

N O R T H W E S T E R N

U N I V E R S I T Y

Assurance of Compliance with Public Health Services (PHS)

Policy on Humane Care and Use of Laboratory Animals

Assurance #A3283-01

Northwestern University: May, 2006

**Office for the Protection of Research Subjects - Animal Care & Use Committee
750 N. Lake Shore Drive, Rubloff #700, Chicago, IL 60611-3008
312-503-9339 FAX 312-503-0112 acuc@northwestern.edu**

NORTHWESTERN UNIVERSITY ASSURANCE

Northwestern University, hereinafter referred to as "Institution", hereby gives assurance that it will comply with the Public Health Service Policy on Humane Care and Use of Laboratory Animals, referred to as PHS Policy.

I. APPLICABILITY

This assurance is applicable to all research, research training, experimentation and biological testing and related activities involving vertebrate animals, tissues and cells, hereinafter referred to as "activities", which are supported by the Public Health Service (PHS) and conducted at this Institution, or at another institution as a consequence of the subgranting or subcontracting of a PHS-conducted or supported activity by this Institution. "Institution" includes all central and satellite facilities at both the Evanston and Chicago campuses of Northwestern University.

II. INSTITUTIONAL POLICY

- A. This Institution will comply with all applicable provisions of the Animal Welfare Act (AWA) and other Federal, State and local statutes and regulations relating to animals.
- B. This Institution is guided by the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training."
- C. This Institution acknowledges and accepts responsibility for the care and use of animals involved in activities covered by this Assurance. As partial fulfillment of this responsibility, this Institution will make a reasonable effort to ensure that all individuals involved in the care and use of laboratory animals understand their individual and collective responsibilities for compliance with this Assurance as well as all other applicable laws and regulations pertaining to animal care and use.
- D. This Institution has established and will maintain a program for activities involving animals in accordance with the Guide for the Care and Use of Laboratory Animals (Guide).

III. INSTITUTIONAL PROGRAM FOR ANIMAL CARE AND USE

- A. The lines of authority and responsibility for administering the program and ensuring compliance with this Policy are:
 - 1. The Vice President for Research (VPR) is the Institutional Official (IO) responsible for the administration of the Office for the Protection of Research Subjects (OPRS) and the Center for Comparative Medicine (CCM), the central animal care facility at

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Northwestern University. The Associate Vice President for Research Operations (AVPRO) has been delegated oversight responsibility. The Director of OPRS and the Executive Director of CCM report to the VPR through the AVPRO.

2. The OPRS is responsible for the overall management and record keeping of the Animal Care and Use Program (ACUP). The OPRS/ACUC administrative office is designated the office of record for the NU Animal Care and Use Program. All submissions are received, vetted and distributed through this office after veterinary pre-review, and all records kept for ACUC are maintained in the OPRS/ACUC office. Records that relate directly to applications, proposals and proposed significant changes in ongoing activities and approved by the ACUC are maintained for the duration of the activity and for three years after completion of the activity. The office coordinates all activities of the ACUC, maintains all documents, serves as liaison between the committee, external oversight agencies, CCM, research investigators and NU administration, the Office for Research (OR), the Office of Research Integrity (ORI), the Office of Research Safety, as well as the Office for Sponsored Projects (OSP) and monitors all aspects of NU Animal Welfare Assurance and applicable laws which pertain to the responsibilities of the ACUC. The OPRS/ACUC informs the VPR of all aspects of the ACUC Program.

The OPRS/ACUC maintains, updates and distributes all current and new information on regulations, policies and guidelines to the IO, the ACUC membership, the faculty and the animal research staff on a regular basis. The OPRS/ACUC maintains an association with all related professional and training organizations for the benefit of the NU research organization; prepares policy documents for review by the ACUC; and schedules semi-annual inspections of central facilities, satellite facilities, PI laboratories where vertebrates are taken for experimentation and reviews the NU animal welfare program.

CCM QA and Training personnel, reporting directly to the ACUC, and working in close accord with the OPRS/ACUC inspections program, have initiated an additional, more service and training-intense program of post-approval monitoring, allowing for better investigator and lab staff communication, cooperation, acceptance and documented compliance.

3. The Center for Comparative Medicine (CCM) is responsible for the overall administration of the animal facilities and all satellites. The CCM administrative office is designated to implement proper practices for animal use and to monitor animal use and care provided to the animals by the CCM staff.
4. A University-wide faculty committee, the ACUC is appointed by the VPR. The ACUC is responsible for reviewing and approving any and all animal protocols, make recommendations to the VPR on all matters relating to the University's animal care program, facilities and procedures. The ACUC monitors compliance with animal welfare regulations, PHS policies, USDA guidelines and University policy to ensure

adequate care of all live, vertebrate animals held or used for research, testing or educational purposes.

B. The qualifications, authority, and percent of time contributed by veterinarian(s) who participate in the program:

1. There are six full-time and one part-time veterinarians involved with monitoring and implementing the program for the care and use of laboratory animals at Northwestern University. The Executive Director and Director have broad discretion in implementing the University policy on the care and use of laboratory animals which specifies adherence to Public Health Service (PHS) policy and the Animal Welfare Act (AWA). The Clinical and Staff Veterinarians are primarily responsible for the day-to-day health and well-being of the animals and provide the majority of the clinical veterinary care.
 - i) Dr. Philippe Baneux is the Executive Director of the Center for Comparative Medicine, is a Diplomate of European College of Laboratory Animal Medicine with more than 27 years experience and is the Attending Veterinarian. Dr. Baneux has the appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use including animal husbandry, nutrition, sanitation practices, zoonosis control, and hazard containment. In fulfilling his duties and responsibilities he: a) maintains current information on regulations, licensing, registration, and accreditation; b) maintains liaison with pertinent professional organizations; c) implements institutional animal welfare policies; d) obtains and maintains all necessary licenses, registrations, permits, certificates required for the Institution; e) maintains records pertaining to the acquisition, transport, and clinical care of animals; f) acts upon ACUC-generated reports of deficiencies in animal care or facilities; g) offers continuing guidance to all personnel involved in the care and use of animals with respect to appropriate handling, immobilization, sedation, analgesia, anesthesia, and euthanasia; h) provides veterinary and professional consultation for all Institution-sponsored projects including the design, construction and repair of animal facilities; i) ensures that necessary facilities and technical staff are available to perform a wide range of clinical services; j) ensures that continuing training programs in animal care are provided for all CCM employees; k) provides guidance and oversight to surgery programs and post-surgical care; l) ensures that daily monitoring of all animals is conducted to assess their health and well-being; and m) ensures that surveillance is maintained over all animal facilities as well as animal care and use, and that deficiencies are corrected in a timely manner.
 - ii) Dr. Thomas Welsh, Director, is an American College of Laboratory Animal Medicine diplomate and assists the Executive Director. He is in particular responsible for new and renovation construction projects, long range planning and educational programs in laboratory animal medicine. Dr Welsh received his D.V.M. from Oklahoma State University (1965) and Ph.D. in Pathology, from

University of Illinois Chicago (1972). He completed his post doctoral training in Laboratory Animal Medicine, Hines VA Hospital, Hines Illinois, (1968-72). He has thirty-seven years experience in Laboratory Animal Medicine and Management.

- iii) Dr. Lisa Forman, Assistant Director for Regulatory and Small Animal Medicine, is an ACLAM, Diplomate. Dr. Forman received her D.V.M. (1995), and M.S. (1990), from the University of Wisconsin-Madison. She completed a three year, post doctoral NIH sponsored laboratory animal training program at the University of Michigan (1995-1998). She has 12 years of experience in laboratory animal medicine and 15 years experience in research as an animal user.
 - iv) Dr. Stephen Levin, Clinical Veterinarian for Evanston campus, is an ACLAM diplomate. Dr. Levin received his D.V.M. from the University of Illinois, 1995, and Ph.D. from the University of Michigan, 2004. He has ten years of clinical veterinary experience, and five in Laboratory Animal Medicine (post doctoral training at the University of Michigan 1999-2004).
 - v) Dr. Diana Berger, Assistant Director for Surgery and Large Animals received her D.V.M. (1982) and a M.S. in Pathobiology (1991) from Colorado State University. She has 25 years of experience in laboratory animal medicine, which has ranged from animal caretaker at the University of Hawaii to a Post-Doctoral fellowship in laboratory animal medicine at the University of Washington, and clinical veterinarian in industry and academic institutions.
 - vi) Dr. Nicolette Zielinski-Mozny, Clinical Veterinarian, received her D.V.M. from the University of Wisconsin-Madison (1996) and Ph.D. from the University of Illinois at Chicago (1992). Dr. Mozny completed a two year post doctoral fellowship in laboratory animal medicine (1996-1998) at UIC and is an ACLAM Diplomate. She has 9 years experience in laboratory animal medicine and 19 years experience as a researcher.
 - vii) Dr. Patti Cahill, Staff Veterinarian, received her D.V.M. from the University of Illinois (1991). She has 14 years of private practice experience. She participated in a laboratory animal internship program at the University of Illinois at Chicago and worked for the laboratory animal department at the University of Illinois Urbana-Champaign during her undergraduate program. She has been employed part-time at NU for the past year and a half and is responsible for large animals and surgery. Dr. Cahill also practices veterinary acupuncture part-time and has been certified in this field since 2000.
- C. This Institution has established an Animal Care and Use Committee (ACUC), which is qualified through the experience and expertise of its members to oversee the Institution's animal program, facilities, and procedures. The ACUC members complete the "ACUC Members Training Module" found on the VA Training Site, and have either a one-on-one training session with the Director of OPRS and/or a committee member mentor for the

first 2 months on the committee. The ACUC consists of at least five members, and its membership meets the composition requirements set forth in the PHS Policy at IV.A.3.b. Attached is a list of the names, degrees, position titles, specialties and Institutional affiliations, and non-affiliation, of the ACUC chair and its members.

D. The ACUC will:

1. Review at least once every six months the Institution's animal research program for the humane care and use of animals, using the *Guide* as a basis for evaluation. A report of the findings of the ACUC will be made available to the entire membership for review and approval prior to forwarding the report along with any minority views to the Vice President for Research with recommendations regarding deficiencies in the facilities and/or recommendations for improving the program.
2. Inspect at least once every six months the Institution's animal facilities (including satellite facilities) using the *Guide* as a basis for evaluation. A report of the findings of the ACUC will, in each case, be made available to the entire membership for review and approval prior to forwarding the report along with any minority views to the Vice President for Research with recommendations regarding correction of deficiencies in the facilities and/or recommendations for improving the facilities.
3. Conduct, in order to approve applications and proposals or proposed significant changes in ongoing activities, a review of those sections related to the care and use of animals and determine that the proposed activities are in accord with PHS Policy, the *Guide*, and Animal Welfare Act, unless an acceptable justification for a departure is presented. Further, the ACUC shall determine that the activity conforms with the Institution's Assurance and meets the following requirements: a) procedures with animals will avoid or minimize discomfort, distress and pain, consistent with sound research design; b) procedures that may cause more than momentary or slight pain and/or distress will be performed with appropriate sedation, analgesia, or anesthesia, unless justified for scientific reasons in writing by the investigator; c) animals that would otherwise experience severe or chronic pain or distress that cannot be relieved will be painlessly sacrificed at the end of the procedure or, if appropriate, during the procedure; d) living conditions of animals will be appropriate for their species and contribute to their health and comfort; e) the housing, feeding and non-medical care of the animals will be directed by a veterinarian or other appropriately experienced scientist; f) medical care for animals will be available and provided as necessary by a qualified veterinarian; g) personnel conducting procedures on the species will be appropriately qualified and trained in the described procedures; and h) methods of euthanasia used will be consistent with the recommendations of the American Veterinary Medical Association Panel on Euthanasia (Journal of the American Veterinary Medical Association, 1993, Vol. 202, No. 2, January 15, 1993) unless justified for scientific reasons in writing by the investigator.
4. Review concerns expressed by personnel involving the care and use of animals at the Institution. The ACUC procedure for reviewing concerns is as follows: a) any person

- having reason to question the humane or ethical treatment of animals at Northwestern University may choose from several options: the Office for Research Integrity (ORI), where a representative will log the report, and forward it the OPRS/ACUC to gather information for presentation to the committee; the web based “Ethics Point” and/or the “ACUC Hotline”. No threat or reprisal will be made against anyone reporting perceived mistreatment or noncompliance; b) all complaints and documentation will be brought to the attention of the ACUC and its Chair; c) if warranted, a subcommittee of the ACUC will be convened and if the incident is judged to be inconsistent with the policy of Northwestern University or applicable federal regulations regarding the humane and ethical treatment of animals, appropriate measures will be taken. Serious violations and recommendations for correction and possible subsequent action will be forwarded to the Vice President for Research and, if warranted, the VPR will notify the Office for Protection from Research Risks (OPRR), USDA and AAALAC and, if warranted, the funding agency.
5. Make written recommendations to the Vice President for Research regarding any aspect of the Institution's animal program, facilities, or personnel training, including correcting and /or improving any aspect of the Institution’s animal program, facilities, or personnel training. Recommendations will be submitted to the VPR in writing through the Associate Vice President for Research Operations and will include a description of the actions endorsed by the ACUC to make such improvements or corrections and a suggested timetable for action.
 6. Review and approve, require modifications in order to secure approval or withhold approval of those activities related to the care and use of animals as set forth in the PHS Policy; Section IV.C. Investigators must submit an Animal Care and Use application for proposed work involving animals regardless of funding source or purpose (research, testing or education). The ACUC shall evaluate all components related to the care and use of animals to determine that the proposed research and/or teaching protocols will be conducted in accordance with institutional policies, PHS Policy, and the Animal Welfare Act insofar as it applies to the research project, and that the research protocol is consistent with the *Guide*, unless an acceptable justification for a departure is presented in writing. When received by the NUACUC administrative staff, a copy of the submitted protocol is distributed to the entire committee whose members then have up to five days to request full committee review or to allow designated review to proceed. The designated reviewer (DR) is assigned by the ACUC Chair or designee within the 5 day period. Comments received from ACUC members by the OPRS office during this period are forwarded to the DR, who has the authority to review, seek clarification and/or approve the submission. The following categories are designated automatically for full committee review: a) primate protocols; b) all experimental procedures categorized as USDA level “E” protocols; c) as well as any food and/or water restriction protocols. Approval is by a vote of a majority of the quorum present. A quorum is considered to be a majority of the voting members. No member may participate in the ACUC review or approval of an application or proposal in which the member has a conflicting interest except to provide information as requested by the ACUC, nor may a member who has a

conflict of interest contribute to constitution of a quorum when voting. All active protocols using vertebrates are to be reviewed annually.

7. Notify investigators in writing of its decision to approve or withhold approval of those activities related to the care and use of animals, or of modifications required to secure ACUC approval as set forth in the PHS Policy, Section IV.C.4. The Office for the Protection of Research Subjects (OPRS) issues disposition letters following the ACUC meeting. If approved, pending modifications, or disapproved, the investigators are notified of the committee's action on their proposal by official letter from the OPRS and signed by the ACUC Chair or designee. The investigator must submit a corrected protocol prior to formal approval being granted.
 8. Be authorized to suspend an activity involving animals as set forth in the PHS Policy, Section IV.C.6. The ACUC may suspend an activity that it previously approved if it determines that the activity is not being conducted in accordance with the approved protocol or applicable provisions of the Animal Welfare Act, the Guide and/or the Institution's Animal Welfare Assurance. The ACUC may suspend an activity only after review of the matter at a convened meeting of a quorum of the ACUC and with the suspension vote of a majority of the quorum present. The Executive Director or Director of CCM cannot officially suspend an activity, only the full committee has the authority to do that. Under NU policy, they do have the authority and obligation to halt any activity and call for immediate action, to ensure the provision of adequate veterinary care. If the ACUC suspends an activity involving animals, the Vice President for Research, in consultation with the ACUC, shall review the reasons for suspension, require appropriate corrective action and report that action with a full explanation to the PHS Office for Laboratory Animal Welfare (OLAW).
- E. The individual(s) authorized by this Institution to verify ACUC approval are:

Office for the Protection of Research Subjects
Animal Care and Use Committee
750 N. Lake Shore Drive, Suite 700
Chicago, IL 60611
312-503-9339

Mary Ann Jurgus, #737
Director, OPRS/ACUC

Damema Spragens, #724
Coordinator, OPRS/ACUC

Heidi Levin, #724
Coordinator, OPRS/ACUC

Manny Robert, #724
Coordinator, OPRS/ACUC

Kurt Gillon, #724
Coordinator, OPRS/ACUC

- F. The occupational health and safety program enrollment for personnel who work in laboratory animal facilities or have contact with animals is required to assess and reduce the risk of disease transmission between humans and animals, to reduce occupational hazards, and to comply with NIH policy, the following shall apply:
1. All personnel who are exposed to the animals or have contact with animals are to be enrolled in the Occupational Health Program. The Northwestern Memorial Hospital (NMH) Corporate Health in Chicago and Omega Health Service in Evanston are the occupational health service providers and participation by all personnel is documented.
 2. The principal investigator shall be responsible for ensuring that all persons listed in the protocol under his/her direction shall comply with the provisions of the Occupational Health Program. This is documented by principal investigator signature on the ACUC protocol form. Any principal investigator who fails to carry out this responsibility will be denied the use of animals until full compliance has been established.
 3. The occupational health requirements are determined by the level of risk associated with each animal species and the extent of animal handling. The program is designed to protect both personnel and the laboratory animals. Personnel include those individuals involved in direct care of animals and their living quarters, and those individuals who have direct contact with animals (live or dead), their viable tissues, body fluids or wastes. This includes individuals who must enter animal areas to provide program or support services. Zoonotic diseases and traumatic injury are of principal concern. Other safety considerations include equipment, noise levels, toxic chemicals, radiation exposure and allergens.

Occupational healthcare services includes the following:

- a) Completion of a Medical Survey by all personnel. Individuals designated for an initial visit will receive, as determined by the level of risk, the following: a) physical exam and evaluation; b) Tetanus vaccination; c) for CCM animal caretakers a base audiogram; d) primate users will receive a TB test and if there is a history of a recent treatment for TB or a positive skin test from a TB or BCG vaccination, a chest x-ray will be taken.
- b) All primate users and CCM personnel who have contact with the animals will receive an annual TB test. For all other animal users a TB test and/or physical exam will be performed based on a risk assessment.

4. The Office of Research Safety (ORS) furnishes guidelines and training in the safe use of ionizing radiation, hazardous chemicals, bloodborne pathogens and other biological agents. The ORS reviews all animal use protocol applications to ensure the compliance of safety issues with federal, state and local regulations. All individuals who use any source of ionizing radiation (including x-ray machines and irradiators) must complete a registration form and undergo training. The Chemical and Biological Safety Officer reviews and approves Safety Plans that detail laboratory hazards. The Safety Plans will be reviewed on an annual basis and are approved prior to the use of animals. ORS annually inspects all chemical fume hoods, and biological safety cabinet performance is certified by a designated outside contractor.

- G. The total gross number of square feet in each animal facility, the species of animals housed therein and the average daily inventory, by species, of animals in each facility is provided in an attached chart.

- H. The training or instruction available to scientists, animal technicians, and other personnel involved in animal care, treatment, or use includes an Animal Use Orientation and Training Session providing: a) an overview of regulations and animal welfare laws; b) species-specific training modules covering handling and concerns related to those species, the use of anesthesia, analgesia and euthanasia and basic animal husbandry information; c) an overview of the function of the Institutional Animal Care and Use Committee (IACUC); and d) an OHSP module providing information on contact dermatitis and allergy risks. Participation documentation is maintained in the OPRS/ACUC office. Additional training sessions conducted by CCM are scheduled as needed, consisting of: a) barrier rodent housing requirements; b) biocontainment rodent housing requirements; and c) surgical preparation, gowning and gloving.

IV. Institutional Status

As specified in the PHS Policy, Section IV.A.2., Category 1, all of this Institution's programs and facilities (including satellite facilities) for activities involving animals have been evaluated and accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care, International. The Institution's program and facilities (including satellite facilities) for activities involving animals have also been evaluated by the ACUC and will be reevaluated by the ACUC at least once every six months, in accord with IV.B.1. and 2. of the PHS Policy, and reports prepared in accord with IV.B.3. of the PHS Policy.

All ACUC semiannual reports will include a description of the nature and extent of this Institution's adherence to the Guide. Any departures from the Guide will be identified specifically and reasons for each departure will be stated. Reports will distinguish significant deficiencies from minor deficiencies. Where program or facility deficiencies are noted, reports will contain a reasonable and specific plan and schedule for correcting each deficiency. Semiannual reports of the ACUC evaluations will be submitted to the Vice President for Research, and copies maintained by this Institution and made available to the Office for Laboratory Animal Welfare (OLAW) upon request.

V. Recordkeeping Requirements

- A. This Institution will maintain for at least three years:
 1. A copy of this Assurance and any modifications thereto, as approved by PHS.
 2. Minutes of ACUC meetings, including records of attendance, activities of the committee, and committee deliberations.
 3. Records of applications, proposals, and proposed significant changes in the care and use of animals and whether ACUC approval was given or withheld.
 4. Records of semiannual ACUC facility inspections and program review reports and recommendations (including minority views) as forwarded to the Vice President for Research.
 5. Records of accrediting body determinations.
- B. This Institution will maintain records that relate directly to applications, proposals, and proposed changes in ongoing activities reviewed and approved by the ACUC for the duration of the approved activity and for an additional three years.
- C. All records shall be accessible for inspection and copying by authorized OLAW or other PHS representatives at reasonable times and in a reasonable manner.

VI. Reporting Requirements

- A. At least once every 12 months, the ACUC, through the Institutional Official, will report in writing to the Office for Protection from Research Risks (OPRR):
 1. Any changes in the status of the Institution (e.g., if AAALAC accreditation is revoked), any change in the description of the Institution's program for animal care and use as described in this Assurance, or any changes in ACUC membership. If there are no changes to report, this Institution will provide OPRR with written notification that there are no changes.
 2. Notification of dates that the ACUC conducted its semiannual evaluations of the Institution's program and facilities (including satellite facilities) and evaluations submitted to the Vice President for Research.
 3. The most recent evaluation of the animal care program and facilities by the Animal Care and Use Committee was approved at the regularly scheduled November, 2005 meeting. A report of this evaluation was submitted to Dr. Bradley Moore, Vice President for Research on December 1, 2005. Documentation, by signature, of the evaluation of the written animal care program description of the ACUC is on file in OPRS. Any minority views are included with the evaluation.
- B. The ACUC, through the Institutional Official, will provide OLAW promptly with a full explanation of the circumstances and actions taken with respect to:

1. Any serious or continuing noncompliance with the PHS Policy.
2. Any serious deviations from the provisions of the Guide.
3. Any suspension of an activity by the ACUC.

C. Reports filed under VI.A. and VI.B. above shall include any minority views filed by members of the ACUC.

VII. Institutional Endorsement and PHS Approval

A. Authorized Institutional Official

Name: Bradley Moore, Ph.D.
Title: Vice President for Research
Address: 633 Clark Street
Evanston, IL 60208
Phone: (847) 491-3485
Fax: (847) 467-4620

Signature:

Date:

B. Public Health Service Approving Official

Name:
Title:
Address: Office of Laboratory Animal Welfare
National Institutes of Health
6705 Rockledge Drive
RKL1, Suite 1050, MSC 7982
Bethesda, MD 20892-7982
Phone: (301) 496-7163
Fax: (301) 402-2803

Signature:

Date:

C. Effective Date of Assurance:

D. Expiration Date of Assurance:

FACILITY AND SPECIES INVENTORY

NORTHWESTERN UNIVERSITY ASSURANCE NUMBER: A3283-01

| Animal Facilities | Gross Square Feet | Species Housed | Average Daily Inventory |
|----------------------|----------------------|---------------------|----------------------------|
| #1 | 10,756 | Cat | 7 |
| | | Dog | 8 |
| | | Frog-Grass | 117 |
| | | Mouse | 7527 |
| | | Primate - New World | 12 |
| | | Primate - Old World | 54 |
| | | Rabbit | 43 |
| | | Rat | 1586 |
| | | Swine | 14 |
| #2 | 15,053 | Dog | 7 |
| | | Mouse | 4469 |
| | | Swine | 6 |
| #3 | 989 | Gerbil | 2 |
| | | Guinea Pig | 2 |
| | | Mouse | 878 |
| #4 | 665 | Mouse | 189 |
| #5 | 7,632 | Cat | 7 |
| | | Frog-Grass | 9 |
| | | Frog - Xenopus | 23 |
| | | Hamster - Golden | 540 |
| | | Hamster - Siberian | 137 |
| | | Mouse | 6146 |
| | | Primate - Old World | 5 |
| | | Rabbit | 3 |
| | | Rat | 189 |
| #6 | 485 | Chinchilla | 26 |
| | | Gerbil | 25 |
| | | Guinea Pig | 9 |
| | | Mouse | 4 |

**ANIMAL CARE AND USE COMMITTEE MEMBERSHIP
2005 - 2006**

**NORTHWESTERN UNIVERSITY
ASSURANCE NUMBER: A3283-01**

| NAME AND DEGREE | SCIENTIFIC SPECIALTY | AFFILIATION WITH INSTITUTION |
|----------------------------------|---------------------------------|----------------------------------|
| Arlene Rabushka | Community member | Non-Affiliated |
| Brian J. O'Hara | Community member | Non-Scientist |
| David Ericksen* | Community member | Non-Affiliated/ Non-Scientist |
| Charles J. Heckman, Ph.D.** | | Scientist |
| Thomas Adrian, Ph.D. | Surgery | Scientist |
| Philippe Baneux, DVM | Executive Director/Veterinarian | CCM Staff |
| Diana Berger, DVM | Veterinarian | CCM Staff |
| David A. Dean, Ph.D. | Pulmonary | Scientist |
| Lisa Forman, DVM | Veterinarian | CCM Staff |
| James W. Frederiksen, M.D. | Medicine-Surgery | Scientist |
| Erwin Goldberg, Ph.D. | BMBCB | Scientist |
| Ronald E. Kettner, Ph.D. | Physiology | Scientist |
| Melina Kibbe, M.D. | Surgery | Scientist |
| Claus-Peter Richter, M.D., Ph.D. | Hematology-Oncology | Scientist |
| Karla Fullner Satchell, Ph.D. | Immunology | Scientist |
| Mark Segraves, Ph.D. | Neurobiology | Scientist |
| Martha Hotz Vitaterna, Ph.D. | Functional Genomics | Scientist |
| Jeffrey Weiss, Ph.D. | Endocrinology | Scientist |
| Fred Martinson | Research Safety | Ex Officio |
| Steve Levin, DVM, Ph.D.* | Veterinarian | CCM Staff |

| | | |
|---------------------------------|--------------------------|------------|
| Nicolette Zielinski-Mozny, DVM* | Veterinarian | CCM Staff |
| Thomas Welsh, DVM, Ph.D.* | Veterinarian | CCM Staff |
| Lewis J. Smith, M.D. | Associate VP of Research | Ex Officio |
| Bradley Moore, Ph.D. | VP of Research | Ex Officio |

* Alternate

** Chairman - Address and Telephone #: 750 N. Lake Shore Drive
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