An introduction to the NC3Rs and an overview of our office-led programmes of work in Toxicology and Regulatory Sciences can be found in the Journal of the American Association for Laboratory Animal Science:

Web resource ‘hubs’ pull together information, publications and guidance in specific areas that have resulted from NC3Rs office-led projects:

- **Animals in chemical safety testing:**
  [www.nc3rs.org.uk/animals-chemical-safety-testing](http://www.nc3rs.org.uk/animals-chemical-safety-testing)

- **Animals in environmental safety testing:**
  [www.nc3rs.org.uk/animals-environmental-safety-testing](http://www.nc3rs.org.uk/animals-environmental-safety-testing)

- **Animals in drug discovery and development:**
  [www.nc3rs.org.uk/animals-drug-discovery-and-development](http://www.nc3rs.org.uk/animals-drug-discovery-and-development)

Resource webpages focus on key aspects of our projects:

- **Pathways-based approaches resource page:**
  Supports scientists and regulators interested in developing and applying pathways-based/mechanistic approaches for safety assessment. As part of this resource we provide a regular periodical called Adverse Outcome Pathway (AOP) News, which aims to keep interested parties updated on the latest information and opportunities related to pathways-based approaches and AOPs.

- **Microsampling resource page:**
  [www.nc3rs.org.uk/microsampling](http://www.nc3rs.org.uk/microsampling).
  Provides guidance on using microsampling in toxicology studies.
1. Animals in chemical safety assessment

1.1 Non-animal approaches and chemical safety assessment


1.2 Redundancy in acute toxicity testing

1.3 Adoption of the Fixed Concentration Procedure (FCP) for acute inhalation studies


1.4 Applying pathways-based approaches across the biosciences


1.5 Reducing animal use in the safety assessment of nanomaterials


### 1.6 Toxicokinetics


### 1.7 Exposure-driven risk assessment


### 1.8 Non-animal methods for cosmetics testing

1.9 In vitro approaches for carcinogenicity testing


1.10 Bile duct cannulation


1.11 In silico toxicity protocols


2. Animals in environmental safety assessment

2.1 Promoting the 3Rs in ecotoxicology


2.2 Assessing the need for chronic fish studies on formulated pesticides

2.3 Applying the one concentration approach in fish bioaccumulation studies


2.4 Applying the threshold approach in fish acute toxicity studies


2.5 Using QSARs to predict fish acute toxicity of pesticide metabolites

3. Animals in drug discovery and development

3.1 Promoting the 3Rs in drug discovery and development


3.2 Single dose acute toxicity studies


3.3 Refining regulatory toxicology studies


3.4 Toxicokinetics and satellite animals


3.5 Reducing animal use in monoclonal antibody development


### 3.6 Reducing the use of recovery animals

3.7 Reducing the use of animals in safety pharmacology studies


