Preface

In 1993 Lonnie Russell and Michael Griswold edited a book titled *The Sertoli Cell*, which has served as a major resource for investigators interested in male reproduction. It is appropriate that now—more than 10 years later—the advances in this field are summarized in this new text. It is also appropriate that this volume is a tribute to the many scientific contributions made by Professor Lonnie Russell of Southern Illinois University. Lonnie died in a drowning accident in Brazil in 2001 at the height of a successful research career in reproductive physiology. Lonnie used his expertise in anatomy to help define the intricacies of spermatogenesis with a focus on the function of Sertoli cells. He was first an anatomist and physiologist, and he used those tools to produce an enormous amount of information on the testis. His laboratory published the first and only visualization of intact Sertoli cells reconstructed from serial sections in the electron microscope. These papers allowed those of us in the field a fundamental visualization of the beauty and complexity of the Sertoli cells. It is essential for the molecular biologists and biochemists to place their findings in the context of the complex biology of the testis. Part of the goal of this current text is to make that process easier.

The editors of this text (the Mikes) have a combined nearly 50 years of experience focused on exposing the secrets of the Sertoli cells. Both of us have spent many years reporting on specific gene products of Sertoli cells and over the combined 50 years we have thoroughly investigated perhaps a dozen gene products. The biggest change in the field has been the use of expression arrays and gene knockout technologies that allow the monitoring of thousands of expressed sequences and the more laborious testing of their physiological functions. In *The Sertoli Cell*, Russell and Griswold reported that nearly 300 papers were published in 1990 that somehow involved these cells. Since the millennium there have been nearly twice that number of papers per year, suggesting these new technologies and other factors have stimulated an increased interest in the Sertoli cell.

The current text attempts to present a systems biology approach to an understanding of the Sertoli cell. A combination of molecular, cellular, and physiological aspects of Sertoli cells are presented. Due to the essential role Sertoli cells play in the process of spermatogenesis, topics such as spermatogonial stem cells and germ cell transplantation are also presented. An attempt was made to identify areas that have had significant advances over the past decade, as well as suggest important areas for the future analysis of Sertoli cell biology. Information is presented to provide the novice with basic information on the topics as well as to provide experts with new details that have advanced the field. We hope you find *Sertoli Cell Biology* a useful reference and that it provides insight for an understanding of the Sertoli cell and male reproduction.

ACKNOWLEDGMENTS

The chapters provided and hard work of the contributing authors is what made this book possible. The editors thank Ms. Mica Haley, Ms. Jacqueline Garrett and the staff at Elsevier/Academic Press for their assistance and patience. We thank Dr. Rex Hess and acknowledge his interest in the book, particularly in the design of the cover. The cover includes an electron micrograph of a Sertoli cell from Dr. Lonnie Russell and his three-dimensional reconstruction of the cell, as well as a light micrograph of the Sertoli cell provided by Dr. Hess. This book would not have been possible without the editorial and administrative support of Ms. Jill Griffin. Jill's dedication and efficiency were critical for the book and indispensable to the editors.