ABSTRACT: The Scientists Center for Animal Welfare (SCAW), established in 1979, as a non-profit, educational organization with the goal of providing information to the science community and general public about the humane and responsible use of animals in research, testing and education, will present information about non-governmental sources of information on animal welfare in the United States and Canada. The main sources are SCAW, the Hastings Center, the Johns Hopkins Center for Alternatives to Animal Testing, the Canadian Council on Animal Care, and the Institute of Laboratory Animal Resources. These organizations as resource centers will be described and the materials they have available will be presented. The materials will include publications and audiovisual and computer-oriented products.

Introduction

My name is Lee Krulisch, and I am Executive Director of the Scientists Center for Animal Welfare (SCAW). I wish to thank the First International Conference of Animal Health Information Specialists for the opportunity to present information about non-governmental information resource centers in the United States that can provide information on research animal welfare.

Objective

This presentation will focus on non-governmental sources of information on research animal welfare in the United States. The main sources will be SCAW, The John Hopkins Center for Alternatives to Animal Testing (CAAT), Public Responsibility in Medicine and Research (PRIM&R), The Institute of Laboratory Animal Resources (ILAR) and The Hastings Center. Following this presentation there will be a question and answer period.

Resource Centers

A. The Scientists Center for Animal Welfare

The Scientists Center for Animal Welfare (SCAW) was established in 1979 as a non-profit, educational organization with the goal of providing information to the science community and general public about the humane and responsible use of animals in research, testing, and education. SCAW was established in 1979 by scientists and others concerned with laboratory animal well-being. Over the last 12 years, SCAW has evolved as a unique organization governed by a Board of Trustees and administered by myself as Executive Director. SCAW is a non-profit educational organization based in Bethesda, Maryland.

SCAW is a recognized, influential force in the area of animal well-being, providing an open forum where the current issues of laboratory, agricultural and wildlife research animal welfare can be objectively explored. SCAW publishes educational materials to provide up-to-date information about ethics, animal care, experimental protocols, and other topics, and also sponsors workshops, seminars and larger conferences. SCAW seeks the best possible reconciliation of human needs with requirements for the physical and psychological well-being of all animals.

Ongoing programs include publication of a quarterly SCAW Newsletter, exhibits at national association meetings, managing a Speakers and Conference Bureau, responding to the press and media who are seeking information about current research animal welfare issues, and responding to inquiries from the general public.
SCAW's current publications include:

*Implementation Strategies for Research Animal Well-being: Institutional Compliance with Regulations* — proceedings of a conference sponsored by SCAW and Working for Animals Used in Research, Drugs and Surgery, Inc. (WARDS) in Baltimore, Maryland, on December 5-6, 1991. This 2-day conference focused on the revised Part 3 Animal and Plant Health Inspection Service (APHIS)/USDA regulations about the humane and responsible care and use of nonhuman primates and canines in research.

*The Care and Use of Amphibians, Reptiles and Fish in Research* — proceedings of a conference sponsored by SCAW and the Louisiana State University School of Veterinary Medicine. The focus of this 2-day conference was on the care and use of fish, amphibians and reptiles that are used as research models. Part of the conference also focused on research that is being done for aquaculture, and included areas in field research; housing and handling; and anesthesia, analgesia and euthanasia for different species of fish.

*The Well-being of Agricultural Animals in Biomedical and Agricultural Research* contains proceedings from a SCAW-sponsored conference held in September 1990. Chapters by expert and international authors focus on current and future regulations for agricultural research animals, animal behavior, care and management, and Animal Care and Use Committee's (ACUC) responsibilities for research farm animals.

*Laboratory Animal Welfare Annotated Bibliography,* published in 1991, contains more than 150 citations of key literature in the field of animal welfare relevant to the Animal Welfare Act and surrounding issues. Major topics include national policies, history, pain and distress, euthanasia, alternatives, and animal husbandry.

*Guidelines for the Well-being of Rodents in Research* — proceedings of a conference SCAW held in December 1990. The objective of this conference was to inquire about the present status of rodents used in research and testing, and to explore establishing guidelines for the well-being of rodents. Researchers, the public, and Congress are more carefully considering the humane treatment of rodents. The academic and industrial research communities can provide scientifically-based information to suggest appropriate guidelines for this species.

*Canine Research Environment and Well-being of Nonhuman Primates in Research* are proceedings from a SCAW conference held in June of 1989. These two 1-day conferences provided a forum for discussion of proposed regulations by APHIS/USDA about the care of canines and nonhuman primates. Recommendations from this meeting were included in the final regulations.

*Science and Animals: Addressing Contemporary Issues* — proceedings of a SCAW conference held in Washington, D.C., in June of 1988. The speakers addressed research animal well-being or the improvement of well-being from the perspective of their topics. The conference was arranged around seven major areas of interest from "Definition and Recognition of Well-being" to "Effective Participation by Lay and Community Members in IACUC Activities."

The volume *Field Research Guidelines* is based on workshop proceedings of a conference sponsored by the National Science Foundation (NSF) and organized by SCAW in October 1987. The workshop focused on changes by the U.S. Public Health Service policies in 1986 that made experimental protocols involving field research subject to review by Animal Care and Use Committees. This volume is a summary and discussion of the guidelines and includes a review of NSF's role in developing the guidelines.

SCAW sponsors one or two major conferences each year in addition to seminars and workshops. SCAW often cooperates with other institutions. For instance, in the 1991 conference sponsored by SCAW and WARDS, on "Implementation Strategies for Research Animal Well-being: Institutional Compliance with Regulations," the discussions concerned how different institutions implement programs to comply with Federal regulations about the well-being of primates and canines in research, particularly in reference to the recently revised APHIS/USDA regulations that carry out the mandates of the Animal Welfare Act. The proceedings of this conference were published in April 1992.

In 1992, SCAW will sponsor a workshop on "Information Resources on Animal Issues" at the National Capital Area Branch/American Association of Laboratory Animal Science (NCAB/AALAS) meeting on September 8, 1992 in Ellicott City, Maryland. This workshop will provide participants information about various information resources they can use on current issues involving animals in research, testing and education. Presenters will speak about their organizations as resource centers, and may also speak to some specific issues.
SCAW will also sponsor a conference on “Refinement Strategies in Animal Testing” on September 17-18, 1992 in the Philadelphia area. This conference will review advances in refinement and reduction of animal use in the testing of medical, industrial, and consumer products. Opportunities and limitations for further refinement will be discussed with respect to human and animal welfare.

SCAW distributes over 500 packets of information about good science and animal use to students and teachers at all levels. In March of this year, SCAW organized a meeting of an educational task force with representatives from government and non-government institutions, including some of those recently discussed, to discuss how to encourage good science and present a balanced point of view about research animal use to children in grades 1-8. This will be an ongoing project.

The Johns Hopkins Center for Alternatives to Animal Testing (CAAT)

CAAT was founded in 1981 by a grant from the Cosmetic, Toiletry and Fragrance Association, Inc. (USA). Since that time, support for the Center has broadened to include more than 80 corporations, foundations, U.S. government agencies and private individuals. CAAT's activities are divided into four categories: (1) research, (2) communication, (3) education, and (4) validation and technology transfer. CAAT's Executive Director is Dr. Alan M. Goldberg.

CAAT's mission is to:

1) Develop, to the extent consistent with the public's health and safety, in vitro alternatives to the use of whole animals in evaluating commercial and/or therapeutic products. Alternatives are new tests that refine existing in vivo (whole animal) tests or that replace or reduce animal use in current tests.
2) Validate alternative methods and encourage their use.
3) Disseminate scientifically correct information about alternatives and their use.

CAAT is engaged in a wide variety of activities. Seven international symposia have been held to date, and their proceedings are published in the Alternative Methods in Toxicology book series. Three newsletters are published yearly. The CAAT newsletters highlight activities of CAAT and provide information about alternatives. A recent issue provided a guide to resources on animal welfare and the use of animals in product safety testing and research. In June 1990, CAAT held a 2-day workshop on “Structure-Activity Relationships in Predictive Toxicology.” These workshops form the basis for the CAAT Technical Reports.

CAAT's major activity is its research grants program. This program is aimed at providing the fundamental knowledge necessary to develop new in vitro methods. The scope of this program is international. In the last nine years, more than 150 research project-years have been funded in the United States, Europe and Canada. Many of these projects have advanced the science of in vitro toxicology, and a number have resulted in promising assays. CAAT is actively exploring ways to encourage independent evaluation of new methods, technology transfer and regulatory acceptance.

CAAT responds to requests from students in elementary, high school and college for information about alternatives. Many of these requests are for the purpose of writing school reports. Other efforts to educate the public about alternative issues are carried out through the dozens of invited speaking engagements throughout the year. The Center makes presentations to corporate, scientific, and academic groups, as well as the general public. CAAT is developing an educational outreach program at the pre-college level. This is an important time for CAAT to become involved in providing factual information and education about the issues of alternatives and animal use.

In June 1992, CAAT sponsored a conference on “Animal Care and Use Committees and Alternatives” which assisted ACUC members, administrators, support and resource personnel in their review responsibilities, and also addressed concepts of alternatives in the use of animals in education, research, and the role of ACUCs in pre-college education. In 1993, CAAT will hold a World Congress on Alternatives and Animal Use in the Life Sciences, Education, Research and Testing.

Public Responsibility in Medicine and Research (PRIM&R)

PRIM&R was founded in 1974 by clinicians and researchers from the major teaching hospitals in Massachusetts. From that original group, it has grown to a national non-profit organization which is dedicated to providing a multi-disciplinary forum for addressing biomedical and bioethical issues.

PRIM&R is committed to educating the research community, industry and the public about the ethical, legal and policy dimensions of appropriate and ethical research. PRIM&R accomplishes its...
objectives by holding conferences which allow groups and individuals concerned with research-related activities to meet and explore a range of issues at the interface of research, ethics, and law.

PRIM&R has an annual conference that focuses specifically on the ethical issues surrounding animal care and use in scientific research. Topics at these meetings have included:

- The establishment and operation of Institutional Animal Care and Use Committees (IACUCs);
- The effects of USDA regulations, the Animal Welfare Act, and other federal and state regulations on the conduct of animal research.
- Educating investigators with regard to animal pain and distress, methods of euthanasia, protocol development, the psychological well-being of housed animals, the use of alternatives to animal subjects in research, and general veterinary care.

PRIM&R distributes educational materials and conference proceedings on a wide range of topics from human subjects, IACUCs, ethics, and administration. At the March 1992 PRIM&R meeting, topics discussed included:

1. The recent USDA emphasis on performance standards,
2. the operation of IACUCs, and
3. the education of investigators, staff and the public about the ethical use of animals in research.

The research community anticipates these annual meetings as an opportunity to gain information about the current issues and to exchange ideas.

Applied Research Ethics National Association (ARENA) works with PRIM&R to serve individuals involved in research and clinical practice. ARENA is a national organization for members of Institutional Review Boards (IRBs), IACUCs, Health Care Ethics Committees (HCECs), patient’s advocacy groups, and similar groups concerned with ethical and practical issues related to the conduct of research. ARENA holds meetings in conjunction with both Spring and Fall PRIM&R meetings.

ARENA’s activities include:

- National and regional meetings which serve to review and shape research policy and health care standards. Newsletter Publication of the ARENA Animal Care Committee Guidebook
- Assistance with the development of regional networks
- Access to expert consultation (where available) on specific bioethical issues and administrative operations
- Annual distributions of a comprehensive ARENA Membership Directory
- Commentary on relevant federal legislative or administrative initiatives
- The distribution of reference and bibliographic materials.

ARENA’s objectives are the promotion of networking among its members, the development of educational activities, the resolutions and/or amelioration of mutual problems, and the professional advancement of its members. ARENA members are those involved in the day-to-day application of ethical principles and regulations regarding research and clinical practice.

The Institute of Laboratory Animal Resources (ILAR)

ILAR is a part of the Commission on Life Sciences, within the National Research Council, National Academy of Sciences. It acts as a coordinating agency and international resource for compiling and disseminating information on laboratory animals, promoting education, planning and conducting conferences and symposia, and promoting high-quality humane care of laboratory animals. With oversight provided by a 14-member Council, ILAR continually seeks to initiate, strengthen, refine, and redirect programs to address issues. Topics may include: the management of various species used in research (including those with experimentally-induced diseases or defects); refinement of research methodologies through the selection and use of appropriate models; preservation of unique genetic stocks of research animals; recognition and alleviation of pain; and training and education of those involved with the use of animals in research and education, including those at the high school level. ILAR also seeks to furnish guidance for institutional officials and animal care and use committees. In the international arena, ILAR serves as the U.S. representative to the International Council for Laboratory Animal Science (ICLAS). ILAR’s goal is to disseminate its resources to other countries, focusing on developing nations.

ILAR’s best known document is the Guide for the Care and Use of Laboratory Animals (Guide). Since 1963 it has served as the standard reference on the care and use of laboratory animals. Soon to be revised for the sixth time, it serves as the reference document for the Public Health Service Policy on Humane Care and Use of Laboratory Animals. The American Association for the Accreditation of
Laboratory Animal Care also uses the tenets of the Guide in evaluating the animal facilities of institutions seeking accreditation.

The Guide is a continually evolving document, subject to change as knowledge in laboratory animal science increases. Its guidelines are based on establishing scientific principles; expert opinion; and experience with methods and practices consistent with humane, high-quality animal care, interpreted and applied with professional judgment. All government agencies require that grantees and contractors using living, warm-blooded vertebrates in research adhere to these guidelines. During the past 28 years, more than 300,000 copies have been distributed worldwide. Copies are available free of charge at the SCAW office.

Preservation of Laboratory Animal Resources — Valuable and unique genetic stocks, of which transgenic animals are becoming most notable, are the backbone of modern cellular biology, molecular genetics, and other areas of science. The loss of these resources, documented by a recently completed ILAR report entitled Important Laboratory Animal Resources: Selection Criteria and Funding Mechanisms for their Preservation, is of continuing concern. ILAR's report calls attention to these problems, provides examples of genetic materials and unique strains that have been lost, suggests criteria for assessing the relative importance of a stock, and recommends long-term approaches to minimize these losses. Important Laboratory Animal Resources: Selection Criteria and Funding Mechanisms for their Preservation appeared in the Fall 1990 issue of ILAR News. Single copies are available free of charge from ILAR.

Other recent reports include:

Infectious Diseases of Mice and Rats, published in 1991, is a comprehensive text of infectious diseases and their potentially complicating effect on research. The Companion Guide to Infectious Diseases of Mice and Rats is a compact reference guide that is included with the purchase of the full manual.

Immunodeficient Rodents: A Guide to Their Immunobiology, Husbandry, and Use was published by the National Academy Press in September 1989. This 246-page report discusses hereditary and induced immunodeficiencies, maintenance of rodents with immune deficiencies, and mating systems for reproducing these models.

An important part of ILAR's effort is the publication of the quarterly journal ILAR News, circulated free of charge to more than 4,500 individuals and libraries worldwide. In addition to investigators, veterinarians, and technicians, circulation is targeted to reach institutional officials, IACUC members, and biomedical scientists. ILAR News includes peer-reviewed articles on new animal models, refinements, or alternatives and includes considerations of both the strengths and weaknesses of these approaches. Each issue includes Issues for IACUCs, containing articles on topics relevant to IACUC members including implementation of federal regulations, management information, alternatives, animal care, humane concerns, and the use of animals in research, testing, and education. ILAR News also regularly includes items on new models, changes in nomenclature, future meetings, educational programs, workshop reports, new books, and other relevant announcements. Frequently, ILAR News contains individually-authored documents or reports from ILAR committees as bound inserts, which is a rapid, cost-effective means of disseminating information not readily available elsewhere.

ILAR's most frequently used, and perhaps its most important ongoing service to the biomedical community is the Animals Models and Genetic Stocks Information Program. ILAR has developed a computerized database containing U.S. commercial and investigator-held colonies of both commonly and uncommonly used laboratory animals. ILAR annually responds to hundreds of requests for information on sources of animals for laboratory investigation; appropriate animal models for studying human diseases and normal biologic phenomena; animal care and treatment; and the use of animals in research, testing, and education. This database will be used to publish the eleventh edition of Animals for Research—A Directory of Sources, which is widely used by institutions to locate research animals.

Recognition and Alleviation of Pain and Distress in Laboratory Animals, to be released by the National Academy Press this summer, is a handbook of species-specific approaches to the prevention, recognition, and alleviation of pain and distress in laboratory animals for investigators, veterinarians, research directors, ACUCs, and technicians. The report addresses pain-induced and non-pain-induced stress in laboratory animals; clearly defines pain; and distress; emphasizes the importance of distress; and discusses species-typical signs of pain and its pharmaceutical and nonpharmaceutical alleviation.
ILAR is convening a committee to develop guidelines for institutions required by the 1985 Animal Welfare Act amendment to “provide a physical environment suitable to ensure the psychological well-being of nonhuman primates.” Great confusion has resulted from the definition of “psychological well-being,” and the guidance from this committee will serve to provide a single point of reference for institutional programs and for federal inspectors of those programs.

The charge to the committee will be to review current understanding of the cognitive abilities of nonhuman primates, identify and evaluate both the environmental variables that are believed to be most influential in affecting well-being and the behavioral and physiological measures believed to be objective indices of well-being, develop recommendations and procedures for individualizing institutional plans consistent with federal law, suggest priorities for future research, and develop a relevant bibliography on psychological well-being.

The Committee on Transgenic Nomenclature has prepared a set of rules for standardized nomenclature for transgenic animals based on internationally-accepted nomenclature for genetically-defined mice.

ILAR also intends to undertake a large project to prepare guidelines for colony management of transgenic mice and other transgenic animals; suggest methods of preserving these unique resources; and recommend policies and procedures for their development, use, and disposition.

With the increased use of genetically-defined rat strains as research models has come the realization that problems associated with selecting and obtaining rat strains can significantly affect research. ILAR has established a 7-member committee, comprised of well-known experts in rat genetics from the United States, Japan, and Europe to address these problems. These include improper use of standardized nomenclature; lack of criteria for ensuring genetic quality, sharing strains, and preserving unique genetic stocks; and lack of communication between rat geneticists and investigators who use rats in other fields of research. The report of the committee will include as an appendix the rules for nomenclature for transgenic animals and will be published in ILAR News.

The ILAR Council has endorsed the following reports to be initiated in 1992:
(1) Revision of the Guide;
(2) A study of occupational safety and health of personnel in research animal facilities; and
(3) Revision of Dogs and Rodents in the Laboratory Animal Management Series.

Other laboratory animal management documents being considered for revision include those on nonhuman primates, rabbits, swine, amphibians, fowl, and fish.

This information about ILAR has been directly taken from an article written for the Animal Welfare Information Center (AWIC) newsletter.

The Hastings Center

The Hastings Center was founded in 1969 with the goal of providing for public and professional discussion of difficult moral issues in our society. Activities include an active research program on timely and crucial subjects. Working in a variety of fields—law, medicine, science, philosophy, and religion, among others—its research work strives to provide non-partisan information, analysis, and recommendations. A resident staff, elected Fellows, and invited consultants form the nucleus of each research group. The Education Program conducts workshops for teachers and other professionals throughout the country and offers research opportunities for undergraduates, graduates, and senior scholars. Under the Consultation Program, scholars and staff members working on Center projects are frequently sought for public lectures and policy recommendations. Curriculum development assistance is also available under this program.

The bi-monthly Hastings Center Report addresses ethical questions in medicine and the professions. Due to ever-growing media attention paid to ethical questions in medicine and the professions, the Report’s influence is rapidly expanding; articles are frequently quoted in the national press, reprinted or cited in books or scholarly journals, and reproduced for classroom use. In a field that is young and eager for information, the Report fills a unique function: it attempts to approach ethical problems from an interdisciplinary perspective and to challenge both the general and the professional reader.

In 1990, the Center published Animals, Science, and Ethics, edited by Strachan Donnelley, Director of Education at the Center, and Kathleen Nolan. It looks at complex ethical issues that arise in the scientific use of animals in the non-adversarial and non-ideological forum. They state, “We were convinced that these issues required a genuinely interdisciplinary approach. This meant including laboratory and field scientific researchers; veterinar-
ians; philosophers, lawyers, and scientists particularly interested in animal welfare issues; and physicians and philosophers with long-standing bioethical interests but who previously had not confronted the ethics of the humane use of animals." This Special Supplement to the Hastings Center Report is the outcome of two years of deliberation. Topics include:

(1) "The Troubled Middle In Medias Res"
(2) "Ethical Theory and the Moral Status of Animals"
(3) "Animals in Science: The Justification Issue"
(4) "Critical Anthropomorphism, Animal Suffering, and the Ecological Context"
(5) "Ethical Review and the Animal Care and Use Committee"
(6) "Policy Issues in the Use of Animals in Research, Testing, and Education"

A new project will be on ethical issues in animal biotechnology, which is part of a larger program on ethics and the environment. The project is entitled "Humans, Animals, and the Environment: Ethical Responsibilities and Decision-making." In a May 1991, report the reasons behind this study are stated:

"Those who are centrally involved in medical ethics, animal ethics, and environmental ethics tend to work independently of one another and are often at odds. Characteristically, humans are pitted against animals in claims for ethical consideration, and environmental or ecological concerns are aligned against the individual interests of both humans and animals. Further, those who work predominantly in health care or environmental public policy may ignore altogether this internecine, 'academic' warfare and any serious consideration of complex ethical issues. Clearly there is the need for a non-partisan and non-ideological forum to bring these various professionals together to coordinate their interests, and practical efforts. This historically has been a central mission of The Hastings Center.

"Over the course of the program, several systemically interrelated topics will be examined, ranging from the theoretical and speculative to the more urgently practical. The project will consider obligations and responsibilities to humans, animals, and the environment from pragmatic, human-centered perspectives, for example, the curing of diseases and the satisfaction of basic human needs. It will also consider whether there are ethical responsibilities that arise from considerations that go decisively beyond practical usefulness to human beings, that is, from the experience of an inherent value or natural goodness accruing to animal and biological life. Such values include the significance of evolutionary/ecological processes and importance of wild habitats and wilderness areas. The project will examine environmental and animal research issues from the perspectives of public health and risks to contemporary human, animal, and ecological life, including the ethical trade-offs that we ought presently to be making. However, it will also explore ethical responsibilities and obligations to the human and ecological future, including how to respond ethically to possible significant risks to human and natural life in the face of scientific (predictive) uncertainty or ignorance.

"One specific topic will be animal biotechnology, including the creation of transgenic animals (animals harboring genetic material from other than their biological parents, usually from another species). This is going to become increasingly important in scientific research, the production of pharmaceuticals, and the agriculture industry. But there are troubling practical and theoretical issues. What are the costs of biotechnological and genetic manipulations to the animals themselves in terms of suffering and individual well-being? Are we inadmissibly violating the 'integrity' of individuals, species, or natural processes, thereby undermining important values?"

I hope this talk has given you an idea of the range of information available from these sources. I will now be glad to answer any questions you may have.