

1. Record Nr.	UNINA9910963123103321
Autore	Holmes Frederic Lawrence
Titolo	Meselson, Stahl, and the replication of DNA : a history of "the most beautiful experiment in biology" // Frederic Lawrence Holmes
Pubbl/distr/stampa	New Haven, CT, : Yale University Press, 2001
ISBN	9786611730451 9781281730459 1281730459 9780300129663 0300129661
Edizione	[1st ed.]
Descrizione fisica	1 online resource (1 online resource (xii, 503 p.)) : ill
Disciplina	572.8/6
Soggetti	DNA replication - Experiments - History Molecular biology - Experiments - History
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (p. [449]-496) and index.
Nota di contenuto	Machine generated contents note: Chapter One The Replication Problem 11 -- Chapter Two Meselson and Stahl 49 -- Chapter Three Twists and Turns 75 -- Chapter Four Crossing Fields: Chemical Bonds to Biological Mutants 116 -- Chapter Five Dense Solutions 157 -- Chapter Six The Big Machine 183 -- Chapter Seven Working at High Speed 215 -- Chapter Eight The Unseen Band 272 -- Chapter Nine One Discovery, Three Stories 303 -- Chapter Ten An Extremely Beautiful Experiment 319 -- Chapter Eleven Centrifugal Forces 352 -- Chapter Twelve The Subunits of Semiconservative Replication 388 -- Chapter Thirteen Images of an Experiment 412 -- Chapter Fourteen Afterword 435.
Sommario/riassunto	In 1957 two young scientists, Matthew Meselson and Frank Stahl, produced a landmark experiment confirming that DNA replicates as predicted by the double helix structure Watson and Crick had recently proposed. It also gained immediate renown as a "most beautiful" experiment whose beauty was tied to its simplicity. Yet the investigative path that led to the experiment was anything but simple, Frederic L. Holmes shows in this masterful account of Meselson and Stahl's quest. This book vividly reconstructs the complex route that led

to the Meselson-Stahl experiment and provides an inside view of day-to-day scientific research--its unpredictability, excitement, intellectual challenge, and serendipitous windfalls, as well as its frustrations, unexpected diversions away from original plans, and chronic uncertainty. Holmes uses research logs, experimental films, correspondence, and interviews with the participants to record the history of Meselson and Stahl's research, from their first thinking about the problem through the publication of their dramatic results. Holmes also reviews the scientific community's reception of the experiment, the experiment's influence on later investigations, and the reasons for its reputation as an exceptionally beautiful experiment.
