The Ethics Of Using Animals in Research

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Background and Module Content

The scientific rationale underlying the use of animals in biomedical research is that a living organism provides an interactive, dynamic system that can be observed and manipulated experimentally in order to investigate mechanisms of normal function and of disease. As a result, a greater understanding of living systems can be attained and this knowledge can be generalized to other species including humans, facilitating the development of effective therapies. One particular use of animals in research is in the development and use of animal models of particular human physiological functions (e.g., immune response, cardiovascular function, vision) and diseases. These are commonly used in all areas of biomedical research and have contributed significantly to medical progress. Yet while the use of nonhuman animal models is a common component of biomedical research, the role of animal models in research, and its scientific and ethical justification, are frequently not addressed in the education and training of junior researchers.

Students need experience in identifying and thinking through the development of an animal model and the extent to which it can be generalized. In addition, theInstitutional Animal Care and Use Committee (IACUC)approval is required for research and teaching that involves animals. Thus, researchers and instructors need to understand the purpose and function of IACUC.

At the same time, scientific research is funded and conducted under the auspices of society as a whole. Both those who use animals in research or teaching and those who do not are members of society and need to understand the scientific and ethical justification for, criteria for, and limits of the use of nonhuman animals in research and teaching, as well as the range of societal views and concerns regarding the use of animals.

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Method and Scenarios

- Presentation and discussion of scientific and ethical issues in the use of animals in research.
- Participants read federal and institutional regulations and other guidelines regarding the care and use of animals in research, their primary goals, and the structure and functions of IACUCs.
- Distribution of scenarios developed as protocols for IACUC review to the students and faculty.
    - Experiment Discomfort
    - A Question of Sacrifice
    - Introducing Viruses in the Field
    - Survival Skills for Emerging Researchers
    - The New Hip
    - If You Were a Committee Member
    - Change the Protocol to Get Results? (The Jenny Ito Case - text version)
    - Change the Protocol to Get Results? (The Jenny Ito Case - dialogue version)
    - Look, I've Changed
    - Unexpected Adverse Events
- Panel discussion based on those scenarios and questions and any others that students or faculty wish to add.

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Readings (recommended for discussion of scenarios)

Explanation of Federal Regulations covering research with animals.
Links to these regulations are listed in the resources section below.

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Objectives

This Module will Provide:

- a framework for understanding the ethical pros and cons for the use of nonhuman animals in research

and teaching.
- information about resources and regulations regarding the care and use of nonhuman animals.
- theoretical underpinnings and practical experience with regard to the purpose and function of IACUC.
- experience in thinking through the issues they relate to cases drawn from biomedical engineering.

Participants who do or will use animals in research or teaching will:

- understand and explain the validity of the animal model.
- be familiar with the regulations, conventions, and accepted practices regarding the use of animals in research.
- understand the range of societal views and ethical concerns regarding the use of animals in research.
- be able to identify and articulate his or her own scientific and ethical views regarding the use of animals in research.
- understand the elements of the research protocol that serve as the basis for committee members' decisions regarding acceptability and be able to complete an IACUC protocol form so as to adequately convey the rationale and methodology of the research for IACUC review.
- learn the rudiments of serving on a committee that requires critical thinking and moral reasoni