



Front cover image: The Fluid–Mosaic Membrane Model of biological membrane structure, as originally proposed in 1972. In this cross-sectional submicro- or nano-sized structural view of a cell membrane the solid bodies with stippled cut surfaces represent globular integral membrane proteins, which at intermediate range are randomly distributed in the plane of the membrane. At short range, some integral membrane proteins form specific integral protein complexes, as shown in the figure. The figure represents integral proteins in a completely fluid bilayer lipid phase, and it does not contain other membrane-associated structures or membrane domains of different compositions. From *Science* 175 (1972) 720–721 (see Nicolson, pp. 1451–1466, this issue).

Publication information: *Biochimica et Biophysica Acta (Biomembranes)* (ISSN 0005-2736). For 2014, Volume 1838 (12 issues) is scheduled for publication. Subscription prices are available upon request from the Publisher or from the Elsevier Customer Service Department nearest you or from this journal's website (<http://www.elsevier.com/locate/bbmem>). Further information is available on this journal and other Elsevier products through Elsevier's website (<http://www.elsevier.com>). Subscriptions are accepted on a prepaid basis only and are entered on a calendar year basis. Issues are sent by standard mail (surface within Europe, air delivery outside Europe). Priority rates are available upon request. Claims for missing issues should be made within six months of the date of dispatch. **Orders, claims, and journal inquiries:** Please contact the Elsevier Customer Service Department nearest you: **St. Louis:** Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA; phone: (877) 8397126 (toll free within the USA); (+1) (314) 4478878 (outside the USA); fax: (+1) (314) 4478077; e-mail: JournalCustomerService-usa@elsevier.com. **Oxford:** Elsevier Customer Service Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843434; fax: (+44) (1865) 843970; e-mail: JournalCustomerServiceUK@elsevier.com. **Tokyo:** Elsevier Customer Service Department, 4F Higashi-Azabu, 1-Chome Bldg, 1-9-15 Higashi-Azabu, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5037; fax: (+81) (3) 5561 5047; e-mail: JournalCustomerServiceJapan@elsevier.com. **Singapore:** Elsevier Customer Service Department, 3 Killiney Road, #08-01 Winsland House I, Singapore 239519; phone: (+65) 63490222; fax: (+65) 67331510; e-mail: JournalCustomerServiceAPAC@elsevier.com.

Author inquiries: For inquiries relating to the submission of articles (including electronic submission) please visit this journal's homepage at <http://www.elsevier.com/locate/bbmem>. For detailed instructions on the preparation of electronic artwork, please visit <http://www.elsevier.com/artworkinstructions>. Contact details for questions arising after acceptance of an article, especially those relating to proofs, will be provided by the publisher. You can track accepted articles at <http://www.elsevier.com/trackarticle>. You can also check our Author FAQs at <http://www.elsevier.com/authorFAQ> and/or contact Customer Support via <http://support.elsevier.com>.

Advertising information: If you are interested in advertising or other commercial opportunities please e-mail Commercialsales@elsevier.com and your inquiry will be passed to the correct person who will respond to you within 48 hours.

Illustration services: Elsevier's WebShop (<http://webshop.elsevier.com/illustrationservices>) offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

Printed by Polestar Wheatons Ltd., Exeter, United Kingdom

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper)

BIOMEMBRANES

Executive Editors: Yechiel Shai (*Rehovot, Israel*)
Hans J. Vogel (*Calgary, AB, Canada*)

Section Editors:

Francisco J. Barrantes (*Buenos Aires, Argentina*)
Eitan Bibi (*Rehovot, Israel*)
Robert Blumenthal (*Frederick, MD, USA*)
Robert Brasseur (*Gembloux, Belgium*)
Amit Chattopadhyay (*Hyderabad, India*)
Marco Colombini (*College Park, MD, USA*)
John H. Crowe (*Davis, CA, USA*)
William F. DeGrado (*San Francisco, CA, USA*)
Donald Engelman (*New Haven, CT, USA*)
Klaus Gawrisch (*Rockville, MD, USA*)
Astrid Gräslund (*Stockholm, Sweden*)
Huey W. Huang (*Houston, TX, USA*)
Leaf Huang (*Chapel Hill, NC, USA*)
Kenneth A. Jacobson (*Bethesda, MD, USA*)
Valerian E. Kagan (*Pittsburgh, PA, USA*)
Michael M. Kozlov (*Tel Aviv, Israel*)
Akihiro Kusumi (*Nagoya, Japan*)

Katsumi Matsuzaki (*Kyoto, Japan*)
Jesus Pérez-Gil (*Madrid, Spain*)
Manuel Prieto (*Lisbon, Portugal*)
Ayyalusamy Ramamoorthy (*Ann Arbor, MI, USA*)
Mark S.P. Sansom (*Oxford, United Kingdom*)
Suzanne Scarlata (*Stony Brook, NY, USA*)
Frances Separovic (*Melbourne, VIC, Australia*)
Kai Simons (*Dresden, Germany*)
J. Peter Slotte (*Turku, Finland*)
Lukas K. Tamm (*Charlottesville, VA, USA*)
Gunnar von Heijne (*Stockholm, Sweden*)
Tony Watts (*Oxford, United Kingdom*)
Stephen H. White (*Irvine, CA, USA*)
Christopher M. Yip (*Toronto, ON, Canada*)
Michael Zasloff (*Washington, D.C., USA*)

Keywords that indicate the expertise of each Editor can be found on the journal homepage at
<<http://www.elsevier.com/locate/bbmem>>.

Scientific Editors (*Elsevier, Cambridge, MA, USA*):

Shawnna BATTERY
Claudia Montefusco
Laura Wallins
Denise M. Wells (Manager)



ELSEVIER

Amsterdam – Boston – London – New York – Oxford – Paris –
Philadelphia – San Diego – St. Louis