Life Sciences

Handbook of Laboratory Animal Science
Essential Principles and Practices

Laboratory animal studies have provided most of our current knowledge of human physiology, microbiology, immunology, pharmacology, and pathology. From studies of genetics in fruit flies to studies of cellular processes in genetically modified mice to recent dramatic developments in genetics, translational research, and personalized medicines, biomedical research involving animals remains absolutely essential for the advancement of the medical, veterinary, agricultural, and biological sciences, and all rely on access to high-quality laboratory animals as models for humans.

Rooted in the principle that good science can only be performed in environments that promote good animal welfare, this third edition of the bestselling **Handbook of Laboratory Animal Science, Vol. 1: Essential Principles and Practices** emphasizes the importance of implementing the three R's: *replacing* live animals with alternative methods, *reducing* the number of animals used, and *refining* techniques to minimize animal discomfort, and integrates these humane principles into almost every chapter.

Relevant to virtually all areas of laboratory science and forming the cornerstone of laboratory animal science, each individual chapter focuses on an important sub-discipline of laboratory animal science including humane laws and guidelines; non-surgical, surgical, microsurgical, and post-mortem procedures; genetic modification; nutrition, feeding, and environmental factors; experiment design and alternative methods; and analgesia, anesthesia, and euthanasia. Each chapter can be read in series or as a standalone text.

A truly international effort from world-renowned contributors, **Handbook of Laboratory Animal Science, Vol. 1: Essential Principles and Practices, Third Edition** is useful as a textbook in laboratory animal science courses for postgraduate and undergraduate students, as a handbook for scientists who work with animals in their research, and for university veterinarians, regulators, and other specialists in laboratory animal science.

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