

Preface

These 31 contributions constitute the written record of the symposium *In Search of a New Biomembrane Model* held under the aegis of the The Royal Danish Academy of Sciences and Letters on August 13-16, 1997, at the premises of the Academy.

The purpose of the Symposium was to bring together a diverse group of scientists, who work on biological membranes - but from different points of view. The aim was to synthesize current experimental and theoretical knowledge about the lipid bilayer component of cell membranes, and on this background explore whether the time had come to formulate a membrane model that is substantially refined compared to the Singer-Nicolson fluid-mosaic membrane model proposed 25 years ago. The contours of a new membrane model have been emerging over the last 5-10 years based on progress in many laboratories that approach the questions of membrane structure and function from a multitude of traditions and disciplines - ranging from cell biology and physiology, over traditional biochemistry and biophysics, to physical chemistry and theoretical physics.

The symposium was conceived during the annual meeting of the Biophysical Society in Baltimore in February 1996. The undersigned organizers found, during an inspired conversation over lunch, that the time was ripe for summarizing the status of the field of membranes and to organize a symposium, which would bring together key scientists in the field. It was anticipated that a symposium with this scope could have a significant impact on membrane science, in particular with respect to shaping both the physicists' and the biologists' intuition about the relationship(s) between the physical properties of lipid bilayers on the one hand and biological membranes and membrane function on the other hand.

The response from the invited speakers and participants was extraordinarily positive. This positive and open-minded attitude permeated the symposium, which took place in a most agreeable and constructive atmosphere. 32 invited talks were given and more than thirty posters were presented. Altogether, the symposium was attended by 85 speakers and participants.

The present volume contains the contributions of the invited speakers. This written account is not intended to be a conventional set of conference proceedings. Each speaker was requested to prepare, and deliver before the start of the symposium, a written contribution that should be no more than four pages long. The speakers were asked to provide a crisp, stimulating, and preferably provocative contribution, which should be a statement that described the speaker's current picture of the biological membrane based on his or hers own work and prejudices. The entire set of contributions was collected and sent to all speakers in time to be studied before the symposium. After the symposium, the speakers were encouraged to amend their contribution in light of the discussion during the symposium.

The contributions were submitted electronically. They were organized and typeset by Helle Hjorting, who also acted as Symposium secretary. Bernd Dammann, PhD designed the L^AT_EX-format for the typesetting and provided invaluable help in expediting the typesetting. Ove Broo Sørensen of the Technical University of Denmark and Bruce Paul Gaber at the Naval Research Laboratory produced the color membrane cartoons which are reproduced in the introductory chapter.

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New York 1997
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