

# Genes & Development

VOLUME 38 NUMBERS 11–12 JUNE 2024

## Executive Editor

**Laureen Connell** (Cold Spring Harbor Laboratory Press)

## Assistant Editor

**Samantha Cyrill** (Cold Spring Harbor Laboratory Press)

## Consulting Editors

**Terri Grodzicker**

*Editor Emerita*

(Cold Spring Harbor, USA)

**Sharon Dent** (Smithville, USA)

**Roger Greenberg** (Philadelphia, USA)

**MaryBeth Hatten** (New York, USA)

**Leemor Joshua-Tor**

(Cold Spring Harbor, USA)

**René Ketting** (Mainz, Germany)

**Kristen Lynch** (Philadelphia, USA)

**Elaine Mardis** (Columbus, USA)

**Trudy Oliver** (Durham, USA)

**Steve Smale** (Los Angeles, USA)

**Phil Soriano** (New York, USA)

**Peter Tontonoz** (Los Angeles, USA)

**Maria-Elena Torres-Padilla**

(Munich, Germany)

**Peter Verrijzer** (Rotterdam, Netherlands)

## Administrative Assistants

Bibi Garite  
Dorothy Oddo

## Production Manager

Denise Weiss

## Production Editor

Cynthia Blaut

## Production Assistant

Tara Kulesa

## Manager, Digital Content Distribution

Kevin-John Black

## Online Content Coordinator

Mary Mulligan

## EDITORIAL BOARD

**R. Adams** (Münster, Germany)

**K. Adelman** (Boston, USA)

**C. Bargmann** (New York, USA)

**J. Bass** (Evanston, USA)

**S. Bell** (Cambridge, USA)

**A. Berns** (Amsterdam, The Netherlands)

**W. Bickmore** (Edinburgh, UK)

**S. Boulton** (London, UK)

**B. Bruneau** (San Francisco, USA)

**A. Brunet** (Stanford, USA)

**T. Cech** (Boulder, USA)

**X. Cheng** (Houston, USA)

**J. Chory** (La Jolla, USA)

**C. Dean** (Norwich, UK)

**J. Debnath** (San Francisco, USA)

**T. de Lange** (New York, USA)

**S. Dent** (Smithville, USA)

**R. DePinho** (Houston, USA)

**C. Desplan** (New York, USA)

**D. Duboule** (Geneva, Switzerland)

**M. Eilers** (Würzburg, Germany)

**S. Elledge** (Boston, USA)

**R. Evans** (La Jolla, USA)

**A. Ferrando** (New York, USA)

**E. Fuchs** (New York, USA)

**F. Gage** (La Jolla, USA)

**S. Gasser** (Basel, Switzerland)

**S. Gottesman** (Bethesda, USA)

**M. Götz** (Munich, Germany)

**R. Greenberg** (Philadelphia, USA)

**R. Grosschedl** (Freiburg, Germany)

**K.L. Guan** (La Jolla, USA)

**M.B. Hatten** (New York, USA)

**A. Hinnebusch** (Bethesda, USA)

**K. Hochedlinger** (Boston, USA)

**A. Jackson** (Edinburgh, UK)

**S. Jackson** (Cambridge, UK)

**Y.-N. Jan** (San Francisco, USA)

**L. Joshua-Tor** (Cold Spring Harbor, USA)

**Y. Kang** (Princeton, USA)

**R. Ketting** (Mainz, Germany)

**V.N. Kim** (Seoul, Korea)

**C. Köhler** (Uppsala, Sweden)

**M. Lazar** (Philadelphia, USA)

**R. Losick** (Cambridge, USA)

**K. Lynch** (Philadelphia, USA)

**J. Manley** (New York, USA)

**R. Mann** (New York, USA)

**L. Maquat** (Rochester, USA)

**J. Massague** (New York, USA)

**S. McKnight** (Dallas, USA)

**I. Mohr** (New York, USA)

**C. Murre** (La Jolla, USA)

**H.-H. Ng** (Singapore)

**T. Oliver** (Durham, USA)

**S. Orkin** (Boston, USA)

**D. Pe'er** (New York, USA)

**C. Prives** (New York, USA)

**N. Proudfoot** (Oxford, UK)

**W. Reik** (Cambridge, United Kingdom)

**D. Reinberg** (Miami, USA)

**M. Saitou** (Kyoto, Japan)

**P. Sharp** (Cambridge, USA)

**M.C. Simon** (Philadelphia, USA)

**S. Smale** (Los Angeles, USA)

**P. Soriano** (New York, USA)

**D. Spector** (Cold Spring Harbor, USA)

**A. Stark** (Vienna, Austria)

**J. Steitz** (New Haven, USA)

**P. Sung** (San Antonio, USA)

**R. Tjian** (Berkeley, USA)

**P. Tontonoz** (Los Angeles, USA)

**M.-E. Torres-Padilla** (Munich, Germany)

**L.-H. Tsai** (Cambridge, USA)

**M. Vander Heiden** (Cambridge, USA)

**C.P. Verrijzer** (Rotterdam, Netherlands)

**K. Vousden** (London, UK)

**J. Walter** (Boston, USA)

**E. White** (New Brunswick, USA)

**J. Workman** (Kansas City, USA)

**E. Xu** (Shanghai, China)

**R.-M. Xu** (Beijing, China)

**P. Zamore** (Worcester, USA)

**K. Zaret** (Philadelphia, USA)

*Genes & Development* (ISSN 0890-9369), which is published semimonthly by Cold Spring Harbor Laboratory Press, 500 Sunnyside Boulevard, Woodbury, NY 11797-2924, will print 12 times in 2024. Periodicals paid at Woodbury, NY, and additional mailing offices. *POSTMASTER*: Send address changes to Cold Spring Harbor Laboratory Press, 500 Sunnyside Boulevard, Woodbury, NY 11797-2924. Canada Post International Publications Mail Product (Canadian distribution) Sales Agreement No. 1321846.

**Information for Contributors:** Author instructions are available at our website, <https://www.genesdev.org>.

**Online Manuscript Submission:** <https://submit.genesdev.org>.

**Subscriptions:** Kathleen Cirone, Subscription Manager. For 2024 institutional prices, go to <http://genesdev.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: 1-516-422-4094. Claims for missing issues must be received within 4 months of issue date. For address changes, please notify us at [cshpress@cshl.edu](mailto:cshpress@cshl.edu); allow four weeks.

**Advertising:** To advertise in *Genes & Development*, contact Marcie Siconolfi, Advertising Manager, Cold Spring Harbor Laboratory Press, 1 Bungtown Road, Cold Spring Harbor, New York 11724-2203; telephone 516-422-4010; fax 516-422-4092.

**Copyright Information:** Authors of articles published in *Genes & Development* 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 six 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 *Genes & Development* is credited as the place of original publication. Six 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://genesdev.cshlp.org/site/misc/terms.xhtml>. Permission information is online at [http://genesdev.cshlp.org/site/misc/permissions\\_landing.xhtml](http://genesdev.cshlp.org/site/misc/permissions_landing.xhtml).