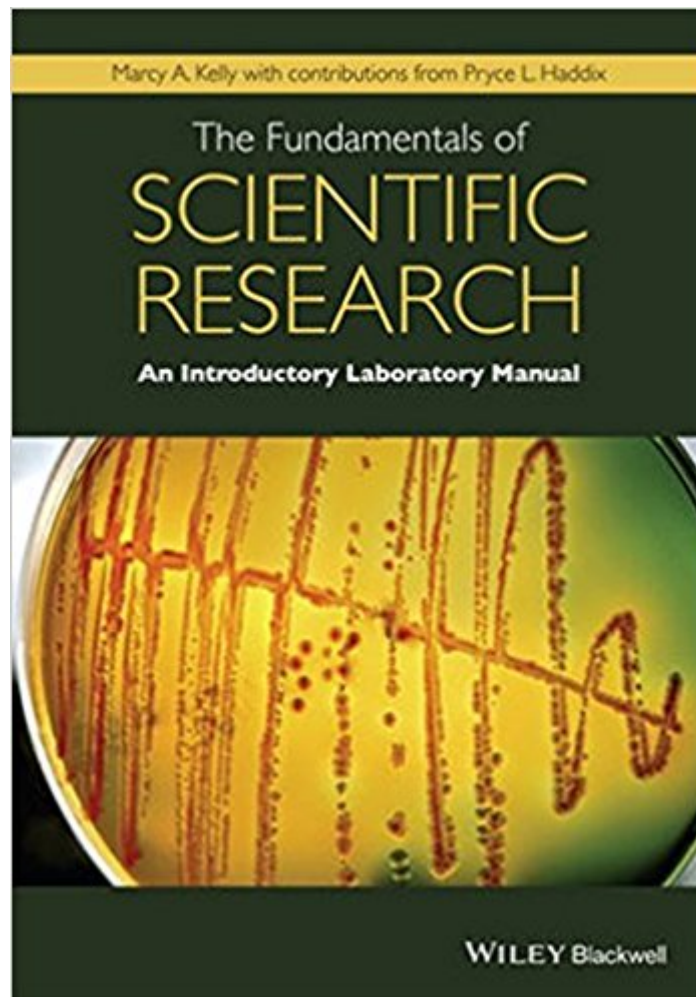


The book was found

The Fundamentals Of Scientific Research: An Introductory Laboratory Manual



Synopsis

The Fundamentals of Scientific Research: An Introductory Laboratory Manual is a laboratory manual geared towards first semester undergraduates enrolled in general biology courses focusing on cell biology. This laboratory curriculum centers on studying a single organism throughout the entire semester – *Serratia marcescens*, or *S. marcescens*, a bacterium unique in its production of the red pigment prodigiosin. The manual separates the laboratory course into two separate modules. The first module familiarizes students with the organism and lab equipment by performing growth curves, Lowry protein assays, quantifying prodigiosin and ATP production, and by performing complementation studies to understand the biochemical pathway responsible for prodigiosin production. Students learn to use Microsoft Excel to prepare and present data in graphical format, and how to calculate their data into meaningful numbers that can be compared across experiments. The second module requires that the students employ UV mutagenesis to generate hyper-pigmented mutants of *S. marcescens* for further characterization. Students use experimental data and protocols learned in the first module to help them develop their own hypotheses, experimental protocols, and to analyze their own data. Before each lab, students are required to answer questions designed to probe their understanding of required pre-laboratory reading materials. Questions also guide the students through the development of hypotheses and predictions. Following each laboratory, students then answer a series of post-laboratory questions to guide them through the presentation and analysis of their data, and how to place their data into the context of primary literature. Students are also asked to review their initial hypotheses and predictions to determine if their conclusions are supportive. A formal laboratory report is also to be completed after each module, in a format similar to that of primary scientific literature. The Fundamentals of Scientific Research: An Introductory Laboratory Manual is an invaluable resource to undergraduates majoring in the life sciences.

Book Information

Paperback: 208 pages

Publisher: Wiley-Blackwell; 1 edition (September 15, 2015)

Language: English

ISBN-10: 111886784X

ISBN-13: 978-1118867846

Product Dimensions: 6.7 x 0.6 x 9.7 inches

Shipping Weight: 15.2 ounces (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (1 customer review)

Best Sellers Rank: #780,060 in Books (See Top 100 in Books) #579 inÂ Books > Science & Math
> Biological Sciences > Biology > Molecular Biology #617 inÂ Books > Science & Math >
Experiments, Instruments & Measurement > Methodology & Statistics #2424 inÂ Books >
Textbooks > Science & Mathematics > Biology & Life Sciences > Biology

Customer Reviews

Great book!

[Download to continue reading...](#)

The Fundamentals of Scientific Research: An Introductory Laboratory Manual Mosby's Manual of Diagnostic and Laboratory Tests, 4e (Mosby's Manual of Diagnostic & Laboratory Tests) Mosby's Manual of Diagnostic and Laboratory Tests (Mosby's Manual of Diagnostic & Laboratory Tests) Laboratory Manual for Introductory Circuit Analysis Laboratory Manual for Introductory Geology (Third Edition) Laboratory Manual for Stern's Introductory Plant Biology Scientific American, September 1969, Acoustical Holography, 1969, Scientific American, Volume 221, Number 4. Forensic Science: An Introduction to Scientific and Investigative Techniques, Third Edition (Forensic Science: An Introduction to Scientific & Investigative Techniques) Scientific Literacy and the Myth of the Scientific Method (Illini Books) The Scientific Apparatus of Nicholas Callan and Other Historic Instruments (Catalogues of historic scientific instruments in Irish collections) The Scientific Endeavor: A Primer on Scientific Principles and Practice Maternity Nursing: An Introductory Text, 11e (MATERNITY NURSINGAN INTRODUCTORY TEXT (BURROUGHS)) 11th (Eleventh) Edition Fundamentals of Nursing: Human Health and Function (Craven, Fundamentals of Nursing: Human Health and Functionraven, Fundamentals of Nurs) Laboratory and Clinical Dental Materials (Dental Laboratory Technology Manuals) Mosby's Diagnostic and Laboratory Test Reference, 11e (Mosby's Diagnostic & Laboratory Test Reference) Laboratory Tests and Diagnostic Procedures with Nursing Diagnoses (8th Edition) (Laboratory & Diagnostic Tests with Nursing Diagnoses (Corbet) The Laboratory Rat (American College of Laboratory Animal Medicine) Veterinary Laboratory Medicine, An Issue of Clinics in Laboratory Medicine, 1e (The Clinics: Internal Medicine) A Microscale Approach to Organic Laboratory Techniques (Brooks/Cole Laboratory Series for Organic Chemistry) Introduction to Organic Laboratory Techniques: A Microscale Approach (Brooks/Cole Laboratory Series for Organic Chemistry)

[Dmca](#)