Animal Research Facts

The fast facts below were borrowed from Speaking of Research (www.speakingofresearch.com) and are great conversation starters as well!

General Facts

- The physiological systems of humans and other species of animals are very similar.
- Humans share more than 85% of their protein encoding DNA with mice.
- Animal research has resulted in the development of vaccines for some of the deadliest diseases (e.g. rabies).
- Medical devices, such as pacemakers and cochlear implants, were dependent upon animal research.
- Vaccinations for polio, tuberculosis, and diphtheria have all been developed through research on animals.
- Animal research plays a key role in the development of veterinary medicines for our pets.
- Survival of premature babies, from prenatal corticosteroids to life support machines, has relied on animal research.

Facts by Species

- Cattle helped scientists create vaccines for smallpox, the HPV vaccine and treatment for river blindness.
- Local anesthetics, rabies vaccine, blood transfusions and statins were made possible by research on rabbits.
- Monkeys were key to developing the polio vaccine, antiretrovirals, and deep brain stimulation for Parkinson's patients.
- Hip replacement surgery, kidney transplants and pacemakers were all developed through research on dogs.
- Mice played a crucial role in developing chemotherapy, the meningitis vaccine, penicillin and antirejection medications.

By the Numbers

- 92% of scientists polled in a *Nature* survey agreed that animal research is essential to the advancement of biomedical science.
- 88% of the Nobel Prizes awarded in Physiology or Medicine have been dependent on research with animals.
- Over 99% of animals used in research are specifically bred for research.
- Approximately 95% of all animal research is conducted on mice, rats, and fish. Other species are used only when necessary.

US Rules and Regulations

- The USDA, which enforces the Animal Welfare Act, conducts unannounced inspections at least once a year.
- USDA inspection reports are posted online for the public to see.
- The Public Health Service (PHS) requires institutions to ensure appropriate care of all animals involved in PHS supported research.
- An Institutional Animal Care and Use Committee is required by the Animal Welfare Act and PHS Policy.
- IACUCs oversee and evaluate all aspects of an institution's animal care and use program.
- IACUCs inspect animal research facilities semi-annually to assure compliance with regulations.
- IACUCs include non-scientific members of the community to help evaluate research proposals.

UK Rules and Regulations

- The Animals in Science Regulation Unit makes announced and unannounced inspections of all facilities in the UK.
- Dogs, cats and monkeys have special protection under UK law; other species must be used if possible.
- All UK researchers must hold an animal license and have attended a Home Office training course.
- The 3Rs – Replace, Refine, Reduce – are written in to the Animals (Scientific Procedures) Act, 1986.

Animal Welfare

- Animal research can only be carried out when there is no viable non-animal alternative.
- The 3Rs (replace, reduce, refine) guide how animals are used in biomedical research.
- Non-animal models, such as cell and tissue culture, are used in addition to animal models, but they cannot replace all animal research.
- All personnel involved with the care and use of laboratory animals must be trained to ensure the animals' well-being.
- Many of the procedures carried out on animals involve no pain or discomfort, such as observing their behavior.
- Animal care technicians, veterinarians, and scientists are all dedicated to the welfare of laboratory animals.