



*Alternatives to Animal Testing*, written by leading experts in the field, discusses the issues involved and approaches that can be taken. Topics include; the safety evaluation of chemicals, international validation and barriers to the validation of alternative tests, in vitro testing for endocrine disruptors, intelligent approaches to safety evaluation of chemicals, alternative tests and the regulatory framework. The book provides an up-to-date discussion of the current state of development of alternatives to animal testing and is ideal for professionals and academics in the field. It would also be of use for graduate students wishing to pursue a career in the pharmaceutical and cosmetic industries.

*Science, Medicine, and Animals* explains the role that animals play in biomedical research and the ways in which scientists, governments, and citizens have tried to balance the experimental use of animals with a concern for all living creatures. An accompanying *Teacher’s Guide* is available to help teachers of middle and high school students use *Science, Medicine, and Animals in the classroom*. As students examine the issues in *Science, Medicine, and Animals*, they will gain a greater understanding of the goals of biomedical research and the real-world practice of the scientific method in general. *Science, Medicine, and Animals and the Teacher’s Guide* were written by the Institute for Laboratory Animal Research and published by the National Research Council of the National Academies. The report was reviewed by a committee made up of experts and scholars with diverse perspectives, including members of the U.S. Department of Agriculture, National Institutes of Health, the Humane Society of the United States, and the American Society for the Prevention of Cruelty to Animals. The *Teacher’s Guide* was reviewed by members of the National Academies’ Teacher Associates Network. *Science, Medicine, and Animals* is recommended by the National Science Teacher’s Association NSTA Recommends.

This open access book presents recent advances in the pure sciences that are of significance in the quest for alternatives to the use of animals in research and describes a variety of practical applications of the three key guiding principles for the more ethical use of animals in experiments – replacement, reduction, and refinement, collectively known as the 3Rs. Important examples from across the world of implementation of the 3Rs in the testing of cosmetics, chemicals, pesticides, and biologics, including vaccines, are described, with additional information on relevant regulations. The coverage also encompasses emerging approaches to alternative tests and the 3Rs. The book is based on the most informative contributions delivered at the Asian Congress 2016 on Alternatives and Animal Use in the Life Sciences. It will be of value for those working in R&D, for graduate students, and for educators in various fields, including the pharmaceutical and cosmetic sciences, pharmacology, toxicology, and animal welfare. The free, open access distribution of *Alternatives to Animal Testing* is enabled by the Creative Commons Attribution license in International version 4: CC BY 4.0.

The ethical treatment of animals has become an issue of serious moral concern. Many people are challenging long-held assumptions about animals and raising questions about their status and treatment. What is the relationship between humans and animals? Do animals have moral standing? Do we have direct or indirect duties to animals? Does human benefit always outweigh animal suffering? The use of animals for experimentation raises all of these questions in a particularly insistent way. Donna Yarri gives an overview of the current state of the discussion, and presents an argument for significantly restricted animal experimentation. Pointing to the similarities between humans and animals, she argues that the actual differences are differences of degree rather than kind. Animal cognition and animal sentiency together are the basis for the claim that experimental animals do have rights. Examining arguments in the disciplines of ethology, philosophy, science, and theology, Yarri makes a case for placing substantial restrictions on animal experimentation. Grounding her examination in Christian theology, she formulates a more humane approach to animal experimentation. She concludes with a concrete burden-benefit analysis that can serve as the foundation for informed decision-making. *The Ethics of Animal Experimentation* serves as both a handbook of animal rights theory and a practical guide to navigating the complexities of animal experimentation. As animal experimentation features in an increasing number of scientific endeavors, it is an ethical issue that requires our immediate attention. Yarri’s unique contribution forges a path toward an ethical practice of animal experimentation.

*The Principles of Humane Experimental Technique*

Summary

A Reference Handbook

A Critical Evaluation of Animal Research

Should Animal Testing Be Banned?

The Ethics of Animal Experimentation

Reviewing the topic from antiquity to the present day, this book examines the debate over the use of animals in research in a fair and balanced way.

Essays cover a variety of viewpoints on the subject of animal experimentation, including whether animals have rights, is animal testing becoming more humane, and if chemical testing on animals saves lives.

In this title, questions such as is it ever justified to use an animal to develop new drugs, household products or cosmetics and is it acceptable for scientists to test the products on animals to ensure the safety of the people using them are explored.

Animal Experimentation: Working Towards a Paradigm Change critically appraises current animal use in science and discusses ways in which we can contribute to a paradigm change towards human-biology based approaches.

An Evolutionary and Ethical Perspective

Alternative Technologies to Animal Testing

Animal Experimentation

Methods of Animal Experimentation

Issues in Responsible Animal Experimentation

Alternatives to animal use in research, testing, and education.

Examines both sides of the debate on animal experimentation and testing, as well as possible alternatives to such experimentation.

Where there is no alternative to the use of animals in biomedical research, it is important that experiments are well designed and correctly analysed in order to minimise pain and maximize the chance of getting scientifically valid results. Experiments that use too few animals may fail to pick up biologically important effects, while those who use them incorrectly or wastefully may get invalid results.

The Design of Animal Experiments is intended for all research scientists who use laboratory animals, with the aim of helping them to design their own experiments more effectively and/or to improve their ability to communicate with professional statisticians when necessary. It covers all randomised controlled experimental designs likely to be needed in laboratory animal research, with worked examples.

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Too much emotion and insufficient fact. This paradox has long characterized the controversy surrounding animal research. Of Mice, Models, and Men is the first exhaustive treatment of all areas—empirical and conceptual—relevant to the use of animals in research. It is also the first study to combine regard for the welfare of laboratory animals with a knowledgeable acceptance of the continuing scientific progress.

virtually devoid of any of the emotional and exaggerated attacks that have characterized many of the other publications in this area. Instead, it presents, in a manner accessible to both sides, all the relevant historical, social, and scientific information required to form an opinion on the subject. The book thus achieves a most difficult goal—that of bridging the gap between researchers using animal models and those who are concerned about the welfare of the animals used in the program to promote laboratory animal welfare.

The necessity for animal use in biomedical research is a hotly debated topic in classrooms throughout the country. Frequently teachers and students do not have access to a balanced, factual material to foster an informed discussion on the topic. This colorful, 50-page booklet is designed to educate teenagers about the role of animal research in combating disease, past and present; the potential benefits of animal research; the ethical issues surrounding animal research; the regulations and oversight that govern animal research; and the continuing efforts to use animals more efficiently and humanely.

Life-Saving Research Vs. Animal Welfare

Remarkable Discoveries about Animals and Revolutionary New Ways to Show Them Compassion

Dilemmas of Animal Experimentation

The Use of Animals in Medical Research

Use of Laboratory Animals in Biomedical and Behavioral Research

Cruelty Or Science?

A comprehensive review of recent scientific evidence examining the contributions of animal experimentation to human healthcare. The book also explores toxicity prediction, animal use during life and health sciences education, impacts on student attitudes toward animals, and the extent to which animals suffer in laboratories.