

NAL'S ANIMAL WELFARE INFORMATION CENTER AND ANIMAL WELFARE IN THE LEGISLATION

JUNE 23, 2021

Presented By:

Animal Welfare Information Center



Speakers



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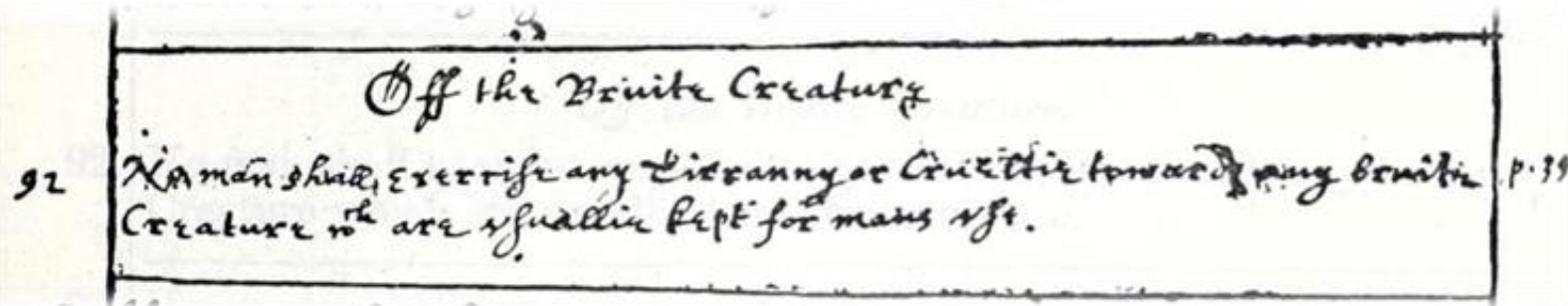
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OBJECTIVES

- History of Animal Welfare
- The Animal Welfare Act and its Amendments
 - Introduction to AWIC
- Define the 3Rs of Alternatives & Why They Matter
- Our Products & Services

Early History of Animal Protection Legislation in the U.S.

1641 – “[Body of Liberties](#)” laws created in Massachusetts Bay Colony includes #92 “Off the Bruite Creatures”



“No man shall exercise any Tyranny or Cruelties towards any brute Creature which are usuallie kept for mans use.”



Illustration of cow from Edward Topsell, “[The history of four-footed beasts and serpents](#),” 1658

Early History of Animal Protection Legislation in the U.S.

1828	First state anti-cruelty law passed in New York
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SECTION 26. Every person who shall maliciously kill, maim or wound any horse, ox or other cattle, or any sheep, belonging to another, or shall maliciously and cruelly beat or torture any such animal, whether belonging to himself or another, shall, upon conviction, be adjudged guilty of a misdemeanor.

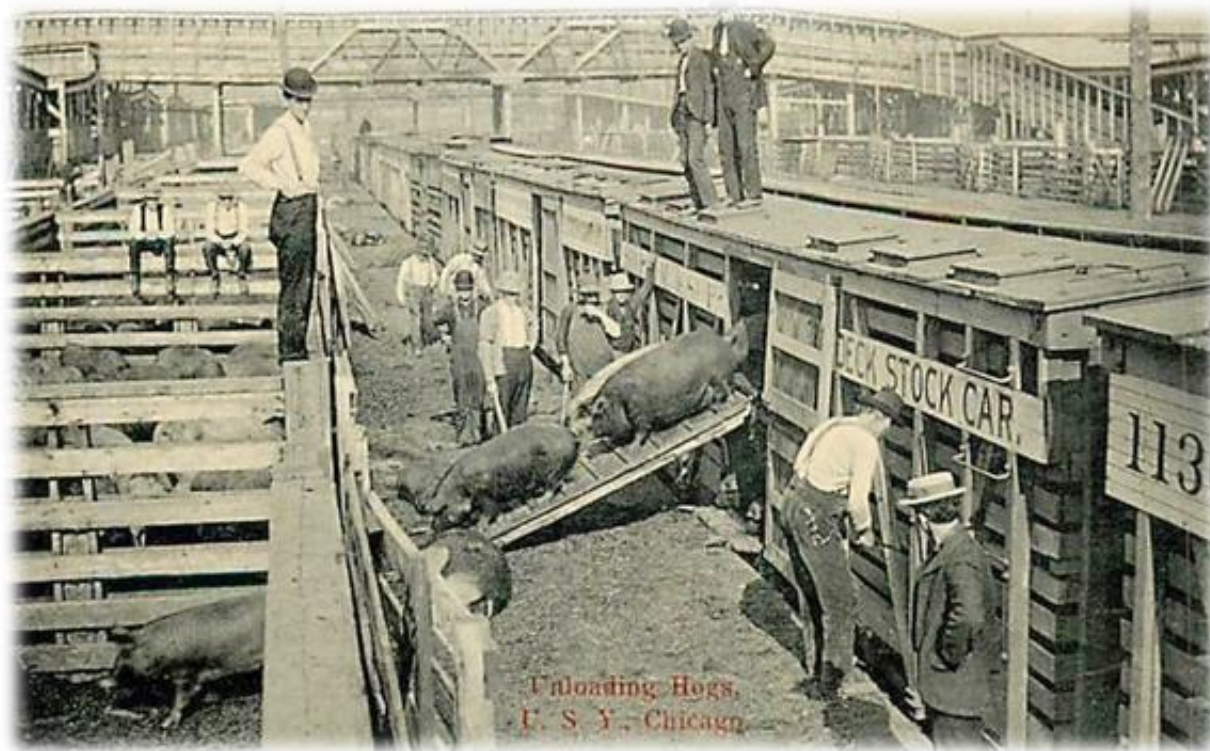


William Sidney Mount, Bargaining for a Horse, 1835, [NY Historical Society](#)

Early History of Animal Protection Legislation in the U.S.

1873

First Federal legislation: “[28-Hour Law](#)”



[Postcard](#) of unloading hogs, Union Stockyards, Chicago, 1912

Early History of Animal Protection Legislation in the U.S.

1958

[Humane Methods of Slaughter Act](#) passed

Bureau of Identification Photographic Library. [View of crew working in slaughter room of the Austin Abattoir], photograph, October 26, 1939



(<https://texashistory.unt.edu/ark:/67531/metaph123858/>; accessed February 11, 2020), University of North Texas Libraries, The Portal to Texas History, <https://texashistory.unt.edu>; crediting Austin History Center, Austin Public Library.

Early History of Animal Protection Legislation in the U.S.

1970	Horse Protection Act passed
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Tennessee Walking horse is put through its paces on a horse farm in October 1975. U.S.

The Animal and Plant Health Inspection Service (APHIS) does regular checks at the farm to ensure the health of the animals.

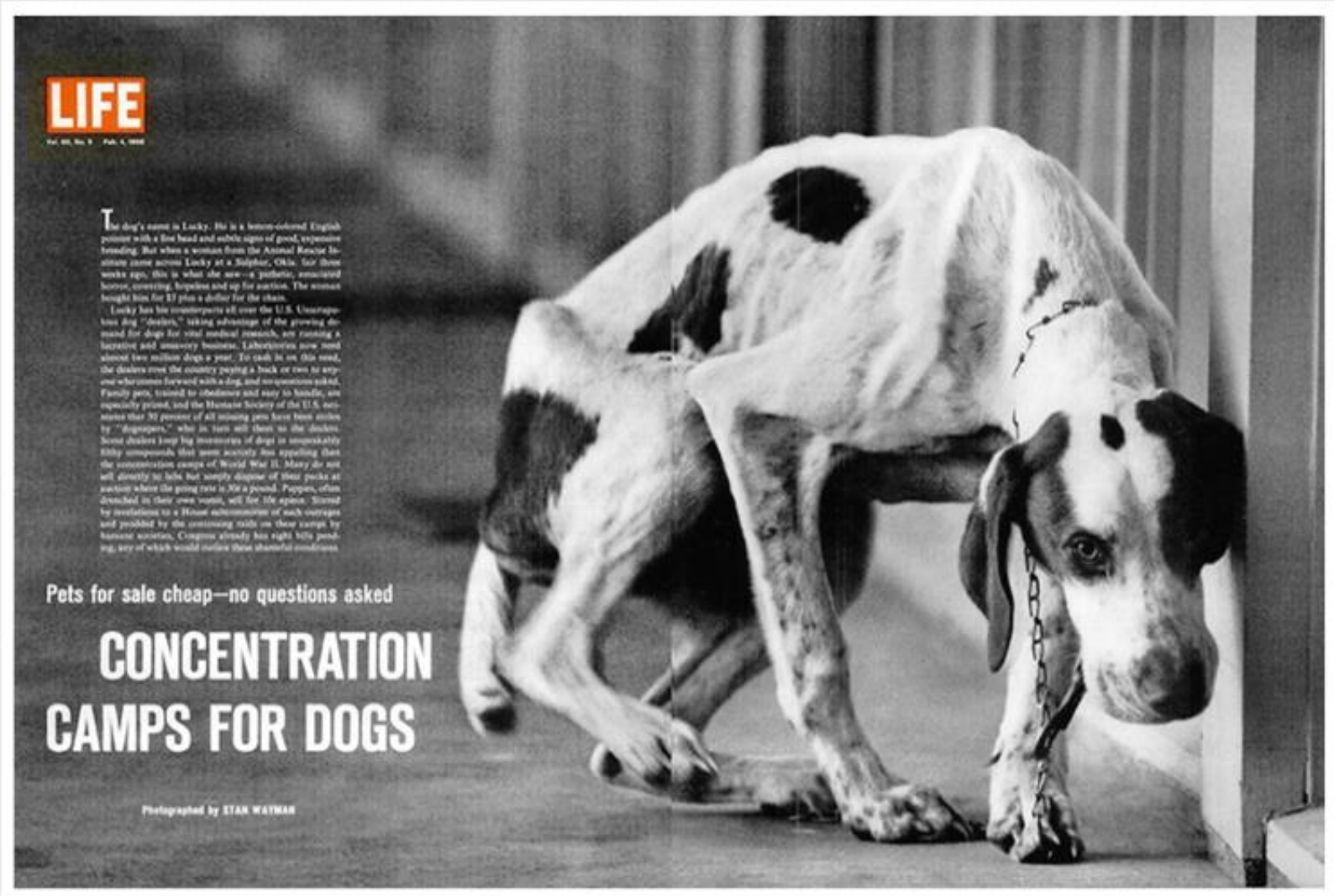


Pepper Goes Missing

June 22, 1965

Sports Illustrated reports the story about Pepper, the Lakavage family's dalmatian that was stolen from their farm in Pennsylvania in June 1965 and sold to a research facility in New York City. Pepper's theft and eventual death prompts Rep. Joseph Resnick (D-NY) to introduce a Laboratory Animal Welfare bill in Congress, an early milestone in the history of the Animal Welfare Act.





LIFE

Vol. 41, No. 7, Feb. 4, 1954

The dog's name is Lucky. He is a lemon-colored English pointer with a fine head and subtle signs of good, expansive breeding. But when a woman from the Animal Rescue League came across Lucky at a Sullybar, Ohio, fair three weeks ago, this is what she saw—a pathetic, emaciated hound, cowering, hopeless and up for auction. The woman bought him for \$3 plus a dollar for the chain.

Lucky has his counterparts all over the U.S. Unscrupulous dog "dealers," taking advantage of the growing demand for dogs for vital medical research, are running a lucrative and unscrupulous business. Laboratories now need almost two million dogs a year. To cash in on this need, the dealers cross the country paying a buck or two to anyone who comes forward with a dog, and no questions asked. Family pets, trained to obedience and easy to handle, are especially prized, and the Humane Society of the U.S. estimates that 50 percent of all missing pets have been stolen by "dogstealers," who in turn sell them to the dealers. Some dealers keep big inventories of dogs in unspeakably filthy kennels that were scarcely less appalling than the concentration camps of World War II. Many do not sell directly to labs but simply dispose of their packs at auction where the going rate is \$30 a pound. Puppies, often discarded in their own yards, will live life again. Stunned by revelations to a House subcommittee of such outrages and provoked by the continuing raids on these camps by humane societies, Congress already has eight bills pending, any of which would curtail these shameful conditions.

Pets for sale cheap—no questions asked
**CONCENTRATION
 CAMPS FOR DOGS**

Photographed by STAN WAYMAN



Animal Welfare Act

(Public Law 89-544)

August 24, 1966

Rep. Resnick's efforts lead to the passage of the [\(Laboratory\) Animal Welfare Act](#), of which the stated intention is "to protect the owners of dogs and cats from theft of such pets and to prevent the sale or use of stolen dogs and cats for purposes of research and experimentation."



Laboratory Animal Welfare Act of 1966

Public Law 89-544

- Authorized Secretary of Agriculture to regulate transport, sale, and handling of animals pre-research or “for other purposes.”
- Defined animal as dogs, cats, nonhuman primates, guinea pigs, hamsters, and rabbits.
- Established licensing of dog and cat dealers.



Animal Welfare Act of 1970

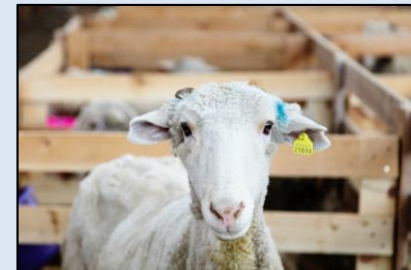
Public Law 91-579

- Secretary to develop regulations regarding record keeping and humane care and treatment of animals in or during commerce, exhibition, experimentation, and transport.
- Clarified the definition of animals as all warm-blooded vertebrates *except*:
 - Horses not used in research
 - Farm animals used for breeding, food, fiber, etc.
 - Rats of the genus *Rattus* and Mice of the genus *Mus*
 - Birds



What About Animals Not Covered by The AWA? Farm Animals

- Governed through state and local laws
- Science-based animal care guidelines
- Voluntary third-party audits
- [Auditing companies/Certification programs](#)
 - Global Animal Partnership
 - American Humane
 - National Dairy FARM Program
 - United Egg Producers Certified

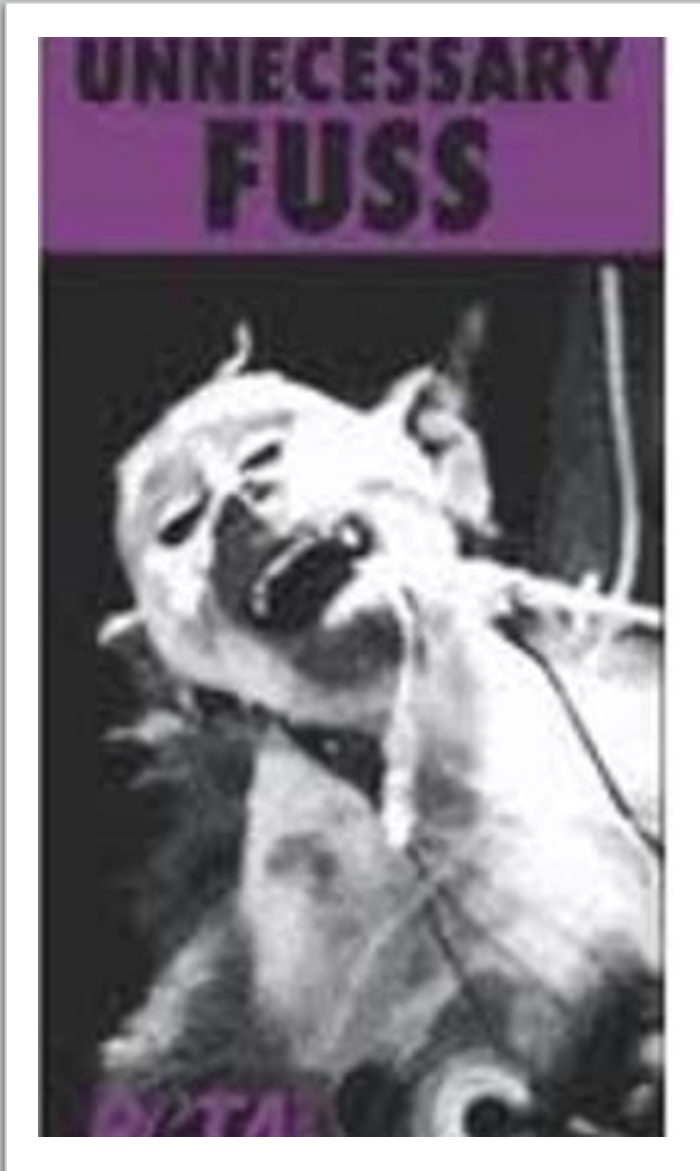


Case of the Silver Spring Monkeys

“...records showed that the animals had not received routine veterinary care for a period of years. Dr. Taub’s grant was suspended until... his laboratory could...demonstrate that he could meet all the standards set forth in the Guide.

Taub’s laboratory was never restored, and the animals remained, by court order, in the custody of NIH...”





Charles R. McCarthy
Former Director, OPRR

<http://www.onlineethics.org/cms/17252.aspx>

University of Pennsylvania Head Injury Clinic

Although the *Unnecessary Fuss* publication by PETA grossly overstated the deficiencies in the Head Injury Clinic, OPRR did find several serious issues in violation of the Guide for Care and Use of Laboratory Animals...

The Results of OPRR's Findings:

- U Penn. was put on probation & the clinic was closed
- The chief veterinarian was fired
- New training programs for investigators and staff
- Quarterly progress reports to OPRR were required.

1985 Amendment: Improved Standards for Laboratory Animals

December 23, 1985



←
Increasing
Protection for
Animals in
Transit
April 22, 1976

December 23, 1985

IMPROVED STANDARDS FOR LABORATORY ANIMALS

The 1985 amendment introduces new requirements for enriching the lives of nonhuman primates, providing exercise for dogs, considering alternatives to painful or distressful procedures, establishing Institutional Animal Care and Use Committees (IACUCs), and creating an information service at the National Agricultural Library (now the Animal Welfare Information Center, AWIC).



Sen. Robert Dole of Kansas

Food Security Act of 1985

Subtitle F, Animal Welfare, Public Law 99-198

Improved Standards for Laboratory Animals Act

“...the farm bill contains legislation dealing with the humane treatment of animals. The main thrust of the bill is to **minimize pain and distress suffered by animals used for experiments and tests. In so doing, biomedical research will gain in accuracy and humanity.** We owe much to laboratory animals and that debt can best be repaid by good treatment and keeping painful experiments to a minimum.”

Humane Care and Reducing Pain and Distress

Improved Standards for Laboratory Animals Act

- Clarifies humane care to include specific criteria such as sanitation, ventilation, and housing.
- Directs the Secretary of Agriculture to establish regulations for
 - exercise for dogs and
 - a physical environment adequate to promote the psychological well-being of primates.
- Specifies that animal pain and distress must be minimized (veterinary care, anesthesia, analgesia, tranquilizers, and euthanasia).
- Establish Institutional Animal Care and Use Committees (IACUC)

The 1985 Amendment

Humane Care
Guidelines

Non-human Primate
Enrichment

IACUCs

Exercise for Dogs

Minimize Animal
Pain and Distress

**Animal Welfare
Information Center
(AWIC)**



AWA Defines Service at NAL **(7 U.S.C. 2142, Sec. 13, Subsection e)**

The Secretary shall establish an information service at the National Agricultural Library. Such service shall, in cooperation with the National Library of Medicine, provide information—

- (1) pertinent to employee training;
- (2) which could **prevent unintended duplication** of animal experimentation as determined by the needs of the research facility; and
- (3) on improved methods of animal experimentation which could--
 - (a) **reduce or replace animal use**; and
 - (b) **minimize pain and distress to animals**, such as anesthetic and analgesic procedures.

Animal Welfare Act History Digital Collection

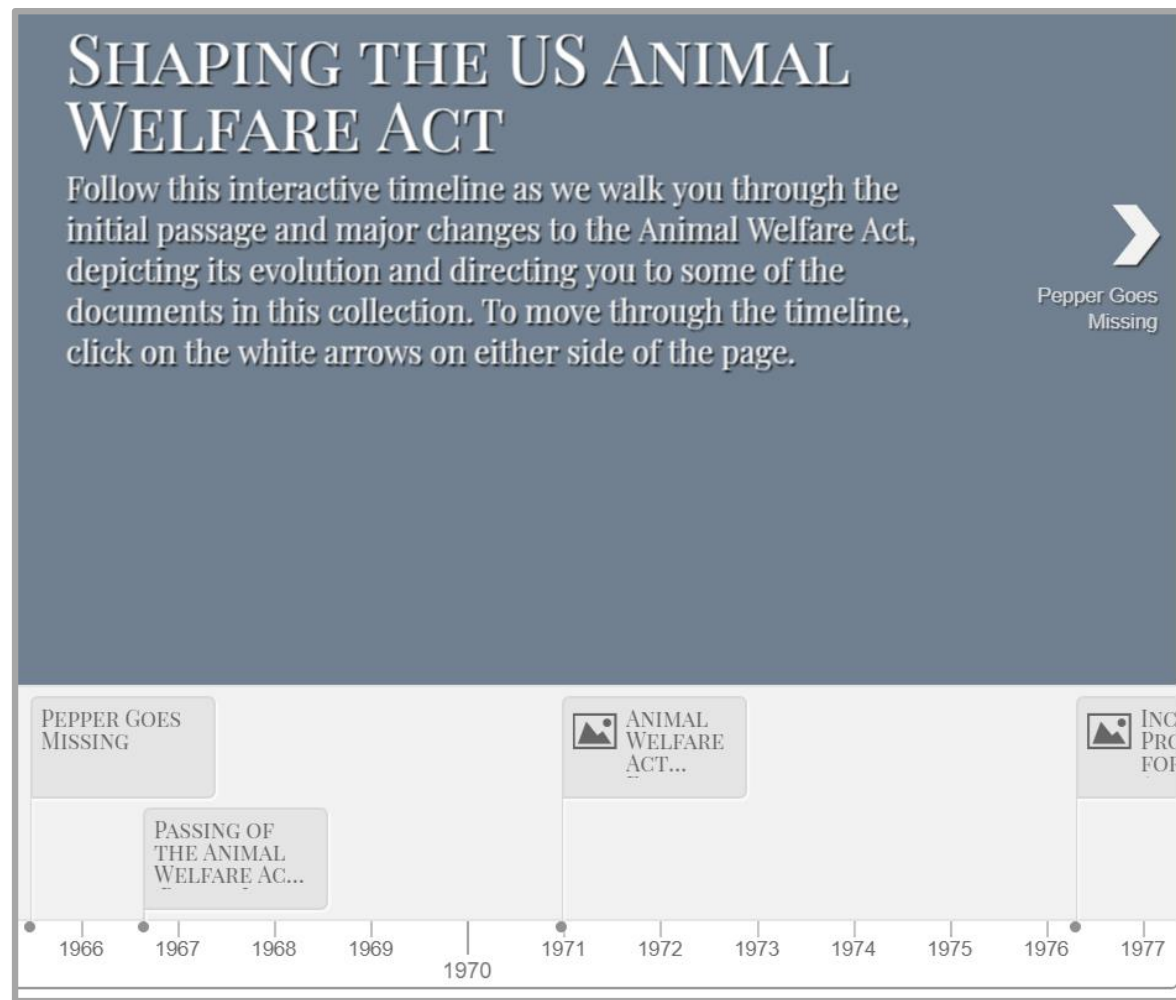
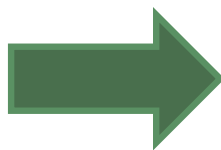


The screenshot shows the homepage of the Animal Welfare Act History Digital Collection. At the top left is the USDA logo and the text "Animal Welfare Act History Digital Collection" and "U.S. DEPARTMENT OF AGRICULTURE". A "Contact Us" link is at the top right. A dark blue navigation bar contains links for "Home", "About the Collection", "How to Use", "Advanced Search", and "Timeline". Below the navigation bar is a large graphic of various animals (whale, giraffe, elephant, lion, dog, cat, bird) in silhouette. To the right of the graphic is the heading "Welcome to the Animal Welfare Act History Digital Collection". Below this is a search bar with the placeholder text "Search the collection" and a magnifying glass icon. There are also links for "Advanced Search" and "Interactive Timeline".

The AWAHDC Page

<https://awahistory.nal.usda.gov/>

Not sure where to start? Begin your journey by going to the [Interactive Timeline](#)



The screenshot shows the "SHAPING THE US ANIMAL WELFARE ACT" interactive timeline. The title is in large, white, serif font. Below the title is a paragraph: "Follow this interactive timeline as we walk you through the initial passage and major changes to the Animal Welfare Act, depicting its evolution and directing you to some of the documents in this collection. To move through the timeline, click on the white arrows on either side of the page." To the right of the text is a white arrow pointing right, with the text "Pepper Goes Missing" below it. Below the text is a timeline axis with years from 1966 to 1977. Several events are marked with dots and boxes: "PEPPER GOES MISSING" (1966), "PASSING OF THE ANIMAL WELFARE ACT..." (1967), "ANIMAL WELFARE ACT..." (1971), and "INC PRO FOI" (1976).

USDA Animal and Plant Health Inspection Service (APHIS)

- Create the [Animal Welfare Act Regulations](#) (9 CFR A- Animal Welfare)
- Enforce the Animal Welfare Act
- Inspect facilities regulated under the Animal Welfare Act



3Rs and Alternatives



Are you familiar with the 3Rs concept? Can you define what the 3Rs are?

Yes- meaning you have heard of the 3Rs and can define each of the 3Rs.

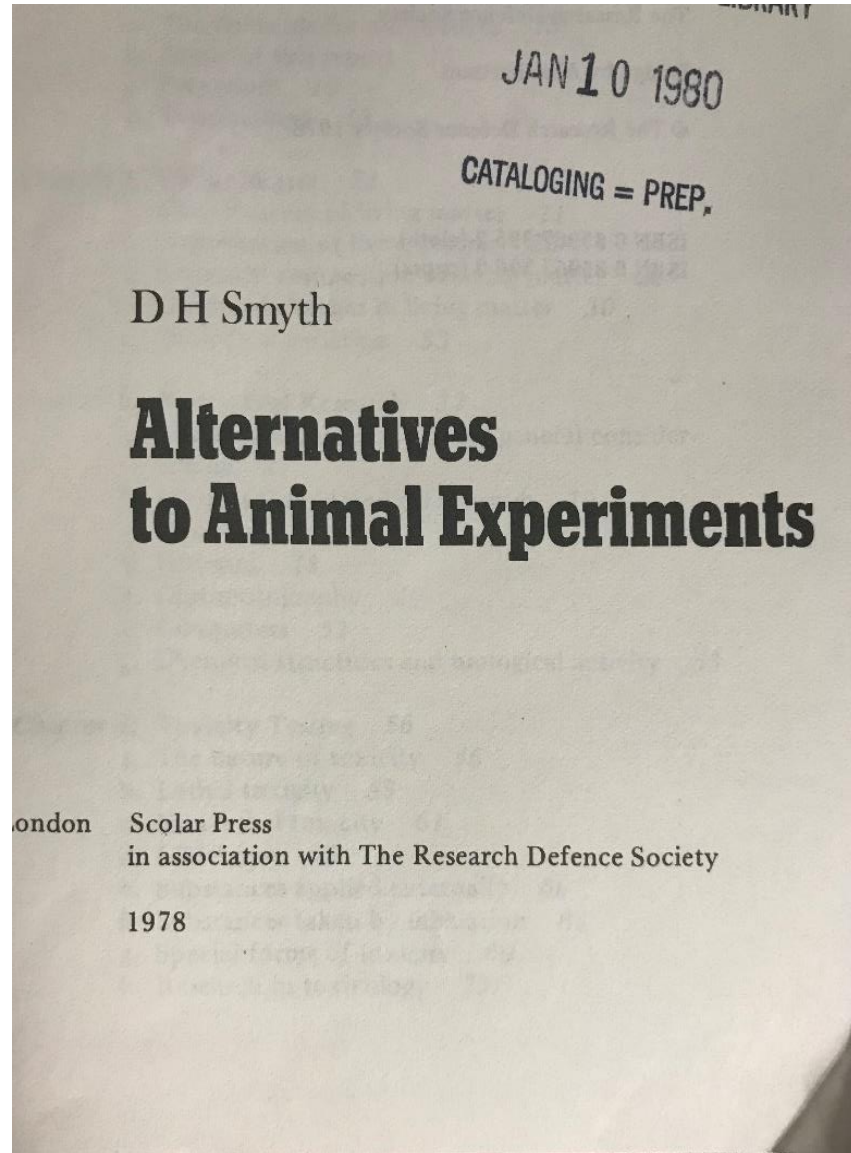
No- meaning you have NOT heard of the 3Rs and cannot define the 3Rs.

A little- meaning you have heard of the 3Rs. However, you cannot define the 3Rs.

History of the 3Rs

“The 3Rs, as first described by Russell and Burch in 1959, are regarded as new scientific methods that incorporate some aspect of **replacement**, **reduction**, or **refinement** of animal use in pursuit of the minimization of animal pain and distress consistent with the goals of the research.”





“Alternatives” term Coined and the Scientific Acceptance of the 3Rs

Smyth’s term “alternatives” became synonymous with Russell and Burch’s 3Rs and is the accepted definition of alternatives in animal research.

Synonymous 3Rs Terms



Animal-Use Alternatives



Alternatives (in Biomedical Research)



The 3Rs (of Biomedical Research)



3Rs Alternatives



Alternative to Animal Use



New Approach Methodologies (NAMs)

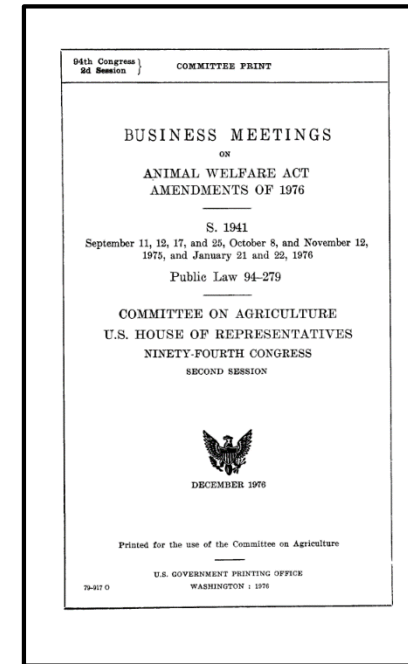
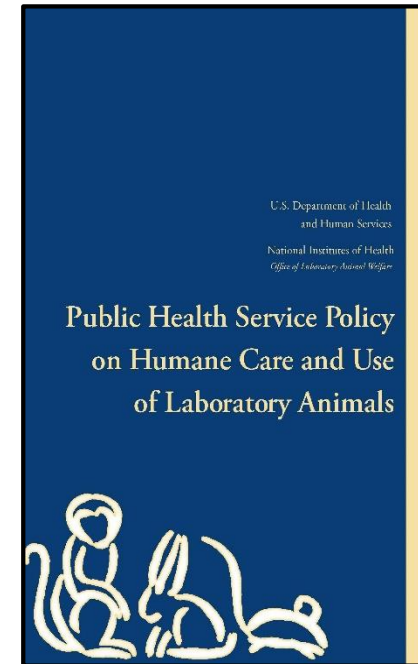


Reasons to Consider Alternatives

- ✓ Regulatory
- ✓ Social
- ✓ Humane
- ✓ Economic
- ✓ Scientific

Regulatory

- Comply with the Animal Welfare Act.
- Comply with the PHS Policy.
- Maintain AAALAC International accreditation



Social

- Respond to social pressures.
 - Change to non-animals as soon as possible.
 - Make research pain free.

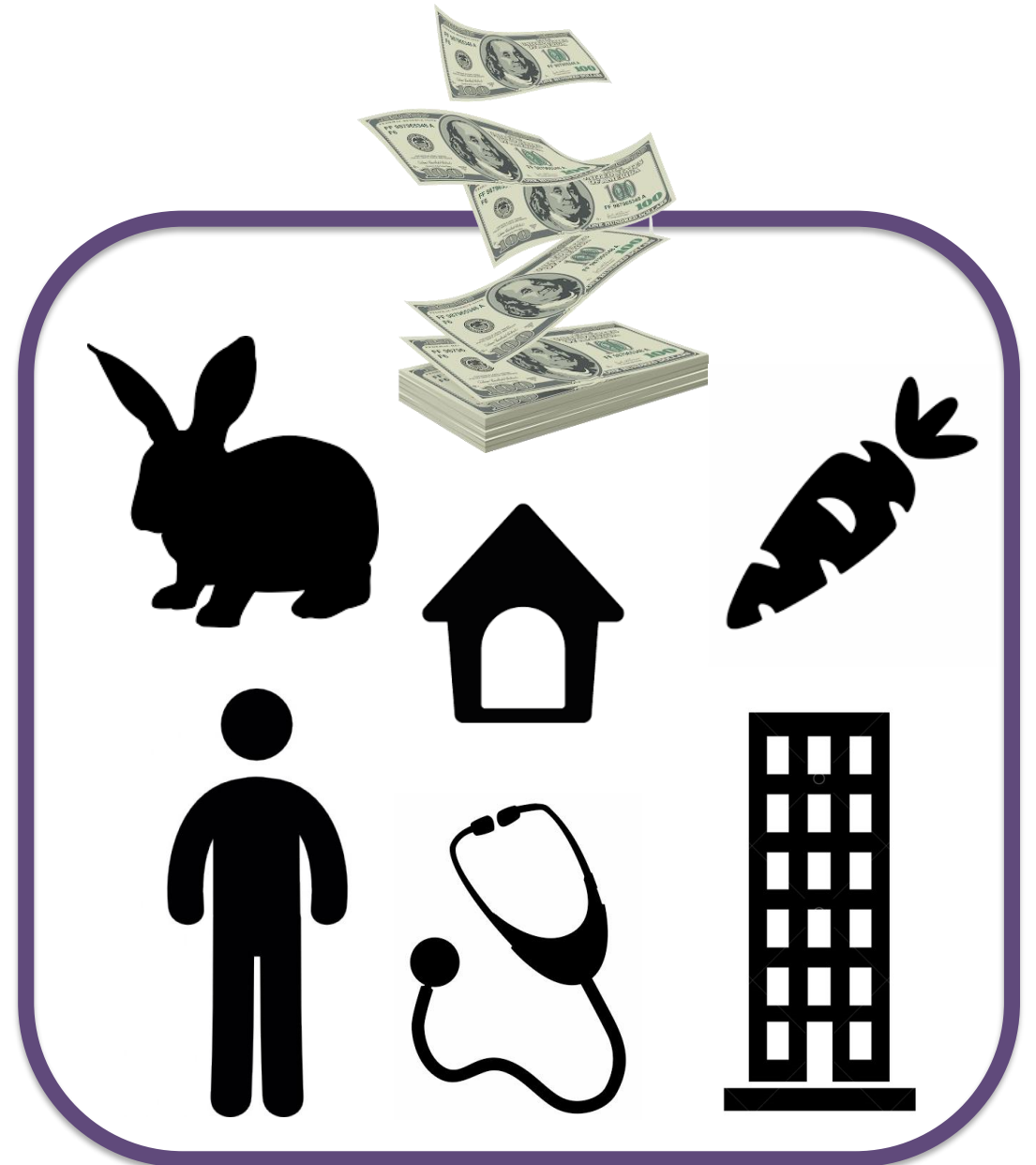
Humane

- Ask ethical questions such as:
 - Should animals be used in research?
 - When should animals be used?
 - How should they be used?



Economic

- Reduce the expense of animal use in:
 - Purchase animals.
 - Animal care costs.
 - Personnel costs.
 - Occupational health and safety costs.
 - Specialized facility infrastructure costs (caging, building design, equipment, etc.).



Scientific



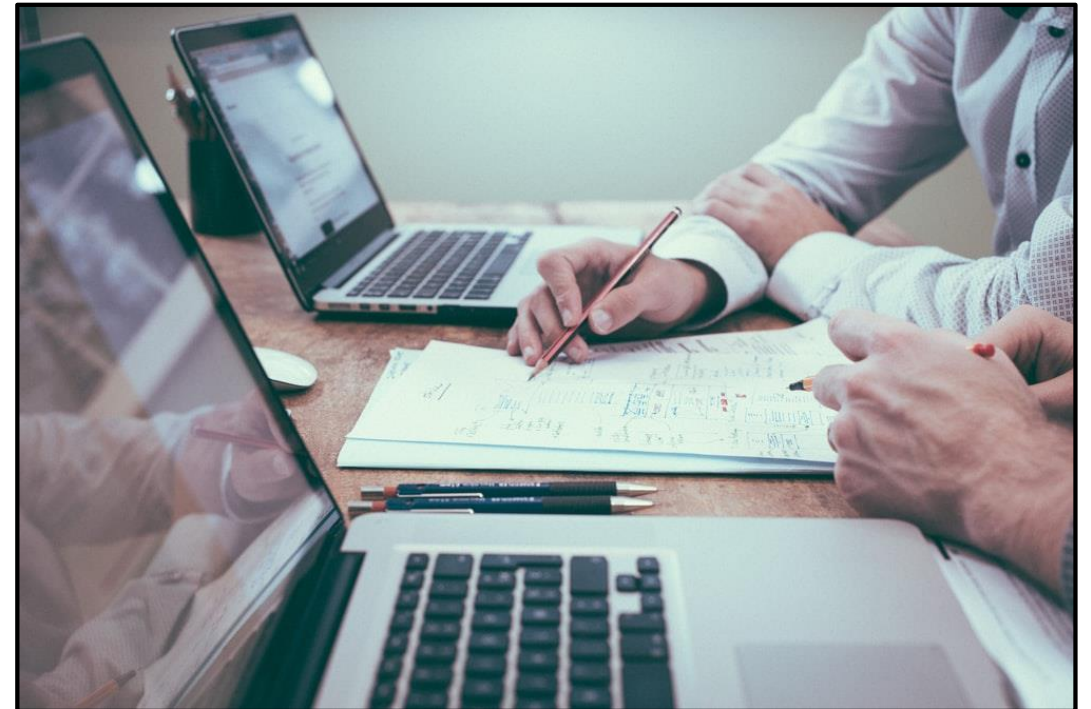
Early stages of grant writing process



NOT final step on protocol form

Why? Because it's Good Science!

- Choose the appropriate model.
- Determine appropriate numbers.
- Increase research efficiency.
- Learn new approaches.
- Find opportunities for less painful and invasive procedures.
- Reduce animal stress.
- Identify possible collaborators.



Scientific

Poor Animal
Welfare =
Unreliable
Experimental
Results

“...better for the animal to be happy, but whether its **state of mind may also have the potential to influence the scientific results** derived from it. To **ensure good science, the animal should have a normal physiology and behaviour**, apart from specific adverse effects under investigation. There is a growing body of evidence from a wide variety of sources to show that **animals whose well-being is compromised are often physiologically and immunologically abnormal and that experiments using them may reach unreliable conclusions...**”

Poole, T. (1997). Happy animals make good science. *Laboratory Animals*, 31(2), 116–124. <https://doi.org/10.1258/002367797780600198>

“...**the provision of suitable enrichment enhances the well-being of the animal, thereby refining the animal model and improving the research data.** Thus, the argument is made that both the **validity and reproducibility of the research are enhanced when proper consideration is given to the research animal’s living environment and the animal’s opportunities to express species-typical behaviours.**”

Bayne, K., & Würbel, H. (2014). The impact of environmental enrichment on the outcome variability and scientific validity of laboratory animal studies. *Revue Scientifique et Technique (International Office of Epizootics)*, 33(1), 273–289. <https://doi.org/10.20506/rst.33.1.2282>

“...The first argument against enrichment is that it may bias results, as enriched animals will produce different results from those living in unenriched environments. But if we turn this concept on its head, **primates living in barren, understimulating environments that lead to stress and abnormal conditions will adversely affect studies that are designed to be conducted on normal animals.** The normal, evolved state is one of enrichment, and as Würbel (2000) and Garner (2005) argue, **animals raised and living in enriched environments should be better (not worse) models**, and the results from such animals should have **improved external validity...**”

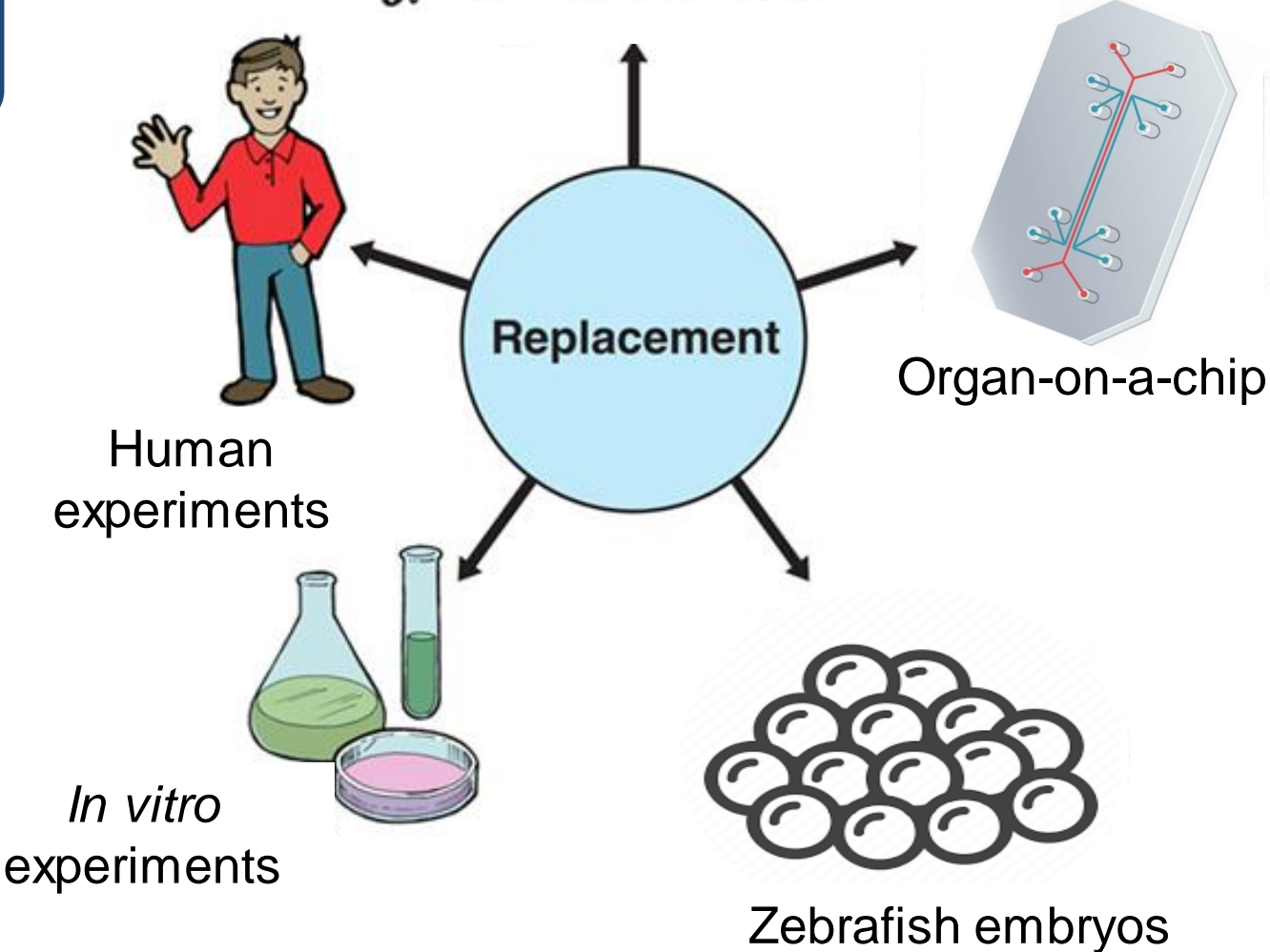
Buchanan-Smith, H. M. (2010). Environmental enrichment for primates in laboratories. *Advances in Science and Research*, 5(1), 41–56. <https://doi.org/10.5194/asr-5-41-2010>

Replacement

Substituting
sentient animals
with insentient
material

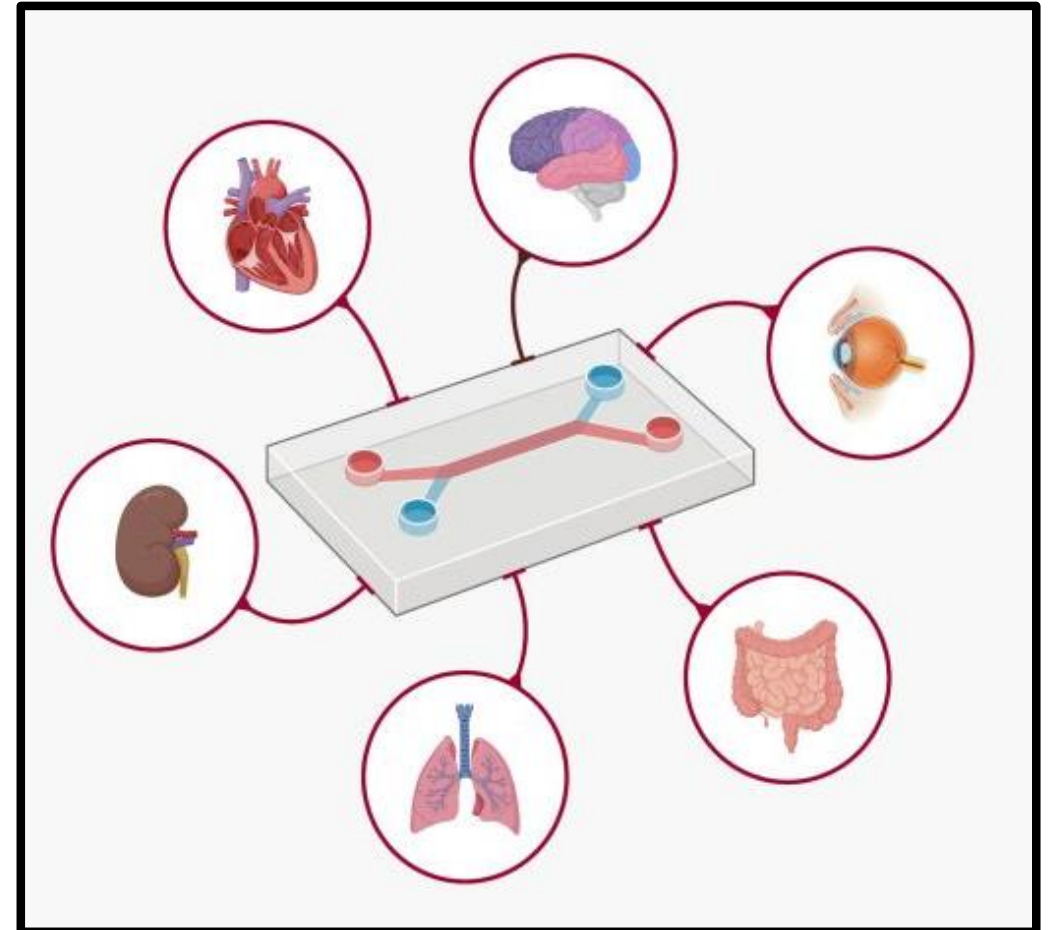
Using mathematical models

$$\frac{\partial L}{\partial t} = r_3 N_2 - d_3 L - D_3 \nabla^2 L$$



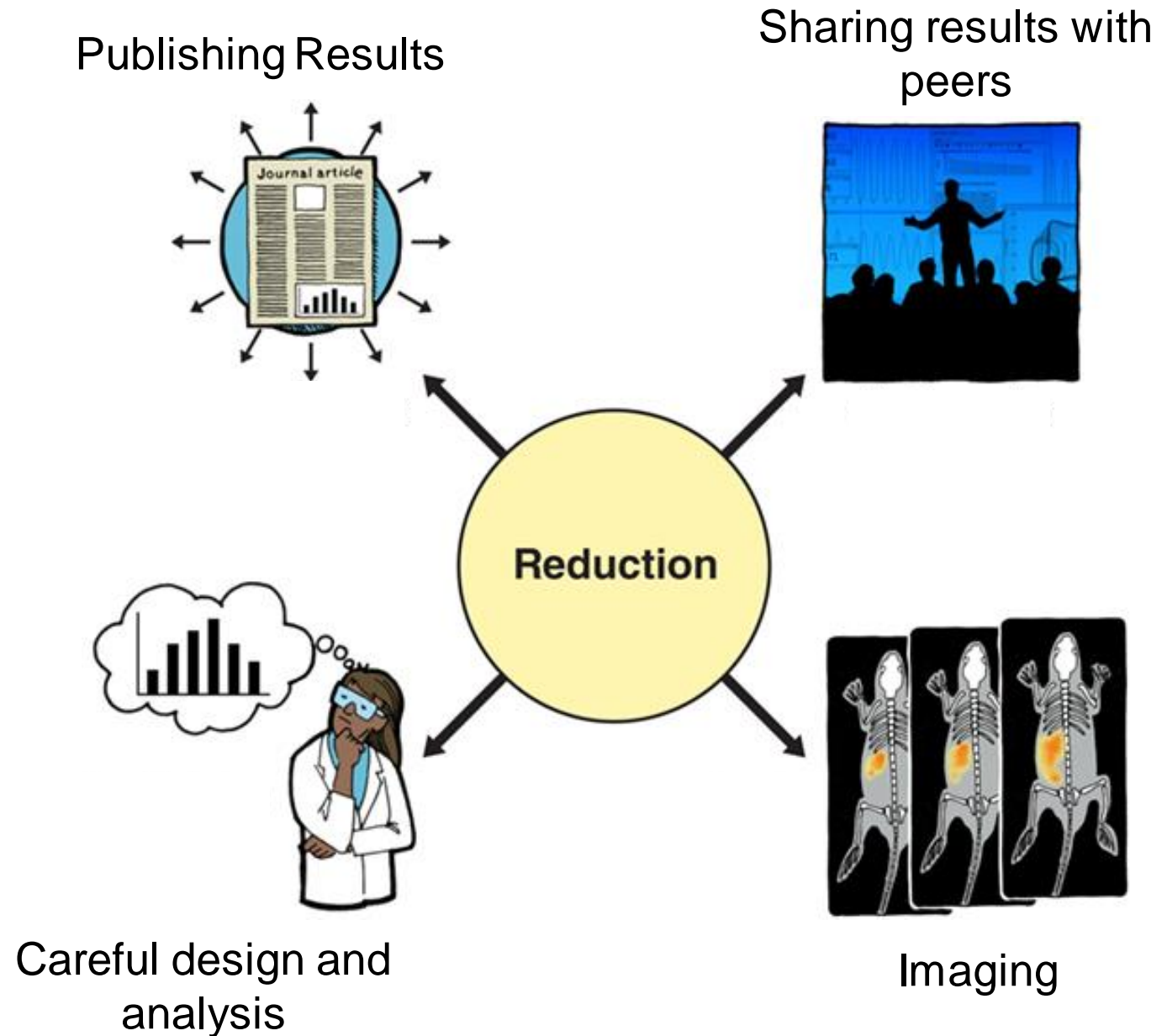
Organ-on-a-Chip

- Cell cultures in a microenvironment that mimics the cell's natural physiological conditions.
- Used for drug development and disease modeling.
- Study individual organ systems or impact on multiple systems



Reduction

Reduction in the number of animals required per experiment or study design while still achieving robust results

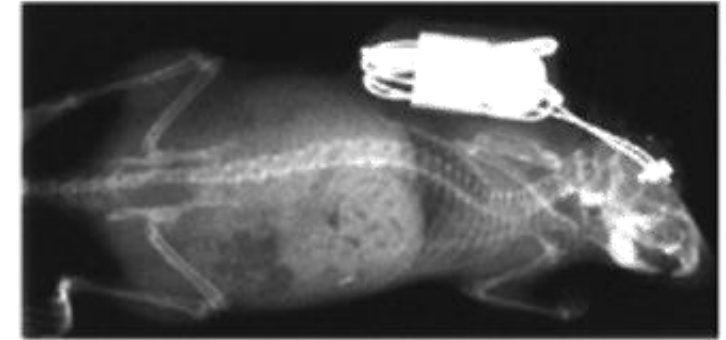


Telemetry

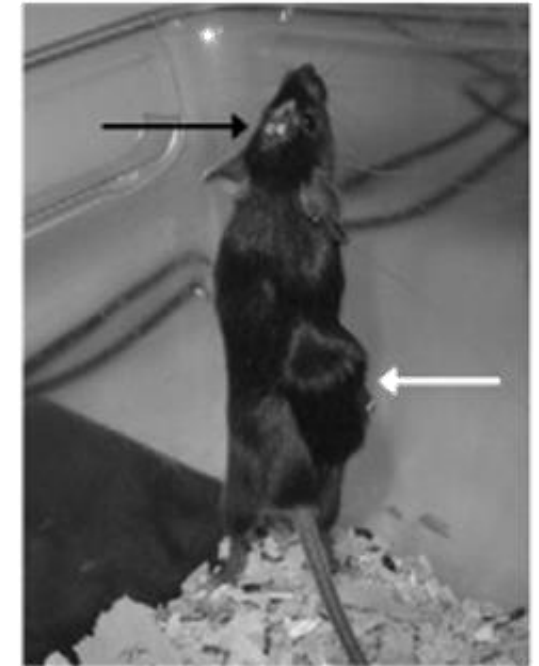
- Internal device wirelessly transmits physiological data to a computer
- Allows extended physiological data collection under natural conditions
- Reduces animal handling and stress
- Determine if experimental methods are stressful

X-ray of mouse with telemetry device

A



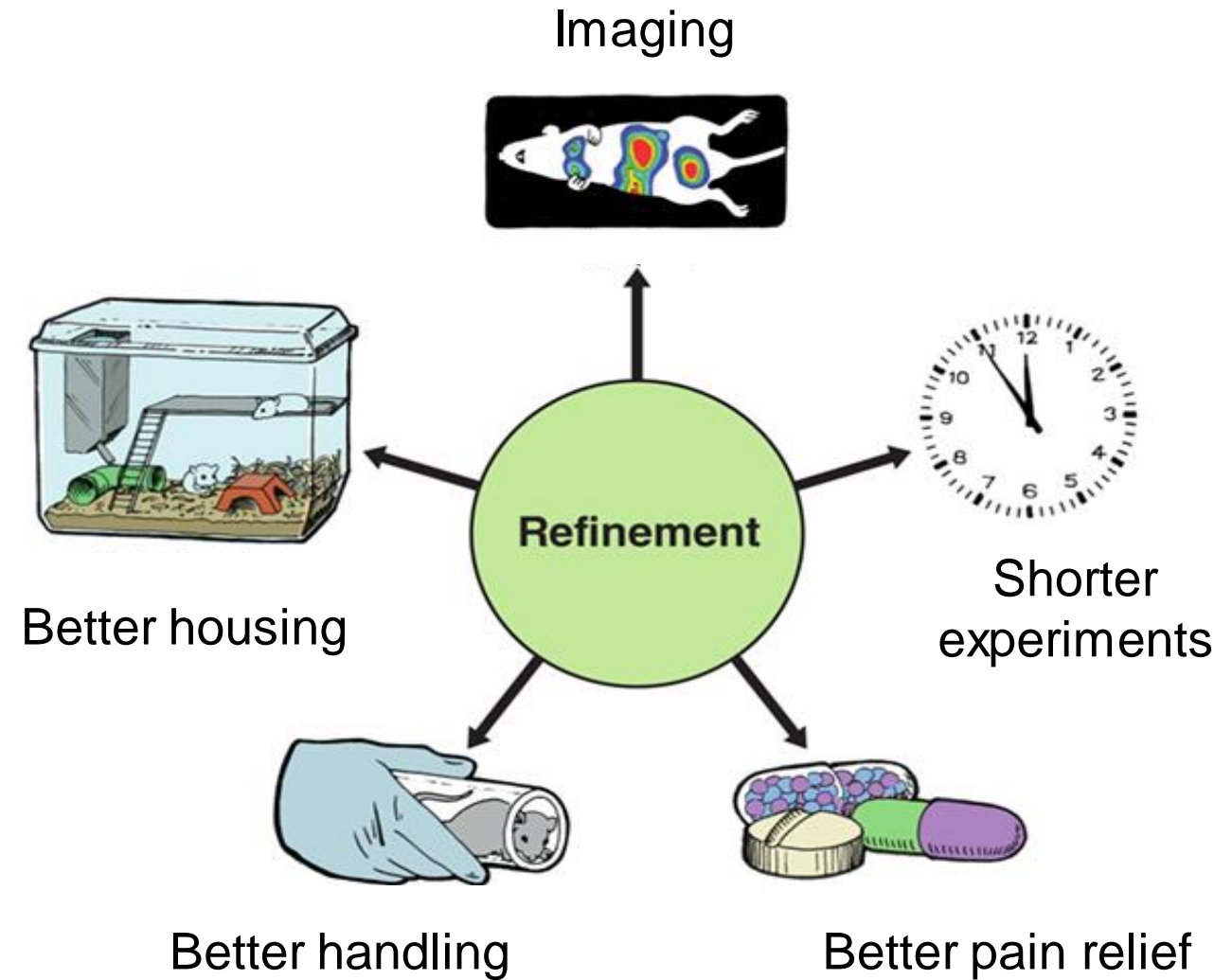
B



Telemetry device visible under skin

Refinement

Methods that minimize
animal suffering and
improve animal
welfare



Handling & Training

Remember: less is more



Rat Tickling

<https://www.youtube.com/watch?v=78PfGQbL-g0>



Positive Reinforcement



Mouse Tunneling



AWIC Products and Services

National Agricultural Library Resources



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Animal Welfare Information Center [Search](#)

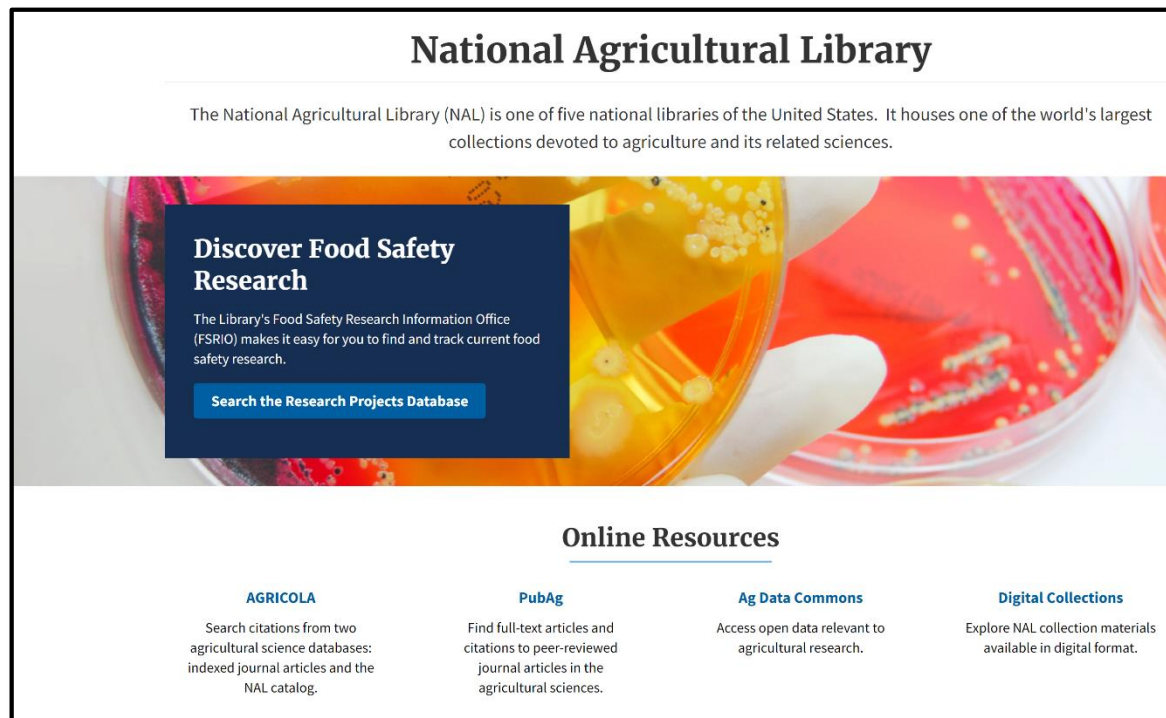
[Home](#) » [Information Center](#) » [Animal Welfare Information Center](#) » Animal Welfare Information Center

Animal Welfare Information Center

The **Animal Welfare Information Center (AWIC)** is mandated by the Animal Welfare Act (AWA) to provide information for improved animal care and use in research, testing, and teaching.

Animal Welfare Act (AWA)
 Sets standards for the treatment of animals in research, exhibition, transport, and by dealers.

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



National Agricultural Library

The National Agricultural Library (NAL) is one of five national libraries of the United States. It houses one of the world's largest collections devoted to agriculture and its related sciences.

Discover Food Safety Research

The Library's Food Safety Research Information Office (FSRIO) makes it easy for you to find and track current food safety research.

[Search the Research Projects Database](#)

Online Resources

<p>AGRICOLA</p> <p>Search citations from two agricultural science databases: indexed journal articles and the NAL catalog.</p>	<p>PubAg</p> <p>Find full-text articles and citations to peer-reviewed journal articles in the agricultural sciences.</p>	<p>Ag Data Commons</p> <p>Access open data relevant to agricultural research.</p>	<p>Digital Collections</p> <p>Explore NAL collection materials available in digital format.</p>
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[National Agricultural Library \(NAL\)](#)

A person wearing a blue sweater is sitting at a wooden desk, typing on a silver laptop. The background is slightly blurred, showing a red wall. A large, semi-transparent white circle is overlaid on the left side of the image, containing text.

Reference & Literature Search Assistance

AWIC assists patrons with searching literature and provides customizable training opportunities.

[Contact us](#) for more information.

AWIC Workshops

Laws and Guidelines

Training

Alternatives Literature

Searching

Workshop

Sample Searches

Databases

Publishing Guidelines

3Rs Alternatives: Technologies and Approaches

Housing, Care and Welfare

AWIC Workshop & Trainings

Meeting the Information Requirements of the Animal Welfare Act

This in-person workshop is intended for the regulated community (any personnel working with animals in research, testing, or education) and is typically held at the National Agricultural Library (NAL) in Beltsville, Maryland. However, due to COVID-19, AWIC is offering this workshop through a virtual platform.

About the Workshop

The regulations of the AWA require that investigators provide Institutional Animal Care and Use Committees (IACUCs) with documentation... that alternatives to procedures that may... momentary... considered and that... duplicat... regarding...

March
25, 2021

May
6, 2021

October
6-7, 2021



What You'll Cover

- A historical overview of the Animal Welfare Act (AWA), and regulations
- What is meant by the Information requirements of the Animal Welfare Act (AWA).
- 3Rs Alternatives of Reduction, Refinement, and Replacement
- Databases and resources available to access scientific literature
- A systematic approach to accessing information and creating effective literature search strategies.

Access Anytime!

To Register: <https://go.usa.gov/xHFRH>

To Register: <http://bit.ly/2ZLkAtd>

 National Agricultural Library
United States Department of Agriculture

AWIC Helps You PREPARE For Better Science



Featured photo by: Gettyimages

Current concerns about reproducibility in preclinical research make it even more important to plan animal studies properly. Sometimes, finding this high-quality information can be difficult, but AWIC can help with identifying the right resources! AWIC provides information on [searching published literature](#) and resources that can assist with [experimental design](#).

Among these resources are the [PREPARE guidelines](#), created by [Norecopa](#). The PREPARE guidelines are a two-page checklist, containing essential topics that scientists should consider when planning experiments. These guidelines are useful to those looking for the latest resources on how to conduct better science, optimize animal welfare, and improve the reproducibility and translatability of animal research.

Visit the [AWIC website](#) for the latest resources on 3Rs information and technology, or [contact us](#) for additional support.


Training and Conferences

Scientists Center for Animal Welfare (SCAW)
December 7, 2020 - December 8, 2020


Meeting the Information Requirements of the Animal Welfare Act
March 24, 2021 - March 25, 2021



Stay plugged in to AWIC updates!
SUBSCRIBE

 National Agricultural Library
United States Department of Agriculture

Pets Reduce Animal Use in Research



Center for Image-Guided Animal Therapy


International Women's Day on March 8th, the Animal Welfare Information Center is women scientists conducting research into the development and use of 3Rs

Recent experiments at the Johns Hopkins University's Center for Image-Guided make use of pets with pre-existing diseases. This method reduces the number of animals required. With the information collected, [Dr. Dara Kraltchman](#), V.M.D., Ph.D. animal imaging protocols applicable to both humans and pets. You can watch [Dr. Kraltchman](#) and other women scientists who presented their research at 3Rs Symposium in June 2020.

About CIGAT and other reduction methods in research, visit AWIC's [7th Annual 3Rs page](#) or [contact AWIC](#).

Training and Conferences

Meeting the Information Requirements of the Animal Welfare Act
March 25, 2021 (Virtual)



Stay plugged in to AWIC updates!
SUBSCRIBE

AWIC Newsletter



New 3Rs research



Literature searching tips



3Rs conferences/trainings



Researchers using 3Rs methods

Contacting AWIC

<https://www.nal.usda.gov/awic>

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