An international journal devoted to basic research into how plants function, ranging from the molecular to the cellular to the whole plant levels, and including the interactions of plants with their biotic and abiotic environments.

Editor-in-Chief
Donald R. Ort
USDA/ARS Urbana, IL, USA

Associate Editors
Bonnie Bartel; Houston, TX, USA
Alan Jones; Chapel Hill, NC, USA
Richard Amsino; Madison, WI, USA
Julia Bailey-Serres; Riverside, CA, USA
C. Robin Buell; East Lansing, MI, USA
Sheila McCormick; Berkeley, CA, USA
Thomas Mitchell-Olds; Durham, NC, USA
John Ohlrogge; East Lansing, MI, USA
Kathryn A. VandenBosch; St. Paul, MN, USA
Susanne von Caemmerer; Canberra City, ACT, Australia

Research Area and Sections

Signal Transduction and Hormone Action
Cell Biology
Development and Hormone Action
Environmental Stress and Adaptation to Stress
Bioinformatics, Breakthrough Technologies, and Genome Analysis
Systems Biology, Molecular Biology, and Gene Regulation
Genetics, Genomics, and Molecular Evolution
Biochemical Processes and Macromolecular Structures
Plants Interacting with Other Organisms
Bioenergetics and Photosynthesis
Whole Plant and Ecophysiology

International Board of Monitoring Editors

Kozi Asada
Kyoto, Japan

Antony Bacic
Parkville, VIC, Australia

Neil R. Baker
Essex, UK

Malcolm Bennett
Nottingham, UK

Daniel R. Bush
Fort Collins, CO, USA

Joe Chappell
Lexington, KY, USA

Xuemei Chen
Riverside, CA, USA

Tzyy-Jen Chiuou
Taipei, Taiwan

Alice Y. Cheung
Amherst, MA, USA

Vitaly Citovsky
Stony Brook, NY, USA

Joachim Kopka
Golm, Germany

Tomas Girke
Riverside, CA, USA

Elzbieta Glaser
Stockholm, Sweden

Zhizhong Gong
Beijing, China

Roger Hangarter
Bloomington, IN, USA

Paul M. Hasegawa
West Lafayette, IN, USA

Martha Hawes
Tucson, AZ, USA

Luis Herrera-Estrella
Irapuato, Mexico

N. Michele Holbrook
Cambridge, MA, USA

Gregg Howe
East Lansing, MI, USA

Georg Jander
Ithaca, NY, USA

Jacques Joyard
Grenoble, France

Sophien Kamoun
Norwich, UK

Elizabeth Kellogg
St. Louis, MO, USA

Anthony Kinney
Wilmington, DE, USA

Leon Kochian
Ithaca, NY, USA

Joachim Kopka
Golm, Germany

Norman G. Lewis
Pullman, WA, USA

Hsouni-Min Li
Taipei, Taiwan

Chentao Lin
Los Angeles, CA, USA

Amake Makino
Sendai, Japan

M. David Marks
St. Paul, MN, USA

Susan Martino-Catt
St. Louis, MO, USA

Maureen McCann
West Lafayette, IN, USA

Scott D. Michaels
Bloomington, IN, USA

Ron Mitler
Reno, NV, USA

Mark O’Brien
Buffalo, NY, USA

Katherine Osteryoung
East Lansing, MI, USA

Ron Panstruga
Cologne, Germany

Sara Patterson
Madison, WI, USA

Corné Pieterse
Utrecht, The Netherlands

Marinus Plon
Fort Collins, CO, USA

Hendrik Poorter
Utrecht, The Netherlands

Anreedy S.N. Reddy
Fort Collins, CO, USA

Pamela C. Ronald
Davis, CA, USA

Joelyn C. Rose
Ithaca, NY, USA

David Salt
West Lafayette, IN, USA

Daniel P. Schachtman
St. Louis, MO, USA

Leslie E. Sieburth
Salt Lake City, UT, USA

Edgar P. Spalding
Madison, WI, USA

Nathan M. Springer
St. Paul, MN, USA

Dina St. Clair
Davis, CA, USA

Lloyd W. Sumner
Ardmore, OK, USA

Stephen J. Tonsor
Pittsburgh, PA, USA

Carroll P. Vance
St. Paul, MN, USA

Andreas Weber
Düsseldorf, Germany

Eleanor T. Wurtzel
Bronx, NY, USA

Shaull Yalovsky
Tel Aviv, Israel

Kazuko Yamaguchi-Shinozaki
Ibaraki, Japan

Science Writer
Peter V. Minorsky; peminorsky@asbp.org

Production Manager
Jon Mann; jmmann@asbp.org

Manuscript Manager
Leslie Ash Çikos; leslkos@asbp.org

Plant Physiology® (ISSN 0032–0889, online 1532–2548) is published monthly, in three volumes per year, by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855–2768, USA, and is produced by Dartmouth Journal Services, Waterbury, VT. The institutional price for the print and online versions is based on type of institution; contact institution@aspb.org. A subscription includes both The Plant Cell and Plant Physiology®; single copies may be purchased for $95 each plus shipping. Members of the American Society of Plant Biologists receive free online access to the journal and may subscribe to the print version of Plant Physiology® for $210. Nonmembers individuals may subscribe for $400. For matters regarding subscriptions, contact Suzanne Cholwek, 15501 Monona Drive, Rockville, MD 20855–2768, telephone 301–296–0926; fax 301–251–6740; e-mail adnet@faseb.org. Notify ASPB within 3 months (domestic) or 6 months (foreign) of issue date, and defective copies or copies lost in the mail will be replaced. Send all inquiries regarding display advertising to: FASEB AdNet, 9650 Rockville Pike, Bethesda, MD 20814–3998; telephone 301–279–0926; fax 301–251–6740; e-mail adnet@faseb.org. Periodicals postage paid at Rockville, MD, and at additional mailing offices. Publisher: Send address changes to Plant Physiology®, American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855–2768. The online version of Plant Physiology® is available at www.plantphysiol.org. Permission to Reprint: Permission to make digital or hard copies of part or all of a work published in Plant Physiology® is granted without fee for personal or classroom use provided that copies are not made or distributed for profit or commercial advantage and that copies bear the full citation and the following notice on the first page: “Copyright American Society of Plant Biologists.” For all other kinds of copying, request permission in writing from Nancy A. Winchester, Publications Director. ASPB headquarters.