

# THE SECOND UCLA CONFERENCE ON MEMBRANES

## PREFACE

As a result of the favorable reviews which the first UCLA-sponsored conference on membranes received from many of its participants, this second meeting was organized, on the assumption that the general area of membrane studies is broad enough to sustain an annual meeting at which specific subjects are explored in depth by invited speakers and active discussants. This year we attempted to broaden the spectrum of talks so as to include both topics which overlapped last year's sessions (to provide up-to-date follow-ups) and new areas which emphasized the functional aspects of different membrane systems.

Membrane fluidity, which seems to dominate current thinking of membrane structure, was discussed in terms of lipid mobility, phase transitions, and the relevance of both to lipid-protein interactions, and several papers along these lines are included here. Several speakers also attempted to explain how signals which act on the cell surface (such as hormonal stimuli) are transmitted across the membrane barrier in terms of what is known about protein-protein and glycoprotein-lipid interactions in membranes.

The role of the cAMP-adenyl cyclase system in cell metabolism has many complex aspects, and one of the most fascinating seems to be how and where cAMP affects membrane function. Some evidence that this mechanism may be involved in the regulation of membrane permeability or in the modification of growth properties of tumor cells was discussed in several papers, two of which are included here. In addition another report provides a provocative attempt to relate phase transition properties of membranes with the ability of hormones to activate the adenylyl cyclase system.

Interactions which take place between surface membranes of neighboring cells are clearly involved in many physiologic and pathologic reactions involving blood cells and blood vessel walls, but these subjects are rarely discussed at the usual membrane meetings. For this reason, several sessions were devoted to a discussion of surface charge and other properties of red cells, platelets, and endothelium, so that these models and their associated clinical problems could be brought to the attention of more basic oriented membranologists. Several of these papers are presented here.

Finally, one of the highlights of the meeting was the session devoted to a consideration of the chemistry and function of retinal rod membranes at which some new thoughts were presented concerning orientation of rhodopsin molecules in the rod outer segment membrane.

It is difficult to predict whether this attempt to blend basic investigations of membrane structure and chemistry with studies of more complex cellular interactions will result in mutual benefit to both parties. Those concerned with

studies of complex surface interactions in various diseases (such as in thrombosis and neoplasia) should certainly benefit from the information and the experimental techniques discussed at this meeting, while investigators concerned primarily with basic problems in membrane biology might also benefit from hearing about the problems of more complex cells some of which may be used as "model" systems to investigate specific aberrations in membrane function.

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