

## **The 3Rs and the credibility of science: are they linked?**

The ethical use of animals in biomedical research is codified in the 3Rs, and adoption of these principles is part of the social contract between scientists and the public. It is often stated that more careful pursuit of the 3Rs leads to better science, and a number of compelling examples of this are offered. But might the uncritical pursuit of the 3Rs lead to worse science? For instance, might the injunction to reduce the number of animals to the fewest possible lead to experiments which are too small? Might an AWERB/IRB focus on the importance of novelty impede the approval of replication studies? Might a desire to substitute non-animal alternatives lead to the adoption of research practices at much greater risk of bias? Conversely, how does bad science affect the 3Rs? And, all other things being equal, might better science improve the ethical position of animal research?