

# **PATHFINDER**

## Alternatives to Animal Testing

### **INTRODUCTION & SCOPE**

Animal welfare is the well-being of animals, particularly animals that are in the care of, or whose lives are significantly impacted by humans and human activity. One of the most cited technical definitions of the term is from Donald Broom (1986): "The welfare of an individual is its state as regards its attempts to cope with its environment". It includes physical, mental, and behavioral health, and refers specifically to the state of the animal, as opposed to treatment or care that the animal receives. The AVMA has stated its commitment to animal health, and has adopted a range of principles and policies relating to animal welfare.

The modern concept of animal welfare dates back to the 19th Century, with passage of animal welfare laws in British Parliament and the founding of the Royal Society for the Prevention of Cruelty to Animals (RSPCA). The first Federal animal welfare law in the United States was the 1966 Animal Welfare Act.

There are numerous topics within the umbrella of animal welfare, from wildlife conservation to hunting and fishing regulation. This Pathfinder will focus on an aspect of animal welfare that is of particular interest to veterinary medicine professionals - alternatives to laboratory animal testing.

Not only are researchers and scientists considering the welfare of the animals in their laboratories, but they are increasingly turning to alternatives to lab animals, and there is a burgeoning body of literature to support those alternatives. There are Federal mandates to consider these alternatives, and importantly from the standpoint of library and information science, to document that consideration, which can and should include literature searches.

### **REFERENCES**

Broom, D M. (1986). Indicators of poor welfare. *British Veterinary Journal*, 142, 524-526. DOI: 10.1016/0007-1935(86)90109-0.

# SELECTED RESOURCES

## DATABASES AND INFORMATION PORTALS

### [Animal Welfare Information Center](#)

[Animal Welfare Information Center](#). (2018). Retrieved from [www.nal.usda.gov/awic](http://www.nal.usda.gov/awic).

The essential resource for those involved in any aspect of animal testing. Mandated by the Animal Welfare Act of 1966, the AWIC has a wide range of information that is up-to-date and well-organized. Despite having a wealth of in-depth technical resources, there is also plenty of introductory information, including guides, tips, and examples.

### [ALTBIB](#)

[ALTBIB: Alternatives to Animal Testing](#). (2018). Retrieved from [toxnet.nlm.nih.gov/altbib.html](http://toxnet.nlm.nih.gov/altbib.html).

A creation of the US National Library of Medicine, Altbib provides very helpful guidance in searching PubMed, the NLMs massive database of medical literature. PubMed can be intimidating for even seasoned researchers, so the assistance Altbib provides can be very helpful for veterinary professionals who are looking for literature about alternatives to animal testing.

## WEBSITES

### [IACUC Central](#)

[IACUC Central](#). (2018). Retrieved from [www.aalas.org/iacuc](http://www.aalas.org/iacuc).

According to the Animal Welfare Act, any institution that conducts animal testing must have an Institutional Animal Care and Use Committee (or IACUC) to oversee all animal testing protocols. This website, maintained by the American Association for Laboratory Animal Science, gathers an incredible amount of data for and about IACUCs, including Laws, Policies and Guidelines; Training Resources, an email listserv for Association members.

### [3 Rs Microsite](#)

[Three Rs Microsite](#). (2018). Retrieved from [3rs.ccac.ca](http://3rs.ccac.ca).

Operated by the Canadian Council on Animal Care, this website includes similar resources to IACUC Central, but with a focus on Canadian laws and regulations. One particularly useful feature for researchers in any nation is the [Step By Step Search Guide](#).

### [Institute for Laboratory Animal Research](#)

[Institute for Laboratory Animal Research](#). (2018). Retrieved from [dels.nas.edu/ila](http://dels.nas.edu/ila).

The ILAR maintains a very up-to-date website that features a number of unique resources. A selection of Consensus Reports and Workshop Proceedings, a list of Studies in Progress, an updated Calendar and list of upcoming Workshops, and a list of other resources from Websites and Videos to Podcasts and Booklets.

## BOOKS

### [USDA Animal Care: Animal Welfare Act and Animal Welfare Regulations \(“Blue Book”\)](#)

*USDA animal care: animal welfare act and animal welfare regulations.* (2017).  
Washington, D.C.: United States, Department of Agriculture, Animal and Plant Health Inspection Service.

Published by the US Animal Welfare Information Center, the Blue Book contains the complete text of the 1966 Animal Welfare Act, as well as - crucially - all applicable regulations and standards. This free resource is an essential reference.

### [The Principles of Humane Experimental Technique](#)

Russell, WMS. (1992). *The principles of humane experimental technique.* Baltimore, Md.: Johns Hopkins Center for Alternatives to Animal Testing.

The original text that presented the case for alternatives to animal testing. Originally published in 1959, the book is still widely respected within the field of animal welfare. A “special edition” was published in 1992 that has also gone out of print, but Johns Hopkins makes the entirety of the book available for free through Altweb. This is the book that defined “the Three Rs” of animal welfare, and it is valuable to revisit those original definitions to inform current alternative decisions.

### [Animal Experimentation: A Guide to the Issues](#)

Monamy, V. (2009). *Animal Experimentation: A Guide to the Issues.* Cambridge: Cambridge University Press.

As the introductory pages state, “The purpose of this book is to introduce life science students to the major issues that constitute modern debate about animal experimentation.” This slim volume is both accessible and thorough in laying out the philosophical and scientific issues surrounding the field.

### [The Design and Statistical Analysis of Animal Experiments](#)

Bate, S. and Clark, R. (2014). *The Design and Statistical Analysis of Animal Experiments.* Cambridge: Cambridge University Press.

Focusing on mathematics and statistics, this book is quite technical, but may be very useful for researchers interested specifically in reducing the number of animals they need to use in a study while still obtaining statistically relevant results.

## JOURNALS

### **Journal of Applied Animal Welfare Science (JAAWS)**

A technical journal aimed at veterinarians and scientists featuring articles and reports on general animal welfare issues.

### **ALTEX - Alternatives to Animal Experimentation**

The official journal of a number of international organizations that focus on alternatives to animal testing. Notably, ALTEX is an open access journal, so all content is freely available.

### **ATLA - Alternatives to Laboratory Animals**

A British journal published by the Fund for the Replacement of Animals in Medical Experiments (FRAME), ATLA is also tightly focused on alternatives.

### **Journal of the American Association for Laboratory Animal Science (JAALAS)**

The official communications venue for the AALAS, this journal may be of use to veterinary professionals working in field as a source of professional news as well as scientific discovery.

## **REFLECTIONS**

Putting together this Pathfinder was a fascinating and challenging process. The primary challenge, for me, was in finding a topic that was broad enough to have sufficient resources available to find and curate, but also narrow enough that the amount of information I was attempting to survey was not overwhelming. Initially, I was considering “Animal Welfare” as a topic. I realized fairly quickly that this was far too broad and multi-faceted a topic to cover. Even defining Animal Welfare is a complicated task that requires significant context and history. To narrow it down, I looked at several subtopics within Animal Welfare. I considered Behavioral Enrichment, Abandoned and Feral Pets, Hunting, and Production Animal Welfare before eventually deciding to choose Prevention of Cruelty and Animal Testing, focusing on the informational needs of veterinary professionals. This was the Pathfinder I proposed in my proposal.

During the course of assembling the resources for those two areas, I realized that not only did each subtopic have an entire depth and breadth of informational resources, but the two subtopics had little overlap in the literature. This led to my decision to limit the Pathfinder to Alternatives to Animal Testing. The reason for choosing that over Prevention of Cruelty is that I felt that Alternatives had a closer connection to my intended audience, especially after learning about veterinary professionals and their roles in IACUCs. While the subject matter has been dramatically narrowed from its original form, I feel like this has only made this pathfinder more useful and relevant to its users.

Another challenge in this Pathfinder was ensuring that I kept that userbase in mind in my selection of resources and their annotations. Both in terms of including resources that would be relevant to the topic for my users, but also in excluding resources that, while they might be of interest to the audience, might not belong in this pathfinder. One example of that would be the *Journal of Veterinary Science and Animal Welfare*. It is a perfectly useful journal for the veterinary community, but despite the title, the journal’s scope is more general veterinary science than animal welfare, and it certainly does not focus on animal testing like the other journals I was able to include. Veterinary medicine is not as prolific a field as human medicine, but there are still several more specialized journals that made more sense for the pathfinder.

Another resource that I decided not to include was one that I initially identified as a core resource of the pathfinder, and it actually help me source a great deal of the information that I did include. Altweb, from the Johns Hopkins Bloomberg School of Public Health, is a gateway to online information about alternatives to animal testing. There are plenty of interesting and informative resources here, like the calendar of worldwide animal welfare events, the monthly newsletter and links to the journal Altex. Unfortunately, the site does not appear to have been thoroughly updated since 2009 or so, so there are a several dead links throughout the site. It was greatly useful to me, and I think it could be useful to dedicated searchers, but I didn't feel comfortable directing casual information seekers to a site that could prove to be frustrating.

I've always considered medical libraries as a potential career, especially given my background in the veterinary field, and this pathfinder helped to solidify it in my mind. I really enjoyed digging into the resources and understanding the medical, legal, and informational aspects of this project.