

# Field research and laboratory animal science: what can we learn from each other?

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AAALAC. Where science and responsible animal care connect.  
c. 2001 AAALAC International



It's a pity that

**Forsøksdyrlære (the science of using animals in research)**

is often translated as

**Laboratory Animal Science!**

The laboratory animal environment has overshadowed (but not deliberately excluded) the other environments, at all levels in Europe, for a number of reasons.

The Norwegian lab animal environment is small, relatively transparent and exchanges information

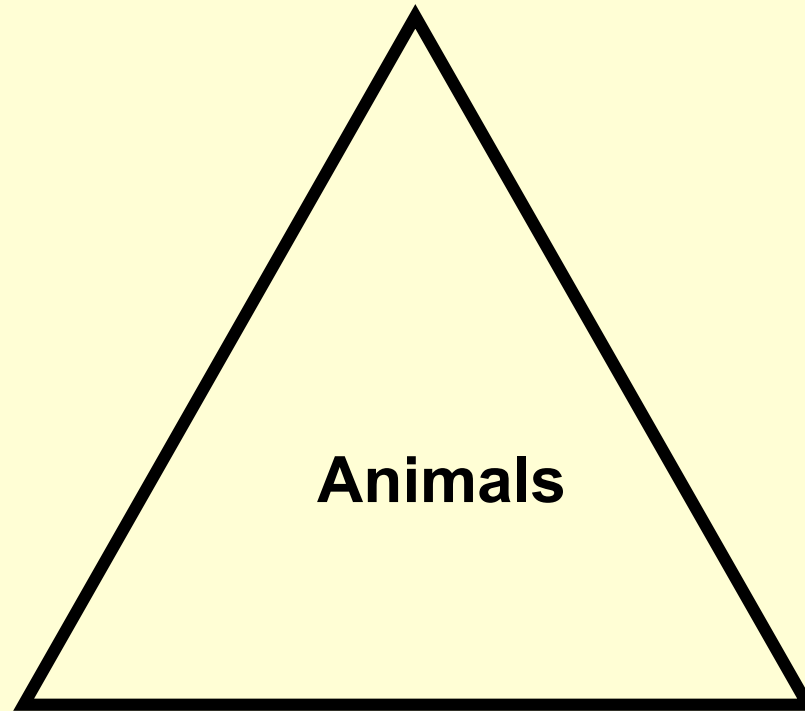
Field research is only mentioned three times in the Regulation on animal research

# Laboratory Animal Science LAS

**LAS** is defined as:

The scientific, legally approved and ethically acceptable study of animals for biomedical purposes, *i.e.* a multidisciplinary field encompassing genetics, physiology, microbiology, ecology, pathology, sociology, husbandry, animal experimental technology and the scientific use of animal species as models for other animal species and man.

**Scientific**

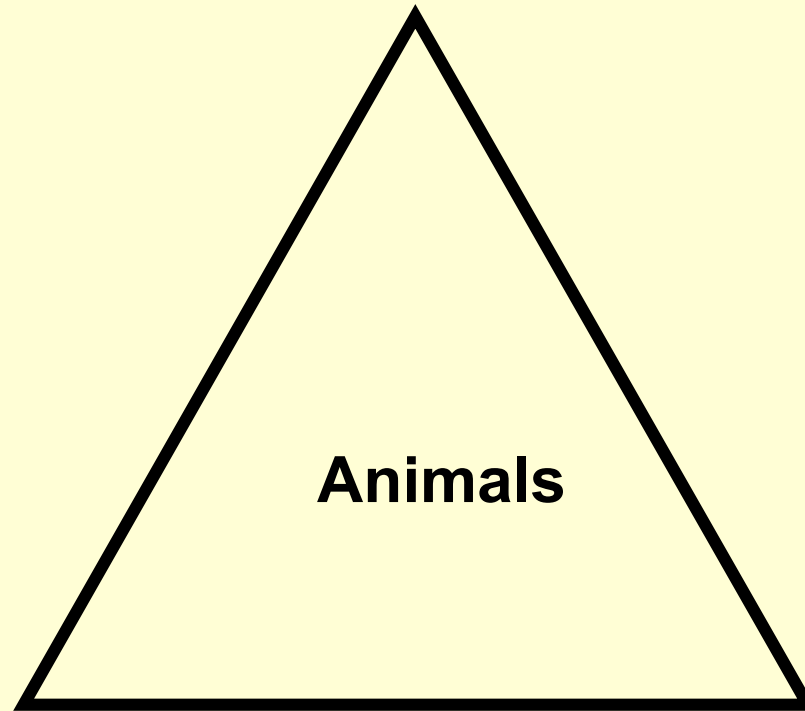


**Animals**

**Legal**

**Ethically acceptable**

**Head of Unit**



**Animals**

**Researchers**

**Technicians**

3 million animals

60 animal units  
+ field studies

National Committee (NARA)  
(8 members)

1 secretary & assistant

## **”Comparative medicine”**

with the focus on

- groups/species rather than individuals
- reproducibility across borders and time
- well-defined populations of animals
  - Healthy animals in a monitored environment
  - Known genotype
  - Known and standardised environmental conditions
  - Well-maintained and sanitised buildings
  - Same standard of welfare for all individuals
  - Veterinary care readily available

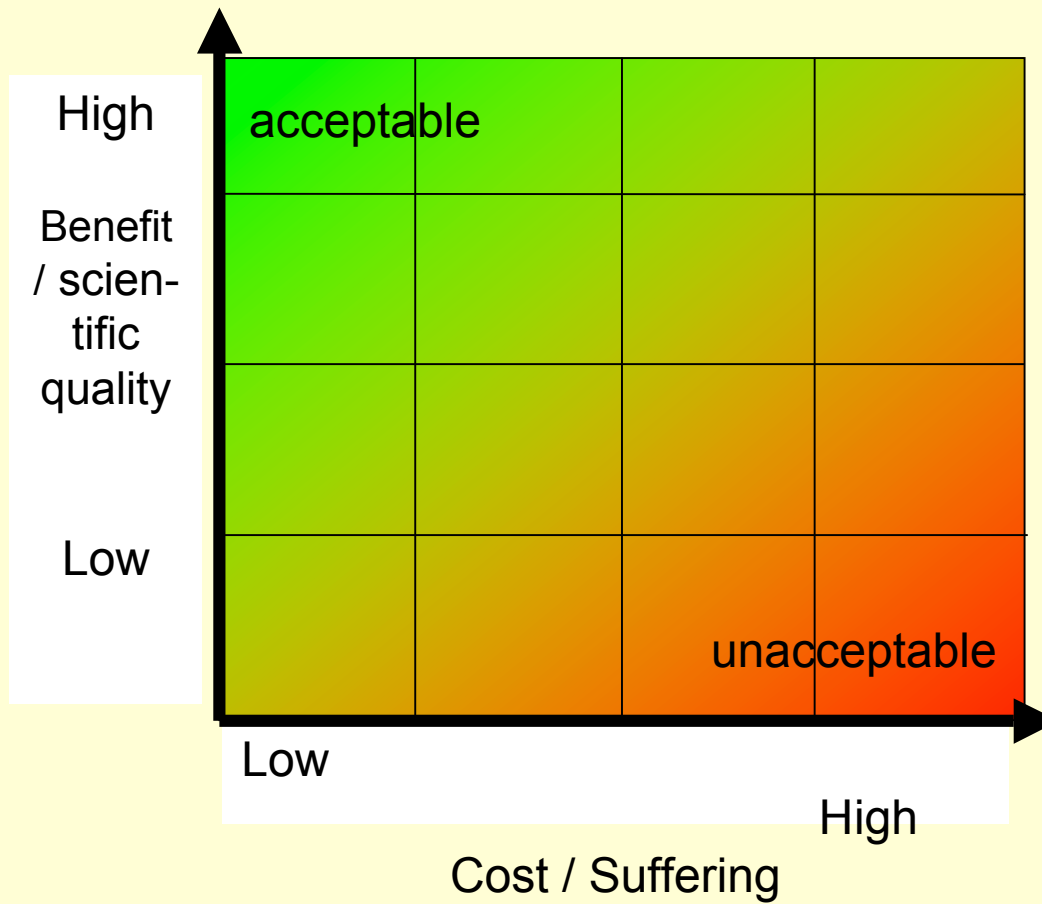


***Comparative medicine.***

***Are we giving animals the benefit of the doubt? Fish:***

**No brain, no pain?**

# Some form of ethical review proses



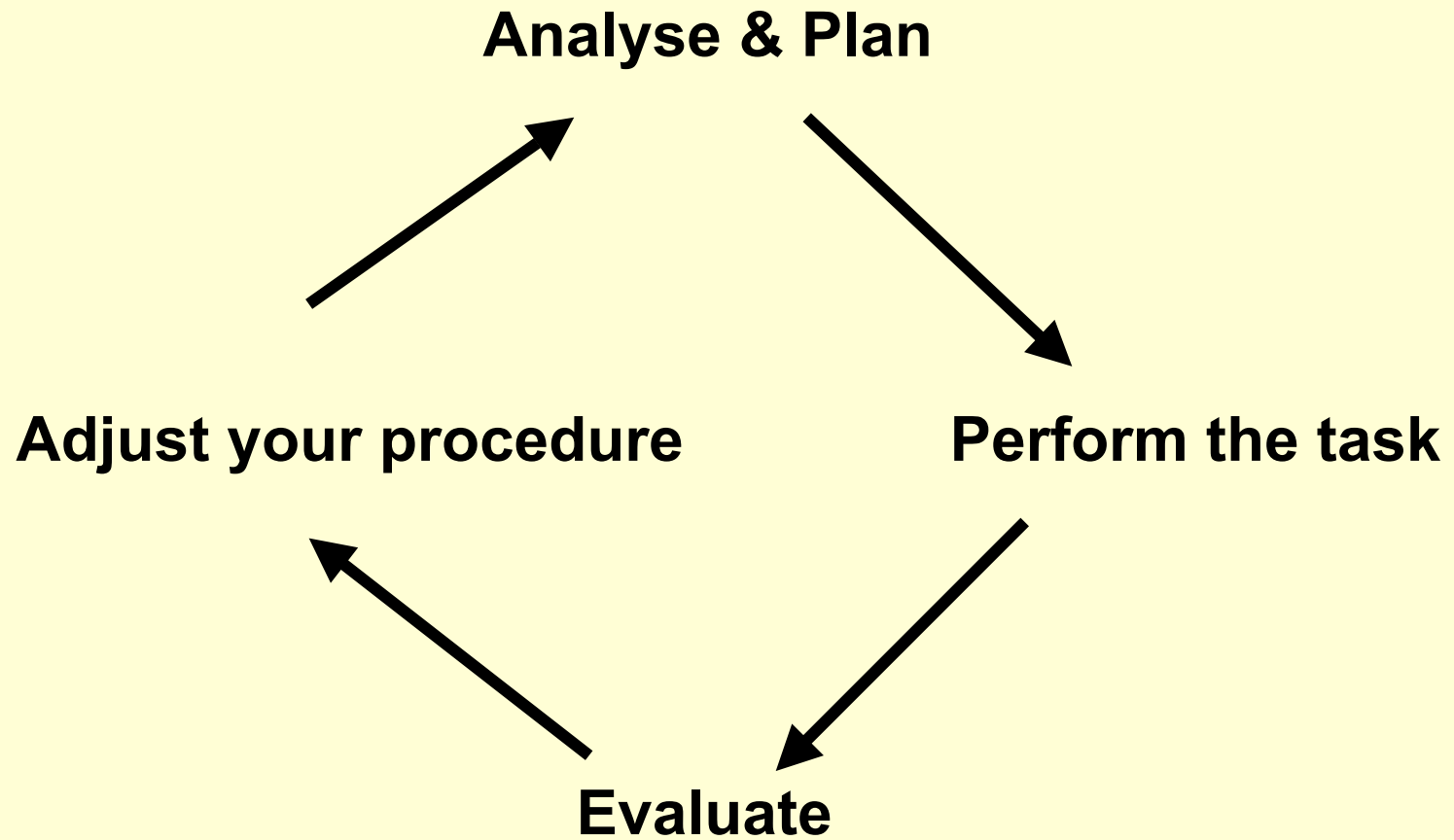


## *Accreditation by AAALAC International*

- Private nonprofit organization.
- Governed by 60+ “Member Organizations,” (AVMA, ICLAS, AALAS, FELASA, etc.).
- Facilities are assessed by a Council on Accreditation working with approx. 200 *ad hoc* Consultants.
- US and European offices

[www.aaalac.org](http://www.aaalac.org)



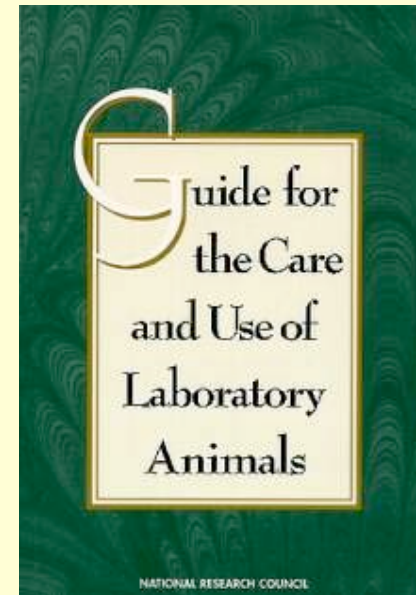


Quality control is a motivating upward spiral



# Standards

- AAALAC standards are based on applicable local and national regulations, plus the *Guide for the Care and Use of Laboratory Animals* (NRC 1996).



# *Program Description*

- A complete description of the facility's organisation and functions
- Template from AAALAC
- In our case: approx 100 pages + enclosures
  
- In addition a **Master Plan, Disaster Plan, Health & Safety handbook** and a large number of **SOPs**. (*Even in a controlled lab animal environment, quick life-and-death decisions have to be made - often when you yourself are most stressed*)

# *Animal care and use policies and responsibilities*

- Who is responsible
- Who provides veterinary care
- Competence of the staff
- Health and safety at work



# *Animal environment, housing and management*

- The physical environment
- Consideration to the animals' needs
- Animal care
- Breeding systems

# *Veterinary medical care*

- Purchase of animals and transport
- Preventative medicine
- Surgery
- Analgesia and anaesthesia
- Humane killing
- Medicines control

# *The buildings*

- Location and construction
- Management of the plant
- Farm animals and field studies
- Security



**Identification of critical areas**





Murphy's law...

# Refinement of techniques





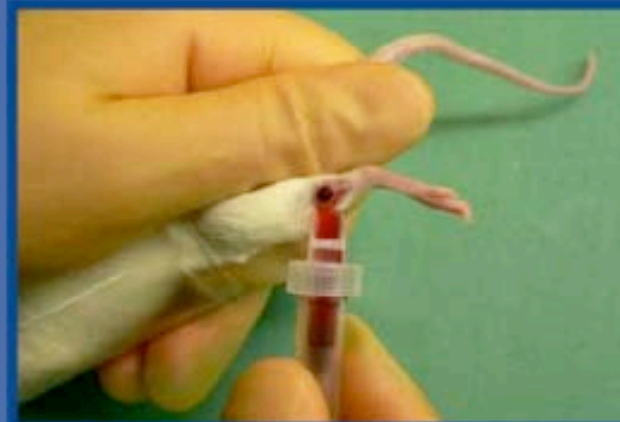
# *'Simple' bleeding?*

## *Retro-orbital, cardiac*



The Norwegian Reference Centre for  
Laboratory Animal Science & Alternatives

### Saphenous vein puncture for blood sampling of the mouse



#### Blood collection

The blood is collected in a  
sampling tube or  
microhaematocrit tube.



Close this window  
to return to the  
main menu

Slide show

Video



*SCID-Hu mice immunized with a pneumococcal vaccine produce specific human antibodies and show increased resistance to infection.*

Aaberge I.S. *et al.*, *Infection & Immunity*, 1992, 60 (10): 4146-4153

We don't have a Journal of the 3Rs



*A sedative with analgesic  
properties should be used*



***<http://film.oslovet.veths.no>***



”Simple” identification

affecting natural behaviour?  
amputations?

Tolerance of mortality in fish and  
small mammals with low Bambi-  
factor

# Lateral thinking...



*Methods of positioning fish for surgery or other procedures out of water  
Lab. Anim., 2000, 34: 430-433.*

- Home
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# FEDERATION OF EUROPEAN LABORATORY ANIMAL SCIENCE ASSOCIATIONS

!!!!NEWS!!!!NEWS!!!!N

WELCOME TO THE FELASA WEBSITE!

**EUROGUIDE**  
 on the accommodation and care of animals used for  
 experimental and other scientific purposes  
 has been presented at the FELASA/ ICLAS symposium  
 and is available from [RSM press](#).

The guide facilitates scientists to obtain in a user friendly way the core aspects  
 of the care of laboratory animals set out in the revised Appendix A  
 of the European Convention for the Protection of Vertebrate Animals used for  
 Experimental and Other Scientific Purposes (ETS 123),  
 which went into effect on the 15th of June, 2007.



# FELASA recommendations and guidelines

## Education and training

- [FELASA accreditation of education and training programmes: Training and International recognition](#)
- [FELASA recommendations for the accreditation of laboratory animal science education and training](#)
- [FELASA recommendations on the education and training of persons working with laboratory animals: Category A and C](#)
- [FELASA recommendations for the education and training of persons carrying out animal experiments: Category B](#)
- [Education of specialists in laboratory animal science \(Category D\)](#)

## Health monitoring

- [Health monitoring of breeding colonies and experimental units of cats, dogs and pigs](#)
- [Health monitoring of non-human primate colonies](#)
- [FELASA recommendations for the health monitoring of rodent and rabbit colonies in breeding and experimental units](#)
- [FELASA recommendations for the health monitoring of experimental units of calves, sheep and goats](#) (Laboratory Animals 34: 329-350, 2000)

## Others

- [Accreditation of laboratory animal diagnostic laboratories](#)
- [FELASA quick reference guide on nutrition](#)
- [Guidelines for the production and nomenclature of transgenic rodents](#) (Laboratory Animals 41: 301-311, 2007)
- [Guidelines for the veterinary care of laboratory animals](#)
- [Principles and practice in ethical review of animal experiments across Europe](#)
  - [Full report](#)
  - [Summary of the report of a FELASA working group on ethical evaluation of animal experiments](#) (Laboratory Animals 41: 143-160, 2007)
- [Pain and distress in laboratory rodents and lagomorphs](#) (Laboratory Animals 28: 97-112, 1994)
- [Sanitary aspects of handling nonhuman primates during transport](#) (Laboratory Animals 31: 298-302, 1997)
- [Standardisation of enrichment](#)

[www.felasa.eu](http://www.felasa.eu)





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"Laboratory Animals" regularly publishes invited reviews, working party reports, and other articles of general interest to the research community. Laboratory Animals Ltd distributes many of these as reprints, but we also make some of them available for download in .pdf format.

If you do not have a copy of Adobe Acrobat Reader, or the Adobe Acrobat plug-in for your browser, you will need to obtain one of them before you will be able to view the documents. They are available from the **Adobe web site**. This site can be quite busy, and you may find it faster to locate an alternative site.

Click to browse downloads relating to:

1. Working Party Reports and Guidelines
2. FELASA reports
3. Supplement on Health Monitoring (Laboratory Animals 33, 2, Supplement 1, 1999)
4. Refinement of Blood Sampling Techniques - papers from Laboratory Animals 32(4) 1998
5. On-line additions to published papers
6. Other papers from Laboratory Animals
7. Humane Endpoints In Animal Experiments
8. Guidelines referred to in "Instructions for Authors"
9. Proceedings of the 9th FELASA Symposium - Internationalisation and Harmonisation of Laboratory Animal Care and Use Issues



## Laboratory Animals

The official journal of 6 European laboratory animal science associations and FELASA  
[www.lal.org.uk](http://www.lal.org.uk)

## Scand-LAS

LAS association for the Nordic countries & Estonia, with its own journal  
[www.scandlas.org](http://www.scandlas.org)



*Housing?*

Group housing or  
Individual housing



Environmental  
Enrichment

Acclimation











'We may need the animals, as it were,  
on the night; but the machines will do  
very well at rehearsals'

*W. Russell, UFAW Courier, 1955*





## NORINA

- Information on 4,000 alternatives
- Many of these are can be used to train technicians and researchers

## TextBase

- Information on 1,000 textbooks
- Many of these are anatomy and dissection manuals
- Links to publishers and bookstores on the Internet
- Overview of key books and books held at the Lab Animal Unit at the Vet School
- Continuously updated

**<http://oslovet.veths.no>**

*1996: 2nd World Congress on  
Alternatives and Animal Use  
in the Life Sciences, Utrecht*



*1997: Altweb,  
Alternatives to  
animals on the  
web*



# Pain Management Database

- ❖ Collaboration between Altweb and AWIC
- ❖ 10,000 peer reviewed citations from Medline, Agricola, and Agris
- ❖ Covers rats, mice, primates, dogs, cats, rabbits, pigs, guinea pigs, birds, sheep, fish, and exotic species
- ❖ Abstracts with dosage info or side effects

# *How are databases used?*

- Bibliographic databases (e.g. MEDLINE, AGRICOLA, CABI) are often not used adequately (poor overlapping)
- Scientists rarely use "three-R's" words when they assign keywords to their papers
- This is a major problem because we have no single "Journal of the 3Rs"
- Too few scientists are aware of the specialist databases on alternatives



# *Centres giving information on the 3 Rs*



## UCCAA

University of California  
Center for Animal Alternatives



## Animal Welfare Information Center

U.S. DEPARTMENT OF AGRICULTURE  
NATIONAL AGRICULTURAL LIBRARY

*AJ Smith & T Allen, Animal Welfare, 2005*

***The use of Databases, Information  
Centres and Guidelines when  
planning research  
that may involve animals***

# *Email discussion groups*

*CompMed + archive*

*VOLE*

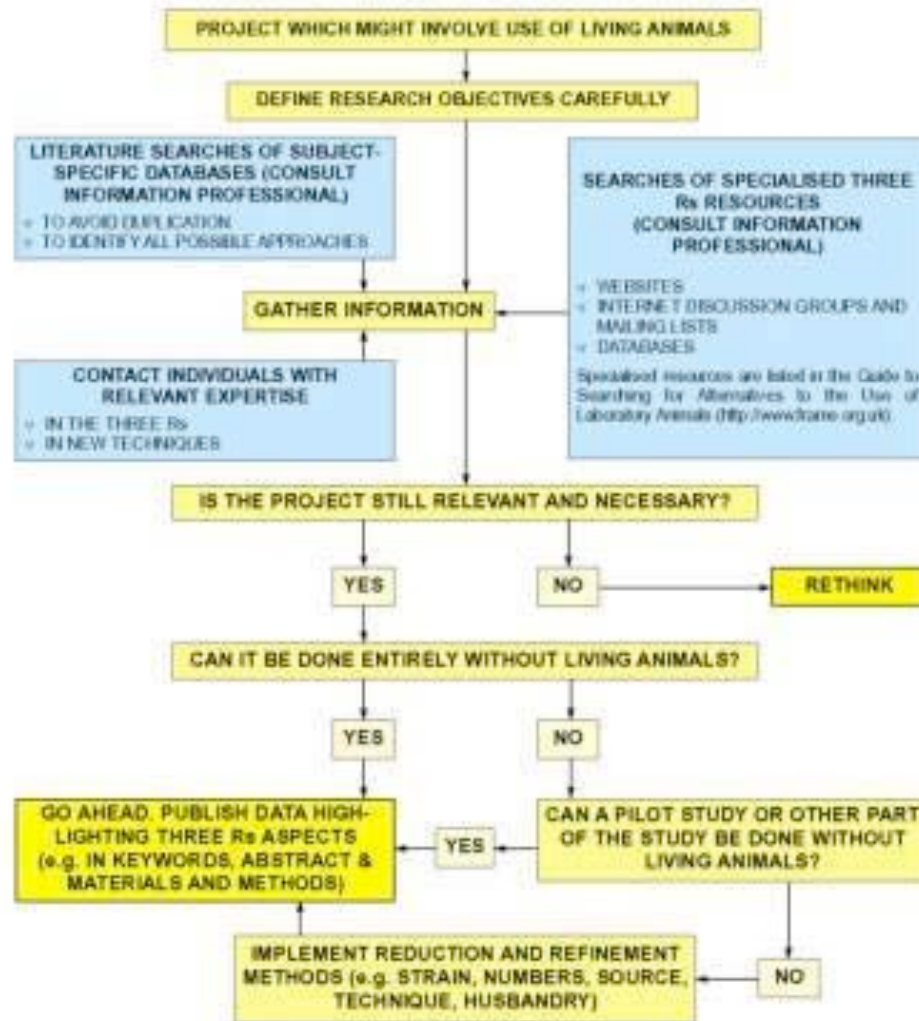
*LAREF*

*RAT-TALK*

*Transgenic-List*

## EARLY PLANNING FOR A PROJECT WHICH MIGHT INVOLVE THE USE OF ANIMALS

Scientists using animals in scientific procedures have an ethical and legal obligation to ensure that the Three Rs, namely Reduction, Refinement and Replacement, are implemented wherever possible. This strategy was designed by the Focus on Alternatives\* group to help scientists meet this obligation. The strategy should be applied at the beginning of a project, and at regular intervals throughout. Advice should be sought from the Ethical Review Process and Home Office Inspectorate.



\*Membership of the Focus on Alternatives committee includes the Dr Harwin Trust, FRAME, The Humane Research Trust, The Lord Dowding Fund, RSPCA, St Andrew Animal Fund and UFAW. Copies of the poster are obtainable from FRAME, 95-96 North Sherwood Street, Nottingham, NG1 4EJ. Tel: 0115 950 4740. Fax: 0115 950 3570. E-mail: [frame@frame.org.uk](mailto:frame@frame.org.uk)

## Focus on Alternatives (FoA)

A consortium of UK animal welfare organisations