

MOLECULAR AND CELLULAR BIOLOGY

VOLUME 19 • AUGUST 1999 • NUMBER 8

Alan M. Weiner, *Editor in Chief* (2000)
Yale University

James C. Alwine, *Editor* (2003)
University of Pennsylvania School of Medicine

Albert S. Baldwin, *Minireview Editor* (2004)
University of North Carolina School of Medicine

Dafna Bar-Sagi, *Editor* (2002)
State University of New York at Stony Brook

Susan M. Berget, *Editor* (2003)
Baylor College of Medicine

James R. Broach, *Editor* (2000)
Princeton University

Jonathan A. Cooper, *Editor* (2003)
Fred Hutchinson Cancer Research Center

Roger J. Davis, *Editor* (2002)
University of Massachusetts Medical School

Barbara J. Graves, *Editor* (2003)
University of Utah School of Medicine

Anita K. Hopper, *Editor* (1999)
*The Milton S. Hershey Medical Center
Pennsylvania State University*

James N. Ihle, *Editor* (2002)
St. Jude Children's Research Hospital

Harinder Singh, *Editor* (2002)
University of Chicago

Stephen T. Smale, *Editor* (2001)
University of California at Los Angeles

George F. Sprague, Jr., *Editor* (2003)
University of Oregon

Jean Y. J. Wang, *Editor* (2002)
University of California, San Diego

Jonathan R. Warner, *Editor* (2003)
Albert Einstein College of Medicine

Susan R. Wentz, *Editor* (2004)
Washington University School of Medicine

Jerry L. Workman, *Editor* (2002)
Pennsylvania State University

EDITORIAL BOARD

Cory Abate-Shen (2000)
Frederick W. Alt (1999)
Manuel Ares, Jr. (1999)
Dean W. Ballard (1999)
Claudio Basilio (2000)
Adrian P. Bird (1999)
Douglas L. Black (2000)
Elizabeth H. Blackburn (2000)
John Blenis (2001)
Jef D. Boeke (2000)
Joseph Bolen (1999)
Johannes Bos (2001)
Allan Bradley (1999)
Marjorie C. Brandriss (2000)
John B. E. Burch (2000)
John A. Carbon (1999)
Michael Carey (2000)
Marian Carlson (2001)
Charles Cole (1999)
Albert J. Courey (2000)
Sara Courtneidge (2000)
Gerald R. Crabtree (1999)
Elizabeth A. Craig (2000)
Frederick R. Cross (2000)
George A. M. Cross (1999)
Thomas Curran (2000)
Alan D'Andrea (2000)
Titia de Lange (1999)
Melvin L. DePamphilis (2001)
Channing J. Der (2000)
Daniel J. Donoghue (1999)
Thomas H. Eickbush (2001)
Robert N. Eisenman (2000)
Sarah C. R. Elgin (2000)
Scott Emr (2000)

Douglas Engel (2001)
Beverly Errede (1999)
Mark E. Ewen (2001)
Peggy Farnham (2000)
Stanley Fields (2000)
Daniel Finley (1999)
Thomas D. Fox (1999)
Leonard P. Freedman (2000)
William T. Garrard (2000)
Sankar Ghosh (2000)
Jackson B. Gibbs (2000)
Michael Gilman (2001)
David D. Ginty (2001)
Stephen P. Goff (2001)
Paula J. Grabowski (2000)
Jack F. Greenblatt (2000)
Rudolf Grosschedl (2001)
Mark Groudine (1999)
Lorraine J. Gudas (2001)
James E. Haber (2001)
Joyce L. Hamlin (1999)
Nathaniel Heintz (2000)
John W. B. Hershey (2000)
Alan Hinnebusch (2000)
Peter M. Howley (2000)
Allan Jacobson (2000)
Judith Jaehning (1999)
Robert Jensen (1999)
Mark Johnston (2000)
James T. Kadonaga (2001)
William G. Kaelin, Jr. (1999)
Michael Karin (2000)
Michael B. Kastan (2000)
Randall Kaufman (2000)
Andrius Kazlauskas (2001)

Jack D. Keene (1999)
Tom K. Kerppola (2000)
Hannah Klein (2000)
Richard D. Kolodner (2001)
Janet Kurjan (2000)
Laimonis A. Laimins (2001)
Alan Lambowitz (1999)
Andrew Lassar (1999)
Lester F. Lau (2001)
Mitchell A. Lazar (1999)
David Levy (2001)
Michael R. Lieber (2001)
John T. Lis (2001)
David M. Livingston (2000)
Nancy Maizels (2001)
Michael Malim (2001)
David J. Mangelsdorf (2000)
James Manley (2001)
Lynne E. Maquat (2000)
Kunihiro Matsumoto (2000)
Aaron P. Mitchell (2000)
David O. Morgan (1999)
Cornelis Murre (2000)
Benjamin G. Neel (1999)
Joseph R. Nevins (1999)
Carol Newlon (2000)
Eric N. Olson (2001)
Keiko Ozato (1999)
Harvey L. Ozer (2000)
Tony Pawson (2000)
Craig L. Peterson (1999)
Magnus Pfahl (2000)
John R. Pringle (2000)
Robin Reed (1999)
Steven I. Reed (2000)

Danny Reinberg (2000)
Jasper D. Rine (2000)
Martine F. Roussel (2001)
Suzanne Sandmeyer (2000)
David Schatz (1999)
Joseph Schlessinger (2000)
Carl W. Schmid (1999)
Bart Sefton (2001)
Yang Shi (1999)
Dorothy E. Shippen (2001)
Frank Solomon (2000)
Karen U. Sprague (2001)
David Stern (2000)
Tom H. Stevens (2001)
Bruce Stillman (2000)
Kevin Struhl (2001)
Bill Sugden (2000)
Patrick Sung (2000)
Kelly G. Tatchell (2001)
Lawrence H. Thompson (2000)
Jenny Pan-Yun Ting (1999)
Lex H. T. van der Ploeg (2000)
Terry Van Dyke (2001)
André Veillette (2001)
Karen Vousden (2001)
Geoffrey Wahl (2001)
Lewis T. Williams (2000)
Fred Winston (2000)
Alan P. Wolfe (1999)
Richard D. Wood (1999)
Nancy Woychik (1999)
Orjan Wrangé (2000)
Meng-Chao Yao (1999)
Richard Young (2001)
Richard S. Zitomer (2000)

Samuel Kaplan, *Chairman, Publications Board*
Rebecca L. Zwadyk, *Production Editor*

Linda M. Illig, *Director, Journals*
Margaret Reel Miller, *Assistant Production Editor*

Molecular and Cellular Biology (ISSN 0270-7306), a publication of the American Society for Microbiology (ASM), 1325 Massachusetts Ave., N.W., Washington, DC 20005-4171, is devoted to the advancement and dissemination of fundamental knowledge concerning the molecular biology of eukaryotic cells, of both microbial and higher organisms. Instructions to authors are published in the January issue each year; reprints are available from the editors and the Journals Department. The journal is published monthly, one volume per year. Nonmember print subscription prices (per year) are: \$450, U.S.; \$469, Canada (plus 7% GST, or 7% GST + 8% HST where applicable); \$538, Europe; \$546, Latin America; \$555, rest of world. Member print subscription prices (per year) are: \$84, U.S.; \$99, Canada (plus 7% GST, or 7% GST + 8% HST where applicable); \$142, Europe; \$149, Latin America; \$159, rest of world. Single copies are: \$47, nonmember; \$15, member (Canadians add 7% GST, or 7% GST + 8% HST where applicable). For prices of electronic versions, contact the Subscriptions Unit, ASM. Correspondence relating to subscriptions, defective copies, missing issues, and availability of back issues should be directed to the Subscriptions Unit, ASM; correspondence relating to reprint orders should be directed to the Reprint Order Unit, ASM; and correspondence relating to disposition of submitted manuscripts, proofs, and general editorial matters should be directed to the Journals Department, American Society for Microbiology, 1325 Massachusetts Ave., N.W., Washington, DC 20005-4171. Phone: (202) 737-3600.

Claims for missing issues from residents of the United States, Canada, and Mexico must be submitted within 3 months after publication of the issues; residents of all other countries must submit claims within 6 months of publication of the issues. Claims for issues missing because of failure to report an address change or for issues "missing from files" will not be allowed.

Periodicals postage paid at Washington, DC 20005, and at additional mailing offices.

POSTMASTER: Send address changes to *Molecular and Cellular Biology*, ASM, 1325 Massachusetts Ave., N.W., Washington, DC 20005-4171.

Made in the United States of America. Printed on acid-free paper.

Copyright © 1999 American Society for Microbiology. All Rights Reserved.

CODEN: MCEBD4

The code at the top of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal use or for personal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per-copy fee through the Copyright Clearance Center Inc., 222 Rosewood Drive, Danvers, MA 01923, for copying beyond that permitted by Sections 107 and 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale.