**Replacement of Animals in Research**

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- **Replacement** - dedication to the use of alternatives to animals in research

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The three Rs – Burch and Russel 1959
- **Replacement**
- **Reduction**
- **Refinement**

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"alternatives to animals in research" Google - 177 million hits

- **FRAME** - Journal: ATLA
- **ALTWEB** - "a global clearing house for information on alternatives for animal testing" – lots of amazing array of resources
- **ALTEX** - Alternatives t Animal Experimentation Journal (archive)

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- **In Vitro** - CAAT, IIVS
- **In Silico**
  - simulations, biokinetic models,
  - data mining, pattern recognition, bioinformatics
- **In Humans**
  - Genotyping
  - Stemcells
  - Cadaver tissue
  - Lower Organisms?????

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-The ECVAM Good Search Practice on Animal Alternatives

- "I had confused experience with learning, and comfort with perfection"
  - Jon Richmond, Forward – The ECVAM Search Guide

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Concepts to think about:
- Humane endpoints in laboratory animal experimentation
  - [http://www.humane-endpoints.info/eng/](http://www.humane-endpoints.info/eng/)
- Managing animal stress, distress and pain
- Coping with animal distress and death.
REPLACEMENT OF ANIMALS IN RESEARCH

Getting Research Funding for the three Rs

- Dr Hadwen Trust - the largest UK charity funding research using alternatives to animals. Inspiring research on many different areas.

- MAWA - Medical Advances Without Animals - Australian Charity hosted by ANU

- ARDF - Alternatives Research and Development

- ALTWEB - Funding lists