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# Retinal Disorders

## Genetic Approaches to Diagnosis and Treatment

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## Preface

**B**ECAUSE THEY AFFLICT SO SPECIALIZED A TISSUE, retinal diseases have been approached late by research using molecular genetic techniques. The baffling complexity of the eye, however, has made the recent discoveries these studies have yielded even more exciting. Sometimes these seem to have come out of the blue, unanticipated by more traditional methodologies. In this book, we provide a survey of the new field that has emerged. Our first goal has been simply to collect essays describing the cutting edge of work on retinal disorders. But we have also sought to go beyond the traditional approaches usually taken by such collections and tried to present work that also reaches those working scientists at the margins of the field, including postdocs and faculty working more generally in neurobiology or cell biology, residents, and investigators from related scientific areas.

To accomplish this, we first asked colleagues with a broad general perspective to write chapters that survey the various areas of the field. These chapters introduce the first three sections of the volume and have a broader scope than the others. The authors were charged with introducing the material to readers who are not trained in ophthalmology—basic scientists and physicians from other specialties. The subsequent chapters in each section are more focused, covering specific areas in greater detail.

It will be clear to readers that the application of new molecular approaches is bringing new life to the pathobiology of retinal disease. Perhaps most gratifyingly, they have led directly to potential new treatments for conditions affecting the retina—most notably various forms of gene therapy—and these are covered in other chapters within the book. For a variety of reasons, implementation of these therapeutic approaches is progressing deliberately; but they have enormous promise because of their broad applicability. Here we have tried to compile, as completely as possible, a handbook of the approaches currently in play.

We thank Richard Sever, the initiator of this project at Cold Spring Harbor Laboratory Press, and especially the patient and ever-cheerful Barbara Acosta, who was its main shepherd. Anne Goodwin and Wendy Chao labored long and well to improve the readability, style, and accessibility of the chapters. The production staff at Cold Spring Harbor Laboratory Press labored to make all the chapters look nice, as they emphatically do. Finally, we thank the MEE Fluorescein Laboratory, Haobing Wang, and Michael Becker for creating the cover image.

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