



EDITOR IN CHIEF

Timothy W. Nilsen
Case Western Reserve University

DEPUTY EDITOR

Eric Phizicky
University of Rochester School
of Medicine and Dentistry

REVIEWS EDITOR

Thomas R. Cech
Howard Hughes Medical Institute

EDITORS

Javier F. Caceres
MRC Human Genetics Unit
Maria Carmo-Fonseca
Instituto de Medicina Molecular,
University of Lisbon
Kathleen Collins
University of California, Berkeley
Elena Conti
Max Planck Institute of Biochemistry,
Martinsried

Adrian R. Ferré-D'Amaré
National Heart, Lung and Blood Institute
Fátima Gebauer
Centre for Genomic Regulation (CRG)
Britt Glaunsinger
University of California, Berkeley
Daniel Kolakofsky
University of Geneva

Marina V. Rodnina
Max Planck Institute for Biophysical
Chemistry
Rob Singer
Albert Einstein School of Medicine
Erik Sontheimer
University of Massachusetts Medical School
Peter F. Stadler
Leipzig University

Jörg Vogel
University of Würzburg
Eric Westhof
CNRS, Strasbourg
John Woolford
Carnegie Mellon University
Mihaela Zavolan
Biozentrum, University of Basel

EDITORIAL BOARD

Manuel Ares
University of California, Santa Cruz
David P. Bartel
Massachusetts Institute of Technology
Brenda L. Bass
University of Utah
Philip C. Bevilacqua
Pennsylvania State University
Douglas L. Black
University of California, Los Angeles
Ronald R. Breaker
Yale University
Chris Burge
Massachusetts Institute of Technology
Lingling Chen
Shanghai Institutes for Biological Sciences,
Chinese Academy of Sciences
Soo-Chen Cheng
Institute of Molecular Biology, Academia Sinica
Bryan Cullen
Duke University Medical Center
Anne Ephrussi
EMBL, Heidelberg
Witold Filipowicz
Friedrich Miescher Institute
Mariano A. Garcia-Blanco
Duke University
Wendy Gilbert
Yale University
Brenton R. Graveley
University of Connecticut Health Center

Matthias W. Hentze
EMBL, Heidelberg
Daniel Herschlag
Stanford University
Jane E. Jackman
The Ohio State University
Allan Jacobson
University of Massachusetts Medical School
Martin Jinek
University of Zurich
Arlen Johnson
The University of Texas at Austin
Katrin Karbstein
The Scripps Research Institute
Magda Konarska
Warsaw University
Andrei Korostelev
University of Massachusetts
Medical School
Adrian R. Krainer
Cold Spring Harbor Laboratory
Alan M. Lambowitz
University of Texas at Austin
David M.J. Lilley
University of Dundee
Reinhard Lührmann
Max Planck Institute for Biophysical Chemistry,
Göttingen
Kristen W. Lynch
University of Pennsylvania School
of Medicine

James Manley
Columbia University
Lynne E. Maquat
University of Rochester
Harry F. Noller
University of California, Santa Cruz
Mary O'Connell
Masaryk University
Richard A. Padgett
Lerner Research Institute, Cleveland Clinic
Tao Pan
University of Chicago
Roy Parker
University of Colorado, Boulder
Joseph A. Piccirilli
The University of Chicago
Ramesh Pillai
University of Geneva
Anna Marie Pyle
Yale University
Donald Rio
University of California, Berkeley
Michael Rosbash
Brandeis University
Phillip A. Sharp
Massachusetts Institute
of Technology
Stewart Shuman
Memorial Sloan Kettering
Cancer Center

Haruhiko Siomi
Keio University School of Medicine
Mikiko C. Siomi
The University of Tokyo
Jonathan Staley
University of Chicago
Joan A. Steitz
Yale University
Gisela Storz
National Institute of Child Health
and Human Development
Scott Strobel
Yale University
David Tollervey
University of Edinburgh
Juan Valcárcel
ICREA and Centre de Regulació
Genòmica
Yanli Wang
Institute of Biophysics, Chinese Academy
of Sciences
Marvin Wickens
University of Wisconsin, Madison
Sandra L. Wolin
National Cancer Institute
Sarah A. Woodson
Johns Hopkins University
Phillip Zamore
University of Massachusetts
Medical School

DIRECTOR OF PUBLICATION SERVICES

Linda Sussman
Cold Spring Harbor Laboratory Press

PRODUCTION MANAGER

Denise Weiss
Cold Spring Harbor
Laboratory Press

PRODUCTION EDITOR

Marie Cotter
Cold Spring Harbor
Laboratory Press

PRODUCTION EDITOR

Mary Mulligan
Cold Spring Harbor
Laboratory Press

EDITORIAL COORDINATOR

Ann Marie Micenmacher
Case Western Reserve University

Editorial Office: RNA, Center for RNA Molecular Biology, Room W127, School of Medicine, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-4973, USA. Telephone: 216-368-1852; fax: 216-368-2010; e-mail: majournal@case.edu.

Publishing and Advertising Offices: Cold Spring Harbor Laboratory Press, 1 Bungtown Road, Cold Spring Harbor, New York 11724-2203. For advertising rates and data, contact Marcie Siconolfi, Advertising Manager, at 516-422-4010 (telephone) or 516-422-4092 (fax).

Instructions for Contributors: Instructions for contributors are published in each issue of RNA and are available online (<http://www.majournal.org>).

Subscriptions: Kathleen Cirone, Subscription Manager. For 2021 institutional prices, go to <http://majournal.cshlp.org/site/subscriptions/cost.dtl>. Orders may be sent to Cold Spring Harbor Laboratory Press, Fulfillment Department, 500 Sunnyside Boulevard, Woodbury, New York 11797-2924. Telephone: Continental U.S. and Canada 1-800-843-4388; all other locations 1-516-422-4100. Fax: 1-516-422-4097. Claims for missing issues must be received within four months of issue date.

Member Subscriptions: Members of the RNA Society automatically receive RNA as part of their annual membership dues.

The RNA Society: Membership information and application forms may be obtained from: The RNA Society, 9650 Rockville Pike, Bethesda, MD 20814-3998, USA. Telephone: 301-530-7120; fax: 301-530-7049; e-mail: ma@faseb.org.

COPYRIGHT INFORMATION: Authors of articles published in RNA retain copyright of the articles (except US Government employees) but grant Cold Spring Harbor Laboratory Press exclusive right to publish the articles for a period of 12 months following full-issue publication. This includes the rights to publish, reproduce, distribute, display, and store the article in all formats; to translate the article into other languages; to create adaptations, summaries, extracts, or derivations of the article; and to license others to do any or all of the above. Authors can reuse their articles in their work as long as RNA is credited as the place of original publication. Twelve months following publication, these articles are made available under a CC-BY-NC 4.0 Creative Commons license. Articles that carry the Open Access designation are available immediately under a CC-BY 4.0 or CC-BY-NC 4.0 Creative Commons license. Detailed copyright terms are online at <http://majournal.cshlp.org/site/misc/terms.xhtml>. Permission information is online at http://majournal.cshlp.org/site/misc/permissions_landing.xhtml.

RNA (ISSN 1355-8382) is published monthly by Cold Spring Harbor Laboratory Press, 500 Sunnyside Blvd., Woodbury, NY 11797-2924. Periodicals paid at Woodbury, NY, and additional mailing offices. **POSTMASTER:** Send address changes to Cold Spring Harbor Laboratory Press, Journals Fulfillment Dept., 500 Sunnyside Blvd., Woodbury, NY 11797-2924.

FORTHCOMING PAPERS

Bioinformatics

Hierarchical natural move Monte Carlo refines flexible RNA structures into cryo-EM densities

Jeng-Yih Chang, Zhicheng Cui, Kailu Yang, Jianhua Huang, Peter Minary, and Junjie Zhang

Report

The crystal structure of a Poliovirus exoribonuclease-resistant RNA shows how diverse sequences are integrated into a conserved fold

Anna-Lena Steckelberg, Quentin Vicens, David A. Costantino, Jay C. Nix, and Jeffrey S. Kieft

Articles

Site-specific and substrate-specific control of accurate mRNA editing by a helicase complex in trypanosomes

Vikas Kumar, Alasdair Ivens, Zachary Goodall, Joshua Meehan, Pawan Kumar Doharey, Andrew Hillhouse, Daniel Osorio Hurtado, James J. Cai, Xiuren Zhang, Achim Schnauffer, and Jorge Cruz-Reyes

A rare bacterial RNA motif is implicated in the regulation of the *purF* gene whose encoded enzyme synthesizes phosphoribosylamine

Sarah N. Malkowski, Ruben M. Atilho, Etienne B. Greenlee, Christina E. Weinberg, and Ronald R. Breaker

Folding heterogeneity in the essential human telomerase RNA three-way junction

Christina Palka, Nicholas M. Forino, Jendrik Hentschel, Rhiju Das, and Michael D. Stone

The shift from early to late types of ribosomes in zebrafish development involves changes at a subset of rRNA 2'-O-Me sites

Sowmya Ramachandran, Nicolai Krogh, Tor Erik Jørgensen, Steinar Daae Johansen, Henrik Nielsen, and Igor Babiak

Methods

Chemical shifts-based similarity restraints improve accuracy of RNA structures determined via NMR

Chad Lawrence and Alexander Grishaev

Termi-Luc: a versatile assay to monitor full-protein release from ribosomes

Denis Susorov, Shawn Egri, and Andrei A. Korostelev