

## Next Generation Sequencing Technologies and Challenges in Sequence Assembly (SpringerBriefs in Systems Biology)

Sara El-Metwally M.Sc, Osama M. Ouda, Mohamed Helmy



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The introduction of Next Generation Sequencing (NGS) technologies resulted in a major transformation in the way scientists extract genetic information from biological systems, revealing limitless insight about the genome, transcriptome and epigenome of any species. However, with NGS, came its own challenges that require continuous development in the sequencing technologies and bioinformatics analysis of the resultant raw data and assembly of the full length genome and transcriptome. Such developments lead to outstanding improvements of the performance and coverage of sequencing and improved quality for the assembled sequences, nevertheless, challenges such as sequencing errors, expensive processing and memory usage for assembly and sequencer specific errors remains major challenges in the field.

This book aims to provide brief overviews the NGS field with special focus on the challenges facing the NGS field, including information on different experimental platforms, assembly algorithms and software tools, assembly error correction approaches and the correlated challenges.



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