



SRB 92-16

## ANIMAL CARE AND USE COMMITTEES

United States Department of Agriculture National Agricultural Library Beltsville Maryland 20705

## Animal Care and Use Committees

*Special Reference Briefs: 92-16 Updates SRB 90-06*

Also see [Information Resources for Institutional Animal Care and Use Committees 1985-1999](#)

**Tim Allen and Karen Clingerman**  
**Animal Welfare Information Center**

### Animal Welfare

*National Agricultural Library  
 Beltsville, Maryland 20705  
 September 1992*

## ANIMAL CARE AND USE COMMITTEE SPECIAL REFERENCE BRIEF

### TABLE OF CONTENTS

<a href="#">INTRODUCTION . . . . .</a>	<a href="#">i</a>
<a href="#">ANIMAL CARE COMMITTEES - GENERAL . . . . .</a>	<a href="#">1</a>
<a href="#">INSTITUTIONAL/INDUSTRIAL COMMITTEES. . . . .</a>	<a href="#">8</a>
<a href="#">ETHICS . . . . .</a>	<a href="#">13</a>
<a href="#">INVESTIGATOR/PUBLIC ATTITUDES AND CONCERNS . . . . .</a>	<a href="#">17</a>
<a href="#">MEMBERSHIP AND TRAINING. . . . .</a>	<a href="#">20</a>
<a href="#">POLICY/PROCEDURE . . . . .</a>	<a href="#">24</a>
<a href="#">PROTOCOL REVIEW. . . . .</a>	<a href="#">27</a>
<a href="#">REGULATION OF ANIMAL CARE AND USE COMMITTEES . . . . .</a>	<a href="#">32</a>
<a href="#">AUTHOR INDEX . . . . .</a>	<a href="#">34</a>

## INTRODUCTION

The animal care and use committee (ACUC) operates at the institutional level and is mandated by federal laws and national policies. Functions of the ACUC include 1) the review of the animal care portions of projects to determine if the appropriate animal model and appropriate numbers of animals have been chosen, and if personnel are properly trained and knowledgeable in the proper use of anesthesia, analgesia and euthanasia, 2) to conduct semi-annual, unannounced inspections of facilities to ensure the humane care, treatment and transport of animals, and 3) to support the attending veterinarian, making sure he or she has access to all animal facilities, and aiding the veterinarian in training of personnel and review of protocols and facilities.

The effectiveness of the animal care and use committee is largely determined by the institutional administration. The ACUC effectiveness may be enhanced by tailoring the ACUC to the specific needs of the institution, staffing the committee with competent, committed members, and by giving institutional support in the form of resources. The ACUC membership includes scientists who use animals, veterinarians, and lay members (lay members are community members not affiliated with the scientific community). The ACUC, while it must be responsive to the needs of researchers, must also ensure that research is appropriate and animals are treated in a humane manner.

This document covers general issues dealing with animal care and use committees. Topics include industrial applications, ethics, investigator and public attitudes toward the ACUC, membership and training issues, policy, protocol review, and regulation of the ACUC. As a Special Reference Brief, this document contains not only reference materials in the collection of NAL, but also references from outside sources.

The authors would like to thank Jennifer Lyons-Carter for all her efforts in the preparation of this document.

## ANIMAL CARE COMMITTEES - GENERAL

**001** "Animal care use committees: Deciding what is appropriate, necessary, and humane." M.D. Snyder, N.K. Hinton, J.F. Cornhill, and L.E. Elfner *Science Teacher* 59(2):28 (February 1992). Descriptors: animal models in research, management, science teachers, ACUC.

**002** "Agricultural animal care review." G. Joiner *Animal Welfare Information Center Newsletter* 1(4):3,5 (October-December 1990). NAL call number: aHV4701.A952 Descriptors: livestock, committees, bioethics, animal welfare, ACUC.

**003** *Animal Care and Use Committee Office of the Deputy Administrator, National Program Staff, U.S. Department of Agriculture, Agricultural Research Service Washington, DC; 1990. NAL call number: IP M910313031*

**004** *Administration, Education, and the Animal Care Committee (Conference Proceedings) Public Responsibility in Medicine and Research (PRIM & R) and Tufts University School of Veterinary Medicine, PRIM & R, 1989, 5 p. NAL call number: HV4915 A35 Descriptors: ACUC, laboratory animals, conference.*

**005** "The Animal Welfare Act and the zoo: A positive approach." G.H. Olsen *Journal of Zoo and Wildlife Medicine* 20(2):135-137 (June 1989). NAL call number: SF601.J6 Descriptors: zoo animals, legislation, regulations.

**006** "Institutional animal care and use committee: Review of wildlife field research." P. Bowman *Lab Animal* 18(3):28-30 (April 1989). NAL call number: QL55.A1L33 Descriptors: wildlife management, wild animals, animal research, research institutes, committees, animal welfare, surveys.

**007** "Measuring Merit in Animal Research." R. Dresser *Theoretical Medicine* 10,21-34 (March 1989). Descriptors: ethics, animal, medicine, research, merit review.

**008** "Oversight of the care and use of animals in animal behavior research in the United States." M. Stephens In: *Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications* J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 2-8. NAL call number: aHV4762 A3A64 Descriptors: Animal Welfare Act, committees, field research.

**009** "Surveillance of animal care and use in Canada." G.R. Michener *Animal Care and Use in Behavioral Research*:

Regulations, Issues, and Applications J.D. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 9- 14. NAL call number: aHV4762 A3A64 Descriptors: Canadian Council on Animal Care, experimental animals, guidelines, animal care committee.

**010** "The Animal Welfare Act's impact on the scientist." J.W. Glosser, and P.B. York Journal of the American College of Toxicology 7(4):447-451 (1988). NAL call number: RA1190 J61 Descriptors: law, United States, enforcement, amendments.

**011** Field Research Guidelines: Impact on Animal Care and Use Committees F.B. Orlans (ed.), Scientists Center for Animal Welfare, Bethesda, MD; 1988, 23 p. NAL call number: HV4704.F5 Descriptors: treatment of animals, wildlife, standards.

**012** "Institutional animal care and use committees: A new set of clothes for the emperor?" L. Finsen Journal of Medicine and Philosophy 13(2):145-158 (May 1988). Descriptors: animal welfare, ethics, National Institutes of Health.

**013** "Animal ethics committees." W.P. Anderson Australian and New Zealand Journal of Medicine 17(1):157 (1987). Descriptors: animal welfare, policy.

**014** "Are animal care and use committees really needed?" J.R. Geraci, and D.H. Percy Laboratory Animal Science 37(special issue):111-112 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, research institutions, animal experiments.

**015** "Consensus recommendations on effective institutional animal care and use committees." Laboratory Animal Science 37(special issue):11-13 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, workshop, research institutes, training, ethics, animal experiments.

**016** "Effective animal care and use committees." Laboratory Animal Science 37(special issue):1-178 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, laboratory animals.

**017** "Effective animal care and use committees - preface and acknowledgments." F.B. Orlans, R.C. Simmonds, and W.J. Dodds Laboratory Animal Science 37(special issue):9 (January 1987). NAL call number: 410.9 P94 Descriptors: Scientists Center for Animal Welfare, effective institutional practices, recommendations.

**018** "Essential functions of animal care and use committees." H.J. Baker Laboratory Animal Science 37(special issue):30-34 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, conferences, organizations, animal experiments, projects.

**019** "Gaining institutional support." J.G. Fox Laboratory Animal Science 37(special issue):115-117 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, animal experiments, committees.

**020** "Overview of papers on effective animal care and use committees." W.J. Dodds Laboratory Animal Science 37(special issue):14-16 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, policy, animal experiments.

**021** "Report of a panel discussion on how to run an effective Animal Care and Use Committee." K. Hiiemae, H. Rozmiarek, J.F. Williams, J.E. LeBeau, and M. Ross Laboratory Animal Science 37(special issue):39-44 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal experiments, policy, institutions.

**022** Animal Rights, the Threat to Research. The New Research Environment Foundation for Biomedical Research, Washington, DC; 2 videocassettes (VHS) (44 min., 28 sec.) 1987. "In cooperation with John Hopkins University School of Medicine." CT: Tape 1. The animal rights movement: The threat to research. (14 min.) -- Tape 2. pt. 1. The animal care and use committee. -- pt. 2. Common procedures & techniques. -- pt. 3. Survival surgery. (30 min.). NAL call number: Videocassette - no. 194 Descriptors: animal experimentation, animal models in research, law and legislation, animal welfare.

**023** "State Sunshine Laws." SCAW Newsletter 9(3):3 (1987). NAL call number: QL55 N48 Descriptors: animal rights groups, access.

**024** "Animal care committees: Changing their long-standing role as research rubber stamps." J.A. Kelly PsyETA - Psychologists for the Ethical Treatment of Animals Bulletin Spring 1986, pp. 2-5. Descriptors: review, animal welfare,

experiments.

**025** "Animals (Scientific Procedures) Act 1986: The Animal Procedures Committee." M. Balls *Alternatives to Laboratory Animals - ATLA* 14(1):6-13 (September 1986). NAL call number: Z7994 L3A5 Descriptors: animal research, advisory committees, legislation, law, animal welfare.

**026** "Animal welfare in Canada: A contrasting view." H. Davis *PsyETA - Psychologists for the Ethical Treatment of Animals Bulletin* 8(2):9-10 (Spring 1986). Descriptors: committees, animal experiments, facilities, university research.

**027** "Comment on ethical committees." J.D. Rankin *Acta Physiologica Scandinavica* 128(554):169-171 (1986). NAL call number: QP1 A2 Suppl Descriptors: animal welfare, ethics, inspection, cruelty.

**028** "Conference report - Institutional Animal Care and Use Committees." D. Britt *Alternatives to Laboratory Animals: ATLA* 13(3):236-239 (1986). NAL call number: Z7994 L3A5 Descriptors: animal research, review boards, evaluations.

**029** "Institutional Animal Care and Use Committees." *Alternatives to Laboratory Animals: ATLA* 14(2):96-99 (December 1986). NAL call number: Z7994 L3A5 Descriptors: laboratory animals, animal welfare, animal research, guidelines.

**030** "Compulsory ethical examination of animal experiments. Experiences with the Swedish system." K.J. Obrink, and L. Wass In: *Proceedings of the 8th ICLAS/CALAS Symposium Vancouver, 1983* Gustav Fischer Verlag, New York, NY; 1985, pp. 151-156. Descriptors: animal experiments, ethics, ethical committees, compulsory preexamination, Swedish legislation.

**031** "Ethical committees and animal experimentation." S. Haywood, S.R.L. Clark, and D. Judson *Veterinary Record* 117(18):479 (1985). NAL call number: 41.8 V641 Descriptors: animal welfare, research.

**032** "Ethical committees and animal experimentation." J. Remfry *Veterinary Record* 117(19):508 (1985). NAL call number: 41.8 V641 Descriptors: animal research, review, ethics.

**033** "Ethical committees and animal experimentation." J.F.R. Sweet *Veterinary Record* 117(18):479 (1985). NAL call number: 41.8 V641 Descriptors: college, research, experimental animals.

**034** "Microcomputer assisted management of an institutional animal care and use committee." P.C. Tillman *Laboratory Animal Science* 35(5):540-541 (1985). NAL call number: 410.9 P94 Descriptors: abstract, clerical aspect, record keeping, committee organization.

**035** "Survey of Attitudes to Animal Care and Use Committees." F.B. Orlans *Laboratory Animal Science* 35(5):539-540 (1985). NAL call number: 410.9 P94 Descriptors: abstract, scientists, humane, standard, compliance animal welfare, mandatory, protocol review.

**036** "The role of the ethical committee in biomedical research." S. Haywood *Alternatives to Laboratory Animals: ATLA* 11(4):226-228 (June 1984). NAL call number: Z7994 L3A5 Descriptors: animal experiments, medical research, ethics, regulations, animal welfare.

**037** "The potential role of local ethical committees in the moderation of experiments on animals in Britain (includes Swedish view)." D.P. Britt *International Journal for the Study of Animal Problems* 4(4):290-294 (October-December 1983). NAL call number: HV4701.I49 Descriptors: ethical code, animal use, research.

**038** "Recommended terms of reference for local animal care committees." *Journal of Medical Primatology* 9(1-2):145-148 (1980). NAL call number: QL737.P9J66 Descriptors: ethics, guidelines, Canadian Council on Animal Care.

**039** "Proper use of animals in schools: An educational program." D.C. Secord, and H.C. Rowsell *Canadian Veterinary Journal* 15(2):42-47 (1974). NAL call number: 41.8 R3224 Descriptors: biology programs, animal care, guidelines, committees.

## INSTITUTIONAL/INDUSTRIAL COMMITTEES

**040** "An effective IACUC: A Johns Hopkins experience." J. Poling *Animal Welfare Information Center Newsletter*

1(4):1-2,6 (October-December 1990). NAL call number: aHV4701.A952 Descriptors: committees, bioethics, animal welfare.

**041** "Animal Research From the Perspective of the Institutional Animal Care and Use Committee." C.J. Wust, and P.W. Concannon (eds.), *Animal Research, Animal Rights, Animal Legislation, Proceedings of Two Forums on the Use of Animals in Research Held at the Annual Meetings of the Society for the Study of Reproduction*, Columbia, Missouri, USA, August 7, 1989 and Knoxville, Tennessee, USA, July 16, 1990 V+45P, Society for the Study of Reproduction: Champaign, IL; 1990, pp. 38-42. NAL call number: QL876 S6 Descriptors: Animal Welfare Act, facilities, ethology, policy.

**042** "Guiding Principles for the Care and Use of Animals in the Field of Physiological Sciences." *Journal of the Physiological Society of Japan* 52(1):27-29 (1990). Descriptors: human, animal welfare, research, ethics, animal research committee.

**043** "Forming an IACUC at a small institution." J.W. Driscoll, and T.C. Rambo *Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications* J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 23- 28. NAL call number: aHV4762 A3A64 Descriptors: committee, universities, regulatory requirements, committee responsibility.

**044** "The development of guidelines for the care and use of agricultural animals used in agricultural research and teaching." W.W. Stricklin In: *Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications* J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 44- 51. NAL call number: aHV4762 A3A64 Descriptors: agricultural animal care and use program, institutional policies, committee.

**045** "An effective industrial animal care and use committee." H.G. Hughes In: *Science and Animals: Addressing Contemporary Issues* H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 49-50. NAL call number: HV4704 S33 1988 Descriptors: committee for animal research, ethics, protocols, drug development.

**046** "An effective industrial animal care and use committee." R. Mueller, and M.E. Landi In: *Science and Animals: Addressing Contemporary Issues* H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 123-124. NAL call number: HV4704 S33 1988 Descriptors: protocol, Good Laboratory Practices, training.

**047** "Ghettoizing animal research: The impact of federal regulations on science and education in small colleges." J. Demarest *Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications* J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 30-36. Descriptors: survey, regulations, animal care and use committee, training, animal maintenance.

**048** "Institutional animal care and use committees: Making them responsible and responsive." J.A. Mench In: *Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications* J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 15-22. NAL call number: aHV4762 A3A64 Descriptors: federal regulations, IACUC, training, peer review.

**049** "Animal care committees in the pharmaceutical industry." J. Goodpasture *Laboratory Animal Science* 37(special issue):132-133 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, laboratory animals, pharmacy.

**050** "Animal research review in an industrial facility." D.R. Knauff *Laboratory Animal Science* 37(special issue):129-131 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare regulations, animal experiments, committees.

**051** "Institutional Animal Care and Use Committee at Columbia University's Health Sciences Division." R.B. Dell *SCAW Newsletter* 9(4):3-4 (Winter 1987). NAL call number: QL55 N48 Descriptors: animal welfare, laboratory animals.

**052** "Institutional responsibilities." H.B. Herscowitz *Laboratory Animal Science* 37(special issue):118-119 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, laboratory animals, committees.

**053** "Perspective of a small institution." D.H. McKelvie *Laboratory Animal Science* 37(special issue):125-126 (January

1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal experiments, committees, guidelines.

**054** "A primate research center perspective: Animal Care and Use Committees." F.A. King Laboratory Animal Science 37(special issue):134-136 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, professional staff committees, laboratory animals.

**055** "Program and objectives of the Canadian Council on Animal Care." H.C. Rowsell Laboratory Animal Science 37(special issue):24-25 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, pain, prevention, legislation, protection, animal testing alternatives, societies, committees.

**056** "Unique problems of animal care and use in small institutions." B. Gordon Laboratory Animal Science 37(special issue):127-128 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, research institutes, animal experiments, committees.

**057** "University administration of animal care and use programs." A.A. Barber Laboratory Animal Science 37(special issue):93-96 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, administration, policy, animal experiments.

**058** "University of Southern California model for the humane care and utilization of animals in research and teaching." R.C. Benedict Laboratory Animal Science 37(special issue):90-92 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal research, committees, ethics.

**059** "The University of Southern California's committee in action." T.V. Berne, W.M. Blackmore, D. Marsh, E. Horowitz, M.J. Baker, J.D. Peck, J.W. Robb, and B. Berry Laboratory Animal Science 37(special issue):81-89 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal experiments, ethic, universities.

**060** "Report from the Committee on Animal Care and Experimentation (American Physiological Society)." H.R. Parker Physiologist 17(2):133- 134 (May 1974). NAL call number: 447.8 P564 Descriptors: laboratory animals, research, cats, dogs, physiology.

## ETHICS

**061** "NIH Guidelines and Animal Welfare." L. Marlene-Russow In: Biomedical Ethics Reviews, 1990 Humana Press, Clifton, NJ; 1992. NAL call number: R724 B493 Descriptors: animal experimentation, laws, ethics.

**062** "Institutional Animal Care and Use Committees and the Moderate Position." W. Stephenson Between the Species Winter 1991, pp. 6-8. NAL call number: HV4701 B4 Descriptors: animal rights, biomedical research, ethics, justification, value.

**063** "Reply to Stephenson on Biomedical Research." S. Gendin Between the Species Winter 1991, pp. 9-11. NAL call number: HV4701 B4 Descriptors: animal rights, biomedical research, ethics, IACUC.

**064** "Animals, Science, and Ethics." S. Donnelley, and K. Nolan (eds.), Hastings Center Report 20(3)Supp.1-32 (May-June 1990). NAL call number: R724 H27 Descriptors: animal experimentation, anthropomorphism, bioethics, research, IACUC.

**065** "Approaches to increasing the ethical consistency of prior review of animal research." E.D. Prentice, D.A. Crouse, and R.W. Rings Investigative Radiology 25(3):271-4 (March 1990). Descriptors: animal testing alternatives, legislation, ethics.

**066** "Care and use of animals. Probing four views of animal use." J.R. Boyce Journal of the American Veterinary Medical Association 196(9):1368-9 (May 1, 1990). NAL call number: 41.8 Am3 Descriptors: animal welfare, ethics, veterinary medicine.

**067** "Ethical review and the animal care and use committee." A.N. Rowan Hastings Center Report 20(3):S19(6) (May-June 1990). NAL call number: R724 H27 Descriptors: Laboratory Animal Welfare Act of 1966, social aspects, Animal Welfare Act of 1970, ethics, animal experimentation, research institutes, standards.

**068** "Ethical issues in the use of wild animals in behavioral and ecological studies." G.R. Michener In: Animal Care and Use in Behavioral Research: Regulations, Issues, and Applications J.W. Driscoll (ed.), United States Department of Agriculture/National Agricultural Library, Beltsville, MD; 1989, pp. 37-43. NAL call number: aHV4762 A3A64 Descriptors: field studies, animal care committees, maintaining wild species, guidelines.

**069** "Speculative philosophy, the troubled middle, and ethics of animal experimentation." S. Donnelley Hastings Center Report 19(2):15(7) (March-April,1989). NAL call number: R724 H27 Descriptors: animal experimentation, animal welfare, Institutional Animal Care and Use Committees, decision making.

**070** "The use of animals in medical education: A question of necessity versus desirability." J. Cheong Theoretical Medicine 10:53-57 (March 1989). Descriptors: ethics, animal rights, medicine.

**071** "Standards for animal research: Looking at the middle." R. Dresser Journal of Medical Philosophy 13:123-143 (May 1988). Descriptors: ethics, animal experimentation, standard, balance, utilitarianism.

**072** "Animal Welfare and Animal Rights." L.W. Sumner Journal of Medicine and Philosophy 13:159-175 (May 1988). Descriptors: ethics, animal experimentation.

**073** "Doing ethics by committee: Problems and pitfalls." A.L. Caplan Laboratory Animal Science 37(special issue):45-47 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal experiments.

**074** "Animal suffering: How it matters." A.H. Flemming Laboratory Animal Science 37(special issue):140-144 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, pain, animal experiments, committees.

**075** "Case studies of ethical dilemmas." F.B. Orlans Laboratory Animal Science 37(special issue):59-64(January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal experiments, animal welfare, committee.

**076** Taking Sides: Clashing Views on Controversial Bioethical Issues C. Levine Guilford, Dushkin, 1987. Descriptors: ethics, bioethics, textbook, animal experiments.

**077** "Mad bears and innocent hares: Remarks toward a theory of diminished responsibility." C. Blatz Between the Species 3:3-11 (Winter 1987). NAL call number: HV4701 B4 Descriptors: ethics, responsibility, animal experimentation, innocence.

**078** "Animal rights re-evaluated." J. Simpson Free Inquiry 5:37-40 (Winter 1984-85). Descriptors: ethics, treatment, economics.

**079** "Ethics, ethical committees and animal experimentation." D. Britt Nature 311(5986):503-506 (1984). NAL call number: 472 N21 Descriptors: public concern, research, animal welfare.

**080** "Animal rights and animal experimentation." B.J. Cohen In: Rights and Responsibilities in Modern Medicine M.D. Basson (ed.), Liss Publishing, New York, NY; 1981, pp. 85-92. Descriptors: ethics, animal experimentation, alternatives.

**081** "The voluntary control program of the Canadian Council on Animal Care." H.C. Rowsell Journal of Medical Primatology 9(1-2):5-8 (1980). NAL call number: QL737 P9J66 Descriptors: laboratory animals, ethics, research, committees.

**082** "The Rational Use of Living Systems in Bio-Medical Research." Universities Federation for Animal Welfare Universities Federation for Animal Welfare 1972. NAL call number: QL55 R37 Descriptors: ethics, animal experimentation, utility, vaccine, transplantation, feeling, reason, consent.

## INVESTIGATOR/PUBLIC ATTITUDES AND CONCERNS

**083** "Access to animal care committees." G.L. Francione Rutgers Law Review 43n1:1-14 (Fall 1990). Descriptors: sunshine laws, animal welfare, law and legislation, animal experimentation, management.

**084** "The importance of access to animal care committees: A primer for activists." G.L. Francione The Animal's Agenda 10(7):44-47 (September 1990). NAL call number: HV4701 A45 Descriptors: laboratory animals, animal welfare, IACUC,

access, information.

**085** "Public responsibility in medicine and research conference on administration, education and the animal care committee." R. Carey Journal of Medical Primatology 19(1):75-6 (1990). NAL call number: QL737 P9J66 Descriptors: animal welfare, legislation and jurisprudence, laboratory animals, research.

**086** "Communicating animal welfare issues to the investigator: An institutional newsletter." P.A. Doris SCAW Newsletter 10(1):6,15 (Spring 1988). NAL call number: QL55 N48 Descriptors: animal experiments, inspection, committees, programs, policy, information needs.

**087** "Animal Care and Use Committees: Focus on the investigator." R.A. Murphy SCAW Newsletter 10(1):9-10 (Spring 1988). NAL call number: QL55 N48 Descriptors: animal welfare, animal experiments, inspection.

**088** "Analyzing conflicts between the institution, the scientist, the animal care committee, and the concerned public." M. Tugwell Laboratory Animal Science 37(special issue):145-147 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, research institutes, public opinion.

**089** "Animal care and use committees and the public concern." H.C. Rowsell Laboratory Animal Science 37(special issue):122-124 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal research, public relations.

**090** "Attitudes to animal usage and the review system in the US." S. Haywood Alternatives to Laboratory Animals: ATLA 14(4):369-374 (June 1987). NAL call number: Z7994 L3A5 Descriptors: animal experiments, education, research.

"IACUC, who needs it? The investigator's viewpoint." R.J. Traystman Laboratory Animal Science 37(special issue):108-110 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal experiments, laboratory animals, committees.

**092** "Investigator concerns: Animal care and use committees." J.F. Williams Laboratory Animal Science 37(special issue):113-114 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal experiments, committee.

**093** "Investigators' interrelationship with laboratory animals." L.K. Bustad Laboratory Animal Science 37(special issue):167-170 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, animal housing, animal nutrition, animal experiments, animal health, handling.

**094** "Public disclosure or sunshine laws hinder the efficiency of the animal care and use committees." B.R. Collins Laboratory Animal Science 37(4):513 (1987). NAL call number: 410.9 P94 Descriptors: open meetings, confidentiality, Florida.

**095** "Scientists' attitudes toward animal care and use committees." F.B. Orlans Laboratory Animal Science 37(special issue):162-166 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, training, surveys.

**096** "Survey of attitudes to animal care and use committees." F.B. Orlans Laboratory Animal Science 35(5):539-540 (1985). NAL call number: 410.9 P94 Descriptors: abstract, scientist, humane standards, compliance, animal welfare, mandatory protocol review.

**097** "The Modern Politics of Laboratory Animal Use." T. Moss Science, Technology and Human Values 9:51-56 (Spring 1984). Descriptors: ethics, animal rights, animal experimentation, public opinion.

**098** "Animal rights law: Barking up a new tree. (Attorneys for Animal Rights)." V. Quade American Bar Association Journal 68n6:663 (June 1982). Descriptors: animal welfare, litigation, Lawyers Committee for the Enforcement of Animal Protection, management, research.

## MEMBERSHIP AND TRAINING

**099** "A comprehensive health science center educational program for animal care and use." G.L. White, M.A. Perry, and S.D. Kosanke Lab Animal 20(7):47-49 (July-August 1991). NAL call number: QL55 A1L33 Descriptors: University of



Oklahoma, course focus, workshops, laboratories.

**100** Education and Training in the Care and Use of Laboratory Animals: A Guide for Developing Institutional Programs Institute of Laboratory Animal Resources, Committee on Educational Programs in Laboratory Animal Science, National Academy Press, Washington, DC; 1991, 139 pp. NAL call number: SF604.E3 Descriptors: laboratory animals, animal welfare, training, bibliography.

**101** "Evaluation of the effectiveness of an animal care and use training program." K.I. Adsit, S.P. Tomasovic, A.J. Mastromarino, and K.N. Gray Lab Animal 19(4):50,52-54 (May-June 1990). NAL call number: QL55 A1L33 Descriptors: University of Texas, training modules, program assessment.

**102** Guia Para el Cuidado y uso de Animales de Laboratorio. Revisada en 1985. Translation of: Guide for the Care and Use of Laboratory Animals NIH publication no. 90-23S. Institute of Laboratory Animal Resources (U.S.). Committee on Care and Use of Laboratory Animals. US Department of Health and Human Services, Public Health Service, National Institutes of Health, Bethesda, MD; 1990, 83 pp. NAL call number: SF406.G8 1990 Descripciones: animales del laboratorio, bienestar de animales, entrenamiento, bibliografia.

**103** "Recognition and alleviation of pain and distress." D.A. Kastello Symposium: Animal Welfare Compliance for Study Directors American College of Toxicology, Orlando, FL, 1990. NAL call number: Videocassette no. 968 Descriptors: study director, veterinarian, ACUC, pain, study endpoints.

**104** "The American veterinarians' role and education in laboratory animal science." D.M. Stark Animal Technology: Journal of the Institute of Animal Technicians 40(3):199-201 (December 1989). NAL call number: QL55 I5 Descriptors: laboratory animals, training, animal husbandry, ACUC.

**105** "Animal care and training for temporary research employees." S.P. Tomasovic, K.N. Gray, A.J. Mastromarino, and K.I. Adsit Lab Animal 18(4):27-28,30,32(May/June 1989). NAL call number: QL55 A1L33 Descriptors: training programs, animal care and use, protocol, IACUC.

**106** "Committee knowledge of protocol adherence." L.W. Gerrity Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 137-138. NAL call number: HV4704 S33 1988 Descriptors: community representative, reduction, replacement and refinement, community member concerns.

**107** "Community responsibility and the role of community members in public education." C.E. Farr Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 139-141. NAL call number: HV4704 S33 1988 Descriptors: community member functions, care and use of animals, confidentiality, public relations.

**108** "Humane principles and procedures in animal research. Animal research training series." P.A. Doris Texas Tech University Health Science Center c1989, 1 videocassette (30 min.) NAL call number: Videocassette (2 copies) - nos. 804 and 805 Descriptors: new legal requirements, IACUC, husbandry.

**109** "Liability exposure of community members." J.L. Dyer In: Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 133-136. NAL call number: HV4704 S33 1988 Descriptors: violations, statutory duties of the committee, private action, open meetings, Freedom of Information Act.

**110** "Partnership in training--a winning combination." C.J. Maltby Lab Animal 18(5):38-39 (July-August 1989). NAL call number: L55 A1L33 Descriptors: laboratory animals, research institutes, educational programs.

**111** "Reference materials for non-affiliated members of animal care and use committees." K.P. Engler Special Reference Brief 89-08 National Agricultural Library, Beltsville, MD; May 1989, 19 pp. NAL call number: aS21.D27S64 Descriptors: animal welfare, animal testing alternatives, legislation.

**112** "Thoughts on educating community members of animal care and use committees." J. Hutchison Science and Animals:

Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 129-132. NAL call number: HV4704 S33 1988 Descriptors: guidelines, public representation, educational programs.

**113** Institutional Administrator's Manual for Laboratory Animal Care and Use NIH publication no. 88-2959 Editorial Committee of Institutional Administrators and Laboratory Animal Specialists for the Henry M. Jackson Foundation for the Advancement of Military Medicine, Uniformed Services University of the Health Sciences, 1988, 82 pp. NAL call number: SF406 I54 Descriptors: laboratory animals, animal welfare.

**114** Use of Laboratory Animals in Biomedical and Behavioral Research National Research Council, Committee on the Use of Laboratory Animals in Biomedical and Behavioral Research. Institute of Medicine, National Academy Press, Washington, DC; 1988, 102 pp. NAL call number: QL55.U74 Descriptors: animal experimentation, vivisection, laboratory animals, animal welfare, bibliography.

**115** "Investigator training: Animal care and use committees." J.A. Will, and A. Gendron-Fitzpatrick Laboratory Animal Science 37(special issue):159- 160(January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, continuing education, laboratory animals, research, universities.

**116** "Membership issues: Animal care and use committees." J.D. Strandberg Laboratory Animal Science 37(special issue):35-38 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal experiments, animal welfare.

**117** "Role of animal care and use committees in investigator training." R.C. Simmonds Laboratory Animal Science 37(special issue):152-154 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, training, educational programs.

**118** "Role of laboratory animal technicians as committee members." U.K. Stephens Laboratory Animal Science 37(special issue):103 (January 1987). NAL call number: 410.9 P94 Descriptors: animal care, research, animal welfare, participation.

**119** "Role of the veterinarian." G.L. Van Hoosier, Jr. Laboratory Animal Science 37(special issue):101-102 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, committees.

**120** "Technician training: Animal care and use committees." S. Scher Laboratory Animal Science 37(special issue):150-151 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animal science, animal welfare, United States.

**121** Guidelines for Lay Members of Animal Care Committees. Experimental Animals Committee. Canadian Federation of Humane Societies, Nepean, Ontario; 1986. NAL call number: HV4735.G8 Descriptors: protocol review, animal welfare, recommendations, public concern.

## POLICY/PROCEDURE

**122** Animal Care and Use Programs: Regulatory Compliance and Education in an Age of Fiscal Constraint Public Responsibility in Medicine and Research (PRIM & R), Tufts University School of Veterinary Medicine and Tufts University School of Medicine, PRIM & R, Boston, MA; 1991, 408 pp. NAL call number: HV4913.A54 Descriptors: educational material, bibliographies, animal welfare.

**123** "Responsibility of the regulator to the regulated community." J.W. Glosser Journal of Medical Primatology 19(1):1-8 (1990). NAL call number: QL737 P9J66 Descriptors: animal welfare, legislation, jurisprudence, government, public opinion.

**124** "Measuring merit in animal research." R. Dresser Theoretical Medicine 10(1):21-34 (March 1989). Descriptors: attitude of health personnel, disease models, ethics, peer-review, laboratory animals.

**125** Animal Law Report American Bar Association. Animal Protection Committee. American Bar Association, Young Lawyers Division, Animal Protection Committee, New York, NY; Vol. 2, no. 1 (May 1988), title from caption. NAL call number: KF3841.A15A5 Descriptors: treatment of animals, Law and legislation, wildlife conservation, animal testing,

alternatives.

**126** "Animal care and use committees: History and current national policies in the United States." R.A. Whitney, Jr. Laboratory Animal Science 37(special issue):18-21 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, legislation.

**127** "Assuring the effectiveness of Animal Research Committees." H.M. Sapolsky SCAW Newsletter 9(1):7-8 (Spring 1987). NAL call number: QL55.N48 Descriptors: laboratory animals, animal experiments, committees, policy, legislation.

**128** "Current and future policies regarding laboratory animal welfare." H. Rozmiarek Investigative Radiology 22(2):175-179 (February 1987). Descriptors: public policy, legislation, United States.

**129** "Institutional animal care and use committee (IACUC) required facility inspections - objectives and implementation." M.P. McGarry, M.A. Imamovic, and D.J. Piccione Laboratory Animal Science 37(4):544 (1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, public health, conference.

**130** "Operating principles for committees on animal research." J. Hittelman Laboratory Animal Science 37(special issue):97-100 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, institutions.

**131** "Pioneering in-house policies on animal procedures." F.B. Orlans Laboratory Animal Science 37(4):512-513 (1987). NAL call number: 410.9 P94 Descriptors: abstract, animal care and use committee, laboratory animals.

**132** "Refining the IACUC process: Policies and procedures." R. Dresser SCAW Newsletter 9(1):3-6 (Spring 1987). NAL call number: QL55.N48 Descriptors: animal welfare, animal experiments, pain, stress, committees, institutions.

## PROTOCOL REVIEW

**133** "Time of Death of CNS Tumor-Bearing Rats Can be Reliably Predicted by Body Weight-Loss Patterns." E.S. Redgate, M. Deutsch, and S.S. Boggs Laboratory Animal Science 41(3):269-273 (1991). NAL call number: 410.9 P94 Descriptors: ACUC, central nervous system, antineoplastic drug, moribund state, alternative to death as endpoint.

**134** "Use of animals in medical education." JAMA, The Journal of the American Medical Association 266(6):836 (August 14, 1991). NAL call number: 448.9 Am37 Descriptors: laboratory animals, usage, physicians, education, medical, IACUC.

**135** "Contributions of the laboratory animal veterinarian to refining animal experiments in toxicology." S.P. Pakes Fundamentals of Applied Toxicology 15(1):17-24 (July 1990). Descriptors: animal pain, psychology, measurement, research design, alternatives, trends, veterinarians, IACUC's.

**136** "Approving the use of animals in medical education." F.N. Tomson Theoretical Medicine 10(1):35-42 (March 1989). Descriptors: animal welfare, laboratory animals, standards, attitude of health personnel.

**137** "Developing standards in animal research review." R. Dresser Journal of the American Veterinary Medical Association 194(9):1184-1191 (May 1, 1989). NAL call number: 448.9 Am37 Descriptors: animal welfare, laboratory animals, protocols, standards, United State Public Health Service.

**138** "Institutional animal care and use committee review of wildlife research." P. Bowman Lab Animal 18(3):28-30 (April 1989). NAL call number: QL55.A1L33 Descriptors: wildlife field studies, survey, institution, standards.

**139** "Issues in the use of aversive stimuli in animal experimentation." J.M. Witkin Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R. C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 115-116. NAL call number: HV4704.S33 1989 Descriptors: noxious stimuli, alternatives, parameters, evaluation of proposals.

**140** "Limits of food and water deprivation." J. McIntosh, and E.C. Staley Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 117. NAL call number: HV4704.S33 1989 Descriptors: protocol, food/water intake, controlled feeding, monitoring of

animals.

**141** "Protocol review: Curbing drug abuse." Lab Animal 18(5):23 (July/August 1989). NAL call number: QL55.A1L33 Descriptors: drug use, rodents, drug effects, IACUC.

**142** "Protocol review: Experimental hypothermia." Lab Animal 18(3):18 (April 1989). NAL call number: QL55.A1L33 Descriptors: rats, submersion, animal distress.

**143** "Protocol review: Surgical suite alternative." Lab Animal 18(7):22 (October 1989). NAL call number: QL55.A1L33 Descriptors: surgical procedures, guinea pigs, laboratory operating area.

**144** "Protocol review: Unattended animals." Lab Animal 18(1):15 (January/February 1989). NAL call number: QL55.A1L33 Descriptors: rat, technician, suspension of animal use, veterinarian, investigator responsibilities.

**145** "Protocol review: Uncleared procedures." Lab Animal 18(4):19 (May/June 1989). NAL call number: QL55.A1L33 Descriptors: dogs, rabbits, prosthetic devices, protocol approval, justification.

**146** "United Kingdom Coordinating Committee on Cancer Research guidelines for the welfare of animals in experimental neoplasia." Institute of Laboratory Animal Resources, National Research Council. ILAR News 31(3):16-21 (Summer 1989). NAL call number: QL55.A1I43 Descriptors: laboratory animals, animal welfare, neoplasms, guidelines, United Kingdom.

**147** "Use of immune stimulants." S. Niemi Science and Animals: Addressing Contemporary Issues H.N. Guttman, J.A. Mench, and R.C. Simmonds (eds.), Scientists Center for Animal Welfare, Bethesda, MD; 1989, pp. 119-121. NAL call number: HV4704.S33 1988 Descriptors: adjuvant, ACUC, laboratory animals, ascites.

**148** "Protocol review: Limb regeneration in mammals." Lab Animal 17(5):22-23 (July/August 1988). NAL call number: QL55.A1L33 Descriptors: rats, limbs, amputation, wound healing, inspection.

**149** "Prior ethical review of animal versus human subjects research." E. Prentice, A. Jameton, D. Antonsen, and I. Zucker Investigative Radiology 23(9):695-697 (1988). Descriptors: IACUC, institutional review board.

**150** "Protocol review: Survival surgical procedures." Lab Animal 16(6):25-26 (September 1987). NAL call number: QL55.A1L33 Descriptors: personnel requirements, facilities, consultant, aseptic surgical procedures.

**151** "Considerations in the humane use of laboratory animals in radiology research." R.G. Dreesen Radiologic Technology 58(4):347-350 (March- April 1987). Descriptors: animal welfare, laboratory animals, radiology, research methods, committee requirements.

**152** "Protocol review: Project reassessment." Lab Animal 16(2):23-24 (March 1987). NAL call number: QL55.A1L33 Descriptors: rabbits, hemorrhage, projects, committees.

**153** "Protocol preview and review." J.M. Cohen Laboratory Animal Science 37(special issue):57-58 (January 1987). NAL call number: 410.9 P94 Descriptors: animal experiments, institutions, committees, animal welfare.

**154** "Animal research protocol review in the Veterans Administration." A.F. Moreland Laboratory Animal Science 37(special issue):137-139 (January 1987). NAL call number: 410.9 P94 Descriptors: animal experiments, policy, regulations, medical research.

**155** "Protocol review at the University of Nebraska Medical Center." E.D. Prentice, and I. Zucker SCAW Newsletter 9(4):5-6,9 (1987). NAL call number: QL55.N48 Descriptors: ACUC, animal review committee, expedited process, full committee review.

**156** "Research protocol review for animal welfare." F.B. Orlans Investigative Radiology 22:253-258 (1987). Descriptors: ACUC, animal use in research, alternatives, humane treatment of animals.

**157** "Review of experimental protocols: Classifying animal harm and applying 'refinements'." F.B. Orlans Laboratory Animal Science 37(special issue):50-56 (January 1987). NAL call number: 410.9 P94 Descriptors: animal welfare, ethics,

injuries, animal testing alternatives.

**158** "Animal use protocol review is here now." C.S. Gillett Laboratory Animal Science 36(5):579 (1986). NAL call number: 410.9 P94 Descriptors: abstract, animal care committees, educational materials.

**159** "Ideas for experimental design of experiments involving animals." F.B. Orlans Laboratory Animal Science 36(5):557 (1986). NAL call number: 410.9 P94 Descriptors: design of experiments, procedures, review process.

## REGULATION OF ANIMAL CARE AND USE COMMITTEES

**160** "Agricultural Research Service, USDA publishes new animal care directives." H. Guttman Animal Welfare Information Center Newsletter 1(4):4, 6 (October-December 1990). NAL call number: aHV4701.A952 Descriptors: USDA, directives, animal welfare, bioethics, IACUC.

**161** "Federal Laws and Policies governing animal research: Their history, nature, and adequacy." B.E. Rollin In: Biomedical Ethics Reviews, 1990 Humana Press, Clifton, NJ; 1992. Descriptors: Animal Experimentation, Laws, Policy.

**162** "Proceedings of symposium: Animal Welfare compliance for study directors." American College of Toxicology (ACT) and Production Plus, Inc. ACT Meeting, Orlando, Florida, 1990 2 videocassettes (207 minutes), 3/4 inch. NAL call number: Videocassette no. 976 Descriptors: study directors, principle investigators, USDA animal welfare regulations, training.

**163** "Regulatory perspectives of the United States Department of Agriculture on functions of animal care and use committees." W.C. Stewart Laboratory Animal Science 37(special issue):22-23 (January 1987). NAL call number: 410.9 P94 Descriptors: laboratory animals, animal welfare, inspection, research institutes, regulations.

**164** "Regulation of animal experimentation: Canada's program of voluntary control." H.C. Rowsell Acta Physiologica Scandinavica 554:95-105 (1986). NAL call number: QP1.A2 Descriptors: animal welfare, animal testing alternatives, animal welfare history, history of medicine, pain, peer review.

**165** "Regulation of animal experimentation: United States of America." F.B. Orlans Acta Physiologica Scandinavica 554:138-152 (1986). NAL call number: QP1.A2 Descriptors: animal welfare, legislation, veterinary, animal testing alternatives, National Institutes of Health.

## AUTHOR INDEX

Adsit, K.I. 101, 105

Anderson, W.P. 013

Antonsen, D. 149

Baker, H.J. 018

Baker, M.J. 059

Balls, M. 025

Barber, A.A. 057

Benedict, R.C. 058

Berne, T.V. 059

Berry, B. 059

Blackmore, W.M. 059

Blatz, C. 077

Boggs, S.S. 133

Bowman, P. 006

Boyce, J.R. 066

Britt, D. 138

Bustad, L.K. 093

Caplan, A.L. 073

Carey, R. 085

Cheong, J. 070

Clark, S.R.L. 031

Cohen, B.J. 080

Cohen, J.M. 153

Collins, B.R. 094

Concannon, P.W. 041

Cornhill, J.F. 001

Crouse, D.A. 065

Davis, H. 026

Dell, R.B. 051

Demarest, J. 047

Deutsch, M. 133

Dodds, W.J. 017, 020

Donnelley, S. 069

Doris, P.A. 086, 108

Dreesen, R.G. 151

Dresser, R. 007, 071, 124, 132, 137

Driscoll, J.W. 043

Dyer, J.L. 109

Elfner, L.E. 001

Engler, K.P. 111

Farr, C.E. 107

Finsen, L. 012

Flemming, A.H. 074

Fox, J.G. 019

Francione, G.L. 083, 084

Gendron-Fitzpatrick, A. 115

Geraci, J.R. 014

Gerrity, L.W. 106

Gillett, C.S. 158

Glosser, J.W. 010, 123

Goodpasture, J. 049

Gordon, B. 056

Gray, K.N. 101, 105

Guttman, H.N. 160

Haywood, S. 031, 036, 090

Herscowitz, H.B. 052

Hiiemae, K. 021

Hinton, N.K. 001

Hittelman, K.J. 130

Horowitz, E. 059

Hughes, H.G. 045

Hutchison, J. 112

Imamovic, M.A. 129

Jameton, A. 149

Judson, D. 031

Kastello, D.A. 103

King, F.A. 054

Knauff, D.R. 050

Murphy, R.A. 087

Niemi, S. 147

Nolan, K. 064

Obrink, K.J. 030

Olsen, G.H. 005

Orlans, F.B. 011, 017, 075, 095, 096, 156

Pakes, S.P. 135

Parker, H.R. 060

Peck, J.D. 059

Percy, D.H. 014

Perry, M.A. 099

Piccione, D.J. 129

Poling, J. 040

Prentice, E.D. 065, 149, 155

Quade, V. 098

Rankin, J.D. 027

Redgate, E.S. 133

Remfry, J. 032

Rings, R.W. 065

Robb, J.W. 059

Ross, M. 021

Rowan, A.N. 067

Rowsell, H.C. 039, 055, 081, 089, 164

Rozmiarek, H. 021, 128

Sapolsky, H.M. 127

Scher, S. 120

Secord, D.C. 039

Simmonds, R.C. 017, 117

Snyder, M.D. 001

Staley, E.C. 140

Stephens, M. 008

Stephens, U.K. 118

Stewart, W.C. 163

Strandberg, J.D. 116



Stricklin, W.R. 044

Sumner, L.W. 072

Sweet, J.F.R. 033

Tillman, P.C. 034

Tomasovic, S.P. 101, 105

Tomson, F.N. 136

Traystman, R.J. 091

Tugwell, M. 088

Van Hoosier, Jr., G.L. 119

Wass, L. 030

Whitney, Jr., R.A. 126

Will, J.A. 115

Williams, J.F. 021, 092

Witkin, J.M. 139

Wust, C.J. 041

York, P.B. 010

Zucker, I. 149, 155

