

Preface

We have written *DNA Repair and Mutagenesis* to provide the scientific community with a thorough and state-of-the-art treatment of cellular responses to DNA damage. The general field of DNA repair has now become firmly integrated into numerous other areas of scientific inquiry, including the molecular basis of human health and disease. We therefore intend this book for students and scientists working in carcinogenesis, recombination, transcription and gene regulation, DNA replication, environmental studies, and biological evolution, in addition to those more directly involved in DNA repair and mutagenesis.

The first edition of this book was called *DNA Repair* and was published in 1985 by W. H. Freeman & Co. This new edition, *DNA Repair and Mutagenesis*, has been extensively revised and updated but does contain significant blocks of material essentially adapted verbatim from the first edition. We want to acknowledge generous permission from W. H. Freeman & Co. to reuse material from *DNA Repair*. Certainly a major feature of this new edition is the comprehensive coverage of mutagenesis and other aspects of DNA damage tolerance in five new chapters. Coverage of mutagenesis was not included in the 1985 edition, and we are pleased to be able to present this topic in a more complete text. We hope too that the revised treatment of DNA repair mechanisms and processes does appropriate justice to the enormous strides that this exciting field has witnessed in the decade since the writing of *DNA Repair*.

In very recent times, progress in the DNA repair and mutagenesis fields has been particularly rapid, and we feel compelled to apologize in anticipation for the inescapable fact that, the minimal time lapse between completion of the manuscript and the emergence of the published book notwithstanding, the literature may have already eclipsed some aspects of its content. We hope that such eclipses are mainly in matters of detail and have not rendered any fundamental concepts inaccurate or obsolete. To the extent that the book is current at the time of publication, we owe a tremendous debt of gratitude to colleagues around the world,

too numerous to mention by name, who have kept us well stocked with reprints and in many cases were generous enough to share information with us prior to its entry into the public domain. The book is well referenced through 1993 and contains numerous citations to work published in 1994, and even 1995. We are also enormously grateful to the individuals who provided us with original photographs and other illustrative materials.

We have continued the theme, developed in *DNA Repair*, of attempting to present the field of cellular responses to DNA damage with a historical perspective. We have refrained wherever possible from unadulterated dogma. While we are conscious of having presented viewpoints that are controversial and even conflicting, we hope that readers are challenged by such controversy and are not unduly confused or frustrated by different points of view or by our reluctance to give the definitive word, as it were. We also hope that readers, particularly students, will discover that this text is as much about how science advances and how ideas develop and attain full maturity as it is about DNA repair and mutagenesis itself. In the same historical vein, we realize that the names of many proteins and genes have changed over the years, sometimes for good reasons as more has been learned about them. In some instances we have elected to use current nomenclature, whereas in others we have retained the original nomenclature in deference to historic recognition and value. We apologize to those who might be offended by such license.

No work of this sort can be brought to fruition without special assistance. We owe an enormous debt of gratitude to many individuals for the help they have provided at every level of this labor. First and foremost, we have enjoyed scientific dialogue with an outstanding cadre of professional colleagues who have given unstintingly of their time, energy, and creative talents to review and discuss every chapter with us. In this respect we owe special and particular thanks to Jane and Lee Bardwell, Rick Bockrath, Vilhelm Bohr, Dirk Bootsma, Bryn Bridges, Tony Carr, James Cleaver, Priscilla Cooper, Rick Cunningham, Dick D'Ari, Pat Foster, Arthur Grollman, Larry Grossman, Jim Haber, Phil Hanawalt, Karla Henning, Jan Hoeijmakers, Peter Karran, Hannah Klein, Richard Kolodner, Tom Kunkel, Chris Lawrence, Alan Lehmann, Mike Lieber, Tomas Lindahl, John Little, Paul Lohman, Stephen Meyn, Kenneth Minton, Paul Modrich, Ethel Moustacchi, Eric Radany, Miroslav Radman, Hans Rahmsdorf, Leona Samson, Aziz Sancar, Gwen Sancar, Alain Sarasin, Roger Schultz, Mick Smerdon, Larry Thompson, Alan Tomkinson, Ben Van Houten, Bert van Zeeland, Harry Vrieling, Susan Wallace, Zhigang Wang, Felicity Watts, Steve West, Evelyn Witkin, Rick Wood, and Margaret Zdzienicka. We thank them all for their thoughtful criticisms, comments, and suggestions, which contributed immeasurably to the currency and the accuracy of the topics treated, not to mention our peace of mind concerning these issues. Particular thanks are due to Ken Minton and Karla Henning, who labored over much of the entire text with the most attentive detail. Ken Minton, Rick Wood, Susan Wallace, Roger Schultz, and Alan Tomkinson went so far as to rewrite some sections, for which we are especially grateful. If we have left anyone out, please forgive the transgression. Final responsibility rests with us, and we apologize for any inaccuracies and omissions that may remain at the time of publication. Readers are encouraged to inform us of such as they are discovered, for no other reason than the fact that we may be masochistic enough to contemplate revising this work some time in the future.

We acknowledge the outstanding talent, dedication, and commitment of Marty Burgin and her staff in the Medical Illustration Services at The University of Texas Southwestern Medical Center. This book is as much hers as it is ours. We are also enormously grateful to Patrick Fitzgerald of ASM Press for pursuing us as vigorously as he did to publish this work and for providing the strong sense of his personal commitment and that of his staff throughout the final stages. The extraordinary job of editing of the manuscript by Yvonne Strong merits special mention, as does Patrick Fitzgerald's recognition of the value of complete reference citations, despite the significant added expense of publishing these. This tou-

speaks highly of his interest in serving the academic community through ASM Press. Thanks are also due to Susan Birch, Senior Production Editor at ASM Press; to Susan Schmidler for the cover and book design; to Terese Winslow for the color illustration on the cover; and to Mary Boss, Marcie Abell, and the staff at Impressions for their outstanding coordination of the editing, typesetting, and proofing of the manuscript.

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