National Centre for the Replacement Refinement & Reduction of Animals in Research

Tackling experimental design in your funding proposal

Resources to help describe your experimental design and methodology

Pitfall to avoid	Resource
You've assumed experimental design is only important for *in vivo* experiments	Webinar: Best practice in experimental design (Dr Natasha Karp, Associate Director of Biostatistics, Astrazeneca)
Your scientific question is unclear or poorly defined	Blog post: Eleven ways your funding application could be failing
You haven't described your experiments in enough detail	Worked examples: different types of experiments written up by the MRC Experimental Design Assistant
Your sample size is poorly justified	Video: Statistical power and the perils of chance (Dr Kate Button, University of Bath) ARRIVE guidelines Blog post: How to decide your sample size when the power calculation is not straightforward (Dr Simon Bate, Statistical Sciences, GSK) Video: Study design: effect sizes and statistical analyses (Professor Hazel Inskip, University of Southampton) Conducting a pilot study
Your statistical analysis is unclear or inappropriate	EDA: Statistical analysis EDA: Independent variables
You've incorrectly identified the experimental unit	ARRIVE guidelines: Experimental units Journal article: What exactly is 'N' in cell culture and animal experiments? (Lazic *et al Plos Biology*)
You've not explained how you are avoiding bias	EDA: Allocation EDA: Nuisance variables Video: Blinding reduces bias in experimental design (British Pharmacological Society) ARRIVE: Blinding

For more detailed hints and tips, visit: nc3rs.org.uk/news/tackling-experimental-design-funding