Dallas*

Hesham A. Sadek, *Dallas*

Naveed A. Sattar, *Glasgow*

Svati H. Shah, *Durham*

Philippe Gabriel Steg, *Paris*

Nancy K. Sweitzer, *Tucson*

Sami Viskin, *Tel Aviv*

Wanpen Vongpatanasin, *Dallas*

Karol E. Watson, *Los Angeles*

Digital Strategies

Amit Khera

Podcasts

Carolyn S.P. Lam

Content Editors

Bridging Disciplines

Ian J. Neeland

Satyam Sarma

Vlad Zaha

Cardiology News

Parag Joshi

Tracy Hampton

Bridget Kuehn

Case Series

Aslan T. Turer

Clinical Implications of

Basic Research

Nikhil V. Munshi

CME

Susan Matulevicius

Monika Sanghavi

Jennifer Thibodeau

ECGs

José A. Joglar

Pathology

Jeffrey E. Saffitz

Pathways to Discovery

John D. Rutherford

Special Populations

Sharon C. Reimold

Senior Guest Editors

Vera Bittner

Gianluigi Condorelli

Frans Van de Werf

Senior Advisory Editors

François M. Abboud

Paul Armstrong

Eugene Braunwald

Helen H. Hobbs

Eric N. Olson

Milton Packer

James T. Willerson

Senior Statistical Editor

Daniel F. Heitjan

Statistical Editors

Colby Ayers

Sue Duval

Julia Kozlitina

Chao Xing



American
Heart
Association®

Circulation

Editorial Board

David Aguilar	Jeptha P. Curtis	Ahamed H. Idris	Pradeep P.A. Mammen	Andrea M. Russo
Michelle A. Albert	Mary Cushman	Erik Ingelsson	Douglas L. Mann	John J. Ryan
Christine M. Albert	Christopher deFilippi	Joachim H. Ix	Barry J. Maron	Samir Saba
John H. Alexander	Geneviève Derumeaux	Allan S. Jaffe	James Martin	Jeffrey L. Saver
Karen P. Alexander	Stefanie Dimmeler	Pierre Jais	Nikolaus Marx	Renate B. Schnabel
Fernando Alfonso	Xin Du	Jan Janoušek	Manuel Mayr	Jay W. Schneider
Amit Amin	Marc R. Dweck	Edward C. Jauch	James M. McCabe	P. Christian Schulze
Sonia S. Anand	Philip Eaton	Anders Jeppsson	Peter A. McCullough	Peter J. Schwartz
Cheryl A.M. Anderson	Kenneth A. Ellenbogen	Nils P. Johnson	John J.V. McMurray	Benjamin M. Scirica
Mark E. Anderson	Raimund A. Erbel	Lena Jonasson	Elizabeth M. McNally	Stephen L. Seliger
Dominick J. Angiolillo	David Erlinge	Karen E. Joynt Maddox	Roxana Mehran	Frank Sellke
Elliott M. Antman	N.A. Mark Estes III	Daniel P. Judge	Erin D. Michos	Ajay M. Shah
Paul W. Armstrong	Brendan M. Everett	Jonathan Kalman	Nicholas L. Mills	Prediman K. Shah
Herbert D. Aronow	Michael Ezekowitz	David A. Kass	Ana Olga Mocumbi	Svati H. Shah
C. Noel Bairey Merz	James C. Fang	Padma Kaul	Gilles Montalescot	Philip W. Shaul
Aaron L. Baggish	William F. Fearon	Sanjay Kaul	James C. Moon	Leslee J. Shaw
George L. Bakris	Gemma A. Figtree	Sanjiv Kaul	David A. Morrow	Michael G. Shlipak
Christie M. Ballantyne	Rodolphe Fischmeister	Morton J. Kern	Elizabeth Murphy	Tabassome Simon
Subhash Banerjee	Charles Fraser	Richard N. Kitsis	Vijay Nambi	Karin Sipido
Sripal Bangalore	Norbert Frey	Bjorn C. Knollmann	Chiadi E. Ndumele	Peter Smith
Eric R. Bates	Keiichi Fukuda	Michel Komajda	Khurram Nasir	Randall C. Starling
Jeroen J. Bax	Daniel J. Garry	Issei Komuro	Jane W. Newburger	Aijun Sun
Emelia J. Benjamin	Michael A. Gatzoulis	Marvin A. Konstam	Graham Nichol	Luke Szwed
Ivor J. Benjamin	Bernard J. Gersh	Ran Kornowski	Vuyisile Nkomo	Jean-François Tanguay
Jeffrey S. Berger	Edward P. Gerstenfeld	Mikhail Kosiborod	Alan Nugent	Ling Tao
M. Angelyn Bethel	Samuel S. Gidding	Christopher M. Kramer	Patrick O'Gara	John R. Teerlink
Deepak L. Bhatt	Jay Giri	Harlan M. Krumholz	Brian O'Rourke	Rong Tian
Vera Bittner	Robert P. Giugliano	Fred Kusumoto	Christopher Owens	Jolanda van der Velden
Roger S. Blumenthal	Thomas G. Gleason	Bonnie Ky	Richard L. Page	Jennifer E. Van Eyk
Christoph Bode	Zachary D. Goldberger	Susan G. Lakoski	Anushka Patel	Ronald G. Victor
Marc P. Bonaca	Nora Goldschlager	Irene M. Lang	Chetan B. Patel	Salim S. Virani
Barry A. Borlaug	K. Lance Gould	Richard A. Lange	Vlado Perkovic	Renu Virmani
Javed Butler	Paul A. Grayburn	Christophe Leclercq	Ileana L. Piña	Thomas M. Vondriska
Robert Byrne	Soffia Gudbjörnsdottir	Benjamin D. Levine	Enzo R. Porrello	Anton Vonk Noordegraaf
Paolo G. Camici	Naomi M. Hamburg	Martin M. LeWinter	Tiffany M. Powell-Wiley	Thomas J. Wang
Mercedes R. Carnethon	Yaling Han	Eldrin F. Lewis	Silvia G. Priori	Tracy Y. Wang
Barbara Casadei	Anna R. Hemnes	Gregory D. Lewis	Sunil V. Rao	Lawrence R. Wechsler
Chern-En Chiang	David M. Herrington	Peter Libby	Kausik K. Ray	Jeffrey I. Weitz
Sumeet S. Chugh	Ziad Hijazi	A. Michael Lincoff	Muredach Reilly	Harvey D. White
Joaquin E. Cigarroa	Mark A. Hlatky	Brian R. Lindman	William Clifford Roberts	Duminda N. Wijeyesundera
Nakela L. Cook	Judith S. Hochman	Gregory Y.H. Lip	Matthew T. Roe	Y. Joseph Woo
Filippo Crea	Marius M. Hoepfer	Lars H. Lund	Raphael Rosenhek	Clyde W. Yancy
Mark A. Creager	Brian D. Hoit	Xin-Liang L. Ma	Anthony Rosenzweig	Robert Yeh
Michael H. Criqui	Michael V. Holmes	Thomas M. Maddox	Helge Røsjø	Jianyi Zhang
Louise Cullen	Dayi Hu	Ehtisham Mahmud	Marc Ruel	Michael R. Zile
Anne B. Curtis	Marc Humbert	Craig R. Malloy	Stuart D. Russell	



Circulation

Editors, *Circulation* Journals

Paul J. Wang
Circulation: Arrhythmia and Electrophysiology

Kiran Musunuru
Circulation: Genomic and Precision Medicine

Marcelo F. Di Carli
Circulation: Cardiovascular Imaging

David P. Faxon
Circulation: Cardiovascular Interventions

Brahmajee K. Nallamothu
Circulation: Cardiovascular Quality and Outcomes

Nancy K. Sweitzer
Circulation: Heart Failure

2017-18 AHA Scientific Publishing Committee

N.A. Mark Estes, III, Chair
Angela Cochran, Vice Chair
Marwah Abdalla
Matthew Allison
Kent Anderson
Gregory L. Burke
Eddie L. Greene
Alice Jacobs
Susan King
E. Magnus Ohman
Alejandro A. Rabinstein
Veronique L. Roger
David S. Siscovick
Catherine L. Webb

Previous *Circulation* Editors-in-Chief

Thomas M. McMillan, 1950-56
Herrman L. Blumgart, 1956-66
Howard B. Burchell, 1966-71
Charles K. Friedberg, 1971-72
Ephraim Donoso, 1972-73
Eugene A. Stead, 1973-78
Elliot Rapaport, 1978-83
Burton E. Sobel, 1983-88
John Ross Jr., 1988-93
James T. Willerson, 1993-2004
Joseph Loscalzo, 2004-16

Editorial Staff

Emily Picillo
Managing Editor

Molly Klemarczyk
Assistant Managing Editor

Sara O'Brien
Assistant Managing Editor

Karen Barry
Director of Journal Operations