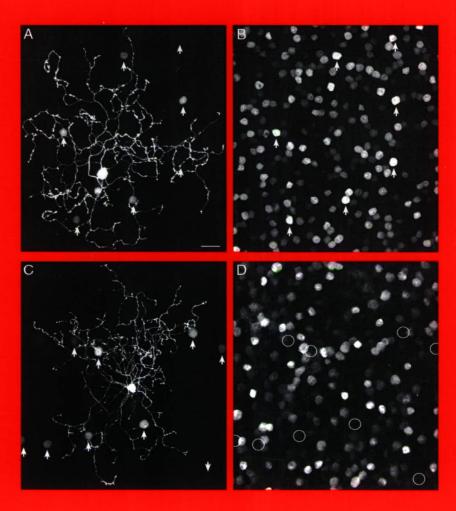
VILUME 14 NEUROSCIENCE NUMBER 3



An international journal for experimental and theoretical research



ISSN 0952-5238

V I S U A L NEUROSCIENCE

(ISSN 0952-5238)

EDITOR

PETER D. SPEAR University of Colorado at Boulder

ASSOCIATE EDITORS

Laura Frishman, College of Optometry, University of Houston, 4901 Calhoun Road, Houston, TX 77204-6052. E-mail: lfrishman@uh.edu Stewart Hendry, Zanvyl Krieger Inst., Johns Hopkins University, Baltimore, MD 21218. E-mail: HENDR_S@jhuvms.hcf.hju.edu Robert Marc, Dept. of Ophthalmology, University of Utah School of Medicine, 50 North Medical Drive, Salt Lake City, UT 84132. E-mail: robert.marc@hsc.utah.edu

John Maunsell, Division of Neuroscience, Baylor College of Medicine, I Baylor Plaza S-603, Houston, TX 77030. E-mail: maunsell@bcm.tmc.edu

EDITORIAL BOARD

Paola Bagnoli, University of Pisa, Italy Curtis L. Baker, Jr., McGill University David G. Birch, Retina Foundation, Dallas Dwight A. Burkhardt, University of Minnesota, Minneapolis Vivien Casagrande, Vanderbilt University School of Medicine Christine Curcio, University of Alabama at Birmingham Dennis M. Dacey, University of Washington Edgar (Ted) DeYoe, Medical College of Wisconsin Barbara L. Finlay, Cornell University, Ithaca David Fitzpatrick, Duke University, Ithaca David Fitzpatrick, Duke University Stewart H. Hendry, Johns Hopkins University Eric M. Lasater, University of Utah Barry B. Lee, Max-Planck-Institute for Biophysical Chemistry, Göttingen FORMER EDITOR (1992–1996) JAMES T. MCILWAIN, Brown University Steven C. Massey, University of Texas Health Center, Houston Ian G. Morgan, Australian National University Neal S. Peachey, Loyola University Medical Center Roberta Pourcho, Wayne State University School of Medicine Kathleen S. Rockland, University of Iowa Helen Sherk, University of Washington S. Murray Sherman, SUNY Stony Brook Malcolm M. Slaughter, State University of New York, Buffalo Keiji Tanaka, Riken Institute, Japan Margaret H. Tigges, Emory University Trichur R. Vidyasagar, Australian National University H.-J. Wagner, Eberhard-Karls-Universität, Tübingen Stephen Yazulla, State University of New York, Stony Brook FOUNDING EDITOR (1988–1991)

KATHERINE V. FITE, University of Massachusetts, Amherst

Visual Neuroscience (ISSN 0952-5238) publishes experimental and theoretical studies concerning the neural mechanisms of vision. Contributions may deal with molecular, cellular, and systems-level processes in both vertebrate and invertebrate species. Studies based exclusively on clinical, psychophysical, or behavioral data will be considered if they are related to neural mechanisms. Appropriate research areas include: photoreception and transduction, subcortical visual pathways, developmental processes, visually guided behavior, retinal structure and function, cortical mechanisms, oculomotor control, and substrates of perception.

Visual Neuroscience features full-length research papers, short communications, and review articles that critically examine topics related to the journal's principal focus.

Visual Neuroscience is indexed in Current Contents/Life Sciences; Science Citation Index; MEDLINE; Ocular Resources Review; Neuroscience Citation Index; and in the SCISEARCH and ISI/BIOMED databases.

Editorial Office: Peter D. Spear, Editor, Visual Neuroscience, University of Colorado at Boulder, Old Main 1-43, Campus Box 275, Boulder, CO 80309-0275, USA. Telephone (303) 492-7294. Fax: (303) 492-4944. E-mail: peter.spear@colorado.edu.

Publishing, Subscription and Advertising Offices: Cambridge University Press, 40 West 20th Street, New York, NY 10011, USA; and (outside the US and Canada) Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England.

Published Bimonthly. Annual institutional subscription rates: US \$425.00 in the US, Canada, and Mexico; UK £275.00 + VAT elsewhere. Individual rates: US \$152.00 in the US, Canada, and Mexico; UK £99.00 + VAT elsewhere. Single part rates: US \$73.00 in the US, Canada, and Mexico; UK £49.00 + VAT elsewhere. Special rates for students (with certification of status): US \$88.00 in the US, Canada, and Mexico; UK £69.00 + VAT elsewhere. 153.00 for members of the Society for Neuroscience, the Association for Research in Vision and Opthalmology, and the European Society for Neuroscience. Prices include postage and handling.

Information on Visual Neuroscience and all other Cambridge journals is available via http://www.cup.org/ in North America and in the UK via http://www.cup.cam.ac.uk/.

Copyright © 1997 Cambridge University Press

All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying or otherwise, without permission in writing from Cambridge University Press. *Photocopying information for users in the U.S.A.:* The Item-Fee Code for this publication (0952-5238/97 11.00 + .10) indicates that copying for internal or personal use beyond that permitted by Sec. 107 or 108 of the U.S. Copyright Law is authorized for users duly registered with the Copyright Clearance Center (CCC) Transaction Reporting Service, provided that the appropriate remittance of 11.00 + .10 per article is paid directly to: CCC, 222 Rosewood Drive, Danvers, MA 01923. Specific written permission must be obtained for all other copying.

Printed in the United States of America.

Periodicals postage paid at New York, NY, and additional mailing offices. Postmaster: send address changes in the US and Canada to: Visual Neuroscience, Journals Department, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573-4930.

Cover Diagram. Reconstructed confocal micrographs of two retinal wholemounts, showing the Neurobiotin-injected DAPI-3 cell (A,C) and the corresponding field of glycine-immunoreactive (B) or GABAimmunoreactive (D) amacrine somata. The seven somata that are tracer coupled to cell A are strongly imunoreactive for glycine, whereas the nine somata that are tracer coupled to cell C are not immunopositive for GABA. Scale bar = $20 \ \mu m$. See figure 9 on page 484 in the article by Layne L. Wright et al.