

Preface

The original series of *Methods in Cell Biology* (edited by Conly Rieder) published in 1999 dedicated to mitosis and meiosis comprised 22 chapters. Of these only a handful were exclusively dedicated to microscopy. After almost 20 years, 40 chapters were not enough to compile all major developments that research in mitosis and meiosis has witnessed. There was also an explosion of microscopy methods that culminated recently with the discovery and implementation of superresolution techniques that allowed us to see beyond the diffraction limit of light. For these reasons, and instead of separating the two fundamental processes of cell division in somatic cells (mitosis) and gametes (meiosis), we decided to dedicate an entire volume to the most recent advances in microscopy and powerful micromanipulation techniques that have and will continue to have a strong impact on our understanding of the intricacies behind these fundamental processes.

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