

EXPERIMENTAL DESIGN FOR BIOLOGISTS

The effective design of scientific experiments is critical to success, yet graduate students receive very little formal training in how to do it. Based on a well-received course taught by the author, *Experimental Design for Biologists* fills this gap.

Experimental Design for Biologists explains how to establish the framework for an experimental project, how to set up a system, design experiments within that system, and determine and use the correct set of controls. Separate chapters are devoted to negative controls, positive controls, and other categories of controls that are perhaps less recognized, such as "assumption controls," and "experimentalist controls." Furthermore, there are sections on establishing the experimental system, which include performing critical "system controls."

Should all experimental plans be hypothesis-driven? Is a question/answer approach more appropriate? What was the hypothesis behind the Human Genome Project? What color is the sky? How does one get to Carnegie Hall? The answers to these kinds of questions can be found in *Experimental Design for Biologists*. Written in an engaging manner, the book provides compelling lessons in framing an experimental question, establishing a validated system to answer the question, and deriving verifiable models from experimental data. *Experimental Design for Biologists* is an essential source of theory and practical guidance in designing a research plan.



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