

Preface

This book is the product of research spanning two decades. In the 1980s I had been investigating the history of cytology in the nineteenth century and biochemistry in the early twentieth century when I responded to an announcement from the American Society for Cell Biology of a fellowship for support of research on the history of cell biology. With their financial support in 1986 and 1987 I began to examine the creation of modern cell biology in the decades after World War II. I am enormously grateful not only for the fellowship funding but also for the invaluable assistance of individuals associated with ASCB. In particular, I thank Robert Trelstad, then Secretary of ASCB, who invited me to society and executive council meetings, gave me encouragement, and provided entrée to senior members of the society. A number of the founders of modern cell biology were still active in the society and I had the opportunity to meet and interview them regarding their own contributions to cell biology and their recollections of the early days of this field. I also had access to the archives of the society, which were then housed at the Society offices. (They have since been transferred to the University of Maryland, Baltimore County.) I have relied heavily on this material in analyzing in Chapter 7 the history of the American Society for Cell Biology.

In the early 1990s I received additional support from the National Endowment for the Humanities. I am most appreciative of the support from NEH as well as from the National Science Foundation, which funded my earlier work on the history of biochemistry. Among other activities, this support enabled me to interview many additional pioneer cell biologists.

I particularly wish to thank the following scientists for taking time to meet with me and provide their reflections and insights on the history of cell biology: Max Alfert, Vincent Allfrey, Helmut Beinert, Britton Chance, Christian de Duve, Morgan Harris, Daniel Mazia, Montrose Moses, George Palade, George Pappas, Keith Porter, Van Potter, Hans Ris, Birgit Satir,

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Peter Satir, Philip Siekevitz, Paul Stumpf, and Hewson Swift. I am also deeply appreciative for the guidance Pamela Henson provided me on the techniques for doing aural history with scientists.

The NEH grant also enabled me to carry out research at the Rockefeller Archive Center (RAC). This center holds records of laboratories at the Rockefeller Institute for Medical Research, as well as the archives of the Rockefeller Foundation, which provided funding for many of the early cell biologists. Especially useful for Chapters 5 and 6 were the Annual Reports submitted each April by every laboratory at the Rockefeller Institute. These were incorporated into the *Scientific Reports of the Laboratories to the Board of Scientific Directors* (RG 439, Rockefeller University Archives, RAC). I will refer to these reports throughout the text as simply the *Annual Report* for a laboratory.

While working on this project I have been associated with the philosophy departments of three universities: Georgia State University, Washington University in St. Louis, and the University of California, San Diego. Each has provided invaluable support for which I am most grateful. I particularly appreciate the contributions of several of my graduate students. In particular, at Washington University Jennifer Mundale transcribed many of the oral interviews and engaged in numerous fruitful discussions with me about this and related projects. More recently, at UCSD I have benefited from the ideas and insights of Andrew Hamilton, who provided detailed comments on Chapter 2, and of Cory Wright. I have also benefited from interactions with graduate students who participated in my seminars on mechanism at both Washington University (presented jointly with Carl Craver) and UCSD.

My spouse and frequent collaborator, Adele Abrahamsen, has made an enormous contribution to this project. I thank her for extremely valuable comments on the entire manuscript. I have benefited from our many productive discussions of mechanism and the history of research on cells. As well, various parts of the text draw upon papers we coauthored.

A key component of my analysis is that the knowledge developed in cell biology consisted of the discovery of various cell mechanisms. My understanding of what a mechanism is and how scientists investigate them has benefited from many discussions with Robert Richardson, my coauthor on *Discovering Complexity*, as well as Carl Craver, Lindley Darden, Stuart Glennan, and William Wimsatt.

Finally, I thank Michael Ruse, who initially invited me to submit a proposal for this book to Cambridge University Press and then showed admirable patience while I produced it.