# Preface

The first edition of this textbook was published in 1985. However, research in the biochemistry and molecular biology of lipids and lipoproteins has experienced a remarkable rebirth within the past few years with the realization that lipids play important roles not only in membrane structure and the functioning of membrane proteins, but also in diseases such as heart disease, diabetes, obesity, stroke, cancer and neurological diseases. In addition, lipids are known to participate widely in signaling pathways which impact on all basic biological processes. We have therefore assembled the fourth edition of this textbook by taking account of these major advances in these fields.

The 4th edition has been written with two major objectives in mind. The first is to provide students and teachers with an advanced and up-to-date textbook covering the major areas in the fields of lipid, lipoprotein and membrane biochemistry and molecular biology. The chapters are written for students who have already taken an introductory course in biochemistry, who are familiar with the basic concepts and principles of biochemistry, and who have a general background in the area of lipid metabolism. This book should, therefore, provide the basis for an advanced course for students and teachers in the biochemistry of lipids, lipoproteins and membranes. The second objective of this book is to satisfy the need for a general reference and review book for scientists studying lipids, lipoproteins and membranes. Our goal was to provide a clear summary of these research areas for scientists presently working in, or about to enter, these and related fields. This book remains unique in that it is not a collection of exhaustive reviews on the various topics, but rather is a current, readable and critical summary of these areas of research. This book should allow scientists to become familiar with recent discoveries related to their own research interests, and should also help clinical researchers and medical students keep abreast of developments in basic science that are important for clinical advances in the future.

All of the chapters have been extensively revised since the third edition appeared in 1996. New chapters have been added on lipid modifications of proteins, bile acids, lipoprotein structure, and the relation between lipids and atherosclerosis. We have not attempted to describe in detail the structure and function of biological membranes or the mechanism of protein assembly into membranes since these topics are covered already in a number of excellent books. The first chapter, however, contains a summary of the principles of membrane structure as a basis for the subsequent chapters.

Excellent up-to-date reviews are available on all the topics included in this book and many of these reviews are cited in the relevant chapters. We have limited the number of references cited at the end of each chapter and have emphasized review articles. In addition, the primary literature is cited in the body of the text by providing the name of

one author and the year in which the work was published. Using this system, readers will readily be able to find the original citation via computer searching.

The editors and contributors assume full responsibility of the content of the various chapters and we would be pleased to receive comments and suggestions for future editions of this book.

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