

# Regulation of Animal Use within Federal Departments and Agencies

---

Six Federal departments and four Federal agencies conduct animal experimentation within Federal facilities, or “intramurally.” Of those, only the Departments of Commerce and Transportation, which use few animals, have no specific guidelines. A seventh Federal department, the Department of Energy (DOE), conducts no intramural animal experimentation, but has a policy on animal experimentation for its extramural contracted work. The other entities all have some type of policy for intramural use of animals.

Effective December 1986, each Federal research facility will be required to establish an animal care and use committee with composition and function as described in the 1985 amendments to the Animal Welfare Act (see ch. 13). Each Federal committee will report to the head of the Federal entity conducting the animal experimentation.

Several generalizations can be drawn about the guidelines of the Federal entities conducting intramural animal experimentation. Most policies on proper animal care and treatment include:

- adherence to the Animal Welfare Act and to the ***Guide for the Care and Use of Laboratory Animals*** of the National Institutes of Health (NIH) (26) as well as the Public Health Service (PHS) *Policy on Humane Care and Use of Laboratory Animals by Awardee Institutions* (see app. C);
- an animal care and use committee with at least three members (the attending veterinarian and two scientists within the agency);
- an attending veterinarian responsible for maintaining the proper animal care standards;
- some prior review of protocols and animal species use, usually accomplished by an animal care and use committee;
- no real mechanism for enforcement of the policy, with the primary responsibility for maintaining the proper standards and adhering to agency guidelines lying with the individual investigator;
- a minimal number of site inspections and no real oversight mechanism; and
- a policy calling for using as few animals as possible and encouraging the use of alternative methods wherever feasible.

Some agency policies are noteworthy for additional provisions intended to promote high standards of animal care and use:

- NIH requires all animal research committees to include one member sensitive to bioethical issues and

not employed in the same NIH bureau, institute, or division. This person must be a Federal Government employee and so may or may not be a layperson. These committees have explicit responsibilities and a detailed administrative structure in which to carry out duties.

- The Ames Research Center of the National Aeronautics and Space Administration (NASA) has demonstrated the successful participation of lay committee members in the consideration of animal welfare issues: 40 percent of the committee are laypeople, a format set up at NASA's instigation.
- Since 1971, the Veterans' Administration (VA) has required that all facilities using animals seek and obtain accreditation by the American Association for Accreditation of Laboratory Animal Care (AAALAC). The VA has a contract with AAALAC covering all its research facilities, thus prohibiting failure of accreditation of any constituent facility solely for financial reasons. The Department of Energy also requires the facilities of its extramural contractors to be AAALAC-accredited.
- The Department of Defense (DOD) has a policy and committee distinct from its general animal policy to ensure proper care and use of nonhuman primates.
- The policies at the Food and Drug Administration (FDA) and the Department of the Interior give a great deal of flexibility to the research centers to allow specific policies tailored to the needs and demands of each animal facility. Although this may have many advantages, it may make the maintenance and monitoring of a standard of care throughout the agency difficult.

## Department of Agriculture

Regulation of animal use in research within the U.S. Department of Agriculture (USDA) involves adherence to the Animal Welfare Act and to the NIH *Guide* (26). Much of the animal research performed by USDA involves farm animals, which are largely excluded from these policies. The system of compliance involves periodic checking of intramural research facilities. For extramural research, no enforcement occurs; hence the system is largely voluntary and self-regulating (15).

## Department of Defense

The general policy on animal use in all Department of Defense programs is contained in DOD Directive No.

3216.1, issued by the Deputy Secretary of Defense in 1982. This statement sets policy on the humane treatment and appropriate care of animals used in research and the responsibilities of different DOD personnel to carry out the directive. In general, it follows the Animal Welfare Act and the NIH *Guide*, along with attempting to incorporate alternatives to animal use in the form of replacement, reduction, and refinement. Other, special policies treat the general use of nonhuman primates and prohibit the use of dogs, cats, and nonhuman primates for developing nuclear weapons. The directive also requires that all proposals or designs for animal experiments undergo appropriate animal welfare review to confirm: “(1) the need to perform the experiment or demonstration; 2) the adequacy of the design of the experiment or demonstration; and 3) compliance with established policy on the use of animals” (20).

Army Regulation 70-18 (a Joint Service regulation) implements the directive’s policies uniformly for all DOD components. The authority for enforcing this regulation is conferred to the Secretary of the Army, who is required to develop and issue, in consultation with the other DOD components, regulations implementing the directive. Army Regulation 70-18 states that all DOD facilities using animals should seek AAALAC accreditation. Also, it sets up a long chain of responsibilities for establishing and policing animal welfare policies. The regulation states that the Under Secretary of Defense for Research and Engineering will: “1) issue policies and procedural guidance under DOD directive 3216.1, 2) allocate nonhuman primate resources, and 3) designate a veterinarian as the DOD representative to IRAC [Interagency Research Animal Committee]” (21). The Surgeon General of each DOD component involved in animal research must supervise animal use and implement this regulation in each component, establish a joint working group to identify and conserve nonhuman primate resources, and establish and provide representatives to a joint technical working group that periodically reviews the care and use of animals in DOD programs. Finally, the local commander of a facility must ensure that:

- all programs involving animals conform to the guidelines cited in Army Regulation 70-18;
- local animal care and use, procurement, and transportation policies and procedures comply with the regulation;
- animals used or intended to be used will experience no unnecessary pain, suffering, or stress, and their use will meet valid DOD requirements;
- alternatives to animal species will be used if they produce scientifically satisfactory results; and
- dogs, cats, or nonhuman primates are not used in research conducted to develop nuclear, biological, or chemical weapons (21).

Thus, the powers and responsibilities for carrying out DOD animal welfare policies are decentralized. DOD

does not do any inspections of its facilities. The facilities are required to submit annual reports to USDA under the regulations implementing the Animal Welfare Act.

The Army regulation builds the institutional review structure around the local animal care committee. Local commanders must form a committee to oversee the care and use of animals in their facilities. **The committee** must have at least three members, including at least one person not involved in the proposed project and one veterinarian. The committee reviews: 1) all aspects of animal care to ensure that established policies, standards, and regulations are complied with; and 2) all research protocols and proposals for proper animal welfare policies and good animal experimentation standards. Sufficient information to do this animal care and treatment review must be presented with all research proposals. In addition, proposals that involve experimentation on nonhuman primates are reviewed separately by the proper DOD component office (21).

As with other departments in the Federal Government, DOD contracts with outside investigators for some of its research. The DOD extramural animal research policy requires that the same standards outlined in Army Regulation 70-18 be followed by contractors in order to receive DOD funds. Assurance is obtained by written statements from the recipient animal care committee or other responsible official. An assurance is also required that the proposal or protocol has been reviewed and approved by the local animal care and use committee or by the attending veterinarian (21). Enforcement of these policies for extramural research is more difficult than the intramural policy, since **investigators** and administrators are not directly responsible to the military line of command.

In addition to DOD-wide policies issued by the Office of the Secretary, a recommendation is pending in the Army Medical Research and Development Command that an Advisory Committee on Animal Welfare be appointed, including non-DOD representatives, to meet periodically about concerns related to the use of animals for research and training purposes (7).

In 1983, the Air Force commissioned an outside review panel to study animal use in its Aerospace Medical Division. The panel looked at Brooks Air Force Base (San Antonio, TX) and Wright-Patterson Air Force Base (Dayton, OH), which together account for 95 percent of the service’s animal use. The panel found the current policy in place to be satisfactory and was (17):

... impressed with the thoroughness and genuine concern of all those involved to ensure that appropriate measures are taken to effect proper care and use of animals. Furthermore, there was a clear emphasis on selection of alternatives to animal use where feasible. Excellent progress was shown in the use of simulation models for a variety of radiation and toxicological studies.

The panel did note that the system of care and treatment policies was too informal and based on the current personnel; it was unconvinced the system would remain in place if staff were transferred. The Aerospace Medical Division of the Air Force drafted a Supplement to Army Regulation 70-18 to implement some of the review panel's recommendations. The most substantial change deals with the animal care and use committee membership (21):

The local commander will appoint at least one lay person from the local community who has no direct Department of Defense connections to serve as a member of the Committee. This lay member should not be a veterinarian or research scientist who works with animals; however, a background in sciences would be helpful. The Committee may have permanent or ad hoc membership. Its specific purpose is to review all protocols, experimental designs, or lesson plans that involve the use of animals and assure compliance with [DOD policy].

The Air Force Supplement to Army Regulation 70-18 also requires that each organization using animals submit not just the Annual Report of Research Facility of USDA's Animal and Plant Health Inspection Service (APHIS), but also an Annual Animal Use Report, listing all species used, the inventory at the beginning of the year, additions and losses to the facility, the ending inventory, the utilization of the animals, the different experimental situations, and the projected use of animals for the next fiscal year (18).

### ***Department of Energy***

The Department of Energy has no intramural research facilities and so contracts for all its research. The division involved with animals is the Office of Health and Environmental Research (OHER); programs involving research with animals represented less than 15 percent of OHER's total research budget for fiscal year 1985 (5). Proposals for OHER-funded research are subjected to outside peer review for scientific merit. An OHER research committee from the Office's four divisions has final approval before funding a research proposal.

The OHER policy for animal use by its extramural contractors places the prime responsibility for the maintenance of animal facilities and for animal care on the contractor. OHER contract research facilities are bound by law to comply with the Animal Welfare Act and its regulatory policies, and OHER personnel maintain close liaison to assure such compliance. In addition, the IRAC principles are part of the OHER policy statement, along with the requirement to maintain AAALAC accreditation (5).

To enforce these policies, one OHER staff member has responsibility for monitoring animal research pro-

grams for compliance. This staff member must maintain contact with the research facilities to assure accreditation and to affirm, at least yearly, that it is being maintained. Site visits with at least one noncontract veterinarian who is an expert in laboratory-animal care may be conducted to evaluate the care and treatment of experimental animals (5,6).

### ***Department of Health and Human Services***

#### **Food and Drug Administration**

The Food and Drug Administration has recently played a major role in attempting to address animal welfare issues. In 1983, the agency took two steps in this direction by sponsoring an acute studies workshop and by establishing an Agency Steering Committee on Animal Welfare Issues.

The workshop helped clarify FDA's position on its need for toxicity data, especially from the LD<sub>50</sub> test. The points emerging from the workshop were that:

- FDA had no regulations mandating use of the LD<sub>50</sub> test;
- the requirement by Federal agencies for LD<sub>50</sub> data from regulated parties was much less than perceived by the public;
- government and industry agreed that there are better determinants of acute toxicity than the LD<sub>50</sub> test and that they supported developing valid alternatives to the use of animals for testing chemicals;
- U.S. Government agencies are cooperating with other countries through organizations like the Organization for Economic Cooperation and Development; and
- improvements in the way animals are used for toxicity testing can and should be made administratively rather than through legislation (1,22).

The steering committee, which in part grew out of the acute studies workshop, found several FDA references to the LD<sub>50</sub> that could be misinterpreted as requirements to perform the test, and one involving three antitumor antibiotics where the requirement still existed (in contrast to the workshop findings). Its 1984 report states that, in all these instances (except for the antitumor antibiotics), regulations and guidelines are being rewritten to resolve any misunderstandings. They will then reflect the position of FDA that "the use of this test should be avoided except for those rare situations where no alternative exists." In the case of the antitumor antibiotics, FDA is considering eliminating the requirement (23).

Addressing five specific considerations, all part of its investigation of agency testing guidelines and practices

to answer questions raised at the acute studies workshop, the steering committee concluded that:

- FDA practices and procedures are designed to obtain the maximum amount of data from the minimum number of animals;
- despite general references to the use of LD<sub>50</sub> tests, FDA has no requirements for LD<sub>50</sub> data obtained by using the classical, statistically precise test, except for batch release toxicity tests of three anti-tumor antibiotics;
- there are many alternative tests being studied and developed throughout FDA;
- practices and procedures for assuring humane care and treatment of animals are agency-wide; and
- FDA has a number of regular channels of communication to industry, consumers, and the private sector in general and efforts to improve communication channels will continue (23).

The steering committee recommended workshops on acute toxicity studies throughout the agency, on the use of in vitro alternatives by various centers, and on agency and PHS practices and procedures for the care and handling of animals. The recommendations also called for the establishment of an agency-wide animal welfare committee (23). FDA is now setting up two in-house workshops to address the first two topics (1). Furthermore, it has established a Research Animal Council to see that the recommendations of the report are carried out, to consider animal research issues at FDA in a broad context, and to serve as an oversight committee for individual FDA centers. FDA's Research Animal Council began meeting quarterly in 1984 and will report to the Commissioner; its membership includes one representative from each of the centers within FDA (3).

FDA policies on humane animal care and treatment require compliance with the Animal Welfare Act as well as with other standards for humane care and use of animals. The steering committee report found that all centers have acceptable procedures, but that they varied in specific details. The centers conduct different amounts of research and testing; some have more formal procedures than others and stronger veterinary staff capabilities. Accreditation by AAALAC is sought on a voluntary basis, and two of FDA animal facilities, the National Center for Toxicological Research (NCTR) and the Center for Drugs and Biologics of the Office of Biologics Research and Review, are fully accredited (23).

The policies and procedures in place at the National Center for Toxicological Research (Jefferson, AR) are a good example of FDA system for addressing animal

welfare issues, since NCTR is the primary animal research facility within FDA (24):

**The policy of NCTR management is to use laboratory animals under practical and reasonable conditions of humane treatment, in carefully planned experiments with in vitro methodologies balanced against minimally required test species numbers in in vivo bioassays, and via procedures set forth in national standards and guidelines.**

The Director of NCTR has primary responsibility for assuring compliance with the policy but delegates some aspects of that control. The duties of the Senior Scientists in NCTR's Office of Research include technical overview of animal use, strain selection, genetic quality control, state-of-the-art reviews, and recommendations for adopting new concepts in animal care and control. The Director of the Division of Animal Husbandry is responsible for breeding-colony operations, animal production and laboratory-animal care in NCTR's various holding areas, and quarantine procedures (25). The animal care committee has adopted an "Animal Use Form for Experimental Protocols" and requires every investigator using animals to provide the committee with detailed information for evaluation (23). Finally, the Director has set up ad hoc committees of in-house personnel to evaluate specific areas of animal care, such as change in feed for the facility (1,24).

The FDA policy on extramural research requires adherence by awardee institutions to the PHS policy and procedures (23):

This includes (1) having in place a program of animal care which meets federal and Department standards, (2) providing, through AAALAC accreditation or defined self-assessment procedures, assurance of institutional conformance, and (3) **maintaining an animal research committee to provide oversight of the institution's animal program, facilities and associated activities.**

## National Institutes of Health

NIH has a specific animal care and use program for intramural research and for research within NIH-controlled space (25). The NIH policy requires individual investigators to adhere to the NIH *Guide*. In addition, each bureau, institute, or division (BID) is encouraged to pursue accreditation of its animal facilities by either AAALAC or any other NIH-approved accrediting body (at present AAALAC is the sole body) and to report its accreditation status each year to the Deputy Director, who ensures compliance with the policy by each BID.

The NIH policy delegates responsibility to five different authorities, including two types of committees. The

first is the local BID Animal Research Committee (ARC). This committee must have at least five Federal Government employees; the BID Scientific Director is responsible for annual appointments of the chairperson and members and for carrying out the committee's recommendations. Included among the five ARC members must be the attending veterinarian on the BID staff, a tenured investigator representing laboratories and divisions that use animals, and "a person who is sensitive to bioethical issues, does not possess an advanced degree in one of the life sciences, and is an employee from outside that BID" (26).

The NIH policy gives the BID ARCS many specific responsibilities beyond the general duties of many such committees. As with other local animal care committees, each ARC is required to make recommendations on animal care matters to its Scientific Director and to review proposals and protocols for humane standards of animal care. It is also supposed to advise individuals on the BID's policies and oversee their implementation within the facility. The major specific duties of the ARC are:

- to hold quarterly meetings at which a majority of the ARC members are present;
- to maintain a file of all minutes, memorandums, waivers, and project review documents;
- to perform site visits of each facility within the BID at least annually to assess compliance, and to submit written reports on these inspections to the Scientific Director;
- to develop a plan for attaining accreditation of the animal facilities or for pursuing accreditation standards; and
- to prepare an annual report for the NIH Deputy Director for Intramural Research addressing problems and accomplishments related to attaining accreditation.

Individual investigators are responsible for submitting appropriate information needed for ARC review of a proposal, advising the ARC chairperson of any significant deviations from procedures described in the most recent project review, and ensuring that all personnel working directly with animals have been trained in the proper care and use of that species. Thus, the system puts much of the burden for proper animal care during an experiment on each investigator.

The second authority set up by the NIH intramural policy was the NIH Animal Research Committee (NIHARC). Committee members are appointed annually by the Deputy Director for Intramural Research and must include a veterinarian, the chairperson from each BID ARC, and a nonaffiliated member. NIHARC holds quarterly meetings, advises the Deputy Director

on animal care and use at NIH, discusses issues referred from the BID ARCS, develops and coordinates training programs for NIH employees on animal care and use, and prepares NIH's Annual Report of Research Facility for USDA.

### ***Department of the Interior***

The Department of the Interior does more than 95 percent of its research in-house. All research and development facilities must comply with both the Animal Welfare Act and with the Department ***Research and Development Policy Procedures Handbook (27)***, which calls for an approved animal welfare plan. The National Wildlife Health Laboratory (NWHL) must provide assistance upon request in the development, implementation, and maintenance of each program. Due to the diversity of the research programs and the uniqueness of the species involved, each facility is allowed to develop an animal welfare plan peculiar to its own needs as long as it is approved by NWHL.

Each division plan must discuss:

- persons responsible for compliance;
- reporting and recordkeeping procedures for animals used;
- all components of the Animal Welfare Act and the Department animal health and husbandry standards that cannot be complied with, due either to the general design of anticipated studies or the unique natural requirements of the species involved;
- quarantine procedures for exotic species;
- personnel health monitoring and disease prevention programs;
- a schedule for periodic onsite evaluations by the NWHL Veterinary Medical Officer; and
- procedures for handling carcasses following unexpected mortalities (27).

The NWHL Veterinary Medical Officer oversees enforcement of these policies.

### ***Consumer Product Safety Commission***

The Consumer product Safety Commission (CPSC), as part of its mission to enforce the labeling requirements of the Federal Hazardous Substances Act (FHSA) (see ch. 7), conducts its own oral acute toxicity studies to determine the toxic potential of regulated substances. If the demand for testing exceeds the capacity of the CPSC's Health Sciences Laboratory Division, the agency contracts with FDA's NCTR (13).

In addition to requiring its own personnel, contracting agencies, and regulated parties to observe the requirements of the Animal Welfare Act and the NIH Guide in performing required safety tests on animals, CPSC has published an Animal Testing Policy, “which is intended to reduce the number of animals tested to determine hazards associated with household products and to reduce any pain that might be associated with such testing” (49 FR 22522). The policy states that CPSC itself and manufacturers of substances covered by the FHSA “should wherever possible utilize existing alternatives to conducting animal testing [including] prior human experience, literature sources which record prior animal testing or limited human tests, and expert opinion.”

Citing the provision in FHSA regulations that gives preference to studies based on humans over those with animals, the policy states that CPSC “resorts to animal testing only when the other information sources have been exhausted.” It also states that:

- “limit” tests for acute toxicity studies, rather than the “classic” LD<sub>50</sub>, are performed when necessary, requiring fewer animals;
- eye irritancy testing is not performed if the test substance is a known skin irritant; and
- agency-required Draize (eye irritation) tests are modified to eliminate the need for restraining test rabbits, allowing them full mobility and access to food and water (49 FR 22522).

### ***Environmental Protection Agency***

The guidelines and policies that the Environmental Protection Agency (EPA) follows governing humane treatment and appropriate veterinary care for laboratory animals involve AAALAC accreditation for its two major laboratories, adherence to the NIH *Guide*, and adherence to the Animal Welfare Act. In addition, EPA has an intra-agency committee that oversees animal research issues. There is no separate policy for extramural research; NIH *Guide* principles and requisites are enforced in such cases by a signed statement from the investigator that the proper animal care is being observed (16).

The EPA facility at Research Triangle Park, NC, has an animal care committee that oversees and carries out an institutional review of animal care and welfare issues. The committee is composed of representatives of the different research divisions within that facility along with the attending veterinarian. Its 8 to 10 members, who meet approximately once a month and keep records of their proceedings, are responsible for animal care issues only, and do not conduct scientific reviews of research proposals. Scientific review is done

separately before proposals reach the committee. The overall responsibilities for the committee are to:

- oversee the functioning of the animal care facility,
- plan improvements for the facility and carry them out,
- set policy for humane treatment of animals,
- set policy for sharing facility resources,
- address any day-to-day animal care problems brought to its attention, and
- review proposals for appropriate animal use and care (2).

In addition, the committee can recommend experimental changes to improve animal care and treatment and has the authority to interrupt or terminate an experiment if it finds any instances of inhumane treatment or inappropriate care of the animals, a step that has been taken at least once since the committee was established (2).

The committee does not monitor experiments while in progress or handle the day-to-day activities of the animal care facility. These powers are delegated to the attending veterinarian (who is under contract with EPA to work at the facility 3 days a week) and a staff of approximately 20 (2).

### ***National Aeronautics and Space Administration***

The overall National Aeronautics and Space Administration policy on animal research is based on the Animal Welfare Act, the NIH *Guide*, and the IRAC principles. All NASA facilities, all users of NASA facilities, aircraft, or spacecraft, and all NASA contractors using animals are subject to this policy. The overriding philosophy of the policy is based on three principles:

- Animals will be used only to answer valid questions that improve the health, welfare, or general medical and scientific knowledge of humans.
- Experimental animals must not be subject to avoidable discomfort or distress.
- Experiments requiring the use of invasive procedures without benefit of anesthetic agents demand strong justification and attention to possible alternatives (12).

Although the NASA policy exists today as only a proposed NASA Management Instruction (NMI), it is already being implemented. For example, the NMI establishes an Animal Care and Use Committee (ACUC) in each facility with animals (12); the committee includes a research veterinarian, a biomedical scientist, a non-scientist, and a person not affiliated with NASA. It is responsible for overseeing the animal care facility, establishing specific guidelines, reviewing proposals, and making recommendations for approval or dis-

approval of funding (9). The committee must ask the following questions for each experiment (12):

- Will the minimum possible number of animals be used?
- Is the use of animals necessary in this experiment?
- Are provisions for care of these animals adequate?

Different compliance with these policies is needed for intramural versus extramural research. For NASA facilities, ACUC reports are required to be sent to the Director of the Life Sciences Division at NASA headquarters reviewing facility procedures. AAALAC accreditation is required for all NASA installations. Currently all facilities are moving toward AAALAC accreditation but have not yet obtained it (12). For extramural research, the institution must submit a written assurance that its animal care policies are equivalent to the NASA policy. (AAALAC accreditation is one way of showing compliance.) Noncompliance will result in termination of the research by the ACUC and possibly sanctions after review by the Director of the Life Sciences Division (19).

The Ames Research Center (Moffett Field, CA), NASA's primary center for nonhuman research, illustrates the implementation of NASA policy. The Ames Research Center has established the *Animal Users Guide* for Ames-sponsored laboratory experiments using animals. This guide sets up two entities to ensure that all legal requirements are met: The animal care facility is responsible for housing and maintaining the animals properly, and the animal care and use committee must monitor all animal care and experimentation progress at the center. In addition, the guide states (28):

EVERY RESEARCH SCIENTIST AND ALL RESEARCH PERSONNEL, CONTRACTORS, AND GRANTEEES ARE RESPONSIBLE FOR OBSERVING THE LEGAL REQUIREMENTS CONCERNING LABORATORY ANIMALS.

The Ames committee reports to the center's Director of Life Sciences and is responsible for:

- reviewing the use of animals in proposed and ongoing experiments;
- reviewing all animal experimentation performed by contractors or grantees;
- serving as an advisory committee on all questions of animal care and use, and as a forum for resolving differences that may occur; and
- reviewing animal-related inventions and devices (28).

At present, the Ames committee has 10 members—4 non-NASA, non-life-sciences laypersons; 1 veterinarian; 1 scientist-veterinarian; 1 engineer; 2 scientists; and 1 science manager. In addition, 2 veterinarians accredited in Laboratory Animal Medicine are advisors. The lay members include an attorney, a professor of religion (ethics), the chairman of the Department of Education at a local college, and the public relations director of the Santa Clara Valley Humane Society. This is one

of the few such committees in the country with a 40 percent lay membership. According to the Acting Director of Life Sciences at Ames Research Center, "the out-of-house members have contributed materially to the [committee]." Two of the lay members head subcommittees that are reviewing and updating the *Animal Users Guide* and committee charter and developing an animal user's orientation program (14).

### **National Science Foundation**

A summary of the animal care requirements of the National Science Foundation (NSF) is found in Section 713 of the NSF Grant *Policy Manual* (30) and included in the NSF document "Grant General Conditions," that is sent to each grantee when an award is made. Any grantee performing research on warm-blooded animals must comply with the Animal Welfare Act and its regulations and follow the NIH *Guide*. NSF has no formal inspection system to check on compliance with these policies, as that is judged to be the responsibility of USDA/APHIS (8). The result is a voluntary adherence system by NSF grantees,

Beginning in 1986, NSF imposed two new requirements on grant applicants and grantees who perform research on vertebrate animals:

- Each proposal must be reviewed by an institutional animal care and use committee.
- Each proposal must be accompanied by a statement from the grantee that assures the grantee's compliance with the PHS policy.

Grant proposals submitted to NSF thus face three separate reviews—one by the grantee's institutional committee, one by outside reviewers, and one by NSF staff. Although these are primarily scientific in nature, reviewers are asked to comment on animal welfare issues. If a proposal involves the use of animals, sufficient information must be provided to allow evaluation of the appropriateness of experimental protocols with respect to the choice of species, the number of animals to be used, and any necessary exposure of animals to discomfort, pain, or injury (29). With this information, the reviewers are asked to (29):

... comment if you have any concerns regarding the violation of animal welfare laws or guidelines, the exposure of animals to unnecessary pain or mistreatment, or the use of excessive numbers of animals. If the species being used is not the one most appropriate, or if alternative or adjunct methods could be used to eliminate or reduce the need for animal experimentation, please comment.

### **Veterans' Administration**

The Veterans' Administration is unique in its policies governing humane treatment and appropriate veteri-

nary care for laboratory animals because it has required all its facilities using animals to seek and obtain AAALAC accreditation (see ch. 15). This policy was originated in 1971, and 81 out of 174 VA facilities (as of Apr. 1, 1985) had some level of AAALAC accreditation. Not all VA constituents apply for accreditation, since some do not engage in animal research. In fact, the VA has a contract with AAALAC covering all its research facilities that prohibits failure of accreditation of any constituent facility solely for financial reasons (10).

In addition to requiring adherence to the PHS policy, the VA has a lengthy research review process with a strong committee structure. At the local research facility, each research and development committee has a subcommittee for animal studies that oversees all such research. The membership varies, though it includes at least one member of the research and development committee, a Veterinary Medical Officer (VA employee), and two to four investigators who are involved in studies using animals. Thus, there are no laypersons or persons not affiliated with the research facility on the subcommittee. Except for the veterinarian, who serves indefinitely, members serve 3-year terms (31). The subcommittee has three primary functions:

- to approve the use or uses made of animal subjects in all research studies as they relate to animal welfare laws, regulations, and policies;
- to review all animal studies for need, adequacy, and availability of essential animal research facility support; for the appropriateness, quality, and availability of the animal models; for the humanness and appropriateness of procedures and conditions surrounding animal subjects before and throughout the study; and
- to evaluate, at least annually, the animal research facility and recommend appropriate actions to correct deficiencies noted (11).

Proposals are reviewed again at a regional VA office by two committees, first for veterinary medical review (appropriate use and care of animals) and then for scientific merit (10). The animal welfare review is done by a Veterinary Medical Panel of specialists chosen for their experience, knowledge, and research in laboratory-animal science and medicine. This panel attempts “to assure that proposals include sound, acceptable animal medicine and husbandry practices in animal research facilities that are operated in conformance with all pertinent animal welfare laws, regulations, and policies” (11). Specifically, the panel conducts reviews:

- to ascertain the description of the animal model;
- to ascertain the biological and medical definition of the animal model;
- to ascertain the environmental and experimental-animal-related factors;
- to determine if there is evidence of adequate ex-

perience with the proposed technology of manipulations, monitoring, or measuring;

- to determine if use of intact animals is required or if animal parts could be obtained from or shared with other investigators who have scientifically compatible studies;
- to determine if painful procedures are involved and whether these can be avoided or if their control has been satisfactorily planned; and
- to relate the budget of the experiment to the animal costs and to the animal maintenance needs (11).

In 1984, the VA required that all research proposals have an appendix with a detailed discussion of animal protocols, the number of animals to be used, and why the specific choice of organism was made. This appendix is signed by three people from the local facility—the researcher, the animal committee chairperson, and the research and development chairperson—to guarantee that the procedures are carried out.

The enforcement of the VA’s animal research policies rests with the committee structure and is overseen by the Chief Veterinary Medical Officer for the VA, whose duties include making sure all Federal and State animal research laws are observed and that the individual facilities have the funds to continue to remain AAALAC-accredited. In addition, the VA began in fiscal year 1984 strict enforcement of the completion of the Annual Reports of Animal Research Facilities for APHIS by every VA facility, whether the facility used animals in research the preceding year or not (10).

At the local VA facilities, the attending veterinarian has authority for veterinary medical matters. This person must monitor the housing, general treatment, and care of the experimental animals while the experiment is in progress as often as needed. If inhumane treatment or inappropriate care is found, the veterinarian and animal subcommittee do not have the authority to interrupt or terminate an experiment. The subcommittee would make a recommendation to the research and development committee and to the Associate Chief of Staff for Research and Development, who may make a decision or a recommendation to the Director (4). This means there is some enforcement of the proper animal care standards at each local VA facility on a day-to-day basis.

## Appendix B References

1. Borsetti, A., Staff Scientist, Office of Science Coordination, Food and Drug Administration, U.S. Department of Health and Human Services, Rockville, MD, personal communications, October and November 1984 and March 1985.
2. Chernoff, N., U.S. Environmental Protection Agency, Research Triangle Park, NC, personal communication, 1984.



3. Crawford, L., Director, Bureau of Veterinary Medicine, Food and Drug Administration, US. Department of Health and Human Services, Rockville, MD, personal communication, November 1984.
4. Ditzler, J., Chief Medical Director, Department of Medicine and Surgery, Veterans' Administration, Washington, DC, personal communication, Jan. 17, 1985.
5. Edington, C., Associate Director, Office of Health and Environmental Research, Office of Energy Research, U.S. Department of Energy, Washington, DC, personal communication, Nov. 16, 1984.
6. Edington, C., Procedures for Selection of Animal Research Projects for Funding Through OHER/DOE (Washington, DC: Department of Energy, Jan. 24, 1985).
7. Kainz, R., Office of the Commander, U.S. Army Medical Research and Development Command, Ft. Detrick, MD, personal communication, September 1984.
8. Kingsbury, D., Assistant Director, National Science Foundation, Washington, DC, personal communication, Nov. 2, 1984.
9. Lewis, C. S., "NASA's Use of Animals in Research," prepared for the Life Sciences Division, National Aeronautics and Space Administration, Washington, DC, Sept. 28, 1983.
10. Middleton, C., Chief Veterinary Medical Officer, Veterans' Administration, Washington, DC, personal communication, Oct. 3, 1984.
11. Moreland, A., "Animal Research Protocol Review Within the Veterans' Administration," mimeo, Gainesville, FL, 1984.
12. Nicogossian, A., Director, Life Sciences Division, National Aeronautics and Space Administration, Washington, DC, personal communication, Oct. 19, 1984.
13. Porter, W., Health Sciences Laboratory Division, Consumer Product Safety Commission, Washington, DC, personal communication, Nov. 19, 1984.
14. Sharp, J., Acting Director of Life Sciences, Ames Research Center, National Aeronautics and Space Administration, letter to A. Nicogossian, Director, Life Sciences Division, NASA, on Animal Care and Use Committee, Moffett Field, CA, Sept. 12, 1984.
15. Stewart, W., Senior Veterinarian, Animal and Plant Health Inspection Service, U.S. Department of Agriculture, Hyattsville, MD, personal communication, November 1984.
16. Ulvedal, F., Acting Director, Water and Toxic Substances Health Effects Research Division, U.S. Environmental Protection Agency, Washington, DC, personal communications, September and October 1984.
17. U.S. Department of Defense, Air Force, Aerospace Medical Division Animal Use Review Panel Meetings (Washington, DC: May 1984).
18. U.S. Department of Defense, Air Force, Aerospace Medical Division, 'Animals in DOD Research and Training AMD Supplement 1' (draft), Brooks Air Force Base, TX, 1985.
19. U.S. Department of Defense, Assistant Secretary of Defense for Health Affairs, Memorandum to the Secretaries of the Uniformed Services, President of the Uniformed Services University of the Health Sciences, and Directors of Defense Agencies (Washington, DC: Jan. 4, 1984).
20. U.S. Department of Defense, *The Use of Animals in DOD Programs*, DOD Instruction 3216.1 (Washington, DC: Feb. 1, 1982).
21. U.S. Department of Defense, *The Use of Animals in DOD Programs*, Army Regulation 70-18 (Washington, DC: June 1, 1984).
22. U.S. Department of Health and Human Services, Food and Drug Administration, Office of Science Coordination, *Final Report of Acute Studies Workshop* (Washington, DC: Nov. 9, 1983).
23. U.S. Department of Health and Human Services, Food and Drug Administration, *Final Report to the Commissioner, FDA Agency Steering Committee on Animal Welfare Issues* (Rockville, MD: Aug. 15, 1984).
24. U.S. Department of Health and Human Services, Food and Drug Administration, National Center for Toxicological Research, *NCTR Quality Assurance Program* (Jefferson, AR: May 1983).
25. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, *Animal Care and Use in the Intramural Program*, NIH Policy 3040-2 (Bethesda, MD: Dec. 30, 1983).
26. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, *Guide for the Care and Use of Laboratory Animals*, NIH Pub. No. 85-23 (Bethesda, MD: National Institutes of Health, 1985).
27. U.S. Department of the Interior, *Research and Development Policy/Procedures Handbook* (Washington, DC: July 26, 1984).
28. U.S. National Aeronautics and Space Administration, Ames Research Center, *Animal Users Guide AHB 7180-1* (Moffett Field, CA: June 1982).
29. U.S. National Science Foundation, Office of the Assistant Director for Biological, Behavioral, and Social Sciences, *NSF AD/BBS Circular no. 1.3* (Washington, DC: June 15, 1982).
30. U.S. National Science Foundation, *NSF Grant Policy Manual, Section 713* (Washington, DC: Apr. 15, 1984).
31. U.S. Veterans' Administration, Department of Medicine and Surgery, *Research and Development in Medicine General* (Washington, DC: Apr. 27, 1982).