

Biological Psychiatry

A Journal of Psychiatric Neuroscience and Therapeutics

Editor

John H. Krystal, M.D.
Yale University School of Medicine
VA Connecticut Healthcare System
West Haven, Connecticut

Deputy Editors

Cameron S. Carter, M.D.
Sacramento, California

Daniel Geschwind, M.D., Ph.D.
Los Angeles, California

Paul J. Harrison, D.M., FRCPsych
Oxford, United Kingdom

John S. March, M.D., M.P.H.
Durham, North Carolina

Eric J. Nestler, M.D., Ph.D.
New York, New York

Jon-Kar Zubieta, M.D., Ph.D.
Ann Arbor, Michigan

Editorial Committee

Dennis S. Charney, M.D.
New York, New York

David Goldman, M.D.
Rockville, Maryland

René Hen, Ph.D.
New York, New York

K. Ranga Rama Krishnan, M.D.
Durham, North Carolina

Ex Officio

Raquel E. Gur, M.D., Ph.D.

Husseini K. Manji, M.D., FRCPC

Peter Roy-Byrne, M.D.

David R. Rubinow, M.D.

Editorial Board

| | | | | |
|---|---|--|--|--|
| Schahram Akbarian, M.D., Ph.D. Worcester, MA | Klaus P. Ebmeier, M.D. Oxford, United Kingdom | George F. Koob, Ph.D. La Jolla, CA | Kathleen R. Merikangas, Ph.D. Bethesda, MD | David R. Rubinow, M.D. Chapel Hill, NC |
| Kazufumi Akiyama, M.D., Ph.D. Tochigi, Japan | Stephen V. Faraone, Ph.D. Syracuse, NY | K. Ranga Krishnan, M.D. Durham, NC | Andreas Meyer-Lindenberg, M.D., Ph.D. Mannheim, Germany | A. John Rush, M.D. Singapore |
| Stewart A. Anderson, M.D. New York, NY | Robert Freedman, M.D. Denver, CO | Andrew D. Krystal, M.D., M.S. Durham, NC | Emmanuel Mignot, M.D., Ph.D. Palo Alto, CA | Harold A. Sackeim, Ph.D. New York, NY |
| Nicholas Barden, Ph.D. Quebec, Canada | Karl J. Friston, M.B.B.S., M.A., MRCPsych London, United Kingdom | Ellen Leibenluft, M.D. Bethesda, MD | Károly Mimics, M.D. Nashville, TN | Gerard Sanacora, M.D., Ph.D. New Haven, CT |
| Karen F. Berman, M.D. Bethesda, MD | John D. E. Gabrieli, Ph.D. Cambridge, MA | Douglas F. Levinson, M.D. Palo Alto, CA | Lisa M. Monteggia, Ph.D. Dallas, TX | Alan F. Schatzberg, M.D. Stanford, CA |
| James Blair, Ph.D. Bethesda, MD | Joel Gelernter, M.D. West Haven, CT | Pat R. Levitt, Ph.D. Nashville, TN | Alexander Neumeister, M.D. West Haven, CT | Edward M. Scolnick, M.D. Cambridge, MA |
| David L. Braff, M.D. La Jolla, CA | Barbara Geller, M.D. St. Louis, MO | David A. Lewis, M.D. Pittsburgh, PA | Charles P. O'Brien, M.D., Ph.D. Philadelphia, PA | Yavin Shaham, Ph.D. Baltimore, MD |
| E. Sherwood Brown, M.D., Ph.D. Dallas, TX | David Goldman, M.D. Rockville, MD | Israel Liberzon, M.D. Ann Arbor, MI | Michael C. O'Donovan, Ph.D. Cardiff, United Kingdom | Lary J. Siever, M.D. Bronx, NY |
| Joseph R. Calabrese, M.D. Cleveland, OH | Elizabeth Gould, Ph.D. Princeton, NJ | Jeffrey A. Lieberman, M.D. New York, NY | Martin P. Paulus, M.D. La Jolla, CA | Trey Sunderland, M.D. Chevy Chase, MD |
| William A. Carlezon, Jr., Ph.D. Belmont, MA | Christian Grillon, Ph.D. Bethesda, MD | Barbara K. Lipska, Ph.D. Bethesda, MD | Mary L. Phillips, M.D. Pittsburgh, PA | Stephan F. Taylor, M.D. Ann Arbor, MI |
| Jonathan D. Cohen, M.D., Ph.D. Princeton, NJ | Ralitza Gueorguieva, Ph.D. New Haven, CT | Robert C. Malenka, M.D., Ph.D. Palo Alto, CA | Daniel S. Pine, M.D. Bethesda, MD | Laurence H. Tecott, M.D., Ph.D. San Francisco, CA |
| Edwin H. Cook, Jr., M.D. Chicago, IL | Ahmad R. Hariri, Ph.D. Pittsburgh, PA | Stephen R. Marder, M.D. Los Angeles, CA | Judith L. Rapoport, M.D. Bethesda, MD | Michael E. Thase, M.D. Pittsburgh, PA |
| Nick Craddock, M.D. Cardiff, United Kingdom | Markus A. Heilig, M.D., Ph.D. Bethesda, MD | Athina Markou, Ph.D. La Jolla, CA | Scott L. Rauch, M.D. Belmont, MA | Richard D. Todd, Ph.D., M.D. St. Louis, MO |
| Richard J. Davidson, Ph.D. Madison, WI | René Hen, Ph.D. New York, NY | Graeme F. Mason, Ph.D. New Haven, CT | Charles F. Reynolds, III, M.D. Pittsburgh, PA | Bruce I. Turetsky, M.D. Philadelphia, PA |
| Michael Davis, Ph.D. Atlanta, GA | Noboru Hiroi, Ph.D. Bronx, NY | Christopher J. McDougale, M.D. Indianapolis, IN | Trevor W. Robbins, Ph.D. Cambridge, United Kingdom | Myrna M. Weissman, Ph.D. New York, NY |
| Karl Deisseroth, M.D., Ph.D. Stanford, CA | Robert B. Innis, M.D., Ph.D. Bethesda, MD | Bruce S. McEwen, Ph.D. New York, NY | Jerrold F. Rosenbaum, M.D. Boston, MA | Rachel Yehuda, Ph.D. Bronx, NY |
| Robert Desimone, M.D. Cambridge, MA | Edward G. Jones, M.D., Ph.D. Davis, CA | Francis J. McMahon, M.D. Bethesda, MD | David R. Rosenberg, M.D. Detroit, MI | Takeo Yoshikawa, M.D., Ph.D. Saitama, Japan |
| Wayne C. Drevets, M.D. Bethesda, MD | John R. Kelsoe, M.D. La Jolla, CA | Michael J. Meaney, Ph.D. Quebec, Canada | Christopher A. Ross, M.D., Ph.D. Baltimore, MD | Elizabeth A. Young, M.D. Ann Arbor, MI |
| Ronald S. Duman, Ph.D. New Haven, CT | Joel E. Kleinman, M.D., Ph.D. Bethesda, MD | Herbert Y. Meltzer, M.D. Nashville, TN | Peter Roy-Byrne, M.D. Seattle, WA | Carlos A. Zarate, Jr., M.D. Bethesda, MD |

Editorial Office

Department of Psychiatry
The University of Texas
Southwestern Medical Center
6363 Forest Park Road, Suite 651
Dallas, Texas 75235-5435 USA

Telephone: (214) 648-0880

Fax: (214) 648-0881

e-mail: biol.psych@UTSouthwestern.edu

www.sobp.org/journal

Administrative Editor Carol A. Tamminga, M.D.

Managing Editor Rhiannon M. Bugno

Publication Coordinator Rosa Garces

Technical Editor Rosemary McCandless

Aims and Scope

This international rapid-publication journal is the official journal of the Society of Biological Psychiatry. It covers a broad range of topics in psychiatric neuroscience and therapeutics. Both basic and clinical contributions are encouraged from all disciplines and research areas relevant to the pathophysiology and treatment of major neuropsychiatric disorders. Novel results of original research, available in three formats of Archival, Research and Brief Reports, Commentaries and Correspondence judged to be of high impact to the field are published, particularly those addressing genetic and environmental risk factors, neural circuitry and neurochemistry, and important new therapeutic approaches. Concise Reviews and Editorials that focus on topics of current research and interest are also published rapidly.

Founding Editor

Joseph Wortis, M.D., 1969-1992

Editor Emeriti

Wagner H. Bridger, M.D., 1992-1997

Richard C. Josiassen, Ph.D., 1997

Dennis S. Charney, M.D., 1998-2006