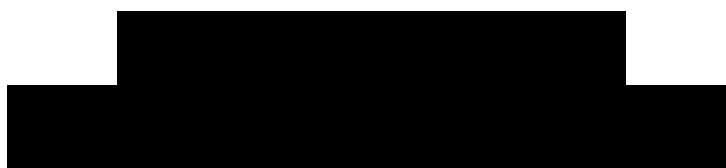


**Program Description
Animal Care and Use Program**

**School of Veterinary Medicine
AAALAC File No. 000620**

University of Wisconsin-Madison



For

AAALAC International

July 27, 2017

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Program Description

Section 1. Introduction

- A. State the name of the program unit and, if applicable, its parent organization. List all organizations (schools, centers, etc.) included within the program unit.

The name of the program unit is the University of Wisconsin, School of Veterinary Medicine (SVM). Its parent unit is the University of Wisconsin-Madison (UW-Madison).

RARC provides veterinary care, IACUC/OB administration, post approval monitoring, training and related functions campus-wide. This includes four programs, each with their own AAALAC accreditations:

UW-Madison School of Medicine and Public Health (SMPH), AAALAC File No. 000305

UW-Madison VCRGE AAALAC File No. 000567

UW-Madison School of Veterinary Medicine (SVM) AAALAC File No. 000620

UW-Madison College of Agricultural & Life Sciences (CALS) AAALAC File No. 001190

and one unaccredited program, the UW-Madison College of Letters & Science.

- B. Give a brief overview of the institution, its purpose and how the animal care and use program relates to the mission of the institution.

Founded in 1848, the University of Wisconsin–Madison is the flagship campus of the University of Wisconsin System. It was designated a land grant institution in 1866 with the mandate to serve society through focus on agriculture, science and engineering. The main campus covers 936 acres in the City of Madison. An experimental farm system and other permanent field research stations are located throughout the state.

The University's mission is education, research and service of relevance at state, national and international levels. Educational offerings include degrees in 130 bachelor's, 144 master's, 109 doctoral and 14 professional degree programs. The total enrollment for fall 2016 was 43,338. Research is vibrant and varied with continuing emphasis on interdisciplinary collaboration. In fiscal year 2015, total research expenditures were slightly under \$1.1 billion, which ranked 6th nationally among all public institutions. This was down \$40 million from the previous year according to the National Science Foundation's annual Higher Education Research and Development expenditures survey. Aside from the public service responsibilities of a land grant institution, the University has a deep tradition of service to various aspects of society. Today this philosophy is manifested in educational outreach, partnering with industry and research collaborations around the world.

An excellent animal care and use program is requisite to all parts of the University's mission, and particularly important to research and graduate education. Approximately 455 principal investigators used 320,000 animals at the University in 2016. About 891 protocols for animal projects, including teaching and research, are on-going. The large majority of these projects take place at [REDACTED] University-managed animal care facilities including [REDACTED] on campus, [REDACTED] in University-owned and leased facilities in the greater Madison area, and at [REDACTED] experimental farms and research stations located throughout the state.

The University of Wisconsin-Madison School of Veterinary Medicine was established by Wisconsin Legislative action in 1979. In May 1987, the first 76 Doctor of Veterinary Medicine degrees were granted by the University of Wisconsin.

The School of Veterinary Medicine consists of six separate facilities:

[REDACTED] The [REDACTED] facility is the hub of the school's operation. The [REDACTED] structure houses the [REDACTED] on the [REDACTED], classrooms and laboratory space, and administrative areas on [REDACTED]; and faculty offices and research laboratories on the [REDACTED]. Clinical services within the building include housing for 120 small animals and penning and stall space for nearly 80 large animals.

The University of Wisconsin-Madison School of Veterinary Medicine is dedicated to providing excellent programs in veterinary medical education, research and service that enhance the health and welfare of animals and people and the economic well-being of the State of Wisconsin.

In pursuit of this mission, the school strives toward:

- being the foremost North American School of Veterinary Medicine in the quality of our professional, graduate, and postgraduate education programs;
- establishing and maintaining outstanding research programs;
- being the national leader with regard to educational, research, and outreach programs in dairy cattle health and disease;
- establishing and maintaining supportive and complementary relationships with the public, private sector veterinarians, industries ancillary to veterinary medicine, and relevant regulatory agencies; and
- fostering educational and employment environment which regards individual differences as vitalizing; and maintains flexibility and creativity in the pursuit of excellence.

- C. Note that AAALAC International's three primary standards are the Guide for the Care and Use of Laboratory Animals (Guide), NRC, 2011; the Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide), FASS 2010, and the European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes, Council of Europe (ETS 123). Other regulations and guidelines used (U.S. Department of Agriculture (USDA), Public Health Service (PHS) Policy, Good Laboratory Practice (GLP), Canadian Council on Animal Care (CCAC), etc.) may also apply. Describe which of the three primary standards and other regulations and guidelines are used as standards for the institutional animal care and use

program and how they are applied. For example, an academic institution in the United States with an Office of Laboratory Animal Welfare (OLAW) Assurance may use the standards of the Guide and PHS Policy for all animals, the Animal Welfare Act regulations for covered species, and the Ag Guide for agricultural animals used in agricultural research and teaching. In the European Union, the standards applied might be the Guide, ETS 123, Directive 2010/63, and any country-specific regulations.

The UW-Madison has formally adopted the following as standards for the animal care and use program: (1) *Guide for the Care and Use of Laboratory Animals* (Guide), NRC, 2011; (2) *Guide for the Care and Use of Agricultural Animals in Research and Teaching* (Ag Guide), FASS 2010; (3) the U.S. Department of Agriculture (USDA) Animal Welfare Act and Animal Welfare Regulations; and (4) the Public Health Service Policy on the Humane Care and Use of Laboratory Animals. The Guide and PHS Policy is applied to all live vertebrate species except for agricultural animals used in food and fiber studies or agricultural animal teaching activities. Under these circumstances, the Ag Guide is followed. All four standards also apply to facility planning and management, oversight of animal environments, animal user training programs, IACUC/OB functions, and veterinary care. For purposes of assessing appropriate species-specific euthanasia plans the animal program adheres to the American Veterinary Medical Association Guidelines for the Euthanasia of Animals (2013).

- D. Describe the organization and include an organizational chart or charts (as an Appendix/Appendices) detailing the lines of authority from the Institutional Official to the Attending Veterinarian, the Institutional Animal Care and Use Committee/Oversight Body (IACUC/OB), and the personnel providing animal care. Please include the title, name (Note: For individuals whose information is publically available, provide the titles and names; for individuals whose information is not publically available, you may provide titles only.), and degree (if applicable) of each individual at the level of supervisor or above. Names of animal care staff below the title of supervisor need not be included, but the titles and number of animal care personnel under each supervisor should be included. If animal care responsibility is administratively decentralized, the organizational chart or charts must include all animal care programs, indicating the relationship between each administrative unit and personnel, the Attending Veterinarian, and the Institutional Official.

The lines of authority and responsibility for administering the program and ensuring compliance with vertebrate animal welfare regulations are as follows: The ultimate responsibility for the program of research animal care and use lies with the Chancellor of the University of Wisconsin-Madison (CEO, per PHS policy). Rebecca M. Blank, PhD has served as Chancellor since 2013. The responsibility and authority of the Institutional Official (IO) for appointing IACUC/OB members have been delegated to [REDACTED], PhD, [REDACTED]. Dr. [REDACTED] has further delegated the responsibility and authority for IACUC/OB appointments to individual associate deans or equivalent positions in each School or College.

UW-Madison has four IACUC/OBs serving the schools and colleges that use animals. The College of Agricultural and Life Sciences (CALS), School of Medicine and Public Health (SMPH) and the School of Veterinary Medicine (SVM) each have dedicated IACUC/OBs. ARROW protocol: Agricultural, Biomedical, Educational Display, Wildlife

and Other. Vice Chancellor for research and Graduate Education (VCRGE) and the College of Letters and Science have one combined IACUC/OB that serves both entities. It is known as the LSVIC IACUC/OB. Please note that L&S is not AAALAC accredited, while all four of the other schools/colleges are accredited.

The All Campus Animal Planning and Advisory Committee (ACAPAC) is advisory to the IO. The ACAPAC consists of the Chairs of all four of the above IACUC/OBs (vice chairs are alternates), principal investigators representing the campus, the Chief Campus Veterinarian ([REDACTED], DVM, MPH, PhD), and ex officio, non-voting members.

The CEO, IO and the IACUC/OBs are advised by the [REDACTED], and the Chief Campus Veterinarian, Dr. [REDACTED]. Dr. [REDACTED] reports directly to Dr. [REDACTED] and is supervised by Dr. [REDACTED] for personnel supervisory purposes only.

RARC is a service unit that provides support to responsible care and use of animals throughout the University. Administratively it is part of the VCRGE and part of this program description. It has three primary functions:

1. Provide veterinary and laboratory services in support of quality animal care.
2. Provide formal training and on-request support in the proper care and handling of research and teaching animals.
3. Provide administrative functions for the IACUC/OBs, post-approval evaluation and assure compliance with the laws, regulations and guidelines governing the care and use of laboratory animals.

- E. Identify the key institutional representatives (including, but not limited to, the Institutional Official; IACUC/OB Chairperson; Attending Veterinarian; animal program manager; individual(s) providing bio-safety, chemical hazard, and radiation safety oversight; etc.); and individuals anticipated to participate in the site visit.

University of Wisconsin – Madison, Oversight	
Rebecca Blank, PhD	Chancellor, CEO per PHS policy
[REDACTED], PhD	[REDACTED]
[REDACTED], PhD	[REDACTED]
	Institutional Official
[REDACTED], PhD	[REDACTED],
	Associate Professor of Psychology
[REDACTED], PhD	Co-Chair of LSVIC IACUC/OB,

	Professor of Psychology
[REDACTED], PhD	Co-Chair of LSVIC IACUC/OB, Assistant Professor
[REDACTED], PhD	[REDACTED]
[REDACTED], DVM, MPH, PhD, DACLAM	UW-Madison Chief Campus Veterinarian Research Animal Resources Center
<u>University of Wisconsin – Madison, University Health Services (UHS)</u>	
[REDACTED], MD, MPT	[REDACTED]
[REDACTED], MS, CIH	[REDACTED]
<u>University of Wisconsin – Madison, Environmental Health & Safety (EHS)</u>	
[REDACTED], PhD	[REDACTED]
[REDACTED], PhD	[REDACTED], Assistant Director of EH&S
[REDACTED], PhD	[REDACTED], Assistant Director of EH&S
[REDACTED], MPH	[REDACTED], Assistant Director of EH&S
[REDACTED], BS, MBA	[REDACTED], Senior Risk Management Specialist EH&S Representative to the IACUC/OBs
[REDACTED]	Senior Risk Management Specialist EH&S Representative to the IACUC/OBs
[REDACTED], BS	Risk Management Specialist EH&S Representative to the IACUC/OBs
<u>Research Animal Resources Center (RARC)</u>	
[REDACTED], PhD	[REDACTED] Institutional Official
[REDACTED], DVM, MPH, PhD, DACLAM	UW-Madison Chief Campus Veterinarian, RARC

[REDACTED], PhD	[REDACTED]
[REDACTED], DVM, PhD, DACVP	[REDACTED],
[REDACTED], BS, CVT, RLATG	[REDACTED], Senior Administrative Program Specialist
[REDACTED], BA, MA, CPIA	[REDACTED], Senior Administrative Program Specialist
[REDACTED], PhD, CPIA	[REDACTED] Associate Administrative Program Specialist
[REDACTED], BS, MS	Animal Program Assessment Specialist, Senior Administrative Program Specialist
[REDACTED], BS	Animal Program Assessment Specialist Associate Administrative Program Specialist
[REDACTED], BS, MS	[REDACTED], Administrative Program Specialist
[REDACTED], BS, CVT, RALAT	[REDACTED], Research Program Manager I
University of Wisconsin – Madison, School of Veterinary Medicine (SVM)	
[REDACTED], DVM, PhD	[REDACTED]
[REDACTED], DVM, PhD	Chair of SVM IACUC/OB, Professor of Pathobiological Sciences
[REDACTED], DVM, MS	[REDACTED]
[REDACTED], BS, LATG	[REDACTED]
[REDACTED], BS, CPIA	[REDACTED]
[REDACTED], ALAT	[REDACTED]

- F. Briefly describe the major types of research, testing, and teaching programs involving animals and note the approximate number of principal investigators and protocols involving the use of animals. As mentioned in the instructions, please complete one of the animal use forms included with this outline or provide the information requested in a similar format as an appendix.

At the time of this writing (December 19, 2016) there are 177 protocols (held by 79 PIs) in IACUC/OB-approved active status. The types of vertebrate animal research carried out in the SVM program primarily involve traditional laboratory rodents (e.g. Mus,

Rattus), ferrets, dogs, cats, sheep, and horses. Studies include but are not limited to vaccine efficacy, T cell immunity, myelin disease and repair, torpor and hibernation, and bone regeneration.

A variety of common and exotic domestic species (mammals, birds, reptiles) are used for the instruction of veterinary students enrolled in required and elective courses. Protocols covering clinical studies conducted with client-owned patients of the (approximately 35) are overseen by this IACUC/OB. Nonhuman primates are not used in studies overseen by this IACUC/OB except for one protocol that involves the collection of biological samples from wild primates in Uganda by Ugandan collaborators (V005039).

- G.** Note the source(s) of research funding (grants, contracts, etc.) involving the use of animals.

During the latest fiscal year, the School of Veterinary Medicine received a total of over \$23.6 million in extramural research support funds. Approximately 91% of this total comes from federal grants and 9% from non-federal grants.

All new and competing renewals of NIH awards are systematically evaluated for congruence with IACUC/OB-approved protocols.

- H.** List other units (divisions, institutes, areas, departments, colleges, etc.) of your organization that house and use animals that are not included in this Description. If any of these are contiguous, physically or operationally (e.g., same IACUC/OB, same animal care staff), with the applicant unit, describe the association. Explain why such units are not part of this program application.

In addition to the School of Veterinary Medicine, two other schools and two colleges at UW-Madison use animals in teaching and research: 1) College of Agricultural and Life Sciences (CALS), 2) Graduate School (GRAD), 3) School of Medicine and Public Health (SMPH), and 4) College of Letters and Science (L&S).

L&S is the only school that is not AAALAC accredited. Therefore, animals used by the other college and schools are not housed in L&S facilities.

CALS, GRAD and SMPH each maintain their own AAALAC accreditation and, thus, are not included in this program description.

Each program's facilities are operationally distinct, and each is overseen by a program-specific IACUC/OB, except for VCRGE and L&S which are overseen by a single IACUC/OB.

Facility use is allowed between the AAALAC accredited programs. Generally, when animals are housed and used in facilities that cross the jurisdictions of more than one IACUC/OB, primary oversight (including protocol review and approval, semiannual inspections, and veterinary care) is performed by the IACUC/OB that oversees the facility where the majority of the animals for a given study are housed. Complementary protocol review consultation is sought from the campus research veterinary staff and other campus IACUC/OBs on an ad hoc basis when the design of a particular study requires the use of facilities overseen by an IACUC/OB other than the IACUC/OB with

primary oversight. A campus policy describes the method and circumstances under which multiple IACUC/OBs exercise shared protocol review and approval (All Campus policy 2003-024, "Assignment of Protocols to UW-Madison ACUCs," <http://www.rarc.wisc.edu> under "Policies").

The UW-Madison research program includes some use of invertebrates. This use is overseen by the non-IACUC/OB Invertebrate Research Review Committee (IRRC). IRRC is a voluntary oversight committee that meets on an as-needed basis and is charged with reviewing research projects utilizing higher invertebrates. The primary responsibility of the committee is to ensure that invertebrates used in research or teaching are used appropriately, and cared for humanely according to species needs. IRRC was established at the request of UW-Madison investigators who required oversight in order to meet international publication standards. Veterinary and regulatory expertise is represented on the IRRC.

- I. Contract Facilities: If the institution contracts for animal care facilities or services for animals owned by the institution, the contractor and its AAALAC International accreditation status must be identified. If a contractor's animal care and use program is not accredited by AAALAC International, a brief description, following this Program Description outline, of the relevant contractor's programs and facilities must be provided. In addition, the species and approximate average number of animals housed in the contract facilities and the approximate distance between the institution's animal facility and the contract facility must be noted. Incorporation of the contractor program into the site visit schedule will be discussed with institutional representatives. If the institution does not contract for animal care facilities or services, so note.

No contract facilities are used.

- J. Note other relevant background that will assist reviewers of this report.

None

Section 2. Description

I. Animal Care and Use Program

A. Program Management

1. Program Management Responsibility [Guide, pp. 13-15]

a. The Institutional Official [Guide p. 13-14]

Describe how program needs are clearly and regularly communicated to the Institutional Official by the Attending Veterinarian, IACUC/OB, and others associated with the program.

The UW-Madison Chief Campus Veterinarian has a direct line reporting to Dr. [REDACTED] (IO), who is also serving as the [REDACTED], and freely communicates program needs. The WNPRC Attending Veterinarian communicates with the IO directly, through the [REDACTED] or through the Chief Campus Veterinarian.

The IACUC/OB sends reports of its semiannual inspections and program reviews to the IO. The IO attends at least one regular IACUC/OB meeting per year, at which all committee members have an opportunity to interact with the IO. The Chair of the IACUC/OB is also in regular contact with the IO. In addition the IO attends most All Campus Animal Planning and Advisory Committee (ACAPAC) meetings. At these meetings the IO has direct contact with the school and college IACUC/OB chairs who are members of the ACAPAC.

As the [REDACTED], the IO/[REDACTED] attends regular meetings with the management of RARC and monthly all staff meetings.

b. The Attending Veterinarian [Guide, p. 14]

- i. Describe the institutional arrangement for providing adequate veterinary care. For each veterinarian associated with the program (including private practitioners), provide the veterinarian's name(s), list responsibilities, and how the veterinarian is involved in monitoring the care and use of laboratory animals. If employed full-time by the institution, note the percentage of time devoted to supporting the animal care and use program of the institution. If employed part-time or as a consultant, note the frequency and duration of visits.

Outside the WNPRC, veterinary programmatic staffing needs are determined by the IO and [REDACTED] (Dr. [REDACTED]), the UW-Madison Chief Campus Veterinarian (Dr. [REDACTED]), the members of the All-Campus Animal Planning and Advisory Committee (ACAPAC) and IACUC/OB of each school and college.

[REDACTED],	Attending Veterinarian	100%
DVM, MPH, PhD, DACLAM		
Dr. [REDACTED] supervises UW-Madison veterinary care and all veterinarians outside WNPRC. She reports programmatic concerns to the IO and to the [REDACTED].		
[REDACTED]. Dr. [REDACTED] is a voting member of the All Campus Animal Planning and		

Advisory Committee and an alternate voting member of the School of Veterinary Medicine IACUC/OB.

[REDACTED] DVM, MS, DACVIM	Senior Program Veterinarian, Large Animal	35%
Provides direct veterinary care to large animal species in the School of Veterinary Medicine's facilities (~35%), as well as facilities in CALS (~65%) that are not covered by this program description. Provides direct veterinary care to large animal species in the School of Veterinary Medicine's research and teaching facilities. Dr. [REDACTED] is a voting member on School of Veterinary Medicine IACUC/OB. Dr. [REDACTED] reports to Dr. [REDACTED].		
[REDACTED] DVM, DACLAM	Senior Program Veterinarian Small Animal	100%
Provides direct veterinary care to small animal species in the School of Veterinary Medicine's research and teaching facilities. Dr. [REDACTED] is a voting member on School of Veterinary Medicine IACUC/OB. Dr. [REDACTED] reports to Dr. [REDACTED].		
[REDACTED] DVM, DABVP-Bovine	Program Veterinarian, Large Animal	10%
Provides direct veterinary care to large animal species in the School of Veterinary Medicine's facilities (~10%), as well as facilities in CALS (~90%) that are not covered by this program description. Dr. [REDACTED] is an alternate voting member on School of Veterinary Medicine IACUC/OB. Dr. [REDACTED] reports to Dr. [REDACTED].		

- ii. List others (e.g., Principal Investigators, veterinarians serving as Principal Investigators, veterinary faculty/staff, technical staff, farm managers) who have a direct role in the provision of veterinary care and describe their responsibilities. An organizational chart depicting the reporting relationship between these individuals and the Attending Veterinarian should be included as an appendix.

SVM PI's and staff

May have a direct role in the provision of veterinary care in terms of performing their investigations on animals. Duties (contingent upon animal care training and experience) may include surgery or other experimental manipulations, as well as basic husbandry in certain instances where research needs dictate (see All Campus Policy 2005-029). The Senior Program Veterinarian has oversight of these activities via the IACUC/OB and regular walk-throughs of facilities.

ARC technical staff

May have a direct role in the provision of veterinary care as stipulated by pertinent SOP or direct veterinary authorization. Responsibilities may include providing basic husbandry needs (such as food, water, and sanitation of caging) as well as aspects of veterinary care such as euthanasia or provision of treatment as directed by a veterinarian or veterinary technician. The Senior Program Veterinarian has oversight of these activities via the IACUC/OB and regular walk-throughs of facilities.

ARC managerial staff

May have a direct role in the provision of veterinary care as stipulated by pertinent SOP or direct veterinary authorization. Responsibilities may include providing basic husbandry needs (such as food, water, and sanitation of caging) as well as aspects

of veterinary care such as euthanasia or provision of treatment as directed by a veterinarian or veterinary technician. The Senior Program Veterinarian has oversight of these activities via the ICUC/OB and regular walk-throughs of facilities.

RARC veterinary technician staff

Will have a direct role in the provision of veterinary care as training and experience permits. The Senior Program Veterinarian directs their activities and directly supervises them.

c. Collaborations [Guide, p. 15]

Describe processes for assigning animal care and use responsibility, animal ownership and IACUC/OB oversight responsibilities at off-site locations (i.e., collaborations).

The School of Veterinary Medicine's animal care program includes [REDACTED] that are managed by UW-Madison. The [REDACTED] UW-Madison locations mentioned in Item B of the Introduction are part of the described animal program and are included in UW-Madison PHS Assurance A3368-01.

Studies conducted with live vertebrate animals at locations that are not part of the described UW-Madison PHS Assurance are not overseen by the School of Veterinary Medicine's IACUC/OB, except as noted in item 2 below. Institutional policy 2003-015 on collaborative research projects, subgrants, and subcontracts taking place at non UW-Madison facilities (read it at www.rarc.wisc.edu/policy/2003-015.html) states:

“(1) Any UW-Madison investigator conducting collaborative research that involves the conduct of work with live vertebrate animals at a facility not owned or controlled by UW-Madison must ensure that an agreement between UW-Madison and the facility is in place prior to initiation of the research. For the purposes of this policy, “collaborative research” includes research conducted at another institution that is supported by funds administered by UW-Madison and/or conducted by a UW-Madison employee or agent under a UW-Madison appointment or affiliation. The agreement must document which entity is responsible for fulfilling compliance obligations such as animal care and handling and performance of IACUC functions. UW-Madison may require the collaborating institution to provide documentation of IACUC[/OB] approval or other relevant materials.

(2) While federal regulatory agencies do not require duplicative review by both institutions, UW-Madison will not relinquish its right to review any animal use protocol. Determination of the need for duplicative review shall be made by the individual College/School [IACUC/OB] using established UW-Madison protocol review processes.

(3) If the research, teaching, or outreach involves animals covered under the Animal Welfare Act (USDA), the non-UW-Madison facility must provide evidence that it is registered as a “Research Facility” with the USDA. If PHS funding supports the activity, the non-UW-Madison facility must provide evidence to the UW-Madison Investigator of current PHS Assurance. Research, teaching, or outreach using live vertebrate animals at non-USDA registered or non-PHS assured institutions will adhere to OLAW's guidance and will be reviewed by UW-Madison institutional representatives on a case-by-case basis.”

Studies involving noncontact observation of wild animals in their natural habitat that does not materially affect the animals must be described in writing in a waiver request and submitted to the Chief Campus Veterinarian or designee per All-

Campus policy 1997-007. The Chief Campus Veterinarian or designee will make a determination if the animal aspect of the study requires IACUC/OB oversight as required by the Animal Welfare Act Regulations and PHS Policy. A copy of the "wildlife waiver" is available for viewing at:
<https://www.rarc.wisc.edu/documents/WildlifeWaiver-4.doc>

2. Staff Management

a. Training and Education

Describe how the IACUC/OB provides oversight and evaluates the effectiveness of training programs. Describe how training is documented.

The IACUC/OB provides oversight and evaluation of training program effectiveness during protocol reviews, semiannual program reviews and semiannual inspections, at monthly IACUC/OB meetings, and on an ad hoc basis as needed.

When protocols are submitted for IACUC/OB review, administrative staff verify that all individuals listed on each protocol have completed, are enrolled to complete, or have been notified to complete, basic animal user and safety training as detailed in Policy 1999-006-io. Discrepancies are highlighted for the IACUC/OB's review, and the committees have the discretion to require additional training or retraining on a case-by-case basis, with the completion of such directed training as a contingency of protocol approval. IACUC/OBs commonly direct veterinary staff, trainers from RARC, or specialists (for example, anesthesiologists from the School of Veterinary Medicine) to be present with research staff for initial procedures and surgeries to observe and evaluate techniques, and to report back their assessment to the IACUC/OB.

The basic animal user training required by campus policy consists of: (1) an online orientation that covers federal rules and regulations and campus policies regarding the use of animals in research, (2) an occupational safety class focused on hazards associated with direct contact with animals, plus safety when using sharps, personal protective equipment, reporting significant exposures, first-aid tips, medical concerns, and respirator use, and (3) species-specific handling, restraint, and applicable research techniques. A fourth required class, Lab Animal Surgery, is required of individuals performing animal surgery for the first time, or for the first time on a species new to them. Courses 1, 3 and 4 above are documented in a central training database maintained by RARC. Course 2 is documented by the campus' occupational safety training staff.

Laboratory training notebooks, in which lab-specific training is documented (e.g., that which is provided by Principal Investigators or appropriate lab staff) are present in many labs and are checked by IACUC/OB members during semiannual inspections and discussed with the lab members who are present during the inspections. The Worksheet that serves as the basis for the IACUC/OB's semiannual program reviews [Lab. Animal 2007 Oct; 36 (9) 35-40] contains an entire section on training in the animal program, including a specific discussion item focused on training program effectiveness (from the Worksheet: "There are methods to evaluate the effectiveness of the initial and continuing training of individuals working with animals.").

i. Veterinary and Other Professional Staff [Guide, pp. 15-16]

Provide name and credentials of veterinary and other professional staff, including the veterinary personnel listed above, and describe their qualifications, training, and continuing education. Please do not provide curriculum vitae of personnel.

University of Wisconsin – Madison, Oversight

Rebecca M. Blank, PhD, Chancellor: Dr. Blank was appointed Chancellor to start on July 1, 2013. Outgoing Interim Chancellor David Ward served from July 2011 through June 2013. Dr. Blank earned her PhD in economics from the Massachusetts Institute of Technology. She brings experience in economics, history, research and leading through innovation to the University. Most recently Dr. Blank served in top positions at the U.S. Department of Commerce and as acting secretary she managed 45,000 employees and a \$10 billion budget. She brings strong academic credentials to the position of Chancellor having been on faculty at Northwestern and Princeton Universities, a dean in the Gerald R. Ford School of Public Policy at the University of Michigan, and a fellow at the Brookings Institution.

, PhD,

, PhD,

, PhD,

[REDACTED]	
[REDACTED]	[REDACTED]
[REDACTED], DVM, MPH, PhD, DACLAM,	[REDACTED]
University of Wisconsin – Madison, University Health Services	
[REDACTED], MD, MPT,	[REDACTED]
[REDACTED]	
[REDACTED], MS, CIH,	[REDACTED]
University of Wisconsin – Madison, Environment, Health & Safety (EHS)	

	, PhD,
	, PhD,
	, PhD,
	, MPH,
	, PhD,
	, MS, CBSP, SM(NRCM)

[REDACTED]

[REDACTED], BS, [REDACTED]
[REDACTED]

[REDACTED], BS, MBA, [REDACTED]
[REDACTED]

[REDACTED], Risk Management Specialist Senior, Environment, Health & Safety:
[REDACTED]

[REDACTED], BS, Risk Management Specialist, Environment, Health & Safety:
[REDACTED]

Research Animal Resources Center (RARC)

[REDACTED], PhD, CPIA, [REDACTED]

[REDACTED]	
[REDACTED], BS, PhD, CPIA,	[REDACTED]
[REDACTED]	
[REDACTED], BS, MS, Animal Program Assessment Specialist, RARC:	[REDACTED]
[REDACTED]	
[REDACTED], BS, Animal Program Assessment Specialist, RARC:	[REDACTED]
[REDACTED]	
[REDACTED], BS, MS,	[REDACTED]

[REDACTED]

SVM Facility Veterinarians (RARC staff)

[REDACTED], DVM, DACLAM. SVM Senior Program Veterinarian, [REDACTED]

[REDACTED]

[REDACTED], DVM, MS, DACVIM. SVM Senior Program Veterinarian: [REDACTED]

[REDACTED]

School of Veterinary Medicine Leadership

[REDACTED], DVM, PhD, [REDACTED]

[REDACTED]

[REDACTED], DVM, PhD, DACVAA, [REDACTED]

[REDACTED]

<u>SVM Animal Resource Center Staff</u>	
[REDACTED], BS, LATG, [REDACTED]	[REDACTED]
[REDACTED], BS, CPIA, [REDACTED]	[REDACTED]
[REDACTED], ALAT, [REDACTED]	[REDACTED]

ii. **Animal Care Staff** [Guide, p. 16]

Indicate the number of animal care personnel. 15

Summarize their training, certification level and type, experience, and continuing education opportunities provided.

The initial training for Animal Research Technicians (ART) involves the RARC Animal User Orientation (every five years), Safety for Personnel With Animal Contact, Hazard Communication with GHS Update (every 3 years), Cage Wash/Autoclave training. [REDACTED]

[REDACTED]. In addition, RARC veterinary care staff provide annual Sick Animal Reporting training as well as species specific training for any new species that are housed within our program. Husbandry training involves hands-on training in conjunction with written Standard Operating Procedures (SOPs) with supervisor and senior technicians. ART staff have the option to take any of the courses that RARC offers. Animal Resource Center (ARC) maintains education and training records for each of the Animal Research Technician.

[REDACTED]	ART since 1995
[REDACTED]	ALAT, ART since 2000
[REDACTED]	ALAT, ART since 2005
[REDACTED]	ALAT, ART since 2005
[REDACTED]	ART since 2008
[REDACTED] inga	ART since 2012
[REDACTED]	ART since 2014
[REDACTED]	ART since 2015
[REDACTED]	ART since 2013

iii. **The Research Team** [Guide, pp. 16-17; 115-116; 122; 124]

- 1) Describe the general mechanisms, by which the institution or IACUC/OB ensures that research personnel have the necessary knowledge and expertise in the animal procedures proposed and the species used.

When protocols are submitted for IACUC/OB review, administrative staff verify that all individuals listed on each protocol have completed, or are enrolled to complete, or have been notified to complete, basic animal user and safety training as detailed in policy 1999-006-io. This policy addresses training requirements for principal investigators, research staff, postdoctoral fellows, students and visiting scientists. Training includes completion of the online UW-Madison Animal User Orientation and occupational safety training, followed by species-specific training based on the species they will work with, and surgical training if applicable. Every animal user's individual training is recorded in a training databases.

- a) Briefly describe the content of any required training.

UW- Madison Animal User Orientation is an online course that covers the rules and regulations regarding the use of animals in research. Specifically, topics include IACUC function, ethics of animal use, the Three R's, methods for reporting concerns about animal use, occupational health and safety issues, animal handling and other related topics. Must be renewed every 5 years.

Safety for Personnel with Animal Contact is an online training course provided by EH&S that offers an introduction to the UW Madison EH&S Department and an overview of occupational health and safety topics including animal contact safety, zoonoses, allergies & asthma, ergonomics, medical concerns, immunizations, injury and exposure protocols, syringe use guidelines, and personal protective equipment. Must be renewed every 5 years.

Risk Communication in Animal Facilities is an online course designed for individuals exposed to chemicals, biologicals, and radioactive materials in an animal facility and how to properly notify the animal care and veterinary staff.

Animal Contact Risk Questionnaire (ACRQ) provided by UHS is an onboarding and annual requirement that addresses the health risk assessment for employees working with animals. A blank copy of this questionnaire is provided in Appendix 5: Medical Evaluation Form.

Species Specific Training is required of all personnel listed on an approved animal use protocol. Training includes online courses and hands-on instruction pertaining to the particular species the individual will be working with.

Laboratory Animal Surgery Class is required of all personnel performing survival surgery and prolonged nonsurvival surgery. This course covers anesthesia, analgesia, aseptic technique, instrument handling, basic suturing and wound closure and culminates in a hands-on surgical procedure.

Medical Records Training Module is an online training module that describes the regulatory oversight and necessity of maintaining medical records. The module explains the role of the veterinarian, veterinary staff, principal investigator, laboratory staff, and animal care staff in maintaining current and accurate medical records. This training is a prerequisite for the Laboratory Animal Surgery Class. It may be required of individuals if deemed necessary by their department or IACUC/OB.

Anesthesia Training Requirements for Nonsurvival Surgery is an online module that covers anesthesia and monitoring, and is required in lieu of the Laboratory Animal Surgery Class for individuals performing nonsurvival surgery less than 5 minutes in duration from the time of incision. This training is a prerequisite for the Laboratory Animal Surgery Class.

Aseptic Technique Training Module is an introduction to the basic terminology associated with aseptic technique. It covers why aseptic technique is used, common sterilization methods, the difference between disinfecting and sterilizing, and the steps that need to be taken in preparation for animal surgeries. This training is a prerequisite for the Laboratory Animal Surgery Class.

- b) Describe the timing of training requirements relative to the commencement of work.

Per All Campus Policy 1999-006-io, all UW-Madison animal users are required to complete the UW-Madison Animal User Orientation prior to animal contact.

Once an individual is placed on an IACUC-approved protocol, species-specific training (administered by RARC) for the species with which the individual will work is to be completed within 30 days.

Once an individual is placed on an IACUC-approved protocol, Safety for Personnel with Animal Contact is to be completed and renewed every 5-years. There is no opt out. Safety staff follow up with individuals until the training is completed.

Individuals named on IACUC-approved protocols as part of the surgical staff are to complete the Lab Animal Surgery Class or Anesthesia Training Requirements for Nonsurvival Surgery, within 30 days of being placed on the protocol.

If individuals need to work with or care for animals before completing the required training, they must work under the direct supervision of a supervisor who has completed the required training described in policy 1999-006-io. For all but safety training, deadline extensions may be

granted through RARC. The Chief Campus Veterinarian may grant waivers for non-safety training. Requests for such waivers are infrequent.

Visiting scientists who spend less than 30 days on campus must work under the direct supervision of the host principal investigator or designee who has completed required training. Visiting scientists who spend greater than 30 days working with animals on campus must complete the appropriate required training as detailed in policy 1999-006-io.

c) Describe continuing education opportunities offered.

Online training modules for continuing education opportunities are available. These modules include:

- AALAS Learning Library
- Anesthesia Machine User Guide
- Anesthesia Training Requirements for Nonsurvival Surgery
- Controlled Substances
- Lab Animal Surgery Anesthesia
- Lab Animal Surgery Aseptic Technique
- Medical Records
- Microisolator Technique

Additional education opportunities are also offered:

- AALAS ALAT certification – classroom and self-study
- AALAS LAT and LATG – self-study
- Necropsy
- Pathology
- Perfusion
- Stereotactic

2) Describe the process(es) to ensure surgical and related procedures are performed by qualified and trained personnel. Who determines that personnel are qualified and trained for surgical procedures? What role does the Attending Veterinarian and IACUC/OB have in this determination? [Guide, pp. 115-116]

Every individual named on IACUC-approved protocol as part of the surgery staff, including anesthetists, must complete the Laboratory Animal Surgery Class or Anesthesia Training Requirements for Nonsurvival Surgery. Courses are taught by the RARC Trainers.

If the Training Staff or a veterinarian deems an individual incapable of competently performing surgery, that individual's PI is notified. The individual is then either removed from the surgical portion of the protocol or additional training is arranged.

Once an individual satisfactorily completes the surgery course, the PI resumes oversight to ensure the surgical procedure, as described in their laboratory's animal care and use protocol, is properly completed.

The online protocol management system ARROW verifies that every individual listed on an IACUC-approved protocol has successfully completed the mandatory species-specific and/or surgical training as outlined in policy 1999-006. The RARC training staff tracks each individual's progress and records the

training once it is complete in the central training database operated by RARC. If an individual does not complete the required training in the time permitted, that individual and the PI is sent a notice of revocation. Revocations are tracked until resolved.

RARC Veterinarians are informed of proposed surgical procedures through protocol pre-review and review. Questions that research animal veterinarians or the IACUC/OB may have about qualifications of personnel or the nature of the surgical technique are addressed through protocol review. Additionally, when a researcher is identified through protocol review as performing surgery on a USDA-covered species on which they have never operated, they are to be observed/assisted by a research animal veterinarian the first time they perform surgery on the new species, regardless of experience with other species. The veterinary staff is also made aware of any surgical procedures planned in VCRGE surgery suites through surgical-suite scheduling procedures. Veterinary staff regularly observes procedures, schedules walk-throughs, and/or performs facility inspections to observe animals. Any concerns are reported to the Senior Program Veterinarian and/or the Chief Campus Veterinarian

- 3) Describe the training and experience required to perform anesthesia. [Guide, p. 122]

If anesthesia will be used, it must be stated in the approved animal care and use protocol. Every protocol is reviewed for proper anesthesia usage by the IACUC/OB and an assigned veterinarian.

Individuals listed on IACUC/OB-approved protocols must complete species-specific training for the species with which they will be working within 30 days of being listed on a protocol. Individualized anesthesia training is offered during the species-specific training courses.

Individuals named on IACUC/OB-approved protocols as part of the surgery staff, including anesthetists, must complete the Lab Animal Surgery course or Anesthesia Training Requirements for Nonsurvival Surgery. Both courses include training in analgesia and anesthesia.

Once an individual has received the required training (species-specific and/or surgery), it is recorded in the central training database operated by RARC. Until an individual has received the required training, they must work under the direct supervision of a supervisor who has completed the required training.

Additional supportive material is available through RARC. Species-specific Sedation/Analgesia/Anesthesia/Euthanasia forms list approved drugs and dosages. An online Medical Records Training Module discusses anesthesia record content, anesthesia monitoring and offers examples of anesthesia records. Guidelines for Anesthesia Record and Monitoring Requirements for Vertebrate Animals can also be found under the Animal Health, Medical Records section of the RARC website.

- 4) Describe how the proficiency of personnel conducting euthanasia is ensured (especially physical methods of euthanasia). [Guide, p. 124]

If euthanasia is to be performed, the method must be stated in the approved animal care and use protocol. Every protocol is reviewed for the most

appropriate method of euthanasia for the study by the IACUC/OB and an assigned veterinarian. Methods of euthanasia are consistent with the AVMA Guidelines on Euthanasia (2013) and pertinent NIH guidelines.

Physical methods of euthanasia (cervical dislocation, decapitation) without prior anesthesia must be scientifically justified in the animal use protocol and be approved by the IACUC/OB. The protocol must contain a description of the training of personnel who will perform the euthanasia.

Individuals listed on IACUC/OB-approved protocols must complete species-specific training for the species with which they will be working within 30 days of being listed on a protocol. Individualized euthanasia training is offered during the species-specific training courses.

b. Occupational Health and Safety of Staff [Guide, pp. 17-23]

Describe the institutional entities that are involved in the planning, oversight, and operation of the institutional occupational health and safety program.

UW-Madison has six institutional entities responsible for the institutional occupational health and safety program:

1. University Health Service (UHS)
2. UW Environment, Health and Safety (EH&S)
3. Institutional Safety Committees
4. Stem Cell Research Oversight Committee (SCRO)
5. Animal Care and Use Committees (IACUC/OBs)
6. Office of Risk Management

1. University Health Services (UHS): UHS was founded as the University's health center for students. The role of UHS has expanded and now also includes an Occupational Medicine Department and the Environmental and Occupational Health Unit, previously part of the Division of Environment, Health and Safety (see below).

The UW-Madison Occupational Health Program is a component of the UHS. The [REDACTED], is a Certified Industrial Hygienist who manages the UW Occupational Health Program. Mr. [REDACTED] reports to the [REDACTED] and is responsible for defining essential elements of the Occupational Health Program and for coordinating review of the program with the UW Occupational Health Committee.

A) Environmental and Occupational Health is directed by Mr. [REDACTED], [REDACTED]. Mr. [REDACTED] is the [REDACTED] and serves under Mr. [REDACTED]. Environmental and Occupational Health provides a variety of services campus wide: industrial hygiene investigation and consultations, food safety, noise evaluation surveys and hearing conservation, indoor air quality, assists departments with respiratory protection plans, ergonomics, reproductive hazards, non-research blood borne pathogen programs, and coordinates the measurement and fitting of prescription safety glasses.

B) Occupational Medicine staff under UHS [REDACTED], MD, reviews the Animal Contact Risk Questionnaire (ACRQ) baseline form (Appendix 5a) to enroll personnel with animal contact into the occupational health program. Thereafter, an annual form is used (Appendix 5b). Medical

staff perform tetanus vaccinations, rabies and Hepatitis B vaccinations, pre-exposure consultations and vaccinations for personnel working with certain infectious diseases and work related allergy consultation and management. Other responsibilities include respirator clearance and fit testing, TB testing for non-human primate handlers (SVM program does not have any non-human primate handlers), follow-up evaluations for positive responders, and treatment of exposures during regular working hours. After hours treatment for exposures is performed by UW Hospital & Clinics Emergency Room Services. In addition, UHS coordinates any serum collection needed for pre-employment or pre-exposure services for some labs depending on the hazardous agent involved.

Further information about UHS can be found on their website:
<https://www.uhs.wisc.edu/eoh/>

2. UW Environment, Health and Safety Department (EH&S): EH&S is organized into five offices involved in the oversight of animal program safety: (A-E below):

A) Office of Biological Safety (OBS) is directed by [REDACTED], PhD, the [REDACTED]. OBS assists all faculty and staff in observing safe biomedical laboratory practices as prescribed by the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) and the University of Wisconsin-Madison Institutional Biosafety Committee (IBC). OBS oversees the Biological Safety protocol review process and performs regular laboratory visits for post approval monitoring. The office assures that research is done in secure facilities in compliance with all local, state, and federal regulations. OBS also encompasses the **Animal Research Safety** group and the **Select Agent Safety** group

- **Animal Research Safety (ARS):** ARS advises IACUC/OBs on animal protocol hazards and coordinates bi-monthly animal safety working group meetings to discuss occupational safety and health concerns within the UW-Madison animal research community. Three ARS specialists review sections of Biological Safety protocols related to animal research, and attend IBC meetings as needed when Biological Safety protocols that include animal research are submitted for review as part of consistency checks. ARS staff also advise personnel with animal contact on safety issues, and coordinate research-related blood-borne pathogen programs.

- **Select Agent (SA) Program:** The UW-Madison SA program assists faculty and staff to ensure compliance with the Federal Select Agent program. The Federal Select Agent Program is jointly comprised of the CDC Division of Select Agents and Toxins and the APHIS Select Agent Services. The Federal Select Agent Program oversees the possession, use and transfer of biological select agents and toxins (SABT), which have the potential to pose a severe threat to public, animal or plant health, or to animal or plant products. The UW-Select Agent Program assists in implementing and enforcing the Select Agent Regulations, maintains an up to date inventory of all SABT on campus, conducts laboratory inspections, ensures that all individuals who work with these agents undergo a security risk assessment performed by the FBI, and investigates any incidences in which non-compliance may have occurred. The current list of select agents and biological toxins that fall under the SA regulations are posted on the Federal Select Agent Program website: www.selectagents.gov/SelectAgentsandToxinsList.html

B) Office of Engineering and Technical Services (ETS) is directed by [REDACTED] BSME, Senior Administrative Program Specialist and [REDACTED] (also, Alternate Responsible Official (ARO)). ETS provides facility and biomedical containment consultation throughout the University and within EH&S. ETS provides consultation concerning the purchase of biological safety cabinets (BSC).

C) Office of Chemical Safety is directed by Dr. [REDACTED] who is [REDACTED]. Chemical Safety assists the University and research community by providing guidance on chemical safety and compliance with regulations dealing with the use and storage of hazardous chemicals and drugs. It provides general laboratory safety training and also performs laboratory visits in order to provide direct feedback on safety and compliance concerns. Chemical Safety also consults with investigators on safety and compliance issues upon request. The Office assists with chemical disposal and serves as an advisor for spill cleanup. Each laboratory is required to have a chemical hygiene plan while non-chemical laboratories are required to have a Hazard Communication Plan. The Chemical Safety Committee, overseen by the Office of Chemical Safety, uses the OSHA Laboratory Standard to identify Particularly Hazardous Substances requiring additional special precautions. A Particularly Hazardous Substance Approval Form is completed for each area using these chemicals. After approval, this form is reviewed by all personnel working with that material, and is attached to their chemical hygiene plan. All rooms used for storing hazardous materials must have a "Laboratory Emergency Information" form posted near the door and a copy of the completed form must be provided to each facility manager. The signs are updated annually. Chemical safety specialists provide consultations for the safe use of hazardous chemicals and hazardous drugs administered into animals.

D) Office of Radiation Safety (ORS) is directed by Mr. [REDACTED], MPH, [REDACTED]. ORS assures proper use of radioactive materials and radiation producing devices. It provides training and consultation to researchers and staff, as well as frequent audits of radiation labs to ensure all radiation safety requirements are in place. ORS staff visit each lab to discuss safe handling and storing, posting and labeling, contamination checks, waste disposal, record keeping and other requirements as needed. In order to use radioactive materials in vertebrate animals, the authorized user must submit a form 99A to ORS. An animal use protocol approved by the IACUC/OB is also required prior to approval of the 99A request. ORS works with the authorized user to assure that proper radiation training has occurred, that animals are not moved to unauthorized facilities, that proper labeling is placed in animal rooms and on cages, that animal waste, food and bedding is properly disposed of, that the animals are permanently marked or tagged as having been given radioactive materials, that animals are disposed of by ORS when euthanized, and that other requirements as stated on form 99A are followed. ORS controls the purchase of all radioactive materials for the campus. Unless all required practices are followed, the user will not be allowed to obtain radioactive materials for a project.

E) Office of General & Building Safety assists all UW-Madison departments, programs, faculty, students and staff in observing safe work practices as prescribed by the Wisconsin Administrative Code. The department promotes the development of safe facilities and advocates for proactive maintenance programs to insure the safety of persons using campus facilities for work, learning or recreation. The office's areas of responsibilities include building safety (includes asbestos and lead management), confined space entry, accident prevention, sharps and hazardous glass disposal, advice on Lockout/Tag-out for hazardous equipment, fire safety (which includes fire extinguisher maintenance, training and annual testing), evaluation of safety showers and eye wash stations, fire prevention via inspections and improvements for code compliance, evacuation drills and fire alarm testing.

3. Institutional Safety Committees: There are five faculty committees that function at the institutional level. They receive administrative support from EH&S:

A) Institutional Biosafety Committee (IBC): The IBC reviews research activities involving biologically hazardous materials and/or recombinant DNA molecules/organisms. Investigators using biologically hazardous materials and/or recombinant DNA must submit a Biological Safety protocol to the Committee. The Committee reviews and approves protocols, and establishes appropriate safety precautions. The Committee is constituted as mandated by section IV-B-2 of NIH Guidelines.

B) Biosecurity Task Force: The Task Force is the home of the institutional select agent program. Significant administrative support is provided by EH&S's Office of Biological Safety. Professor [REDACTED], PhD serves as UW-Madison's Responsible Official (RO). The [REDACTED], MS, SM (NRCM), CBSP, is one of three Alternate Responsible Officials (AROs) who are both EH&S employees.

C) Chemical Safety Committee: The Chemical Safety Committee establishes policies and procedures for the safe acquisition, use, storage and disposal of chemicals on campus. The Committee provides guidance to the Office of Chemical Safety in carrying out these policies and procedures. The Committee advises EH&S and campus chemical users on programs to comply with federal, state and local chemical and environmental safety laws.

D) Radiation Safety Committees: In 2016, UW-Madison and UW Health (governed by UW Hospitals and Clinics Authority) finalized a partnership agreement to merge, reorganize, and jointly manage their radiation safety programs. Overall oversight of the program is charged to an Executive Radiation Safety Committee, and six full, standing radiation safety committees that focus on more specific aspects of radiation safety (i.e., Radioactive Drug Research Committee; UW Nuclear Reactor Safety Committee; Campus Radiation Safety Committee; Human Radiation Use Committee; X-ray Safety Committee; and Laser Safety Committee). The Campus Radiation Safety Committee oversees animal research involving radioactive materials.

Membership of the Executive Committee and related committees is drawn from personnel from UW-Madison and UW Health, and they are appointed annually by the Chancellor of UW-Madison and Chief Administrative Officer of UW Health or their designees. The committees are charged to advise University administration, set policy to ensure compliance with local, state, and federal regulations, approve requests from faculty and staff to use radioactive materials, radiation producing machines and non-ionizing radiation, and evaluate protocols for their use. The Office of Radiation Safety (ORS) in FPM/EH&S is the administrative office for these committees.

E) Occupational Health Committee: This committee is appointed by the Chancellor to develop and recommend policies and procedures on all aspects of occupational health. The committee advises University administration, sets policy to ensure compliance with local, state, and federal regulations and accreditation requirements governing occupational health and safety. The committee reviews workplace health and safety issues brought to their attention and makes recommendations for resolutions. The committee also reviews safety services provided to the campus, and evaluates University safety performance consistent with their charter.

4. Stem Cell Research Oversight Committee (SCRO): The SCRO is an institutional committee based in the VCRGE and does not receive administrative support from EH&S as do the above institutional safety committees. The SCRO provides

oversight for all research on campus that involves 1) the use of hESCs or their derivatives; 2) the introduction of hPSCs, or their derivatives, obtained from a non-embryonic source, into non-human animals at any embryonic, fetal, or postnatal stage, if an expected effect is that the human cells will be integrated into the central nervous system, testes, or ovaries of the animal; 3) all research that (a) involves pre-implantation stages of human development, human embryos, or embryo-derived cells or (b) entails the production of human gametes in vitro when such gametes are tested by fertilization or used for the creation of embryos; or 4) the storage or disposition of human embryos or gametes obtained for the purposes of stem cell research. SCRO policies and guidance are based on federal and international guidelines from the NIH, NAS, and ISSCR. The committee ensures that all appropriate oversight approvals are in place.

5. Animal Care and Use Committees (IACUC/OBs): Exposure intensity, frequency, hazards posed by animal species, and the research materials used in or with animals are evaluated by the IACUC/OBs and other specialized review committees described above. Specialists from the EH&S Office of Biological Safety's Animal Research Safety Group (ARS) review animal protocols as voting members of the IACUC/OBs. Ms. [REDACTED] is the voting member assigned to all four IACUC/OBs, and Mr. [REDACTED] and Ms. [REDACTED] are her voting alternates. The specialists participate in IACUC/OB semiannual facility inspections, and attend convened IACUC/OB meetings to provide expert opinion and guidance. The specialists also review animal-related parts of Biological Safety protocols and attend the IBC meetings as needed. Biological Safety protocols are submitted for review as part of consistency checks.

The IACUC/OB specifically reviews the occupational safety program as it relates to the animal program at every semiannual program review and provides feedback in its reports to the Institutional Official.

6. UW Division of Business Services, Office of Risk Management: The Office is responsible for processing State of Wisconsin Worker's Compensation reports and evaluating risk data. Among other occupational risk mitigation services, the Office provides the following:

- Driver Authorization
- Student Risk Management Information
- Risks of Off Campus Classes
- Liability Program
- International Health Insurance

Other entities that provide important services, but are not directly involved in program planning or oversight include the following:

A) UW Hospital and Clinics (Emergency Department and Infectious Disease Physicians). The UW Hospital and Clinics emergency department serves as a back-up to UHS for the treatment of bites and exposures as well as other research hazards. The Infectious Disease Physicians serve as a resource for exposure to and treatment for biological hazards and zoonotic diseases.

B) Employee Health Providers serve as the main diagnostic entity for the treatment of non-traumatic injuries sustained by University employees with health insurance. Students would generally be treated by UHS or the UW Hospital & Clinics emergency department.

i. Hazard Identification and Risk Assessment [Guide, pp. 18-19; See also Chapters 2 and 3 in Occupational Health and Safety in the Care and Use of Research Animals, NRC 1997]

- 1) Describe the process used to identify, evaluate and control experimental and other potential hazards (such as ionizing and non-ionizing radiation, chemical cleaning agents, animal bites, allergens, zoonoses, and venomous species) inherent or intrinsic to the use of animals by the institution. Describe how risks of these hazards are assessed and how procedures are developed to manage the risks.

Research Hazards:

1. PI and research staff amends, renews or generates a new animal use protocol including identification of hazards the safety section. The PI performs the initial risk assessment of hazards, and establishes precautions in the safety section. UW-Madison's standing committees on Occupational Health, Biological Safety, Radiation Safety, and Chemical Safety provide professional assistance in research study design upon request. The protocol is submitted to Research Animal Resources Center (RARC).

2. RARC schedules the review of the animal use protocols by the full Animal Care and Use Committee (IACUC/OB) at the monthly meeting or via Designated Review (DR). Exposure intensity, frequency, hazards posed by animal species and the materials used in or with the animals are first evaluated by the Principal Investigator and then by the Animal Research Safety (ARS) staff person assigned to the committee. Every protocol is reviewed by at least one of the following:

- a. IACUC/OB member specifically assigned the protocol generates questions and or modifications needed for the protocol and provides these to RARC for the committee meeting or to be submitted to the PI in the case of DR. All members are encouraged to review all protocols.

- b. SVM veterinarian (also an IACUC/OB member) specifically assigned the protocol generates questions and or modifications needed for the protocol and provides these to RARC for the committee meeting or to be submitted to the PI in the case of DR.

- c. The Animal Research Safety (ARS) staff person ([REDACTED]) for SVM) assesses the risks:

- i. Presented by the species used and ensures appropriate procedures are outlined in the animal care and use protocol to manage or control the risks. Including appropriate personal protective equipment (PPE), and caging to handle allergens and zoonotic agents. If necessary emails the PI to provide precautions needed in the animal care and use protocol.

- ii. Presented by biological or radioactive agent administered to the animals. Compares animal use protocol to OBS-2 protocol and 99A form for consistency, and if necessary emails the PI if an OBS or 99A is needed, if they need to be modified or amended, if they need to be renewed, or if safety precautions contained within the other protocols are inconsistent with the information presented in the animal care and use protocol.

- iii. Presented by chemicals or drugs administered to the animals. Performs research to obtain the following information regarding the compound if available: pharmacokinetic data, safety and toxicity data, Safety Data Sheets or product inserts. Consults with the Office of Chemical safety as needed for

assistance in chemical risk assessment. If necessary emails the PI to provide precautions needed in the safety section of the animal care and use protocol.

iv. The following personnel are blind carbon copied (BCC) on the email to the PI:

1. Both IACUC/OB assigned reviewers
2. The RARC protocol staff person
3. The facility supervisor for the animal facility named in the protocol
4. If amendment to the OBS-2 is requested the OBS staff person assigned to the PI's OBS-2 protocol.

v. Contacts EHS if special or additional safety training will be needed.

3. IACUC/OB meets (or communicates via email for DR) and discusses the protocol and either approves it, approves it pending answers to questions, requires a modification, or does not approve it. Ms. [REDACTED] is available at the meeting to answer questions of the IACUC/OB committee members; committee members contact Ms. [REDACTED] by email or phone in the case of DR. RARC staff forward all committee questions and requests for modifications to the PI, with a sentence reminding them that safety concerns have been sent previously by the ARS staff person. The PI has two weeks to reply. RARC receives the answers to the questions and protocol modifications (referred to as the "rewrite") and forwards them to designated member(s) of the committee and Ms. [REDACTED] for review. The committee members and Ms. [REDACTED] can request additional modifications to the protocol, if needed. Both committee members and Ms. [REDACTED] notify the protocol office by email if the rewrite is satisfactory and the committee members advise approval.

a. The IACUC/OB has authority to place a hold on releasing animal protocol approval if a corresponding amendment is needed to the OBS-2 protocol. If a PI is adding a new biological agent that is either subject to the NIH Guidelines for Research Involving Recombinant or Synthetic DNA Molecules or is a pathogen or agent in risk group 2 or higher, the agent must also be added to their OBS-2 protocol. The ARS staff person will advise the IACUC/OB when the PI has submitted the corresponding OBS-2 amendment and recommend approval of the animal protocol when congruence between both the animal and OBS-2 protocol has been achieved.

4. Once the animal use protocol is approved RARC sends electronic copies to appropriate individuals/entities in the appropriate school and administration offices.

a. The approval letter to the PI includes the following sentences to remind them of their obligation to contact facility staff prior to initiating work with hazards "Only those procedures described in the attached are approved by the Animal Care and Use Committee (IACUC/OB). Performing activities not approved by the IACUC/OB is a protocol violation and will be dealt with in accordance with ACAPAC policy 1999-008 ([rarc.wisc.edu>policies](http://rarc.wisc.edu/policies)).

b. The facility supervisors are included on the emails to the PI from Ms. [REDACTED], so they are aware of any changes related to the amendment regarding appropriate safety precautions needed for the protocol so they are aware of what the research staff should be doing for their experiment. This includes such things as posting hazard door signs, hazard labels on animal cage-cards, appropriate disposal of waste, and what PPE should worn.

c. If respirators are required for animal handling the appropriate respirators are provided and facility personnel medical evaluated and fit tested to wear the respirators. Likewise, if other medical services such as vaccinations are needed, personnel are referred to UHS prior to initiation of work.

5. PI and research staff amends, renews or generates a new OBS protocol and submits it to the Office of Biological Safety (OBS), as needed. The OBS is the administrative office of the Institutional Biosafety Committee (IBC). Review of biosafety protocols submitted by investigators forms the basis for the conduct of a thorough risk assessment, the results of which are communicated to the principal investigator via the protocol registration form. Additional details are provided below (see Description of Institutional Policies).

a. OBS consults with an Animal Research Safety staff person to review any relevant animal sections and ensure congruence with applicable animal protocols.

b. Use of hazardous materials and established safety precautions must then be approved by the Institutional Biosafety Committee committees:

c. The PI is notified if any changes are needed and if necessary, the finalized OBS protocol is submitted to the IBC for review.

d. The Institutional Biosafety Committee (IBC) reviews research activities involving biologically hazardous materials and/or recombinant or synthetic DNA molecules/organisms. The IBC will either approve the protocol or approve pending changes.

6. EH&S Office of Chemical Safety staff assists laboratories with the safe use of chemicals and prevention of hazardous exposures. They also assist with chemical disposal and guidance for spill cleanup and provide a manual titled, "Laboratory Safety Guide." Each laboratory is required to have a Chemical Hygiene Plan (CHP) while non-chemical laboratories are required to have a Hazard Communication Plan. The Chemical Safety Committee uses the OSHA Laboratory Standard to identify Particularly Hazardous Substances requiring additional special precautions. A Particularly Hazardous Substance Approval Form is completed for each area using these chemicals. After approval this form is reviewed by all personnel working with that material, and is attached to their chemical hygiene plan.

All rooms used for storing hazardous materials must have a "Laboratory Emergency Information" form posted near the door and a copy of the completed form must be provided to each facility manager. The sign is reviewed and updated annually.

7. To use radioactive materials in vertebrate animals, the authorized user must submit a form 99A to the Radiation Safety Office in EH&S. An animal use protocol approved by the appropriate IACUC/OB is also required prior to approval of the 99A request. Radiation Safety works with the authorized user to assure that:

- a. proper radiation training has occurred
- b. animals are not moved to unauthorized facilities
- c. proper labeling is placed in animal rooms and cages
- d. animal waste food and bedding is properly disposed of
- e. the animals are permanently marked or tagged as having been given radioactive materials
- f. the animal is disposed of by EH&S when sacrificed and,

- g. other requirements as stated on form 99A are followed.

The Radiation Safety Office controls the purchase of all radioactive materials for the campus. Unless all required practices are followed, the user will not be allowed to obtain radioactive materials for the project. Radiation Safety also ensures that the users are appropriately trained in the use of radioactive isotopes and irradiators, lasers, etc., which includes provisions for pregnant employees while working with or around these hazards.

8. Post Approval Monitoring.

a. The IACUC/OB conducts semiannual inspections of all animal facilities and non-centralized facilities such as PI labs where live animals go. It may also conduct ad hoc inspections using committee members and/or consultants. [REDACTED] from the Animal Research Safety group in the Biological Safety Office participates in the semi-annual site inspection of animal facilities and research laboratories performed by the IACUC/OB committee members. She also participates in Biosafety lab visits as well as Biosafety Level 3 inspections with the Biological Safety staff. Monitoring and support in the event of an accident or exposure or in response to reported concerns are available from the Office of Biological Safety and UHS.

b. Personnel from the EHS Offices of Biological Safety, Chemical Safety and Radiation Safety may also perform site visits to ensure the facilities, labs animal rooms and safety equipment are appropriate for the hazardous agents present. Monitoring and support in the event of an accident or exposure or response to reported concerns are available from these offices and UHS.

c. Animal care staff is trained to be vigilant and to bring questions and concerns to the attention of their supervisors, research staff, IACUC Chair, Chief Campus Veterinarian, [REDACTED] and/or as appropriate EHS. Whistleblower postings located in the animal facilities provide contacts and guidance should concerns fail to be addressed via the previous avenues.

9. Facility Management

Facility management determines any non-research hazards with the assistance of RARC assigned veterinarians, UW Safety departments, facility supervisors and animal care staff while using the following sources of information: Guide for the Care and Use of Laboratory Animals, Occupational Health and Safety in the Care and Use of Research Animals, Biosafety in Microbiological and Biomedical Laboratories (BMBL), Occupational Safety and Health Standards for General Industry, Occupational Health, Biosafety in the Laboratory, and the UW-Madison Environmental Health & Safety Department's Laboratory Safety Guide for chemicals, and Radiation Safety for Radiation Workers. Ms. [REDACTED] participates in site inspections of animal facilities performed by IACUC/OB and facility management. Safety data sheets for chemicals are obtained and reviewed and appropriate safety precautions established based on how it is used, routes of entry, target organs, and nature of the hazard. Chemical training sheets are developed when needed by RARC vet staff or UW EH&S Safety and provided for training personnel.

The RARC veterinary staff in conjunction with the Animal Research Safety group and facility management establish the appropriate PPE for each species based on potential zoonotic agents, facility design, housing type used, and microbial

status of the animals. RARC veterinary staff, Ms. [REDACTED], and facility supervisors determine the appropriate PPE and safety precautions are put in place prior to the study start. The precautions established and PPE required cover zoonotic hazards, microbial agents, noise levels, animal exposures (bites, scratches, and OPIM), ergonomics (repetitive movements, lifting & bending), potential for exposure to allergens and physical hazards (noise, temperature/humidity levels, animal exposures, ergonomics, allergens, etc.).

10. Injury Reports

The University requires an injury report not only when injured but also for near misses so potential injuries can be identified and an actual injury prevented in the future. UHS reviews all injury reports for personnel with animal contact and reviews a yearly injury summary to track any trends in types of injury that are identifiable. Completed injury reports are sent to UW Risk Management and sent to the Wisconsin Department of Workforce Development. OBS responds to assure follow-up.

11. Hazard Monitoring

Periodic testing and monitoring of noise, temperature and humidity, isoflourane levels, ergonomic risks and other potential environmental hazards is performed by EOH/UHS staff. Based on results, additional engineering controls may be added, worker rotations implemented, changes made in how the work is performed, or additional PPE required. If the risks cannot be reduced to a safe level with engineering controls, or until engineering controls are implemented, PPE may be required.

12. Hazard Posting

Research personnel indicate the hazards and safety precautions needed in the safety section of the animal use protocol. Facility managers review the information from the protocol and post a hazard door sign, research personnel or animal care staff then fill out and affix contact/precautions card, and hazard cage labels. The hazard door sign indicates the appropriate PPE to enter the animal room and to handle the animal. The contact/precautions card lists research personnel to contact, and precautions for the animal waste and any other additional safety precautions that need to be followed. Research personnel perform special training of animal handlers, or inform safety personnel to perform training as needed. The hazard communication stays posted until the hazard is no longer present.

13. Husbandry/Handling Procedures (vivaria and labs)

Rodents are housed in filter-top cages or similar containment type caging after they have been administered hazardous agents; these cages, soiled bedding and the animals themselves are handled in biological safety cabinets, animal transfer stations or chemical fume hoods as appropriate for the hazard type when possible or additional PPE is employed when activities must be done outside of containment. Large animals administered hazardous agents are housed in non-containment caging and employ the room exhaust for containment while personnel use appropriate PPE for their protection. Disposable PPE (lab coats, sleeves, gloves, and surgical masks or respirators) are donned for work with hazardous agents. The PPE is then disposed of in infectious waste containers prior to leaving the animal room or facility. All ABSL 2, 3 & select agent biological waste is autoclaved prior to disposal. Most animal carcasses are frozen for later incineration; if dictated by the relevant Biological

Safety Protocol they are also autoclaved prior to placing in the freezer. Carcasses > 40lbs may be sectioned by PI staff for incinerator disposal or can be frozen whole for digester disposal at the [REDACTED]. Sharps containers are disposed of via [REDACTED] waste management system, sharps containers from BSL3 areas are also autoclaved out.

First aid kits are available in all facilities and are supplied to handle general first aid concerns and exposures. The kits in the animal Vivarium contain supplies needed for general first aid and exposures to BSL2 agents and animal bites. The kits in the animal transport vehicles have the general supplies, eye wash bottles, instructions needed for exposures, PPE supplies and animal capture equipment in the event of an emergency, and vehicle emergency paperwork.

14. Research Staff Responsibility

It is the responsibility of research personnel to convey the hazard information communicated to them through the above processes to animal facility staff, laboratory staff and visitors using hazard door signs, cage labels, and special hazard signs and verbal instructions when needed.

- 2) Describe procedures for reporting and evaluating exposure to hazards, work place injuries, etc.

The UW-Madison IBC requires that Principal Investigators or supervisors report all potential exposures to or releases of organisms or biological toxins within 24 hours of the event. Potential exposures include needle sticks, animal bites, aerosol exposures, and other incidents potentially resulting in disease. Potential releases include spills outside of primary containment as well as potential releases to the environment. Unauthorized releases of transgenic animals or plants should also be reported.

Access to an on-line report form is prominently featured on the EH&S emergency contact website homepage (<http://ehs.wisc.edu/emergency.htm>). When submitted, this report provides the OBS, the Office of Occupational Health, and the Institutional Biosafety Committee with information to ensure that proper actions have been taken, including appropriate medical care. It also assists the University in meeting NIH reporting requirements. OBS performs a root cause analysis to determine if any mitigation steps can be taken to avoid the incident from reoccurring in the future.

Once threats to personal safety and property have been mitigated, the employee documents the event. The employee completes the Employee's Work Injury or Illness Report. This procedure is the same as for any work-related illness or injury and is described below in this section.

UW-Madison maintains an ALARA ("as low as reasonably achievable") policy based on personal dosimeter and area surveillance. The Radiation Safety Office has Reporting Event Schedule based on the exposure received.

The Chemical Safety Office, as part of EH&S, performs inspections of laboratories as part of its Laboratory Visitation Program. During the visits hazard assessments are performed to ensure that exposures to hazardous materials are minimized and general safety practices are followed. After

inspections, the Principal Investigators are issued reports outlining deficiencies along with recommended corrective actions. The Chemical Safety Office also requires reporting (on the same emergency contact page above) and investigates incidents on campus involving hazardous chemicals to determine root cause and corrective actions and will communicate to the rest of campus (when appropriate) lessons that have been learned from these incidents.

Work-related injury and illness must be reported per Wisconsin statute. After any necessary urgent treatment is obtained and threats to personal safety mitigated, the employee must report the event promptly. University of Wisconsin System employees complete the Employee's Work Injury or Illness Report (OSLP-1) and submit the form to their supervisor. The supervisor completes a Supervisor's Accident Analysis and Prevention Report (WKC-SUP) and submits it to the unit's HR office and/or safety staff. The supervisor forms should be completed within 24 hours of being notified by the employee of an accident. Unit human resources and/or safety staff then complete the Employer's First Report of Injury or Illness (WKC-12) form. These 3 forms are then promptly forwarded to UW-Madison's Division of Business Services Office of Risk Management. The supervisor and/or unit safety staff meet with the employee to ensure that necessary modifications to work practices, equipment and/or the work environment are implemented to minimize future risk.

ii. Facilities, Equipment and Monitoring [Guide, pp. 19-20]

- 1) Describe how hazardous agents are contained within the study environment and in the animal housing area.

Hazardous agents are contained at the cage level, room level, and/or isolation suite. Infectious disease work is restricted to Class I/II biologic safety hoods. Chemical and radioactive hazards are contained at the cage level and/or in chemical fume hoods.

- 2) Describe facilities that use hazardous agents. Note square feet/meters, number of animal rooms, and support spaces. In addition, describe design features, construction features, and special equipment, especially as they relate to hazard containment. Note if, and how, exhaust air is treated. If special facilities are not available and animals exposed to hazardous agents are housed within conventional animal rooms, so note.

The Bio-safety Level 2 (BSL2) isolation wing is 7,869 square foot facility has 36 animal rooms. The animal rooms range in size from 99, 109 and 113 square feet with a 24 or 26 square foot anteroom. Twenty-one interior rooms have access to a work hallway and 20 exterior rooms have access to the outside. Support areas consist of men's and women's locker rooms with a shower; a work station for storage of coveralls, towels, scrub suits, and shoe covers; feed and bedding storage; supply room; necropsy with refrigerator and freezer. The isolation wing is on a separate air handling system. All exhaust air is HEPA filtered.

[REDACTED]. The animal room air pressure is negative to the hallways and the pressure can be monitored by personnel by manometric gauges mounted outside each room. There is no autoclave in the BSL2 area, garbage, coveralls, rodent cages, etc. are brought to the autoclave in room [REDACTED].

The [REDACTED] BSL3 isolation area is 2,187 square foot area has six animal rooms.

[REDACTED]. A sink and toilet are located in the clean corridor. The anteroom contains a shower, space for changing clothes, and Personal Protective Equipment (PPE) items to be worn in animal room. Each room has a door to the dirty corridor, and the dirty corridor is serviced by a double-door autoclave and shower. Exhaust air is double HEPA filtered; once in the room and again in the [REDACTED] mechanical room. Air pressure in the rooms is negative to the clean corridor and dirty corridor. [REDACTED]

[REDACTED]. Room air pressure is monitored by manometric gauges, located outside each room in the clean corridor. The gauges are tied into an audible and visual alarm to allow personnel to see which room has the problem. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



- 3) Describe the oversight process and husbandry practices in place to ensure personnel safety, including any personal protective equipment provided when work assignment involves hazardous agents.

IACUC/OB, an RARC assigned veterinarian, and a UW-Madison Animal Research Safety Unit (ARS) professional, review all protocols to ensure hazards are identified in the occupational health & safety sections and that appropriate safety practices are detailed. The ARS professional compares the hazards specified in each animal protocol with the hazards registered with UW-Madison EH&S via the Biological Safety protocol or form 99A with Radiation Safety. Principal investigators are notified when inconsistencies are found and informed what needs to be done; personnel from the EH&S Office of Biological Safety are also notified. The research personnel are responsible for posting and/or performing all required hazard communication when using hazardous agents or materials. Bi-annual site inspections are performed by the IACUC/OB accompanied by an RARC assigned veterinarian and a representative of the ARS Unit. Safety issues found during the site visits are communicated to the area supervisor.

Animal Research Safety (ARS) staff: reviews all animal care and use protocols focusing on potential human health and safety concerns including the use of personal protective equipment, training, hygiene, and medical surveillance ARS work with Office of Biosafety, Radiation Safety, Chemical Safety and the committees affiliated with these groups along with the investigators to ensure adequate safety practices are in place. ARS staff serves as a voting member of all Animal Care and Use Committees providing guidance and consulting with the Committee on health and safety issues.

All animal rooms and procedure areas where hazardous chemical, biological, or radioactive materials are used must have the applicable warning sign posted on the door along with the name of the hazardous agent(s), the required personal protective equipment, and the emergency notification procedures (i.e., contact person and telephone numbers to call in case of questions and/or an emergency). The signage is created by the Facility Manager in coordination with ARS. When animals have been administered infectious agents and potentially infectious materials the cages and rooms are clearly identified with the biohazard symbol and the agent in use. Special hazard warning signs are

also posted for some agents that pose a special risk for certain sexes, those with compromised immune systems, and any other conditions that apply.

Researchers and staff: the IACUC/OB, along with the OBS, IBC and the Radiation and Chemical Safety department assess whether a researcher and staff are qualified to work with hazardous agents. The IACUC/OB, OBS, and IBC will require additional training of personnel, as needed. Numerous training opportunities are available sponsored by EH&S covering chemical, biological, and radiation safety. These training opportunities include such topics as risk assessment, containment procedures, hazard communication, safety precautions, and proper treatment and disposal of hazardous waste. The Animal Research Safety (ARS) group provides online training to new animal handlers as part of the animal handler certification required training. On-line training is available for the radiation safety certification.

Animal Care Staff: work with animals that have been administered infectious agents, hazardous chemicals and drugs, or radiation are given special instructions on the handling of feed, bedding, and animals by their supervisor, principal investigator, EH&S, and/or the veterinary staff. The specific information and instruction vary widely with the agent and conditions in which the agent is used with an animal. Signage that includes the symbol for biohazards and precaution information is affixed beside the door of rooms where these materials are in use.

Animals administered hazardous chemicals and drugs where significant amounts may be expelled; a hazard communication is employed during the time of significant hazard. Door signs are posted that include precautions to enter the room and handle the animals, researcher contact information, PPE to wear, safety equipment to use, decontamination procedures, and appropriate waste disposal. Cages are labeled and the agent identified. After the chemical or drug is no longer administered and the increased hazard time has expired the waste is collected and picked up by EH&S for appropriate disposal.

When animals have been treated with radioactive compounds and are still excreting those compounds, the cages and rooms are clearly identified with the well-known radioactive compound symbol, the radioisotope used, and the quantity of the radioisotope that has been used. Staff is trained in the proper precautions to take when handling the animals and their wastes. Once the “non-radioactive” animals are removed from the rooms, these rooms are cleaned by personnel trained in radiation safety.

- 4) Describe any facilities that may also be used for human-based research or patient areas, including the policies and procedures for human patient protection, facility decontamination, animal transport through common corridors or elevators, and other personnel protection procedures.

None are maintained under the SVM IACUC/OB.

- 5) Describe any other circumstances in which animals or caging equipment are transported in common use corridors or elevators (e.g., have the potential to come in contact with individuals not associated with the animal care and use program), and measures taken to mitigate risks associated with such use.

[REDACTED] is a [REDACTED] animal holding facility with no laboratory space. Access to the facility is limited to those with projects and teaching responsibilities for veterinary students.

[REDACTED]

[REDACTED]

- 6) If motorized vehicles are used for animal transport, describe how the driver is protected from exposure to hazards such as allergens or zoonosis.

Transport via motor vehicle is in accordance with ACAPAC Policy #2011-043-v Campus Transportation of Laboratory Animals. This policy requires that all animal transport be in accordance with Animal Welfare Act Regulations and the Guide, and covers both vehicular and pedestrian transport of animals. The policy requires that caging must limit exposure to allergens, waste products and odors, is sanitizable or disposable, and prevents escape in the event of an accident.

iii. Staff Training [Guide, p. 20]

- 1) Describe educational program(s) to inform personnel about zoonoses, personal hygiene, allergies, and other considerations regarding occupational health and safety.

All campus personnel with identified animal contact are required to complete an online Animal User Orientation created by the RARC's Training Staff, and an

online safety training program created by EH&S titled Safety for Personnel with Animal Contact. Both of these initial trainings are renewed every 5 years.

EH&S's Animal Research Safety (ARS) offers Safety for Personnel with Animal Contact. This training is available in Learn@UW to all animal handlers as part of the animal handler certification required training; ARS staff also performs in-person trainings by request. Every 5 years animal handlers are to take the online recertification.

EH&S's Office of Biological Safety (OBS):

OBS offers the Required Biosafety Training course for anyone working with biological agents. The course is split into 6 modules:

- Introduction to Biosafety Risk Assessment & Mitigation
- NIH Guidelines & Research Oversight at UW-Madison
- Biosafety Protocol Process
- Procedural Risks & Mitigation
- Exposure Response & Reportable Events
- Disinfection, Decontamination, & Biohazard Disposal.

EH&S's Office of Radiation Safety:

Any personnel involved with handling radioactive materials and/or radiation producing devices are required to take specific trainings to be approved to use and handle radioactive materials. Training modules

(<http://ehs.wisc.edu/radiationsafetytraining.htm>):

- Radiation Safety 101: Radiation Safety for Radiation Workers – Part I
- Radiation Safety 101: Radiation Safety for Radiation Workers – Part II
- Radiation Safety 102: Radiation Safety Refresher Training
- Radiation Safety 105: Radiation Safety for Irradiator Users and Animal Caregivers
- Radiation Safety 106: X-Ray Diffraction
- Laser Safety Training

EH&S's Office of Chemical Safety:

The Office is responsible for overseeing campus chemical safety and compliance through its Hazard Communication Program and Chemical Hygiene Program. Depending on a staff member's role the individual will generally fall under one of these two programs. Both programs require that staff working with hazardous chemicals know the chemicals they are handling, understand the hazards associated with the chemicals, and know what steps they need to take to minimize exposure. Additionally, staff must be trained in how to identify and respond to emergency situations, such as a spill or release of a hazardous chemical. Chemical Safety offers a variety of trainings

(<http://ehs.wisc.edu/chemsafetytraining.htm>): (Chemical Safety: Chemical Safety Training (ILT))

- Chemical Safety: 201 Fume Hood Training
- Chemical Safety: 202 Cryogen Safety Training
- Chemical Safety: Hazard Communication with Global Harmonized System (GHS)

PIs are responsible for any agent-specific training needed.

- 2) Describe special qualifications and training of staff involved with the use of hazardous agents in animals.

All personnel working under a biological safety protocol are required to take and pass the required biosafety training modules offered by the Office of Biological Safety. This requirement is fulfilled by completing courses Biosafety 101, Biosafety 104 and Biosafety 201 or the new combined training "Required Biosafety Training." These trainings need to be renewed every 5 years. Completion of these modules is required before beginning research activities. These modules address working with biohazardous agents in animals. Training topics include regulations, risk assessment, risk mitigation, exposure response and reportable events, and disinfection and disposal.

iv. Personal Hygiene [Guide, p. 20; Ag Guide pp. 4-5]

- 1) List routine personal protective equipment and work clothing provided for animal care personnel, technical staff, farm employees, etc. Describe arrangements for laundering work clothing.

SVM ARC SOP 504 states all individuals entering the animal housing areas are expected to wear provided clothing including footwear (disinfected, disposable, or dedicated) while performing their animal related activities. If they handle animals, gloves are mandated. The agricultural and companion animals are an exception unless a procedure is being performed. In addition, depending on specific research specifications, additional items of PPE may be required (mask, hairnet, double glove, etc). Those requirements are posted on individual doors/areas. Personal protective equipment items are disposed, disinfected, or laundered upon exiting area or as often as necessary for persons to present a clean, neat appearance. Laundering is performed either on premise or bagged and sent to another facility for processing.

- 2) Describe provisions for washing hands, showering, and changing clothes, including instances where work clothes may be worn outside the animal facility.

SVM ARC SOP 504 states that ideally hands should be washed between rooms as well as when exiting animal housing areas. ARC staff is provided five minute wash time before lunch and a fifteen minute shower time prior to the end of their shift. Animal housing clothes worn are to be laundered daily at the end of the shift. It is recommended that animal housing clothes are changed or covered prior to going to non-animal facility areas.

- 3) Describe policies regarding eating, drinking, and smoking in animal facilities.

SVM ARC SOP 504 states that food and drink are not to be taken into the animal housing rooms. Food and drink may be transported to offices located within animal housing areas if transported in sealed containers and kept in office areas.

UW-Madison maintains smoke-free facilities.

Per Wisconsin Statute 101.123(2)(a)(5t) it is illegal to smoke in state institutions. The UW-Madison Smoke-Free Policy further prohibits smoking within 25 feet of building entrances and exits, and in University owned or leased vehicles. In all the facilities there are dedicated spaces available to have lunches/breaks outside the animal housing areas.

v. **Animal Experimentation Involving Hazards** [Guide, pp. 20-22]

- 1) Describe briefly institutional policies governing experimentation with hazardous biological, chemical, and physical agents, including the oversight process for the use of hazardous agents. Note: Written policies and standard operating procedures (SOPs) governing experimentation with hazardous biological, chemical, and physical agents should be available during the AAALAC site visit. If such policies and procedures are not available, please explain.

All Campus Policy 2004-025: Occupational Health Program Enrollment.

This policy details the requirement for all personnel to complete an Animal Contact Risk Questionnaire (ACRQ). The ACRQ is reviewed in a HIPAA-compliant manner by University Health Services (UHS) medical staff. The UHS medical staff determine the level of occupational health and safety practices required based on the individual's health information and the hazards and risks imposed by the environment, the animal species involved, and the degree of animal contact. Completion of the ACRQ and evaluation of the questionnaire by UHS staff is required before individuals can have contact with research animals.

All Campus Policy 1999-006: Animal Care and Use Authorization and Mandatory Training. This policy defines minimum training requirements for individuals who use or care for animals in teaching, research and outreach at the University of Wisconsin-Madison.

All Campus Policy 2013-052: Cage Labeling Requirements. This policy instructs investigators on cage/pen labeling activity secondary to the use of biohazards, toxic substances, or radioactivity in animals.

Oversight of policies, biosafety protocols and/or standard operating procedures is provided by the Institutional Biosafety Committee, the Animal Research Safety group, the Office of Radiation Safety, the Office of Chemical Safety, UHS, the IACUC/OB, and RARC personnel.

- 2) Describe aspects of the health and safety program specifically for personnel potentially exposed to hazardous agents.

Exposures to biological agents are handled as described in section 2-I-A-2-b-2: Hazard Identification and Risk Assessment (above).

When an employee is exposed or potentially exposed, they must complete an employee injury report and seek medical attention, if needed. Each report is reviewed by their supervisor and EH&S representatives. They also complete a "First Report of Biological Exposure or Release Event" form for biological exposures or report it to Chemical Safety if chemicals are involved. First aid/exposure kits are available for injuries.

- 3) Describe safety procedures for using volatile anesthetics and how waste anesthetic gases are scavenged.

Isoflurane is the most commonly used volatile anesthetic gas; the all-campus Guidance for the Control and Monitoring of Waste Anesthetic Gases in Animal Research is followed when working with volatile anesthetic gases.

The following are the preferred controls for volatile anesthetics:

1. An externally ventilated hood such as a fume hood or Class II B2 biological safety cabinet should be used whenever available.
2. A commercial anesthesia machine with a charcoal scavenging unit should be used whenever available. Charcoal canisters must be weighed every time the machine is used and discarded when it is above the effective weight.
3. When an induction box is used, it should remain in the hood whenever possible, and at a minimum be opened within the hood after isoflurane has been utilized.
4. When a nose cone is used, a commercially available model with a diaphragm that provides a tight seal around the animal's nose should be used.

Volatile anesthetic gases are used in gas anesthesia machines that use a waste gas-absorbing canister recovery system, a certified fume hoods connected to building exhaust, a building vacuum system, or a hard ducted BSC. Bench top scavenging units exhausted to outside (commonly called "snorkels") are used for exhausting small volumes of anesthetic gases when used in nose cones during procedures. If isoflurane is to be used on the bench top, without a machine with a scavenging device or hood or other improvised scavenging (i.e. laboratory vacuum line) method, monitoring should be done to evaluate the exposure level. Individuals named on IACUC/OB-approved protocols as part of the surgery staff, including anesthetists must complete Lab Animal Surgery, an introductory course in analgesia, anesthesia, basic wound closure, suturing, aseptic technique, and surgery (administered by RARC). RARC also has an on-line training module for anesthesia machines, which covers the appropriate use of the machine. UHS may monitor isoflurane levels in procedure rooms and provides feedback to personnel if needed.

Anesthesia machines are annually calibrated and certified by a commercial company, [REDACTED]. The IACUC/OB checks maintenance of the anesthesia machines during semi-annual inspections.

Individuals named on IACUC/OB-approved protocols as part of the surgery staff, including anesthetists, must complete Lab Animal Surgery, an introductory course in analgesia, anesthesia, basic wound closure, suturing, aseptic technique, and surgery (administered by RARC). RARC also has an on-line training module for anesthesia machines, which covers the appropriate use of the machine.

- 4) List, according to each of the categories noted below, hazardous or potentially hazardous agents currently approved to be used in animals that are or will be maintained for more than a few hours following exposure. If the hazardous agent cannot be listed by name for security/proprietary reasons, identify it by the general category of agent and level of hazard. Note: This information may be provided as an Appendix.

- a) Biological agents, noting hazard level (CDC Biohazard Level, Directive 93/88 EEC, CDC or USDA/DHHS Select Agent, etc.).

Thirty-five protocols involve use of biological agents rated as BSL 2 or higher. See Appendix 14.

- b) Chemical agents, noting general category of hazard (toxicant, toxin, irritant, carcinogen, etc.).

Fifteen protocols involve use of chemical agents that remain hazardous or potentially hazardous for several hours after administration to an animal. See Appendix 15.

- c) Physical agents (radiation, UV light, magnetic fields, lasers, noise, etc.).

Fifty-four protocols involve the use of physical agents. See Appendix 16.

- 5) Describe the program for housing and caring for animals exposed experimentally to the hazardous agents noted above, with emphasis on management and safety practices for containment of each class of agent. Indicate how levels of personnel exposure are assessed.

Researchers and staff: the IACUC/OB and the OBS in concert with the IBC and the Radiation and CHO department assess whether a researcher and staff are qualified to work with hazardous agents. The IACUC/OB, OBS, and IBC will require additional training of personnel, as needed. Numerous training opportunities are available sponsored by EH&S covering chemical, biological, and radiation safety. This training includes such topics as risk assessment, containment procedures, hazard communication, safety precautions, and proper treatment and disposal of hazardous waste. The RARC provides on-line or in-person training to new animal handlers as part of the animal handler certification required training. On-line training is available for radiation safety certification.

Staff working with animals that have been administered infectious agents, hazardous chemicals and drugs, or radiation are given special instructions on the handling of feed, bedding, and animals by their supervisor, principal investigator, occupational health and safety personnel, and/or the veterinary staff. The specific information and instruction vary widely with the agent and conditions in which the agent is used with an animal. Signage that includes the symbol for biohazards and precaution information is affixed beside the door of rooms where these materials are in use.

When animals have been administered infectious agents and potentially infectious materials the cages and rooms are clearly identified with the biohazard symbol and the agent in use. Door signs also include precautions to enter the room and handle the animals, researcher contact information, PPE, safety equipment to use, decontamination procedures, and appropriate waste disposal. Special hazard warning signs are also posted for some agents that pose a special risk for certain sexes, those with compromised immune systems, and any other conditions that apply.

Animals administered hazardous chemicals and drugs where significant amounts may be expelled; a hazard communication plan is employed during the time of significant hazard. Door signs are posted that include precautions to enter the room and handle the animals, researcher contact information, PPE to wear, safety equipment to use, decontamination procedures, and appropriate waste disposal. Cages are labeled and the agent identified. After the chemical or drug is no longer administered and the increased hazard time has expired; the waste is collected and picked up for appropriate disposal.

When animals have been treated with radioactive compounds and are still excreting those compounds; the cages and rooms are clearly identified with the well-known radioactive compound symbol, the radioisotope used, and the quantity of the radioisotope that has been used. Staff is trained in the proper precautions to take when handling the animals and their wastes. Once the “non-radioactive” animals are removed from the rooms, these rooms are cleaned by personnel trained in radiation safety

vi. Personal Protection [Guide, pp. 21-22]

- 1) Describe training, equipment and procedures employed to reduce potential for physical injury, inherent to animal facilities (e.g., noisy areas, large quantities of chemicals such as disinfectants, ergonomics) or species used (e.g., nonhuman primates, agricultural animals).

Policy 1999-006-io Training Requirements for Animal Users is a guidance document for identifying training and assessment requirements for animal users. The document defines distinct animal user groups (e.g. students) and which requirements are relevant to each, deadlines to complete each requirement, and includes a training matrix. The handout for the occupational health and safety training will be available at the site visit. Online training information is available at the <http://www.ehs.wisc.edu/training.htm> including syringe use guidelines, bloodborne pathogens, and safe use of liquid nitrogen.

The OBS offers Basic Bio-safety Training, Hazardous Material Shipping Training and Biological Safety Cabinet Training. Radiation Worker Training is required before working with radioactive materials. Bloodborne Pathogen Training is required annually for personnel with a reasonable expectation of exposure to human blood or other potentially infectious human materials. Chemical Safety Worker training is also offered. Training in ergonomics, body mechanics, and proper lifting techniques are provided periodically through UHS-Environmental & Occupational Health. It is encouraged to employ pair lifting on heavy or odd shaped items.

Additional training offered by UHS includes: asbestos awareness, fire extinguisher use, CPR/AED, fit testing, and laser safety. Information regarding all educational offerings is available at the EH&S website, <http://www.ehs.wisc.edu/training.htm>.

In 2015, University Health Services, Environmental and Occupational Health performed Laboratory Animal Allergen and Noise Exposure Monitoring. Cage dumping and washing are the loudest daily, but other tasks performed by employees throughout the day were also monitored. The results of noise

exposure monitoring for cage dumping and washing were below the action level of 85dBA for an 8 hour average. Employees will be provided with hearing protection upon request.

Research and animal care staff are provided with a sufficient number of scrub suits, and lab coats for use in the facility. The protective clothing is changed daily or as often as necessary for persons to present a clean, neat appearance. All uniforms and lab coats are laundered in house. Employees are also provided with work gloves, eye and respiratory protection when needed. Dedicated scrub suits and gowns (launderable or disposable) are used in the BSL1, BSL2 and BSL3 isolation areas. Scrub suits, which are worn under Tyvek coveralls will be autoclaved before being laundered (BSL3 only).

The following items are protective equipment provided to personnel:

Safety glasses	Disposable dust mask
Safety goggles	Gloves: Leather, rubber, disposable exam
Disposable respirator	Ear protectors
Cloth coveralls	Disposable shoe covers
Scrub suits	Tyvek coveralls

- 2) Describe the procedures for the maintenance of protective equipment and how its function is periodically validated.

If protective equipment becomes worn, broken, or unsanitizable it will be replaced immediately. A majority of the PPE used in the facilities is disposable, one-time wear items. Eye wash and chemical showers are tested regularly for functionality.

- 3) Describe situations where respiratory protective equipment is available or required, such as cage washing facilities, feedmills, etc. Describe how such equipment is selected and how respirator fit testing and training in the proper use and maintenance of the respirator is provided.

When engineering controls are not sufficient or work tasks determine that respiratory protection is required, respirators are provided and personnel are required to participate in the UHS Respiratory Protection Program. Voluntary use of N-95s is allowed.

Respirators are selected by the work unit based on work tasks and ability to fit. UHS manages the medical approval to wear a respirator with electronic submission of a medical questionnaire and, if indicated, an appointment with a medical professional.

All personnel who are required to wear an N-95 are fit tested annually. The Occupational Health and Safety Coordinator provides formal classroom training on respiratory protection to all personnel that may need to wear an N-95 or PAPR.

- 4) Describe program policies to ensure personnel safety when working with rack/cage washers, other sanitation/sterilization equipment, and other heavy

equipment such as scrapers, tractors, and farm machinery. Describe the training program that supports these policies.

ARC has a Training Check-off Sheet for onboarding new staff/students. The components are: RARC requirements, UHS requirements, SVM [REDACTED] and SVM/HR requirements. New employees are trained by the supervisor or senior ARTs in the operation and safety use of equipment such as: Rack/cage washer, autoclaves, power washers, and floor scrubbers.

The operation of a forklift is performed only by those who have had formal training and skid loader operation is performed only by those who have had formal training or previous experience.

vii. Medical Evaluation and Preventive Medicine for Staff [Guide, pp. 22-23]

- 1) Identify the individual(s) and/or office responsible for developing and monitoring the medical evaluation and preventive medicine program.

The UW University Health Services (UHS) Occupational Medicine Office develops and monitors the Medical Evaluation and Preventive Medicine Program for the UW-Madison campus.

- 2) Describe the categories of personnel (research staff, visiting scientists, animal care staff, students, support staff, etc.) included in the program.

Policy 2004-025, Occupational Health Enrollment Program, identifies four target groups of employees, students and visitors, and outlines when enrollment in the Occupational Health Program is required. The four target groups are:

1. Anyone who through their employment, training or service at UW-Madison has regular contact with animals: a) faculty, staff and students named in an animal-use protocol, b) research animal veterinarians, c) animal care staff, d) IACUC/OB members, e) veterinary medical students, and f) Veterinary Medicine Teaching Hospital staff.
2. Students
3. Visitors
4. UW-Madison Employee Service Personnel

- 3) Describe general features of the medical evaluation and preventive medicine programs, including pre-employment/pre-assignment health evaluation, periodic medical evaluations, immunization programs, and procedures for communicating health related issues.

UHS is a fully accredited ambulatory care clinic located on campus that provides primary medical care to students and occupational medicine to faculty, staff and students. UHS provides pre-exposure services such as routine testing, examinations, consultation, immunizations and other services which are required before encountering a specific occupational risk.

The Animal Contact Risk Questionnaire (ACRQ) is evaluated by medical professionals at UHS to assess potential risks for each individual who may have

contact with research animals or who may work in animal facilities. Shortly after hire, the baseline form is completed. Thereafter, the annual update form is used (Appendix 5). Individual risk and prevention recommendations are communicated via UHS electronic health record. The information obtained in the ACRQ (including review of previous annual submissions) is used to determine required immunizations, use of personal protective equipment, hygiene practices, medical surveillance, and training.

If respirator use is indicated, medical evaluation is performed by UHS occupational medicine staff. Fit testing for tight fitting respirators is conducted on an annual basis by Occupational Medicine/Occupational Health staff.

Routine immunization services provided by UHS include: Tetanus boosters which are required at 10-year intervals for individuals with animal contact; Hepatitis B vaccine is offered to personnel with a reasonable expectation of exposure to human blood or other potentially infectious human material; Rabies vaccine is recommended for personnel who may come into contact with animals from unknown sources or wild-caught animals; flu shots are offered to faculty, employees, and students.

- 4) Describe special precautions or procedures for personnel exposed to potentially hazardous species (nonhuman primates, sheep, etc.) or agents (infectious agents, human origin tissues, chemicals/toxins, etc.).

Environment Health & Safety (EH&S) offers safety courses in biological safety, animal research safety, chemical safety and radiation safety that explain the potential risks and hazards that personnel may be exposed to working with hazardous animals and agents.

There is detailed information on the EH&S website (<http://www.ehs.wisc.edu/index.htm>) concerning the potentially hazardous species and agents that an individual may encounter while working in research on campus.

EH&S recommends standard exposures procedures in the event of a spill or exposure. Spill and exposure reporting information is located the EH&S website: <http://www.ehs.wisc.edu/spillinfo.htm> and <http://www.ehs.wisc.edu/biosafety.htm>

Post-exposure services are provided by University Health Services (UHS). UHS provides medical care for workers exposed to animals or to hazardous chemicals or biologic agents within the research and academic setting including screening, case management, outpatient evaluation and management, outpatient laboratory testing, plain film radiology, and telephone call line support for employees with exposures. When referral to outside or after hours care is required, UHS assists with arranging follow-up and care coordination.

The UW-Madison coordinates with UW Health Infectious Disease Physicians when needed. They provide inpatient, outpatient and emergency consultative services for the diagnosis and management of complex infectious diseases and unexplained febrile illnesses, especially those that may become life-threatening.

UHS has prepared several electronically available Exposure Medical Response Guidance documents to inform laboratory staff and health professionals about risks and treatment in the event of a specific exposure.

c. Investigating and Reporting Animal Welfare Concerns [Guide, pp. 23-24]

Describe institutional methods for reporting and investigating animal welfare concerns.

Institutional policy 2003-017-io (read it at www.rarc.wisc.edu/policy/2003-017-io.html) states that any individual who has concerns related to the use of animals in teaching, research or outreach at UW-Madison may express those concerns without fear of reprisal. Anonymous reporting may be made to an anonymous tip line staffed by the Office of the Vice Chancellor of Research and Graduate Education, or to the IACUC/OB Chair, any member of the veterinary staff, or the Assistant Director of RARC. Signage about this policy with contact information is posted where it is easily seen in open staff areas in every animal facility, and in every laboratory space in which animal procedures are approved to be performed. The IACUC/OB verifies the presence of the whistleblower posting on every semiannual facility inspection. The signage includes instruction for obtaining protection from retaliation under Wisconsin's Whistle Blower Law (Wis. Stats. §230.80-85). A phone number for reporting concerns, and a link to the reporting policy, appear on the RARC home page.

Reports are investigated by the Chief Campus Veterinarian or a designee. Investigations are done in cooperation with animal facility managers and directors, department chairs, research staff, the UW-Madison Office of Administrative Legal Affairs, human resources staff, and other University staff as needed. The reported concern may be brought to the attention of the IACUC/OB, the IO, OLAW, USDA, AAALAC or other entities depending on the nature of the report and the ultimate finding of the investigation.

B. Program Oversight

1. The Role of the IACUC/OB [Guide, pp. 24-40]

a. IACUC/OB Composition and Function [Guide, pp. 17; 24-25]

Please provide a Committee roster, indicating names, degrees, membership role, and affiliation (e.g., Department/Division) as an appendix.

i. Describe Committee membership appointment procedures.

The UW-Madison Chancellor, Rebecca Blank, has delegated the responsibility and authority for IACUC/OB appointments to Interim IO Dr. [REDACTED], and [REDACTED]. Responsibility has been further delegated to Dr. [REDACTED], [REDACTED].

The SVM IACUC/OB appointments to the LSVC IACUC/OB are based on nominations from the [REDACTED]. Dr. [REDACTED]'s office then issues an appointment memo detailing the name of the IACUC/OB appointee, their voting status, and their term of service. Alternate voting members are named for the regular voting members as appropriate. Non-voting and ex-officio members generally include compliance staff from entities such as RARC.

Membership rosters for the School of Veterinary Medicine IACUC/OB and the All-Campus Animal Care and Use Panel are presented in Appendix 6.

ii. Describe frequency of Committee meetings.

The School of Veterinary Medicine IACUC/OB holds a regularly scheduled meeting each month. Separate, focused meetings are held twice a year to perform the semiannual program reviews. Additional special meetings may be convened for other reasons at the discretion of the chair.

iii. Describe the orientation, training, and continuing education opportunities for IACUC/OB members. [Guide, p. 17]

Newly appointed IACUC/OB members attend an orientation session with the committee chairperson and the IACUC/OB Administrators. The information provided includes the federally mandated charge of the committee, obligations of committee members, how protocols are reviewed, the role and method of semi-annual inspections, and the role and method of the semi-annual program reviews. Newly appointed IACUC/OB members are provided with a reference binder that includes copies of the most recent editions of the Guide and Ag Guide (as applicable), AWAR section 2.31, the PHS Policy, links to the 2013 AVMA Report on Euthanasia, guidance on reviewing protocols, and related materials. An introduction to the online system for managing IACUC/OB meetings and protocols is provided at the orientation; a second, more in-depth training is provided 2-3 months following a member's appointment when they begin receiving formal protocol review assignments. All new members have access to all approved and in-review protocols beginning the date of their appointment.

Committee training is a standing agenda item for each monthly IACUC/OB meeting. Topics range broadly with emphasis on regulations and regulatory updates. Examples include the regulatory definition of an animal, recent changes to USDA animal care policies and the Guide, strategies for deciding on designated vs. full committee review of protocols, and environmental enrichment. Training topics are selected by the IACUC/OB Administrators based on current national and/or campus regulatory issues, ideas from IACUC/OB members and RARC staff, and topics raised in professional venues (e.g. IACUC-ADMIN listserv). In addition, the IACUC/OB Administrators offer opportunities for distance learning (e.g. NABR and OLAW webinars, virtual PRIM&R meetings) to IACUC/OB members as they become available.

b. Protocol Review [Guide, pp. 25-26]

A blank copy of your institution's protocol review form should be provided as an appendix. Also include forms used for annual renewal, modifications, amendments, etc., as applicable.

i. Describe the process for reviewing and approving animal study protocols, including research and teaching proposals. Include a description of how animal study protocols that do not involve a formal grant proposal are reviewed and approved (i.e., pilot studies or internally funded studies). Include a description of how the IACUC/OB weighs the potential adverse effects of the study against the potential benefits that may result from the research. Describe how protocols that have the potential to cause pain or distress to animals are reviewed, alternative methodologies reviewed,

veterinary input solicited, and studies controlled or overseen. Specify how animals and experimental group sizes are justified.

NOTE: In April 2014 UW-Madison began the process of converting to an on-line IACUC/OB protocol submission system called ARROW (Application Review for Research Oversight at Wisconsin). By the fall of 2017 the majority of protocols overseen by the IACUC/OBs will exist in ARROW, with a small percentage remaining in the old, paper format. There are 5 blank ARROW versions and currently the SVM IACUC uses the Biomedical, Agriculture, Other and Wildlife versions. Blank copies of these 4 types and the paper IACUC/OB protocol form are provided in Appendix 7. A demonstration of the ARROW system can be provided to the site visitors upon request.

The animal care and use protocol in ARROW (smartform) consists of two major portions, "Protocol Basics" and "Species Details". Specific information about numbers of animals, procedures and manipulations, monitoring and endpoints, usage locations and transport for each species to be used in a project are captured in the "Species Details" section. The "Protocol Basics" portion includes names of those who will perform the animal work, staff safety hazards, and other information broadly applicable to the entire animal project regardless of species.

There are four different smartforms in ARROW designed for distinct types of animal projects. They are:

1. Biomedical Research, Basic Biology, Teaching and/or Colony Management
2. Agricultural Research, Teaching, and/or Herd Management
3. Wildlife Study with No Housing or Educational Display Only
4. Other

The "Biomedical" protocol is the master smartform, and the other three are based upon it. All follow the same overall design, and include identical questions for the PI with the following minor differences. This blank Biomedical ARROW protocol is attached in Appendix 7.

Agricultural Research, Teaching, and/or Herd Management Smartform

- includes an option for selecting "Private herd" as a source of animals (Species Source page)
- includes an option for selecting and describing agricultural feed studies (Substance Administration: All Other Substances page). This form is available to site visitors but is not included in Appendix 7.

Wildlife Study with No Housing or Educational Display Only

- the method for creating the "Species Details" portion allows PIs to enter broad groups of animals (e.g. "all fishes native to Wisconsin lakes") instead of identifying individual species
- specific questions require PIs to describe wildlife capture methods and criteria for release of wildlife back into nature This protocol form is available to site visitors but is not included in Appendix 7.

Other

- does not include a "Species Details" portion
- This smartform is used very rarely (there are 4 out of 161 SVM ACUC-approved protocols) and only with permission from the IACUC office when teaching, service, or research activities require maximum flexibility in the variety of species to be used.

For example, one such protocol is titled “Restraint, Examination and Anesthesia of Exotic Animals: Teaching and Continuing Education Activities.” All information required for IACUC review is included in the “Protocol Basics” pages. This form is available to site visitors but is not included in Appendix 7.

Paper protocol form

This form is used not only for protocols that will soon be up for 3 year renewal, but also for those protocols that are approved for Select Agent. This form can be secure from those not directly involved with the SA study. ARROW protocols are available to a larger audience, making this highly sensitive information available to a wider audience. The paper protocol form is attached in appendix 7.

All work involving the use of live vertebrate animals at UW-Madison requires approval by at least one of the college or school IACUC/OBs prior to work beginning. This is true regardless of the source of funding or the intended use of the animals (i.e., teaching, research or testing, outreach).

Animal use protocols are completed by the principal investigators in ARROW. Through ARROW, new protocols and three-year renewals are first submitted to one of the research animal veterinarians for veterinary pre-review and consultation. The veterinarians review the entire protocol and make suggestions for improvement. If necessary, the veterinarians meet with the PI to discuss required modifications. Once the veterinarian is satisfied that the protocol is acceptable for review by the IACUC/OB, s/he notifies the PI that the protocol may be submitted for IACUC/OB review. These steps are also completed within ARROW. While there is no policy requiring veterinary pre-review of amendments, PIs have learned the value of the veterinary pre-review and often solicit veterinary input in the preparation of amendments.

Protocols submitted for IACUC/OB review are managed by staff in the IACUC office at RARC. They are distributed to the appropriate IACUC/OB for review by one of two methods: full committee review at a convened IACUC/OB meeting or Designated Review (DR).

For full committee review, two voting members of the IACUC/OB (one veterinarian and one non-veterinarian) are responsible for leading the IACUC/OB’s discussion of the specific protocols assigned to them. Although these “primary reviewers” are named, all voting IACUC/OB members have access to the protocols scheduled for review as part of their meeting materials. All members are encouraged and expected to read all of the protocols they receive and to raise concerns or questions for IACUC/OB discussion. Prior to the convened monthly meeting, IACUC/OB members may submit review questions or discussion notes for each protocol via the ARROW system. These are discussed at the convened meeting. After discussion the IACUC/OB takes action to approve, require modifications to secure approval, or deny (“disapprove,” per PHS assurance) each protocol. If the IACUC/OB action is to require modifications to secure approval, the investigator must submit a rewrite of the protocol addressing all of the IACUC/OB’s review concerns. Such rewrites are reviewed via DR by the veterinary reviewer and/or other voting committee members described below.

DR is used to review protocols under any of the following three circumstances (see Policy 2002-020-c).

(1) DR can be used as an alternative to reviewing a protocol at a legally convened meeting. First, each voting committee member is provided with a copy of the protocol. All voting members then have the opportunity to respond before a reasonable deadline (usually 3 working days) as to whether the protocol is eligible for DR. If any member indicates "not eligible for DR," the protocol is scheduled for full committee review at the next convened IACUC/OB meeting. If approved for DR, then designated reviewers from the IACUC/OB (one veterinarian and one non-veterinarian) are appointed by the Chair. Identical versions of the protocol are provided to the designated reviewers. They may approve, require modifications to secure approval, or call for full committee review at a convened meeting. Approval must be unanimous by the designated reviewers.

(2) DR can be used following full IACUC/OB approval of a motion to require modifications to secure committee approval. The solicited changes are reviewed by at least one veterinarian who has voting privileges on the IACUC/OB, with other voting committee members participating in the review upon request or as determined by the chair.

(3) DR can be used when an amendment simply addresses one or more of the following "minor" criteria:

- Addition of locations where procedures are conducted on animals, or where other animal activities of a duration less than 12 hours occur
- Addition of an IACUC/OB-approved housing location within the reviewing IACUC/OB's oversight
- Qualifications and training of instructors invited by the university to teach specific procedures, generally for continuing education courses, is submitted in lieu of completing standard on-line animal user orientation for UW-Madison.
- Addition of language to allow the transfer of animals between IACUC/OB-approved protocols with RARC veterinary approval.
- Changing from one approved commercial source of animals to another.
- Changing brand names of materials or substances (e.g., "Kleenex" instead of "Puffs").
- Changing from a specific brand name to a generic term (e.g., from "Kleenex" to "tissue").
- Decreasing the frequency or volume of previously-approved blood draws.
- Removal of procedures and/or procedure locations

Amendments that fall into this third category are reviewed by the IACUC/OB chair and the school/college senior program veterinarian, either of whom may call for the amendment to be reviewed by the full IACUC/OB at a convened meeting.

Following review and approval, the investigator is notified of the status of the protocol via ARROW (or via email for non-ARROW approvals). The logistics of all protocol

processing and PI notifications regarding protocol maintenance (e.g. impending expirations) are managed by the IACUC office.

Regardless of the review method used, the IACUC/OB applies the same standards to their reviews to balance potential benefits against potential harms, as well as potential pain and distress that the procedures in the study may cause animals and any alternatives that were considered. The IACUC/OB's review of specific questions in the standardized protocol form ensures that PIs have explained the goals of the study and its potential benefits and harms. If this information is not clear the IACUC/OB requires modifications to the PI's responses until the IACUC/OB is satisfied. Regarding potential pain or distress, the IACUC/OB comprehensively evaluates the proposed work, the animal monitoring plans, and the PIs' literature searches. A research guide for PIs developed by RARC in consultation with UW-Madison Libraries staff to provide guidance to investigators on the regulatory basis for this requirement, developing search strategies, and presenting search results in the context of the protocol is available. This can be viewed at <http://researchguides.library.wisc.edu/animalalternatives>

Practical evaluation of appropriate numbers of animals for studies described in protocols is a perennial topic of discussion by the IACUC/OBs. Policy 2013-051-c, Justification of Number of Animals in Protocols (<https://www.rarc.wisc.edu/policies.html> > Policies by Number), provides guidance and expectations for PIs on this important aspect of the animal protocol application. The policy instructs PIs to include statistical justifications in their explanations of requested animal numbers when possible, and where statistical justification is not possible to provide a rationale for the proposed animal numbers, such as citations of previous research. PIs are also advised to consider including a very small percentage of overage to provide them with flexibility in the event animals must be removed from studies for non-experimental reasons if that is clearly explained in the numbers justification narrative. The IACUC/OBs will accept as part of the explanation the PI's previous experience with the particular experimental model, or in the case of teaching protocols the students' learning experience needs. PIs are often instructed to include tables or charts that show the exact number of experimental groups and animals needed for the study. If the PI's explanation of the animal numbers request is unclear to the IACUC/OB, the Committee requires modification of the response until it meets the IACUC/OBs' satisfaction before approval of the protocol is granted.

- ii. Describe process for reviewing and approving amendments, modifications, and revised protocols. If applicable, include a description of "major" vs. "minor" amendments.

After initial IACUC/OB approval of an animal use protocol, protocols may be amended by the PI as study requirements change (e.g., an existing study is refined or a new component is added), or at the direction of the IACUC/OB (e.g., following an adverse event). Amended protocols are reviewed and approved by the IACUC/OB following the same procedures as described above in (b)(i) via review at a convened IACUC/OB meeting or via Designated Review.

In accordance with OLAW NOT-OD-14-126 in February 2016 the IACUC/OB approved a policy to allow veterinary verification of changes to protocols. Policy 2016-058 (Veterinary Verification and Consultation –VVC) describes specific changes that can and cannot be made via this method. At least quarterly the

IACUC/OB reviews a log of changes to protocols made via VVC and at that time has the opportunity to request details from the veterinarian or request that an amendment to the protocol be submitted by the PI. The full policy text is available at [https://www.rarc.wisc.edu/iacuc/acapac/2016-058_veterinary_verification_and_consultation_\(vvc\).html](https://www.rarc.wisc.edu/iacuc/acapac/2016-058_veterinary_verification_and_consultation_(vvc).html)

c. Special Considerations for IACUC/OB Review [Guide, pp. 5; 27-33]

i. Experimental and Humane Endpoints [Guide, pp. 27-28]

Describe how criteria for determining alternatives to experimental (humane) endpoints are developed, approved, and applied. Include a description of monitoring systems in place for studies for which information on alternative endpoints are not available.

Alternatives to humane experimental endpoints are embedded within the IACUC/OB protocol review and approval functions. As the Committee reviews each protocol the endpoints are evaluated against veterinary standards and scientific compatibility by the collective knowledge among the Committee members. Consultants are used when applicable knowledge is not represented among the Committee membership. Plans for animal monitoring in cases where alternative endpoints are not available are tailored on a study-by-study basis by the IACUC/OB with veterinary input. These often include a scheduled report back to the Committee regarding endpoint outcomes.

ii. Unexpected Outcomes that Affect Animal Well-being [Guide, pp. 28-29]

Describe how unexpected outcomes of experimental procedures (e.g., unanticipated phenotypes in Genetically Modified Animals) are identified, interpreted, and reported to the IACUC/OB.

The IACUC/OB can become aware of unexpected outcomes in several ways. PIs are required to report adverse events when they occur as described in Policy 2012-050-v, Adverse Event Reporting. All animals are observed every day by care staff, veterinary staff, or investigational staff. There are systems in place for care staff and investigational staff to report abnormal observations, and those personnel have been trained in those systems. The attending veterinarian report is an agenda item for each IACUC/OB meeting, and unexpected outcomes are reported then. Animals with unexpected morbidity or mortality are necropsied at the discretion of the program veterinarians.

iii. Physical Restraint [Guide, pp. 29-30]

Note: This section is to include only those protocols that require prolonged restraint. Brief restraint for the purpose of performing routine clinical or experimental procedures need not be described.

1) Briefly describe the policies for the use of physical restraint procedures or devices.

The Institution will allow long term physical restraint provided there is scientific justification that is approved by the IACUC/OB. Campus Policy 1997-004 describes the policy on physical restraint. The policy describes the requirements

for protocol approval; animal selection and acclimation; personnel training; animal monitoring; special requirements for restraint >12 hours; provision of food, water, and enrichment; and requirement for reporting complications.

- 2) Describe animal restraint devices that are used or have been used within the last three years. For each device, briefly describe the duration of confinement, acclimation procedures, monitoring procedures, criteria for removing animals that do not adapt or acclimate, and provision of veterinary care for animals with adverse clinical consequences.

See Appendix 17 which describes prolonged restraint and monitoring (n=9)

iv. Multiple Survival Surgical Procedures [Guide, p. 30]

Note: One survival surgical procedure followed by a non-survival procedure is not included in this category.

- 1) Describe the institutional policy(ies) regarding multiple survival surgery (major or minor) on a single animal.

In compliance with the AWA, Policy 14 of the USDA, and the Guide, the SVM IACUC/OB approves multiple major or minor survival surgeries on a single animal only if presented with adequate scientific rationale for the performance of these procedures.

- 2) Describe the procedure for approving multiple survival surgery (major or minor) and the criteria used to determine the potential impact on the animals' well-being.

PIs who wish to perform multiple survival surgical procedures on a single animal within one protocol must provide adequate scientific justification to the School of Veterinary Medicine IACUC/OB. In addition, veterinary record review and approval is required to transfer animals between protocols, to be sure that no animal is used for survival surgeries between protocols.

- 2) Summarize the protocols currently approved that involve multiple major survival surgical procedures and the time allowed between procedures on the same animal. Describe the method of institutional monitoring.

See Appendix 18 for a summary of protocols approved for multiple major survival surgery.

v. Food and Fluid Regulation [Guide, pp. 30-31]

- 1) Describe experimental situations that require food and/or fluid regulation. Note: This does not include pre-surgical fast. List title of the experiment(s), justification, species involved, and length and type of food/fluid regulation.

See Appendix 19 for a summary of protocols approved for food and/or fluid regulation.

- 2) Describe animal health monitoring procedures and frequency (e.g., body weight, blood urea nitrogen, urine/fecal output, food/fluid consumed)

Answers provided for each IACUC/OB number in the answer to question 1) immediately above.

- 3) Describe methods of ensuring adequate nutrition and hydration during the regulated period.

Answers provided for each IACUC/OB number in the answer to question 1) above.

- vi. **Use of Non-Pharmaceutical-Grade Drugs and Other Substances** [Guide, p. 31]
Describe the rationale and consideration given by the IACUC/OB for use of non-pharmaceutical grade drugs or other substances, if applicable.

As described in All-Campus Policy 2010-037-io, the use of non-pharmaceutical-grade compounds must be described in a protocol approved by the school/college IACUC/OB, and be scientifically justified.

- vii. **Field Investigations** [Guide, p. 32]

Describe special considerations used by the IACUC/OB when reviewing field investigations of animals (non-domesticated vertebrate species), if applicable.

The unique considerations of field studies are embedded within the IACUC/OB protocol review and approval functions. They include a protocol form specific to these studies. This protocol includes questions that require specific responses when wild animals are the species of interest. The questions address details of the natural habitat, capture methods, frequency of checking nets and traps, disposition of non-target species, and release procedures. They also include quarantine and biosecurity concerns, including the inadvertent transmission of pathogens between individual animals and collection sites. Occupational safety concerns are reviewed by UW-Madison EH&S staff. Field biologists who are not on the IACUC/OB may be asked to consult on specific aspects of field study protocols.

As per USDA and OLAW regulations, vertebrate animal studies that involve observation-only studies (no hands-on or invasive procedures) of wild animals in their natural habitat are exempt from IACUC/OB oversight and review. PIs are instructed instead to complete a wildlife waiver to describe the non-invasive work. The waiver application explicitly directs PIs to complete the Animal Care and Use Protocol Review if wild animals are to be captured, sampled, or materially affected. Upon submission to the IACUC/OB Administrator the waiver is reviewed by the Chief Campus Veterinarian, Dr. [REDACTED], or her designee, who consults with each PI about study plans. After that evaluation the PI is either directed to complete the Animal Care and Use Protocol, or the waiver is signed by Dr. [REDACTED] and the PI and kept on file at RARC for reference. A signed copy is furnished to the PI and copied to the EH&S staff, who may initiate a safety consultation at their discretion. Annually the IACUC Administrator or designee contacts each PI and inquires about the status of each project and whether there have been changes in scope that would require an Animal Care and Use Protocol.

- viii. **Agricultural Animals** [Guide, pp. 32-33]

Describe considerations given and guiding documents used by the IACUC/OB when reviewing “biomedical” and “agricultural” research projects involving agricultural species as study animals, if applicable.

The UW-Madison has formally adopted the following as standards for the animal care and use program: (1) the Guide for the Care and Use of Laboratory Animals (Guide), NRC, 2011; (2) the Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide), FASS 2010. These standards are applied to facilities planning and management, oversight of animal environments, animal user training programs, IACUC/OB functions, and veterinary care. For purposes of assessing appropriate species-specific euthanasia plans the animal program adheres to the American Veterinary Medical Association Guidelines for the Euthanasia of Animals (2013).

ix. Animal Reuse [Guide, p. 5]

Describe institutional policies and/or oversight of animal reuse (i.e., on multiple teaching or research protocols). Summarize the protocols currently approved that involve the reuse of individual animals.

There is a veterinary policy describing the circumstances under which animals may be transferred or reassigned. Before such a reassignment is authorized, the program veterinarian reviews the animal's medical records and determines if reassignment will compromise the animal's health and well-being. No animals that undergo major surgical procedures on one protocol can be used on another protocol involving a major surgical procedure unless the procedure is non-survival. Investigators are encouraged at the time of protocol development/review to include the possibility of reassigning animals to another protocol if appropriate.

2. Post-Approval Monitoring [Guide, pp. 33-34]

- a.** Describe mechanisms for IACUC/OB review of ongoing studies and periodic reviews (e.g., annual review, 3-year renewals if PHS funded, etc.).

Up to two reminders are sent to each PI by the ARROW system or email attachment by IACUC office staff prior to the annual re-approval date of each protocol. A required form must be completed and submitted by each investigator for each protocol. The PI must specifically request continuance of the protocol for one year. At each convened meeting, the IACUC/OB reviews the submitted forms. The IACUC/OB may request any needed changes or clarifications, and approves the annual re-approvals by motion and majority vote. IACUC office staff communicates the IACUC/OB's requests, (if any) to the PIs, tracks the responses, and reports the results to the IACUC/OB. If a PI fails to return the required form, the IACUC/OB may take action to suspend the protocol for failure to request annual re-approval or enact other consequences.

Triennial renewals are required for every protocol regardless of funding source. Up to three reminders are sent to each PI by RARC prior to the expiration date of each protocol. Protocols must be submitted to the IACUC/OB every three years for complete de novo review and approval. If the PI fails to respond, the protocol is terminated upon the expiration date. A notice of protocol termination is sent by the protocol office via email to the PI, department chairperson, Senior Program Veterinarian of the relevant IACUC/OB, and the manager(s) of the animal facility(-ies) listed on the protocol. When the protocol is submitted, it is reviewed as described above in section B.1.b.i.

As needed, the IACUC/OB will re-review any active protocol called for review by a voting member at a convened meeting to re-evaluate specific procedures, monitoring criteria, endpoints, or other aspects of the animal work. Based on that evaluation the IACUC/OB may require retraining of research staff, the presence of the PI or others at the IACUC/OB meeting, or other remedial action. Policy 2016-059-io, Post-approval Monitoring (PAM), describes routine and directed PAM activities including laboratory and protocol assessments. Three specialists in RARC are primarily responsible for PAM activities.

- b. Describe the process and frequency with which the Committee reviews the animal care and use program and conducts facility and laboratory inspections. Detail any criteria used for exempting or varying the frequency of reviewing satellite holding facilities and animal use areas. If contract facilities or contractor-provided personnel are used, describe procedures used by the IACUC/OB to review such programs and facilities. Note: A copy of the last report of these reviews should be included as an appendix.

One full-time position in the IACUC office is dedicated to supporting the IACUC/OB semiannual inspections, and receives support from other staff. The incumbent reports to the [REDACTED] and is responsible for scheduling inspections, note-taking, database management, follow-up on deficiency correction, and reporting to the IACUC/OBs. The [REDACTED] and [REDACTED] back-up the position's functions to provide coverage for UW-Madison's multiple animal facilities and labs.

At least once every six months each animal care facility, investigator laboratory and animal transport vehicle that falls within the IACUC/OB's oversight is inspected by a subcommittee of the IACUC/OB. The subcommittee is comprised of at least two voting members. Facilities and laboratory spaces where only non-USDA-covered species are used may be inspected by a single committee member.

Any committee member is welcome to participate in any facility inspection. A Safety representative member of the committee is generally present for each inspection. The inspection subcommittees identify minor and significant deficiencies and assign correction dates for deficiencies. Alternatively, subcommittees may refer potential deficiencies and corrective action to the full IACUC/OB for discussion at a convened meeting.

Occasionally non-voting IACUC/OB member consultants inspect facilities. For example, RARC compliance staff may inspect facilities or labs where only non-USDA-covered species are used. These consultants may recommend deficiencies and correction dates, but must also refer them to a convened IACUC/OB for action.

A member of the IACUC office staff accompanies all inspection teams and records the results in a customized database via iPad. The findings of each inspection are compiled, presented and discussed at the next convened IACUC/OB meeting, and recorded in the official meeting minutes. Inspections performed by consultants are specifically approved by committee vote.

Corrective actions are monitored and logged by IACUC office staff. Reports of overdue actions or requests for extensions are provided to the IACUC/OB as needed. Real-time inspection data concerning deficiencies and the status of corrective action may be viewed by the I.O., the IACUC/OB chair, and selected IACUC staff via a secure website.

During semi-annual program review, the results of the facility inspections performed during the previous six months are reviewed for trends and problem areas. In preparation for the meeting the Inspection Specialist and/or IACUC Administrators prepare a summary of findings and trends to present at the semi-annual program review. Repeat deficiencies are highlighted in the program review report.

The semi-annual animal care program reviews are conducted by the full IACUC/OB, or by a subcommittee of less than a voting quorum. When a subcommittee conducts the review the results are presented to the full IACUC/OB for discussion and sign-off. To guide the review the IACUC/OB uses the Guide for the Care and Use of Laboratory Animals, and, as applicable, 9 CFR Chapter I, 2.31. A worksheet (Lab Animal 2007 Oct; 36(9): 36- 40) based on the program definition (Lab Animal 2005 Nov; 34(10):41-4) is used to guide discussion and as the program evaluation tool. Results of the review are then transmitted in a timely manner to the Institutional Official.

- c. Describe institutional responses to deficiencies noted on regulatory inspection reports (e.g., government, regulatory agencies). Note: Copies of all such inspection reports for the past three years (if available) should be available for review by the site visitors.

Regulatory inspection reports are shared with research animal veterinarians, the Institutional Official, and members of the IACUC/OB. These individuals work together to correct existing problems, and develop a method to ensure that those problems are not repeated. Corrective actions can range from development of new institutional policies to discussion with those involved, formal retraining, and/or loss of animal use privileges. If facility deficiencies are identified, the relevant animal care unit is directed to make necessary corrections and report this to the IACUC/OB and RARC. Actions taken are reported to relevant regulatory agencies by the IACUC/OB Chair, IO, and/or Chief Campus Veterinarian.

- d. Describe other monitoring mechanisms or procedures used to facilitate ongoing protocol assessment and regulatory compliance.

There are several ways that protocol and regulatory compliance are monitored:

1) Animal care staff observe animals daily and alert veterinary staff to unexpected events, which triggers veterinary staff to check the approved protocol. In addition, veterinary staff perform routine walk-throughs of all animal holding facilities. Vets and vet techs will often consult approved protocols to determine if conditions they observe are congruent with the approved protocol.

2) The Senior Program Veterinarian Report is a standing agenda item at all IACUC/OB meetings and is used to report any non-compliance or other concerns to the IACUC/OB.

3) RARC's Animal Program Assessment Specialists review approved protocols on a routine basis and when directed by the IACUC/OB. ACAPAC Policy 2016-059 specifies that all active animal research protocols are eligible for formal post-approval monitoring laboratory assessment. These assessments can include protocol and medical records reviews, procedural observations, meetings with lab staff, and animal facility visits. The Assessment Specialists also have a standing item the IACUC/OB agenda to report any non-compliance or other concerns.

4) In accordance with PHS Policy and the NIH Grants Policy Statement (Part II, Terms and Conditions, 4.1.1.2) a congruency check is performed for each NIH and NSF-funded grant that contains research with live vertebrate animals for which UW-Madison is an awardee (prime or sub). Grants can be associated with more than one protocol, and protocols can have many grants listed. Grant-protocol congruence is assessed at the

time of award, and upon award of competitive renewal. The congruency checks are performed by the post-approval monitoring staff at RARC.

II. Animal Environment, Housing and Management

Note: Complete each section including where applicable, procedures performed in farm settings, field studies and aquatic environments, etc.

A. Animal Environment

1. Temperature and Humidity [Guide, pp. 43-45]

- a. Describe briefly the heating and air conditioning system performance. Provide method and frequency for assessing, monitoring, and documenting animal room or housing area temperature and humidity that is appropriate for each species. Note current (measured within the last 12 months), detailed (by room) performance data are to be provided as indicated on the enclosed Heating, Ventilation, and Air Conditioning (HVAC) System Summary appendix. If outdoor housing areas are used, so note.

The [REDACTED] vivarium spaces are served by several individual 100% outside air, constant volume air handling units with heat reclaim, steam heat and chilled water. These air handling units do not have redundant systems. The vivarium spaces are 100% exhausted by groups of individual exhaust fans that are associated with an air handling unit for the area they serve. There is no redundancy for the individual exhaust fans. The barn areas have unit heaters for heat, and there is no chilled water for the barn areas. Animal room temperature, humidity and lighting are monitored by the [REDACTED]. The barn areas are not on [REDACTED].

[REDACTED] is a 100% outside air unit with heat reclaim, steam heat and chilled water that supplies air to rooms [REDACTED] and [REDACTED] as well as other non-vivarium spaces on [REDACTED]. [REDACTED] is a 100% outside air unit with heat reclaim, steam heat and chilled water that supplies air to rooms [REDACTED] as well as other non-vivarium spaces on [REDACTED]. [REDACTED] is a 100% outside air unit with heat reclaim, steam heat and chilled water that supplies air to the vivarium and non-vivarium spaces on the [REDACTED].

Exhaust fan [REDACTED] exhaust rooms associated with [REDACTED] exhausts rooms associated with [REDACTED], and [REDACTED] exhausts rooms associated with [REDACTED]. These are no redundant exhaust fans to [REDACTED]. Exhaust fans [REDACTED] and [REDACTED] are HEPA filtered exhaust that is dedicated to [REDACTED] BSL3 vivarium rooms. Exhaust fans [REDACTED] and [REDACTED] are redundant fans that run lead/lag. [REDACTED]. Animal room temperature, humidity and lighting are monitored by the [REDACTED].

A 100% outside air constant volume multi-zone unit with steam heat and chilled water supplies air to the entire building including vivarium spaces. [REDACTED]

[REDACTED]. Animal room temperature, humidity and lighting are monitored by the Edstrom Watchdog System.

[REDACTED]

[REDACTED]

[REDACTED]

All air is 100% fresh air. Temperature and humidity adjustments are at the room level with additional adjustments at the air handler unit.

[REDACTED]
Is an outdoor facility, thus does not apply.

- b. If temperature set points and/or environmental conditions are outside the thermoneutral zone for the species, describe the process for ensuring behavioral thermoregulation (e.g., nesting material, shelter, etc.) and/or IACUC/OB approved exception.

Animal housing facilities use room temperatures according to the Guide's parameters for individual species. To avoid heat stress in rodent species, these parameters are typically set below the Lower Critical Temperature (LCT) of 26 °C for rodents. For housing below the LCT, rodents are provided with adequate resources to avoid cold stress, which include nesting material, appropriate bedding material, and presence of cage mates.

In areas that are temperature controlled, if conditions become outside the thermoneutral zone a work order is placed with Physical Plant to remedy the problem. Animals will be monitored during the time where the temperature points become a problem. If necessary, animals would be moved to a different part of the building or different building to maintain proper temperature. The veterinary staff is notified of any temperature points that become outside the thermoneutral zone.

In areas that are not temperature controlled (barns, outdoor spaces); if conditions become outside the thermoneutral zone additional monitoring will occur. In addition, supplemental water, food, bedding (adding, remove wet), closing/opening of doors/windows, etc may occur to help animals become more comfortable and return to their thermoneutral zone.

2. Ventilation and Air Quality [Guide, pp. 45-47]

- a. Briefly describe the performance aspects of the ventilation system. Provide method and frequency for assessing, monitoring, and documenting the animal room ventilation rates and pressure gradients (with adjacent areas). Note: current (measured within the last 12 months) detailed (by room) information is to be provided as indicated on the enclosed Heating, Ventilation, and Air Conditioning (HVAC) System Summary appendix.

Animal room ventilation rates are assessed every three years by the UW Sheet Metal Shop. This data is presented in the HVAC Report. All animal room pressures are negative, compared to the hallways. Clean cage storage are positive, compared to the hallways. Animal Care personnel can easily monitor the animal room pressure in the [REDACTED] BSL2 facility and [REDACTED] campus conventional housing by magnehelic gauges mounted outside each animal room. The exhaust fan for the [REDACTED]-BSL2 is [REDACTED]. The animal room pressure for the [REDACTED] is monitored by photohelic gauges mounted in the clean hallway. One gauge measures the pressure between the animal room and dirty hallway and the second one measures pressure between the animal room and anteroom. Each room has an audible and visual alarm to let you know that the room is positive or excessively negative. [REDACTED]

- b. Describe ventilation aspects of any special primary enclosures using forced ventilation.

[REDACTED]

The [REDACTED] has a single Innovive® ventilated caging system in basement.

- c. If any supply air used in a room or primary enclosure is recycled, describe the percent and source of the air and how gaseous and particulate contaminants are removed.

Does not apply

3. Life Support Systems for Aquatic Species [Guide, pp. 84-87]

Provide a general description of institutional requirements for enclosures using water as the primary environmental medium for a species (e.g., aquatics). Describe overall system design, housing densities, and water treatment, maintenance, and quality assurance that are used to ensure species appropriateness. Please note that facility-specific tank design and parameter monitoring frequencies should be summarized in the Aquatic Systems Summary appendix.

Institutional requirements require that facilities that house aquatic species meet *the Guide's* specifications. At SVM in collaboration with aquatic experts, aquatic researchers, ARC, and RARC staff, an Aquatic Animal Management program has been established, offering enhanced guidelines for design, water treatment, and quality assurance. The SVM has developed several SOP's for the care of aquatic species including:
SOP 209d Veterinary Care of Long-Term Aquatic
SOP 209e Veterinary Care of Water Quality

SOP 318 Husbandry of Frogs
SOP 319 Husbandry of Turtles

For *Xenopus* and Turtles housed in SVM facilities

Overall system design: Static tanks

Water treatment: Tap water that has been allowed to sit until chlorine has dissipated. Water temperature, ammonia, nitrite, pH, and chlorine are monitored. Standard levels for each of the previous have been developed for *Xenopus* and Turtles housed in SVM facilities.

Housing density is dependent on numbers of animals, species requirements, and length of study.

4. Noise and Vibration [Guide, pp. 49-50]

Describe facility design features and other methods used to control, reduce, or prevent excessive noise and vibration in the animal facility.

Noise devices (radios, etc) are not allowed in rooms with animals unless in an approved IACUC/OB protocol. When possible, noise making animals such as dogs are kept away from rodents.

B. Animal Housing (All terrestrial, flighted, and aquatic species)

1. Primary Enclosures

Provide a description of primary enclosures used (e.g., cages (conventional, individually-ventilated cage systems (IVCS), etc.), pens, stalls, pastures, aviaries, tanks) in appendix.

- a.** Describe considerations, performance criteria and guiding documents (e.g. Guide, Ag Guide, ETS 123 and/or other applicable standards) used by the IACUC/OB to verify adequacy of space provided for all research animals, including traditional laboratory animal species, agricultural animals, aquatic species, and wildlife when reviewing biomedical, field and agricultural research studies.

UW-Madison has formally adopted the following as standards for the animal care and use program: (1) *the Guide for the Care and Use of Laboratory Animals (Guide)*, NRC, 2011; (2) *the Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide)*, FASS 2010. These standards are applied to facilities planning and management, oversight of animal environments, animal user training programs, IACUC/OB functions, and veterinary care.

See Appendix 12 for a list of primary enclosures.

- b.** Describe space exceptions to the guiding documents (Guide, Ag Guide, ETS 123, and/or applicable standards), indicating the references, considerations and performance criteria used (e.g., by the IACUC/OB) to verify adequacy of space provided for all animal species covered by the program. [Guide, pp. 55-63]

not applicable

2. Environmental Enrichment, Social and Behavioral Management [Guide, pp. 52-55; 63: Ag Guide, Chapter 4]

a. Enrichment

- i. Describe the structural elements of the environment of primary enclosures that may enhance the well-being of animals housed (e.g. resting boards, privacy areas, shelves/perches, swings, hammocks, etc.).

ACAPAC policy 2011-042-v Social Housing and Environmental Enrichment describes the requirement to provide enrichment for all species unless justified and approved in the IACUC protocol.

The “Animal Social Housing and Enrichment Requirements” (ASHER) guidelines provided by RARC outline the various species and the requirements for enrichment.

For the species commonly housed at ARC, the table below describes the enrichment provided.

Parrots	Branches and ropes
Cats	Resting platform and scratching posts, privacy areas
Dogs	Resting platforms, modular playground system
Goats	Modular playground system, climbing barrels
Ferrets	Resting Boxes (rat box with [REDACTED] shredded paper)
Rabbits	Hiding devices (buckets – pen housed rabbits), s.s. wire feeders, jingle ball
Rats	Tubes, lofts
Mice	Igloos, tubes
Turtles	Rocks, privacy areas
Chinchillas	Huts
Swine	Best Balls

- ii. Describe nonstructural provisions to encourage animals to exhibit species-typical activity patterns (e.g., exercise, gnawing, access to pens, opportunity for exploration, control over environment, foraging, denning, burrowing, nesting materials, toys/manipulanda, browsing, grazing, rooting, climbing).

If the particular study allows, animals are group housed and provided enrichment items. Some examples of species specific non-structural provisions to encourage natural activity patterns are:

Calves	Group housed in rooms or pens.
Goats/sheep	Group housed in rooms or pens.
Pigs	Group housed in rooms or pens, best ball, treats
Cattle	Group housed in pastures or pens.
Ponies	Group housed in pens.
Horses	Group housing to allow access to pasture, exercise area and shelter. Housed individually in box stalls; can see and hear one another. Let out for exercise in pairs/groups.
Parrots	Group housed in a room with branches and ropes.
Cats	Group housed on the floor with resting platform, scratching posts, decubitus pads, and toys. Cats housed in quad cage (single or group housed) with hammock.
Ferrets	Housed in pairs and enrichment items if study allows, in rat boxes with [REDACTED] shredded paper.
Dogs	Group housed in rooms. Individual housed dogs in runs are able to hear and see dogs on the other side

	of the room. Dogs in runs meet the current space requirements so dogs do not need to be exercised. Some dog runs possess the ability to have dogs group housed. Dogs have daily contact with animal care personnel and may have access to outside exercise area with pool and modular playground system or leash walked. Time is documented when lab staff/care staff have positive interaction with dogs in runs.
Rodents	Group housed in cages. Rats are provided tunnel or loft. Mice are provided [REDACTED] or [REDACTED] shredded paper, igloo for enrichment.
Rabbits	Group housed on floor if study allows. Best balls are provided in their cages and when housed on the floor, hanging wire feeders.
Chinchilla	Igloo, hide box, play pen
Snake	Igloo
Turtle	Rocks to climb and hide, basking area
Spiders	Igloo

b. Social Environment [Guide, p. 64]

- i. Describe institutional policy or strategy for social housing of social species.

Social housing requirements are stated in the RARC Animal Social Housing and Enrichment Requirements document. Unless otherwise necessitated by clinical or approved research requirements, social species are housed in a way that promotes safe and appropriate interaction with conspecifics. The animal protocol application contains questions soliciting explanation and scientific justification for requests to singly-house social species. The SVM IACUC/OB reviews requests to singly-house animals in the context of protocol review and will not approve protocols until a satisfactory response is provided by the PI. The IACUC/OB requires PIs to submit protocols to veterinary staff prior to formal IACUC/OB review, and during these consultations the veterinary staff discuss housing options that are compatible with the study.

- ii. If social animals are not socially housed, provide justification, as approved by the IACUC/OB.

If a researcher wants to house social animals singly, it must be scientifically justified and specifically approved in the animal use protocol.

- iii. Describe steps taken with isolated or individually housed animals to compensate for the absence of other animals (e.g., interaction with humans, environmental enrichment, etc.).

Singly housed rodents are provided nesting material and/or hiding apparatuses as enrichment.

c. Procedural Habituation and Training of Animals [Guide, pp. 64-65]

Describe how animals are habituated to routine husbandry or experimental procedures, when possible, to assist animals to better cope with their environment by reducing stress associated with novel procedures or people.

While no formal program exists, habituation of animals to routine husbandry or experimental procedures occurs on multiple levels. First and foremost, animals are generally given a period of acclimatization before experimental procedures begin, though this can vary based on the needs of the research. Some investigators also use positive reinforcement (such as treats, where scientifically possible, or even supervised playtime) to socialize their animals and reduce stress. Additionally, enrichment is provided, whether in the form of a conspecific for play or in the form of manipulanda.

d. Enrichment, Social and Behavioral Management Program Review [Guide, pp. 58, 69]

Describe how enrichment programs and exceptions to social housing of social species are regularly reviewed to ensure that they are beneficial to animal well-being and consistent with the goals of animal use.

Exceptions to social housing are reviewed by the IACUC/OB when the protocol is submitted, renewed, and/or amended.

Enrichment programs are evaluated in the same fashion as facility SOPs. The Senior Program Veterinarian and Associate Director must approve the enrichment SOPs and review periodically.

e. Sheltered or Outdoor Housing [Guide, pp. 54-55]

- i. Describe the environment (e.g., barn, corral, pasture, field enclosure, flight cage, pond, or island).

██████████ – Currently housing horses. The barn is wood frame with metal exterior and concrete floor. The interior is split up into pens and animals have access to outside exercise areas and pasture. Animals in this barn are group housed and there is enough room for submissive animals to move away from the group. Water is provided by livestock automatic water device. Hay is placed in hay feeders.

- ii. Describe methods used to protect animals from weather extremes, predators, and escape (e.g., windbreaks, shelters, shaded areas, areas with forced ventilation, heat radiating structures, access to conditioned spaces, etc.).

██████████ – horses have free access to barn, pasture and exercise areas to protect them from weather extremes.

- iii. Describe protective or escape mechanisms for submissive animals, how access to food and water is assured, provisions for enrichment, and efforts to group compatible animals.

██████████

– the barn along with pasture and exercise areas are large enough for submissive animals to escape. Multiple food and water devices assure access for all horses.

f. Naturalistic Environments [Guide, p. 55]

- i. Describe types of naturalistic environments (forests, islands) and how animals are monitored for animal well-being.

n/a

- ii. Describe how food, water, and shelter are provided.

n/a

- iii. Describe how animals are captured.

N/a

C. Animal Facility Management

1. Husbandry

a. Food [Guide, pp. 65-67]

- i. List type and source of food stuffs.

Diet	Supplier	Species
PMI Start and Grow 6153		Chickens
Mouse/Rat 6% 7002		Rat/Mice
Rodent Diet w 60 kcal% fat		Mice
18% Irradiated Rodent Diet Meal		Rat
Teklad Global 2018		Mouse/rat
Teklad Td06414 High Fat		Mouse
Teklad Td 120455 Low Fat		Mouse
PMI Irrad 5 LOD		Mouse
Transgenic Dough Diet		Mouse/rat
Sunflower seeds irradiated		Rodent, gr
Mouse/Rat 4% 7001	squirrel	Grd Sql
Timothy Hay		Rabbit/Chinchilla
mini pig		Swine/Mini Pig
PMI Complete Rabbit		Rabbit
Select Series Pro Rabbit		Chinchilla
Alfalfa Pellet		Goat
Alfalfa Cube		Horse
PMI Goat Chow		Goat
Irradiated Envigo 2019		Mice
Global Ferret		Ferrets

Tetra Reptomin		Turtle
Irradiated Envigo LM-485		Rodent
Hay		Various
Vegetables/Fruit	Supermarket	Various
Pig feed		Pigs
Hay		Various
Horse grain		Horse
Equine Senior		Horse
Horse Strategy GX		Horse
Crickets		Spiders, Iguana,
	Bearded dragon	
Fuzzy/Pinkey Mice		Snake
Calf Starter		Dairy Cattle
Milk Replacer		Dairy Cattle
Purina Feline Chicken/rice can		Cat
Purina Adult Chicken Rice dry		Cat
Purina Feline Adult Hairball dry		Cat
Purina Feline UR st/ox dry		Cat
Purina Feline UR st/ox can		Cat
Purina Kitten Chicken/Rice dry		Cat
Purina Chicken/Liver can		Cat
Hill's Science Diet, Indoor Adult dry		Cat
Purine Canine Adult Lamb/Rice dry		Dog
Purina Puppy Chicken/rice dry		Dog
Purina Canine Adult Chicken/Rice can		Dog
Purina Canine dental Health Dry		Dog
Special Diet –		
Dr. [REDACTED] protocol V5423 –Administering phenobarbital supplemental diet for Long Evans Shaker (les) rats increases survival (from ~10% to~50%) and general health of affected les rats. Diet is formed into patties and food color added to indicate different concentrations and Phenobarbital. The diet is made from the following:		
85% [REDACTED] 4% fat powdered rodent feed, 5% dried, non-fat milk (to make food appetizing), 5% sugar (to make food appetizing), 5% gelatin (to make food cohesive), Phenobarbital (sigma cat #P1636 or P5178) at concentrations from 2.4 mg/g to 3 mg/g (to prevent seizures)		
Treats animals may receive:		
Ground Squirrel – Sunflower seeds, fresh fruit		
Rabbit – apples, fresh greens		
Dog – tartar shield treats,		
Horses– Carrots, apples		
Rats/mice – sunflower seeds		
Cat - Greenies Feline Dental		

- ii. Describe storage facilities of vendors, noting temperature and vermin control measures. If more than one source, describe each.

██████████ maintains a Purina approved sanitation program for its facilities by: Providing adequate storage facilities which are clean, dry and sanitary at all times.

Meeting "Guidelines for Establishing and Maintaining a Sanitation and Vermin Control Program for Certified Lab Dealers".

Inventorying adequate stocks and lines of Purina lab feed to insure proper stock control.

██████████ The ██████████ operates a central feed mill to provide special feed rations for the many research animals ██████████. Attached to the ██████████ end of the feed mill is a metal framed warehouse with a concrete floor for storage of bagged ingredients. Feed is stored in the warehouse, in thirty nine overhead bins for bulk ingredient bins that vary in size for 6-32 ton and in eleven 8-ton load out bins. Temperature is ambient with no environmental controls in the warehouse and in the bulk load out area. The central mixing and bulk ingredient bin areas are heated. The facility also has six storage bins and two Harvestore silos on site for holding corn that can be transferred to the feed mill. ██████████ services the area once monthly and rodent bait stations are set up inside the building. Insect load is monitored via traps and pheromone emitters are strategically located on the grounds for mating disruption.

██████████ This facility has a metal shed with a concrete floor. There is no temperature control, and vermin control is provided by an outside company.

██████████ diets are manufactured following the strictest standards to ensure consistency in animal nutrition. They have established their own company-owned distribution facility to ensure that there is no compromise in the quality or condition of diets. Their operating procedures and quality control program consists of the following: sanitation program; entire lab-diet storage facility is fully climate-controlled; vermin control program and inspection of incoming materials.

- iii. Describe bulk food storage facilities, if applicable, noting temperature and vermin control measures. Note food storage areas within the specific animal facilities are described below in Section IV.B.4.a. Physical Plant.

██████████ This area does not have temperature control. Vermin are monitored by bait stations.

- Two grain bins (not in use) are available for large animal feed.
- Small hay bales stored in ██████████ on pallets
- Large hay bales stored on the concrete floor

██████████ This area does not have temperature control. Vermin are monitored by bait stations. Large hay bales stored on the concrete floor.

iv. Describe food storage in animal rooms.

Feed is delivered to the room in a closed bag. The bag is opened and emptied into a large, wheeled Rubbermaid container with a snap tight lid. The Rubbermaid unit has a "Feed Card" that indicates the feed type, date filled, mill date of feed and date container was placed in service.

v. Describe food preparation areas.

Room [REDACTED] at [REDACTED] is a procedure room and is used to prepare the special diet used by the *Shp*-mutant dogs and exotic animal species.

Room [REDACTED] at [REDACTED] is a procedure room and is used to prepare special diet for exotic animal species.

vi. Describe how food is provided to various species (*ad libitum*, limited amounts, types of feeders).

Species	Feed	Type of feeder	Schedule
Cattle	Hay	Floor/rubber tub	Limited amount
Horse	Pasture grass	Pasture	Ad libitum
Horse	Hay	Wall hung feeder/tubs	Limited amount
Horse	Grain	Wall hung or rubber feeder	Limited amount
Sheep	Hay	Rubber tub	Limited amount
Pigs	Pig gestation	Rubber tub/trough	Limited amount
Dogs	Dry dog food	SS hanging feeder or bowls	Limited amount
Cats	Dry cat food	SS bowls	Limited amount
Ferret	Dry ferret food	J-Feeder	Limited amount
Rodents	Rodent chow pelleted	SS wire lids with built in feeder	Limited amount
Chickens	Chicken feed	Rubber feeder, plastic feeder	
	Limited amount		
Rabbit	Pelleted rabbit chow	J-Feeder, crocks	Limited amount
Rabbit	Timothy hay	Crock, hanging feeder	Limited amount
Chinchilla	Timothy hay	Crock	Limited amount
Chinchilla	Rabbit diet	J-Feeder, crocks	Limited amount
Grd Sql	Pelleted rodent chow	SS wire lids with built-in feeder, Crocks	Limited amount
Spiders	Crickets	Bottom of cage	Limited amount
Turtle	Tetra Reptomin	Added to pond	Limited amount
Snake	Surplus mice	Bottom of cage	Limited amount
Brd Dragon	Crickets, veggies	Bottom of cage, crocks	Limited amount

vii. Describe special food quality control procedures including procedures for rotating stock, monitoring milling dates, nutritional quality, bio-load, chemical contaminants, etc.

[REDACTED], Purina, and other diets are dated when they arrive and the milling dates are checked. All diets must be used within 6 months of milling date or 6 months from arrival date if no mill date is present. Bags of feed that are past these dates are disposed of. All feed is rotated so the old feed is used first.

Domestic farm animal bagged feed can be supplied by [REDACTED] which is milled the day before we get it and bags are dated on arrival and for content. All diets must be used within 6 months of arrival.

Ground Squirrel	rubber tubs, stock tanks Polycarbonate water bottle with stainless steel sipper tube and rubber stopper, ceramic crocks
Ferrets	Polycarbonate water bottle with stainless steel sipper tube and rubber stopper
Snake	Crocks
Brd Dragons	Crocks
Spider	Crocks
Chinchilla	Polycarbonate water bottle with stainless steel sipper tube and rubber stopper
Chicks	Chick watering device

- ii. Describe methods of quality control, including monitoring for contaminants.

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The ARC animal housing facilities are checked for sanitation and water quality every 3 months. Luciferase Enzyme Technology is the standard testing method. Through the use of the "Pocket Swab" and the [REDACTED] Lum-T System, unseen food and microbial residue (ATP) remaining on animal caging, equipment, or in the water is traced. Aqua Check strip tests are also used to test for total hardness, total alkalinity, pH, total chlorine and free chlorine.

- iii. If automatic water delivery systems are used, describe how they are maintained and sanitized.

Does Not Apply

c. Bedding and Nesting Materials [Guide, pp. 68-69]

- i. Describe type(s) and how used for various species.

Type	Species	How used:
[REDACTED]	Rodent	Contact
Certified diamond Dry	Rodent	Contact
Enrich-Nest	mice	Contact
Aspen	Ground Squirrel moms	Contact
[REDACTED] Krinkle Paper	Rodent, Ground Squirrel, Ferret	Contact
Decubitus pads	Cats	Contact
Paper board	Rabbits, Dogs, Ferrets, Chinchilla, Chicken	Non-Contact
Blankets	Dogs (Whelping, Myelin Deficient)	Contact
Pine Shavings	Horses, Cattle, Sheep, Goat, Swine, Chickens	Contact
Straw	Cattle, Sheep, Horses	Contact
Sawdust	Horses	Contact

- ii. Describe bulk bedding storage facilities, if applicable, including vermin control measures. Note bedding storage areas within the specific animal facilities are described below in Section IV.B.4.a.

This area does not have temperature control, but is in a vermin control program using bait stations.

██████████ - with concrete floor is used to store bales of pine shavings on pallets and wrapped in plastic.

██████████ - This area does not have temperature control, but is in a vermin control program using bait stations.

██████████ – has a concrete floor and is used to store straw bales on pallets and sawdust.

iii. Describe quality control procedures, including monitoring for contaminants.

██████████ provides the pine bedding used for our large animals. The product is kiln dried and triple screened to remove dust. Bags of pine shavings are observed mold, moisture, dusty, or any foreign matter. The supervisor will contact the vendor if there are any problems.

Straw is inspected for mold, dust and any foreign matter. The vendor is notified if there are any problems.

d. Miscellaneous Animal Care and Use Equipment

i. Describe motorized vehicles and other equipment (e.g., trailers) used for transporting animals, noting the type and how the cargo compartment is environmentally controlled, if applicable.

A ██████████ with ██████████ Heat & A/C unit, and hydraulic rail gate is the main vehicle to transport animals. This vehicle along with two other ██████████ trucks are used to transport dogs, cats, rodents, and other small animals as well as cages, feed and bedding. Two stock trailers used to move large animals.

ii. Describe other animal care related equipment used in the animal care program (e.g., specialized equipment for exercise or enrichment, high pressure sprayers, vacuum cleaners, tractors, trailers, spreaders, etc.).

- Five portable high pressure cleaners used in the barn areas, dog runs, cleaning vehicles and large animal hallways.
- One fork lift is used to move loads of feed and bedding on pallets.
- Two skid steers and one-front end loader to clean large animal areas.
- Floor scrubbers are used to clean the hallways.

e. Sanitation [Guide, pp. 69-73]

i. Bedding/Substrate Change

- 1) Describe frequency of contact and non-contact bedding change for each species and enclosure type (solid-bottom or suspended) or pen.

[REDACTED]		
Species	Type of enclosure	Frequency
Mouse	Polycarbonate – Solid	1 to 2 x /week
Mouse	IVC System – Solid	1 x /2-weeks
Mouse	[REDACTED] caging	1x every 2 weeks
Rat	Polycarbonate – Solid	1 to 3 x /week
Grd Sql	Polycarbonate – Solid	1 x /week
Guinea Pig	Polycarbonate – Solid	3 x /week
Rabbit	Suspended cage	Paper board 3 x /week
Rabbit	Floor housed	1 to 2 x /week
Cat	Litter pan – Solid	Daily
Dog	Run or room	Daily
Hamster	Polycarbonate – Solid	1 to 2 x /week
Horse	Box stall	3 x /week
Cattle	Pen	3 x /week
Cattle	Room	Daily - 3 x /week
Calf	Room/pen	3 x /week
Pigs	Room/pen	1-2 x /week
Pigs	Room – no bedding	Daily
Sheep	Room/pen	2 x /week
Ferrets	Suspended cage	Paper board 3 x /week
Chick	Suspended cage	Paper board 3 x /week
Turtle	Pond	1 to 2 x /week
Snake	Polycarbonate – Solid	Paper board 1-2 x/week
Brd Dragon	Tank – Solid	Paper board 1-2 x/week
Horse	Barn/loose housing	Picked daily/changed every 2 weeks
Spider	Polycarbonate-solid	Paper board 1-2x/week
Chinchilla	Suspended cage	Paper board 3x/week

- 2) Describe any IACUC/OB-approved exceptions to frequencies recommended in the Guide or applicable regulations and the criteria used to justify those exceptions.

SOP 301 Husbandry of Mice and SOP 302 Husbandry of Rats, rodents with newborn litters not to be disturbed for 5-7 days after birth of litter.
Ground squirrels are exempt from changing cages during the hibernation period at [REDACTED] (VCRGE facility).

- 3) Note the location where soiled bedding is removed from the cages/enclosures and where clean bedding is placed into the cages/enclosures.

Soiled bedding is removed from cages in room [REDACTED], dirty side cage washing area. Clean bedding is placed into cages in room [REDACTED].

Soiled bedding is removed from cages in room [REDACTED] (dirty side of cage washing area). Clean bedding is placed into cages in room [REDACTED] (clean side of cage washing area).

Soiled bedding is removed from cages in room [REDACTED]. Cages are transported to [REDACTED] or [REDACTED] to be autoclaved and washed. Clean bedding is placed into cages in room [REDACTED].

Soiled bedding is removed from cages in room [REDACTED] (dirty side of cage washing area). Clean bedding is placed into cages in room [REDACTED] (clean side of cage washing area).

ii. Cleaning and Disinfection of the Micro- and Macro-Environments

Describe the washing/sanitizing frequency, and methods used in the Appendix, "Cleaning and Disinfection of the Micro- and Macro-Environment."

- 1) Describe any IACUC/OB-approved exceptions to the Guide (or applicable regulations) recommended sanitization intervals.

Rat microisolator lids are approved to be changed up to every 2 months and mouse microisolator lids are approved to be changed up to every 3 months. This is based off of studies conducted on campus to determine biologic load on these items with extended changing. V005622, V005460, V005622 all use ground squirrels are exempt from changing cages during the hibernation period of the animal at [REDACTED] (VCRGE facility)

- 2) Assessing the Effectiveness of Sanitation and Mechanical Washer Function

- a) Describe how the effectiveness of sanitization procedures is monitored (e.g., water temperature monitoring, microbiological monitoring, visual inspections, etc.).

Monitoring of Cage Washers

[REDACTED] & [REDACTED] – Temperature Sensitive Tape 180° temperature recording labels, from Sanitation Tools, are used to verify the 180°F rinse water temperature. One wash cycle per day is checked. The tape is dated and placed in a permanent record. Quarterly, [REDACTED] will check the cage washers for chemical concentration, check water hardness, fill water and rinse water pH, verify 180° rinse temperature, general condition of cage washer, and operation of the automatic chemical dispensing equipment.

Monitoring of Autoclaves

On a monthly basis, autoclaves at the [REDACTED], [REDACTED] and the [REDACTED] will be monitored with 3M Attest 1262P Biological Indicators, for Steam Sterilization, which contain a suspension of *Geobacillus stearothermophilus*. The ampule is incubated for 48 hours and the results along with the printer tape for that cycle are kept in a log book. In addition, 3M Comply 1243E Steam Chemical Integrator strips are used. The chemical integrator strips give a reject/accept result. The processed strips are kept in a log book.

[REDACTED]

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Using [REDACTED] Pocket Swab Plus is a self-contained, single service ATP rapid hygiene test. The Pocket Swab Plus provides a true measure of “hygiene” and “cleanliness” by detecting microorganisms and food/organic product residues present on surfaces, which may provide a nutritious medium for microbial growth and act as barriers to the direct action of both sanitizers and disinfectants. Examples of items tested are: water bottles, stoppers, dog feeders, crocks, rodent shoebox cages, and wire bar lids.

b) Describe preventive maintenance programs for mechanical washers.

[REDACTED] and [REDACTED]
The cage washes at [REDACTED] and [REDACTED] are greased weekly by ARC staff. Monthly a steamfitter from UW Physical Plant will perform monthly preventive maintenance in addition to fixing/troubleshooting problems that arise.

The cage washers at [REDACTED] and [REDACTED] are on a monthly preventative maintenance program with the UW Physical Plant steamfitters. Washer solutions, a private company is also used for troubleshooting and repairs.

[REDACTED]

f. **Waste Disposal** [Guide, p. 73-74]

Describe the handling, storage, method and frequency of disposal, and final disposal location for each of the following:

i. Soiled bedding and refuse

[REDACTED]
Manure from large animals is held in manure bunkers and picked up by a private individual as needed. A bedding dump station is used to dump rodent bedding which is bagged and placed in a dumpster outside cage wash room. Cat litter and rabbit pan liners are bagged and placed in the dumpster. The dumpster is emptied weekly by UW Environmental Services with the waste go to landfill.

Empty feed bags, bedding bags, and cardboard are placed in recycling dumpsters. Recycling dumpsters are emptied by UW Environmental Services weekly.

[REDACTED]

A bedding dump station is used to dump rodent bedding which is bagged and placed in a dumpster located on the south side of the building. UW Environmental Services empties the dumpster weekly. The waste goes to landfill.

Empty feed and bedding bags and cardboard are placed in a recycling dumpster to be picked up by UW Environmental Services weekly.

[REDACTED]

A bedding dump station is used to dump rodent bedding which is bagged and placed in a dumpster by the loading dock. UW Environmental Services empties the dumpster weekly with the waste going to landfill. Empty Innovive cages are placed in clear plastic bags and placed in a recycling dumpster.

Empty feed bags, bedding bags, cardboard, and newspaper go into the recycling dumpster which is picked up weekly by UW Environmental Services.

[REDACTED]

[REDACTED]

ii. Animal carcasses

[REDACTED]

Animal carcasses, either whole or sectioned and not weighing more than 40 pounds are bagged, boxed, frozen and removed by EH&S for incineration. Large animals and large animal parts are taken to the walk-in refrigerator/freezer located in the hay barn for pick up by an assigned renderer for a fee. All sheep and goats must be sectioned, boxed and frozen for pick-up by EH&S for incineration. For a fee, the [REDACTED] provides tissue disposal by alkaline tissue hydrolysis.

[REDACTED]

Small animal carcasses are bagged, boxed, labeled, and placed in the walk-in freezer located in [REDACTED] (room [REDACTED]), for pickup by EH&S for incineration. Large animals are brought to the walk-in cooler located in necropsy for pickup by an assigned renderer. All sheep and goats must be sectioned (not weighing more than 40 pounds), bagged, boxed, labeled and frozen for pick up by EH&S for incineration. For a fee, the [REDACTED] provides tissue disposal by alkaline tissue hydrolysis.

[REDACTED]

Small animal carcasses are placed in a freezer in [REDACTED] hallway. These animals are bagged and boxed and placed in the walk-in freezer at [REDACTED] for pick up by EH&S for incineration.

[REDACTED]

iii. Hazardous wastes - infectious, toxic, radioactive, sharps and glass



Toxic wastes and bedding are disposed via consultation with Safety. Toxic carcasses and tissues are bagged, frozen, and then incinerated.

Radioactive wastes and bedding are disposed via consultation with Safety. Radioactive carcasses and tissues are bagged, frozen, and then incinerated.

Sharps are disposed into designated sharps containers. When these containers are full, they are closed and taped shut. ABSL2 and [REDACTED] sharps containers are autoclaved before being placed in a [REDACTED] bin. Final disposal is through [REDACTED] ([REDACTED]). [REDACTED] is a fully licensed and insured medical waste removal and disposal company servicing Wisconsin area hospitals, clinics, and skilled nursing homes.

Glass is disposed in a glass disposal box, when full, it is taped shut and placed in a trash dumpster.

g. Vermin Control [Guide, p. 74]

- i.** Describe the program for controlling vermin (insects, rodents, predators, etc.) noting the control agent(s) used, where applied, and who oversees the program and applies the agent(s). Include a description of natural predators (e.g., barn cats) or guard animals (e.g., dogs, donkeys) used for vermin and predator control, if applicable.

SVM ARC uses the 405 series Standard Operating Procedures (SOPs) to describe the internally maintained vermin control program.

A contract vermin company is used for [REDACTED]. [REDACTED] (external company) is used to control flies and rodents outside and inside the barn areas of [REDACTED].

To highlight the combined programs, it includes the following:

- May through October (Fly Control) exterior of the [REDACTED] and [REDACTED], interior and exterior of the [REDACTED]
- Bird netting is in half of the [REDACTED]
- Electronic insect light traps (ILTs) in hallway of barn areas and interiors of [REDACTED] and [REDACTED]. ILTs are also in the break room and office area.
- Bait stations in the interior and exterior of barn areas.
- Live traps are used in small animal areas at [REDACTED], and [REDACTED].

- ii.** Note how animal users are informed of pesticide use and how animal users may opt out of such use in specific areas.

Insecticides will not be used in an animal room or area without prior notification of the investigators.

h. Emergency, Weekend and Holiday Care [Guide, pp. 74-75]

- i. Describe procedures for providing weekend and holiday care. Indicate who (e.g., regular animal care staff, students, part-time staff, etc.) provides and oversees care and what procedures are performed. Indicate qualifications of weekend/holiday staff if not regular staff.

██████████, and ██████████
Holiday care is provided by full time Animal Research Technicians (ARTs). Weekend care is provided by student help (college student) or full time ARTs. Supervision of weekend staff is provided by ██████████. The Supervisor and veterinarian on-call are informed of any health care concerns or physical plant problems so appropriate calls can be made.

██████████ and Specified rooms at all facilities

Members of the laboratory staff are charged with daily care of animals

Example of work performed by weekend staff:

- All animals checked for overall health and having adequate food and water
- Medication or treatments provided if prescribed by veterinarian
- All dogs areas are cleaned, other species if necessary/assigned

- ii. Describe procedures for contacting responsible animal care and/or veterinary personnel in case of an emergency.

RARC has a veterinarian on call, 24 hours per day, 365 days per year. The dedicated paging number (managed by the UW-Hospital and Clinics Paging Center) is posted throughout all facilities and near all appropriate telephones. Telephone numbers for investigators are posted in corridors and on individual animal room doors or cages.

The specific directives to contact the veterinary staff are in the SVM SOP 201. The ██████████, supervisor, and RARC main office all have cell phone numbers posted in case of facilities/staffing emergencies.

In the event of a large animal emergency on a holiday or weekend, several contacts may be made. The ██████████, the RARC Large Animal Vet on call, or a local veterinary service.

2. Population Management [Guide, pp. 75-77]

a. Identification

Describe animal identification methods for each species (e.g., microchips, cage/tank cards, collars, leg bands, tattoo, ear tags, brands, etc.).

Rodents	Cage cards, ear notch, ear tags
Rabbits	Ear tags or tattoo, microchip and cage card
Dog	Collars containing an ID number, microchip or ear tattoo
Cats	Ear tattoo or microchip
Ferrets	Ear tags
Avian	Wing tags or leg bands with ID number (not required)
Goats	Neck chains with ID number, ear tag, neck bands
Sheep	Ear tags
Swine	Ear tags
Cattle	Ear tags
Horses	Halters with ID numbers attached

b. Record Keeping

Describe procedure(s) for maintaining individual records on animals. Identify the species for which individual records are maintained, individuals (titles, not necessarily names) responsible for maintaining the records, and where they are maintained and how veterinary and IACUC/OB access is assured.

USDA covered species will either have individual records or cage records (covered rodents). Non-covered species maintain batch records that may be kept outside the room or in the laboratory. A binder is set up for each room that may contain the following information along with any individual/batch records:

- “Census” sheet to record addition or deletions to census
- “Clinician’s Order” sheet to record any procedures or observations
- “Weight” sheet to keep track of weight gain and losses
- “Long-Term Care” sheet that documents vaccinations, worming, etc

██████████ is responsible for maintaining the animal records for those involved in research. RARC veterinary staff are responsible for maintaining the medical records. The supervisor, Senior Program Veterinarian and/or designated clinical veterinarian, and RARC veterinary technicians will inspect records routinely. Animal records are maintained by veterinary staff and kept close to the animals. Animal records are kept until 3 years after the end of the study or death of the animals per the University Records Retention schedule. Records of teaching animals are the responsibility of ██████████, Instructional Specialist Department of Medical Sciences.

c. Breeding, Genetics and Nomenclature

- i. Describe the program for advising investigators on the selection of animals based on genetic characteristics.

Selection of animals for research projects is the responsibility of the PI. RARC operates as a resource providing information regarding all aspects of selection and use of appropriate animal models. Consultation with the senior program veterinarian is on a one-to-one basis either due to a specific request or as a result of questions raised during protocol review.

- ii. Describe the program for advising investigators on using standardized nomenclature to ensure proper reporting of the identification of the research animals with regard to both the strain and substrain or the genetic background of all animals used in a study.

While not required, RARC recommends PIs follow a standard nomenclature such as that listed on the Mouse Genome Informatics Database.

- iii. For newly generated genotypes, describe how new phenotypes that negatively impact well-being will be monitored, managed and reported to the IACUC/OB in a manner to ensure the animals' health and well-being.

The PI is asked to provide known phenotypic information in the protocol. Animal care staff view all animals, including those with modified genotypes, daily. Colonies with any morbidity or mortality are reported promptly to veterinary staff and investigational staff for further evaluation, and institution of ameliorating procedures. In addition, RARC offers phenotype evaluation by the pathology laboratory to assist researchers in describing unexpected phenotypes. New phenotypes that negatively impact well being are reported to the IACUC/OB by the veterinarians or the investigators.

III. Veterinary Care [Guide, pp. 105-132]

Note: Complete each section, including, where applicable, procedures performed in farm settings, field studies, aquatic environments, etc.

A. Animal Procurement and Transportation [Guide, pp. 106-109; Ag Guide, pp. 8; 45; 51-57]

1. Animal Procurement

Describe the method for evaluating the quality of animals supplied to the institution (e.g., from commercial vendors, other institutions, etc.).

Rodents, guinea pigs, hamsters, rabbits are procured from reliable commercial vendors like [REDACTED] and [REDACTED]. Vendor web sites or upon request provide colony health reports. In addition, a majority of vendors send their latest health report with the animal shipment.

Rodents that come from outside institutions, other UW campus facilities, or other non-approved vendor sources require the review of a health report by the veterinary staff before being accepted into SVM facilities. Incoming rodents from outside institutions will be placed in quarantine until health status is confirmed.

Dogs and cats are purchased or donated from class A dealers like [REDACTED], and [REDACTED]. Health records from the vendor accompany each animal.

Ferrets are purchased from commercial vendors. Health records from the vendor accompany each animal.

Snakes, turtles, frog, bearded dragon, and spiders are purchased from commercial vendors or owned by private owners (teaching). The research animals are inspected by the small animal program veterinarian.

Sheep are purchased from other campus facilities or private vendors where the herd health status is known. Animals are screened for Q-fever prior to delivery.

Swine are purchased from other campus facilities or commercial vendors where the herd health status is known.

Cattle are borrowed from other campus facilities (or private owners) where the herd health status is known.

Goats are purchased from private owners. The goats are inspected by the large animal program veterinarian.

Horses are donated or transferred from other protocols. RARC vet staff and or School of Veterinary Medicine Dean's Office reserve the right to refuse any possible donation horse if it does not meet the needs of SVM teaching and/or research.

2. Transportation of Animals

Describe how animals are transported between outside sources and the institution and within the institution, including loading, unloading, level of biosecurity, immune status and specific pathogen status (consider all species, including aquatic and semi-aquatic species).

SVM ARC uses the 327 series and 402 SOPs to help guide in transportation processes.

Most animals are delivered by the commercial vendors in their own climate controlled vehicle, by a delivery service in their own climate controlled vehicle, or in ARC's or other UW IACUC/OB approved climate controlled vehicle. The exception would be those animals that have been acclimated to travel in stock trailers. Purchases from private owners may be delivered to the facility in the owner's vehicle and trailers.

Animal deliveries are made to the [REDACTED] and/or [REDACTED]. [REDACTED] receives all animals destined for [REDACTED]. In each instance, the animals are received and orders are checked. Animals to be housed at the [REDACTED] are transported in the department's climate controlled vehicles. Animals may be transported in an IACUC/OB inspected private vehicles. Transportation of small animals and livestock between ARC facilities, other campus facilities, and commercial facilities is by the ARC climate controlled vehicles and livestock trailer.

Staff members performing transportation duties adhere to the prescribed PPE requirements for facilities and handling of animals. Except for animals that are transported in the livestock trailer, animals are transported in enclosed containers that are secured. This is to protect the animals and the staff transporting animals. Higher biosecurity status animals are also placed in secondary containers.

B. Preventive Medicine

1. Animal Biosecurity [Guide, pp. 109-110]

- a. Describe methods used to monitor for known or unknown infectious agents.

For rodents, in addition to daily observation there is a sentinel program of testing for breeding colonies, long term holding rooms, and animals in quarantine. The procedure for the sentinel program is outlined in IACUC/OB approved protocol V005639.

- b. Describe methods used to control, contain, or eliminate infectious agents.

If an infectious agent is present, or suspected to be present, the room(s) in question is put under quarantine, including change in entry order procedures and permitting no transfers in or out, to contain the potential spread of the agent. Methods to control or eliminate the problem depend on the agent, and could include specific treatment, burn-out (including cessation of breeding), re-derivation, or culling of the affected population. Final determination of the methods used is made by the veterinarian in consultation with the affected researcher(s). In addition, personnel access to animal facilities is controlled.

2. Quarantine and Stabilization [Guide, pp. 110-111]

- a. Describe the initial animal evaluation procedures for each species.

Animals are delivered to [REDACTED] and/or [REDACTED]. The condition of the shipping containers and verification of the order will be checked. Cages are set up ahead of time so the time the animals spend in the shipping containers is minimal.

Animal care personnel will check the general health, sex, and quantity of the animals as they are being transferred to cages. Any problems are reported to the supervisor and the supervisor reports health problems to the veterinary staff. The vendor is also informed if there is a problem with the order or animal health concern.

With USDA covered species the supervisor or veterinary staff will designate the setup of individual animal records and check the general health of the animal when it arrives. Any health care concerns are reported to the veterinary staff. Most USDA covered species will receive a physical exam under the direction of a research animal veterinarian (typically within 48 hours). Dogs, cats, horses, and sheep will be incorporated into a long-term veterinary care program. Other programs are being developed as the need arises.

- b. Describe quarantine procedures for each species that are purpose bred.

All species from commercial vendors or with verified health status go directly into their assigned rooms. Generally, animals are allowed to acclimate for a few days prior to use.

Rodents from other UW-Madison units (non-SVM) or other institutions must have health reports reviewed by the veterinary staff to determine if they can be shipped to SVM facilities. An online system managed by a Transfers Coordinator is used to facilitate the review of documents. Rodents approved to enter SVM facilities are placed in quarantine at the [REDACTED]. The veterinary staff will take samples for PCR testing. The results will be reviewed by the small animal program veterinarian and approval to be transferred to the principal investigator room.

Non-rodent species of unknown health status are segregated by room, pen, or area from other similar animals until end of project or until health status can be determined. Species-specific preventative medicine treatments (dependent on study needs) are determined at this time and implemented.

- c. Describe the quarantine facilities. In your description explain any special measures used for quarantine/conditioning of each random source (not bred and raised specifically for research) species used.

The quarantine facilities for all animals are located at [REDACTED]. Depending on the circumstance, they may be housed in the isolation or semi-isolation area. The semi-isolation area is located out of the general traffic area off of the conventional wing. The isolation area has showers available and each room has an anteroom for donning PPE.

Horses are quarantined to a separate pasture until health testing and vaccination verification can be finalized.

- d. Describe the required/recommended stabilization period for each species.

Per ACAPAC policy 2015-55-v, animals are allowed to acclimate a minimum of 48 hours after arrival. Animal use at time of arrival must either be protocol approved or discussed with and approved by attending veterinarian.

- e. Describe the program for the separation of animals by species, source, and health status. If the animals in different status are not maintained separately, describe circumstances in which mixing occurs and explain the rationale for mixing.

Separation by species and health status is ultimately what dictates where animals are housed. Ideally, animals are separated in addition to the above mentioned species and health status by vendor and principal investigator. More common is that the separation is by principal investigator. Different commercial vendors and similar health statuses can be housed in the same room. In practice animals from different commercial vendors but of similar health status can be housed in the same room.

3. Separation by Health Status and Species [Guide, pp. 111-112]

- a. Describe isolation procedures and related facilities for animals.

Individual rooms/areas list what PPE is required for each particular situation. [REDACTED] has the isolation and/or semi-isolation areas. The semi-isolation area is located out of the general traffic area off of the conventional wing. The isolation area has showers available and each room has an anteroom for donning PPE. At [REDACTED], the [REDACTED] and [REDACTED] hallways are isolation areas as they have the BSL2 rooms for the building. [REDACTED]

- b. Describe situations where multiple species may be housed in the same room, area, or enclosure.

At [REDACTED] contains three separate areas with a total of 14 pens for holding pigs, cows, horses, sheep, goats, and calves. The separate areas are partitioned by overhead garage doors. In the event we have multiple agricultural species housed in the [REDACTED], species are separated by garage doors. Any animals undergoing a quarantine period would be housed in the farthest stalls.

4. Surveillance, Diagnosis, Treatment and Control of Disease [Guide, pp. 112-113]

- a. Describe 1) the procedure(s) for daily observation of animals for illness or abnormal behavior, 2) the observer's training for this responsibility, and 3) method for reporting observations (written or verbal). Include a description of the method for ensuring that reported cases are appropriately managed in a timely manner.

Animal Research Technicians (ARTs) are responsible for observing every animal on a daily basis in the facility to which they are assigned, and reporting all sick, injured or dead animals that they find, including protocol-related sick, injured, or dead animals, to the veterinary staff. Research staff is also responsible for observing the animals on a regular basis and reporting sick, injured, or dead animals to the veterinary staff. ARTs use SVM ARC SOP 300 as a general guide for what needs to be reported and SVM ARC SOP 200 on how to report. ARTs have refresher training on these SOPs yearly. In essence, anything that looks abnormal or concerning is emailed and/or a phone call is placed to the veterinary staff daily during the weekdays. An on-line Animal Health Reporting site has been implemented for rodents. If it is an emergency situation a phone call is required until a member of the veterinary staff is reached. After-hours, weekends, or on holidays, the veterinarian on-call is notified.

- b. Describe the methods of communication between the animal care staff/veterinarians and the researcher(s).

If a non-emergency, the ARTs contact the veterinary staff. The veterinary staff maintains an email address () that is monitored by multiple individuals to ensure continuity of care during vacations or illness. The veterinary staff contacts the researcher via email or telephone with a recommendation. A treatment plan or alternation options which re implemented if agreeable to the research staff.

- c. Describe the procedure for providing veterinary medical care to ill animals and note who is contacted and the method of communicating (written or verbal) information to the veterinarian regarding sick animals.

When ill animals are identified, the veterinary staff is notified as described above. Animals are directly evaluated by the veterinary staff. Veterinary medical intervention or further diagnostic work is implemented as needed under the direction of a research animal veterinarian. If action or treatment must be taken that may have an effect on the research being conducted, the veterinarian will consult with the investigator (via phone, email, or in person) regarding possible courses of action if possible. If the situation is deemed to be an emergency or if the investigator is unavailable, the veterinarian will make the decision on action to be taken rather than delay treatment or implementation of diagnostic methods.

- d. Describe the preventive medicine and health management/ monitoring programs (e.g., physical examination, TB testing, vaccination, hoof/nail trimming, teeth cleaning/floating, vendor surveillance, use of sentinel animals, etc.) for each species.

Sentinel Program

Sentinel program for mice and rats is described SVM IACUC/OB protocol V005639. This protocol states that the following procedure:

Every six weeks (or sooner if clinically necessary) the following is performed in breeding rooms typically via live bleed on sentinel animals:

Serology (IDEXX BioResearch)

*Mouse Clinical Panel – MHV, Sendai, TMEV, *M. pulmonis*, MPV, MVM, EDIM, MNV

*Rat Clinical Panel – RCV/SDAV, NS1, RPV, RMV, KRV, H-1, RTV, Sendai virus, PVM, *M. pulmonis*.

*Parasitology – Fecal floats, scotch tape preps for breeding rooms, PCR testing.

Every twelve weeks (or sooner if clinically necessary) live sentinel mice and rats are brought over to RARC Diagnostic Laboratory for serology, parasitology, and necropsy.

*Mouse Clinical Panel – MHV, Sendai, TMEV, *M. pulmonis*, MPV, MVM, EDIM, MNV

*Rat Clinical Panel – RCV/SDAV, NS1, RPV, RMV, KRV, H-1, RTV, Sendai virus, PVM, *M. pulmonis*.

*Parasitology – Cecal, external, PCR

Once a year (or sooner if clinically necessary for breeding rooms and non-breeding rooms) live sentinel mice and rats are brought over to [REDACTED] for serology, parasitology, and necropsy:

Serology (IDEXX BioResearch)

*Mouse Comprehensive Panel – MHV, MVM, NS1, MPV 1-5, MNV, TMEV, EDIM, Sendai virus, *Mycoplasma pulmonis*, PVM, REO3, LCMV, Ectromelia virus, MAV1, MAV2, Polyomavirus

*Rat Comprehensive Panel – RCV/SDAV, NS1, RPV, RMV, KRV, H-1, RTV, Sendai virus, PVM, *M. pulmonis*, REO3, LCMV, CARB, Hantaan virus, *Clostridium piliforme*, MAV1

*Parasitology – Cecal, external, PCR

Animals Housed Long-Term Care Plans

Long-term Veterinary Care of Dogs is SVM ARC SOP 209. This SOP prescribes for ARC and RARC staff the following items: vaccinations, parasitology, heartworm prevention, grooming, weighing, physical exams, and dentals.

Long-term Veterinary Care of Cats is SVM ARC SOP 209a. This SOP prescribes for ARC and RARC staff the following items: vaccinations, parasitology, weighing, physical exams, and dentals.

Long-term Veterinary Care of Sheep is SVM ARC SOP 209b. This SOP prescribes for ARC and RARC staff the following items: quarantine, vaccinations, deworming, shearing, physical exams, and foot care.

Long-term Veterinary Care of Equine is SVM ARC SOP 209c. This SOP prescribes for ARC and RARC staff the following items: vaccinations, deworming, Coggins, physical exams, oral care, and foot care.

209F describes long term care of ferrets, 209g describes long term care of rabbits, 209h is long term care of USDA covered rodents, 209i is long term care of pigs. Any non-rodent covered USDA species that are on project longer than 30 days will have a yearly physical whether or not an SOP exists especially for that species.

Canine/Feline Dental Cleaning SVM ARC SOP 208 and 208a are available for RARC staff when animals are prescribed cleanings by the RARC veterinarians.

Vendor Surveillance

Vendors are routinely notified to not ship animals with various health statuses as prescribed by the Attending Veterinarian/Senior Program Veterinarian.

C. Clinical Care and Management [Guide, pp. 113-115]

1. Emergency Care [Guide, p. 114]

- a. Describe the procedures to ensure that emergency care is continuously available for animals during and outside of regular work hours.

An RARC veterinarian is on-call 24 hours/day 365 days a year. An on-call paging center is used to contact the on-call veterinarian after-hours, weekends, holidays, etc. Emergency contact information is posted in all animal facilities, and all personnel who work with animals are trained in the appropriate way to contact a veterinarian in emergency situations.

For weekend large animal care, RARC provides a large animal vet on call list each month, other weekends of the month we contact the local veterinary service or UW Veterinary Care Large Animal Service.

- b. Describe the authority of the Attending Veterinarian or his/her designee relative to the emergency treatment of animals in the program.

In emergency situations, an attempt will be made to contact the researcher to explain the situation and the treatment options if at all feasible. If the situation requires immediate action, veterinarians have full authority to treat animals in any way deemed necessary, or to euthanize animals, depending on circumstances.

2. Clinical Record keeping [Guide, p. 115]

Describe the procedure for maintaining medical records and documenting treatment of ill animals including: clinical laboratory findings, diagnoses, treatments, medical progress records, etc. Identify individual(s) (titles, not necessarily names) responsible for maintaining such records and identify where the records are maintained and who has access to the records. Describe the role of the Attending Veterinarian in record keeping.

Medical records are maintained jointly by three parties: the animal research technicians, who may make entries to describe symptoms or document treatment, if authorized to provide it; the laboratory staff, who make entries upon manipulation of covered species for the purposes of research; and the laboratory animal veterinary staff, who make entries upon manipulation of animals for the purposes of clarifying clinical signs, making a diagnosis, or documenting treatment, where authorized to do so.

These documents are normally kept as close to the animal as is possible to facilitate continuity of care. In the case of USDA-covered species, these records are kept in binders next to the door or, in certain instances, in the laboratory itself. In the case of non-USDA covered species, health records may be kept in a binder next to the door. Some records for these species are also kept in the laboratory or on the cage itself in the case of cage cards. Any member of the three groups detailed above should have access at all times to these records for the purposes of learning more about a particular animal, documenting clinical signs relating to that animal, or documenting treatment of that animal.

RARC veterinarians have the authority to require actions that are necessary to assure the development of adequate and accessible medical, husbandry, experimental, and teaching records. Ultimate responsibility and authority for determining adequacy of animal records rests with the Attending Veterinarian in consultation with the Senior Program Veterinarians.

3. Diagnostic Resources. Describe available diagnostic methods used in the program including:

a. In-house diagnostic laboratory capabilities.

UW- Madison has two in-house laboratories supporting clinical care and research on the Madison campus: the [REDACTED], located in the [REDACTED], and the WNPRC's lab. Both are overseen by the LSVIC IACUC/OB.

[REDACTED]: The [REDACTED] provides necropsy, histopathology, cytology, urinalysis, microbiology and parasitology services for all species for diagnostic and research purposes. It is the primary provider of diagnostic necropsy and pathology support to the campus for all species, however primates are also done by the WNPRC. The [REDACTED] oversees the epidemiology of disease problems (in particular, rodent) on the UW-Madison campus. The lab has a PhD, board certified pathologist, two clinical lab technicians, a histotechnologist and 2 to 3 trained undergraduate assistants. The [REDACTED] lab also uses the bacteriology, hematology, and virology services of the [REDACTED], and the [REDACTED]. The [REDACTED] oversees the campus rodent surveillance program, directly handling many of the rodent surveillance and testing submissions for the campus and receiving results from SMPH and the [REDACTED] which carry out their own testing. Environmental quality control (autoclave testing, cage washer and caging and water bottle testing) is managed through the [REDACTED] as well with the use of the 3-M LumGiene® Pocket Swabs and autoclave ampules. [REDACTED]'s environmental and serology technician conducts sampling at the various labs to ensure standardization of the testing procedures. In 2016 [REDACTED]'s histology lab moved to a new 533 ft² space. In June 2017 necropsy also moved to a new, larger space (530 ft²).

WNPRC: The WNPRC has a 457 sq. ft. clinical pathology laboratory that performs the following tests: complete blood counts with cellular morphology evaluations, packed cell volumes, total plasma proteins, urinalysis with microscopic examinations, cytology evaluations, parasitology (EIA, ova and parasite concentration, ova and parasite wet mounts), fecal occult blood, QBC (quantitative buffy coat) malaria screening, and thick and thin smear malaria screening. Timely diagnostic testing is performed by two laboratory technicians supported by two part-time student workers. Three pathologists (one ACLAM, one ACVP, and one ASCVP) provide additional support and oversight for all clinical pathology services.

The [REDACTED] complements the above diagnostic labs. The [REDACTED] is part of SMPH. It primarily provides histology services in support of research studies of [REDACTED] investigators, but is available to researchers both within and outside the University for fee. Specialized resources, such as frozen sections and particular histologic or immunohistochemical stains, augment the diagnostic capabilities of the [REDACTED] and WNPRC.

b. Commercially provided diagnostic laboratory services.

[REDACTED]: Commercial labs used by the [REDACTED] and the WNPRC include:

1. [REDACTED]
2. [REDACTED]
3. [REDACTED]
4. [REDACTED]
5. [REDACTED]
6. [REDACTED]
7. [REDACTED]
8. [REDACTED] and [REDACTED]
9. [REDACTED]
10. [REDACTED]

WNPRC: Tests not performed at the WNPRC are submitted to laboratories with validated protocols for nonhuman primates and include: routine serum chemistry, bacterial cultures (anaerobic, aerobic, and mycobacterial), cerebral spinal fluid evaluation, protein electrophoresis, viral isolation, serology for simian retroviruses, thyroid panels, and other tests as appropriate.

c. Necropsy facilities and histopathology capabilities.

[REDACTED]: Lab facilities consist of necropsy and histology suites, and a clinical lab. The current clinical lab occupies 372 ft². Digital photography equipment is available. There is a new fume hood for handling chemicals and two "powered air purifying respirator systems" (HEPA PAPR) are also available for further protection when performing necropsies of NHPs, animals with human tissue implants, or those infected with BSL-2 organisms. PAPR units for paraformaldehyde use are available from the WNPRC. Complete gross necropsies with histology are usually performed on all USDA species whether the death is related to clinical or investigational causes.

The new necropsy room is designed with a square downdraft necropsy table for larger dog, primate and lamb-sized animals, a variable height, down and back draft grossing station for cutting in tissues and necropsying rodents and other small animals, and a biosafety cabinet.

Large animals are necropsied at the [REDACTED] located on campus which has a large necropsy floor with hydraulic tables and additional necropsy rooms with enhanced biosecurity. This facility also has a tissue digester for disposal of carcasses of sheep, deer, and cattle >30 months.

Histology is done by a certified histotechnologist. The histology lab has a floor model Tissue-Tek VIP Vacuum Infiltration tissue processor, a Tissue Tek TEC 5 Embedding System, Tissue Tek DRS 2000 Automatic Slide Stainer, a new Leica manual rotary microtome, a histology coverslipping hood, and microwave and appropriate safety storage cabinets. Occasionally tissues may be processed by the [REDACTED] or the [REDACTED] if the [REDACTED] histotech is unavailable.

d. Radiology and other imaging capabilities.

[REDACTED]: SVM's radiology resources are available when needed. These include radiology, MRI, ultrasound, Faxitron, and CAT scans. The WNPRC resources described below are also available. A shared equipment grant for a new Faxitron was recently received. It will be housed in SMPH facilities.

WNPRC: The WNPRC owns an Envision portable digital radiography system, a [REDACTED] X-Ray Unit, a [REDACTED] digital dental radiography unit [REDACTED] unit, and an [REDACTED] automatic processor. The Envision unit is used to perform quarantine screen-out thoracic radiographs on NHPs to determine the presence or absence of pulmonary lesions consistent with Mycobacterium tuberculosis/bovis and to perform routine diagnostic radiographs. The dental unit is used to facilitate the diagnosis of clinical and occult dental disease (e.g., tooth root abscesses, dental caries, osteomyelitis, and maxilla/mandibular fractures).

The WNPRC owns four portable ultrasound units: a [REDACTED] system, a [REDACTED] system, and two [REDACTED]. These ultrasound units are used for NHP cardiac evaluations, abdominal organ evaluations, abdominal organ biopsies, reproductive organ evaluations, fetal viability evaluations, fetal measurements, amniocentesis, chorionic villus sampling, and percutaneous umbilical blood sampling.

MRI, CT, and PET scan units are also available at various sites on the UW-Madison campus if more sophisticated imaging modalities are necessary.

4. Drug Storage and Control

a. Describe the purchase and storage of controlled and non-controlled drugs.

Controlled Drugs

Campus-wide, principal investigators must hold individual DEA licenses (federal) and a Controlled Substance Special Use Authorization (state) to purchase protocol-approved controlled drugs. They are responsible for secure storage and record keeping, instructions for proper storage and record-keeping are provided by the Research Animal Resources Center (RARC).

Additionally, within the SVM program, Dr. [REDACTED] and [REDACTED] holds the license for the ARC, [REDACTED]. Mr. [REDACTED] is responsible for the purchase of controlled drugs through the SVM-UW Veterinary Care Pharmacy and can store them in a safe and drug lock box at [REDACTED]. Record keeping for the controlled drugs is also the responsibility of Mr. [REDACTED].

Further, RARC veterinarians holding DEA licenses may also purchase controlled drugs for veterinary-care use.

Non-controlled Drugs

Non-controlled drugs are purchased by principal investigators through approved vendors or through the RARC pharmacy service.

Ensuring Drugs and Supplies are Within Expiration Date

The IACUC/OB checks for expired drugs during the semi-annual inspections of investigator labs, including the [REDACTED] safe and lock box. Monthly check of all ARC drugs and supplies is completed by ARC [REDACTED], Supervisor, and RARC Veterinary Technicians.

- b. Describe record keeping procedures for controlled substances.

Principal investigators must store controlled substances properly (e.g. safe, lock box) and keep detailed records of the use of controlled substances. The veterinary staff or [REDACTED], where appropriate, would maintain records of controlled substances purchased under their respective licenses. Records are stored with controlled substances in a safe or lock box. Additions and removal of drugs from safes and lock boxes are noted on a continual basis.

D. Surgery [Guide, pp. 115-123]

1. Pre-Surgical Planning [Guide, p. 124]

Describe the process(es) used to ensure adequate pre-surgical planning, including: identifying personnel; locating equipment, supplies, veterinary involvement for selecting analgesic and anesthetic agents and facilities; planning; and pre- and postoperative care.

Identifying and training personnel

Personnel performing surgery are required to be listed by the Principal Investigator on the animal-use protocol, indicating their experience and training. The animal-use protocol is reviewed by the IACUC/OB, and work is allowed only after approval. Principal investigators are responsible for compliance with this plan, and for ensuring that their students and technicians are trained appropriately. All newly hired UW-Madison investigators and research staff members performing surgery are required to attend the RARC Laboratory Animal Surgery Course unless granted a waiver. This surgery course is an all-day course, which consists of lectures, demonstrations and hands-on opportunities in anesthesia/analgesia, suturing and wound closure, aseptic technique and performing a splenectomy on a rat.

Opt-out Option: Veterinarians and Physicians certified by the board of the American College of Surgeons may request from the Animal Care and Use Committee and the Chief Campus Veterinarian or designee to have the Lab Animal Surgery course requirement waived (may be required to have the first surgery observed by a qualified individual as determined by the IACUC/OB). The Senior Program veterinarian, IACUC OB Chair, and the Chief Campus Veterinarian or designee will make the final decision. A waiver for this training requirement may be granted to other individuals on a case-by-case basis at the discretion of both the IACUC/OB and the Chief Campus Veterinarian by agreement. The IACUC/OB and Chief Campus Veterinarian have the authority to require such individuals to provide evidence (e.g. CV) to support the request of waiver. All waiver approvals must be documented in the minutes of a convened IACUC/OB meeting. Note: This training is not required of animal users who completed the UW Animal User Orientation prior to 10/29/2007. However the ACUCs may

require these users to complete Lab Animal Surgery training at their discretion. More information can be found in policy 1999-006, entitled "Animal Care and Use Authorization and Mandatory Training" and found here, <https://www.rarc.wisc.edu/policy/1999-006.html>.

Locating equipment and supplies

Investigators are given instruction on how to locate equipment and supplies through the Laboratory Animal Surgery Course, facilities orientations, and/or consultation with the veterinary staff.

Veterinary involvement for selecting analgesic and anesthetic agents and facilities

Veterinarians are involved in analgesic and anesthetic planning primarily through animal-use protocol pre-review and/or review. Veterinarians also meet directly with investigators to review and refine analgesia or anesthesia at the request of the PI, the veterinarians, or the IACUC/OB. All approved surgery spaces are kept in a database by RARC, veterinary and IACUC/OB input are used to determine the appropriateness of new spaces to be used for surgery.

Pre-surgical Planning

Pre-surgical planning is the primary responsibility of the Principle investigator or designee and the research animal veterinarian. Surgical plans (including patient preparation, surgical techniques, anesthetic administration and monitoring, and use of analgesics) are written by the researcher, must be in an Animal-Use Protocol, and are reviewed and approved by a veterinarian as part of either a protocol pre-review process and/or as part of the IACUC/OB review process. If questions about a surgical plan cannot be resolved by normal protocol review processes, a meeting between the investigator and a research animal veterinarian is mandated, either by the IACUC/OB or the Attending Veterinarian, and the amended protocol is returned to the IACUC/OB for review and approval. Staff veterinarians initially advise the respective investigator regarding proper selection of anesthetics, surgical technique, perioperative analgesia etc. during the protocol review process and as needed during the course of the study.

Pre- and Post-operative Care

Specific pre- and post-operative care is performed in accordance with the approved Animal-Use Protocols reviewed by the IACUC/OB with input from the veterinary staff as deemed necessary. Pre-operative diagnostics are performed on a case-by-case basis with the final decision for diagnostics determined by the Senior Program Veterinarian.

2. Surgical Facilities [Guide, p. 116]

- a.** List building name(s) and room number(s) or other locations (coded, if confidential) where surgical procedures are performed. Include areas where surgical procedures are conducted in agricultural species. Indicate the type of species, nature of procedure (major/minor/emergency; survival and non-survival, etc.). Indicate for each surgical area if the use is heavy (daily), moderate (weekly), or light.

Surgery Area – Room

This area is mostly an agricultural species surgery area that includes minor/major surgeries and survival/non-survival surgeries. This area is lightly used. Some of the surgical procedures that occur in this area are as follows:

"Equine Lameness and Surgery Elective" course is an elective course for fourth year students who are large animal oriented to provide basic training in different procedures on ponies. This class involves survival surgery with major procedures.

"Food Animal Surgery Elective" is designed to give fourth year veterinary students additional live animal surgical experience on cattle and calves. This class involves survival surgery with major procedures.

"Directed Study Large Animal Surgical Techniques Laboratory" is designed to provide third year students a basic knowledge and understanding of proper surgical technique, as well as the ability to perform a common large animal procedure (right paralumbar fossa exploratory celiotomy and omentopexy), that the student is not always exposed to during the clinical rotation. This class involves survival surgery with major procedures on cattle.

RARC veterinary surgery room, [REDACTED]. This room is approved for major or minor surgeries and may be used by RARC veterinary staff, or by laboratory staff with approval. Veterinary staff may use this area to perform spay/neuters of research/colony cats and dogs for adoption through the Surplus Animal Recommendation Form.

[REDACTED], Room [REDACTED]

This area uses cats and dogs for major survival surgery to do spay/neuters of Humane Society animals for third year veterinary students. The use of this room would be considered light.

[REDACTED], Room [REDACTED]

This area is mostly used for research surgical procedures. The procedures performed there are a variety of orthopedic and soft tissue surgeries on dogs, sheep and other animals. Most of these surgeries are major and survival. In addition, the veterinary staff may use this area to perform spay/neuters of research/colony cats and dogs for adoption through the Surplus Animal Recommendation Form.

Principal Investigator's Laboratories
Various rooms (some listed below)

Surgical procedures are also performed in laboratories on campus outside of vivarium space. These rooms must be listed on an IACUC/OB approved protocol and are inspected semi-annually by the IACUC/OB. The individual laboratories are used to perform major/minor surgeries that are both survival and non-survival. Each laboratory varies in the usage. Below are examples of some surgeries that are performed in laboratories.

Room Number	Species	Procedure
[REDACTED]	Rat	retrograde transport of fluorescent tracers, CNS drug delivery
	mouse	Cystometry
	Rat	CNS Drug Delivery, Gonadectomy, spinal injury
	mouse	denervation, electroporation, synergist ablation/myotectomy

[REDACTED] may be used in the capacity for research surgeries or clinical surgeries. [REDACTED] is a fully functioning teaching hospital that cares for small to large species. The usage varies.

Room Number	Species	Procedure
████	Mice	Renal capsule grafting, castration, steroid implant

- b. List the major surgical support equipment available at each location where survival or nonsurvival surgery is performed (e.g., gas anesthesia machines, respirators, etc.).

- 6 shanks hydraulic operating tables
- 10 stations with plug-in oxygen and vacuum outlets
- 7 portable surgical lights
- 2 double head ceiling mounted surgical lights
- 8 large animal stocks
- 7 anesthesia machines
- Casting floor
- Padded gate for anesthesia induction
- 2 padded stalls for anesthesia recovery

- Line for oxygen, nitrous oxide, air and vacuum
- Narkovet anesthesia machines
- Mobile hydraulic stainless steel surgical table
- Surgical light suspended from ceiling
- Stainless steel counter top with sink, cabinets, and video monitor

- anesthesia machines
- Stainless steel hydraulic surgical table
- Two ceiling-mounted surgical lights
- Bovie cautery unit
- X-ray view screen
- Lines for oxygen, air, vacuum and nitrous oxide

Principal Investigator's Laboratories
Various rooms

Each laboratory has equipment that is described in their approved IACUC/OB protocols to perform the surgeries.

may be used in the capacity for research surgeries or clinical surgeries. is a fully functioning teaching hospital that cares for small to large species.

c. Describe any specialized considerations for designation of surgical areas (e.g., rodents, aquatics, farm animals, etc.).

Teaching horses are transported to █████ for surgery in the █████. Rodent surgery or aquatic surgery areas are inspected at least every 6 months and must comply with guidelines developed by RARC and IACUC/OB to maintain status as a rodent or aquatic surgery area.

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Obtained by Rise for Animals.
Uploaded to Animal Research Laboratory Overview (ARLO) on 11/25/2020

3. Surgical Procedures [Guide, pp. 117-118]

- a. Describe the criteria used to differentiate major from minor survival surgery, including classification for certain procedures (e.g., laparoscopic technique, etc.).

Survival Surgery is defined as those procedures after which the animal recovers from anesthesia (i.e., regains consciousness).

Minor Surgery is defined as those procedures that do not penetrate and expose a major body cavity and do not result in a substantial physiologic or functional impairment to the animal.

Major Surgery is defined as those procedures that enter a major body cavity, result in a substantial physiologic or functional impairment to the animal, or involve extensive tissue dissection or transection.

Laparoscopic, arthroscopic or similar techniques are defined as major or minor depending on specific circumstances of the research protocol; for example, simple visualization of a structure or placement of an experimental device may be considered minor, whereas procedures that involve extensive tissue manipulation or resection may be considered major.

- b. How is non-survival surgery defined?

Non-survival surgery is defined as surgery from which the animal never regains consciousness from anesthesia after the surgery.

4. Aseptic Technique [Guide, pp. 118-119]

- a. Describe procedures, equipment, and protective clothing used for aseptic surgery. Include patient and surgeon preparation.

Aseptic technique for non-rodent mammalian surgery:

- Training of personnel in proper aseptic surgical technique, e.g. through the RARC Laboratory Animal Surgery Course
- Use of sterile instruments and surgical supplies
- Wearing of head cover, face mask, sterile gown, and sterile gloves
- Clipping, surgical scrub, and draping of the surgical site
- Performing survival procedures only in approved surgical suites
-

Aseptic technique for rodent surgeries:

- Training of personnel in proper aseptic surgical technique, e.g. through the RARC Laboratory Animal Surgery Course.
- Clipping and cleaning of the surgery site
- Gloves, facemask, and lab coat
- Sterile instruments
- Dedicated area for surgery; keep the surrounding area clean and neat

Protective clothing used and practices employed in non-survival surgeries: As a minimum, investigators performing non-survival surgery are required to clip the surgery site, wear gloves, wear scrubs, smock, or a lab coat, use clean instruments, use a dedicated area for surgery, and keep the surrounding area clean and neat. Additional aseptic measures are required if the procedure is long enough for signs of infection to show. If the surgery is performed on a non-human primate appropriate PPE must be worn.

- b. Describe methods used to sterilize instruments and protective clothing. Indicate how effectiveness of sterilization is monitored and, if applicable, any approved alternate methods for instrument re-sterilization between serial surgeries. If used, include a description of approved liquid sterilants and instrument exposure time(s) required for each.

Used to Sterilize Instruments and Protective Clothing

Steam autoclaves, ethylene oxide (ETO) sterilizers, and glass bead sterilizers can be used. For autoclave sterilization, a steam indicator strip is placed directly into the pan and steam indicator tape holds the surgery packs closed.

Liquid Sterilants

Liquid sterilants are typically not used as a sole means of sterilizing instruments for any major procedures. Occasionally, liquid sterilants such as Cetylcode® or other glutaraldehyde solution may be used to sanitize instruments. Manufacturers' recommendations for exposure times are followed, typically 10 – 15 minutes minimum for most applications, but up to 10 hours for others; all instruments must be thoroughly rinsed with sterile water or saline prior to use.

- c. Describe surgical support functions provided by the program to investigators.

Beyond the RARC Laboratory Animal Surgery Course, veterinary staff assistance with surgery and anesthesia can be provided to investigators upon request of the PI or directive of the IACUC/OB and veterinary staff.

For USDA covered species a non-DVM researcher's initial surgery in a new species would be conducted under the direct supervision of an RARC veterinarian to ensure appropriate technique and competency in the procedures.

5. Intraoperative Monitoring [Guide, p. 119]

Describe monitoring and recording requirements for each species, including the type of record(s) maintained. Also note monitoring of anesthesia during non-survival procedures.

Intraoperative Monitoring: For surgical procedures, the IACUC/OB protocol calls for a listing of physiologic parameters that will be monitored to ensure adequate anesthesia depth.

Monitoring and recording requirements for each species: assessment of anesthetic depth prior to performing any surgical procedure is required in all instances for all species; this is usually assessed by checking for a withdrawal response (e.g. toe pinch) and adjunct methods such as palpebral reflex and jaw tone. Monitoring to assure anesthetic depth during surgery is also required. Parameters such as heart rate and respiratory rate are to be monitored at least every 15 minutes for USDA-covered species (see below).

Types of records maintained: Anesthesia forms are available to or may be developed by all PIs performing surgeries on USDA-covered species. Parameters that are typically monitored include heart rate, respiratory rate, blood oxygen saturation, and body temperature. Anesthesia records are to be filed with the animal's clinical records. Anesthesia monitoring for non-survival procedures: No distinction is made between survival and non-survival procedures regarding monitoring.

6. Postoperative Care [Guide, pp. 119-120]

Describe the postoperative care program, including who is responsible for overseeing and providing the care, types of records maintained (e.g., perioperative), where the records are maintained, etc.

The responsibility for providing postoperative care in the UW-Madison program lies principally with the PI, the veterinary staff may provide assistance if requested or indicated based on clinical results. RARC veterinary staff helps monitor USDA covered species having surgery between 1-5+ days post-surgery to ensure recovery from procedures.

Postoperative records should include an assessment of the quality of recovery of the animal at least every 15 minutes until animal is completely recovered (able to make normal postural adjustments, control airway, etc.), potentially including heart rate, respiratory rate or character, color, response to toe pinch, and body temperature. These records are considered a part of the animal's medical record, and are maintained as specified above.

E. Pain and Distress [Guide, pp. 120-121]

1. Describe how and by whom pain and distress are assessed and categorized.

Criteria for assessing pain and distress must be in an approved IACUC/OB protocol. These criteria are subject to veterinary approval through the protocol pre-review or review process, and the protocol must be approved by the IACUC/OB before any work can commence. Pain and distress are assessed by laboratory members, animal care staff, and veterinary staff. If pain and distress are determined (categorized) as not being appropriately alleviated by protocol-approved analgesic regimen, veterinarians provide different analgesic regimens until any pain or distress are sufficiently alleviated. Humane euthanasia is employed if pain cannot be sufficiently alleviated.

2. Describe how the IACUC/OB ensures that unnecessary pain and distress are avoided (e.g., pilot studies, monitoring by veterinary staff, animal use protocols, humane endpoints, other refinements, etc.).

The SVM IACUC/OB routinely requires PIs to submit protocols to veterinary staff for general pre-review prior to submission for formal IACUC/OB review. As needed, the IACUC/OB may also require additional veterinary review of specific aspects before granting approval.

The IACUC/OB evaluates potential level of pain or distress when it reviews protocols, with significant input from RARC veterinarians and the PI.

Examples of procedures that cause either minimal, transient, or no pain or distress when performed by well-trained individuals using proper techniques include: administration of anesthetics, analgesics, tranquilizers, fluid or electrolyte therapy, immunizations, and oral medications; urethral catheterization or cystocentesis; percutaneous vascular catheterization; blood collection (except for intracardiac or retro-orbital); gastric gavage; routine veterinary medical procedures (e.g., injections, palpations, skin scrapings, radiography, routine manual restraint, etc.); and euthanasia.

Examples of procedures that are considered to cause more than momentary or transient pain or distress in the absence of appropriate anesthetics, analgesics, and/or tranquilizers include: all major and minor surgical procedures, including biopsies and gonadectomy; electrical shock, to include shock reinforcement; injection of any agent that induces excessive inflammation or necrosis (e.g., bradykinin, pristane, certain infectious agents, etc.); LD50 determinations; neurophysiological preparations and cannulations; intracerebral inoculations; chair or stock restraint of nonacclimated animals, or any restraint for more than 12 hours; drug or radiation toxicity testing; intracardiac or retro-orbital blood collection.

In the course of experiments, animals are viewed daily by care staff who are trained to recognize behaviors that might indicate pain or distress. In addition, veterinary staff views all animals regularly.

In 2014 and 2016 focused training was provided at convened IACUC/OB meetings to enhance the committee's review of pain and distress - specifically, PI compliance with USDA AC policies 11 and 12 to include relevant keywords, search strategies, and narrative discussion of search results in the protocol. In 2010 a research guide for PIs on alternatives was developed in partnership with UW-Madison Libraries staff. It provides guidance to investigators on the regulatory basis for this requirement, developing search strategies, and presenting search results in the context of the protocol.

F. Anesthesia and Analgesia [Guide, pp. 121-123]

1. List the agents used for each species. Dosages, routes of administration and drug combination should be included in guidelines and available at the time of the site visit. Describe also any non-pharmacologic means used to diminish pain and distress.
- 2.

Species	Anesthesia	Analgesia
Rats	Isoflurane Butorphanol Ketamine and xylazine Ketamine and midazolam Ketamine and diazepam Ketamine and acepromazine	Buprenorphine Pentobarbital Meperidine Ketoprofen Carprofen
Mice	Urethane Etomidate Ketamine combination Tribromoethanol Pentobarbital	Buprenorphine Butorphanol Carprofen Ketoprofen
Rabbits	Butorphanol Isoflurane Pentobarbital	Acepromazine plus butorphanol Buprenorphine

	Ketamine and acepromazine Telazol and xylazine Diazepam or midazolam Dexmedetomidine combinations	
Pigs	Isoflurane Lidocaine Flunixin meglumine Ketamine and Droperidol Ketamine and xylazine Ketamine and acepromazine Pentobarbital Xylazine and Telazol	Buprenorphine Butorphanol Aspirin
Sheep & Goats	Isoflurane Lidocaine Flunixin meglumine Ketamine and xylazine Ketamine and diazepam Pentobarbital	Aspirin Buprenorphine Butorphanol Morphine Flunixin meglumine
Horse	Pentobarbital sodium Thiopental sodium Lidocaine Isoflurane	Butorphanol Xylazine hydrochloride Flunixin Phenylbutazon
Cattle	Pentobarbital sodium Thiopental sodium Lidocaine Aspirin	Xylazine hydrochloride Butorphanol Flunixin Isoflurane
Hamsters	Pentobarbital sodium Ketamine and xylazine	Butorphanol Buprenorphine
Cats	Pentobarbital Dexmedetomidine Thiamylal Thiopental Isoflurane Ketamine Sevoflurane Fentanyl Proparaciane	Butorphanol Oxymorphone Buprenorphine Meloxicam Buprenorphine Acepromazine Midazolam Hydromorphone Alfaxalone
Dogs	Pentobarbital Thiopental Fentanyl Dexmedetomidine Acepromazine Isoflurane Midazolam Sevoflurane Bupivacaine	Butorphanol Buprenorphine Morphine Ketoprofen Carprofen Meloxicam Alfaxalone Lidocaine Propofol

Firocoxib	Piroxicam
Tramadol	Gabapentin
Midazolam	Hydromorphone
Nontraditional species (e.g. reptiles, other rodents, amphibians, birds):	
Alfaxalone	Dexmedetomidine
Midazolam	Diazepam
Butorphanol	Xylazine
Acepromazine	Meloxicam
Isoflurane	Ketamine
Buprenorphine	Lidocaine
Hydromorphone	Tiletamine/Zolazepam
Tramadol	Oxymorphone
<p>During protocol review, a veterinarian may direct a multi-modal anesthesia/analgesia approach, such as the use of a combination of local and systemic anesthetic, or an NSAID with an opioid. A veterinary anesthesiologist from the SVM anesthesia department may consult on anesthesia and analgesia for research protocols.</p> <p>Non-pharmacologic means to diminish pain and distress include the return of rodents to the home cage (familiar environment) after surgery, placing feed and water in easily accessible locations (e.g. feed pellets or hydrogels on cage floor or in special trays for rodents), providing conspecific social interaction, and providing appropriate post-operative thermal support.</p>	

2. Describe how the veterinarian provides guidance and advice to researchers concerning choice and use of anesthetics, analgesics or other pain moderating methods.

The veterinarians provide guidance on the use of anesthetics and analgesics primarily during the protocol review and development process. In addition, they consult with investigators and research staff as requested and as part of ad hoc training sessions. RARC training sessions on each species include anesthetic use and monitoring.

Anesthesia is administered by trained research personnel. The protocol form asks for information regarding the training of individuals who will be participating in surgical procedures. This information is reviewed and approved by the IACUC/OB. In some cases (e.g., when assistance from UW Veterinary Care or RARC personnel is requested) anesthesia is administered by a veterinarian or veterinary technician. For teaching protocols, the students are trained by a board certified anesthesiologist/resident.

3. Describe the monitoring of the effectiveness of anesthetics and analgesics, including who does the monitoring.

Monitoring the use of analgesics and anesthetics is a responsibility shared among the veterinarians, investigators, and the IACUC/OB. The veterinarians examine written descriptions of the use of analgesics and anesthetics as part of the protocol review process. Issues of concern are communicated to the PI and resolved before the protocol is approved. Additionally, if problems are noted during the post-operative period, the veterinarians will investigate to ensure that adequate anesthesia and analgesia are being provided. PIs are responsible for ensuring that approved anesthesia and analgesia protocols are executed as

written and for notifying the veterinary staff if they or their support staffs observe problems. The IACUC/OB may observe anesthesia protocols in progress or interview investigators during semiannual inspections.

4. Describe how the veterinarian(s) and the IACUC/OB evaluate the proposed use of neuromuscular blocking agent to ensure the well-being of the animal.

Any proposed use of neuromuscular blocking agents must be stated and justified in the IACUC/OB Protocol, and this must be approved by the IACUC/OB. Veterinarians evaluate the proposed use of neuromuscular blocking agents via protocol pre-review and/or review.

5. Describe policies and practices for maintaining and ensuring function of equipment used for anesthesia.

Yearly maintenance/calibration of inhalant anesthetic vaporizers is required and verified during IACUC/OB semi-annual inspections.

G. Euthanasia [Guide, pp. 123-124]

1. Describe approved methods of euthanasia, including humane slaughter. Include consideration of species, age, condition (e.g., gestational period, or neonatal) and location(s) for the conduct of the procedure.

Euthanasia, depending on method, may be performed in any of the vivarium rooms which are inspected semi-annually by the IACUC/OB. Some common rooms/areas that are used are the following:

Area	Room	Equipment available
L	E	Large animal surgery room
		Work stations
		Work stations
		CO2 station, work stations
		CO2 station
L	E	CO2 station, work stations
		CO2 station

Euthanasia is also performed in laboratories on campus outside of vivarium space. These rooms must be listed on an IACUC/OB approved protocol, and are inspected semi-annually by the IACUC/OB.

The following methods are used for the species listed:

Mice – Barbiturate overdose; compressed CO₂ gas in cylinder, without pre-charging the chamber, introduce 100% CO₂ at the rate of 10-30% of the chamber volume per minute; anesthesia followed by disruption of a critical organ; anesthesia followed by exsanguination; anesthesia followed by cervical dislocation (by trained personnel). If cervical dislocation is requested without sedation or anesthesia, a scientific justification must be given and approved by the IACUC/OB.

Rat – Barbiturate overdose; compressed CO₂ gas in cylinder, without pre-charging the chamber, introduce 100% carbon dioxide at rate of 10-30% of the chamber volume per

minute; anesthesia followed by disruption of a critical organ; anesthesia followed by exsanguination; anesthesia followed by cervical dislocation (<200 g and performed by trained personnel). If cervical dislocation is requested without sedation or anesthesia, a scientific justification must be given and approved by the IACUC/OB.

Hamster – Barbiturate overdose; anesthesia followed by disruption of a critical organ; compressed CO₂ gas in cylinder, without pre-charging the chamber, introduce 100% carbon dioxide at the rate of 10-30% of the chamber volume per minute.

Gerbil – Anesthesia followed by disruption of a critical organ; anesthesia followed by exsanguination; compressed CO₂ gas in cylinder, without pre-charging the chamber, introduce 100% CO₂ at rate of 10-30% of chamber volume per minute.

Ground squirrel – Isoflurane followed by decapitation; isoflurane followed by sodium pentobarbital; CO₂; decapitation without prior anesthesia (for hibernating squirrels in deep torpor).

Rabbit – Barbiturate overdose; anesthesia followed by exsanguination; anesthesia followed by KCl.

Dog – Barbiturate overdose

Cat – Barbiturate overdose, deep sedation followed by exsanguination

Avian – Chicks – Compressed gas in cylinder, without pre-charging the chamber, introduces 100% CO₂ at the rate of 10-30% of the chamber volume per minute; adult birds - barbiturate overdose.

Turtle –Commercial euthanasia solution IP, Isoflurane followed by decapitation with removal of cortex, midbrain and brainstem.

Bearded Dragon, Snake – Isoflurane followed by Sodium Pentobarbital IV or IC.

Large domestic animals – Barbiturate overdose is used if necessary a second method approved by the AVMA would be used.

Euthanasia of Fetuses and Neonates

For mouse, rat and hamster fetuses up to 15 days (i.e. E14 or less), and guinea pig fetuses up to 34 days (E33 or less), euthanasia of the mother or removal of the fetus are appropriate methods for fetal euthanasia (any loss of blood supply should ensure rapid death of fetuses). For mouse, rat and hamster fetuses E15 days to birth, and guinea pig fetuses E34 days to birth, a physical method of euthanasia (decapitation or cervical dislocation) is *required* in addition to euthanasia of mother or removal of fetus; careful injection of anesthetic agents may be used (e.g. IP injection of pentobarbital 800 mg/kg) prior to decapitation or cervical dislocation.

For mice, rat and hamster neonates up to and including 10 days of age, decapitation, cervical dislocation or injection with a chemical anesthetic (e.g. pentobarbital 800 mg/kg IP) are acceptable means of euthanasia. Neonates 10 days of age or less are resistant to hypoxia; if CO₂ is used; prolonged exposure time is needed to cause loss of consciousness or death. A secondary physical means of euthanasia (decapitation or cervical dislocation following loss of consciousness) is required when CO₂ is used.

2. Describe policies and practices for maintaining and ensuring function of equipment used for euthanasia.

CO₂ regulators are immediately replaced if there is any indication of improper function.

3. Describe the methods used to confirm death of an animal.

All personnel who euthanize research animals must verify cardiac and respiratory arrest. Instruction on this procedure is given to all staff who use animals and is provided during required RARC training classes. In many instances of rodent euthanasia (typically stated in Animal-Use Protocols) a secondary physical means of euthanasia such as bilateral pneumothorax, cervical dislocation, or decapitation is employed.

The following information is supplied to researchers in the help section of the online protocol form:

Links: [RARC guidelines: Euthanasia by Species](#)

[AVMA 2013 Guidelines on Euthanasia](#)

[Euthanasia of Fetal Calves, Lambs, and Kids](#)

[Euthanasia of Fetal and Neonate Rodents](#)

[Euthanasia Using CO₂ for Rats and Mice](#)

Examples of indicators of death in mammals:

- No movement of the chest / no signs of respiration – The animal's chest has stopped moving up and down indicating that it has stopped breathing. DO NOT rely on this sign alone, as the animal's heart may continue to beat for some time after breathing has stopped.
- No pulse – Not always easy to locate in small animals
- Glazing of the eyes – This occurs rapidly after death. The cornea loses its clear, moist appearance and becomes opaque, dry, and wrinkled.
- Rigor mortis – If death cannot be confirmed, or there is any doubt, personnel should wait until rigor mortis has set in before disposing of the animal's carcass.

- Indicators of death in fish and aquatic invertebrates:
- Absence of heartbeat – The presence of a heartbeat is not a reliable indicator of life, but sustained absence of heartbeat is a strong indicator of death.
- Loss of movement
- Loss of reactivity to any stimulus

IV. Physical Plant [Guide, pp. 133-151]

Repeat this section for each animal housing area, including agricultural settings, temporary holding areas for field studies, aquatic environments, and each IACUC/OB approved satellite housing facility. Include as an appendix the floor plans of each (if applicable) on 8.5" x 11" or A4 paper.

A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

2.

_____, (_____) and _____, (_____) report to _____ (_____) reports to _____, DVM, MS, the _____. This facility is under the direction of the School of Veterinary Medicine IACUC/OB. Veterinary care is managed by RARC under the direction of Dr. _____, Attending Veterinarian; with Dr. _____, SVM's Senior Program Veterinarian for Small Animals and Dr. _____, SVM's Senior Program Veterinarian for Agricultural Animals.

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

██████ does not have research laboratories. There are two treatment/procedure rooms that investigators can use.

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

is a conventional animal facility. There is no clean/dirty corridor system.

- Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

4.

Corridors

Corridors are cement block with epoxy paint, and corners have corner guards. Corridors in Conventional area are 6' wide, Isolation, and Semi-isolation are 5' wide, and 7' 4" wide in barn area.

Animal Room Doors

Conventional – Metal doors 88" x 44" with 8" x 36" window. All doors have door sweeps.

Semi-isolation/Isolation – Metal doors with no windows. Doors that face the clean hallways are 84" x 32". Doors that are on the exterior of the building and interior doors leading to the work hallway are 84" x 44". All doors have door sweeps. Six animal rooms and the clean side of the cage wash have a non-slip color, quartz epoxy floor system.

Floors

Conventional

Six dog rooms with runs have a non-slip epoxy color quartz floor system. Eighteen animal room floors are concrete with a smooth trowel finish, and treated with Ashford formula which cures, seals, waterproofs and hardens the surface.

Semi-Isolation

Animal rooms, work hallway, and $\frac{3}{4}$ of the general hallway have a non-slip epoxy color quartz floor system.

Isolation

Forty animal rooms have a non-slip, epoxy color quartz floor system and the necropsy room has a color epoxy paint floor system.

Recovery

Large animal stalls have a one-half inch thick resilient floor, and aisle is a brushed concrete.

Barns

- Brushed concrete
- Brushed concrete with 6 stalls having a rubber stall mats
- Brushed concrete

All concrete is treated with Ashford formula, which cures, seals, waterproofs and hardens the surface.

Hallways

One half of the conventional hallway has been resurfaced with a color epoxy quartz system. One half of the conventional, semi-isolation, and isolation work corridor are concrete with a smooth trowel finish. The clean corridor in isolation has been resurfaced with a color epoxy paint system. Barns are a brushed concrete. All concrete is treated with Ashford formula, which cures, seals, waterproofs and hardens.

Walls

Walls throughout conventional, semi-isolation and isolation are concrete block with epoxy paint.

Four dog rooms in conventional have glass board over concrete block.

- metal and glass board over treated wood. Pen dividers are treated wood.
- Metal and glass board over treated wood. Pen dividers are treated wood.
- metal, glass board over treated wood.

Ceilings

Ceilings throughout the animal facility are gypsum board with epoxy paint. Four dog rooms with runs and several rooms in semi-isolation the ceilings are covered with glass board. Ceilings in the flex penning, horse, and cow barn are metal.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

Conventional, isolation, and semi-isolation areas do not have exterior windows that allow natural photo periods or public observation into the room.

, and have exterior windows that allow natural photo periods when open. When closed, the windows are opaque.

B. Functional Areas and Operations

1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

- Animal rooms – Incoming air is filtered and exhaust air is filtered before passing through heat reclaim coils.
- Exhaust air for BSL2 isolation area is HEPA filtered.
- 100% outside air is used, the air is not re-circulation.
- Four mechanical equipment rooms.
- Temperature adjustment for animal rooms in conventional is by wall thermostat in each room. Temperature adjustment for animal rooms in semi-isolation and isolation is by wall thermostat located outside each room in hallway. Additional adjustments are made at the air handler unit in the mechanical rooms.
- There is no individual room control for humidity. Humidity is controlled at each air handler which supplies several rooms. Humidity is automatically added to the system during the heating season, and off during the cooling season.
- Each animal room in BSL2 isolation has a magnehelic gauge mounted in the hallway that allows animal care personnel to see if the room is under negative pressure.
- [REDACTED] and [REDACTED] – Automatic thermostat control of wall exhaust fans and ceiling circulating fans. Automatic thermostat control of ceiling mounted hot water unit heaters.
- The [REDACTED] system to monitor temperature, humidity, and lighting is in all animal rooms.

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

The facility does not have any construction feature that would minimize the potential for adverse consequences.

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

All animal room pressures are negative compared to the hallways. The BSL2 area has magnehelic gauges mounted outside each room so personnel can easily monitor room pressure. Animal room temperature and humidity are monitored by the [REDACTED] system. [REDACTED]

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

[REDACTED]



2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.



- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

Since the last AAALAC visit, there were two one hour planned shutdowns, so Madison Gas and Electric could replace a switch gear.

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

Common features for animal rooms:

- Light timers (12 hours of light and 12 hours of dark)
- Waterproof fluorescent fixtures with two – 4', 32 w tubes
- All electrical receptacles in animal rooms have waterproof cover
- Generally, rodents are not placed on the top rack. If they are placed on the top rack they have a filter top and PVC tube or other nesting structure in the cage

Conventional

- Animal rooms with cages or racks – 1 fixture
- Dog rooms with runs – 1 fixture/run, 10 per room

Semi-isolation

- Small rooms – 2 fixtures
- Large rooms – 4 fixtures

Isolation

- Ante room – 1 fixture
- Animal room – 2 fixtures



- 30 fixtures



- 16 fixtures

- 16 fixtures

3. **System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

Does not apply

4. **Storage Areas** [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

The following feed and bedding room has temperature control. All feed is kept on dollies and dunnage racks. Vermin are monitored using live traps.

Isolation	Food is taken as needed from room
Semi Isolation	Food is taken as needed from room
Conventional	Room

The following areas do not have temperature control. Feed and bedding is stored on wood or plastic pallets.

Room	East end of the
Room	East end of

May through October provides fly control to the exterior of the and . Interior and exterior bait stations are in the barn areas.

SVM ARC uses the 405 series Standard Operating Procedures (SOPs) to describe the internally maintained vermin control program. Additional ways to control vermin are:

- Electronic insect light traps in hallway of barn area.
- Live traps are used in small animal areas in the conventional, semi-isolation, and isolation areas are checked daily.

- b. Describe storage areas for cages, equipment, supplies, etc.

Area	Room #	Square feet	Supplies
Semi		123	Reptile tanks and supplies
		123	Cat and bird supplies
		123	Cat PPE, cat food, cat room supplies
		123	Disposable exhaust filters
Conventional		121	Clean cage storage-small animal cages
		54	Pan papers/air filters
		435	Oxygen and CO ₂ cylinders
		80	PPE
		80	PPE, sharps containers, floor scrubber
		220	Transport cages
		190	Medical supplies, prescription drugs, refrigerators for drugs/food

		256	Ice machine, dead animal freezers
		91	Laundry facility, procedure towels
		279	Rabbit and shoe box racks, SS feeders, Resting platforms
Isolation		68	Janitorial supplies, PPE
		142	Scrub suits, coveralls, towels, shampoo
		42	Tools, light bulbs, floor scrubber
		99	Garbage bags, PPE, autoclave bags, disinfectant
Surgery Area		116	Rubbermaid barrels
		109	Medical Sciences teaching supplies
		191	Surgery teaching supplies, anesthesia machines, surgical lights, controlled drug lock box
Barns		87	Paint supplies, disinfectant, Nelson watering bowls and lids
		31	Barn cleaner parts
		105	Horse supplies, truck supplies, tools
		114	Medical supplies, refrigerator for medication and vaccines
		210	Large animal kickboards, feed tubs, transport cages
		8,376	Hay, bagged shavings, skid steer, fork lift, walk-in freezer/refrigerator

- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

Area	Room #	Square feet	Supplies
Conventional		435	Oxygen and CO ₂ cylinders
		68	Janitorial supplies
		99	Disinfectant
		87	Paint supplies, disinfectant
		8,376	Fuel (in designated cabinet)

5. Facilities for Sanitizing Materials [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

Cage sanitation is located in Room [REDACTED]. This is in the conventional housing area. All cages from the conventional, semi-isolation and isolation areas will be sanitized here.

All cages and equipment are brought to the dirty side of the cage wash room, [REDACTED]. Here cages are dumped and equipment prepared for sanitizing in the rack washer. Clean cages and equipment are removed from the clean side, room [REDACTED]. There is a wall separating the clean and dirty side of the cage wash rooms. Soiled bedding is removed in plastic bags and placed in a dumpster outside the cage wash area. The floors of the cage wash rooms are covered with epoxy quartz. The walls are concrete block with epoxy paint. The ceilings for

both areas are gypsum board with epoxy paint. The dirty side is covered with glass board. Fluorescent light fixtures are water tight and electrical outlets have waterproof covers. There are two 3" floor drains on the dirty side and a 3" floor drain on the clean side. Each room has a thermostat to control room temperature. The clean side room pressure is positive to the hallway and the dirty side room is negative to the hallway.

All bedding is dumped in a bedding dump station. Cages, wire lids, rabbit pans, etc. are placed on a universal wash cart. Bottles are placed on a [REDACTED] bottle wash cart. Cages and equipment are sanitized in a [REDACTED] rack washer. Cage washing detergent is automatically measured and dispensed using a [REDACTED] peristaltic pump.

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

[REDACTED] is divided into four areas:

Barns

[REDACTED] – currently empty. The barn can house large animals in a large pen.

[REDACTED] – Houses Department of Medical Sciences equine teaching herd. The area has 11 box stalls.

[REDACTED] – This barn contains three separate areas with a total of 14 pens for holding pigs, cows, horses, sheep, goats, and calves.

[REDACTED] – The area contains 12 stalls, six bovine and six equine, each with a padded floor. Two of the bovine stalls contain padding on the three walls and gate. These pens are used to recover large teaching animals after surgery. The recovery area is temperature controlled.

Conventional – The area contains six dog rooms with 10 runs each and 23 small animal rooms for housing animals in cages, on racks, or on the floor.

Semi-Isolation – The area contains 44 rooms to house large and small animal species, all rooms can be entered from the clean hallway. Of the 44 rooms, 23 interior rooms open to a service corridor. Large animals are housed in these rooms; it allows the animal to be removed from the room during cleaning. All the manure and bedding is removed from this service corridor. The remaining exterior rooms will house animals that do not need to be removed for cleaning. The rooms all have removable gates to accommodate large or small animals.

Isolation (BLS2) – The area contains 40 rooms and a necropsy area. All rooms are accessible by the clean hallway and entrance to all rooms is through an anteroom. Twenty-one interior rooms open to a service corridor. All rooms have removable gating for housing large and small animals. The isolation area is accessed by men's and women's locker rooms. The exhaust air is HEPA filtered.

2. Surgery [Guide, pp. 144-145]

- a. Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon's scrub, operating room, and postoperative recovery.

Large animal surgery area at the [REDACTED]

There is a large animal surgery area at the [REDACTED] location that is used for teaching purposes. The following areas support this area:

Animal preparation – 792 square feet – Room [REDACTED] – The animal preparation area, Room [REDACTED], has four large animal stocks, Formica wall cabinets, and stainless steel counter with two sinks. The walls are a cement block and ceiling is gypsum board, both treated with epoxy paint. The floor is a rough concrete treated with Ashford formula.

Rooms [REDACTED], 300 square feet – Used for storage of supplies, instruments, anesthesia machines, and portable lights. The walls are a cement block and ceiling is gypsum board with epoxy paint. The floor is a smooth concrete. Fluorescent fixtures are water tight.

Autoclave for instruments and supplies – 254 square feet – Room [REDACTED] – Instruments are autoclaved in Room [REDACTED] by a steam autoclave. The room has a 12" tile floor, cement block walls and gypsum board ceiling, both treated with epoxy paint.

Dressing areas for changing into surgical attire – 742 square feet – Rooms [REDACTED] and [REDACTED] – The rooms have two showers; lockers, sink and toilet facilities.

Surgery scrub is part of the surgical arena.

Operating arena – 2,316 square feet – Room [REDACTED] – The operating arena, has four large animal stocks, Formica wall cabinets, stainless steel counter with four sinks and two double head, ceiling-mounted surgical lights. The walls are a cement block and ceiling is gypsum board, both treated with epoxy paint. A majority of the floor is colored epoxy quartz, while the other part is ¾" resilient rubber floor.

Animal recovery – 3,087 square feet – Room [REDACTED] – Large animal recovery is in Recovery Area Room [REDACTED]. This area is located off the Surgery Room [REDACTED]. Two of the 12 stalls in this area are padded and all the floors in the stalls are ¾" resilient flooring. The walls are a cement block, the ceiling is gypsum board, and both covered with epoxy paint. The fluorescent lights are water tight. The center aisle of this area is concrete with a rough trowel finish and treated with Ashford formula.

Students taking courses in the Department of Medical Sciences Department use the same area for large animal instruction three days per weeks throughout the school year. The non-surgery functions use 75% of the time, while surgery functions use 25% of the total time. The area is thoroughly cleaned between surgical and non-surgical courses.

Small Animal Surgery of [REDACTED]

There are three rooms used by the RARC small animal veterinary staff for procedures and surgery (spay/neuter).

The following areas support this area:

Animal preparation: Room [REDACTED], 156 square feet. This procedure room has formica base cabinets, wall cabinets and counter top with sink and stainless steel procedure table. The room is used for storage of veterinary supplies, procedures, animal prep for surgery and surgeon's scrub.

Animal surgery/procedure: Room [REDACTED], 105 square feet. The room has two storage cabinets for supplies, stainless steel surgery table, portable anesthesia machine and portable surgery light.

Animal recovery: Room [REDACTED], 103 square feet. The room has a stainless steel table and two portable transport cages used for recovery.

Autoclave for instruments and supplies: Room [REDACTED], 254 square feet. Instruments and supplies are processed by a steam autoclave.

Dressing areas for changing into surgical attire: Rooms [REDACTED] and [REDACTED], 742 square feet. Each room has lockers, two showers, two sinks and toilets/urinals. Room [REDACTED] and [REDACTED] 407 square feet. Each room has lockers, shower, sink and toilet.

Surgical scrub storage: Room [REDACTED], 142 square feet. Room has two storage cabinets, for surgical scrubs, towels, and coveralls.

- b. Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

Large animal surgery area at the [REDACTED]

Interior Surfaces

The casting area is $\frac{3}{4}$ " resilient flooring. The remaining area is a colored epoxy quartz system. The walls are cement block with epoxy paint. The ceiling is gypsum board with epoxy paint.

Ventilation System

100 percent outside air is used without air re-circulation. The surgery and recovery area is positive to the hallway.

Lighting

Lighting is provided by water tight fluorescent fixtures.

Outlets

Electrical outlets have waterproof covers.

Scavenging

Anesthesia machines have a vacuum hook up and a canister to keep anesthetic gases from escaping into the room.

Fixed Equipment

The east and west walls have a stainless counter top with two stainless steel sinks and Formica cabinets. The east, west, and north walls have oxygen and vacuum line hook-up. There are two double head surgical lights that hang from the ceiling. A large animal induction area (padded walls and gate) is located on the southwest corner. Four large animal stocks for bovine standing surgery with ceiling hung electrical outlet boxes

Small Animal Surgery of [REDACTED]

Interior Surfaces

The floors are a colored epoxy quartz, the ceilings are gypsum board with epoxy paint and the walls are cement block with epoxy paint.

Ventilation System

No air recirculation. The surgery and recovery area is positive to the corridor and the procedure room () is negative to the corridor.

Lighting

Rooms and have water tight fluorescent fixtures and room has covered florescent fixtures

Outlets

Electrical outlets have waterproof covers

Scavenging

The portable anesthesia machine has F/AIR canister

Fixed Equipment

The only fixed equipment is in procedure room with formica base cabinets, wall cabinets and countertop with sink.

3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

Does not apply

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

Necropsy	Isolation – one room – 466 square feet
Cage Wash	Two rooms – 737 square feet
Procedural Space	Two rooms – 346 square feet
	Two areas (Large Animal) – 1,277 square feet
Staff Facilities	Four locker rooms with showers – 1,185 square feet
	Two bathrooms with sink – 43 square feet
	Three sink areas in front of barns – 202 square feet
	Two work stations – 356 square feet
Lounge Facilities	One room – 281 square feet
Office Space	Three offices – 418 square feet
Mechanical	One room (boilers and chillers) – 1,724 square feet
	Four mechanical lofts (air handling units) – 9,330 square feet

D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

-
-

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

The [REDACTED] is located at the [REDACTED] end of the [REDACTED] of the [REDACTED].

The [REDACTED] is managed under Animal Resource Center (ARC) which has the following management structure:

[REDACTED] and [REDACTED] report to [REDACTED]. [REDACTED] reports to [REDACTED], DVM, MS, the [REDACTED]. This facility is under the direction of the School of Veterinary Medicine IACUC/OB. Veterinary care is managed by RARC under the direction of Dr. [REDACTED], Attending Veterinarian; with Dr. [REDACTED], SVM's Senior Program Veterinarian for Small Animals.

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

The animal holding facility at the [REDACTED] is located on the [REDACTED]. The research laboratories are located on the [REDACTED] and [REDACTED].

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

[REDACTED]

Policy number 2012-045-v Laboratory Housing of Animals describes the process for housing animals in a laboratory. Research animals are sometimes housed outside of dedicated housing space. Housing outside vivarium for greater than 12 hours requires SVM IACUC approval.

4. Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

Corridors

Corridors are cement block with epoxy paint and corners have corner guards. The corridors are 5' wide.

Animal Room Doors

Animal room doors are metal 83" x 44" with a 10" x 10" window. All doors have door sweeps. Doors in the BL3 isolation areas are metal 80" x 36" with a 10" x 10" window on the door that opens into the dirty hallway. Isolation doors have door sweeps.

Floors

Floors throughout the second floor facility are seamless quartz epoxy with a 6" cover base.

Walls

Walls throughout facility are concrete block with epoxy paint. The two dog rooms have glass board on the run walls.

Ceiling

Ceilings throughout facility are gypsum board with epoxy paint, except for glass board in dog rooms, cage wash room, and 6 rooms in [REDACTED] BL3 isolation area.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

There are no exterior windows in animal rooms that allow natural photo periods or public observation into the room.

B. Functional Areas and Operations**1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]**

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

- All air is one hundred percent outside air, there is no re-circulated air.
- Supply fan [REDACTED] supplies air for the [REDACTED] animal facility. Exhaust fan [REDACTED] services the conventional rooms and exhaust fans [REDACTED] is a dual fan system service for the [REDACTED].
- Each room in the [REDACTED] has its own HEPA exhaust system. The exhaust air then passes through a common, second HEPA exhaust system in the mechanical room before being exhausted to the outside.

- Conventional animal room pressure is monitored with magnehelic gauges mounted outside each animal room. Photohelic gauges monitor the pressure in the [REDACTED] animal rooms, with a visual and audible alarm outside each isolation room and one located in the conventional corridor. [REDACTED]. Each room has temperature and humidity control.
- Temperature and humidity adjustments are made at the room level with additional adjustments at the air handler.
- [REDACTED].

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

The facility does not have any construction feature that would minimize the potential for adverse consequences.

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

All animal room pressures are negative compared to the hallways. Magnehelic gauges outside conventional rooms allow personnel to easily monitor room pressure. Animal room pressures for the [REDACTED] are monitored by photohelic gauges mounted in the clean corridor. One gauge measures the pressure between the animal room and dirty hallway. The second gauge measures pressure between the animal room and anteroom. [REDACTED]

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

[REDACTED]

2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

Since the last AAALAC visit, the School experienced a power outage for approximately one hour on July 14, 2016. When power came back on room temperature increased for about 25 minutes reaching a maximum temperature of 80.9 degrees F. Watchdog system went in alarm, problem was resolved within 15 minutes. No animals experienced adverse events.

In the event of a power failure and emergency power is not available; all animal rooms would be checked frequently for signs of stress. Depending on which facility had the power failure, ARC and RARC would see what space was available at the other locations and assess which animals could be moved.

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

Common features:

- Light timers (12 hours of light and 12 hours of dark)
- Fluorescent fixtures with 2-4' 34 w tubes
- All electric receptacles have waterproof covers
- Generally, rodents are not placed on the top rack. If they are placed on the top rack they have a filter top and PVC tube or other nesting structure in the cage.

Conventional

- Animal rooms with cages on racks have between one to three recessed fixtures.

Dog Rooms

- One waterproof fixture for two runs and three fixtures for the center aisle

Isolation

- Two waterproof fixtures for anteroom and three fixtures for animal rooms.

3. **System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

Does not apply

4. Storage Areas [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

The following rooms have temperature control and storage items are stored off the floor on carts or racks.

Room [REDACTED] – Clean cage storage, feed and bedding storage, disinfectants

SVM ARC uses the 405 series Standard Operating Procedures (SOPs) to describe the internally maintained vermin control program. Live traps are used and checked daily.

- b. Describe storage areas for cages, equipment, supplies, etc.

Room #	Square feet	Supplies
[REDACTED]	192	Tyvek coveralls, scrub suits, towels, PPE Washer and dryer Garbage/autoclave bags, PPE, refrigerator

- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

Room #	Square feet	Supplies
[REDACTED]	272	Disinfectants stored in cabinet

5. Facilities for Sanitizing Materials [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

The cage sanitation room is [REDACTED] located on the south corridor. The animal rooms are located on the north, east and west corridors. The clean and dirty side of the cage wash room is separated by a wall and the cage wash unit.

All cages and equipment are brought to the dirty side of the cage wash room. Clean cages are removed from the clean side of the cage wash room. The floors are seamless epoxy quartz. The walls are concrete block with epoxy paint and ceiling is FRP board. Light fixtures are waterproof and electrical outlets have waterproof covers. There is a 3" floor drain for each side to wash down the floors. Each side has a thermostat to control room temperature.

All bedding is dumped in a bedding dump station. Cages, wire lids, rabbit pans, etc. are placed on a universal wash cart. Bottles are placed on a [REDACTED] bottle wash rack. Cages and equipment are sanitized in a [REDACTED] rack washer. Cage washing detergent is automatically measured and dispensed using a [REDACTED] peristolic pump.

C. Special Facilities [Guide, pp. 144-146, 150]

and suspended ceiling with recessed fluorescent lights. Anesthesia machines are stored in closets with the same make up.

Dressing areas for changing into surgical attire – Rooms [REDACTED] and [REDACTED] – 584 square feet – There are locker facilities for men and women located off [REDACTED]. The locker facility is equipped with lockers, two showers, toilet, and sink. The floors in this area are epoxy quartz; walls are cement block and ceiling is gypsum board.

Surgeons scrub – Surgeon preparation, is performed in a secluded bay in [REDACTED].

Operating area is part of [REDACTED] – 4,221 square feet

Animal recovery – 937 square feet – Room [REDACTED] – This area has six dog runs and 20 cages for holding cats. Floors in this area are seamless epoxy quartz. The walls are cement block covered with epoxy paint. The dog run area ceiling is gypsum board with epoxy paint that is covered with white glass board and the light fixtures are a water tight fluorescent. The cat holding area has a suspended tile ceiling with recessed fluorescent lights. The area is equipped with two treatment tables, grooming table, and stainless steel counter top with sink.

[REDACTED], Room [REDACTED]
Animal preparation – 197 square feet – Room [REDACTED] – Here the animals are anesthetized and clipped for surgery. The room was used as a lab and has wood cabinets with a lab counter top, tile floor, suspended ceiling with recessed fluorescent light, and the walls are cement block and gypsum board.

Instrument and sterile supply preparation and storage – 160 square feet – Room [REDACTED] – The Surgical Support Area is connected to the surgery rooms and is used for instrument preparation, surgeon preparation, and storage of supplies. The area has an autoclave for instrument preparation and two knee-operated stainless steel sinks with hot and cold water for surgeon scrub. Wood cabinets are used for storage of supplies.

Dressing areas for changing into surgical attire – No area dedicated for this. There are men's and women's toilet facilities on the third floor.

Surgeons scrub – 160 square feet – Room [REDACTED].

Operating area – 205 square feet, Room [REDACTED] and 177 square feet, Room [REDACTED] – The room has a suspended ceiling with recessed fluorescent lights, tile floor and the walls are cement block and gypsum board with epoxy paint.

Animal recovery – Recovery of sheep/pigs takes place back in their pens at the [REDACTED] at the [REDACTED]. Recovery of dogs will take place back in their pens on the [REDACTED] vivarium.

- b. Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

[REDACTED], Room [REDACTED]
Interior surfaces

The floors throughout [REDACTED] are seamless epoxy quartz.
The ceiling is open to the concrete floor above.
The walls are a cement block with epoxy paint covering.

Ventilation system

100 percent outside air is used, no air is re-circulated. [REDACTED] is negative to the hallway. The area is negative due to the anatomy course that is held in this area.

Lighting

Lighting is provided by recessed fluorescent fixtures.

Outlets

The safeway multi-tap electrical box has waterproof covers and the electrical strip above the counter top and sink have GFI outlets.

Scavenging

All anesthesia machines have a vacuum hook-up and a canister to keep unused anesthetic gases from escaping into the room.

Fixed equipment

Each surgical station has lines for oxygen and vacuum.
Surgical light is suspended from the ceiling.
Stainless steel counter top with sink.
Wood cabinets above counter top.
Video monitor
Safeway multi-top electrical box

[REDACTED], Room [REDACTED]

Interior Surfaces

Floors throughout the two surgical areas are 12" square tiles.
The walls are both concrete block and gypsum board with epoxy paint.
The ceiling is a suspended acoustical.

Ventilation

One hundred percent outside air is used, no air is re-circulated. The two surgery rooms are positive to the surgical support area, and the surgical support area is negative to the hallway.

Lighting

Lighting is provided by recessed fluorescent fixtures.

Outlets

Electrical outlets have water tight covers and are on a GFI circuit.

Scavenging

All anesthesia machines have a vacuum hook-up and a canister to keep unused anesthetic gases from escaping into the room.

Fixed Equipment

Suspended surgical light
X-ray view screen
Lines for oxygen, air, vacuum and nitrous oxide
Six electrical outlets with waterproof covers

3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

UW-Madison School of Veterinary Medicine AAALAC Program Description

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

Does not apply

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

Cage Wash	Two rooms – 618 square feet
Procedural Space	One room – 192 square feet
Staff Facilities	
	Bathrooms share by SVM personnel – 400 square feet
	Locker area shared by students – 584 square feet
Lounge Facilities	One common area used by SVM personnel
Office Space	One office – 114 square feet
Mechanical	Two rooms – 1,300 square feet

D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

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A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

is located about of the . The animal holding areas are on the and .

is managed under ARC which has the following management structure:

) and .

report to , DVM, MS, the

██████████. This facility is under the direction of the School of Veterinary Medicine IACUC/OB. Veterinary care is managed by RARC under the direction of Dr. ██████████, Attending Veterinarian; with Dr. ██████████, SVM's Senior Program Veterinarian for Small Animals.

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

The animal holding areas are on the ██████████ and ██████████. Research labs are located on ██████████.

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

The ██████████ facility is a conventional single corridor facility. The facility has 19 small animal rooms, office, clean cage, feed, and bedding storage. The ██████████ has two small animal rooms.

Policy number 2012-045-v Laboratory Housing of Animals describes the process for housing animals in a laboratory. Research animals are sometimes housed outside of dedicated housing space. Housing outside vivarium for greater than 12 hours requires SVM ICUC approval.

4. Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

Corridors

Corridors are plaster with epoxy paint. The main corridor is 4'8" wide and corridors with animal rooms are 3'10" wide.

Animal Room Doors

Doors for the ██████████ facility and ██████████ are metal, 3'w x 7'h with 8"w x 36"l windows.

Floors

The floors are a smooth concrete that have been sealed.
Clean cage storage area has a epoxy quartz floor.

Walls

The walls in animal rooms are plaster with epoxy paint.
The walls in the clean cage storage area are ceramic tile.

Ceiling

The ceilings in the animal rooms are a concrete with epoxy paint.
The ceiling in the clean cage storage area is concrete with epoxy paint.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

There are no exterior windows in the animal rooms that allow natural photo periods or public observation into the room.

B. Functional Areas and Operations

1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

- [REDACTED]
- Chilled water for air conditioning and steam for heating are from a central physical plant location.
- The air is 100% outside air and is not re-circulation.
- Humidity for the building is controlled at the air handler.
- There is no individual temperature control for animal rooms. Temperature is controlled by a thermostat in the hallway at each section.
- The [REDACTED] system monitors temperature, humidity, and lighting.

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

The facility does not have any construction feature that would minimize the potential for adverse consequences.

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

Animal room pressures are negative compared to the hallways. [REDACTED]

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

[REDACTED]

2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

[REDACTED]

- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

Since the last AAALAC visit, there have been no power failures to report.

In the event of a power failure and emergency power is not available, all animals would be checked frequently for signs of stress. Depending on which facility had the power failure, ARC and RARC would see what space was available at the other locations and access which animals could be moved.

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

Light timers (12 hours of light and 12 hours of dark).
One fluorescent light fixture serves for each animal room on the [REDACTED].
Four fluorescent light fixtures for the [REDACTED] animal rooms.
Each animal room has a double electrical outlet with cover.

- 3. System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

Does not apply

4. Storage Areas [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

The following rooms have temperature control and storage items are stored off the floor on carts or racks.

Feed Storage	Room [REDACTED]	– 355 square feet
Bedding Storage	Room [REDACTED]	– 355 square feet

SVM ARC uses the 405 series Standard Operating Procedures (SOPs) to describe the internally maintained vermin control program. Live traps are used and checked daily.

- b. Describe storage areas for cages, equipment, supplies, etc.

Clean cage storage Room [REDACTED] – 355 square feet
Storage cabinet In [REDACTED]

- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

Storage cabinet In [REDACTED]

5. Facilities for Sanitizing Materials [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

Cage sanitizing is not available in this building. Dirty cages are brought to Room [REDACTED] where bedding is dumped in a bedding dump station. Cages are prepared for transportation to either [REDACTED] or [REDACTED] to be sanitized.

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

Does not apply

2. Surgery [Guide, pp. 144-145]

- a. Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon's scrub, operating room, and postoperative recovery.

Does not apply

- b. Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

Does not apply

3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

Does not apply

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

Staff Facilities	Two locker rooms with showers – 366 square feet Three sinks in animal area for hand washing
Office Space	One office – 55 square feet

D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

<ul style="list-style-type: none">••••	[Redacted]
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A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

[Redacted]

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

[Redacted]

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

4. Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

B. Functional Areas and Operations

1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

[Redacted content]

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

[Redacted content]

[REDACTED]

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

[REDACTED]

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

[REDACTED]

2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

[REDACTED]

- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

[REDACTED]

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

[REDACTED]

will control the lighting on a 12 hour cycle. The clock controlled system can be

3. **System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

4. **Storage Areas** [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

- b. Describe storage areas for cages, equipment, supplies, etc.

- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

5. **Facilities for Sanitizing Materials** [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

[REDACTED]

[REDACTED]

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

[REDACTED]

2. Surgery [Guide, pp. 144-145]

- a.** Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon's scrub, operating room, and postoperative recovery.

- b.** Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

The [REDACTED] is located on the [REDACTED] of the [REDACTED]. [REDACTED] provides exceptional patient care, comprehensive clinical education and world-class clinical research for the benefit of animal and human health. The large animal area houses client animals, rumen fistula cows, blood donor horses, and some research animals. [REDACTED] has its own staff that cares for the animals including 24 hour CVTs under the direction of Dr. [REDACTED]. This facility is under the direction of the School of Veterinary Medicine IACUC/OB. Research veterinary care is managed by RARC under the direction of Dr. [REDACTED], Attending Veterinarian; with Dr. [REDACTED], SVM's Senior Program Veterinarian for Agricultural Animals and [REDACTED], SVM's Senior Program Veterinarian for Small Animals. In the event of a weekend emergency or concern with the large research and teaching animals, [REDACTED] will treat and house animals if needed.

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

[REDACTED] is located on the [REDACTED] of the [REDACTED], while the research laboratories are on the [REDACTED] and [REDACTED].

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

The large animal area is a conventional type setting.

4. Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

Corridors

Corridors are cement block with epoxy paint.

Animal Room Doors

Does not apply

Floors

Floors in the corridor are concrete covered with a non-slip diamond tread rubber. Floors in the box stalls are concrete covered with a rubber stall mat. Floors in the flex pens are concrete with a non-slip coating.

Walls

Walls throughout the facility are concrete block with epoxy paint.

Ceilings

Ceiling is open with exposed air ducts and pipes.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

Does not apply

B. Functional Areas and Operations**1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]**

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

The air is 100% outside air and is not re-circulation.

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

The facility does not have any construction feature that would minimize the potential for adverse consequences.

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

Does not apply

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

Does not apply

2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

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- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

The school experienced a power outage for approximately one hour on July 14, 2016. There were no adverse events.

In the event of a power failure and emergency power is not available all animals would be checked frequently for signs of stress. We would see what space was available at the other locations and access which animals could be moved.

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

Fluorescent fixtures are not waterproof.
No light timers.

3. **System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

Does not apply

4. **Storage Areas** [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

The area does not have temperature control. This area uses traps for vermin control.

Feed Storage	One room – 869 square feet
Bedding Storage	One room – 869 square feet

- b. Describe storage areas for cages, equipment, supplies, etc.

Storage	One room – 400 square feet
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- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

Storage	One room – 56 square feet
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5. Facilities for Sanitizing Materials [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

Does not apply

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

The large animals are housed in box stalls and pens. There are flex pens available for sheep and pigs. Four, large animal isolation rooms for client animals.

2. Surgery [Guide, pp. 144-145]

- a. Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon's scrub, operating room, and postoperative recovery.

Same as Surgery section for	
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- b. Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

Same as Surgery section for	
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3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

<p> has state-of-the-art diagnostic imaging capabilities including radiography, ultrasonography, fluoroscopy, CT scans, MRI, nuclear imaging. also offers complete pathology services, licensed veterinary pharmacy services and both small and large animal services. These services are offered for client owned animals, but can be used for IACUC/OB approved animal care and use research protocols as well.</p>
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4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

Does not apply

D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

[REDACTED]

A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

[REDACTED] is located approximately [REDACTED] and adjacent to the [REDACTED]. The facility sits on 9.5 acres.

[REDACTED] is managed under ARC which has the following management structure: [REDACTED] and [REDACTED] report to [REDACTED], DVM, MS, the [REDACTED]. This facility is under the direction of the School of Veterinary Medicine IACUC/OB. Veterinary care is managed by RARC under the direction of Dr. [REDACTED], Attending Veterinarian, with Dr. [REDACTED], SVM's Senior Program Veterinarian for Agricultural Animals.

2. Describe the physical relationship of the animal facilities to the research laboratories where animals may be used.

Research labs are located at the [REDACTED] building.

3. Describe the general arrangement of the animal facilities (e.g., conventional, clean/dirty corridor, etc.). For animals that are maintained in a laboratory in order to satisfy the scientific aims of a protocol, describe the housing and care provided and the maximum period of stay required.

This is a large animal holding facility consisting of loose, open housing.

4. Describe finishes throughout the animal facility(ies) for floors, walls, ceilings, doors, alleyways, and gates. Note any areas that are not easily sanitized and describe how these areas are maintained.

Floors

- Floor in barn is concrete.
- Floor in pole shed is concrete.

Walls

- The building is a wood frame with metal exterior. The interior walls are insulated and covered by ¼" plywood.
- The building is a wood frame with metal exterior.

Ceilings

- The ceiling is wood frame with exterior metal.
- The ceiling is wood frame with exterior metal.

5. If exterior windows are present within the animal housing or procedure areas, describe IACUC/OB consideration regarding temperature and photoperiod control, as well as potential security risks.

– Exterior windows are absent in this building, but animals are exposed to natural photo periods. Sliding doors open to the north, east and west and allow animals free access to pen areas and exercise areas (south, east, and west). The building is open to the south.

– Pole shed is open to the south.

B. Functional Areas and Operations

1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]

- a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

Does not apply

- b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

Does not apply

- c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

Does not apply

- d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

Does not apply

2. Power and Lighting [Guide, p. 141]

- a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

There is no emergency backup power in the buildings.

- b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

Since the last AAALAC visit, there has not been any interruption in service This is open housing; animals have access to the [REDACTED] if they choose and would be checked frequently.

- c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

[REDACTED] – Light fixtures are a water-tight incandescent bulb and the electrical outlets have moisture-proof covers.

[REDACTED] - Light fixtures are a water-tight incandescent bulb and the electrical outlets have water-tight covers.

- 3. System Malfunctions.** If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

Does not apply

4. Storage Areas [Guide, pp. 141-142]

- a. Describe storage areas for feed and bedding, including temperature and vermin control.

These areas do not have temperature or vermin control. Straw, hay, and corn stalks are stored on the concrete floor.

Feed Storage	[REDACTED]	– Hay storage – 3,744 square feet
Bedding Storage	[REDACTED]	– Corn stalks, sawdust, and straw – 3,744 square feet

- b. Describe storage areas for cages, equipment, supplies, etc.

Does not apply

- c. Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).

Does not apply

5. Facilities for Sanitizing Materials [Guide, pp. 153]

Describe for each cage sanitation area its location, the traffic flow pattern (soiled to clean, or in and out) within the facility, and kinds of equipment (tunnel washer, bottle washer, rack washer, etc. and other related equipment such as bedding dispensing units).

Does not apply

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

Does not apply

2. Surgery [Guide, pp. 144-145]

- a. Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon's scrub, operating room, and postoperative recovery.

Does not apply

- b. Describe construction features of the operating room(s), including interior surfaces, ventilation, lighting, and fixed equipment used to support surgical procedures and enhance contamination control.

Does not apply

3. Other Specialized Animal Use Facilities [Guide, pp. 146-150]

Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

Does not apply

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

Does not apply

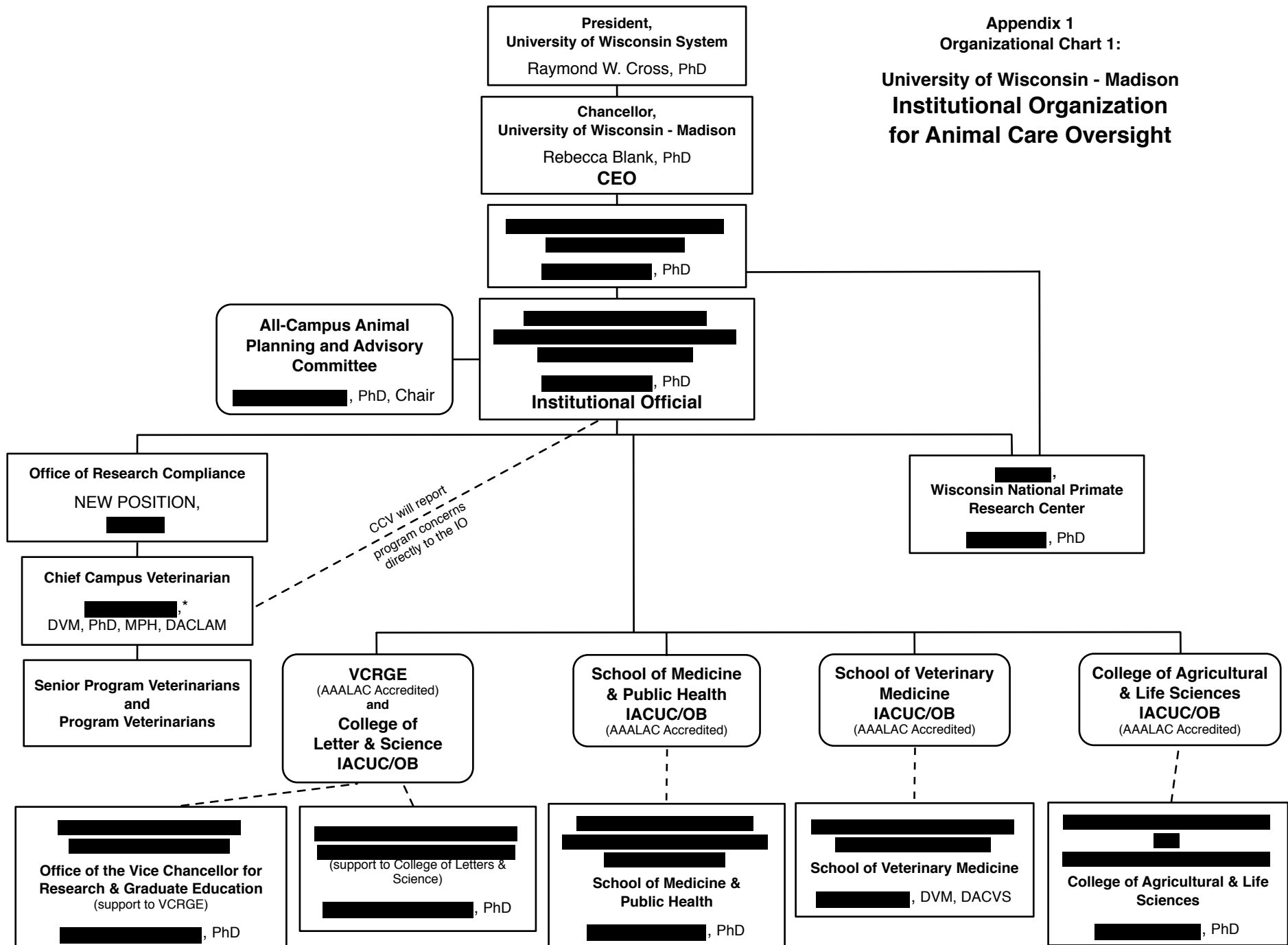
D. Security and Access Control [Guide, p. 151]

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

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Appendix 1
Organizational Chart 1:

University of Wisconsin - Madison
Institutional Organization
for Animal Care Oversight

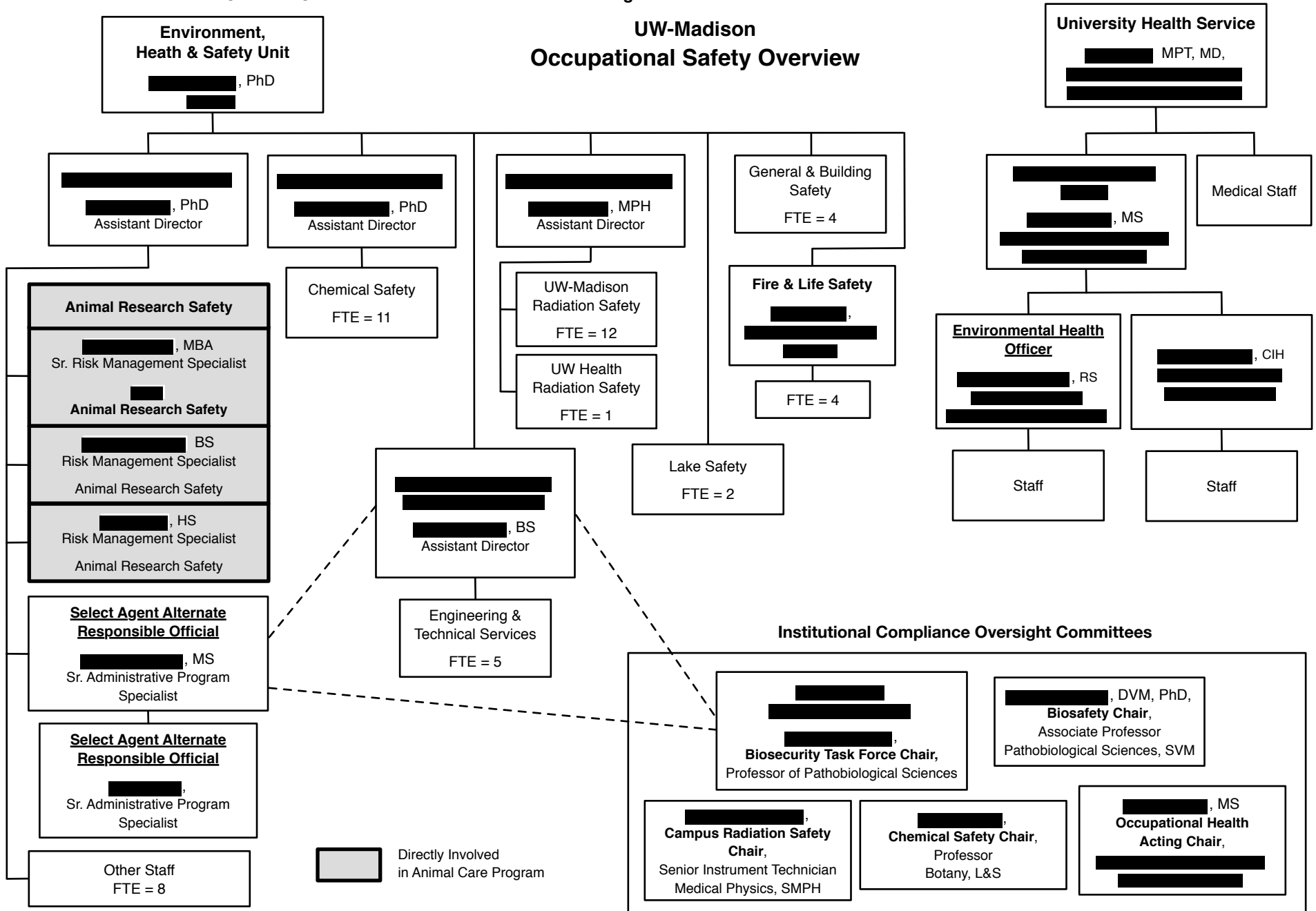


* Dr. [Redacted] reports to Dr. [Redacted] for personnel supervisory purposes only

Appendix 1
Organizational Chart 2:

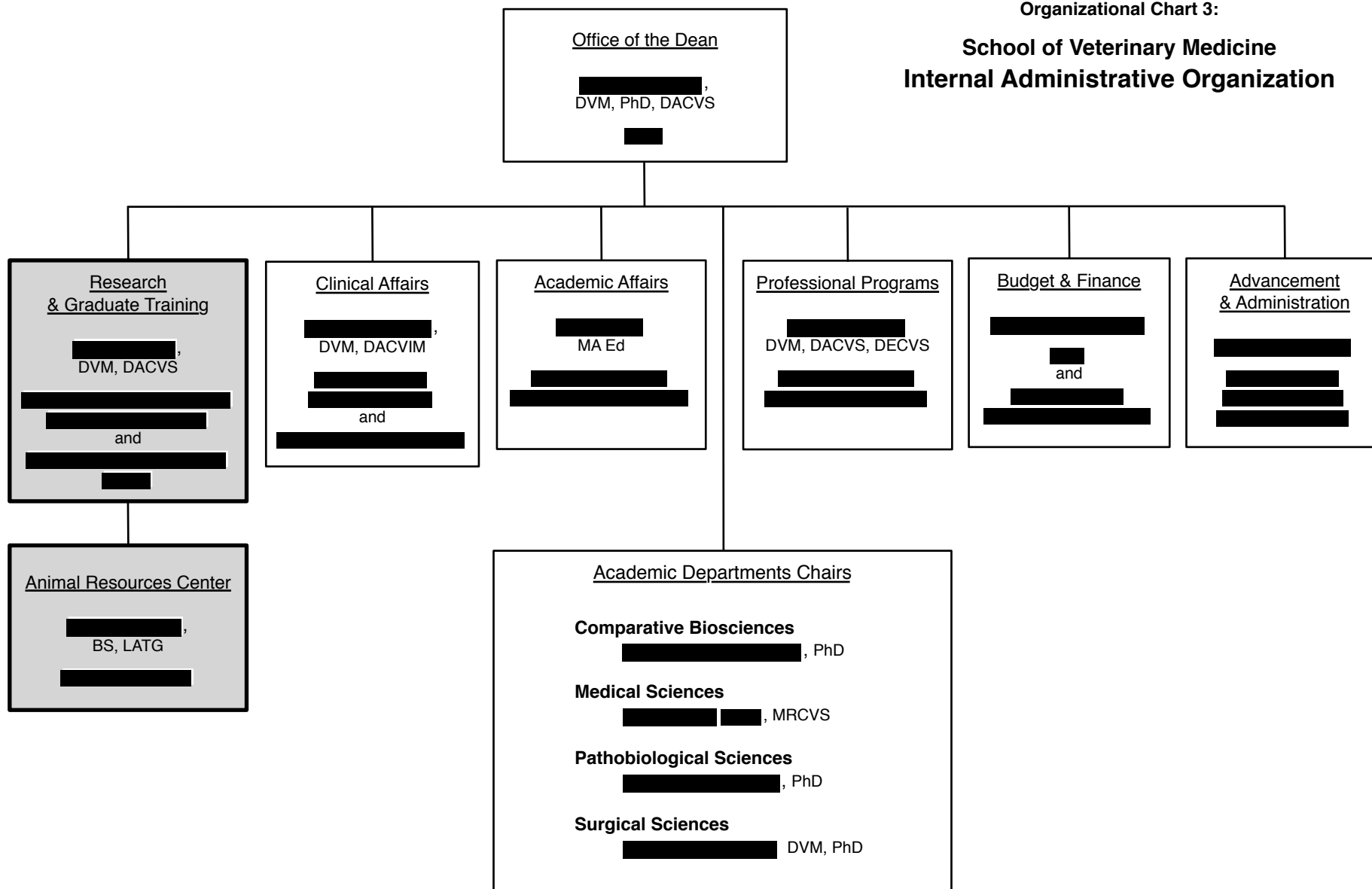
UW Facilities Planning & Management


UW-Madison
Occupational Safety Overview



Appendix 1
Organizational Chart 3:

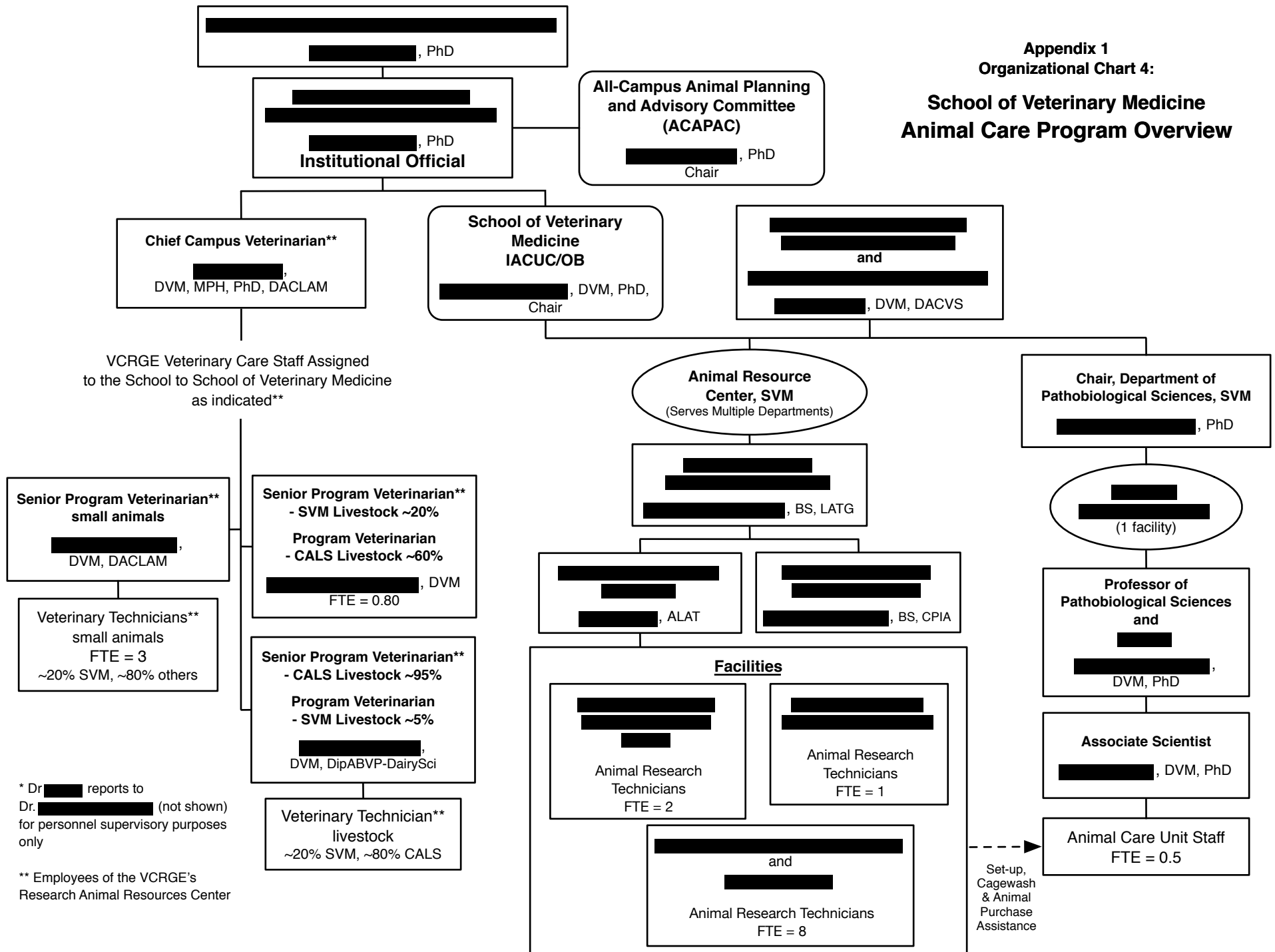
**School of Veterinary Medicine
Internal Administrative Organization**



 Directly Involved
in Animal Care Program

Appendix 1
Organizational Chart 4:

School of Veterinary Medicine
Animal Care Program Overview



* Dr. [redacted] reports to Dr. [redacted] (not shown) for personnel supervisory purposes only

** Employees of the VCRGE's Research Animal Resources Center

Appendix 2: Animal Usage (page 1 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
The Effect of Regional Limb Perfusion with Amikacin Sulfate on Bioburden in Infected Wounds in Horses and the Effects two Common Bacterial Isolates have on the Gross and Histologic Features of Granulation Tissue of Chronic Wounds in Horses	V005008		horse: 10	D						
The Effect of Combination Supplementation with Glutathione and Vitamin E on Markers of Oxidative Stress and Clinical Outcome in Hospitalized Dogs	V005013		dog: 40	C						
Cartilage Implants in a Sheep Model	V005016		sheep: 33	D	X			X	Bio Phys	
Tumor Vaccines for the Treatment of Melanoma: In Vivo Cytokine Therapy for the Treatment of Neoplasia	V005017		dog: 30	C					Phys	
Efficacy of Transdermal Phenobarbital for Seizure Control in Cats	V005023		cat: 40	C			X			
Equine Lameness and Surgery Elective Course (teaching)	V005026		horse: 84	D					Phys	
Housing and Husbandry of Teaching and Research Animals in SVM Animal Program	V005027		any spp: any #	N/A: Holding protocol						
Diagnosis and Progression of Acquired Mitral Valve Disease in Whippets	V005029		dog: 475	C					Phys	
DNA Microseeding to Activate Immune Rejection of Canine Melanoma	V005031		dog: 13	D					Phys	

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 2 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Animals for Use in Veterinary Medical Outreach (Teaching)	V005032	[REDACTED]	dog: 15 horse: 6 cattle: 3	C						
Advanced Small Animal Ultrasound Course: Finding the Small Parts	V005033	[REDACTED]	cat: 12 dog: 36	D					Phys	[REDACTED]
Mosquito Maintenance	V005034	[REDACTED]	rabbit: 6	D						[REDACTED]
Dysregulation of Serotonin Brain Circuits Affecting Fluid and Nutrient Ingestive Behavior	V005038	[REDACTED]	rattus: 230	D			X			[REDACTED]
Field Sampling of Primates and Domestic Animals in Uganda	V005039	[REDACTED]	Black-and-white colobus: 60 Blue guenon: 60 Cattle: 300 Chicken: 300 Dog: 300 Goat: 300 Grey-cheeked mangabey: 60 L'Hoest guenon: 60 Olive baboon: 60 Pig: 300 Red colobus: 60 Red-tailed guenon: 60 Sheep: 300 Vervet: 60	D						

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 3 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
AVIAN Sedation & Clinical Techniques	V005057	[REDACTED]	Birds of prey: 30 Cranes: 30	C				X	Phys	[REDACTED]
Reptile Sedation and Diagnostic Techniques	V005068	[REDACTED]	Leopard Gecko: 30 Veiled Chameleon: 30 Bearded dragon: 30 Red-eared slider turtle: 30	C						[REDACTED]
Ferret Studies	V005069	[REDACTED]	ferret: 90	C					Phys	[REDACTED]
Tissue Perfusion of the Distal Limb following Regional Limb Perfusion in Horses	V005073	[REDACTED]	horse: 30	D						[REDACTED]
Veterinary Physiology Teaching Laboratory	V005075	[REDACTED]	dog: 30	C						[REDACTED]
Gastrointestinal Transit Time Following Intravenous Lidocaine Infusions and Acupuncture in Conscious Dogs Assessed with Barium-impregnated Polyethylene Spheres (BIPS).	V005077	[REDACTED]	dog: 20	C			X		Phys	[REDACTED]
Glycosaminoglycans as an Alternate Therapy for Managing Urinary Tract Infection in Dogs	V005083	[REDACTED]	dog: 100	C						
Association of Relative Regulatory T-cell Frequency with Progression-free Survival in Dogs with B-cell Lymphoma	V005095	[REDACTED]	dog: 35	C						

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 4 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Mechanisms of Prostate Development, Urinary Function and Dysfunction	V005096	[REDACTED]	mus: 5302	D	X		X		Bio Chem	[REDACTED]
Breeding and Colony Maintenance Protocol – Feline Congenital Glaucoma	V005098	[REDACTED]	cat: 204	C					Phys	
Thymidine Kinase 1 as a Biomarker to Monitor Response to Treatment for Canine Histiocytic Sarcoma	V005102	[REDACTED]	dog: 20	C						
Effect of Ultrasonographic Lung Lesions on Milk Production and Reproductive Performance in Adult Holstein Dairy Cattle	V005112	[REDACTED]	cattle: 700	C					Phys	
Bone Void Filler Variations in a Sheep Model	V005121	[REDACTED]	sheep: 27	D					Phys	[REDACTED] necropsy
Animals for Use in Grandparents University	V005127	[REDACTED]	horse: 6 dog: 15 cattle: 3	C						

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 5 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Teaching and Outreach Activities Sponsored by the [REDACTED]	V005128	[REDACTED]	cattle: 4	C					Phys	
Evaluating the Feasibility of Semi-quantitatively Measuring Pulpal Blood Flow of the Canine Tooth with Laser Doppler Flowmetry in the Dog	V005132	[REDACTED]	dog: 8	C					Phys	[REDACTED]
The Role of Urothelial Glycosaminoglycans in the Development of Canine Recurrent Urinary Tract Infections	V005133	[REDACTED]	dog: 50	C						[REDACTED]
Evaluation of Stereotactic Radiotherapy for Canine Sinonasal Tumors using Helical TomoTherapy	V005139	[REDACTED]	dog: 23	D					Phys	[REDACTED]
Mechanisms of Respiratory Plasticity	V005140	[REDACTED]	rattus: 2400 mus: 1200	D	X	X	X	X	Bio Chem	[REDACTED]
Quantitative Detection of Urinary Valerenic Acid in Horses Treated Orally with Quietex Paste, Quietex Powder, or with VISION Paste	V005146	[REDACTED]	horse: 12	D						
Nasal Swab Testing of Dairy Calves Post Vaccination	V005148	[REDACTED]	cattle: 50	C						

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 6 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Effects of Hormones, Toxins, Oxygen and Growth Factors on Brain Glia and Neurons	V005173		rattus: 6454 mus: 17440	D	X	X			Bio Chem	
Vole Breeding Colony	V005174		Southern red-backed vole: 325 Meadow vole: 290	D						
Factors Defining Successful Transition Cow Management in Wisconsin Dairy Herds	V005175		cattle: 18000	C						
Evaluation of Non-penetrating Microvascular cCips (NPVC) for End-to-side Arterial and Venous Anastomosis for Renal Transplantation in Cats	V005183		cat: 10	D	1				Phys	
Comparison of Miaderm Skin Cream versus Aloe Vera-based Gel in the Prevention of Radiation Induced Dermatitis	V005186		dog: 40	C						
Porphyromonas Gingivalis strain Specific Effects on the Deep Placental Bed	V005194		rattus: 214	D					Bio	
Evaluation of a Modified S. suis serotype 2 strain for the Potential use as a Modified Live Vaccine.	V005206		pig: 30	E					Bio	
Genetics of Body Size Evolution in Island Mice	V005209		mus: 4400	D					Phys	

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 7 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Canine Respiratory Disease Complex - Vaccination and Challenge	V005213	[REDACTED]	dog: 300	D					Bio	
Immunogenicity of Recombinant Poxvirus Vectors Expressing Immunogenic African Swine Fever Virus Proteins	V005220	[REDACTED]	mus: 171	C					Bio	[REDACTED]
The Analgesic and Systemic Immune Response to Stereotactic Radiation Therapy in Canine Appendicular Osteosarcoma.	V005225	[REDACTED]	dog: 20	D					Chem Phys	
Transplantation of the Whole Globe	V005244	[REDACTED]	dog: 20	D	X					[REDACTED]
Fully Licensed Monoclonal Antibody + Abbreviated CHOP Based Chemotherapy for Dogs with B-cell Lymphoma	V005245	[REDACTED]	dog: 20	D					Chem	
Using Thoracic Ultrasonography to Optimize Antibiotic use in Pre-weaned Dairy Calves.	V005250	[REDACTED]	cattle: 800	C					Phys	
Development of an Osseointegrated Neural Interface(ONI) for Prosthetic Control/Phase 1	V005256	[REDACTED]	rabbit: 100 mus: 80 rattus: 80	D	X				Phys	[REDACTED]

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 8 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Manipulation of Capillary Forces in Allograft Bone to Enhance Bone Regeneration	V005272	[REDACTED]	pig: 14	D						[REDACTED]
Assessment of Vaccine-induced Protection against White-nose Syndrome in Hibernating Bats	V005277	[REDACTED]	Big brown bat: 100 Little brown bat: 225	E					Bio	
Assessment of Protectivity of Novel Vaccines Against Rabies in Bats	V005278	[REDACTED]	mus: 70 Big brown bat: 120 Brazilian free-tailed bat: 120	D					Bio	
Avian TGA Study	V005294	[REDACTED]	avian spp: any #	C						
Pfizer-Canine Comparative Oncology and Genomics Consortium Biospecimen Repository; Tissue Collection Agreement	V005297	[REDACTED]	dog: 30	C						
Safety Evaluation of Toceranib Phosphate (Palladia™) in Combination with Doxorubicin in Cats with Naturally Occurring Tumors: A Phase I Dose-finding Study	V005298	[REDACTED]	cat: 24	D					Chem	
SVM Protocol Title 1	V005305	[REDACTED]	mus: 1206	E					Bio	
Regulation of T Cell Immunity to Intracellular Pathogens	V005308	[REDACTED]	mus: 20531	E					Bio Phys	[REDACTED]

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 9 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
COTC021: Evaluation of Orally Administered mTOR inhibitor Rapamycin in Dogs in the Adjuvant Setting with Osteosarcoma - Compared to COTC022: A Contemporaneous Controlled Study of the Standard of Care (SOC) in Dogs with Appendicular Osteosarcoma	V005320	[REDACTED]	dog: 36	D					Phys	
Population Pharmacokinetics of Oral Fluconazole in Dogs and Cats with Fungal Disease	V005321	[REDACTED]	cat: 200 dog: 200	C						
Inflammation in Resistance to Bacterial Infection	V005329	[REDACTED]	mus: 540	E					Bio	[REDACTED]
Pharmacokinetics of Extended Release Levetiracetam in Healthy Cats	V005343	[REDACTED]	cat: 10	D						[REDACTED]
Defining Pharmacokinetics and Biological Activity of Systemic Oncolytic Vesicular Stomatitis Virus (VSV) in Dogs Diagnosed with Cancer	V005352	[REDACTED]	dog: 10	D					Bio Phys	
Genomic, Phylogenetic and Recombinational Characterization of Feline Herpes Virus Field Isolates	V005353	[REDACTED]	cat: 150	C						
Development of Novel Poultry Vaccines	V005355	[REDACTED]	chicken: 3190	E					Bio	
Evaluation of Acoustoelastography in Equine Tendons and Ligaments	V005371	[REDACTED]	horse: 60	C					Phys	
Mechanotransduction and the Regulation of Skeletal Muscle Mass	V005375	[REDACTED]	mus: 4250	D	X		X	X	Chem	[REDACTED]

SS = Survival Surgery
MSS = Multiple Major Survival Surgery
FFR = Food and/or Fluid Regulation

PR = Prolonged Restraint
HAU = Hazardous Agent Use
NCF = Non-Central Facility

Appendix 2: Animal Usage (page 10 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Endogenous Remyelination of the CNS	V005376		cat: 34	D					Chem Phys	
Markers of Sulfonamide Hypersensitivity in Dogs	V005378		dog: 150	C						
Beyond Biomaterials: Engineering the Wound Bed	V005384		rattus: 200 pig: 90 mus: 3120	D					Bio	
SVM Equine Donations for Clinical Instruction in Large Animal Medicine	V005390		horse: 45	D					Phys	
Immunogenicity and Protective Efficacy of Enterovirus Vaccines	V005391		mus: 2461	E					Bio Phys	
Ventilation, Thermal Nociception, Food Intake and Fecal Output following Administration of a Novel, High-concentration Buprenorphine Preparation in Rats	V005402		rattus: 10	C				X		
Studies of Myelin Disease in the Canine and Myelin Repair and Neuroprotection	V005412		dog: 63	D	X				Bio Chem Phys	
Glial Cell Transplantation and the Biology of Myelin Disorders	V005423		rattus: 1650	D	X				Chem	
Basic Small Animal Ultrasound Course	V005425		dog: 36 cat: 12	C					Phys	
Pre-clinical Development and Pharmacokinetics of Liposomal Extended Release Doxycycline and Chloroquine	V005433		rattus: 24 mus: 35	D						
Large Animal Diagnostic Imaging	V005437		horse: 30	C					Phys	
Glutathione-S-transferase Polymorphisms in Dogs	V005450		dog: 340	C						

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Appendix 2: Animal Usage (page 11 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
An Investigation of Slow CT to Assess Respiratory Motion in Dogs with Pulmonary Lesions for use in Radiation Therapy Planning.	V005453	[REDACTED]	dog: 20	C					Phys	
Ground Squirrel Collection and Holding	V005460	[REDACTED]	Thirteen-lined ground squirrel: 300	D	X		X			[REDACTED]
Inflammatory Arthritis and Neurodegenerative Disease in Animals	V005463	[REDACTED]	dog: 1350 horse: 280	D					Phys	[REDACTED]
Third Year Surgical Laboratory Course - Junior Surgery	V005465	[REDACTED]	cat: 600 dog: 600	D	X				Phys	[REDACTED]
Respiratory Impairment and Recovery in Neurological Disorders	V005473	[REDACTED]	rattus: 280	D	X	X				[REDACTED]
Mitochondrial Variation in Life Span Amongst Rodent Species	V005481	[REDACTED]	Eastern gray squirrel: 10 Thirteen-lined ground squirrel: 10	D						[REDACTED]
Wear and Persistence of Hoof Blocks using Two Different Adhesives in Relation to Time until Healing of Claw Horn Lesions	V005487	[REDACTED]	cattle: 120	C				X		

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NCF = Non-Central Facility

Appendix 2: Animal Usage (page 12 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Field Study to Estimate the Prevalence of Infection with EHEC O157 and EPEC in Ruminants in Kenya and Bangladesh	V005494	[REDACTED]	cattle: 450	C						
Treatment of Osteoarthritis	V005499	[REDACTED]	dog: 98	D					Phys	
Intraocular Pressure (IOP) in Chinchillas	V005503	[REDACTED]	Long-tailed chinchilla: 100	C						
The Pathogenesis and Development of Therapeutics and Vaccines for Arthropod-borne Viruses	V005516	[REDACTED]	mus: 1696	E					Bio Phys	
Prophylactic Efficacy of Therapeutic Compounds on Experimentally Induced Clostridium Difficile Infection in Mice	V005517	[REDACTED]	mus: 1000	E					Bio	[REDACTED]
PEOPLE Program Summer Education Experience at SVM - General	V005518	[REDACTED]	horse: observe only cattle: observe only dog: < 7/year	C						
Development of Mouse Models to Better Understand Arbovirus Pathogenesis	V005519	[REDACTED]	mus: 1866	E					Bio	[REDACTED]
Maintenance of the Tapeworm, Hymenolepis diminuta, Life-cycle	V005523	[REDACTED]	rattus: 6	C			X			
Dermatology Shelter Medicine Consultations	V005526	[REDACTED]	cat: 300	C						
Shelter Medicine Infectious Disease Intervention	V005535	[REDACTED]	cat: 20,000 dog: 20,000	C						

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NCF = Non-Central Facility

Appendix 2: Animal Usage (page 13 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Evaluation of Risk Factors and Identification of Candidate Genes for Primary Closed Angle Glaucoma in Dogs	V005537	[REDACTED]	dog: 200	D					Phys	
SVM Protocol Title 2	V00554	[REDACTED]	mus: 930	E			X		Bio Chem Phys	
Small Animal Teaching	V005546	[REDACTED]	dog: 45 cat: 36	C						[REDACTED]
Half-Body Radiotherapy In Combination With Chemotherapy For Canine Multicentric Lymphoma: A Recruitment Feasibility Study	V005547	[REDACTED]	dog: 10	C					Chem Phys	
Equine Blood Donors	V005551	[REDACTED]	horse: 30	C						
Patellar-tooth Syndrome in Domestic Cats	V005552	[REDACTED]	cat: 10	C						
The Use of Circulating Biomarkers of Oxidative Stress as an Assessment of the Oxidative Status of the Liver in Dogs with Naturally Occurring Liver Disease	V005556	[REDACTED]	dog: 34	D						
T Cell Immunity to Viruses	V005564	[REDACTED]	mus: 29,873	E					Bio Chem Phys	[REDACTED]

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NCF = Non-Central Facility

Appendix 2: Animal Usage (page 14 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Restraint, Examination and Anesthesia of Exotic Animals: Teaching and Continuing Education Activities	V005574	[REDACTED]	bird spp: < 90 reptile spp: < 90 rodent spp: < 90 lagomorph spp: < 90 ferret: < 90 amphibian spp: < 90 fish: 150/year	C						
Laboratory Investigation into Potential Avian Reservoirs of Zika Virus	V005575	[REDACTED]	Common Canary: 46 chicken: 34	D					■	
Impact of Infection, Acute Atherosclerosis, and Host Immune Response on Fetal Growth	V005576	[REDACTED]	rattus: 92	D					■	
Oral Exposure of Zebra finches to Clothianidin Insecticide	V005578	[REDACTED]	Zebra finch: 40	E			X			
SVM Equine Teaching Residential Herd	V005582	[REDACTED]	horse: 20	D					■	
Effect of Yeast Culture plus Enzymatically Hydrolyzed Cell Walls on Health and Performance of Preweaned Dairy Calves: A Dose Response Study	V005583	[REDACTED]	cattle: 500	C					■	
Quality of Recovery from Isoflurane Anesthesia after Bladder Evacuation in Adult Horses	V005584	[REDACTED]	horse: 88	C					■	
Food Animal Elective	V005593	[REDACTED]	cattle: 300	D	X					
Prions in Plants: Defining the Risks	V005603	[REDACTED]	mus: 1008	D					■	

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Appendix 2: Animal Usage (page 15 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Evaluation of a Novel Staphylococcal lysate for Management of Recurrent Superficial Pyoderma in Dogs	V005605	██████████	dog: 30	C						
School of Veterinary Medicine (SVM) Large Animal (Food and Fiber) Teaching	V005612	██████████	Llama: 20 goat: 15 sheep: 240 pig: 240 alpaca: 20	D					Phys	
Ophthalmic Examination Skills Teaching Lab	V005615	██████████								
Analysis of Normal Range of Motion of Temporomandibular Joints (TMJ) of Dogs.	V005617	██████████	dog: 300	C						
Building the Microbiome into the Hibernator Metabolic Phenotype	V005622	██████████	Thirteen-lined ground squirrel: 429	D			X			██████████
Pilot Study of AuroLase® Therapy for the Treatment of Solid Tumors in Canine and Feline Patients	V005633	██████████	dog: 10 cat: 10	D						
Pharmacokinetics of Morphine and Hydromorphone in Reptiles	V005634	██████████	African Spurred Tortoise: 12 Bearded dragon: 12 Red-eared slider turtle: 12	C						
Rodent Health Monitoring-SVM Facilities	V005639	██████████	rattus: 158 mus: 924	C						

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Appendix 2: Animal Usage (page 16 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
An Open-Label, Multicenter Study of a Novel PD-1 Inhibitor in Dogs with Measureable Mast Cell Tumor, Melanoma, and Lymphoma	V005655	██████	dog: 10	D					Phys	
Amphimerus (liver fluke) in Bluegills	V005657	████████	bluegill: 60	C						
Canine Parvovirus Vaccine Assessment	V005659	████████	dog: 50	D			X			
Evaluation of Antimicrobial Regional limb Perfusion in Dogs	V005663	████████	dog: 20	D					Phys	████████
Cockatiel Studies	V005666	██████	Cockatiel: 24	D					Phys	
Research and Educational Programs on Fleas.	V005667	████████	mus: 312	D						████████
Assessment of Hematologic and Tissue Biomarkers in Immune-mediated Diseases in Dogs and Cats	V005682	████████	dog: 30 cat: 30	D						
Amphibian Sedation Study	V005683	████████	Poison Dart Frog: 24	C					Phys	████████
Immunogenicity of African swine Fever Vaccine Candidates in Pigs	V005684	████████	pig: 91	C					Bio	
Multidose Extended Release Levetiracetam Trial in Healthy Cats	V005686	██████	cat: 10	C						████████
Apheresis to Collect Individual Blood Components in a Horse	V005687	████████	horse: 15	D						
Pilot Study Using a Nanoparticle Structure to Treat Cartilage Defects in a Sheep Model	V005701	████████	sheep: 4	D	X			X	Phys	████████

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Appendix 2: Animal Usage (page 17 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
"Periosteal Transection to Accelerate Bone Growth by a Knifeless Technique: Use of Non-Invasive High-Intensity Focused Ultrasound"	V005703	[REDACTED]	sheep: 33	D	X	X			Phys	[REDACTED]
Nociception and Respiration in Reptiles	V005710	[REDACTED]	Red-eared slider turtle: 180 Ball python: 60	D						[REDACTED]
Immunobiology of Schistosome-Mollusc Interactions	V005717	[REDACTED]	mus: 1440	E						
Endogenous Cannabinoids and NGF Signaling in Pain Associated with Cystitis" and "Mediators of fibrosis in the development of lower urinary tract dysfunction	V005720	[REDACTED]	mus: 2940	E	X	X	X		Bio	[REDACTED]
C-reactive Protein: A Biomarker of Therapeutic Response in Dogs with Aspiration Pneumonia	V005724	[REDACTED]	dog: 15	C					Phys	
Understanding Arbovirus Transmission Dynamics	V005733	[REDACTED]	mus: 960	E					Bio	[REDACTED]
Ecology and Infection in African bats	V005734	[REDACTED]	frugivorous bats: 175 insectivorous bats: 175 interacting rodents: 175	C						
[REDACTED] Bovine Rumen Fluid and Blood Donor	V005748	[REDACTED]	cattle: 9	D	X					
Cardiac Disease in Western Lowland Gorillas	V005752	[REDACTED]	Western gorilla: 50	C					Phys	

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PR = Prolonged Restraint
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NCF = Non-Central Facility

Appendix 2: Animal Usage (page 18 of 18)

Protocol Title	IACUC/OB No.	Principal Investigator	Species: Animals approved per 3 years	Pain & Distress Category	SS	MSS	FFR	PR	HAU	NCF
Molecular Pathogenesis of Viral Diseases	V00806		chicken: 744 duck: 744 ferret: 2196 guinea pig: 1120 hamster: 1040 mus: 26,056 quail: 200	E					Bio Chem	
Molecular Pathogenesis of Influenza Virus (Large Animals)	V01190		dog: 397 cat: 150 pig: 151	D					Bio	
Development of a Universal Influenza Vaccine	V01312		mus: 1504	E					Bio	
Molecular Pathogenesis of Filoviruses and Arenaviruses	V01441		mus: 4646	E					Bio Chem	
SVM Bovine Teaching	V01553		cattle: 1215	C					Phys	
Evaluation of a Genetic Polymorphism in the Canine Phosphodiesterase 5A Gene in the Pathogenesis of Pulmonary Hypertension and the Response to Therapy with Sildenafil Citrate	V01625		dog: 24	C					Phys	
Molecular Pathogenesis of Mycobacterial Infections	V01630		mus: 3000	D					Bio	
Respiratory and Analgesic Effects of Three Differing Buprenorphine Preparations in Rats	V01640		rattus: 15	D			X	X		
Evaluation of Universal H5N1 Vaccines in Chickens	V01642		chicken: 220	E					Bio	

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Appendix 3

Summary of Animal Housing and Support Sites

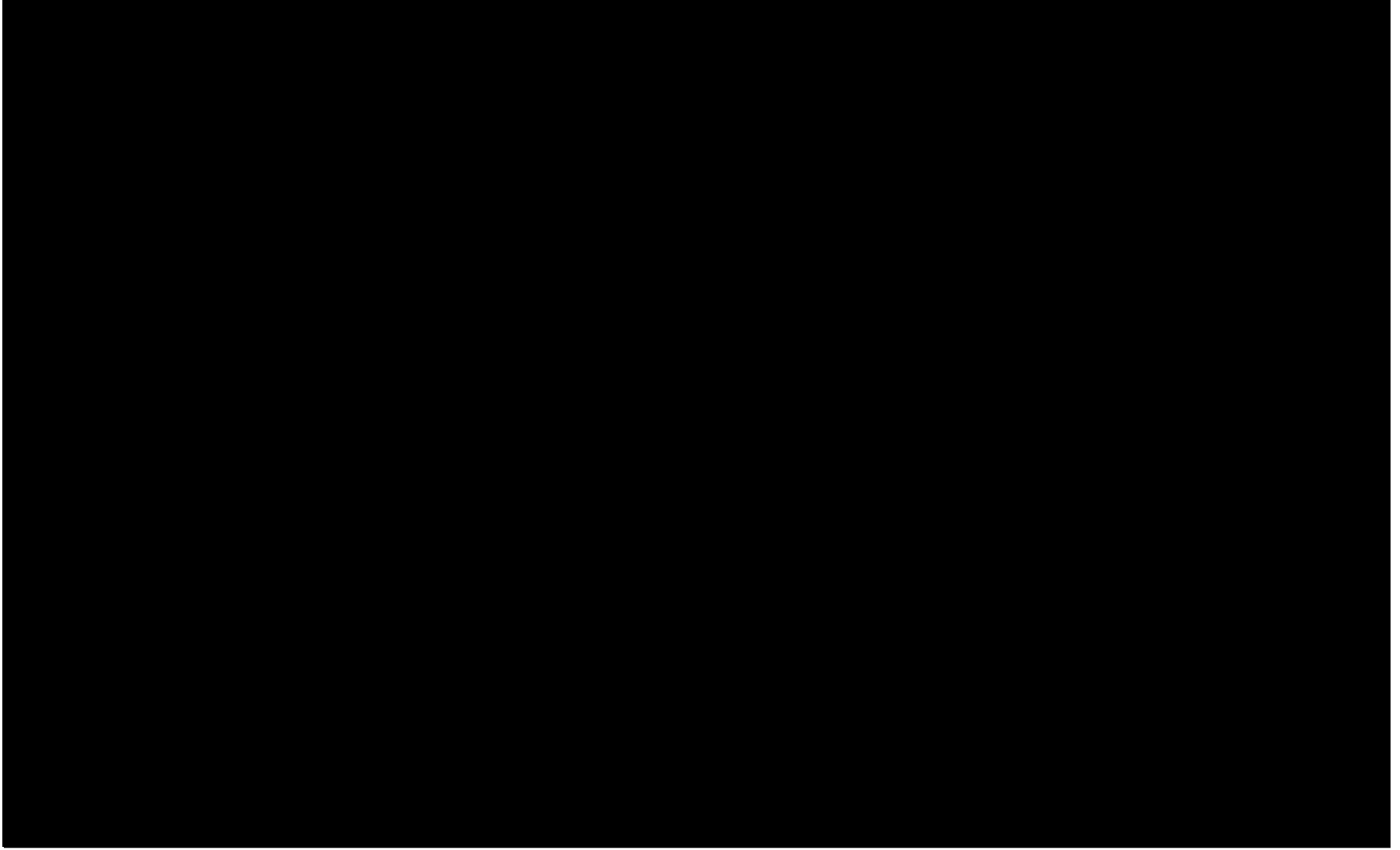
Briefly summarize in the following table the animal facility or facilities, noting the number of areas in which animals are housed (buildings, floors, farms, etc.), the total square footage/meters (or acreage) for animal care and use, and the total square footage/meters (or acreage) for necessary support of the animal care and use program covered by this Description (water treatment plant/area if housing aquatic or amphibian species, HVAC, service corridors, etc. and additional areas to be considered are enumerated in the [Guide](#)). If more than one facility/site, note the approximate distance (yards/miles or meters/kilometers) each facility is from a reference point such as from the largest animal facility. A campus/site map (with a distance scale) may be included as an Appendix to provide this information. Provide floor plans of each area as an Appendix. In Section II.B., describe the general types of animal housing facilities available (e.g., conventional, hazard containment, gnotobiotic, barrier, barns, etc.) and other details of the facilities. See [Instructions, Appendix 1 - Animal Facility Square Footage/Meters Compilation Form](#) for guidance in calculating the size of your animal care and use program.

	Animal Housing and Support Sites					
Location (building/site/farm name*)	Distance from main facility (campus/site map(s) also may be provided in lieu of this information)	Approx. sq.ft./m (acreage) animal housing	Approx. sq.ft./m (acreage) support/ procedure space	Species housed	Approximate Daily Animal Census by species	Person in charge of site
[REDACTED]	[REDACTED]	3,794	5,530	rat, mice, rabbit	216, 742, 3	[REDACTED], Supervisor
[REDACTED]	[REDACTED]	47,638	30,286	dog, mice, ferret, horse, cat	3, 1904, 25, 11, 25	[REDACTED], Supervisor
[REDACTED]	[REDACTED]	2,154	1,432	Mice, rabbit	1576, 2	[REDACTED], Supervisor
[REDACTED]	[REDACTED]	3,793	11, 710	Sheep, pig, horse	2, 2, 1	Dr. [REDACTED] [REDACTED]
[REDACTED]	[REDACTED]	16, 079 1.25 acres of pasture	3,502	Horses	11 (same horses as CIF)	[REDACTED], Supervisor
[REDACTED]	[REDACTED]	1,080	6,580	Mice, ferret	120, 5	Dr. [REDACTED] [REDACTED] PI
Totals:		74,538 1.25 acres of pasture	59,040			
Total animal housing and support space:		132,878 sq ft 1.25 acres of pasture				

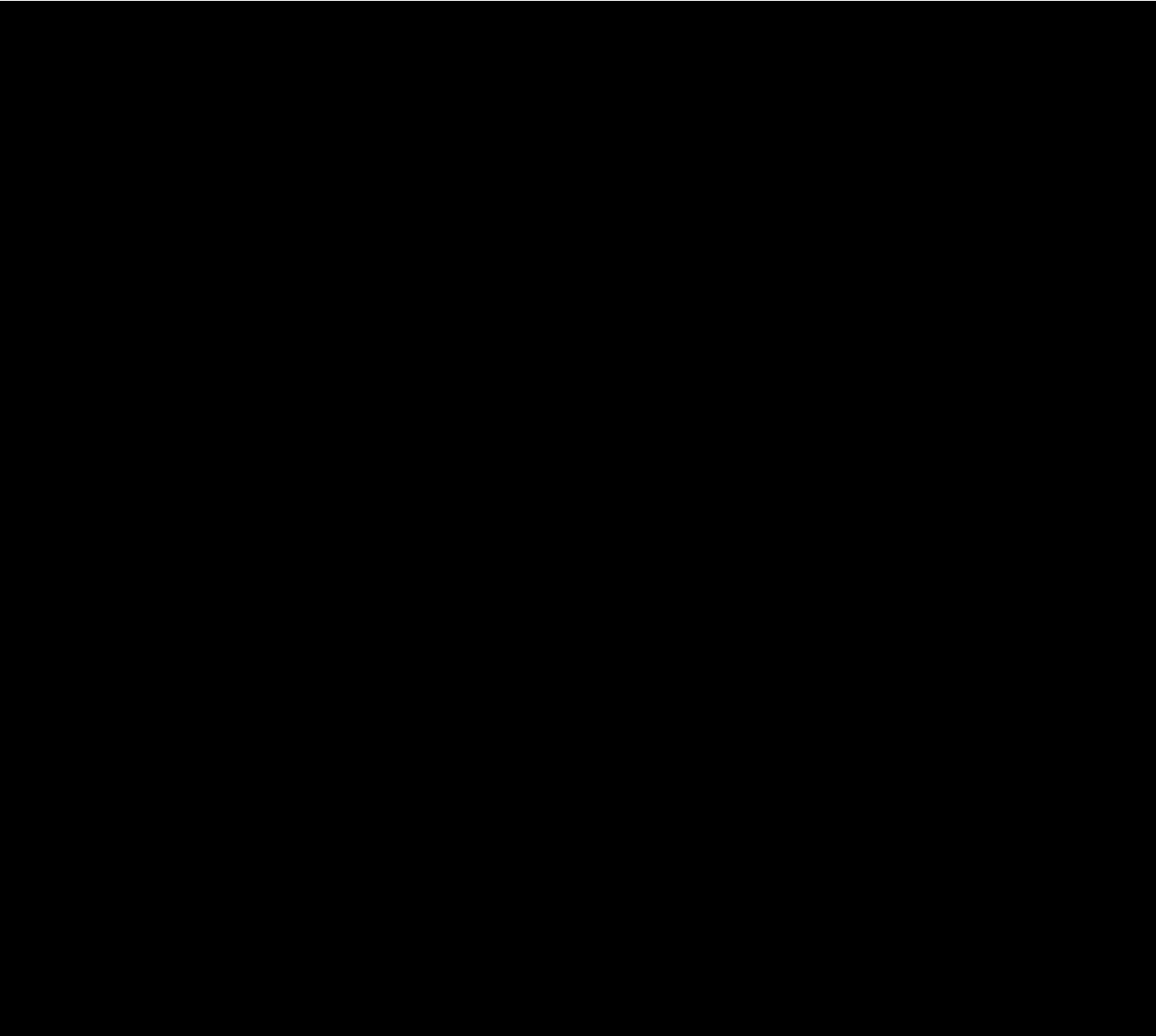
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*Please state name and acronyms used for building names, if not coded for confidentiality.

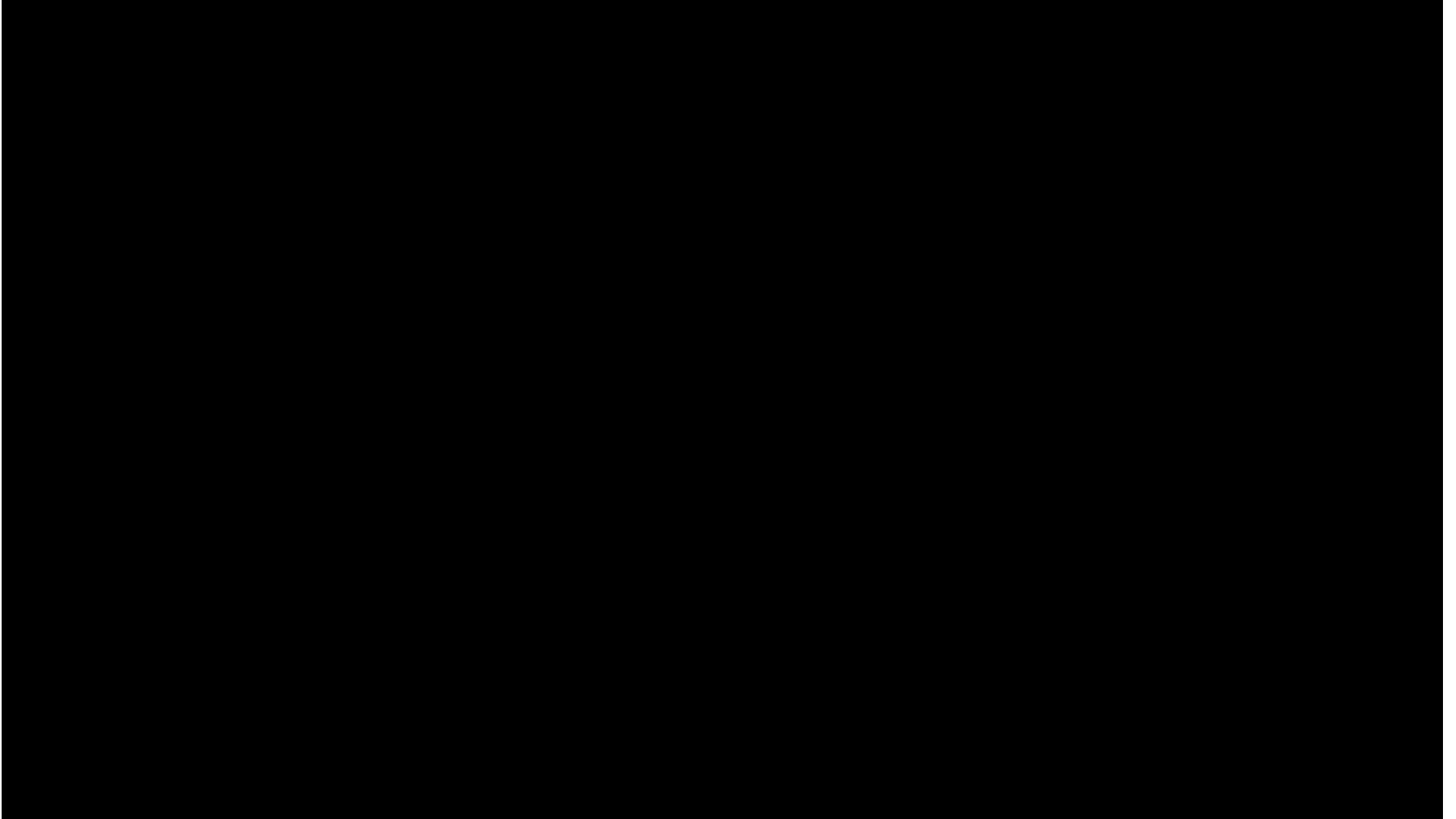
Appendix 4



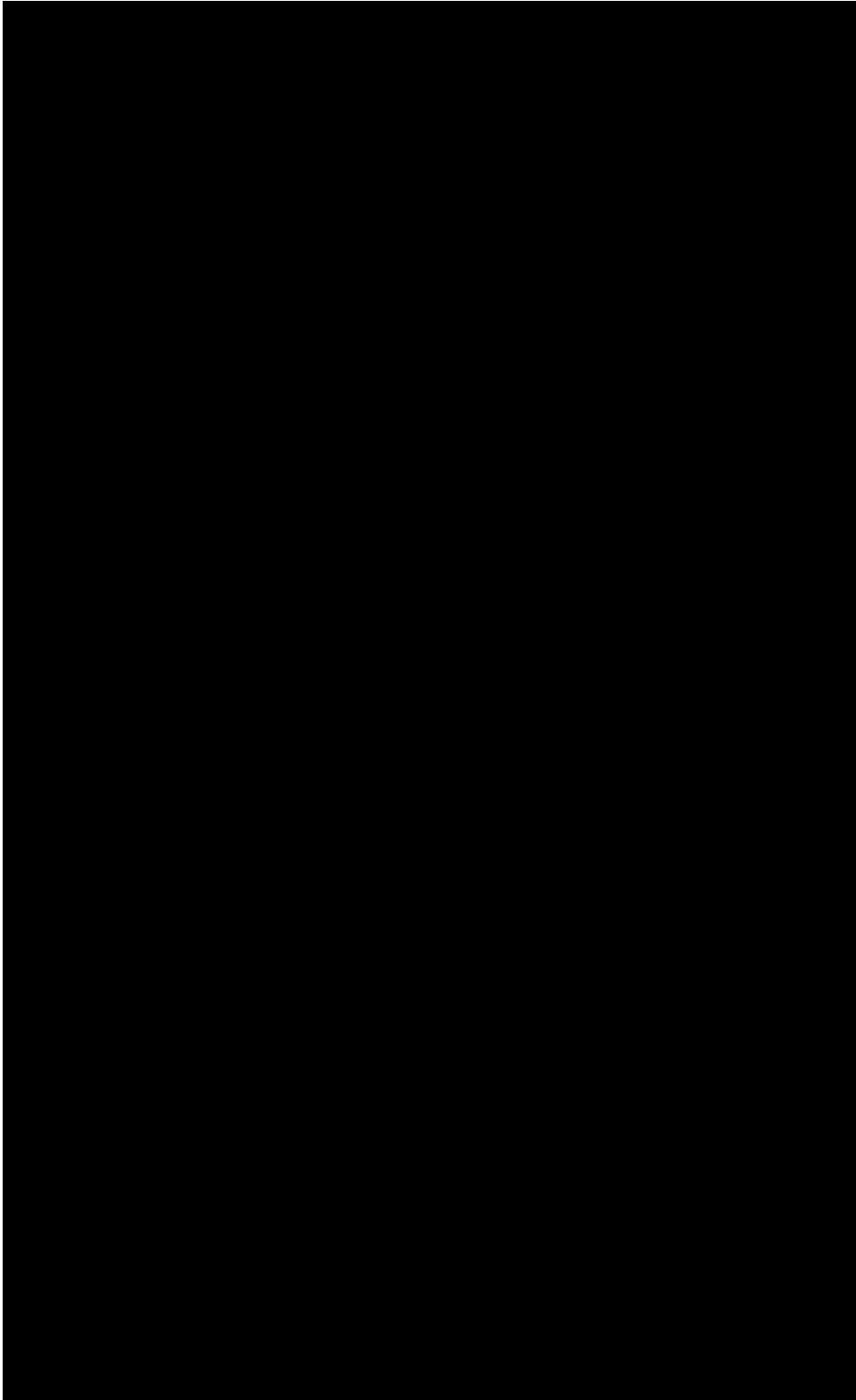
Appendix 4



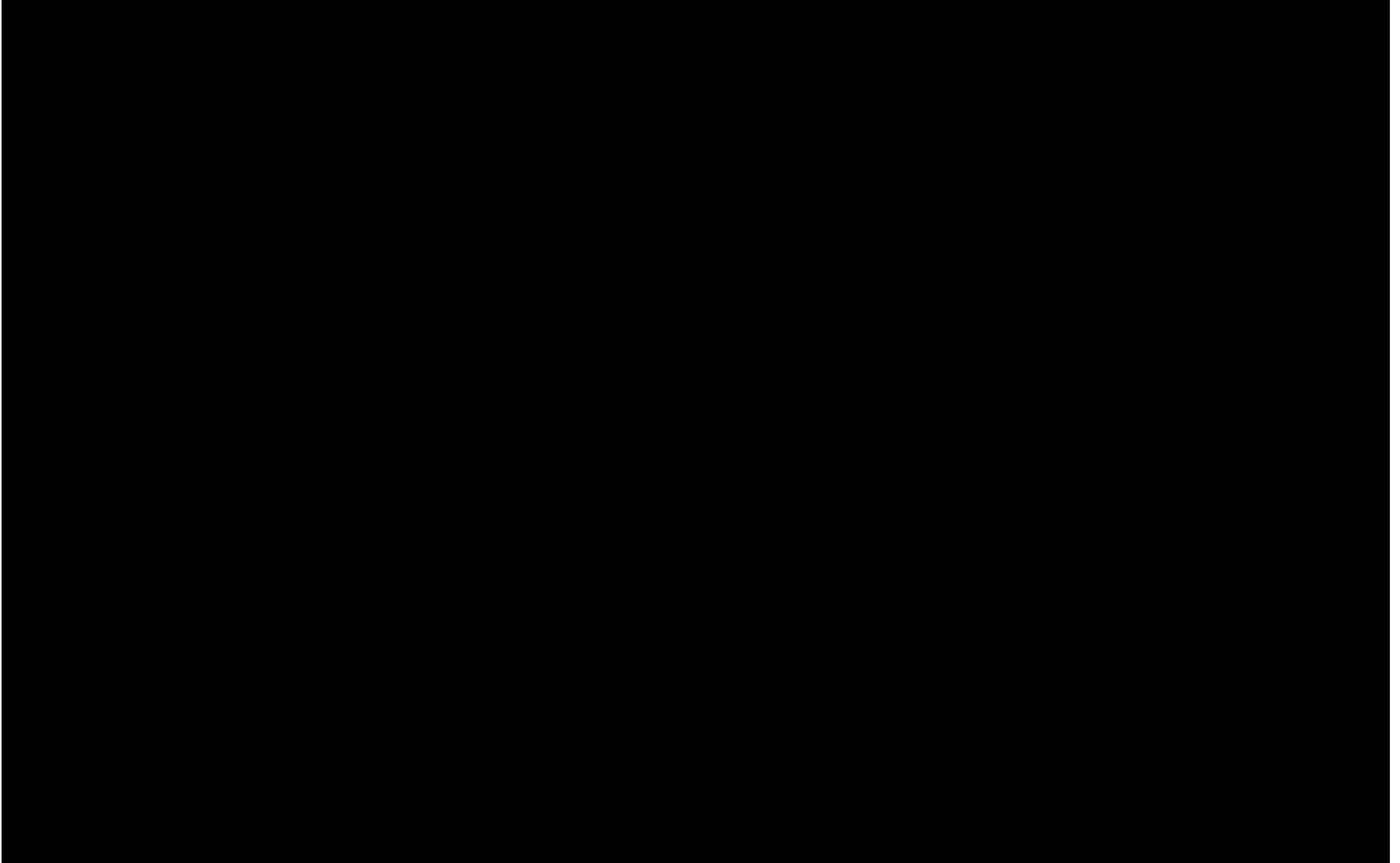
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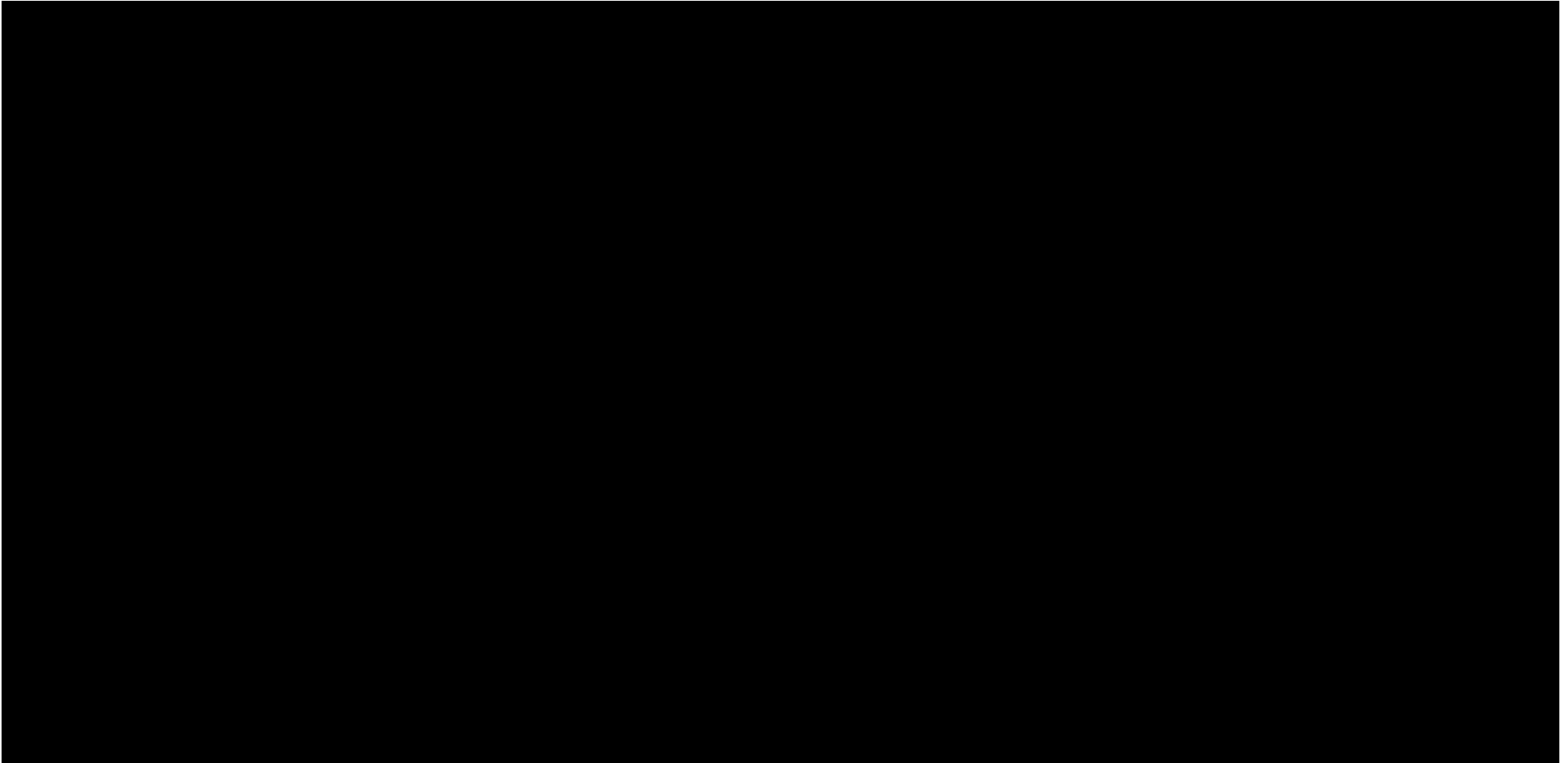
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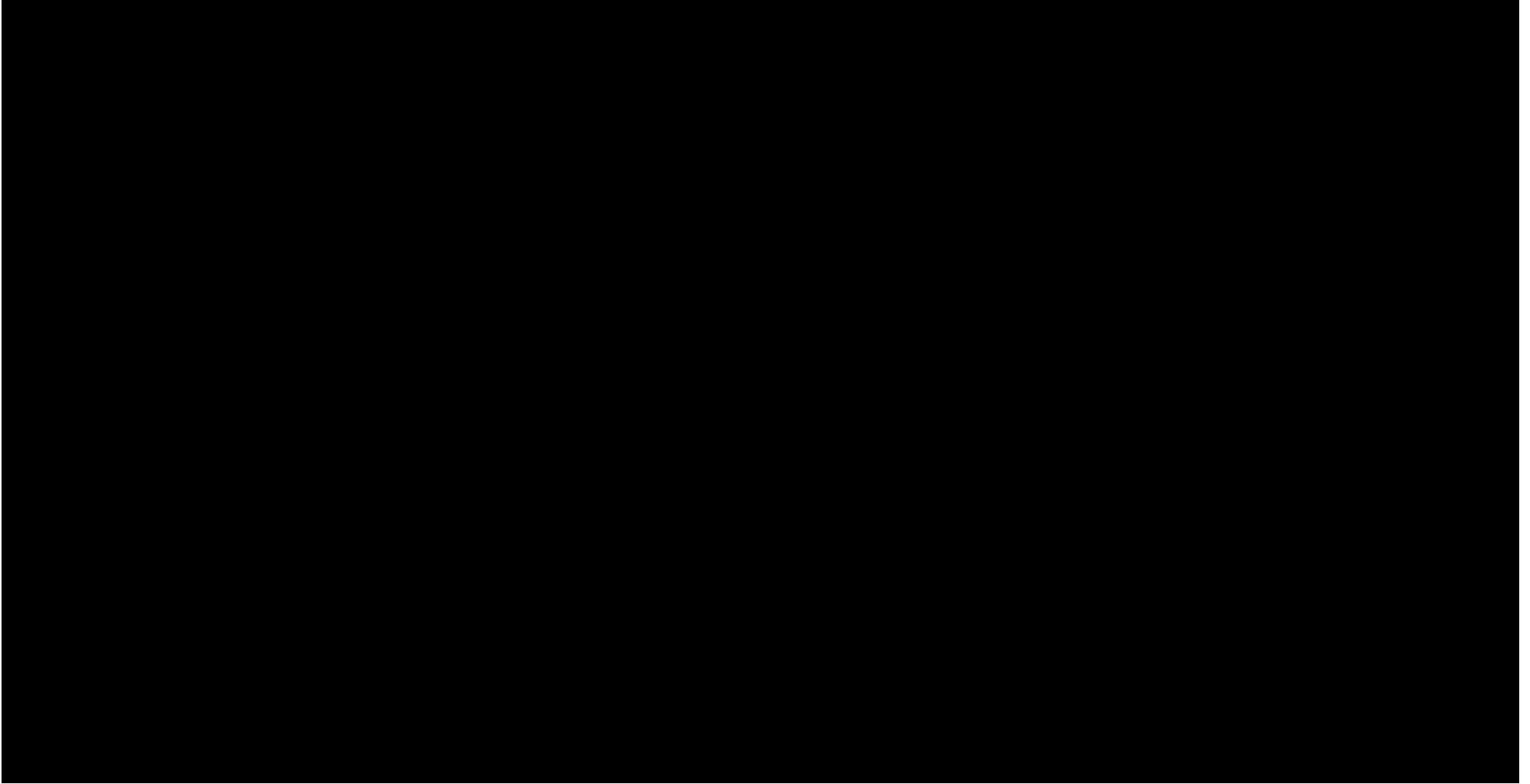
Appendix 4



Appendix 4



Appendix 4





UHS
UNIVERSITY
HEALTH SERVICES

Compose New Secure Message

Welcome, Harry Spyder | [Logout](#)

Recipient: HIM OM

Message Type: OM ACRQ-Annual

Subject: OM ACRQ-Annual

Items marked with ** are required.

ANIMAL CONTACT RISK QUESTIONNAIRE - ANNUAL

To assure occupational health annual risk assessment for those identified by UW Madison ACAPAC policy (and compliance with AAALAC and Federal agencies such as NIH), an Animal Contact Risk Questionnaires **MUST** be completed annually.

Prior to contact with animals the Baseline ACRQ is completed. If you have **NEVER** completed an ACRQ please exit this form and complete the ACRQ Baseline.

If you are unsure which form to complete, contact UHS Occupational Medicine at 608-265-5610.

IMPORTANT NOTE: MyUHS has a time out feature. It is recommended that you complete all required steps in a continuous session.

Supervisor Contact Information

This information will be used to determine who your compliance reports will be sent to

** NAME OF PRIMARY SUPERVISOR, SPONSORING PI FOR VISITORS OR COURSE

INSTRUCTOR FOR STUDENTS:

PHONE NUMBER OF PRIMARY SUPERVISOR, PI OR INSTRUCTOR:

** E-MAIL ADDRESS OF PRIMARY SUPERVISOR, PI OR INSTRUCTOR:

NAME OF ADDITIONAL SUPERVISOR or SECONDARY CONTACT:

PHONE NUMBER OF ADDITIONAL SUPERVISOR OR SECONDARY CONTACT (if applicable):

E-MAIL ADDRESS OF ADDITIONAL SUPERVISOR (if applicable):

Your Contact Information

** WORK ADDRESS:

** PHONE NUMBER:

PART A: OCCUPATIONAL AND ENVIRONMENTAL RISK FACTORS

Animal Contact Setting

Enter any information that applies to your employment or academic status

JOB TITLE(S):

DEPARTMENT(S):

WORK LOCATION/UNIT(S):

PROTOCOL NUMBER(S):

ACADEMIC MAJOR:

COURSE NAME/NUMBER:

Check all that apply. Some individuals may be in more than one UW status

** UW STATUS:

- ☐ UW Employee
☐ Undergraduate Student
☐ Contract worker (working at UW but employed/paid by another entity)
☐ IACUC member
☐ Graduate student
☐ Affiliate/Other (e.g. guest, visiting scientist/scholar)

Affiliates must provide specific information regarding work and role in the text box below

PLEASE DESCRIBE YOUR ROLE AND THE TYPE OF WORK OR ACADEMIC EXPOSURE YOU HAVE TO ANIMALS, ANIMAL TISSUE OR BODILY FLUID. *If you have multiple roles or are both a student and UW employee describe each role (e.g. ART at LAR, undergrad student/Zoology major, 2nd year vet student, Vet tech at SVM, PI, IACUC member)*

Working Conditions

** HAVE YOUR WORK ACTIVITIES OR WORKING CONDITIONS CHANGED SIGNIFICANTLY SINCE YOUR LAST ACCRQ REVIEW?

☐ Yes ☐ No

PLEASE EXPLAIN ANY CHANGES OR ANY CONCERNS YOU HAVE REGARDING YOUR WORKING CONDITIONS:

Animal Species

** HAS THE TYPE OF CONTACT OR ANIMAL SPECIES YOU WORK WITH CHANGED?

☐ Yes ☐ No

If YES, indicate all animal contact you currently have below.

If NO: skip to the next section "Hazards associated with animal contact"

Read the key and indicate the type of contact for each animal species below. Species you do not have contact with may be left blank.

Type of Contact Key

1. No contact of any kind with the species
2. No direct contact (typically an inspector, administrative staff or physical plant employees)
3. Animal husbandry or animal care
4. Contact with unfixed tissues or body fluid only
5. Handle, restrain, administer substances to animals, etc. in teaching or research
6. Collect tissues or body fluid specimens, perform surgery or other invasive procedures, provide veterinary care or necropsy

RATS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

MICE

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

HAMSTERS, GERBILS OR GUINEA PIGS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

RABBITS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

HORSES

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

PIGS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

GOATS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

SHEEP

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

CATTLE

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

DOGS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

CATS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

FERRETS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

OLD WORLD MONKEY (eg: Macaque)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

OTHER NON-HUMAN PRIMATES

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

BIRDS, POULTRY

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

REPTILES

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

FROGS AND/OR OTHER AMPHIBIANS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

FISH

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

ANY/ALL SPECIES OF CLIENT OWNED ANIMAL(S)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

WILD RODENTS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

OTHER TYPE OF WILD MAMMALS

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Specify Other Type of Wild Mammal

OTHER TYPE OF ANIMAL

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Specify Other Type of Animal

Hazards Associated With Animal Contact

**** HAVE ANY OF THE HAZARDS YOU WORK WITH CHANGED?**

☐ Yes ☐ No ☐ Unsure

If YES, check any type of hazard you currently encounter or have possible exposure to in your work or academic activities

If NO: skip to the next section "Personal Protection Equipment"

☐ INFECTIOUS AGENT(S)

List agent(s)

☐ HUMAN CELLS OR TISSUES

List agent(s)

☐ RECOMBINANT DNA

List agent(s)

☐ GENETICALLY ALTERED MATERIAL(S)

List agent(s)

☐ RADIOACTIVE MATERIAL(S)

List agent(s)

☐ TOXIC CHEMICALS(S)

List agent(s)

☐ ANESTHETIC GAS(ES)

List agent(s)

☐ CARCINOGEN(S), MUTAGEN(S), TERATOGEN(S)

List agent(s)

☐ OTHER

List agent(s)

Personal Protection Equipment

****** IS YOUR PERSONAL PROTECTIVE EQUIPMENT DIFFERENT THAN REPORTED IN PRIOR ACRQ?

☐ Yes ☐ No ☐ Unsure

Please list any changes since last ACRQ

****** DO YOU WEAR A RESPIRATOR? *Surgical masks do not qualify as respirators*

☐ Yes ☐ No ☐ Unsure

If yes, what type(S)?

☐ N-95 ☐ N-100 ☐ Half-Face ☐ Full-Face ☐ PAPR ☐ Unsure what type

If yes, have you been fit tested for this respirator in the past year?

☐ Yes ☐ No ☐ Don't know

PART B: PERSONAL HEALTH HISTORY

Environmental Allergies, Asthma, Skin Problems

****** 1. HAVE YOU DEVELOPED ANY NEW ALLERGIES IN THE PAST YEAR?

☐ Yes ☐ No ☐ Unsure

If yes, explain:

****** 2. ARE YOU ALLERGIC OR POSSIBLY ALLERGIC TO ANY ANIMAL(S) THAT YOU CURRENTLY WORK WITH?

☐ Yes ☐ No ☐ Unsure

If yes, list the animal(s) and symptoms you experience:

****** 3. ARE YOU ALLERGIC TO PETS OR ANY OTHER ANIMALS OUTSIDE YOUR WORK ENVIRONMENT?

☐ Yes ☐ No ☐ Unsure

If yes, list the animals and symptoms you experience:

****** 4. DO YOU HAVE OTHER KNOWN ALLERGIES?

☐ Yes ☐ No ☐ Unsure

If yes, list the allergies and symptoms you experience?

**** 5. LIST ANY MEDICATIONS OR OTHER TREATMENTS THAT RELIEVE YOUR SYMPTOMS**

(enter none if applicable):

**** 6a. DO YOU HAVE ASTHMA OR BREATHING PROBLEMS?**

☐ Yes ☐ No ☐ Unsure

**** 6b. DO YOU HAVE ASTHMA OR BREATHING PROBLEMS RELATED TO THE ANIMALS YOU CURRENTLY WORK WITH?**

☐ Yes ☐ No ☐ Unsure

If yes to question 6a or 6b, list the cause(s) or trigger(s) of the asthma including animals or other agents in your workplace. If you do not know write "unknown"

If yes to question 6a or 6b, have you been seen by a healthcare provider for this?

☐ Yes ☐ No

**** 7. DO YOU HAVE ANY SKIN PROBLEMS RELATED TO YOUR WORK (e.g. reactions to latex, dry or cracked skin, other rashes)?**

☐ Yes ☐ No ☐ Unsure

If yes, describe:

General Health Status

**** 1. HAVE YOU BEEN DIAGNOSED WITH ANY NEW MEDICAL PROBLEMS SINCE YOU LAST ACRQ?**

☐ Yes ☐ No ☐ Unsure

If yes, describe:

**** 2. DO YOU HAVE A HISTORY OF HEART DISEASE OR ANY CHRONIC MEDICAL CONDITIONS e.g. high blood pressure, diabetes, arthritis, headaches, lung, kidney, cancer, immunosuppression?**

☐ Yes ☐ No ☐ Unsure

If yes, describe:

**** 3. DO YOU TAKE ANY MEDICATIONS (PRESCRIPTION DRUGS OR OVER THE COUNTER) ON A REGULAR BASIS? YOU DO NOT NEED TO LIST MEDICATIONS FOR SEXUAL FUNCTIONING OR FOR MENTAL HEALTH DIAGNOSES UNLESS THEY CAUSE DROWSINESS OR CONFUSION.** ☐ Yes ☐ No ☐ Unsure

If no, skip to the next section

If you take medications and do not want to list them on the form, then you must Check the box below that says "will schedule an appointment"
After completing and submitting the form, call 265-5610 to make your appointment for ACRQ review of medications

NOTE: Your ACRQ clearance will not be completed until after your appointment.

☐ Will schedule an appointment

List medications:

PART C: HEALTH CONCERNS

****** DO YOU HAVE ANY HEALTH OR WORKPLACE CONCERNS NOT COVERED BY THE QUESTIONNAIRE THAT YOU FEEL MAY AFFECT YOUR HEALTH AND THAT YOU WOULD LIKE TO DISCUSS CONFIDENTIALLY WITH AN OCCUPATIONAL HEALTH PROVIDER?

☐ Yes ☐ No

If Yes, explain:

PART D: ADDITIONAL INFORMATION

The Occupational Health Program is able to assist personnel with allergy or asthma symptoms. Personnel protective equipment, respirator use, and area ventilation support is available upon request. An assessment by a board certified occupational health physician that specializes in work related allergies and asthma can be provided at no charge. Contact the Occupational Health Program at 608-265-5610 for more information and assistance.

For certain types of animal work, individuals who are immune-compromised, pregnant, considering getting pregnant, breast-feeding or who have certain medical conditions may have additional concerns other than allergies. These individuals are encouraged to consult with their personal healthcare providers regarding such matters. They are also welcome to speak with the occupational medicine provider to discuss any health or workplace concerns not covered by this questionnaire. The Occupational Health Program has additional specialized medical resources available for your assistance.

If you have any disability for which you believe you will require an accommodation in order to perform your job, it is your responsibility to inform your supervisor and request a workplace accommodation.

It is important that all questions have been answered completely. If you experience changes to your medical status, you should contact University Health Services Occupational Medicine 608-265-5610.

PART D: CERTIFICATION SIGNATURE

****** ACKNOWLEDGEMENT OF FORM COMPLETION

☐ I have read the information provided on this form.

☐ I have completed this form to the best of my recollection.

☐ I am aware that deliberate misrepresentation may jeopardize my health.

****** NAME

****** DATE

REMINDER: MyUHS has a time out feature. It is recommended that you complete all required steps in a continuous session. You must click "Send" below to submit your questionnaire.

Send

Cancel



UHS
UNIVERSITY
HEALTH SERVICES

Compose New Secure Message

Welcome, Harry Spyder | [Logout](#)

Recipient: HIM OM

Message Type: OM ACRQ-Baseline

Subject: OM ACRQ-Baseline

Items marked with ** are required.

Reviewed 6-2012

ANIMAL CONTACT RISK QUESTIONNAIRE

This questionnaire is designed to collect information to assist with assessing possible health impacts of working with animals. This questionnaire is an important part of the University's ability to monitor health status associated with work activities and to comply with requirements of regulatory, accreditation and funding agencies. Information in this form will be reviewed by licensed medical providers. You will be contacted if there is any further evaluation or intervention needed for you to be medically safe in your work environment.

It is important that all questions be answered completely. If you do not have all of the information to complete the questionnaire you can save it and edit it at a later time. If you experience changes to your medical status, you should contact University Health Services Occupational Health 608-265-5610.

IMPORTANT NOTE: MyUHS has a time out feature that after 20 minutes of inactivity data may be lost or submission of forms incomplete. It is recommended that you complete all required steps in a continuous session.

BEFORE PROCEEDING YOU MUST COMPLETE THIS SECTION

UHS WILL NOT NOTIFY YOUR SUPERVISOR UNTIL THE TWO ADMINISTRATIVE FORMS LISTED BELOW HAVE BEEN COMPLETED.

☐ I certify that I have completed and submitted the Notice of Privacy and Consent to Treat form.**

☐ I certify that I have completed and submitted the Release of Information form**

To confirm completion of these forms click the back button on your web browser which will take you to the MyUHS list of forms.

If you start completing this form without checking these boxes first you may potentially lose the data you entered.

SUPERVISOR CONTACT INFORMATION

** Name of primary supervisor, sponsoring PI for visitors or course instructor for students.

Phone number of primary supervisor

e-mail address of primary supervisor

Name of additional supervisor or secondary contact.

Obtained by Rise for Animals.

Uploaded to Animal Research Laboratory Overview (ARLO) on 11/25/2020

Printed 4/13/2017 by

Phone number of additional supervisor (if applicable)

e-mail address of additional supervisor (if applicable)

Address and Phone Number

Work Address

Phone Number

Part A: OCCUPATIONAL AND ENVIRONMENTAL RISK FACTORS

1. Animal Contact Setting

Check all that apply

☐ I have no contact with animals or animal tissues through my employment or studies at UW-Madison

☐ I have contact with animals or animal tissues through a university offered course or courses
List course name(s) or number(s)

☐ I have contact with university owned animals or animal tissues through my employment as an Animal Research Technician, Laboratory Veterinary Technician, Laboratory Animal Veterinarian, or similar animal care-taker position (e.g. Farm Animal Workers)

☐ I have no direct contact with animals or animal tissues, but I currently work or may work in areas where animals are used or housed (this includes administrative, facility, maintenance, and safety personnel who provide service support to animal care facilities, including equipment and devices housed there)

☐ I am the PI for an animal use protocol or have contact with animals in teaching or research through an approved animal care and use protocol
List protocol number(s) if known

☐ I am a veterinary medical student

☐ I have contact with client-owned animals in the Veterinary Medical Teaching Hospital (VMTH) (This includes: faculty with clinical duties, staff veterinarians, and residents; veterinary technicians and barn personnel; reception, medical records, and other VMTH office staff; pharmacists, pharmacy staff, and central supply staff; VMTH employed facility and maintenance personnel)

☐ I am a member of an animal care and use committee (this includes lay or community members)

Additional Comments Regarding Animal Contact Setting

2. Species of Animal and Type of Contact

Read the key and indicate the type of contact for each animal species

Type of Contact Key

1. No contact of any kind with the species
2. No direct contact (typically an inspector, administrative staff or physical plant employees)
3. Animal husbandry or animal care
4. Contact with unfixed tissues or body fluid only

5. Handle, restrain, administer substances to animals, etc. in teaching or research
6. Collect tissues or body fluid specimens, perform surgery or other invasive procedures, provide veterinary care or necropsy

**** Wild Rodents**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Rat**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Any/all species of client owned animal(s)**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Hamsters, gerbils, or guinea pigs**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Mice**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Reptiles**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Frogs and/or other amphibians**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Fish**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Birds, Poultry**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Dogs**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Cats**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Rabbits**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Ferrets**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Pigs**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Goats**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Sheep**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Horses**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Cattle**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Old World Monkey (e.g.: Macaque)**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Other Non-Human Primate**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

**** Other Wild Mammal**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Specify Other Type of Wild Animal

Other Type of Animal

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Specify Other Type of Animal

Additional Comments Regarding Animal Exposure

3. Hazards Associated With Animal Contact

Complete the following section for each agent you are exposed to in conjunction with animal studies. You MUST place a response in each row. For any yes response please specify the specific agent(s) in the text box provided (if known).

**** Infectious agent(s)**

☐ Yes ☐ No ☐ Unsure

**** Human cells or tissues**

☐ Yes ☐ No ☐ Unsure

**** Recombinant DNA**

☐ Yes ☐ No ☐ Unsure

**** Genetically altered material(s)**

☐ Yes ☐ No ☐ Unsure

**** Radioactive material**

☐ Yes ☐ No ☐ Unsure

**** Toxic chemicals**

☐ Yes ☐ No ☐ Unsure

**** Anesthetic gases**

☐ Yes ☐ No ☐ Unsure

**** Carcinogen, mutagen or teratogen**

☐ Yes ☐ No ☐ Unsure

Other agent

☐ Yes ☐ No ☐ Unsure

Additional Comments Regarding Hazards

4. Personal Protection Equipment

For each type of Protective Equipment check "Yes" for the items you currently use or will be using (if known) when doing your work and "No" for items you do not use.

**** Disposable gloves**

☐ Yes ☐ No

Type of gloves

☐ Nitrile ☐ Vinyl ☐ Latex ☐ Not sure what type

**** Heavy leather gloves**

☐ Yes ☐ No

**** Laundered gown or lab coat**

☐ Yes ☐ No

**** Disposable gown or lab coat**

☐ Yes ☐ No

**** Tyvek Sleeves**

☐ Yes ☐ No

**** Head Cover**

☐ Yes ☐ No

**** Face Shield**

☐ Yes ☐ No

**** Safety Glasses**

☐ Yes ☐ No

**** Safety Goggles**

☐ Yes ☐ No

**** Disposable Coveralls**

☐ Yes ☐ No

**** Laundered Coveralls**

☐ Yes ☐ No

**** Boots**

☐ Yes ☐ No

**** Shoe Covers**

☐ Yes ☐ No

**** Dedicated Footwear**

☐ Yes ☐ No

**** Hearing Protection**

☐ Yes ☐ No

**** Surgical Mask**

☐ Yes ☐ No

**** Respirator/Mask**

☐ Yes ☐ No

If yes, answer a. - d.

a. Type of Respirator/Mask

☐ N-95 ☐ N-100 ☐ Half-Face ☐ Full-Face ☐ PAPR ☐ Unsure

b. Date (approximate) of last medical clearance to wear a respirator

c. Period of approval --select one--

d. Date (approximate) of last mask fit test

**** Other personal protective equipment/item**

☐ Yes ☐ No

Additional Comments Regarding Protective Equipment

PART B: PERSONAL HEALTH HISTORY

Immunization Status and History

**** 1. Have you been immunized against tetanus?**

☐ Yes ☐ No ☐ Don't Know

Year of last tetanus immunization:

Tetanus immunization should be updated every ten years

**** 2. Have you been immunized against hepatitis B?**

☐ Yes ☐ No ☐ Don't Know

Year of last hepatitis B immunization:

For personnel with a reasonable possibility of exposure to human blood or other potentially infectious human material, hepatitis B vaccine is available at no charge. Contact UHS at 608-265-5610 for further information.

**** 3. Have you been immunized against rabies?**

☐ Yes ☐ No ☐ Don't Know

Year of initial rabies immunization:

If your rabies vaccination was more than two years ago, have you had your titre checked within the past two years?

☐ Yes ☐ No ☐ Don't know

Year of last rabies titre check

If you are a veterinarian, vet tech or vet student or have contact with wild caught animal(s) a rabies vaccination or titer should be completed within the last two years.

Tuberculin Surveillance and History

Tuberculin testing must be completed every 6 months for those working in primate facilities.

Alternatively, those with a history of positive reaction to the TB skin test will need to arrange a medical evaluation annually and secure a written fitness for duty statement from University Health Services or their personal medical provider.

**** 1. Date of last tuberculosis skin test (Purified Protein Derivative)**

Results of last TB skin test

☐ Negative ☐ Positive ☐ Unsure

Facility where test was administered

**** 2. Have you received the tuberculosis vaccine Bacillus Calmette Guerin (BCG)?**

☐ Yes ☐ No ☐ Unsure

Year of last BCG vaccination

**** 3. If you have tested positive to the tuberculosis skin test in the past, have you ever received medical clearance indicating that you are free of active tuberculosis"**

☐ Yes ☐ No ☐ Don't know ☐ Not applicable (never had positive test)

If yes, date of last medical clearance

Have you ever received a Quantiferon gold or T-spot test?

☐ Yes ☐ No ☐ Unsure

If yes, indicate date and result

4. Please check any of the following symptoms you have experienced since your last TB skin test.

- ☐ Persistent cough (>3 weeks duration)
- ☐ Hemoptysis (coughing up blood)
- ☐ Weight loss (unplanned)
- ☐ Lethargy/weakness/easy fatigability
- ☐ Night sweats
- ☐ Fever
- ☐ Chills
- ☐ Loss of appetite
- ☐ None

Additional Comments on TB Surveillance and History

Environmental Allergies, Asthma, Skin Problems, and General Health Status

The Occupational Health Program is able to assist personnel with allergy or asthma symptoms. Personnel protective equipment, respirator use, and area ventilation support is available upon request. An assessment by a board certified occupational health physician that specializes in work related allergies and asthma can be provided at no charge. Contact the Occupational Health Program at 608-265-5610 for more information and assistance.

**** 1.** Are you allergic to any animals?

☐ Yes ☐ No ☐ Don't know

If no, skip to 2

List the animals:

Have you been seen by a healthcare provider for animal allergies?

☐ Yes ☐ No ☐ Don't know

**** 2.** Have you developed any symptoms or illness as a result of your exposure to animals?

☐ Yes ☐ No ☐ Don't know

If no, skip to 3

Describe the symptoms you experience when exposed to specific animal(s):

**** 3.** Do you have any other known allergies?

☐ Yes ☐ No ☐ Don't know

If no, skip to 4

List the causes of the allergies:

List the symptoms that occur when you are suffering from your allergies:

List the treatments that relieve your allergies:

**** 4.** Do you have asthma?

☐ Yes ☐ No ☐ Don't know

If no, skip to 5

List the cause(s)/trigger(s) of the asthma if known:

**** 5.** Do you have asthma (or any difficulty breathing) related to the animals that you currently work with?

☐ Yes ☐ No ☐ Don't know

If no, skip to 6

Have you been seen by a healthcare provider for this? ☐ Yes ☐ No

**** 6.** Do you experience shortness of breath?

☐ Yes ☐ No ☐ Don't know

If no, skip to 7

Explain:

**** 7.** Do you have any skin rashes related to your work (e.g. reactions to latex, dry or cracked skin, other rashes)?

☐ Yes ☐ No ☐ Don't know

If no, skip to 8

Explain:

**** 8.** Do you have any chronic medical illnesses?

☐ Yes ☐ No ☐ Don't know

If no, skip to 9

Explain:

**** 9.** Are you currently under the care of a healthcare provider for acute or chronic medical

conditions (high blood pressure, diabetes, arthritis, heart conditions, headaches, lung, kidney, cancer or immunosuppression)?

☐ Yes ☐ No ☐ Don't know

If no, skip to 10

Explain:

**** 10.** Do you take any medications (prescription drugs or over the counter) on a regular basis? You

do not need to list medications for sexual functioning or for mental health diagnoses unless they cause drowsiness or confusion.

☐ Yes ☐ No ☐ Don't know

If no, skip to 11

If you take medications and do not want to list them on the form, then you must

Check the box below that says "will schedule an appointment"

After completing and submitting the form, call 265-5610 to make your appointment for ACRQ review of medications

NOTE: Your ACRQ clearance will not be completed until after your appointment.

☐ Will schedule an appointment

List medications:

**** 11.** Do you have house pets that could be responsible for allergic symptoms or represent a disease transmission hazard?

☐ Yes ☐ No ☐ Don't know

If no, skip to next section

Explain:

Additional Comments on General Health

Individuals Working with Sheep

You may skip to the next section if you do not work with sheep

Work with sheep has been associated with exposure to *Coxiella burnettii*, an organism known to cause a disease called Q-Fever. This illness can be severe in individuals with pre-existing health conditions or who may be pregnant.

1. Do you have a history of known heart valvular disease (heart murmurs) or congenital heart disease?

☐ Yes ☐ No ☐ Don't know ☐ Not applicable (do not work with sheep)

2. Do you now have or have you ever had Q-fever (*Coxiella burnettii* infection)?

☐ Yes ☐ No ☐ Don't know ☐ Not applicable (do not work with sheep)

Additional Comments on Working With Sheep

Individuals Working with Non-Human Primates

Skip to the next section if you do not work with non-human primates

1. Have you had naturally acquired measles (rubeola)?

☐ Yes ☐ No ☐ Don't know ☐ Not applicable (do not work with NHP)

If no, skip to 2

Year of measles illness:

2. Have you had measles immunization?

☐ Yes ☐ No ☐ Don't know ☐ Not applicable (do not work with NHP)

If no, skip to next section.

Year of measles immunization:

Additional Comments Regarding Working With Non-Human Primates

PART C: HEALTH CONCERNS

****** 1. Do you have any health or workplace concerns not covered by the questionnaire that you feel may affect your occupational health and that you would like to confidentially discuss with the Occupational Health Provider?

☐ Yes ☐ No

If Yes, explain in text box below

For certain types of animal work, individuals who are immune-compromised, pregnant, considering getting pregnant, breast-feeding or who have certain medical conditions may have additional concerns other than allergies. These individuals are encouraged to consult with their personal healthcare providers regarding such matters. They are also welcome to speak with the occupational medicine provider to discuss any health or workplace concerns not covered by this questionnaire. The Occupational Health Program has additional specialized medical resources available for your assistance.

If you have any disability for which you believe you will require an accommodation in order to perform your job, it is your responsibility to inform your supervisor and request a workplace accommodation.

PART D: CERTIFICATION SIGNATURE

****** Acknowledgement of form completion:

☐ I have read the information provided on this form.

☐ I have completed this form to the best of my recollection.

☐ I am aware that deliberate misrepresentation may jeopardize my health.

**** Name**

**** Date:**

REMINDER: MyUHS has a time out feature that after 20 minutes of inactivity data may be lost or submission of forms incomplete. It is recommended that you complete all required steps in a continuous session. You must click "Send" below to submit your questionnaire.

Send

Cancel

MEMBER NAME	DEGREE & CREDENTIALS	POSITION TITLE	AFFILIATION WITH INSTITUTION	ADDRESS & PHONE OF CHAIR
<i>Voting</i>				
██████████ *	DVM, PhD	Clinical Associate Professor	Surgical Sciences	██████████ Phone: ██████████@wisc.edu
██████████	PhD	Associate Professor	Comparative Biosciences	
██████████ **, ***	MA	Retired	Nonaffiliated, Nonscientist	
██████████	DVM, PhD	Associate Professor	Medical Sciences	
██████████	BS, MBA	██████████	Animal Research Safety (Biological Safety Office, Environmental Health and Safety)	
██████████	DVM, ACLAM	Attending Veterinarian (nonag species)	RARC	
██████████	DVM, MS, DACVIM	Attending Veterinarian (ag species)	RARC	
██████████ ** ***	MA	Economist	Nonaffiliated, Nonscientist	
██████████	PhD, DVM	Assistant Professor	Pathobiological Sciences	
██████████	VMD, PhD	Professor	Pathobiological Sciences	
██████████	DVM	Clinical Assistant Professor	Surgical Sciences	Vice-chair
██████████	PhD	Professor	Pathobiological Sciences	
██████████	DVM	Clinical Assistant Professor	Medical Sciences	
<i>Voting Alternates</i>				
██████████	DVM	██████████; Alternate for ██████████ and ██████████	SVM Administration	
██████████	DVM	Veterinarian; Alternate for ██████████	RARC	
██████████	DVM, PhD, Dipl. ACLAM	Veterinarian; Alternate for ██████████	RARC	
██████████	BS	Alternate for ██████████	Animal Research Safety	
██████████	DVM, DABVP, MS	Veterinarian; alternate for ██████████	RARC	
██████████	BS	██████████; Alternate for ██████████ or ██████████	SVM Animal Resource Center	
██████████	DVM, MPH, PhD, Dipl. ACLAM	Chief Campus Veterinarian; Alternate for ██████████	RARC	
<i>Ex officio - Non-voting</i>				
██████████	BS	Animal Research Coordinator	Animal Research Safety	
██████████	BS	Associate Admin. Program Specialist	SVM Animal Resource Center	
██████████	MS	██████████	RARC	
██████████	MA	██████████	RARC	
██████████	PhD	██████████	RARC	
██████████	MS	Animal Program Assessment Specialist	RARC	
██████████	BS	Animal Program Assessment Specialist	RARC	
██████████	PhD	Animal Program Assessment Specialist	RARC	

*indicates Chairperson

**indicates nonaffiliated member

***indicates nonscientific member

n = 13, quorum = 7

University of Wisconsin-Madison
Institutional Animal Care and Use Committee
(IACUC)
IACUC Protocol Application

Protocol # : IS00002435

Date Approved : N/A

Expiration date : N/A

DRAFT

PROTOCOL BASICS**1. Protocol title**

Give your protocol a title.

* .

2. PI name

Click Change to choose a different name. If you can't find the name you want, email arrow_help@rarc.wisc.edu.

* [REDACTED]

3. PI Status

Is the named PI (select one):

*

☐ Faculty

☐ Emeritus appointment

☒ Other

4. PI department

Enter the PI's department name.

* RARC

5. Protocol renewal

Is this application a renewal of a previously approved paper protocol?

* ☐ Yes ☒ No

Previous protocol

If yes, please provide the current protocol number (e.g., M01234 or V00789).

6. Protocol writers

Other than the PI, who can write and modify this protocol? Add up to two names by typing the last name in the search box and selecting from the drop down or clicking on the "Add" button to locate the person. If you can't find a name you want, please email arrow_help@rarc.wisc.edu

Person

There are no items to display

7. Email contacts

Select up to two (2) email contacts by typing the last name in the search box and selecting from the drop down or clicking on the "Add" button to locate the person. If you can't find the name you want, please email arrow_help@rarc.wisc.edu.

Person

There are no items to display

8. Emergency contacts

Select up to two emergency contacts (at least one contact is required) who are authorized to act in an animal emergency if the Principal Investigator is not available. These must be individuals who understand the research and can answer questions in a PI's absence. Type the contact's last name in the search box and select from the drop down or click the "Add" button to locate the person

*

Person

[REDACTED]

FUNDING

Identify all funding sources that support your protocol.

If you have questions about grant-protocol congruence, email or submit the [Congruence Review Request Form](mailto:congruence@rarc.wisc.edu) to congruence@rarc.wisc.edu.

1. Research and Sponsored Program (RSP) – managed funding

Do you have a grant or contract funding this project (federal or non-federal)?

PI Name Award Number (MSN #) Project Title Sponsor Reference Number Project ID Sponsor (Source)

There are no items to display

2. Other funding

Add other funding.

Project Title	PI Name	Award Number (MSN #) / Project ID (PRJXXX)	Start Date	End Date	Grant Status	Sponsor (Source)
---------------	---------	--	------------	----------	--------------	------------------

There are no items to display

3. Public Health Service (PHS) funding

Are any of the funding sources above directly from or subawards from NIH, NSF, or other Public Health Service (PHS) agencies? See [https://en.wikipedia.org/wiki/United_States_Public_Health_Service] for a list of PHS agencies.

* ☐ Yes ☒ No

PROTOCOL TYPE

1. Select agents

Does this protocol involve the administration of biological select agents/toxins or is your proposed work conducted in a Registered Space? See the [CDC's Select Agents and Toxins List](#) for guidance.

Note! Controlled substances such as Ketamine and Pentobarbital are NOT select agents. If you are working with controlled substances, select "No."

If you are unsure about the status of your agent or if you'll work in Registered Space, contact

██████████.

* ☐ Yes ☒ No

2. Infectious disease

Does this protocol include work with infectious disease?

* ☐ Yes ☒ No

3. Protocol type

What type of protocol are you submitting? Select one.

* Biomedical Research and Basic Biology and/or Teaching and/or Colony Management

VA ACORP

1. VA ACORP

Is your work also described in an approved Veterans Administration Animal Component of Research Protocol (ACORP)?

* ☐ Yes ☒ **No**

VA researchers must complete this entire UW protocol application to provide answers about procedures and/or housing at UW facilities.

ACORP files

If yes, add the current approved ACORP(s).

There are no items to display

SIGNIFICANCE and JUSTIFICATION

1. Significance of work

Using nontechnical (lay) language that a high-school student would understand, briefly describe the goals of your study including an explanation of how your work will advance knowledge, improve human or animal health, or benefit society. Do NOT use technical language that would be used in a grant application.

At the end of your response, describe briefly and in nonscientific language how you plan to interpret the collected data to meet the goals of the study.

* .

2. Justify use of animals

Explain why you must use live vertebrate animals instead of nonanimal alternatives such as computer simulation or in vitro systems.

* .

EXPERIMENTAL NARRATIVE

1. Experimental narrative

In language that scientific colleagues outside your discipline would understand, please provide a global, chronological summary of your experiments that focuses on the experience of the animals from initial assignment to final disposition. Your answer should allow IACUC members to understand the experience of all animals assigned to this protocol. Briefly outline all proposed surgeries, non-surgical procedures, and other manipulations, but do not include experimental details here. You will provide specific protocol details such as breeding schemes, blood draw amounts, complete surgical descriptions, euthanasia methods, drug dosages, drug routes, etc., later in this protocol.

You do not need to describe animal housing arrangements or other standard husbandry practices here unless those practices will differ from the practices supported by the normal operations of the vivarium staff. If you are unsure if your study-specific husbandry practices are different from the standards provided by the vivarium staff, consult with an RARC research animal veterinarian, WNPRC veterinarian, or the supervisor of the animal facility.

*

2. Supporting publications/manuscripts (optional)

List the title/name of manuscripts, abstracts, or other references supporting your research that the IACUC may find helpful in evaluating this protocol. Do not list standard husbandry references.

3. Summary files

Attach file(s) with timelines, illustrations, figures, or other supplemental information that provides an overview of the protocol. Do not attach copies of grant applications.

There are no items to display

DUPLICATION SEARCH

Describe the search terms and strategy you used to determine that your experiments will not be unnecessarily redundant.

1. Duplication databases

List two or more databases searched (e.g., AltWeb, Biological Abstracts, NORINA, PubMed, etc.):

* .

2. Duplication years covered

Indicate the timeframe covered by search (yyyy-yyyy):

* .

3. Duplication recent search

Indicate the date of the most recent search (mm/dd/yyyy):

* 4/10/2017

4. Duplication keywords

List the keywords used for search:

* .

5. Duplication other

List any other methods you used to determine that you did not unnecessarily duplicate other research and/or involve animals in teaching. This should be secondary to the database search. Examples of other sources are conference attendance, professional expertise, specific journal articles, training, etc.

6. Duplication narrative

Provide a brief narrative description of how the search results were evaluated to avoid unnecessary duplication. Please state if the research proposed in this protocol was determined to be novel. **If not**, describe why it is necessary to repeat previously published findings as part of this research endeavor.

* .

SELECTED SPECIES



You must click on the Species Details button next to each species' name below to answer a series of questions about it.

When you are finished answering questions for all species, click Continue or save and exit.

You can exit before answering all questions and return later to finish.

To REMOVE a species, click the trash can icon on the applicable row below. You must have more than one species to remove one.

To add additional species not shown below, check the box: No

Species Details	Species	Max. Number	Surgery?	MSS?	Breeding?	GM?	USDA Code	Print	Complete?
Species Details	Laboratory mouse	0	yes	yes	yes	yes	B		

SELECT STUDY TEAM

1. Study team

Add all research personnel, including the PI, who will work with animals under this protocol. Do NOT include animal facility supervisors, professional animal care staff, or research animal veterinary staff. DO add protocol writers and email contacts if they will work with animals. If a study team member or a lab member won't be handling animals for over 30 days, or you can't find a name in the drop down, email arrow_help@rarc.wisc.edu.

*

Name	Office phone	Lab phone	Cell phone	Email
View [REDACTED]	[REDACTED]			[REDACTED]@rarc.wisc.edu

2. Study team groups

List GROUPS that will work with animals on this protocol (e.g., 4th year veterinary students, SPI). Do NOT name individuals. Do NOT include assignments.

.

3. PI oversight

If the PI (him or herself) will not be handling or working with a live species, explain how the PI will provide the oversight necessary for compliance with animal program regulations and requirements.

4. Supervisor/trainer for staff with < 1 yr experience

For any individuals added to the study team who may not have at least one year of experience, please state who will train and supervise.

*

.

5. Confirm Training

Please confirm that all study team members have completed the Animal Contact Risk Questionnaire and are medically cleared to handle animals. For assistance, contact [REDACTED] at University Health Services, [REDACTED]

*

.

ASSIGNMENTS AND QUALIFICATIONS

Click ADD to associate members with species and painful procedures.

To see an individual's education and experience, click the icon next to their name on the ADD pop-up (go to Help for how profiles are managed).

To remove a member, return to the Select Study Team page.

NOTE: ALL study team members MUST be assigned to at least one species.

ALL painful/distressful procedures and surgeries must be associated with at least one staff member.

1. Study team member assignments

View	Name	██████████
	Species	Laboratory Mouse
	Painful nonsurgical procedures	''
	Surgeries	. (Minor survival)
	RARC classes	Animal User Orientation - 2017-02-27 UW Animal Program Emergency Orientation - 2016-10-24 Guidelines for Working with Wildlife - 2014-12-30 Animal User Orientation - ... read more...
	Education	No Value Entered
	Experience	I know how to use guinea pigs. And cats. And abominable snowmen. ██████████ provided hands-on training for using Sasquatch. Boop boop.

2. Protocol-specific experience/training not included above for any study team member may be included here.

OCCUPATIONAL HEALTH AND SAFETY OF PERSONNEL

Use of hazardous materials requires separate review and approval by EH&S. The Principal Investigator is responsible for obtaining all relevant approval(s) prior to initiating work with hazardous materials.

1. Occupational hazards

Are any of the following used in the research involving live animals under this application? Check all that apply:

(If you have any questions regarding this section, please contact biosafety@fpm.wisc.edu.)

*

- ☒ Biological hazards (zoonotic agents, human or animal pathogens, human cells, prions, etc.)
- ☒ Chemical hazards (carcinogens, flammables, highly reactive, corrosives, etc.)
- ☒ Physical hazards (UV light, magnetic fields, noise, electric shock, temperature, etc.)
- ☒ Radiation and/or radioactive materials (irradiation, administration of radionuclides, etc.)
- ☒ Recombinant materials (Transgenic animals and/or recombinant materials [viral vectors, microbes, cells, etc.] administered to animals)
- ☒ Wildlife hazards
- ☒ Other. If checked, you must describe in box below.
- ☐ NONE. None of the hazards listed above apply to research performed on living animals under this application.

Other hazards

If the type of hazard is not listed above, please briefly describe.

.

BIOLOGICAL HAZARDS

Biological hazards or biohazards includes all microorganism and toxins produced by microorganisms that are human pathogens regardless of their transmissibility, invasiveness, virulence or lethality. Include human or primate-derived cells, tissues or other materials, as well as prions, and pathogenic fungi. Also include zoonotic pathogens (i.e., pathogens transmissible from animals to humans).

Note that most uses of biological hazards also require an approved UW-Madison Biosafety Protocol from the Office of Biological Safety (OBS). Contact OBS if assistance is needed to complete this section.

1. **Biohazard OBS**

Is this work with biological hazards covered by an approved Biosafety Protocol?

* Yes

BH-OBS number

If yes, please provide the OBS protocol number(s)

.

2. **Biohazard table**

The table below lists biohazards that have been added.

*

Biohazard details

View

Biohazard name	.
Species	Laboratory mouse
Biosafety level	ABSL 1
Biohazard Risk	.
Containment animals	No special containment needed
PPE needed	Exam gloves - Nitrile
Waste	No special precautions needed for waste/dirty bedding
Carcasses	No special precautions needed for disposal use facility standard method

Upload files

Please upload files (optional).

There are no items to display

3. **Biohazard safety signage**

Upload any biohazard safety signage associated with this protocol.

There are no items to display

CHEMICAL HAZARDS

Chemical hazards include chemicals that present a health hazard or physical risk. Chemicals that present a health hazard include carcinogens, drugs, mutagens, and teratogens. They also include chemicals that are irritants or toxins to the skin, eyes, lungs, neurologic system, or any other body part or system. Physically hazardous chemicals include flammables, combustibles, oxidizers, strong reactives, and compressed gas.

Note that the use of chemical hazards must be addressed in the Laboratory Chemical Hygiene Plan (CHP). Read additional information through the help icon above or contact the Chemical Safety Department (265-5000 or chemsafety@fpm.wisc.edu).

1. Chemical Hygiene Plan

INFORMATIONAL: To ensure accurate and timely safety precautions for you and your lab staff, and to meet the Occupational Safety and Health Administration (OSHA) Laboratory Standard, every laboratory must have a Laboratory Chemical Hygiene Plan (CHP). If your laboratory does not have a CHP, contact the Chemical Safety Office to request the template form (265-5000 or chemsafety@fpm.wisc.edu). The Chemical Safety Office staff are also available to review existing CHP for completeness and accuracy.

CHP files

You may attach your current Chemical Hygiene Plan (CHP) here for reference. The ACUC will not review the CHP.

There are no items to display

2. Chemical detail table

The table below lists chemical hazards that have been added.

*

Chemical hazard details

View

Regimen/Substance	.
Drugs and Compounds	.
Containment Preparation	No special containment needed
Species	Laboratory mouse
Containment Animals	No special containment needed
PPE needed	Exam gloves - Nitrile
Waste	No special precautions needed for waste/dirty bedding
Carcasses	No special precautions needed for disposal use facility standard method
Chemical Risk	.
Chemical SDS	Yes

3. Chemical safety signage

Upload any chemical safety signage associated with this protocol.

There are no items to display

PHYSICAL HAZARDS

Physical hazards include ultraviolet and visible light, cold heat, noise, and vibration. It also includes non-ionizing radiation (electric fields, infrared, microwave, magnetic fields, static electricity, radio frequency, etc.). These become hazards when they are of sufficient intensity and/or duration to cause potential physical harm.

Contact Animal Research Safety for help completing this section.

1. **Physical hazards table**

The table below lists physical hazards that have been added.

Physical hazards list

View	Physical hazard name .
	Physical hazard risk .
	Physical hazard handling .

2. **Physical safety signage**

Upload any physical safety signage associated with this protocol.

There are no items to display

RADIOACTIVE HAZARDS

Radioactive hazards includes sources of ionizing radiation (X-rays, alpha, beta, etc.). Include radio labeled tracers and other administered radionuclides.

Note that use of radioactive materials also requires an approved Form 99A from the UW-Madison Office of Radiation Safety (ORS). Contact ORS for help completing this section.

1. **Rad 99A**

Is this work with radioactive material covered by an approved Form 99A from Radiation Safety?

* Yes

If yes, please provide date of approval.

.

2. **Rad housing return**

Will any animals containing radioactive material be returned to housing in an animal-care facility or laboratory?

* Yes, returned to animal-care facility housing

If yes, please explain.

.

Upload files

Please upload files (optional).

There are no items to display

3. **Radiation safety signage**

Upload any radiation safety signage associated with this protocol.

There are no items to display

RECOMBINANT MATERIALS

Recombinant materials include any animal that carries fragments of one or more other species' genome by means of recombinant DNA technology. The donor organism(s) may be single or multi-celled. The offspring of such recombinant animals should also be included here.

Note that use of recombinant material also requires an approved UW-Madison Biosafety Protocol from the Office of Biological Safety (OBS). Contact OBS if assistance is needed to complete this section.

1. **Recomb OBS**

Is this work with recombinant material covered by an approved Biosafety Protocol?

* Yes

OBS number

If yes, please provide the OBS protocol number(s).

.

2. **Recombinant materials table**

The following recombinant materials were added.

*

Recombinant material details

View

Recomb material	.
Biosafety level	ABSL 1
Recombinant hazard animal	Laboratory mouse
Containment animals	No special containment needed
PPE needed	Exam gloves - Nitrile
Waste	No special precautions needed for waste/dirty bedding
Carcasses	No special precautions needed for disposal use facility standard method

3. **Recombinant material safety signage**

Upload any recombinant material safety signage associated with this protocol.

There are no items to display

FINISH PROTOCOL

Note: To complete and submit the protocol, please choose from the steps below:

1. Select 'Hide/Show Errors' to check for any errors or omissions.
2. Select 'Exit' and you will be redirected to the protocol workspace.
3. If you are ready to submit, click "Ready to Submit", and then follow the instructions on the pop up window.

PLEASE NOTE: ONLY THE PI MAY SUBMIT THE INITIAL NEW OR RENEWED PROTOCOL.

Laboratory mouse: JUSTIFY SPECIES CHOICE

1. Justify species choice

Why is this species the most appropriate for your protocol?

* .

Laboratory mouse: NUMBER OF ANIMALS

1. Maximum 3-year total

During the entire three-year period of your protocol, what's the total maximum number of animals of this species that you'll use? Include control and replacement animals, breeding colony animals, all preweaned animals used for tissue samples, and euthanized animals.

* 0

2. Animal number justification

Why does your protocol need this maximum number? For each group, provide a statistical justification or cite your past experience. See [ACAPAC policy 2013-051](#) for guidance and its Companion SOP for examples of acceptable justifications.

* .

3. Number files

Attach file(s) that support your determination of animal numbers. If possible, use tables to organize your information.

There are no items to display

DRAFT

Laboratory mouse: BIO SPECIES SOURCE**1. Bio species source**

Check all sources that apply for this species.

*

- ☒ Investigator at UW-Madison / including another protocol held by PI (please check for maximum flexibility in animal transfers)
- ☐ Approved vendor (e.g. Jackson labs, RARC breeding service, etc.)
- ☐ Bred under this protocol
- ☐ Investigator at non-UW Madison institution (Covance, other university)
- ☐ Unapproved vendor
- ☐ Capture or collection from wild (free-living) population
- ☐ Herd, flock, etc
- ☐ Client/privately owned animals
- ☐ Other

Bio unapproved or other source

If source is unapproved vendor or other, describe.

Laboratory mouse: PRIOR USE**1. Prior use**

Were any of these animals used in another protocol?

* ☐ Yes ☒ No

Prior describe

If yes, describe the prior use and explain how you have determined that the previous use of these animals will not compromise the research proposed in this protocol or the animals' health.

Consider previous nutritional manipulations, blood draws, drugs and materials administered, and other manipulations that might have compromised the animals' fitness for this protocol, or how the proposed study may adversely impact animals given their health history and assignment to earlier projects.

Animals that have undergone a major surgical procedure, permanent physiologic alteration, or substantial impairment on a previous protocol are not eligible for major surgical procedures on subsequent protocols.

Laboratory mouse: BREEDING AND GENETICALLY MODIFIED Y/N

1. Breeding

Does your protocol design include breeding of this species?

* ☒ Yes ☐ No

2. Genetically modified

Will any of this species be genetically modified either through a breeding scheme on this protocol or through purchase of already genetically modified animals?

* ☒ Yes ☐ No

Laboratory mouse: BREEDING

1. Breeding scheme

Describe your breeding scheme. Include number of females per male, continuous or interrupted mating, age range at weaning or separation (if appropriate), and criteria for culling old breeders.

* .

2. Breeding excess outcome

What will you do with animals that are bred in excess or that do not meet phenotype or genotype requirements?

* .

DRAFT

Laboratory mouse: GENETICALLY MODIFIED OR TRANSGENIC ANIMALS

1. **GM title**

Provide the type, name, or brief descriptor of the genetically modified or transgenic (see help text for definition of transgenic) animals.

* .

2. **GM genetic modifications**

Do the parental transgenic animals contain a transgene that is under the control of a gammaretroviral long terminal repeat (LTR) or more than one-half the genome of an exogenous eukaryotic virus?

☐ Yes ☒ No

3. **GM complications**

Do you expect complications with the phenotype of genetically modified or transgenic animals?

*

☒ Yes

☐ Unknown (new phenotype)

☐ No

GM manage

If "Yes" is selected for "GM complications", describe the complications and how you will manage them.

.

GM unknown

If "Unknown (new phenotype)" is selected for "GM complications", how will you monitor animals with unknown potential complications?

4. **GM pain/distress**

Will the phenotype be associated with any pain or distress to the genetically modified or transgenic animals?

*

☒ Yes ☐ No

GM monitor

If "Yes" is selected for "GM pain/distress", describe how you will monitor and treat pain or distress.

.

Laboratory mouse: SUBSTANCE ADMINISTRATION CHECKLIST

1. **Substance administration checklist**

If you will administer substances, check all purposes that apply. Include delivery of materials to animals via injection, infusion, inhalation, implantation, ingestion of food/water, and other means. Include administration of radionuclides. Include nonstandard diets under all other substances.

*

☒ analgesics/anesthetics/sedatives to relieve pain or distress caused by nonsurgical and/or surgical procedures

☒ euthanasia substance(s)

☒ all other substances

☐ I will not administer any substances.

Laboratory mouse: SUBSTANCE ADMIN: ANALGESIC/ANESTHETIC/SEDATION

Used to relieve pain or distress an animal may experience as a result of the procedures and manipulations described in this species/group. For guidance on organizing information, click on the help icon above.

1. **Analgesic/anesthetic/sedation table**

*

Regimens

View

Regimen	.
Drugs and Compounds	.
Description	.
Monitoring Plan	No Value Entered

Laboratory mouse: SUBSTANCE ADMIN: EUTHANASIA

If a substance is used to euthanize this species, it should be entered here. Include CO₂.

1. **Euthanasia substance table**

*

Regimens

View

regimen	.
Drugs and Compounds	.
description	.

Laboratory mouse: SUBSTANCE ADMIN: ALL OTHER SUBSTANCES

For each substance or regimen, click "Add" to answer questions about its administration.

Describe the materials delivered to animals via injection, infusion, inhalation, implantation, ingestion in food or water, nonstandard diets, and by other means. Include administration of radionuclides via injection or in food.

Do not include substances used for **clinical relief** of pain or distress (anesthesia/analgesia) or for euthanasia of this species. See help for additional guidance.

1. **All Other substances table**

*

View	Substance name	.
	Drugs and Compounds	.
	category	.
	Dosing details	.
	purpose of use / monitoring	.
	painful?	Yes
	anesthesia/analgesia regimen	.

Laboratory mouse: SPECIAL SUBSTANCES

1. **Special substances**

*

- ☒ cells, cell lines, tissues, or tissue products (animal and/or human)
- ☒ complete Freund's adjuvant (CFA)
- ☒ controlled substances (requiring DEA registration)
- ☒ nonpharmaceutical-grade compounds
- ☒ paralytic agents
- ☐ none of the above

Laboratory mouse: CELL ADMINISTRATION**1. Cell selection**

Select the substances that are cells, cell lines, or tissue products.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Cell evaluation

Describe the testing and precautions for possible animal pathogens in these cells, cell lines, tissues, or tissue products. Please see [Policy 2007-033](#) for further details.

*

3. Cell files

Attach file(s) if any outside testing was performed on cells, cell lines, tissues, or tissue products.

There are no items to display

Laboratory mouse: Complete Freund's Adjuvant**1. Complete Freund's Selection**

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Complete Freund's Adjuvant justify

Use of CFA must be scientifically justified and a comprehensive search for alternatives considered. Please justify use of Complete Freund's Adjuvant (CFA) versus alternative adjuvant systems.

*

Laboratory mouse: Controlled Substances

Controlled substances are drugs regulated by the Drug Enforcement Administration.

1. CS selection

Check all regimens that contain controlled substances.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. DEA registrant

Name the DEA registrants for the controlled substances.

*

Laboratory mouse: Nonpharmaceutical-Grade Administration

A pharmaceutical-grade chemical compound is defined by the NIH-OLAW and USDA-APHIS as any active or inactive drug, biologic, reagent, etc., that is approved by the FDA or for which a chemical purity standard has been written or established by any recognized pharmacopeia, such as the US Pharmacopeia [USP], the National Formulary [NF], the British Pharmacopoeia [BP], or the Pharmacopoeia of the Council of Europe [EP]. This includes compounds intended for use as investigational agents, for clinical purposes, and in terminal studies.

1. **Nonpharmaceutical-grade selection**

Check the substances that are nonpharmaceutical-grade compounds. Those not checked, with rare exceptions, must be pharmaceutical grade.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. **Nonpharmaceutical-grade use justification**

Justify your use of each nonpharmaceutical-grade substance you'll administer.

* .

3. **Nonpharmaceutical-grade preparation**

If appropriate, describe the preparation method for each compound selected.

.

4. **Nonpharmaceutical-grade files**

Attach files with standard operating procedures or other supplementary information for the preparation or compounding of non-pharmaceutical-grade substances.

There are no items to display

Laboratory mouse: Paralytic Administration

Without exception, you can only use paralytics on a fully anesthetized animal. In addition, you must provide adequate ventilation during the time that an animal cannot breathe on its own.

1. Paralytic selection

Select the substances that are paralytic agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Paralytic use justification

Provide the scientific justification for each paralytic agent you will use.

* .

3. Paralytic number and monitoring plan

For each paralytic agent you'll use, indicate the number of this species to which it will be administered and describe how you will monitor during administration and recovery.

* .

4. Paralytic analgesia/anesthesia/sedation

Regimen/Substance	Drugs and Compounds	Species
<input type="checkbox"/> .	.	Laboratory mouse

Laboratory mouse: AGENTS

1. Agents

*

<input checked="" type="checkbox"/> rDNA
<input checked="" type="checkbox"/> bacteria
<input checked="" type="checkbox"/> virus
<input checked="" type="checkbox"/> prion
<input checked="" type="checkbox"/> human-derived
<input checked="" type="checkbox"/> genetically altered
<input checked="" type="checkbox"/> toxin
<input checked="" type="checkbox"/> carcinogen
<input checked="" type="checkbox"/> mutagen
<input checked="" type="checkbox"/> teratogen
<input checked="" type="checkbox"/> radioactive
<input type="checkbox"/> none of the above

Laboratory mouse: rDNA AGENTS ADMINISTRATION**1. rDNA selection**

Select the substances that are rDNA agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. rDNA files

Attach file(s).

File

There are no items to display

Laboratory mouse: Bacteria Agents Administration**1. Bacteria selection**

Select the substances that are bacteria agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Bacteria files

Attach file(s).

File

There are no items to display

Laboratory mouse: Virus Agents Administration**1. Virus selection**

Select the substances that are virus agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Virus files

Attach file(s).

File

There are no items to display

Laboratory mouse: Prion Agents Administration**1. Prion selection**

Select the substances that are prion agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Prion files

Attach file(s).

File

There are no items to display

Laboratory mouse: Human Derived Agents Administration**1. Human derived selection**

Select the substances that are human derived agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Human derived files

Attach file(s).

File

There are no items to display

Laboratory mouse: Genetically Altered Agents Administration**1. Genetically altered selection**

Select the substances that are genetically altered agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Genetically altered files

Attach file(s).

File

There are no items to display

Laboratory mouse: Toxin Agents Administration

1. Toxin selection

Select the substances that are toxin agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Toxin files

Attach file(s).

File

There are no items to display

Laboratory mouse: Carcinogen Agents Administration

1. Carcinogen selection

Select the substances that are carcinogen agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Carcinogen files

Attach file(s).

File

There are no items to display

Laboratory mouse: Mutagen Agents Administration**1. Mutagen selection**

Select the substances that are mutagen agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Mutagen files

Attach file(s).

File

There are no items to display

Laboratory mouse: Teratogen Agents Administration**1. Teratogen selection**

Select the substances that are teratogen agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Teratogen files

Attach file(s).

File

There are no items to display

Laboratory mouse: Radioactive Agents Administration**1. Radioactive selection**

Select the substances that are radioactive agents.

*

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse
<input type="checkbox"/> .	.	Laboratory mouse

2. Radioactive files

Attach file(s).

File

There are no items to display

Laboratory mouse: SELECT NONSURGICAL PROCEDURES (NSP)

1. **Nonsurgical selection**

Check all types of nonsurgical procedures that will be performed.

*

<input checked="" type="checkbox"/>	Blood collection sampling by nonsurgical procedures
<input checked="" type="checkbox"/>	Food and/or fluid regulation Applies to scheduled or restricted access to food or fluids for experimental purposes. Do NOT check this box for fasting before sedation or use of anesthesia or for standard presurgical fasting or fluid regulation. Presurgical fasting will be described in Surgery Summary.
<input checked="" type="checkbox"/>	Experimental exercise Treadmill running, rotarod performance testing, swimming, and more.
<input checked="" type="checkbox"/>	Genotyping/identification
<input checked="" type="checkbox"/>	Imaging CT scans, MRIs, ultrasound examinations, X-rays, and other imaging procedures, including those that expose the animal to small amounts of radiation for the purpose of producing a visual image of bodies or processes. If a dye is used for imaging, add details about the dye in Substance Administration.
<input checked="" type="checkbox"/>	Irradiation Exposure to gamma irradiation and other ionizing radiation for the purpose of affecting animal tissue or physiology. Administration of radionuclides via injection or in food should be described in Substance Administration.
<input checked="" type="checkbox"/>	Physical restraint Applies to the use of manual or mechanical means to limit some or all of an animal's movement. Does not apply to brief procedures that are part of normal handling or husbandry. Does not apply to normal wildlife-capturing techniques.
<input checked="" type="checkbox"/>	Other nonsurgical procedures Applies to a wide range of other experimental manipulations of animals such as behavioral assays, gastric lavage, maze trials, oocyte collection, preference tests, and more.
<input type="checkbox"/>	I will not perform any nonsurgical procedures.

Laboratory mouse: NSP: BLOOD COLLECTION

For each blood collection regimen, provide details of the procedure.

1. **Blood collection table**

The table below lists regimens of blood collection that have been added.

*

Blood Collection List

View	Regimen	.
	Blood collection monitoring	.
	Collect site	.
	Max. single draw vol. (ml)	.
	Max. percent blood volume withdrawn	.
	# samples	0
	Interval	.
	Blood terminal?	No
	Painful?	No
	Analgesic/Anesthetic regimen	.

2. **Blood collection exceed limits**

For any survival blood collection regimens that approach or exceed the maximum collection limits as outlined in the RARC guidelines, describe monitoring and supportive care procedures.

.

3. **Blood collection justify**

Provide justification for any survival blood collection regimens that approach or exceed the maximum collection limits as outlined.

.

Laboratory mouse: NSP: FOOD AND/OR FLUID REGULATION

Food and/or fluid regulation (FFR) includes:

- scheduled access to food or fluid in which the animal has unlimited access to food or fluid for a specific time daily;
- restricted access, in which the total amount of food or fluid is strictly monitored or controlled. Calorie restriction for experimental purposes should be described here.

FFR does NOT apply to calorie restriction as directed by a veterinarian for purposes of weight control.

FFR does NOT apply to fasting before sedation or use of anesthesia, or to standard presurgical fasting or withholding of fluids. Presurgical fasting will be described in Surgical Procedures.

1. **FFR name**

Give your FFR regimen a brief name. **Note: You will eventually match the name you assign here with a location. Be sure to assign a unique name to this procedure so that you can identify it later in your application.

* .

2. **FFR describe**

Describe the FFR. Include the duration and schedule of regulation.

* .

3. **FFR justify**

Provide the scientific justification for the FFR.

* .

4. **FFR monitor**

How will you monitor animals for adverse events related to FFR, including potential nutritional deficiencies?

* .

5. **FFR record**

How will you record food and/or fluid administration or intake? Include how you will label affected animals' enclosures for identification by animal care and veterinary staff.

* .

6. **FFR pain/distress**

Will any animals be subjected to more than momentary or slight pain/discomfort/distress as a result of this procedure?

* ☐ Yes ☒ No

7. **Analgesic/anesthetic/sedative regimen**

If you will use an analgesia/anesthesia regimen with this procedure, select the one(s) that you will use. Your choices are generated from what you entered on the Anesthesia/Analgesia page.

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/>	.	Laboratory mouse

8. **FFR files**

Add file(s) with standard operating procedures or other supplementary information for food and/or fluid regulation.

There are no items to display

Laboratory mouse: NSP: EXPERIMENTAL EXERCISE**1. Experimental exercise table**

For each experimental exercise regimen, click "Add" to answer questions about it.

*

View

Title	.
Describe	.
Forced	No
Monitor	.
Justify	.
Analgesic/Anesthetic regimen	.

Laboratory mouse: NSP: GENOTYPING AND IDENTIFICATION**1. Genotyping and identification table**

For each genotyping or identification regimen, click "Add" to answer questions about it.

*

View

Title	.
Site	.
Description	.
Age of animals	.
Is Painful	No
Analgesic/Anesthetic regimen	.

2. Genotyping and identification files

Attach file(s) with standard operating procedures or other supplementary information for genotyping or identification.

File

There are no items to display

Laboratory mouse: NSP: IMAGING

For each imaging regimen, click "Add" to answer questions about it. Imaging includes X-rays, PET scans, CAT scans, MRIs, etc.

1. Imaging table

*

View

title	.
modality	.
max. no. of animals	<i>No Value Entered</i>
contrast	.
duration	.
freq./animal	.
description	.
painful?	No
imaging analgesia/anesthesia	.

Laboratory mouse: NSP: IRRADIATION EXTERNAL SOURCE

For each irradiation regimen, click "Add" to answer questions about it.

Do not include administration of radioactive substances (i.e., radionuclides) or radiation exposure that is part of an imaging procedure. You will address those in the Substance Administration and Imaging sections respectively.

1. Irradiation table

*

View

title	.
type	.
max. no. of animals	<i>No Value Entered</i>
max. duration	.
max. single dose/animal	.
max. total dose/animal	.
freq./animal	.
description	.
painful?	No
Analgesic/Anesthetic regimen	.

Laboratory mouse: NSP: PHYSICAL RESTRAINT

For each physical-restraint regimen, click "Add" to answer questions about it.

Do **not** include brief (< 15 min) physical restraint that is part of normal animal-handling practices or procedures.

Do **not** include normal wildlife-capturing techniques.

1. Restraint table

*

View

type of restraint	.
max. duration	.
acclimatization	.
monitoring	.
scientific justification	.
painful?	No
Analgesic/Anesthetic regimen	.

2. Restraint files

Attach file(s) with standard operating procedures or other supplementary information for physical restraint.

There are no items to display

Laboratory mouse: NSP: OTHER NONSURGICAL PROCEDURES

Click "Add" to answer questions about nonsurgical procedures you haven't already described.

1. **Other nonsurgical table**

*

View	title	.
	max. no. of animals	No Value Entered
	pre and post care and/or treatment	No Value Entered
	description	.
	frequency	No Value Entered
	painful?	No
	Files	
	Analgesic/Anesthetic regimen	.

Laboratory mouse: NSP: NONSURGICAL MONITORING

1. **Nonsurgical monitoring**

Review your list of nonsurgical procedures that include pain/discomfort/distress.

Non-Surgical Procedure With Pain	Procedure Type	Analgesic/Anesthetic regimen	Monitoring
.	Euthanasia Methods		.
.	Substance Administration	.	.
.	Genetically Modified		.

Laboratory mouse: SURGERY Y/N

Minor survival surgery: Body cavities are not exposed. Animals typically do not show significant signs of postoperative pain, have minimal complications, and quickly return to normal function.

Examples: wound suturing, peripheral vessel cannulation, percutaneous biopsy, and most procedures routinely done on an outpatient basis in veterinary clinical practice.

Major survival surgery: Body cavities are exposed, and tissues are extensively dissected or transected. Animals may show substantial impairment of physical or physiologic functions.

Examples: laparotomy, thoracotomy, joint replacement, craniotomy, and limb amputation.

Nonsurvival surgery: Procedures are terminal, and animals do not regain consciousness prior to death. Do NOT enter nonsurvival surgeries in Euthanasia.

Examples:

All perfusion or Nonsurvival (≤ 5 min): all perfusions or anesthesia duration ≤ 5 min (e.g. thoracotomy for terminal blood collection).

Nonsurvival: anesthesia duration greater than 5 minutes but less than or equal to 12 hours.

Extended nonsurvival: anesthesia duration > 12 hours.

Surgical procedures that are initiated on a live animal prior to confirmation of death, such as thoracotomy for terminal perfusion, are considered nonsurvival surgeries and should be described here.

NOT surgery: Fine-needle biopsies, intravitreal or subcutaneous injections, simple catheter insertions. These should be described in Other Nonsurgical Procedures.

1. Surgery y/n

Will surgery be performed on any of this species?

* ☒ Yes ☐ No

Laboratory mouse: SURGERY AND POSTSURGERY SUMMARY

For each surgical procedure for this species or group, click "Add" to provide details.

1. Surgery table

*

View

title	.
survival type	Minor survival
max. no. of animals	No Value Entered
Analgesic/Anesthesia regimen	.
Euthanasia regimen	.
Physical Euthanasia	Yes - .
presurgery fasting	No Value Entered
duration	.
description	.

2. Pre and post operative care and/or treatment

Please describe any pre and post care and/or treatment (e.g., antibiotics).

3. Patient preparation

Describe how patient(s) will be prepared to create an appropriate surgical field for the proposed surgery (e.g., clipping hair, scrubbing with chlorhexidine solution and sterile water).

* .

4. Sterile field

Select which of the following will be used to maintain a sterile field during surgery. If a sterile field does not apply, please check "none."

* .

<input checked="" type="checkbox"/>	Sterile instruments (autoclave, gas sterilization)
<input type="checkbox"/>	Bead sterilizer
<input type="checkbox"/>	Sterile gown/garb
<input type="checkbox"/>	Sterile gloves
<input type="checkbox"/>	Sterile drapes
<input type="checkbox"/>	Surgical mask
<input type="checkbox"/>	Surgeon scrub
<input type="checkbox"/>	Other
<input type="checkbox"/>	None

Other sterile field

If you choose other, provide the description here:

5. Surgery monitor

How will you monitor animals during surgery and anesthesia, from induction through recovery from anesthesia (immediate postsurgery period)? Document this in your written animal records, too.

* .

6. Postsurgery analgesia regimens

Select all regimens for the treatment of pain and distress after surgery.

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/>	.	Laboratory mouse

7. Postsurgery pain and monitoring

How will you monitor and treat the pain and distress associated with postsurgical conditions?

8. Surgery files

Add file(s) with illustrations, figures, standard operating procedures, or other supplementary information about this surgical procedure.

There are no items to display

Laboratory mouse: CONCURRENT SURGICAL PROCEDURES**1. Concurrent surgeries y/n**

Will you perform two or more surgical procedures under a single anesthetic event?

* ☒ Yes ☐ No**2. Concurrent surgeries table**

If yes, click ADD to provide details about your concurrent surgeries.

View

title	.
surgery selection	.
max. no. of animals	No Value Entered
description	.
justification	.

Laboratory mouse: MULTIPLE SURVIVAL SURGERIES**1. Multiple survival surgeries**

Will any single animal or group of animals of this species survive two or more surgical procedures in separate anesthetic events?

* ☒ **Yes** ☐ No

MSS table

Click "Add" to provide details about each unique regimen of separate, sequential, survival surgeries.

View

title	.
surgery selection	.
max. no. of animals	No Value Entered
description	.
justification	.

DRAFT

Laboratory mouse: ALTERNATIVES SEARCH

Review the following procedures and genetic modifications (if applicable) you described that cause more than momentary pain or distress. Then answer the questions that follow to explain how you determined that there weren't less painful or distressful alternatives to the procedures.

Painful all table

- **Genetically Modified with pain**

Yes

- **Non Surgical Procedures with pain**

Non-Surgical Procedure With Pain	Procedure Type	Analgesic/Anesthetic regimen
.	Substance Administration	.
.	Euthanasia Methods	

- **Surgical Procedures**

Surgery title	Survival Procedures	Anesthesia/analgesia regimens
.	Minor survival	.

List one or two databases you searched (e.g., AltWeb, Biological Abstracts, NORINA, PubMed, etc.) to look for alternatives.

1. **Alternative databases**

* .

2. **Alternatives years covered**

What years did your search cover? (yyyy-yyyy)

* .

3. **Alternatives recent search**

What was the date of your most recent search?

* 4/10/2017

4. **Alternatives other**

List other methods you used to determine that there weren't less painful or distressful alternatives to the procedures listed above. These should be secondary to the literature search, and may be useful to support or rebuke potential alternatives found in the database search. Examples of other sources are conference attendance, professional expertise, specific journal articles, training, etc.

5. **Alternatives search strategy**

Describe your search strategy, including the scientifically relevant keywords you used.

* .

6. **Alternatives narrative**

How did you evaluate the information you gathered? If you found an alternative or refined method but it couldn't be used in this research, explain why.

* .

Laboratory mouse: COMPLICATIONS

1. **Complications**

In previous sections, you identified the pain and discomfort animals might experience from each procedure. Now consider your procedures from a broader perspective:

What are the potential complications animals may experience from any of your procedures or combination of procedures (e.g., internal bleeding after liver biopsy, Graft Versus Host Disease (GVHD) with transplant) or from any chronic condition resulting from the procedures (e.g., lameness, disease)?

* .

2. **Unrelieved pain or distress**

Will treatment for pain or distress be withheld from any animals of this species?

☒ Yes ☐ No

Unrelieved justify

If yes, provide scientific justification for why pain or distress will not be relieved.

.

Laboratory mouse: USDA DESIGNATION

The United States Department of Agriculture (USDA) established the following B-E categories based on levels of pain, discomfort, and distress associated with procedures.

- B** - animals bred or held for use in teaching, testing, experiments, research, or surgery but not used for such purposes
- C** - teaching, research, experiments or tests conducted that involve no pain or distress that require use of analgesics
- D** - experiments, teaching, research, surgery or tests conducted that involve accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic or tranquilizing drugs or palliative measures are used (including surgery or procedures under anesthesia that without the anesthesia would be painful)
- E** - teaching, experiments, research, surgery or tests conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic or tranquilizing drugs are not used because they would adversely affect the procedures, results or interpretation of the teaching, research, experiments, surgery or tests

1. **USDA designation**

Based on these definitions, choose the highest category of pain/distress that this species will experience as part of this protocol.

*

☒ B

☐ C

☐ D

☐ E

Laboratory mouse: EUTHANASIA

The RARC veterinary staff has recommendations for euthanizing the most commonly used species on campus. Your euthanasia plans must follow these recommendations unless your alternative method is scientifically justified and approved by your IACUC. Click on the blue question mark icon to view these recommendations and the AVMA Guidelines for the Euthanasia of Animals.

1. **Criteria for anticipated euthanasia**

What are your study endpoints?

* .

2. **Criteria for unanticipated euthanasia**

For unanticipated events or nonstudy-related health issues, what criteria or clinical signs will you use to determine an unanticipated endpoint for an animal?

* .

3. **Plan for anticipated euthanasia**

Select all applicable euthanasia methods for planned study procedures.

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse

4. **Plan for unanticipated euthanasia**

Select all applicable euthanasia methods for unanticipated events or nonstudy-related health issues.

Regimen/Substance	Drugs and Compounds	Species
<input checked="" type="checkbox"/> .	.	Laboratory mouse

5. **Plans for physical methods of euthanasia (i.e. exsanguination, captive bolt)**

Method Name	Method Description
View .	.

6. **Other euthanasia methods**

Other planned and unplanned euthanasia methods not included above. Include a statement here if euthanasia will be performed by the RARC Veterinary Staff.

7. **Nonstandard euthanasia justify**

For methods of euthanasia described above that are not listed in RARC Veterinary Standards for this species, justify the use of this method.

8. **Ensure death**

Describe the methods you'll use to ensure death following euthanasia procedures.

* .

Laboratory mouse: DISPOSITION

Indicate the final arrangements for animals assigned to this protocol.

1. **Disposition**

At the end of their assignment in this protocol, animals will be:

*

- ☒ Made available to other investigators.
- ☐ Returned to a UW colony, herd or flock for other use.
- ☐ Returned to their client-owners.
- ☐ Maintained at a privately owned herd or flock.
- ☐ Made available for adoption. Adoption must be preapproved by a laboratory animal veterinarian.
- ☐ Sold at market.
- ☐ Euthanized.
- ☐ Other.

Other disposition

Describe other disposition arrangements and justify below.

2. **Consumption**

Is there a possibility that animals or humans will consume your animals or their byproducts at the end of your study?

* ☒ Yes ☐ No

Consumption describe

If yes, provide the drugs you administered to the animals and the drug withdrawal times. For clinical treatments and extra-label drug use (ELDU), indicate that all ELDU will be documented per state and federal guidelines and withdrawal times will be monitored by the veterinarians and animal caretakers.

.

Laboratory mouse: NONSTANDARD HUSBANDRY

Don't include medically justified, standard pre- or post-anesthetic/surgical exceptions, such as short term withholding of food and water. Describe these in SURGICAL PROCEDURES.

Don't include longer-term food or fluid regulation. Describe these in nonsurgical procedures.

1. Nonstandard husbandry

Check all non-standard conditions that apply to this species.

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Housing animals outside dedicated animal facility
Animals will be kept for greater than 12 hours in any location that is not a dedicated animal facility. |
| <input checked="" type="checkbox"/> | Lab staff provide husbandry in facility
Laboratory or research staff, rather than professional facility animal-care staff, will provide animal husbandry for a subset of animals housed in facilities. |
| <input checked="" type="checkbox"/> | Single housing of social species
Social species are singly housed for periods longer than 12 hours. This does not include short-term solitary housing for animals recovering from anesthesia or surgery. |
| <input checked="" type="checkbox"/> | Enrichment withholding
Animals are not provided with the minimum required enrichment as outlined in the facility SOP. |
| <input checked="" type="checkbox"/> | Exercise withholding for dogs
Dogs are not provided with the minimum exercise as required by the facility SOP. |
| <input checked="" type="checkbox"/> | Ambient Noise
Animals will be exposed to white noise that is not part of the standard environmental enrichment for the species. |
| <input checked="" type="checkbox"/> | Nonstandard lighting
Animals will be exposed to lighting paradigm of non-standard wavelength, intensity, or altered light/dark. |
| <input checked="" type="checkbox"/> | Vibration
Animals will be exposed to vibrations of an amplitude and or frequency known to cause clinical effect. |
| <input checked="" type="checkbox"/> | Cleaning/sanitation schedule different than facility standard |
| <input checked="" type="checkbox"/> | Enclosure smaller or denser than standard for species
Animals will be housed in an enclosure that is smaller than the facility standard or at a density higher than the standard for the cage size. |
| <input checked="" type="checkbox"/> | High velocity air
Animals will be directly exposed to high velocity air that is not a normal part of their husbandry. |
| <input checked="" type="checkbox"/> | Bare floor (no bedding) with no structure for resting or sleeping |
| <input checked="" type="checkbox"/> | Wire bottom cage (NOT Avian) |
| <input checked="" type="checkbox"/> | Temperature outside recommended range
Animals will be exposed to temperatures outside of the normal reference ranges for the species. |
| <input checked="" type="checkbox"/> | Other nonstandard housing or husbandry
Animals are subject to other non-standard housing or husbandry conditions. |
| <input type="checkbox"/> | Not applicable
There will be no non-standard husbandry for this study. |

Laboratory mouse: LAB HUSBANDRY IN LAB HOUSING

Laboratory or research staff, rather than professional facility animal-care staff, will provide animal husbandry in lab housing areas.

1. **Lab housing justify**

Justify why you will house animals in a laboratory rather than in a facility.

* .

2. **Lab husbandry**

Briefly outline the husbandry lab staff will provide. Describe any departures from the relevant facility SOP.

* .

3. **Lab husbandry time**

Outline the duration of housing and provide the schedule of husbandry that lab staff will provide.

* .

4. **Lab husbandry files**

Attach file(s) with standard operating procedures or other supplementary information for lab husbandry in lab housing.

There are no items to display

Laboratory mouse: LAB HUSBANDRY IN FACILITY

Laboratory or research staff, rather than professional facility animal-care staff, will provide animal husbandry for a subset of animals housed in facilities.

1. **Research staff facility husbandry**

Briefly outline how the staff will provide husbandry within the facility. Describe any departures from the relevant facility SOP.

* .

2. **Research staff facility husbandry duration.**

Outline the husbandry duration and schedule the research staff will provide within the facility.

* .

3. **Facility husbandry justify**

Describe why the research staff, rather than facility animal-care staff, will provide husbandry for facility-housed animals.

* .

4. **Facility husbandry files**

Attach file(s) with standard operating procedures or other supplementary information for lab husbandry in facilities.

There are no items to display

Laboratory mouse: SINGLE HOUSING

Answer these questions when individuals of a social species are housed alone for longer than 12 hours.

NOTE: This does **not** include short-term solitary housing for animals recovering from anesthesia or surgery.

1. **Single housing duration**

How long will individuals of this social species be housed singly?

* .

2. **Single-housing enrichment**

What enrichment will you provide for singly housed animals?

* .

3. **Single housing monitor**

How will you monitor singly housed animals?

* .

4. **Single housing justify**

What is your justification for single-housing a social species?

* .

Laboratory mouse: ENRICHMENT WITHHOLDING

Animals are not provided with minimum required enrichment as outlined in the facility SOP.

1. **Enrich withhold duration**

Outline the duration and schedule of withholding of enrichment.

* .

2. **Enrich withhold monitor**

How will you monitor animals under enrichment withholding?

* .

3. **Enrich withhold justify**

What is your justification for withholding of enrichment? Why can't alternate enrichment be used?

* .

Laboratory mouse: EXERCISE WITHHOLDING for dogs

Dogs are not provided with the minimum exercise as required by the facility SOP.

1. **Exercise-withhold duration**

Outline the duration and schedule of withholding of exercise

* .

2. **Exercise-withhold enrichment**

What enrichment will you provide for dogs under exercise withholding?

* .

3. **Exercise-withhold monitor**

How will you monitor dogs under exercise withholding?

* .

4. **Exercise-withhold justify**

What is your justification for withholding exercise?

* .

Laboratory mouse: AMBIENT NOISE

1. **Ambient noise describe**

Describe what devices you will use to create ambient noise in the animals' environment, the number of animals you anticipate using for this portion of the study, and the duration/regimen of the noise.

* .

2. **Ambient noise additional monitoring**

What additional monitoring will you provide for animals exposed to animal noise?

* .

3. **Ambient noise justify**

What is your justification for exposing animals to ambient noise?

* .

Laboratory mouse: NONSTANDARD LIGHTING

1. **Nonstandard lighting describe**

Describe the lighting paradigm animals will be exposed to as part of your protocol. Include duration/regimen of lighting and the number of animals you anticipate using.

* .

2. **Nonstandard lighting additional monitoring**

What additional monitoring will you provide for animals exposed to nonstandard lighting?

* .

3. **Nonstandard lighting justify**

What's your justification for exposing animals to nonstandard lighting?

* .

Laboratory mouse: VIBRATION

1. **Vibration describe**

Describe how you will produce vibration, the number of animals you anticipate using, and the vibration duration/ regimen for animals.

* .

2. **Vibration additional monitoring**

Describe the additional monitoring you will provide for animals exposed to vibration.

* .

3. **Vibration justify**

What is your justification for exposing animals to vibration?

* .

Laboratory mouse: CLEANING/SANITATION SCHEDULE DIFFERENT THAN FACILITY STANDARD

1. **Different cleaning/sanitation schedule describe**

Describe how your cleaning/sanitation schedule will be different than the facility standard, including the approximate duration of the different standard, and the number of animals you anticipate using.

* .

2. **Different cleaning/sanitation schedule additional monitoring**

Describe the additional monitoring you will provide for animals exposed to different cleaning/sanitation schedule.

* .

3. **Different cleaning/sanitation schedule justify**

What is your justification for utilizing a different cleaning/sanitation schedule than the facility standard?

* .

Laboratory mouse: ENCLOSURE SMALLER THAN FACILITY STANDARD

1. **Smaller enclosure describe**

Describe the measurements of the enclosure, the number of animals you anticipate using, and the small-enclosure duration/regimen.

* .

2. **Smaller enclosure additional enrichment**

Describe any other enrichment you will provide to animals housed in an enclosure smaller than the facility standard.

* .

3. **Smaller enclosure additional monitoring**

Describe additional monitoring provided for animals contained in an enclosure smaller than the facility standard.

* .

4. **Smaller enclosure justify**

What is your justification for exposing animals to enclosure smaller than facility standard?

* .

Laboratory mouse: HIGH VELOCITY AIR

1. **High velocity air describe**

Describe how high velocity air will be produced, the number of animals you anticipate using, and high-velocity air schedule/ regimen for animals in your study.

* .

2. **High velocity air additional monitoring**

Describe the additional monitoring you will provide for animals exposed to high-velocity air.

* .

3. **High velocity air justify**

What is your justification for exposing animals to high velocity air?

* .

Laboratory mouse: BARE FLOOR (NO BEDDING) WITH NO STRUCTURE FOR RESTING OR SLEEPING

1. **Bare floor describe**

Provide the measurements of the enclosure, the number of the animals you anticipate using, and the duration/regimen for the animals.

* .

2. **Bare floor additional enrichment**

Describe any additional enrichment you will provide to animals housed on a bare floor (no bedding) with no structure for resting or sleeping.

* .

3. **Bare floor additional monitoring**

What additional monitoring will you provide for animals housed on a bare floor (no bedding) with no structure for resting or sleeping.

* .

4. **Bare floor justify**

What is your justification for housing animals on a bare floor (no bedding) with no structure for resting or sleeping?

* .

Laboratory mouse: WIRE BOTTOM CAGE

1. **Wire bottom cage describe**

Provide the measurements of the enclosure, the number of the animals you anticipate using, and the duration/regimen.

* .

2. **Wire bottom cage additional enrichment**

Describe any additional enrichment you will provide to rodents housed in a wire bottom cage. Indicate if resting will be provided. If no resting platform will be provided, provide justification.

* .

3. **Wire bottom cage additional monitoring**

What additional monitoring will you provide for rodents housed in a wire bottom cage with no resting platform?

* .

4. **Wire bottom cage justify**

What is your justification for housing rodents in a wire bottom cage with no resting platform?

* .

Laboratory mouse: TEMPERATURE OUTSIDE RECOMMENDED RANGE

1. **Temperature describe**

Describe the temperature ranges animals will be exposed to and the exposure duration/ regimen. Also provide the number of animals you anticipate using.

* .

2. **Temperature additional monitoring**

Describe the additional monitoring you will provide for animals exposed to temperature outside of the recommended range for the species.

* .

3. **Temperature justify**

What is your justification for exposing animals to temperature outside of the recommended range for the species?

* .

Laboratory mouse: OTHER NON-STANDARD HUSBANDRY (ONHS)

Indicate other non-standard housing or husbandry conditions, e.g. modified light cycle, nonstandard cage size or type, rodent wire-bottom cages, extended cage-cleaning interval, specialized husbandry needs.

1. **ONSH husbandry describe**

Describe the type of non-standard husbandry.

* .

2. **ONSH duration**

Outline the duration and schedule of the non-standard husbandry condition.

* .

3. **ONSH monitor**

How will you monitor animals under non-standard husbandry conditions?

* .

4. **ONSH justify**

What is your justification for non-standard husbandry conditions?

* .

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Laboratory mouse: TRANSPORT

How will you move live animals?

See [All-Campus Policy 2011-43: Campus Transportation of Laboratory Animals](#) for guidance on transporting laboratory animals outside the animal facility.

1. ☒ **I will not transport animals**

2. **Transport routes**

I will transport animals

- ☐ within, or between adjacent rooms within, a vivarium (animal never leaves the vivarium - e.g. [redacted] to [redacted])
- ☐ within a building or between connected buildings (animal moves from lab to lab - e.g. [redacted] vivarium to [redacted])
- ☐ between buildings (e.g. [redacted] to [redacted])
- ☐ to or from field site (e.g. marsh to [redacted] and back to marsh)
- ☒ no transport of animals will occur

Order of movement

Explain order of movement.

3. **Transport methods**

How will you transport animals?

- ☐ in a dedicated animal transport vehicle or trailer
- ☐ hand-carried in a covered cage, in an animal-transport container, or covered on a cart
- ☐ in a privately owned vehicle
- ☐ other

Transport describe

If other method is used, please describe.

4. **Departmental/Personal Vehicle**

If animals will be transported in a non-designated departmental vehicle, provide the name of the department and a contact person. If animals will be transported in a private vehicle, provide the name of the owner. In both cases, complete and upload the [RARC Permission to Transport Animals Using a Privately Owned or Non-designated Vehicle form](#).

5. **Transport files**

OPTIONAL: Attach file(s) with standard operating procedures; maps; RARC transportation form, if applicable; or other supplementary information for transport.

There are no items to display

Laboratory mouse: END

You are done answering questions about this species.

Click on "Species Complete." You will be redirected to the Species start page where you can answer questions about additional species in your protocol or continue to the next section.

RARC Use Only: _____ - _____ - _____ - _____ - _____ - _____ - _____

UNIVERSITY OF WISCONSIN - MADISON ANIMAL CARE AND USE PROTOCOL REVIEW FORMForms should be typed or in computer-printed format. **PLEASE MINIMIZE** formatting changes when preparing on computer.PC & Macintosh word processing forms can be downloaded via the RARC homepage: <http://rarc.wisc.edu/>**Return completed forms to RARC (396 Enzyme Institute, 1710 University Ave., Madison, WI 53726).****Preferred method of delivery: attachment to e-mail (call [REDACTED] or [REDACTED] for e-mail address).****Hard copy not required except for the page with PI signature, which must be sent or faxed (265-9040).****INVESTIGATORS:** Animal protocols are assigned for review to the Animal Care and Use Committee(s) that provides oversight of the facility or facilities where the animals assigned to this protocol will be housed.*Questions? Call [REDACTED], or [REDACTED] at RARC, or consult the "Guide to Completing the Animal Use Protocol" on the RARC website.***Submission Deadlines by College or School:**

•School of Medicine & Public Health:

4:00 pm the 15th of the month

•School of Veterinary Medicine: rolling deadline

•Graduate School: rolling deadline

•College of Agricultural and Life Sciences:

4:00 pm 1st of the month

•College of Letters and Science:

4:00 pm on the 1st of the month**RARC Office Use Only:**

<input type="checkbox"/> Survival Surgery	<input type="checkbox"/> Restraint	Amendment Stamp/Approval
<input type="checkbox"/> Nonsurvival Surgery	<input type="checkbox"/> Paralytic Agents	
<input type="checkbox"/> Rodent Surgery	<input type="checkbox"/> Fluid/Food Restrictions	
<input type="checkbox"/> Nonrodent Surgery	<input type="checkbox"/> Nonstandard Housing	
<input type="checkbox"/> Multiple Major Survival Surgery	<input type="checkbox"/> Nonstandard Husbandry	
<input type="checkbox"/> Critical Veterinary Care	<input type="checkbox"/> Occupational Health & Safety	
<input type="checkbox"/> Class B Dog/Cat	<input type="checkbox"/> Biohazards	
<input type="checkbox"/> Exercise Exemption	<input type="checkbox"/> Radiation	
<input type="checkbox"/> Enrichment Exemption		

NOTE: ALL PROTOCOLS ARE VALID FOR THREE (3) YEARS FROM DATE OF APPROVAL.**1. Principal Investigator/Project Director:**

Telephone Numbers: Office:

Lab:

Animal Emergency:

Home:

Fax:

E-mail Address:

Alternate for animal emergency or study-related action/communication with Authority to act in the Investigator's absence:

Name of Alternate for animal emergency/study-related action:

Alternate Office Phone:

Alternate Phone:

Alternate Email:

Alternate contact for clerical purposes only for this protocol:

Name of Clerical Alternate:

Clerical Alternate Office Phone:

Clerical Alternate Phone/Email:

2. University Department (of PI):

Office Address:

Unit & Division Number (UDDS):

3. Type of submission (underline appropriate category): NEW RENEWAL AMENDMENT

If Renewal or Amendment, please give current protocol code (e.g. G00180): Code:

4. This protocol is for: TEACHING or RESEARCH (Underline all that apply) BIOMEDICAL; BEHAVIORAL; OBSERVATIONAL; AGRICULTURAL; FIELD; OTHER (SPECIFY)**5. Title of this animal protocol:****6. Classification of animal use (will be completed by RARC administrative staff):** 1 2 3 4 5

7. Underline the appropriate response to each question below:

- a) Will ANY surgery be performed on any animals? **YES NO** If yes, fill out questions 24-30.
 b) Will you be working with wild-caught animals? **YES NO** If yes, fill out questions 31-34.
 c) Will you be using nonhuman primates? **YES NO** If yes, fill out question 35.

8. **Procedure locations:** Will any procedures on live animals (e.g., blood collection, injections, euthanasia, scans, etc.) be conducted in labs or other facilities outside of housing area? Underline one: **YES NO**

If **YES**, enter information on the table below, using additional lines as necessary. "Precautions" refers to steps taken to prevent potential disease transfer upon return to normal housing.

NOTE: Any location where animals are kept for more than 12 hours is considered HOUSING and should be included in Question 10.

(hit "tab" in bottom right cell to add additional row)

Procedure	Building/Room #	Length of stay (hrs)	Method of transport & precautions, if any
example: blood collection, euthanasia		<6	opaque cage in animal transport van

9. **Species, Numbers, and Sources of Animals**

NOTE: TOTAL NUMBERS ARE FOR THE ENTIRE THREE-YEAR LIFE OF THIS PROTOCOL.

a. Numbers of animals needed for experiments for 3 years:

(hit "tab" in bottom right cell to add additional row)

Species of animal	Total for 3 years	Source of animals (e.g. commercial vendor, another UW-Madison protocol)

b. Will any dogs or cats be obtained from Class B dealers? (Underline one) **YES NO**

NOTE: Use of animals from Class B dealers requires permission from the Animal Care and Use Committee.

c. **To ensure the health of laboratory animals, the Investigator must consider the previous use of animals on other projects.** The investigator must take into consideration how previous nutritional manipulations, blood draws, drugs and materials administered, and other manipulations may have compromised the animals' fitness for the proposed study in this protocol, or how the proposed study may adversely impact animals given their health history and assignment to earlier projects. **Animals that have undergone a major operative procedure, permanent physiologic alteration, or substantial impairment on a previous protocol are not eligible for major operative procedures on subsequent protocols.**

Have any of the animals listed in Question 9(a) been part of any other protocols (include breeding animals obtained from other investigators)? Underline one: **YES NO**

If **YES**, briefly explain how you have determined that the previous use of these animals will not compromise the animal's health and the research proposed in this protocol.

10. **Housing:** Building(s)/facilities—including procedure room(s)—where the animals will be housed for more than 12 hours.

11. **Explanation of Goals, Animal Use, and Choice of Species**

a. In straight-forward, nonmedical, nontechnical language that would be understandable to a layperson (aim for a high school-senior reading level), outline the specific scientific goal(s) and significance of this research. Be convincing as to why this work is important for advancement of knowledge, improving human or animal health, or for the good of society. Spell out all acronyms at first occurrence. **If this is a Renewal submission** please provide a brief (2-3 sentences) description of your progress and productivity in the past three years to help the Committee evaluate animal usage. This description can be a citation(s) to a publication generated from this research or new directions that will be pursued in the next three years. If a published manuscript is not yet available, a brief description of any other progress can be provided, such as abstracts, oral presentations, or presentations at meetings.

- b. Specifically justify the use of animals for this research. Explain why it is imperative to use animals and why **non-animal alternatives** such as computer simulation or in vitro systems are not possible
- c. Specifically justify why you chose the species cited in 9(a) for your work, such as the appropriateness of the species for your proposed work. Cost considerations are not justifications.

12. **Explain how the number of animals required was determined and justify that need.** Include all control animals and breeding colony animals in this discussion. A table may help clarify different experimental groups or studies and the specific numbers needed for each. Include any statistical analysis used (e.g. power calculations) in determining the animal numbers.

13. **Current or pending funding** for this project (add more entries as needed):

Title of Grant (1):
Funding Source (1):

Grant Number (1):

Title of Grant (2):
Funding Source (2):

Grant Number (2):

14. Identify the person(s) or animal care unit responsible for *daily* animal care:

15. Research/teaching staff expected to work with the animals in this study (*please delete examples*)

INVESTIGATORS: Everyone listed below must take the "Responsible Use and Care of Laboratory Animals" certification course before starting work with research animals. Protocols cannot be approved until PI and all listed personnel are certified. RARC also offers several species-specific animal handling courses and procedures training (e.g. blood draw techniques, surgery). For information, call RARC 265-2694.

(hit "tab" in bottom right cell to add additional row)

Name / Degree / Phone number	Will work with the following species within this protocol	List the year each individual began working with the specie(s) and performing the procedures they will work with/perform in this protocol. NOTE: For personnel who have worked with the named species less than 1 year, indicate who will train and supervise them.
Joe UW Scientist/PhD, DVM 222-3333	Dog, rat	Dog: blood draws, vein grafts, tissue harvest since 1996; Rat: blood draws, splenectomies since 2003
Jane UW Student/BA/222-4444	rat	no experience, will be trained in blood draws by Dr. Scientist; will only perform blood draws

16a. Search for Unnecessary Duplication and Alternatives to Potentially Painful / Distressful Procedures

16a 1. UNNECESSARY DUPLICATION

The Animal Welfare Act and USDA Animal Care Policy #12 require PIs to assure the Committee that you have considered whether or not your proposed work unnecessarily duplicates existing knowledge. **The USDA believes that database searches remain the most effective and efficient method for demonstrating compliance with the requirement to consider unnecessary duplication of research.** To satisfy this requirement provide the following information:

(hit "tab" in bottom right cell to add additional row)

Electronic databases searched	Years covered by search	Date (MM/DD/YY) of most recent search performed	Frequency with which searches are performed (e.g. monthly)	Keywords used for this search

Please provide a short narrative below of findings from your search. If your research will duplicate existing knowledge please state why this duplication is imperative to the attainment of scientific goals of the protocol.

Narrative 1:

16a 2. Alternatives to procedures that may cause MORE THAN MOMENTARY OR SLIGHT PAIN OR DISTRESS

There may be alternatives to procedures that cause more than momentary pain or distress and that will not interfere with your research. Procedures that cause only momentary pain or distress are quick and minimally invasive, such as simple injections or blood collections, and typically do **not** include procedures performed under anesthesia. Do any procedures you have proposed cause more than momentary or slight pain or distress?

☐ No

☐ Yes

If YES, USDA Animal Care Policy #12 requires PIs to assure the Committee that alternatives to procedures that cause more than momentary or slight pain or distress have been considered. To satisfy this requirement, **the USDA believes that database searches remain the most effective and efficient method for demonstrating compliance with the requirement to consider alternatives to more than momentary painful / distressful procedures.** Note that alternatives that do not allow the attainment of scientific goals of the research are not considered to be viable alternatives.

Use the keywords 'refinement' and 'alternative' in conjunction with each procedure that causes more than momentary or slight pain or distress and species. Note that pain management for each of these procedures should be addressed in Questions 18 and/or 27a and/or 29.

(hit "tab" in bottom right cell to add additional row)

Electronic databases searched	Years covered by search	Date (MM/DD/YY) of most recent search performed	Frequency with which searches are performed (e.g. monthly)	Keywords used for this search (e.g. "procedure + species + refinement+ alternative")

Please provide a short narrative below of findings from your search. If an alternative or refined method was found, but cannot be used in your research, explain why this is the case.

Narrative 2:

For further guidance on conducting searches visit:

http://awic.nal.usda.gov/nal_display/index.php?info_center=3&tax_level=1&tax_subject=184

<http://researchguides.library.wisc.edu/animalalternatives>

16b. Occupational Health and Safety Considerations

Radiation or biohazard material usage in animals: In the table below, mark YES or NO for each category as it applies to this protocol. If YES, indicate the specific materials in the right-hand column and show the status (approved or pending) of Biological Safety (OBS-2) and/or Radiation Safety (99A) protocols.

Category	Used in project? (Yes/No)	If YES, list specific materials used
Recombinant DNA		
Genetically altered materials		
Infectious agents:		
Bacteria		
Virus		
Prion		
Other		
Carcinogen or mutagen		
Toxic agent		
Human-derived materials		
Teratogens		
Other		
Radioactive material		

Status of OBS-2 *needed for this project*: (Underline below OR check here): ☐] Not applicable to this project.
 PENDING APPROVED Provide OBS-2 number if approved:

Status of 99-A *needed for this project*: (Underline below OR check here): ☐] Not applicable to this project..
 PENDING APPROVED Provide 99-A number if approved:

- c. Special Precautions for Personnel:** If you are using any agent that could be hazardous to humans or animals, please provide any special precautions that should be followed by your lab personnel, animal caretakers, veterinarians, maintenance and/or sanitation personnel, or anyone else entering the areas where experiments are conducted or animals are housed. Include any special practices required for handling of any animal or experimental waste, animal carcasses, and cages and caging materials. Consider such requirements as masks or respirators, eye protection, lab coats, gloves, and disposal methods. Also consider posting signage for special requirements on animal room doors and/or cages.

You must address Question 17 separately for each species.

17. Description of Proposed Experimental Design/Studies

- a.** In this section describe the animals' roles in your experiments—that is, the treatments and procedures the animals will receive outside of normal husbandry, from the first experimental manipulation to the final outcome. This response should provide the Animal Care and Use Committee with a clear understanding of what specifically happens sequentially to each animal or group of animals, and over what time period the procedures occur, including but not limited to:
- definitions of all materials given to animals, including dosage range, routes, and frequency of administration;
 - blood draw methods, sites, and % volume
 - breeding procedures/methods, if this protocol is to cover an animal colony or herd;
 - the expected sequence, frequency, and duration of procedures;
 - brief description of any devices/implants animals will receive, surgical and nonsurgical;
 - the timing of any surgery within the experiment (do not repeat the surgical description you will provide in Question 28a);
 - method, frequency, volumes, and numbers of biological samples taken;
 - experimental diets;
 - use of toxic agents, biohazardous materials, or radioactive materials (list in Question 16b);
 - social or environmental manipulation;
 - methods of antibody production.

- b. Do any animals undergo any type of restraint beyond normal housing methods? (examples of non-normal housing include metabolic crates and restraint chairs). Underline one: **YES NO**
If YES, describe the method, length of restraint, and justification for such restraint. If the design of the study requires continuous restraint for longer than 12 hours without the opportunity for exercise, be sure the justification addresses need for such an extended period and include the maximum length of time the animals will be restrained. Include any plans for providing additional enrichment and any steps taken to avoid physical discomfort during the restraint. If you are unsure whether or not your proposed methods are considered restraint, contact your Attending Veterinarian.
- c. Are any animals subjected to fluid or food restriction or regulation? Underline one: **YES NO**
If YES, discuss type and length of restriction, the expected consequences of restriction on the animals' health and well-being, and justification for such restrictions.
- d. Will any animals require nonstandard husbandry or housing exemption (e.g. exercise exemption, modified light cycle, extended cage cleaning periods, nonstandard cage type or size, etc.)? Underline one: **YES NO**
If YES, indicate the type of nonstandard husbandry required and scientific justification for these practices.
18. Will animals be subjected to **more than momentary or slight pain or discomfort** as a **result** of the experimental or other study-related procedures? Underline one: **YES NO**
If YES describe the analgesics you will provide. Include drug names (generic preferred), dosages, route of administration, nursing care, mechanical devices, etc.

NOTE: If all experimental or other study-related procedures are **terminal** and therefore performed only on anesthetized animals, type an X between the brackets: [X]

19. Describe how frequently animals will be monitored to ensure they are not experiencing pain or discomfort from your procedures **or** any unanticipated illness or injury not necessarily directly related to your research. Describe the criteria or clinical signs (e.g. ruffed fur, hunched posture) that you will use to determine when euthanasia will be performed in these cases.
20. Describe the **specific criteria** for termination of animals **if experiments could induce chronic disease, tumors or radiation sickness**. These criteria should be described in terms of tumor size, specific animal characteristics or behaviors, weight loss changes, observed clinical signs, etc.

NOTE: *If experiments are not expected to induce these conditions, please type an X between the brackets:*
 [X] **Chronic disease, tumors or radiation sickness are not anticipated.**

21. Describe the methods of euthanasia used, including drugs, dosage, and any sedation. Consult the 2007 *Report of the American Veterinary Medical Association (AVMA) Guidelines on Euthanasia* (www.avma.org/resources/euthanasia.pdf) or your school's Attending Veterinarian for appropriate euthanasia methods. **Even if euthanasia of animals is not part of this project, complete this Question for cases of unanticipated illness or injury.**

NOTE: *In general, physical methods (cervical dislocation, decapitation) are recommended for use only after other acceptable means have been excluded, in sedated or unconscious animals when practical, when scientifically or clinically justified, and with Animal Care and Use Committee approval. Physical methods **without** pre-anesthesia **require** scientific justification and description of the training of personnel who will perform it.*

22. If the animals are not euthanized at the end of the study, what will happen to them? Include descriptions of transfer of animals to other approved animal care and use protocols, or return of animals to managed colonies or herds.
23. Could any animals or animal products involved in these studies possibly be consumed by humans? Underline one:
YES NO
 If **YES**, list any drugs to be given to the animals and the recommended withdrawal times before safe consumption:

INVESTIGATOR SIGNATURE:

To the best of my knowledge, I certify that the information provided in this Animal Care and Use Protocol is complete and accurate. I understand that approval must be renewed annually, that every third year the ACUC must perform a new review of my protocol, and that I might be required to complete a newer version of the Animal Care and Use Protocol and provide additional information at the time of the triennial review.

I also understand that ACUC approval must be obtained by an amendment to this protocol before I:

- Use additional animal species, increase the number of animals used, or increase the number of procedures performed on individual animals;
- Change procedures in any way that might be considered a significant departure from the written protocol;
- Perform additional procedures not described in this Animal Care and Use Protocol;
- Allow other investigators to use these animals on other protocols, or use these animals on another of my ACUC-approved protocols.

I further certify that:

- No personnel will perform any animal procedures until they have been approved by the ACUC, via RARC. When new or additional personnel become involved in these studies, I will submit their qualifications, training, and experience to the ACUC and seek ACUC approval before they are involved in animal studies;
- I will ensure that all personnel are enrolled in an institutional Occupational Health and Safety Program prior to their contact with animals, or have declined in writing to participate, if allowed by local policy;
- I will provide my after-hours telephone numbers to the animal care staff in case of emergency.

I plan to follow the provisions for the care, use and treatment of animals found in the NIH "Guide for the Care and Use of Laboratory Animals," or the "Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching". I assure that these procedures do not unnecessarily duplicate previous experiments.

Signature of PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR: _____

(A signature is required for submission. Either print, sign, and fax this page to 265-9040 with a cover sheet that identifies you/your protocol clearly, or paste an image of your handwritten signature here.)

Questions for Projects Involving Surgical Procedures

24. Give the names of all research staff who will perform hands-on surgery on the animals in this study. For each person listed, describe their type and length of surgical training and experience, emphasizing **specific** experience with surgeries to be performed as a part of this study. For personnel listed below who have less than 1 year of experience with the surgeries they will be involved with, indicate who will train and supervise them. *Please delete the examples are provided in the table below for you.*

(hit "tab" in bottom right cell to add additional row)

Name/Phone Number	Brief description of SURGICAL training/experience.
Jane UW Scientist / 222-3333	DVM 1995; have performed rat splenectomies since 1996
Joe UW Student / 222-4444	No surgery experience, will be trained in surgical techniques by Dr. Scientist

25. Where will surgery be performed? Room number(s): Building:
26. How many animals listed in Question 9(a) will undergo surgery?
27. **Anesthetics and Paralytic Agents**
- a. Describe anesthetic method used, including all drugs, dosages, routes of administration and supplementation regimen. Include how anesthesia level is monitored, e.g., list the physiologic parameters that will be monitored to ensure adequate anesthesia depth for both general and local anesthesia. *Documentation of the anesthesia used and the monitoring of anesthetic depth is **required** for all surgical procedures.*
- b. Are any paralytic agents being used? Underline one: **YES NO**
If YES, indicate agent, justification for use, and any special monitoring techniques used to assess animal condition while under paralysis.
28. **Surgical Procedures**
- a. Describe the surgical procedure(s), including narrative description(s) for the following: reason for the surgery, incision site(s), tissue isolation methods, wound closure, and an estimate of time required to complete the surgery.
NOTE: Aseptic procedures must be used for all survival surgery.
- b. Describe which of the following procedures will be used to maintain a sterile field during surgery (place an X between the brackets of all that apply):
☐ sterile instruments: specify method: ☐ bead sterilizer ☐ autoclave ☐ describe other:
☐ sterile gown/garb ☐ sterile gloves ☐ sterile drapes ☐ face mask/eye protection
☐ surgeon scrub ☐ other (please describe):
29. Will the animals be allowed to recover from surgery? (Underline one) **YES NO**
If YES, describe the post-anesthetic and post-surgical monitoring and care procedures, including:
- all drugs and dosages
 - how body temperature will be maintained during recovery
 - the plan for suture or staple removal
 - who will perform the monitoring, frequency/duration of monitoring
 - the parameters that will be evaluated
 - method of maintaining written records of these examinations
 - measures designed to alleviate post-operative discomfort
- NOTE: Documentation of the post-operative monitoring of post-surgical animals is required!**
30. Will any animal(s) be allowed to recover from more than one major operative procedure?
Underline one: **YES NO**
NOTE: A major operative procedure is defined as any surgical intervention that penetrates and exposes a body cavity or any procedure that produces permanent impairment of physical or physiological functions.
- a. **If YES**, provide scientific justification for performing these procedures and list the species and number of animals:
- b. What is minimum length of time between the operative procedures?

Questions for Projects Using Wild-Caught Animals

(It is the responsibility of the PI to obtain all necessary state and federal permits for work with wild animals.)

31. Do you capture wild animals or do experimental manipulations (or procedures) on animals in the wild? Underline one: **YES NO**, Observation only
32. If you capture wild animals, describe how they will be trapped, what types of traps will be used, and how often traps will be checked.
33. **Quarantine and Release Information**
- a. Describe quarantine procedures and precautions to prevent exposure of humans and other animals to zoonotic diseases.
- NOTE:** *If animals will not be housed, please state this.*
- b. If animals will be released back to the wild, explain how the released animals will not present a disease exposure to wild populations and explain why this release will not expose the animal to greater risk of predation as a direct result of procedures performed or materials administered.
- NOTE:** *If animals will not be released back into the wild, please state this.*
34. If wild animals will be anesthetized and released to the wild, describe anesthetic doses, method of administering and procedures for assuring that animals are sufficiently recovered from anesthetic to be released. Consider that prey species may have to be monitored until fully recovered to avoid predation.
- NOTE:** *If animals will not be anesthetized, please state this.*

Questions for Projects Using Nonhuman Primates

35. **Nonhuman Primate Enrichment**
- a. If nonhuman primates used in your study must be housed individually due to scientific consideration, provide that scientific rationale.
- b. Provide scientific rationale for any restrictions to environmental enrichment. Include the specific restriction(s) such as: puzzle feeders, cage perch, wooden chew sticks, food treats (bananas, carrots, oranges, other fruit or vegetables), etc.



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

**School of Veterinary Medicine Animal Care and Use Committee
Open Session – March 14, 2017**

Present (voting):

[REDACTED]

Present (nonvoting):

[REDACTED]

Guests:

Absent:

[REDACTED]

Dr. [REDACTED] called the meeting to order at 10:00 a.m.

Approval of Open Session Minutes February 14, 2017

[REDACTED] moved to approve the Open Session Minutes as submitted. The vote was unanimous.

Annual Reapprovals (March)

[REDACTED] moved to approve the annual updates. The vote was unanimous with [REDACTED] abstaining. Dr. [REDACTED] highlighted the PI's compliment of the helpfulness of the ACUC members and RARC staff noted in one of the annual updates.

Logs: Designated Review/other (March)

The committee reviewed and briefly discussed the designated review and veterinary verification and consultation (VVC) logs. Dr. [REDACTED] explained the changes that were made to a teaching protocol via VVC to replace an invasive and outdated technique with a less invasive and more commonly practiced technique. She said the changes will benefit the cows, and the students and instructors. Discussion ensued. The committee asked Dr. [REDACTED] to consult with the PIs and instructors of other large animal teaching protocols to evaluate if similar or other refinements can be made and to report back on progress next month.

[Duchesneau joined the meeting]

Senior Program Veterinarians Reports

Dr. [REDACTED] had no report for open session.

Research Animal Resources Center

396 Enzyme Institute 1710 University Avenue Madison, WI 53726-4087
608-262-1238 Fax: 608-265-2698 Email: help@rarc.wisc.edu

Obtained by Rise for Animals.
Uploaded to Animal Research Laboratory Overview (ARLO) on 11/25/2020

Dr. [REDACTED] reported seven cases of eye trauma in mice were reported to the veterinary staff following retroorbital bleeding as approved in the animal care and use protocol. She said she spoke with the PI, laboratory staff, and animal care technicians (ARTs). The protocol describes intermittent blood draw regimens of five draws within a two-hour period, and Dr. [REDACTED] said she spoke with the RARC trainers about contacting the lab and working with them to refine their blood draw methodology as there may be other options. She noted that the laboratory staff performing retroorbital bleeding are trained in the procedure. Dr. [REDACTED] will provide an update at the next meeting.

Dr. [REDACTED] reported that a colony of voles experienced higher-than-expected mortality in March to date than in previous months, with three animals reported dead. The only activity occurring under the protocol at this time is breeding. Dr. [REDACTED] said all three animals have been submitted for necropsy and results are pending.

Report from the Animal Program Assessment Specialists

Mr. [REDACTED] had no report for open session.

Report from ARC

There was no report.

Committee Training

Ms. [REDACTED] and Dr. [REDACTED] led discussion of policy 2012-050, “Adverse Event Reporting,” (see attached), comparing and contrasting adverse events as defined by the policy with known complications described in protocols, unexpected outcomes of research, and accidents or equipment failures. They described the various reporting and communication tiers within the animal program, such as the sick-animal reporting system and the methods by which deficiencies identified on semiannual inspections are managed. Ms. [REDACTED] emphasized the animal welfare and compliance goals of adverse event reporting to the ACUC, and to the RARC veterinary staff, to identify issues and solve problems. Drs. [REDACTED] and [REDACTED] provided examples of adverse events that in their professional judgement they would report to the ACUC, and said they are open to suggestions for improving that reporting. The committee members expressed satisfaction with the level of reporting from the veterinarians.

Other Business

Dr. [REDACTED] asked if the committee felt there would be value in doing a short presentation at the next faculty meeting to share information from the ACUC, such as reminding DVM PIs of the difference between their role as PI and the role of the RARC Senior Program Veterinarians in terms of treating research subject animals. Members agreed this would be helpful. Dr. [REDACTED] will contact Dr. [REDACTED] to ask for time on the next agenda.

Dr [REDACTED] called for other business for Open Session. Hearing none [REDACTED] moved to adjourn into Closed Session for discussion of research protocols or other documents containing confidential proprietary information and personnel matters relating to such research protocols, pursuant to Wisconsin Statutes Section 19.85(1)(c), (d), and (e). [REDACTED] seconded. The vote was unanimous by roll call.

The meeting was adjourned from Closed Session without reconvening into Open Session.

[REDACTED]

*Appd by SVM ACUC
11 Apr 2017*

LOG FOR SVM ACUC MARCH 2017

Designated Review: New/Renewal

PI	Prot #	Rec'd	Project Title	Species	New/ Renewal
	V5764	2/13	Principles of Veterinary Anatomy - Palpation Animals	Cat, dog	Renewal <i>appeal</i>
	V5776	2/13	Rodent Urinary Function Testing Core	Mouse	New <i>appeal</i>
	V5768	2/27	Diagnosis and management of viral hemorrhagic septicemia virus in Wisconsin	Trout, pke	New <i>pending</i>

Designated Review: Amendment

PI	Prot #	Rec'd	Title	Species	Summary of change
	V5277-A04	2/13	Assessment of Vaccine-induced Protection Against White-nose Syndrome in Hibernating Bats	Bats	+addl bats (not brown) <i>appeal</i>
	V5096-A06	2/14	Mechanisms of prostate development, urinary function and dysfunction	Mouse	(V/C) +addl procedure room <i>appeal</i>
	V5096-A07	2/20	Mechanisms of prostate development, urinary function and dysfunction	Mouse	(V/C) -proc room <i>appeal</i>
	V5382-A01	2/21	Bearded dragon studies 2017	Bearded dragon	+nonstandard husbandry updates <i>appeal</i>
	V5402-A01	2/21	Ventilation, thermal nociception, food intake, fecal output and pica following different buprenorphine formulations in rats	Rat	+addl studies, title modification, +new treatment groups, +addl analgesics <i>pending</i>
	V5659-A01	2/23	Canine Parvovirus Vaccine Assessment	Dog	Clarification of locations and procedures <i>appeal</i>
	V5376-A03	3/1	Endogenous remyelination of the CNS	Dog	+MSC housing <i>appeal</i>
	V5209-A03	3/3	Genetics of Body Size Evolution in Island Mice	Mouse	+secretion collection, +maturity assessment <i>pending</i>

Veterinary Verification and Consultation (VVC) Log

LOG FOR SVM ACUC MARCH 2017

PI	Prot #	Rec'd	Title	Species	Summary of change
	V5077-V02	2/14	Gastrointestinal transit time following intravenous lidocaine infusions and acupuncture in conscious dogs assessed with barium-impregnated polyethylene spheres (BIPS)	Dog	Acupuncture point changed <i>approved</i>
	V5593-V01	2/16	Food Animal Elective	Cow	+laparotomy, updates, +pyloro/omentopexy <i>approved</i>
	V5098-V01	2/21	Breeding and Colony Maintenance Protocol – Feline Congenital Glaucoma	Cat	Breeding clarification, flexibility <i>approved</i>

Dual School Log

PI	Prot #	Rec'd	Project Title	Species	Add'l ACUC
	G005362-A04	2/20/17	Tomotherapy and hematopoietic stem cells for tolerance to kidney transplants	rhesus macaque	SMPH
	G005698-A04	2/27/17	Nonhuman Primate Bone Marrow Transplantation Model	cynomolgus macaque	SMPH
	G005424-A02	2/24/17	Hematopoietic stem cell treatment of SHIV infected Mauritian cynomolgus macaques	cynomolgus macaque	SMPH

University of Wisconsin-Madison, Research Animal Resources Center

ACAPAC Policy Number: 2012-050

Policy Title: Adverse Event Reporting

Purpose: This policy provides a campus-wide definition of "Adverse Events" and identifies reporting and review requirements for both protocol-related and non-protocol-related adverse events. The purpose of adverse-event reporting is to improve monitoring, focus resources on problem areas, ensure appropriate follow-up when problem areas are identified, and clarify expectations between the ACUCs, the PIs, and the veterinary and animal care staff. The ultimate goal of this policy is to improve animal welfare.

Definition: An adverse event is defined as any event that caused harm to a vertebrate animal and that meets either of the following conditions:

1. (a) The event is research-related but is not identified in the approved protocol or occurring at a rate or severity higher than is indicated in the approved protocol; or
2. (a) The event is not research-related, but is unanticipated or due to a facility, physical plant, or equipment failure or malfunction, or personnel mistake.

POLICY: Adverse events must be promptly reported to the appropriate Animal Care and Use Committee (ACUC). Any member of the research community (PI, lab staff, veterinary staff, animal care staff) with knowledge of an adverse event may submit a report. Please consult with an RARC veterinarian for assistance with adverse event reporting.

The ACUC will review adverse event reports and may approve proposed corrective plans or require additional actions to ensure animal welfare. The responsible parties will be notified by the ACUC of any actions taken or requirements made regarding an adverse event.

Author: [REDACTED]

ePublication Date: 9/19/2012 (orig.)

History: amended 2/3/2017



**School of Veterinary Medicine Animal Care and Use Committee
Closed Session – March 14, 2017**

Present (voting):

[REDACTED]

Present (nonvoting):

[REDACTED]

Guests:

Absent:

[REDACTED]

Approval of Closed Session Minutes February 14, 2017

[REDACTED] moved to approved the minutes as presented. The vote was unanimous.

Semiannual Inspections

The sign-up schedule was circulated.

Dr. [REDACTED] and Ms. [REDACTED] led discussion of reports of recent inspections (see attached). The suggestion for more clearly posting signage explaining why some rodents are singly-housed in room [REDACTED] facility was noted. The identification of expired items in areas within the [REDACTED] where animal research had not been performed for extended times led to extensive discussion. It was noted that [REDACTED] does have facility SOPs for checking for expired items, and the lab manager has been directed to reexamine them for completeness and accuracy. Ms. [REDACTED] noted that Dr. [REDACTED] had attended a meeting of the associate deans for research to emphasize the institutional risk of having expired drugs and medical materials present in animal facilities and laboratories, and the associate deans are considering appropriate next steps and consequences for deficiencies and violations.

Senior Program Veterinarians Reports

Neither Drs. [REDACTED] nor [REDACTED] had reports for closed session.

Report from the Animal Program Assessment Specialists

Mr. [REDACTED] had no report for closed session.

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Report from ARC

There was no report for closed session.

Other Business

Dr [REDACTED] called for other business for closed session or any additional business for open session. Hearing none, Dr [REDACTED] adjourned the meeting at 11:05 a.m.

[REDACTED]

Appd by SVM ACUC
11 Apr 2017

School	Name	Date	Start Time	End Time	Special	Inspector 1	Inspector 2
SVM	[REDACTED] Entire	Thursday, January 5, 2017	8:30 AM	11:30 AM	15 Min travel time May be entry reuirements for some portions	[REDACTED]	[REDACTED]
SVM	[REDACTED] (Facility & Labs)	Tuesday, January 10, 2017	12:30 PM	3:00 PM		[REDACTED]	[REDACTED]
SVM	[REDACTED] Vivarium (facility)	Tuesday, February 14, 2017	8:30 AM	10:00 AM		[REDACTED]	[REDACTED]
SVM	[REDACTED] (Facility)	Thursday, February 23, 2017	8:30 AM	10:30 AM	15 Min Travel Time [REDACTED] Required	[REDACTED]	[REDACTED]
SVM	[REDACTED] Facility (both sides)	Friday, March 24, 2017	3:00 PM	4:00 PM		[REDACTED]	[REDACTED]
SVM	[REDACTED] Surgery Area	Tuesday, April 11, 2017	9:00 AM	10:00 AM		[REDACTED]	[REDACTED]
SVM	[REDACTED] (Labs + R. Sommers)	Tuesday, April 18, 2017	12:30 PM	2:30 PM	1 member [REDACTED]	[REDACTED]	[REDACTED]
SVM	[REDACTED] labs [REDACTED]	Wednesday, April 19, 2017	10:00 AM	12:30 PM		[REDACTED]	[REDACTED]

Animal Facilities Inspection Checklist

Name of Facility: [REDACTED] facility 2017A	School/College: SVM
Supervisor: [REDACTED]	Date: 02/23/17
Inspection Team Members: [REDACTED] () [REDACTED] (R) [REDACTED] (V) [REDACTED] ()	File created: 03/06/17

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Lockbox checked, 1 expired item is clearly labeled "to be discarded". General SFI: Reexamine and update as necessary facility SOPs for regularly checking all medical materials and substances to ensure no expired items are used on or in animals.			
[REDACTED]	Womens locker room, shower, bathroom	A				
[REDACTED]	Womens locker room, shower, bathroom	A				
[REDACTED]	Womens locker room, shower, bathroom	A				
[REDACTED]	Mens locker room, shower, bathroom	A				
[REDACTED]	Mens locker room, shower, bathroom	A				
[REDACTED]	Mens locker room, shower, bathroom	A				
[REDACTED]	Equipment transfer room (cages into suites)	A	inspected through the door window due to decon status			

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Lockbox checked, 1 expired item is clearly labeled "to be discarded". General SFI: Reexamine and update as necessary facility SOPs for regularly checking all medical materials and substances to ensure no expired items are used on or in animals.			
	Common room (autoclave opens up into this area)	N	not inspected due to active status			
	Feed, Bedding storage	A				
	Cage wash - CLEAN	M	MINOR - expired rodent chow 7002 in green bin on cart (marked with mill date 8-11-2016, expires after 6 months from mill date)	02/24/17	R	Initial email sent to [REDACTED] on Feb 23, 2017. Per email on Feb 24, 2017, rodent chow was removed and disposed.
	Cage wash - DIRTY	A				
	Animal housing (mice)	A	inspected via camera due to active status			
	Locker room, shower, PPE changing area	A				
	Locker room, shower, PPE changing area	A				
	Animal transfer /Equipment Transfer room	A				
	Storage	A				
	Animal housing	A				

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Lockbox checked, 1 expired item is clearly labeled "to be discarded". General SFI: Reexamine and update as necessary facility SOPs for regularly checking all medical materials and substances to ensure no expired items are used on or in animals.			
██████	Animal housing	M	MINOR - expired items (e.g. syringes) but no expired drugs MINOR - few clear plastic vials containing liquid that are not labeled with contents or dates of mixing or expiration	02/24/17	R	Initial email sent to ██████████ on Feb 23, 2017. Per email on Feb 24, 2017, expired items and unlabeled tubes were removed and disposed.
██████	Animal housing	A	Has not been used for animal work for about a year. SFI: check all drawers and bins to ensure materials are in date before starting any new animal work.			
██████	Necropsy/Procedure Laboratory	M	MINOR - expired isoflurane (2015)	02/24/17	R	Initial email sent to ██████████ on Feb 23, 2017. Per email on Feb 24, 2017, the expired isoflurane was removed and disposed.
██████	procedure space	A				

Animal Facilities Inspection Checklist

Name of Facility: [REDACTED] facility 2017A	School/College: SVM
Supervisor: [REDACTED]	Date: 02/14/17
Inspection Team Members: [REDACTED] (R) [REDACTED] (V) [REDACTED] (V)	File created: 03/06/17

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments	Facility	A				
[REDACTED]	[laundry room] Laundry	A				
[REDACTED]	[treatment room, 2nd fl vivarium] procedure	A	SFI: clarify what the dates are on the food on the freezer. SFI: be sure to update yellow door card.			
Autoclave	Autoclave area	A				
[REDACTED]	cage wash	A				
[REDACTED]	storage	A				
[REDACTED]	housing (dog runs)	A	long term storage			
[REDACTED]	housing (dog runs)	A				
[REDACTED]	housing	N	not in use			
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A	SFI: post sign to indicate why some animals are individually housed (per FM it is due to aggression)			
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A				
[REDACTED]	housing	A	SFI: consider alternate enrichment options for animals that cannot have standard enrichment			

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments	Facility	A				
	housing (reptile)	N	not in use			
	housing	A				
	housing	A				
	housing	A				
ARC_Vehicle	# [REDACTED] Van	A	Inspected 03Mar17 by Dr. [REDACTED] ROLO Note: Switch to [REDACTED] inspection for Fall 2017			



WISCONSIN

UNIVERSITY OF WISCONSIN-MADISON

School of Veterinary Medicine Animal Care and Use Committee Open Session – April 11, 2017

Present (voting):

[REDACTED]

Present (nonvoting):

[REDACTED]

Guests:

[REDACTED]

Absent:

Dr. [REDACTED] called the meeting to order at 10:00 a.m.

Approval of Open Session Minutes March 14, 2017

[REDACTED] moved to approve the Open Session Minutes with minor editorial modifications. The vote was unanimous.

Annual Update from the Institutional Official

Dr. [REDACTED] introduced Dr. [REDACTED] the Institutional Official. Dr. [REDACTED] thanked the committee members for inviting her, and for their time serving on the ACUC. She said she knows from personal experience that the commitment is significant since she chaired the SMPH ACUC for four years. She said that she is enjoying getting to know each of the other ACUCs.

[REDACTED] and [REDACTED] joined the meeting]

Dr. [REDACTED] said that the issues of reducing regulatory burden on Principal Investigators, and reducing unnecessary self-imposed regulatory burden, are important topics being discussed and explored both nationally and at UW-Madison. She said that she will want the ACUC to consider ways in which regulatory burden could be reduced within the animal program; noting that she has met with Ms. [REDACTED] and Dr. [REDACTED] to discuss some ideas such as discontinuing the annual update for protocols that do not require it. Dr. [REDACTED] asked that when proposed changes to ACUC business practices are presented to the committee for discussion that committee members be open-minded about the ideas. She noted that reducing burden in other areas of research compliance is also being reviewed.

Research Animal Resources Center

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Obtained by Rise for Animals.
Uploaded to Animal Research Laboratory Overview (ARLO) on 11/25/2020

Secondly, she noted that the animal program has been focusing heavily on reducing the number of expired medical materials and substances found in animal use areas, both in facilities and in laboratories. She said that a recent inspection by the USDA Veterinary Medical Officers (VMOs) found no expired materials and thanked members for their efforts on this issue. She reminded the ACUC that the presence of such items poses an institutional risk for citations and could impact animal welfare. Dr. [REDACTED] requested that the SVM ACUC consider potential specific consequences that the committee could deliver to those responsible when expired materials are identified on semiannual inspections, and for Dr. [REDACTED] to share these recommendations with the All Campus Animal Planning and Advisory Committee (ACAPAC). Dr. [REDACTED] asked Ms. [REDACTED] to include this on the May agenda.

[REDACTED] joined the meeting]

Dr. [REDACTED] called for questions for Dr. [REDACTED]. Discussion ensued regarding ideas for reducing regulatory burden including the possibility of additional administrative assistance for protocol writers. Dr. [REDACTED] agreed that this is an excellent idea and that a concierge service is under consideration by her office. Dr. [REDACTED] called for any additional questions for Dr. [REDACTED]. Hearing none, Dr. [REDACTED] said that members are welcome to contact her anytime with questions or comments. Dr. [REDACTED] and others thanked Dr. [REDACTED].

Annual Reapprovals (April)

[REDACTED] moved to approve the annual updates. The vote was unanimous with [REDACTED] and [REDACTED] abstaining.

Logs: Designated Review/other (April)

The committee reviewed and briefly discussed the designated review and veterinary verification and consultation (VVC) logs. Dr. [REDACTED] briefly summarized her presentation at the SVM faculty meeting, and noted that many PIs had not previously known of the VVC process. Discussion ensued on the value of VVC including the fact that the policy encourages greater involvement of veterinarians in research projects. The ACUC also briefly discussed recent changes to the designated review process as an example of how UW Madison is reducing regulatory burden.

Senior Program Veterinarians Reports

Dr. [REDACTED] had no report for open session.

Dr. [REDACTED] said that at the request of the ACUC, she reexamined all of the large animal teaching protocols to determine if further refinement of methods was possible. She said that she has no additional recommendations at this time, but that she continues to regularly consult with course instructors on potential refinements.

Report from the Animal Program Assessment Specialists

Mr. [REDACTED] had no report for open session.

Report from ARC

Mr. [REDACTED] had no report.

Committee Training

Ms. [REDACTED] led discussion of a recent Comparative Medicine article on “The Interplay of Ethics, Animal Welfare, and IACUC Oversight on the Reproducibility of Animal Studies,” (see attached). She explained that the lack of reproducibility of some animal studies has led to concern within the scientific community. The article includes a discussion of the interplay of ethics, animal welfare, and animal oversight on the reproducibility of animal studies. A lively committee discussion followed with some members expressing concern that many animal studies are underpowered and do not include sufficient animals to produce statistically valid results. The regulatory emphasis on reduction of animal numbers may contribute to this problem. Other members argued that as long as the animal numbers are justified by basic power calculations or past experience, and not for reasons based on manpower or financial concerns, the IACUC should accept the justification. Mr. [REDACTED] pointed out that it may be an institutional risk if researchers do not have the resources to do an adequate statistical justification. The ACUC discussed available statistical resources in SVM and on campus. They suggested that it may be appropriate to add these to the SOP for animal numbers justification. Ms. [REDACTED] agreed and thanked the members for their thoughtful discussion. She concluded by saying that while the ACUC should keep reproducibility in mind when reviewing protocols, there are no new requirements at this time.

Other Business

Dr. [REDACTED] called for other business for Open Session. Hearing none, [REDACTED] moved to adjourn into Closed Session for discussion of research protocols or other documents containing confidential proprietary information and personnel matters relating to such research protocols, pursuant to Wisconsin Statutes Section 19.85(1)(c), (d), (e), (f) and (g). [REDACTED] seconded. The vote was unanimous by roll call. Dr. [REDACTED] invited Dr. [REDACTED] to stay for Closed Session.

The meeting was adjourned from Closed Session without reconvening into Open Session.



*Approved by SVM ACUC
6-13-17*

LOG FOR SVM ACUC April 2017

Designated Review: New/Renewal

PI	Prot #	Rec'd	Project Title	Species	New/ Renewal
	V5794	3/7	Mouse model for respiratory tuberculosis	Mouse	Renew <i>appd</i>
	V5804	3/14	Evaluation of remote seizure monitor	Dog	New <i>appd</i>
	V5783	3/15	Emergency & Critical Care Teaching	Dog	Renew <i>appd</i>
	V5817	3/20	Plasma F2-isoprostanes as indicators of systemic oxidative stress in cats with chronic kidney disease	Cat	New <i>appd</i>
	V5772	2/16	School of Veterinary Medicine teaching of bovine nonsurgical procedures, diagnostics, and examinations	Cow	Renewal <i>appd</i>
	V5819	4/3	Evaluation of Skin Preparation Protocols for Arthrocentesis in Horses	Horse	New <i>pending</i>

Designated Review: Amendment

PI	Prot #	Rec'd	Title	Species	Summary of change
	V5578-A02	3/13	Oral exposure of zebra finches to clothianidin insecticide	Zebra finch	+addl sources, +transport update <i>appd</i>
	V806	3/15	Molecular Pathogenesis of Viral Disease	Duck, mice, chicken, hamster, ferret, guinea pig, quail	Updates, +addl euthanasia method <i>appd</i>
	V5277-A04	2/13	Assessment of vaccine-induced protection against white-nose syndrome in hibernating bats	Brown bat	Clarifications <i>appd</i>
	V5209-A04	3/20	Genetics of Body Size Evolution in Island Mice	Mouse	+addl blood collections, +food restrictions, updates <i>appd</i>
	V5516-A02	3/20	The pathogenesis and development of therapeutics and vaccines for arthropod-borne viruses	Mouse	(V/C) Updates, SOP chgs <i>pending</i>
	V5256-A09	3/27	Development of an Osseointegrated Neural Interface (ONI) for	Rabbit, mouse, rat	+addl recordings, +addl anesthesia, +nerve cuff prosthetic <i>pending</i>

LOG FOR SVM ACUC April 2017

			Prosthetic Control/Phase		
	V1642	3/30	Evaluation of Universal H5N1 Vaccines in Chickens	Chicken	+housing at [REDACTED] <i>approved</i>
	V56870 A01	4/3	Apheresis to Collect Individual Blood components in a Horse	horse	Chg PI, donation of horses, increased time between blood draws, updates <i>ending</i>

Veterinary Verification and Consultation (VVC) Log

PI	Prot #	Rec'd	Title	Species	Summary of change
	V5720-V01	3/20	Endogenous Cannabinoids and NGF Signaling in Pain Associated with Cystitis and Mediators of Fibrosis in the Development of Lower Urinary Tract Dysfunction	Mouse	+AAV
	V5720-V02	3/24	Endogenous Cannabinoids and NGF Signaling in Pain Associated with Cystitis and Mediators of Fibrosis in the Development of Lower Urinary Tract Dysfunction	Mouse	Addl blood collection sites

Dual School Log

PI	Prot #	Rec'd	Project Title	Species	Add'l ACUC
	A005070-A01	3/20/17	A calf model for mycobacterial vaccine evaluation	cow	
	A005688-A01	3/20/17	Vaccine development for mycobacterial infections in goats or sheep	Goat, sheep	
	G005560-A01	3/29/17	Regulation of gonad development	mus	

Overview

The Interplay of Ethics, Animal Welfare, and IACUC Oversight on the Reproducibility of Animal Studies

Stacy L Pritt^{1,*} and Robert E Hammer²

Reproducibility in animal studies has been defined as the ability of a result to be replicated through independent experiments within the same or among different laboratories. Over the past few years, much has been written and said about the lack of reproducibility of animal studies. Reasons that are commonly cited for this lack of reproducibility include inappropriate study design, errors in conducting the research, and potential fraud. In the quest to understand the basis for this lack of reproducibility, scientists have not fully considered the potential ramifications on ethical constructs for animal research, animal welfare considerations in animal research programs, the regulatory environment, and oversight by IACUCs. Here, we review how ethical theories behind animal research, policies, and practices meant to enhance animal welfare and the IACUC oversight process influence the reproducibility of animal studies, a previously undiscussed topic in the peer-reviewed literature.

Abbreviations: ILAR, Institute for Laboratory Animal Research; PI, principal investigator

Defining the Scientific Concerns about the Reproducibility of Animal Studies

Most basic research scientists agree that one of the cornerstones of the scientific endeavor is the ability to share research data and learn from the positive—and negative—results of other scientists. Not surprisingly, this process involves the replication of studies, whether needed to validate a specific animal model that can then be used in subsequent studies or to modify specific components of an experimental paradigm to test varying hypotheses. Many times, studies are repeated to confirm results when those results were obtained in a different environment. The ability to repeat studies in different environments makes studies predictable and applicable to other animal research as well as human research.

Several commentaries, letters to the editors, review papers, and metadata analyses have indicated that poor reproducibility is indeed a very real problem for both human and animal studies.^{8,17,32} Some have asserted that "...a discovery is valid only if any scientist in any lab can conduct the same experiment under the same conditions and obtain the same results."³¹ When studies cannot be repeated in different environments (in other words, when the findings are not reproducible) despite scientists' attempts to adhere to all components of the previously published experiments, questions are raised. The inability to replicate a study and achieve independent confirmation of data hints at poor study design and other flaws.¹⁶

In 2014, the Institute for Laboratory Animal Research (ILAR) convened the roundtable discussion "Reproducibility Issues in Research with Animals and Animal Models" to address the specific concerns with animal studies.¹⁹ The resulting report summarized the issue by describing how recent publications and statements demonstrate the concern regarding the "...prevalence in the number of peer-reviewed studies that cannot be reproduced, particularly those containing data from experiments using animals and animal models..."¹⁹ According to this report and other sources, although the reproducibility problem impedes the advancement of some animal research, long-term repercussions include the erosion of the integrity and public trust in science and endangerment of the entire scientific endeavor as we currently know it leading to decreased funding and support for science and most certainly less translational research.^{8,19}

Causes of a Lack of Reproducibility

The current scientific literature is replete with reasons why studies cannot be reproduced. A ubiquitous reason is statistical insufficiency, primarily underpowered studies.^{5,8,18,32} Additional causes include incorrect data interpretation, unforeseen technical issues, incorrectly constituted (or absent) control groups, selective data reporting, inadequate or varying software systems, and blatant fraud.^{5,8,17,18,31} Some authors have remarked that the system of 'self-correction,' which has heretofore been taken for granted in the sciences, appears to be broken in that "papers with fundamental flaws often live on," because corrections, retractions, commentaries, or other mechanisms are not used to correct the scientific record.^{8,18} Others have commented that the bias towards

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publishing only positive results or inflation of a study's importance leads to downstream reproducibility problems.³¹

Less has been written about the variables in animal care, health, and welfare that can affect reproducibility. Laboratory animal professionals around the world are quick to recognize differences in institutional animal care programs but often fail to appreciate differences in the approach of scientists using animals in their research programs. Therefore, scientists may point to nonanimal causes for irreproducibility, as have been described in the previous paragraph, more quickly than those linked to animal care involving research animals.

Specific causes of irreproducibility, from a biologic, physiologic, and animal care perspective, as described by the aforementioned ILAR Roundtable report and other sources, include variables in the following areas (although this list is not exhaustive):^{3,10,26,30} 1) animal source (vendor, institution); 2) animal genetic background (inbred, outbred, or hybrid study populations as well as unique strains); 3) animal housing (food, water, bedding, sanitation frequency, air quality, caging materials, lighting, temperature, noise, and so forth); 4) animal health (disease status either active or sub-clinical, gut microbiota); 5) animal behavior (use of enrichment, presence of stereotypies, and so forth); and 6) animal affective or emotional states, regardless of behavior. Many of these causes could be considered normal variation within the species.

Although it is not feasible to determine every single reason for or source of variability behind a lack of reproducibility for animal studies, based on the literature the causes can be grouped into 3 main categories: 1) flaws in study design; 2) variability in study conduct; and 3) poststudy evaluation and publication bias. Ethics, animal welfare, and IACUC oversight significantly affect areas 1 and 2. Important questions that currently lack answers in the scientific and regulatory literature are raised when considering reproducibility from the viewpoints of animal welfare, ethics, regulatory mandates, and IACUC oversight. Such questions must be further examined to have a more well-rounded approach to reproducibility.

Ethical Considerations Regarding Reproducibility

The ethical construct most commonly used to justify the use of animals in research is that of the 'greater good,' this construct stems from the ethical theory of utilitarianism, which is a consequentialist theory.²⁷ A very basic description of this theory is that actions that produce the greatest good or happiness for the greatest number are the most moral actions.²⁶ The 'good' produced by animal research are the new drugs, treatments, as well as decreased suffering in humans and other animals; this 'good' justifies the use of animals in research.²⁷

Animal study reproducibility directly relates to the justification of animal research based on utilitarianism. Reproducible studies contribute to the ongoing research effort and can be justified. But what happens when a study is not reproducible? Concerns about losing the justification for animal use in research due to a lack of reproducibility are seen as statements contending that animals are being "sacrificed needlessly" when reproducibility is not achieved.^{17,19} Reproducibility, or replication, has been discussed within ethical texts because it may serve as a potential mechanism to determine fraud with the recognition that other variables that may prohibit replication can be in play. But now

scientists themselves are asserting an ethical responsibility for reproducibility because,^{17,26} with poor reproducibility, both animal lives and financial resources, time, and human energy might be wasted.^{17,21} Saying that animal lives and other resources are wasted implies that they are not a part of the 'greater good' and that the ethical argument for animal research can be questioned when there is irreproducibility. Therefore, reproducibility is now an ethical topic, with the main question being "if a study was not reproducible, was it ethical?"

One can debate the usefulness of data obtained from nonreproducible studies where misconduct is not the cause of the irreproducibility.²⁶ Commentators and authors who state that the lack of reproducibility indicates that animal lives were wasted imply that nonreproducible results do not contribute to the greater scientific enterprise and that such studies do not meet the criteria of the greater-good argument. In reality, data from studies that are not reproducible may still be of value to other researchers or be of such a unique nature as to preclude reproducibility. Perhaps authors could provide disclosures evaluating the potential reproducibility of studies as well as a description of the intent of the study, beyond hypothesis testing, with regard to limitations on reproducibility when publishing results. Other authors have called for investigators to label their published research as 'exploratory' or 'confirmatory,' so that the emphasis on reproducibility could be placed on confirmatory studies.¹⁵ Because of these nuances, the animal research community should be careful about making sweeping assumptions regarding the implications of reproducibility in terms of animal lives.

Concerns about the potential effects of irreproducibility on the safety of humans participating in clinical trials built upon animal study data have also arisen but are of a different nature. Appropriate deliberation of the potential applicability of animal studies to the safety of human patients in clinical trials should be explicit within publications. If manuscript reviewers do not understand that a particular study was not undertaken in an effort to safeguard human patient safety, then false assumptions may be made, and reproducibility becomes the scapegoat when it was never the focus of the research in the first place.

Animal Welfare Considerations Regarding Reproducibility

To discuss animal welfare, one must first define it. Although multiple authoritative definitions exist, animal welfare is a multifaceted topic and even popular definitions are not uniformly accepted. In addition, the field of animal welfare science combines both scientific assessments and moral judgements.⁴ Fraser⁹ provides one of the best authoritative definitions of animal welfare, which is based on 3 components: biologic health, affective (emotional) states, and natural living. This definition will be used as the definition of animal welfare for the purposes of this manuscript.

As previously discussed, laboratory animal veterinarians and research scientists have already identified those variables inherent in conducting animal research in different facilities and physical environments.¹⁹ Institutions, through their animal and veterinary care programs as well as IACUCs and comparable animal research oversight bodies, have specified those physical elements of their animal facilities that they believe provide the best animal health and welfare outcomes for laboratory animals. These ele-

ments, which directly affect both the 3 previously defined components of animal welfare as well as animal study reproducibility, include factors such as animal housing systems, animal facility macroenvironments, and source and quality of food and water. Therefore, questions regarding both animal health and animal welfare are inherent in discussions of reproducibility. These questions include "How is reproducibility ensured in different animal research environments with varying levels of animal welfare?", "Can compromises in animal welfare make an animal study or model more or less reproducible?", and "Should compromises in animal welfare be made in order to enhance study reproducibility?"

Potential answers have been offered to address reproducibility among different research environments that presumably have differing levels of animal welfare and care.³ The previously discussed 2014 ILAR report included the concepts of publishing additional details regarding the variables and establishing detailed standards that all institutions can follow.¹⁹ The formulation and continuing adoption of the *Animal Research: Reporting of In Vivo Experiments* (ARRIVE) guidelines along with *Guidance for the Description of Animal Research in Scientific Publications* are some of the best examples of this effort.^{12,14} Although the ARRIVE guidelines are being adopted, this work has been criticized as a potential source of regulatory burden.^{14,19,20}

The next 2 questions—"Can compromises in animal welfare make an animal study or model more or less reproducible?" and "Should compromises in animal welfare be made in order to enhance study reproducibility?"—are closely linked.²⁵ Assuming that all environmental elements and study variables are known, if one principal investigator wishes to reproduce the work of another in a different facility, will they need to ask for changes in animal management practices to facilitate potential reproducibility? Should an institution change its standards—which that institution believes fosters the desired level of animal welfare—to achieve reproducibility? Is there any guarantee that once changes are made that reproducibility will then be assured? Answers to these questions lie with an institution's veterinary staff and oversight body but pit the need to maintain institutional standards used to cultivate a preferred animal welfare status against the ability for scientists to reproduce their work in multiple environments.

Allowable tumor size limits imposed by the IACUC present a clear example of this conundrum. Many IACUCs have policies dictating that subcutaneous tumors must not exceed a certain size, usually 1.5 to 2 cm in diameter. These policies are created with significant veterinary input and represent what individual IACUCs believe to be the best way to ensure appropriate animal welfare. However, what happens if a scientist wants to replicate a research project that allowed mice to develop very large tumors so that cells from the tumor could escape and metastasize but that same tumor size is larger than that permitted by his or her home IACUC? Does this situation conflict with animal welfare or support the greater good? Should policies that represent animal welfare standards be changed or exceptions permitted in order to achieve reproducibility? Similar arguments apply to analgesia, anesthesia, postoperative care, and many other policies and institutional standards. An increasing call for animal study reproducibility will result in more of these deliberations.

From the authors' viewpoint, an obvious connection between animal welfare and reproducibility is the legitimate concern that

studies performed by using animals with compromised animal welfare may not be reproducible. However, the commitment of laboratory animal professionals to the provision of high-quality animal care and to the development of animal welfare standards that promote such care can help to improve reproducibility.

IACUC and Oversight

The charge to IACUCs, and related animal research oversight bodies, does not yet include a requirement to evaluate proposed studies for reproducibility. However, even without a specific charge, the IACUC responsibilities of ensuring the humane handling, treatment, and care of animals as well as evaluating hypothesis testing, sample size, and accuracy or relevancy of controls can "contribute to enhanced reproducibility."¹⁹ Barriers to animal study reproducibility, however, still exist in the oversight process due to the goals of various regulations and agencies, institutional policies set by internal oversight bodies, and multiple interpretations of the 3Rs (reduction, replacement, and refinement).^{1,19,28}

In the United States, the USDA Animal Welfare Act and its associated regulations, in addition to the *United States Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training* and guidelines set forth by the Office of Laboratory Animal Welfare within NIH, form a core set of regulations and guidelines for animal research conduct and oversight.^{2,24} The documents and accompanying interpretations, policies, and FAQs, however, do not focus on study reproducibility and in some instances can be construed as to encourage the smallest number of animals possible without regard to reproducibility.^{22,23,29}

According to USDA regulations, an IACUC can only approve animal research activities after the principal investigator (PI) has provided a written assurance stating that the activities do not unnecessarily duplicate previous experiments.²⁹ These regulations and the USDA Animal Care Policy Manual do not address what constitutes unnecessary duplication of previous experiments, leaving that decision to the individual PI, IACUC, or institution. In addition, the term 'duplication' is not defined within the regulations and other USDA standards, which may generate confusion among the PI, IACUC, and others involved with oversight processes. Without such definitions, the PI, IACUC, and institution must decide whether the need to reproduce a study to verify reproducibility represents unnecessary duplication of previous experiments. Indeed, many institutions rely on the assurance statement that the PI signs in their description of animal research activities, whereas others use a literature search to determine unnecessary duplication—although there is no requirement or guidance for that type of literature search.

The third principle in the *United States Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training* states that animal selection should ensure that animals are of "an appropriate species and quality" and that the study uses a "minimum number required to obtain valid results."²⁴ Currently, many animal studies are underpowered, meaning that they do not include enough animals to provide statistically meaningful results. The word 'valid' makes a strong point but is entirely contextual. Study results may be statistically valid for a particular scientific question in a specific laboratory using certain animals with specific genetic backgrounds and re-

agents, but that validity does not guarantee that the study will be reproducible either in the same laboratory or in a different one.

In our experience, correspondence from the Office of Laboratory Animal Welfare has stated that investigators must be trained in methods that “minimize the number of animals used.” No such request is made to ensure that investigators are aware of statistical justification methods to arrive at desired animal numbers, although this justification is described on the Office’s website. A recommendation document released in October 2015 by the US Food and Drug Administration regarding animal medical device studies contains the statement that “A thoughtful attempt at utilizing the least number of animals that will provide meaningful interpretation is paramount and includes such measures as attention to the appropriate experimental control, consideration of potential experimental confounders, and an idea of best observation intervals...” but does not mention future reproducibility or explain whether “meaningful interpretation” equates to study reproducibility.²⁰ Although some of the planning committee members for the much-cited *Reproducibility Issues in Research with Animals and Animal Models: Workshop in Brief* represented government offices, none of the speakers on the agenda represented a US government office’s viewpoint on the topic.¹⁹ The *Guide for the Care and Use of Laboratory Animals* is also silent on this topic.¹¹ NIH’s recent initiative to enhance both rigor and reproducibility does not address IACUC review of animal research.²⁰ Without an explicit call from regulatory agencies and guidance documents for reproducibility to be of paramount concern in animal studies, especially in the decision making process for determining animal numbers, directives regarding minimization of animal numbers will be at odds with calls for increased reproducibility as a mechanism of promoting better and safer translational research.

IACUCs are charged with oversight according to these aforementioned regulations and guidelines, and the regulations and guidelines do not request that reproducibility factor into the IACUC’s decision-making. In fact, many feel that IACUCs can hinder reproducibility by focusing on the minimization of the number of animals used, whereas others may feel that IACUCs should assume some of the responsibility to help ensure reproducibility.¹ IACUCs should carefully consider which stance is appropriate given that many factors influencing reproducibility are beyond the scope of the IACUC, it may not be the intention of the PI that the study be reproduced, or the IACUC may be aware of only one small component of an entire experiment. An IACUC deciding that their reviews must safeguard reproducibility might also be construed as an example of regulatory drift.

IACUC reviews, decisions, policies, and other actions can, however, influence the ability of studies to be reproduced. Emphasizing the minimization of the number of animals to be used has been considered an over-interpretation of one of Russell and Burch’s ‘3Rs’ in that the original publication identifies the ‘R’ of ‘reduction’ not as the minimization of the number of animal used, but rather determining the correct number of animals (based on statistical analysis) prior to conducting the study rather than afterward.²⁸ Ultimately, determining the appropriate number of animals prior to study initiation could reduce the number of animals “...progressively as statistical and experimental techniques are improved.”²⁸ Striving for an “absolute minimization of animals used would be inconsistent with this aim” and can deter scientists from asking for the appropriate number of animals, resulting in underpowered studies and nonreproducible studies.^{1,28}

Because many IACUCs are constituted with knowledgeable scientists and statisticians, an IACUC protocol review can reveal that an inadequate number of animals has been requested for the proposed hypothesis testing and sample sizes. Scenarios include requesting too few animals to derive statistically relevant conclusions, having inadequate or nonexistent positive and negative control groups, and not accounting for sex- and strain-associated differences or animal attrition.^{17,18} What would not be obvious in IACUC review is requesting inadequate numbers due to budgetary constraints. The directive to minimize animal use does not include a companion obligation for the IACUC to request that animal numbers be increased to improve the chances for better statistical outcomes or reproducibility. In our experience, some IACUCs believe it is inappropriate to ask a PI to increase animal numbers during protocol review. However, such a request would be very much in line with the previously depicted ethical construct demanding the need for reproducibility in animal studies so that animal lives are not wasted.^{17,19} On further extrapolation, one might argue that if more studies are designed with reproducibility in mind, then fewer animal lives are ‘wasted’ in unsuccessful attempts at study replication after results have been made public, increasing the contribution to the greater good. Concentrating on the selection of the appropriate animal numbers rather than adhering to a preconceived notion of minimizing the number of animals to be used without factoring in a need for reproducibility should be an area of training and debate for IACUC members.

Conclusions

The reproducibility of animal studies has become a highly discussed topic in the scientific community during the past few years. Peer-reviewed manuscripts, retrospective reviews, meta-data analyses, webinars, workshops, journal clubs, symposia, NIH policies, and projects have all been instigated to determine the causes of this lack of reproducibility, to propose solutions to the problem, and to reproduce pivotal studies.^{5,7,13,16-18,19,25} Animal research is particularly vulnerable to concerns about reproducibility because preclinical results are used to support efficacy and safety determinations for clinical studies and direct but independent oversight in human trials addresses many of the scientific concerns raised with animal studies that lack such oversight.¹³ What has been largely absent from this discussion has been ethical and animal welfare considerations (questions), applicable regulatory mandates, and IACUC oversight. We have discussed the ethical construct for supporting the reproducibility in animal studies, but the call for reproducibility may potentially be undermined by animal welfare standards at individual research facilities, lack of regulatory or other guidance for IACUCs and other oversight bodies to stress reproducibility, and an emphasis on minimizing the number of animals used in proposed animal studies. With the NIH, research scientists, professional associations, pharmaceutical companies, and veterinarians asking that reproducibility receive serious deliberation, now is the time to evaluate fully all ethical, animal welfare, regulatory, and institutional influences that could, in the end, make reproducibility a reality.

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School of Veterinary Medicine Animal Care and Use Committee Closed Session – April 11, 2017

Present (voting):

[REDACTED]

Present (nonvoting):

[REDACTED]

Guests:

[REDACTED]

Absent:

Approval of Closed Session Minutes March 14, 2017

[REDACTED] moved to approved the minutes as presented. The vote was unanimous.

Semiannual Inspections

Ms. [REDACTED] led discussion of reports of recent inspections (see attached). She noted that in the [REDACTED] only areas where UW research animals are used are inspected. She described the improved process for tracking projects that utilize [REDACTED] space. One concern about labeling of secondary containers of disinfectant was rapidly addressed with a change in practice to add manufacturers dates.

Senior Program Veterinarians Reports

Neither Drs. [REDACTED] nor [REDACTED] had reports for closed session.

Report from ARC

Mr. [REDACTED] reported that there were two recent power outages at [REDACTED] and that the monitoring systems worked well and issues were rapidly addressed with no adverse effects on animal health.

Report from the Animal Program Assessment Specialists

Mr. [REDACTED] had no report for closed session.

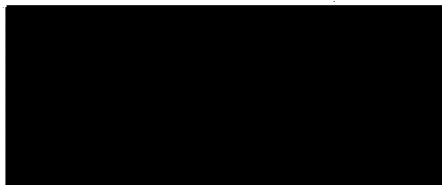
Other Business

Research Animal Resources Center

396 Enzyme Institute 1710 University Avenue Madison, WI 53726-4087
608-262-1238 Fax: 608-265-2698 Email: help@rarc.wisc.edu

Obtained by Rise for Animals.
Uploaded to Animal Research Laboratory Overview (ARLO) on 11/25/2020

Ms. [REDACTED] summarized recent requests and approvals of waivers for training. Dr. [REDACTED] called for other business for closed session or any additional business for open session. Hearing none, Dr. [REDACTED] adjourned the meeting at 10:50 a.m.



*Approved by SVM ACUC
6-13-17*

Animal Facilities Inspection Checklist

Name of Facility: Facility 2017A School/College: SVM
 Supervisor: Date: 03/24/17
 Inspection Team Members: (V) (V) (R) File created: 04/04/17

Inspection Notes

Tracking

Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Note: Secondary containers of disinfectant with labels but no expiration dates. Facility staff noted that there is a high turnover rate which would make individually hand-dating secondary containers impractical. Suggestion: consult with Dr.			
		A				
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side *UW]	N				
	[Small Animal Side *UW]	N				
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side *UW]	N				

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Note: Secondary containers of disinfectant with labels but no expiration dates. Facility staff noted that there is a high turnover rate which would make individually hand-dating secondary containers impractical. Suggestion: consult with Dr. [REDACTED]			
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side]	N				
	[Small Animal Side]	A				
	[Small Animal Side *UW]	A	Discussed inventory control.			
	[Necropsy]	N				
	[Large Animal Side *UW]	A	Donor cows.			
	[Large Animal Side *UW]	A				
	[Large Animal Side]	N				
	[Large Animal Side]	N				
	[Large Animal Side *UW]	A	Discussed pest control.			
	[Large Animal Side *UW]	A	No research animals at this time.			

Inspection Notes					Tracking	
Room	Description	AMS	Comments/Notes	Correct by Date	R	Include name, date and method of all contacts & name, date and method of all responses. Indicate when Resolved or Referred to Committee
General comments		A	Note: Secondary containers of disinfectant with labels but no expiration dates. Facility staff noted that there is a high turnover rate which would make individually hand-dating secondary containers impractical. Suggestion: consult with Dr. [REDACTED]			
[REDACTED]	[Large Animal Side]	N				
	[Large Animal Side *UW]	A				
	[Large Animal Side]	N				
	[Outside]	N				



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**SCHOOL OF VETERINARY MEDICINE ANIMAL CARE AND USE
COMMITTEE**

We the undersigned voting member of the SVM ACUC verify the attached reports reflect our Fall 2016 Semiannual Review of the program of animal care in the School.

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Date of Review: October 26, 2016

Research Animal Resources Center

396 Enzyme Institute 1710 University Avenue Madison, WI 53726-4087
608-262-1238 Fax: 608-265-2698 Email: help@uwmadison.edu

Obtained by Rise for Animals.
Approved: <https://www.riseforanimals.org> Laboratory Overview (ARLO) on 11/25/2020



School of Veterinary Medicine Animal Care and Use Committee

**UW-Madison SVM Animal Care and Use Program
Semi-annual Program Review, Fall 2016 - Report to the Institutional Official
Review performed October 26, 2016; Report finalized December 13, 2016
Prepared by Dr. [REDACTED] SVM ACUC Chair**

Introduction:

Institutional animal care and use committees are legally required to inspect all animal facilities and use areas and to evaluate the Animal Program twice a year. The results of those evaluations must be submitted in a report to the Institutional Official and signed by a majority of the committee members. The Fall SVM ACUC 2016 review is summarized in this report. We identified no major or minor deficiencies in the Program.

Process:

The SVM Campus Animal Care and Use Committee (SVM ACUC) has adopted a Program Definition (Lab Animal 2005 Nov; 34(10):41-4) to provide evaluation standards. A worksheet based on the Program definition was used as the Program evaluation tool (Lab Animal 2007 Oct; 36(9):36-40) with minor modifications to suit the 8th edition of *The Guide*. The completed Worksheet, and supplemental reports provided to the ACUC, are attached to this letter.

To fulfill other responsibilities, the SVM ACUC also inspected facilities and animal use areas, identified deficiencies, initiated corrective actions, and followed up to insure that the corrective actions were completed. To review a summary of the deficiencies that were identified, and the current status of corrective action:

1. Go to the RARC website at: <https://www.rarc.wisc.edu/>
2. Log in with your NetID and password.
3. Select the IACUC tab
4. Go to the "RARC Limited" IACUC members site.
5. Select "All Inspections" in the menu bar.
6. Choose "SVM" from the "School" picklist, "2016B" from the "Cycle" picklist, and "All" from the "Issues" picklist.
7. When finished, use the "RARC Logout" link at the top of the page to log out of the RARC website.

If you have questions about any of the inspection deficiencies, please contact Carey Hannan at RARC (890-1784).

Research Animal Resources Center

396 Enzyme Institute, 1710 University Avenue • Madison, WI 53726-4087
608/265-9040 • FAX: 608/265-2698

Summary: The following text summarizes deficiencies, recommended corrective actions, and correct-by dates. The organization follows that of the worksheets.

I. Physical Plant. *Within this category, no deficiencies were identified.* Veterinary and facility staff communicated efficiently with PIs prior to recent construction at the [REDACTED] about the potential impact of noise and vibration on animal well-being and research results.

II. Animal Environment, Housing, and Management. *Within this category, no deficiencies were identified.* RARC veterinary staff perform checks of labs in which animals are housed at least monthly for animal health and for husbandry documentation, and are regularly notified by PIs when animals are placed in BSL3 areas. Dr. [REDACTED] has received training on the animal program emergency plan. One departure approved by the SVM ACUC in Fall of 2015 allows humane traps used for rodent vermin control in a few locations to be checked less frequently than daily. RARC veterinary staff conducted a performance-based study of the effectiveness of the nutrient gel packs used in the traps and found them to be sufficient for the duration between checks. To date, no mice have been caught in these areas. The rodent cage-top sanitization schedule that departs from the Guide continues with no issues.

III. Personnel Qualifications and Training. *Within this category, no deficiencies were identified.* In general the committee is very satisfied with the training aspect of the SVM research animal program. Animal Research Technicians (ARTs) receive ongoing training in a wide range of job-related tasks such as annual sick-animal reporting and forklift training. The strong connection between the RARC research animal training program and the SVM is noted as a program strength – please see attached supplementary report for detailed information on RARC-provided training.

IV. Occupational Health and Safety. *Within this category, no deficiencies were identified.* An informational report from University Health Services detailing the status of the Animal Contact Risk Questionnaire was distributed (see attached) and the committee noted the 95% compliance rate. The committee feels that the progress indicates responsiveness to previous deficiencies identified by the ACUC.

V. Veterinary Medical Care. *Within this category, no deficiencies were identified.* The presence of the Veterinary School remains a tremendous asset for RARC veterinarians to draw on for training and consultation, and RARC veterinarians are seen as valuable colleagues by SVM investigators. For example, a special training for PIs on anesthesia and emergency procedures taught jointly by an SVM anesthesiologist and RARC veterinarians was held in November and was very well-attended by researchers. One concern that was discussed but not identified as a deficiency at this time is the challenge of providing adequate support to researchers with regards to appropriate anesthetic procedures for animal subjects. There are not enough resources to provide PIs with expertise in reviewing complicated anesthetic plans in protocols and being in attendance during the procedures with complex anesthetic needs. The SVM ACUC formally requests the Institutional Official to endorse the hiring of a veterinary anesthesiologist for these reasons, which will subsequently improve both animal well-being and research results.

VI. Institutional Animal Care and Use Committee. *Within this category, no deficiencies were identified.* The SVM ACUC benefits from having stable, dedicated, and experienced members. Our two community members are active and engaged and are a clear strength in our program. For details on semiannual inspections, ACUC training, protocol review turnaround, and approved Departures from the Guide, please see attached supplementary reports.

VII. Institutional Official. *Within this category, no deficiencies were identified.* We acknowledge the recent change in I.O., and understand Dr. [REDACTED] chaired the School of Medicine and Public Health ACUC and is knowledgeable about the campus' animal program. The SVM ACUC has found it very beneficial to have the I.O. attend at least one of our regular meetings each year, and ask that she continue this tradition.

VIII. Program Integration. *Within this category, no deficiencies were noted.* Several examples of integration between the SVM and other campus animal programs were shared, such as the adoption of the animal health reporting system (SMPH), the shared use of horses for teaching activities, and lambing assistance provided by members of the veterinary student club (CALS). Support staff from RARC are essential to protocol review in a timely fashion, keeping ACUC meeting minutes, coordinating semi-annual inspections, and preparing semi-annual program reviews.

IX. Support of the Institutional Mission. *Within this category, no deficiencies were noted.* We discussed potential risks to animal welfare and research quality of not being able to pay entry-level ARTs and clinical technicians higher wages or offer opportunities for advancement. We understand that this is a challenge across campus, and SVM animal facility management is experienced in using the available resources and opportunities to support and promote professional development of ARTs. As a committee we will continue to be vigilant. As stated previously we ask you to endorse the hiring of a veterinary anesthesiologist to support our researchers and ensure animal well-being.

Closing Statement:

The UW School of Veterinary Medicine ACUC believes the animal care program is very strong and that communication among the ACUC members, RARC, PIs and other animal users is good and constantly improving. The animals in the units receive excellent care from animal research staff and lab animal veterinarians, and any health or welfare concerns are addressed in a timely manner. The SVM ACUC strives to continually monitor, improve and advance the research and teaching missions of the individuals who are given the privilege of using animals on the UW-Madison campus.

Sincerely,

[REDACTED] DVM, PhD, DACVAA

[REDACTED] PhD, DACVAA
Chair, SVM-ACUC



WISCONSIN

UNIVERSITY OF WISCONSIN-MADISON

School of Veterinary Medicine Animal Care and Use Committee Program Review Open Session – October 26, 2016

Present (voting): [REDACTED] (for [REDACTED])

Present (nonvoting): [REDACTED]

Guests: [REDACTED]

Absent: [REDACTED]

Dr. [REDACTED] called the meeting to order at 8:40 a.m. She stated that the goal of today's meeting is to perform the semiannual review of the animal program in the School of Veterinary Medicine. She indicated her approach to today's review will be to discuss each section of the UW-Madison Animal Care and Use Program Review Worksheet (see attached) and identify areas of strengths and deficiencies, noting the committee's comments from the Spring 2016 program review have been provided in today's Worksheet for reference. She also noted that supporting reports on training, inspections, and protocol reviews were circulated to committee members prior to today's meeting.

The committee discussed section I ("Physical Plant"), finding in general this aspect of the program is strong and well-coordinated. It was noted that the veterinary and facility staff communicated efficiently with PIs prior to recent construction at the [REDACTED] about the potential impact of noise and vibration on animal well-being and research results. Dr. [REDACTED] and Mr. [REDACTED] will work together to notify PIs of the potential impact of low and fluctuating animal facility humidity levels on their individual research results as recommended by the 2014 AAALAC site visit team.

[REDACTED] joined the meeting]

The committee discussed section II ("Animal Environment, Housing, and Management), including two programmatic departures approved by the SVM ACUC at previous Program Reviews. The first allows humane traps used for rodent vermin control in a few locations to be checked less frequently than daily. Nutrient gel packs in these traps were found by a performance-based study conducted by RARC veterinary staff to provide sufficient hydration for the duration between checks. Mr. [REDACTED] said that to date, no mice have been caught in these areas. The second is a rodent cage-top sanitization schedule that departs from the Guide (every 3 months for mouse cage tops and every 2 months for rat cage tops) continues to be practiced with no animal health issues observed. Dr. [REDACTED] described recent training she received on the animal program emergency plan, and Mr. [REDACTED] noted one [REDACTED] facility is scheduled to receive security cameras. Dr. [REDACTED] stated the RARC veterinary staff perform checks of labs

Research Animal Resources Center

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Obtained by Rise for Animals.
Added to Animal Research Laboratory Overview (ARLO) on 11/25/2020

in which animals are housed at least monthly for animal health and for husbandry documentation. She said she is regularly notified by PIs when animals are placed in BSL3 areas.

The committee discussed section III (“Personnel Qualifications and Training”). Ms. [REDACTED] lead trainer at RARC, led discussion of her report (see attached). She said the Animal User Orientation online module was updated in August 2016, and then highlighted the number of SVM animal users who have accessed RARC classes and who have requested waivers from required species-specific and lab animal surgery training. She described ways in which the RARC trainers provided unique services to the SVM program such as making rat carcasses available to the dental and surgery courses at SVM and assisting in training the newly-hired supervisor at the Animal Resources Center. Ms. [REDACTED] described the RARC trainers’ process for following up with individuals who fail to attend required training, noting that non-responsive individuals would be reported to the ACUC for action if necessary but to date that has not been needed. Mr. [REDACTED] stated Animal Research Technicians (ARTs) receive ongoing training in a wide range of job-related tasks such as annual sick-animal reporting and forklift training. In general the committee is very satisfied with the training aspect of the SVM research animal program, and appreciated receiving Ms. [REDACTED]’s report prior to the meeting.

The committee discussed section IV (“Occupational Health and Safety,” OHS). An informational report from University Health Services detailed the status of the Animal Contact Risk Questionnaire was distributed (see attached) and the committee noted the 95% compliance rate. The committee feels that the progress indicates responsiveness to previous deficiencies identified by the ACUC. Ms. [REDACTED] reported that the newly-hired [REDACTED] will start in December. She noted that two students on the Biosafety office team are helping ensure training notifications for required safety courses are being sent in a timely and consistent manner to animal users. Ms. [REDACTED] reported that the biosafety cabinet certification group is still catching up on certifications and repairs. As was reported at the spring review outside vendors are still helping, areas such as BSL-3 laboratories remain the highest priority for completion, and cabinets in animal areas will be serviced by UW employees. ACUC members should continue noting out-of-date cabinets on semiannual inspections so these can be prioritized.

The committee discussed section V (“Veterinary Medical Care”), finding in general that this aspect of the program is strong. Dr. [REDACTED] earned her American College of Laboratory Animal Medicine (ACLAM) board certification this summer, and the newly-hired RARC veterinarian will start in mid-December. An animal health reporting system new to the SVM program went live on October 25, 2016, and is expected to strengthen initial reporting to veterinary staff and documentation of reports. Dr. [REDACTED] noted the system is one that has been used widely elsewhere on campus. Dr. [REDACTED] noted a special training for PIs on anesthesia and recovery will take place in November. Mr. [REDACTED] noted the results of the campus’ 2015 rodent survival surgery records review were reported to OLAW, and OLAW complimented the animal program’s proactive approach to compliance and animal well-being. Improvements in the documentation of teaching animal use, and planned improvements in communicating when horses are transferred between buildings, were all noted.

The committee discussed if there are a sufficient number of veterinary staff trained to meet the needs of the SVM research animal program. Drs. [REDACTED] and [REDACTED] said in general their workloads are manageable but less so when veterinary staff positions are unfilled and when

staff take vacations. The committee asked that the veterinarians speak up if they experience workload issues related to veterinary understaffing. Dr. [REDACTED] stated her belief that veterinary workloads could be more efficiently addressed by hiring a boarded veterinary anesthesiologist to consult with PIs, review anesthesia plans in protocols, and attend complicated procedures with complex anesthesia needs. Dr. [REDACTED] agreed, and Dr. [REDACTED] noted that she would welcome that additional expertise. The ACUC will formally request the Institutional Official to endorse the hiring of a veterinary anesthesiologist for the stated reasons which will subsequently improve animal well-being and research results.

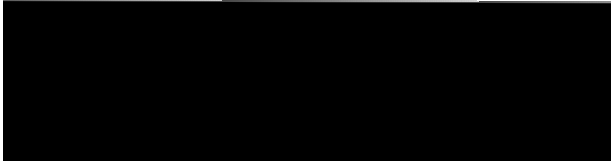
The committee discussed section VI (“Institutional Animal Care and Use Committee”). Ms. [REDACTED] thanked members for their active participation in the inspections and provided information on the most recent inspections period, noting very few deficiencies were identified, none of which were classified as significant and none of which were “repeat” deficiencies. Dr. [REDACTED] provided a report on committee training topics covered during the last six months and on protocol review turnaround, noting review times were shorter than the previous six months for all protocol types. Members noted their particular appreciation for the recent training by Ms. [REDACTED] regarding closed meetings. Dr. [REDACTED] provided detailed information about the Veterinary Verified Change (VVC) approvals, including PI feedback about the process. A summary of departures from the *Guide* in protocols approved by the SVM ACUC was reviewed. Mr. [REDACTED] noted that in August the Animal Program Assessment Specialists began performing formal post-approval monitoring (PAM) per ACAPAC policy 2016-059. To date no SVM protocols have undergone routine PAM, and one lab in SVM is undergoing PAM for direct cause for which regular reports have been given to the ACUC. The committee briefly discussed if protocols reviewed via Designated Review and at meetings received consistent reviews. Several members commented that they feel that because the RARC veterinarians and safety staff review all protocols consistency is supported, and Dr. [REDACTED] commented that in the review notes she sees that all reviewers ask good questions.

The committee discussed section VII (“Institutional Official,” I.O.), noting the recent appointment of interim I.O. Dr. [REDACTED] at the beginning of the month. Dr. [REDACTED] noted Dr. [REDACTED] chaired the School of Medicine and Public Health ACUC until she accepted the I.O. role and is very knowledgeable about the animal program. The SVM ACUC has found it very beneficial to have the I.O. attend at least one SVM ACUC meeting each year, and will request that Dr. [REDACTED] continue this practice.

The committee discussed sections VIII (“Program Integration”) and IX (“Support of the Institutional Mission”). The ACUC reiterated examples of integration between the SVM and other campus animal programs, such as the adoption of the animal health reporting system (SMPH), and the shared use of horses for teaching activities and lambing assistance provided by members of the veterinary student club (CALS). The value of having a boarded veterinary anesthesiologist for all campus programs was restated. It was suggested that Dr. [REDACTED] continue the tradition begun by former chair Dr. [REDACTED] to present ACUC-specific information at SVM faculty meetings, and she agreed to do so. The committee discussed potential risks to animal welfare and research quality of not being able to pay entry-level ARTs and clinical technicians higher wages or offer opportunities for advancement. It was noted that this is a challenge across campus. Several members complimented Mr. [REDACTED] for using the available

resources and opportunities to support and promote professional development of ARTs within SVM.

Dr. [REDACTED] called for other comments. Hearing none, she said after the minutes are approved a draft letter will be circulated for edits, and final signatures will be collected at an future ACUC meeting. Cannon/Sommers moved to adjourn the meeting. The vote was unanimous. The meeting was adjourned at 10:20 a.m.



App'd by SVM ACUC
8 Nov 2016

UW-Madison Animal Care and Use Program Review Worksheet: Fall 2016 SVM ACUC

(based on *Defining the Animal Care and Use Program*, Lab Animal 34(10) 41-44, *Guide for the Care and Use of Laboratory Animals 8th ed.*, and *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching 3rd ed.*)

(I). Physical Plant: "A well-planned, well-designed, well-constructed, and properly maintained and managed facility is an important element of humane animal care and use as it facilitates efficient, economical, and safe operation." (*Guide*, p.133). This includes animal facilities not located on the UW-Madison campus (e.g., Agricultural Research Stations).

A. Methods exist to assure Veterinary, ACUC, PI, and Program staff input into animal facility planning, design, and construction to ensure that new or remodeled facilities meet Program needs.
Fall 2016 ACUC response: Yes. the veterinary and facility staff communicated efficiently with PIs prior to recent construction at the [REDACTED] about the potential impact of noise and vibration on animal well-being and research results.
B. The animal facilities adhere to performance standards in the areas of facility planning, design, and construction. All animal facilities meet relevant physical plant performance standards.
Fall 2016 ACUC response: Yes
C. Appropriate areas are available for: <ul style="list-style-type: none"> • animal housing • animal care • sanitation of cages and other materials • materials receiving and storage • separation of species or isolation of individual projects when necessary • performance of aseptic surgery • other specialized spaces, facilities, and/or equipment required for the conduct of certain studies
Fall 2016 ACUC response: Yes
D. Appropriate areas and procedures exist for receipt and quarantine of arriving animals, and separation and quarantine of animals if there are disease outbreaks.
Fall 2016 ACUC response: Yes
E. Methods exist to monitor and maintain the physical condition of animal facilities to ensure that it remains adequate and appropriate.
Fall 2016 ACUC response: Yes. Dr. [REDACTED] and Mr. [REDACTED] will work together to notify PIs of the potential impact of low and fluctuating animal facility humidity levels on their individual research results as recommended by the 2014 AAALAC site visit team.
F. Departures from The Guide are identified, discussed, and approved by the ACUC.
Fall 2016 ACUC response: Yes
G. Procedures exist to identify, communicate, and correct animal facility physical deficiencies.
Fall 2016 ACUC response: Yes
H. Other criteria that should be used to evaluate physical plant & the animal program?
Fall 2016 ACUC response: None.

II). Animal Environment, Housing, and Management: "An appropriate program provides environments, housing, and management that are well-suited for the species or strains of animals maintained and takes into account their physical, physiologic, and behavioral needs, allowing them to grow, mature, and reproduce normally while providing for their health and well-being." (*Guide*, p.41). Adequate management requires appropriate and sufficient physical, procedural, and human resources. This includes the special needs of aquatic species, and animal facilities not located on the UW-Madison campus (e.g., Agricultural Research Stations).

A. When providing animal housing the institution considers the appropriateness of: <ul style="list-style-type: none"> • the shape, size, and construction of the animals' primary enclosures (cage, pen, etc.) • temperature, humidity, ventilation, and illumination
Fall 2016 ACUC response: Yes
B. When providing animal housing the institution considers the appropriateness of behavioral management. That is, environmental enrichment and social housing programs are beneficial to animal well-being and are consistent with the

goals of animal use (includes meeting needs for social housing and/or environmental enrichment, exercise for dogs, and promotion of the psychological well-being of nonhuman primates).
Fall 2016 ACUC response: Yes
C. In assuring appropriate management of animals and animal facilities the institution considers: <ul style="list-style-type: none"> • animal husbandry, including selection, storage, preparation, and provision of food, bedding, and water • population management, including animal identification (cage cards, ear tags, tattoos, etc.) and records • weekend and holiday animal care • sanitation of enclosures and physical plant • integrated pest control programs
Fall 2016 ACUC response: Yes. Dr. [REDACTED] stated the RARC veterinary staff perform checks of labs in which animals are housed at least monthly for animal health and for husbandry documentation. She said she is regularly notified by PIs when animals are placed in BSL3 areas.
D. Furthermore, the institution considers: <ul style="list-style-type: none"> • facility security and biosecurity • preparation of a disaster plan that takes into account both personnel and animals • personnel security (pre-employment screening, etc.)
Fall 2016 ACUC response: Yes. Dr. [REDACTED] described recent training she received on the animal program emergency plan, and Mr. [REDACTED] noted one [REDACTED] facility is scheduled to receive security cameras.
E. Methods exist to monitor and maintain the physical, procedural, and human contributions to adequate animal environment, housing, and management to ensure that they meet performance standards for all animals. That is, facilities are checked to ensure animals are fed, watered, cared for, and protected in species-appropriate ways.
Fall 2016 ACUC response: Yes
F. Facilities in which animals are housed and used are secure and provide animal and human safety. That is, access to animals in facilities is controlled, monitored, and/or documented.
Fall 2016 ACUC response: Yes
G. Departures from The Guide are identified, discussed, and approved by the ACUC.
Fall 2016 ACUC response: Yes. There are two programmatic departures that were approved by the SVM ACUC at previous Program Reviews. The first allows humane traps used for rodent vermin control in a few locations to be checked less frequently than daily. Nutrient gel packs in these traps were found by a performance-based study conducted by RARC veterinary staff to provide sufficient hydration for the duration between checks. Mr. [REDACTED] said that to date, no mice have been caught in these areas. The second is a rodent cage-top sanitization schedule that departs from the Guide (every 3 months for mouse cage tops and every 2 months for rat cage tops) continues to be practiced with no animal health issues observed.
H. Procedures exist to identify, communicate, and correct deficiencies in animal environment, housing, and management.
Fall 2016 ACUC response: Yes
<i>I. Other criteria that should be used to evaluate animal environment, housing, management & the animal program?</i>
Fall 2016 ACUC response: None.

(III). Personnel Qualifications and Training: "All personnel involved with the care and use of animals must be adequately educated, trained, and/or qualified in basic principles of laboratory animal science to help ensure high-quality science and animal well-being. ...Institutions are responsible for providing appropriate resources to support personnel training and the IACUC is responsible for providing oversight and for evaluating the effectiveness of the training program." (*Guide*, p.15). Personnel represent both a tremendous resource and a source of complexity in maintaining an effective Program. In view of the importance of training and the diversity of training needs, the training program must be comprehensive and flexible.

***Fall 2016: See also supporting report (attached).**

A. All categories of personnel that constitute the animal research and care community receive adequate and appropriate training, including: <ul style="list-style-type: none"> • animal care staff • management and supervisory personnel • research personnel (investigators, instructors, technicians, trainees, students) • IACUC members • Institutional Official • veterinarians and veterinary staff • physical plant and security staff
Fall 2016 ACUC response: Yes.
B. As appropriate, each member of the animal research and care community (as listed above) understands: <ul style="list-style-type: none"> • the components of the animal care and use Program • his or her role within that Program • how that role interacts with the roles of other members of the community
Fall 2016 ACUC response: Yes. The challenge of ensuring DVM PIs do not act as the clinical veterinarians for their research animals was noted as a potential risk but the committee feels most PIs fully understand the distinction.
C. <u>Initial</u> formal and/or on-the-job training in Program goals and the humane care and use of animals is provided.
Fall 2016 ACUC response: Yes.
D. Personnel using or caring for animals participate regularly in <u>continuing</u> education activities relevant to their responsibilities.
Fall 2016 ACUC response: Yes. Animal Research Technicians (ARTs) receive ongoing training in a wide range of job-related tasks such as annual sick-animal reporting and safety equipment training.
E. Documentation of training exists and is accessible.
Fall 2016 ACUC response: Yes.
F. The effectiveness of the initial and continuing training of individuals working with animals is regularly evaluated.
Fall 2016 ACUC response: Yes.
G. Procedures exist to identify, communicate, and correct deficiencies in training.
Fall 2016 ACUC response: Yes.
H. <i>Other criteria that should be used to evaluate training & the animal program?</i>
Fall 2016 ACUC response: Planning is under way to have members of the veterinary student small ruminant club again assist with lambing next spring at the CALS sheep unit.

(IV). Occupational Health and Safety: "Each institution must establish and maintain an occupational health and safety program (OHSP) as an essential part of the overall animal care and use program of animal care and use.... An effective OHSP requires coordination between the research program (as represented by the investigator), the animal care and use program (as represented by the A.V., I.O. and IACUC), the environmental health and safety program, occupational health services, and administration (e.g., human resources, finance, and facility-maintenance personnel)." (*Guide*, p.17).

A. The UW-Madison Occupational Health and Safety Program performs hazard identification and risk assessment associated with: <ul style="list-style-type: none"> • animal care • animal experimentation • teaching using animals • outreach using animals • field studies using wild animals
Fall 2016 ACUC response: Yes.
B. The UW-Madison Occupational Health and Safety Program provides initial and continuing medical evaluation and

preventive medicine for personnel with animal contact.
Fall 2016 ACUC response: Yes. As of mid-October 2016 overall compliance by animal users with the Animal Contact Risk Questionnaire (ACRQ) was 95%, with ongoing follow-ups by UHS staff with noncompliant users. See also supporting report from UHS (attached).
C. The UW-Madison Occupational Health and Safety Program identifies and provides occupational safety training to animal users including appropriate hygiene practices and instruction in appropriate PPE.
Fall 2016 ACUC response: Yes. Ms. [REDACTED] noted that two students on the Biosafety office team are helping ensure training notifications for required safety courses are being sent in a timely and consistent manner to animal users.
D. The UW-Madison Occupational Health and Safety Program monitors animal users, facilities, and procedures.
Fall 2016 ACUC response: Yes. Isoflurane and other monitoring of specific areas can be done upon request. The newly-hired [REDACTED] will start in December.
E. The ACUC and the institution monitor the effectiveness of the Occupational Health and Safety program.
Fall 2016 ACUC response: Yes.
F. Procedures exist to identify, communicate, and correct deficiencies in the Occupational Health and Safety program.
Fall 2016 ACUC response: Yes.
G. Other criteria that should be used to evaluate the Occupational Health and Safety Program for the animal program?
Fall 2016 ACUC response: Ms. [REDACTED] reported that the biosafety cabinet certification group is still catching up on certifications and repairs. As was reported at the spring review outside vendors are still helping, areas such as BSL-3 laboratories remain the highest priority for completion, and cabinets in animal areas will be serviced by UW employees. ACUC members should continue noting out-of-date cabinets on semiannual inspections so these can be prioritized.

(V). Veterinary Medical Care: "Veterinary care is an essential part of an animal care and use program. The primary focus of the veterinarian is to oversee the well-being and clinical care of animals used in research, testing, teaching, and production. This responsibility extends to monitoring and promoting animal well-being at all times during animals use and during all phases of the animal's life. ...The veterinary care program is the responsibility of the attending veterinarian." (Guide, pp.105-106). At UW-Madison attending veterinarian obligations are shared among several veterinarians. Adequate veterinary care is a Program component that closely affects all other components.

A. The Program has access to and meets appropriate performance standards for animal procurement and transportation.
Fall 2016 ACUC response: Yes.
B. The Program has access to and meets appropriate performance standards for preventive medicine, including animal quarantine, stabilization, and separation, as well as surveillance, diagnosis, treatment, and control of disease.
Fall 2016 ACUC response: Yes.
C. The Program has access to and meets appropriate performance standards for management of experiment-associated disease, disability, or other sequelae.
Fall 2016 ACUC response: Yes.
D. The Program has access to and meets appropriate performance standards for assessment of animal well-being. Veterinary access to all animals is provided.
Fall 2016 ACUC response: Yes.
E. The Program has access to and meets appropriate performance standards for establishment of adequate surgical and post-surgical care, including proper use of anesthesia and analgesia. Anesthesia and analgesia (1) must be used before their expiration dates and (2) should be acquired, stored, their use recorded, and disposed of legally and safely.
Fall 2016 ACUC response: Yes. Dr. [REDACTED] noted a special training for PIs on anesthesia and recovery will take place in November. Mr. [REDACTED] noted the results of the campus' 2015 rodent survival surgery records review were reported to OLAW, and OLAW complimented the animal program's proactive approach to compliance and animal well-being. See also (H) below.

F. The Program has access to and meets appropriate performance standards for proper selection and conduct of euthanasia.
Fall 2016 ACUC response: Yes.
G. The Program has access to and meets appropriate performance standards for veterinary participation in protocol development and review.
Fall 2016 ACUC response: Yes.
H. There are a sufficient number of veterinarians and veterinary technicians trained to meet Program needs.
Fall 2016 ACUC response: RARC veterinarians stated in general their workloads are manageable but less so when veterinary staff positions are unfilled and when staff take vacations or other time. They stated their belief that veterinary workloads could be more efficiently addressed by hiring a boarded veterinary anesthesiologist to consult with PIs, review anesthesia plans in protocols, and attend complicated procedures with complex anesthesia needs. The ACUC will formally request the Institutional Official to endorse the hiring of a veterinary anesthesiologist for the stated reasons which will subsequently improve animal well-being and research results.
I. There is effective evaluation and mentoring of research animal veterinarians to meet Program needs.
Fall 2016 ACUC response: Yes. Dr. [REDACTED] earned her American College of Laboratory Animal Medicine (ACLAM) board certification this summer.
J. A mechanism exists for direct and frequent communication to ensure that timely and accurate information about problems associated with animal health, behavior, and well-being information is conveyed to the veterinary staff.
Fall 2016 ACUC response: Yes. Drs [REDACTED] and [REDACTED] reiterated that the Animal Resources Center staff are very diligent in reporting animal concerns. An animal health reporting system new to the SVM program went live on October 25, 2016, and is expected to strengthen initial reporting to veterinary staff and documentation of reports.
K. Mechanisms exist to ensure appropriate veterinary participation in decisions regarding animal husbandry, preventive medicine, and experiment planning and conduct, including surgical and post-surgical care.
Fall 2016 ACUC response: Yes.
L. Veterinarians are provided with sufficient authority to carry out their duties. Direct or delegated authority is given to the veterinarians to oversee all aspects of animal care and use.
Fall 2016 ACUC response: Yes.
M. Records document provision of adequate veterinary care to all animals. Veterinarians have access to these records.
Fall 2016 ACUC response: Yes.
N. The institution monitors the effectiveness of the Veterinary Care program.
Fall 2016 ACUC response: Yes.
O. Procedures exist to identify, communicate, and correct deficiencies in the Veterinary Care program.
Fall 2016 ACUC response: Yes.
P. The veterinary program offers a high quality of care and ethical standards appropriate to the species and the program.
Fall 2016 ACUC response: Yes.
Q. Other criteria that should be used to evaluate the program of veterinary care within the animal program?
Fall 2016 ACUC response: None.

(VI). Institutional Animal Care and Use Committee (IACUC): "The responsibility of the IACUC is to oversee and routinely evaluate the program." (*Guide*, p.24). More than any other group, the IACUC is directly responsible for ensuring the adequacy of all aspects of the Program and can protect the institution's privilege to use animals in research, testing, or education.

A. The ACUC is duly constituted according to the AWA and PHS Policy, and meets as necessary to fulfill its responsibilities.
Fall 2016 ACUC response: Yes. The strength of the nonaffiliated members' participation and the benefits of having

ACUC members who have served on other ACUCs were noted.
B. The ACUC members understand the role and responsibilities of the ACUC. Fall 2016 ACUC response: Yes. The SVM ACUC benefits from having stable, dedicated, and experienced members, including its community/non-affiliated members.
C. The ACUC members receive suitable orientation, background materials, and specific training in understanding and evaluating issues brought before the committee. Training consists of a formal orientation to the institution's program; an overview of legislation, regulations, guidelines, and policies; and instruction on how to conduct protocol review, inspect facilities and labs, and evaluate the program. Committee member training includes both initial and ongoing training/education. Fall 2016 2015 ACUC response: Yes. Dr. [REDACTED] provided a report on committee training topics covered during the last six months. See also supporting report (attached). Members noted their particular appreciation for the recent training by Ms. [REDACTED] regarding closed meetings.
D. The ACUCs review and evaluate the Animal Program semiannually. Fall 2016 ACUC response: Yes.
E. The ACUCs inspect and evaluate animal activity areas semiannually, including identified animal barrier vivaria and labs where animals go for procedures, surgery areas, transport vehicles, "temporary" housing, etc. Fall 2016 ACUC response: Yes. Ms. [REDACTED] thanked members for their active participation in the inspections and provided information on the most recent inspections period, noting very few deficiencies were identified, none of which were classified as significant and none of which were "repeat" deficiencies. See also supporting report (attached).
F. The ACUCs inspect and evaluate drug storage and control programs. Fall 2016 ACUC response: Yes.
G. The ACUCs review proposed uses of animals in research, teaching and outreach (i.e., protocols), including special review requirements regarding physical restraint, multiple major surgical procedures, food or fluid restriction, and the use of pharmaceutical grade chemicals. ACUC members named in protocols or with other conflicts recuse themselves from protocol decisions. ACUC oversight of approved use continues post-approval. Fall 2016 ACUC response: Yes. Dr. [REDACTED] provided detailed information about the Veterinary Verified Change (VVC) approvals, including PI feedback about the process. See also supporting report (attached).
H. Departures from The Guide are identified, discussed, and approved by the ACUC. Fall 2016 ACUC response: Yes. Ms. [REDACTED] summarized the departures from The Guide currently approved in protocols by the SVM ACUC. See also supporting report (attached).
I. A mechanism is established for receipt and review of concerns involving the care and use of animals at the institution, including the establishment of a "Whistleblower Policy." Fall 2016 ACUC response: Yes.
J. All minority reports submitted by appointed ACUC members with voting privileges were handled in according with applicable OLAW and USDA regulations. Fall 2016 ACUC response: No such reports received in the last 6 months.
K. The ACUCs have the authority to suspend animal activities that do not comply with regulations and policies. Fall 2016 ACUC response: Yes.
L. The ACUCs submit reports to institutional officials. Fall 2016 ACUC response: Yes.
M. The ACUCs advise and make recommendations to the Institutional Official on any aspect of the Program. Fall 2016 ACUC response: Yes.
N. The institution backs the authority of the ACUCs. Fall 2016 ACUC response: Yes.
O. An effective mechanism exists for direct and frequent communication to ensure that timely and accurate information

is conveyed to the ACUC regarding problems in any Program component.
Fall 2016 ACUC response: Yes.
P. The ACUCs have adequate administrative support.
Fall 2016 ACUC response: Yes. Support provided by RARC is highly appreciated.
Q. Methods exist to monitor and maintain committee activities and effectiveness in support of the Program.
Fall 2016 ACUC response: Yes.
R. Procedures exist to identify, communicate, and correct deficiencies.
Fall 2016 ACUC response: Yes. Mr. [REDACTED] noted that in August the Animal Program Assessment Specialists began performing formal post-approval monitoring (PAM) per ACAPAC policy 2016-059. To date no SVM protocols have undergone routine PAM, and one lab in SVM is undergoing PAM for direct cause for which regular reports have been given to the ACUC.
<i>S. Other criteria that should be used to evaluate the ACUCs' role in the animal program?</i>
Fall 2016 ACUC response: None.

(VII). Institutional Official (IO): Each institution must appoint an institutional official, who legally commits the institution to meet all requirements embodied in the AWA, AWRs, and PHS Policy by ensuring that the Program satisfies all performance criteria described in the Guide. The IO has the authority to allocate the resources needed to ensure the program's overall effectiveness (*Guide*, p.13). The Institutional Official must have a working understanding of his/her role in the animal program.

A. The ACUC has not identified any deficiencies in the I.O.'s understanding of Program structure.
Fall 2016 ACUC response: True. The ACUC acknowledged the recent appointment of Dr. [REDACTED] as interim I.O. effective October 1, 2016. Dr. [REDACTED] is an experienced ACUC Chair, and understands program structure.
B. The ACUC believes the IO monitors Program functions, including IACUC activities and membership.
Fall 2016 ACUC response: Yes.
C. The ACUC has not identified any deficiencies in the administrative, financial, and legal support for the Program of Animal Care.
Fall 2016 ACUC response: True.
D. The ACUC believes the IO receives appropriate and timely communications from the ACUC and other members of the Program, and carries out appropriate follow-ups and responses.
Fall 2016 ACUC response: Yes.
E. The IO has demonstrated authority to enforce Program policies to the ACUC's satisfaction.
Fall 2016 ACUC response: Yes.
F. Annual and other reports are submitted to federal agencies in a timely manner by the IO.
Fall 2016 ACUC response: Yes.
G. Methods exist to monitor and evaluate the effectiveness of the IO.
Fall 2016 ACUC response: Yes.
<i>H. Other criteria that should be used to evaluate the IOs' role in the animal program?</i>
Fall 2016 ACUC response: The SVM ACUC has found it very beneficial to have the I.O. attend at least one regular meetings each year, and will request that Dr. [REDACTED] continue this practice.

Sections VIII and IX of this Worksheet are designed for internal self-evaluation purposes only. The institution is not obligated to communicate the findings of these sections to USDA, OLAW, or AAALAC unless those findings identify a program deficiency considered reportable by those agencies.

(VIII). Program Integration. For the Program to be effective, all Program components must function well together.

A. There is a cadre of individuals with expertise and understanding regarding Program components who can evaluate Program adequacy.
Fall 2016 ACUC response: Yes.
B. There is strong and well-informed administrative coordination of efforts to support the Program.
Fall 2016 ACUC response: Yes.
C. The ACUC believes that within its school/college Program there is effective and timely communication among veterinarians, principal investigators, the Committee, and the school/college administration so that each of these groups can carry out its designated responsibilities.
Fall 2016 ACUC response: Yes.
D. The ACUC believes that campus-wide there is effective and timely communication among Program administration, veterinarians, principal investigators, the Committee, and the Institutional Official (IO) so that each of these groups can carry out its designated responsibilities.
Fall 2016 ACUC response: Yes.
E. There are sufficient financial, physical, procedural, and human resources to meet Program requirements.
Fall 2016 ACUC response: Yes. The value of having a boarded veterinary anesthesiologist for all campus programs was restated. The committee discussed potential risks to animal welfare and research quality of not being able to pay entry-level ARTs and clinical technicians higher wages or offer opportunities for advancement. It was noted that this is a challenge across campus, but within SVM Mr. [REDACTED] maximizes the resources available to him to support ARTs.
F. There is school/college-wide recognition of the need for and practice of compliance; that is, all Program personnel and participants accept that they must follow the rules.
Fall 2016 ACUC response: Yes. It was suggested that Dr. [REDACTED] continue the tradition begun by former chair Dr. [REDACTED] to present ACUC-specific information at SVM faculty meetings, and she agreed to do so.
G. Methods exist to monitor program integration to ensure that all Program elements function well together.
Fall 2016 ACUC response: Yes. The ACUC reiterated examples of integration between the SVM and other campus animal programs, such as the adoption of the animal health reporting system (SMPH), and the shared use of sheep for teaching activities and lambing assistance provided by members of the veterinary student club (CALS).
H. Procedures exist to identify, communicate, and correct deficiencies in program integration.
Fall 2016 ACUC response: Yes.
I. Other criteria that should be used to evaluate integration of the animal program?
Fall 2016 ACUC response: None.

(IX). Support of the Institutional Mission: The Program must support and enhance the institution's mission in the areas of research, teaching, and outreach that involve living vertebrate animals. Evaluation of the Program must consider whether and how well it fulfills its reason for existence.

A. The animal care program supports research, teaching, and outreach activities that involve animals.
Fall 2016 ACUC response: Yes.
B. The animal care program enhances research, teaching, and outreach activities that involve animals.
Fall 2016 ACUC response: Yes.
C. Methods exist to monitor and maintain the effectiveness of the program.
Fall 2016 ACUC response: Yes.
D. Other criteria that should be used to evaluate the efficiency and efficacy of animal program in fulfilling its mission?
Fall 2016 ACUC response: None.

**UW-Madison Animal Care and Use Semi-Annual Program Review
Fall 2016 SVM
ACUC III. Personnel Qualifications and Training**

RARC Training courses (May 1, 2016 – Present)

- UW research personnel accessed courses 2119 times
- SVM research personnel accessed courses 227 times
 - o 62 Animal User Orientation
 - Revision
 - o 16 Lab Animal Surgery Course
 - o 88 Species Specific Courses
 - Online module/hands on training
 - 30: Mouse and Rat
 - 58: Cat, Dog, Horse, Cattle, Primate, Rabbit, Poultry, Chinchilla, Reptile, Squirrel, Bat, Ferret, Goat, Sheep, Swine, Vole, Zebrafish
 - o 61: Anesthesia, Medical Records, Aseptic Technique, Anesthesia Machine User Guide, Controlled Substances, Nonsurvival Surgery, Transportation, Microisolator Technique, Working with Wildlife

Waivers

- Approval granted from Dr. [REDACTED] ACUC
- 16 SVM waivers granted out of 19 total waivers campus wide
 - o 5 Surgery, 4 Dog, 3 Cat, 3 Horse, 1 Chinchilla

Revocations

- Trainers follow up with each individual
 - o If no resolution, then follow up with PI
 - o If still no resolution, report to Dr. [REDACTED]
 - o Last resort, report to ACUC
- To date 7 SVM individuals revoked out of 36 total campus wide

SVM Specific

- [REDACTED] onboarding
- Rat cadavers to Dr. [REDACTED] for dental and surgery courses

Outreach

- Campus Visitor's Program
 - o middle schools and high schools
- Wisconsin Science Festival
- Madison College Veterinary Technician Program

Other Training Updates

- Animal behavior and training: horses, swine, rats, kittens
- ART Training and tracking



**University Health Services Environmental and Occupational Health
Summary Animal Contact Risk Questionnaire (ACRQ) Status
October 25, 2016**

Compliance with ACRQ

As of October 19 2016 the compliance rate was 95% with 3998 enrolled. The average compliance rate from April to October was 94%.

Impacts to compliance rate

- As noted in the last report, UHS provides a monthly list to RARC of those non-compliant. The monthly rate of those due to submit the annual ACRQ requiring message from RARC has been 9-23%.
- UHS continues to message supervisor and/or department administrator/chair and enrollee (as identified either by RARC or previous ACRQ submission) as a final step prior to providing the non-compliant list to RARC.
- UHS continues to identify and enroll those that are not listed on a protocol, eg. Courses and recently SVM hospital care staff.
- Second and third reminders to submit annual ACRQ for October were delayed due to the meningitis mass vaccination effort. Messages will commence again on October 26th.

Improvements in the process

- Based on feedback provided, the "sender" from UHS was changed to Environmental Occupational Health rather than GM Environmental Occupational Health.
- MyUHS log-in page and UHS messages were updated to include: DO NOT open multiple MyUHS tabs. Doing so will cause unexpected errors.
- Clarification to questions on the ACRQ, including an option to schedule an appointment in lieu of listing medications.
- An obvious notice (pop-up box with number of errors) when the questionnaire submission is not complete due to errors or omissions on the form.
- Coming very soon! UHS has been working with the VCGRE office and RARC to upload ACRQ compliance data into the PI portal.

Obstacles encountered by submitters beyond MyUHS:

- Messages going to Clutter box (<https://kb.wisc.edu/wiscaccountadmin/page.php?id=33784>).
- UHS policy as reviewed by UW Madison legal does not allow messages to go to gmail, yahoo or other private accounts.

UHS continues to work with the software vendor for improvements:

- Upon initial access to MyUHS, a list of Forms to be completed will be presented.
- Recall of previous ACRQ submission.
- UHS continues to work with the vendor on a weekly basis and expects additional enhancements in another upgrade expected later in 2016.

608.890.1992 | uhs.wisc.edu/eoh

SVM ACUC Fall 2016 Protocol Review Statistics

Number of Protocols Reviewed and Approved in the six-month period preceding program review
(4/13/2016 - 10/13/2016)

	Spring 2015	Fall 2015	Spring 2016	Fall 2016
New/Renewals	23	27	25	36
Amendments	30	51	36	45*
Total	53	78	61	81

Turn-around time (in Days) for Protocols Reviewed and Approved during this period

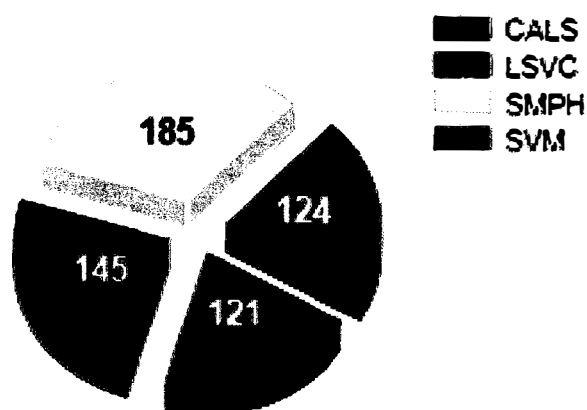
New or Renewals	Spring 2015	Fall 2015	Spring 2016	Fall 2016
Mean	21.9	20.3	29.2	20.9
Median	15	19	26	17
Range	7-65	6-45	10-68	6-55

Amendments	Spring 2015	Fall 2015	Spring 2016	Fall* 2016
Mean	18.8	18.9	15.6	15.4
Median	15	14	13.5	9
Range	2-57	0-130	0-60	0-69

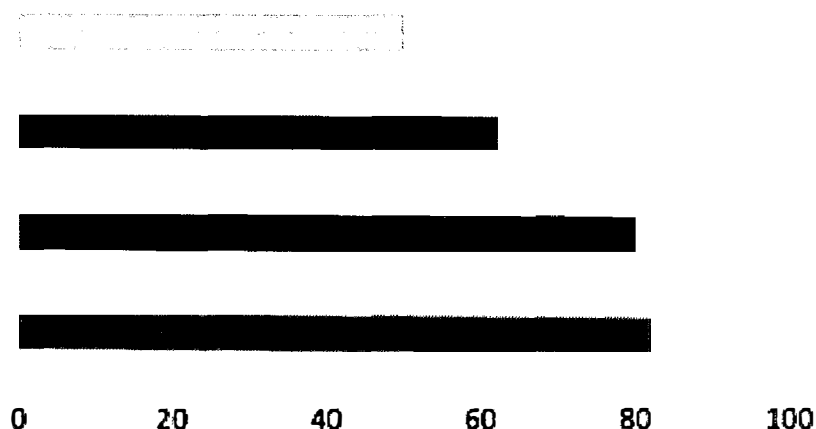
*Includes amendments approved through Veterinary Verification and Consultation (VVC) in which the changes may be implemented immediately after vet consultation. One third of the SVM amendments approved this cycle were via this process (see below).

Campus-wide ARROW Statistics

Protocols by Committee



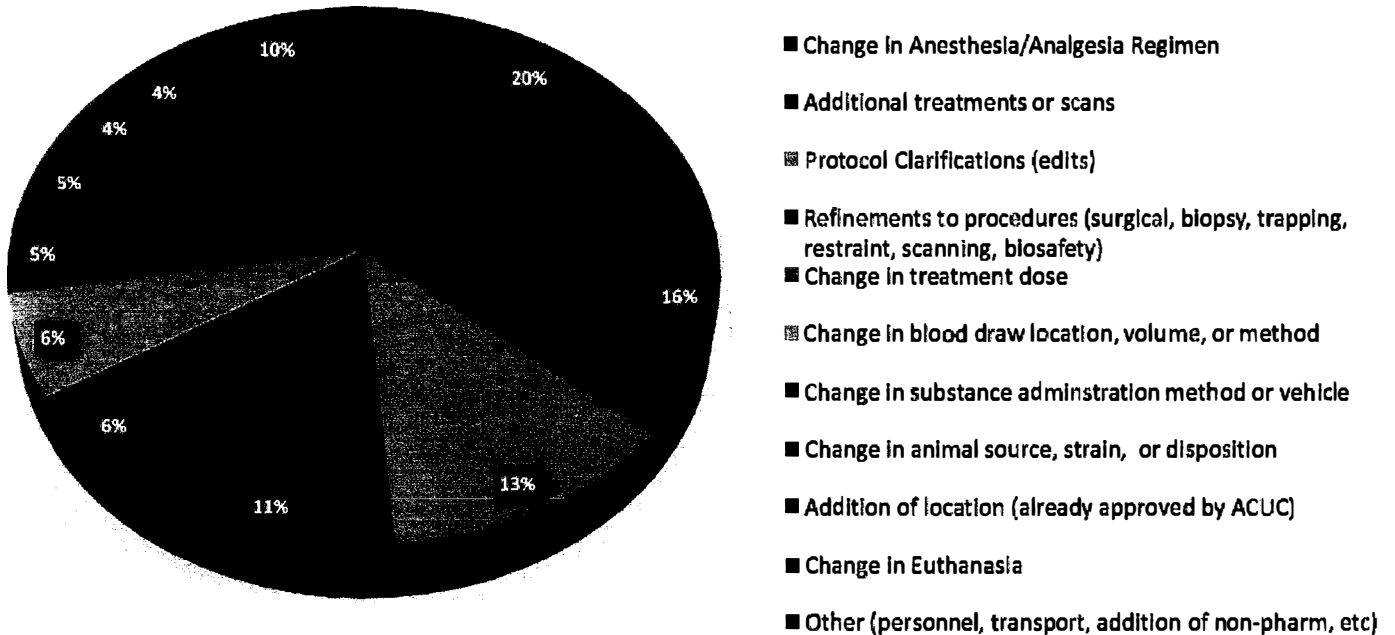
Percent of Active Protocols in ARROW



Campus-Wide VVC Summary

In the first six months since VVC was enacted, sixty protocols were modified by this means.

Types of changes approved by VVC.



Feedback from PIs on VVC

I thought the VVC was great. It was extremely rapid and allowed us to move forward in a timely fashion.

I think this is awesome for the PI. As a veterinarian and a PI, this has helped me tremendously a couple of times. It helped continue a time-sensitive study by allowing me to simply add another dose of drug instead of having to completely stop and wait for an amendment. It also allowed me to start organizing a study quickly because all I had to do is add a single acupuncture point to a protocol that had other points already in it. I have found the VVC to be wonderful. However, I worry that the vets will be overwhelmed :(

This program allowed us to follow-up on a newly observed phenomenon in a time-sensitive project. Without this program, this opportunity to characterize a finding of potentially significant clinical importance may have been lost.

During a protocol-approved experimental procedure, we observed a new phenomenon of potentially great value to anesthesiology and coma treatment. If we were to characterize this phenomenon in the remaining experiments of the series (after which the neural recording equipment would be repositioned/removed), we would need to make an adjustment to the procedure. The VVC program allowed us adjust the procedure as required in time for the next experiment date, and we have since reliably reproduced the phenomenon. Consultations with the veterinary staff at the WNPRC throughout the entire timeline of these events was very valuable. Had the VVC program not existed, it is unlikely that the usual protocol amendment process would have been completed in time to allow the necessary procedural adjustment and thus we may not have been able to determine the important factors giving rise to our finding.

This was very useful for me when I wanted to add additional biosafety information to my protocol (sign, MSDS, SOP etc). The study itself had already been approved, but as we met with animal care staff, I realized that I wanted them to have access to these materials. The expedited process was much easier than a full amendment.

This is an excellent policy and allowed us to begin and finish a study without delay. I found it to significantly enhance our ability to conduct research and do so while trained individuals were around at the right time and we spent less time training individuals to conduct the behavioral studies.

I used VVC to amend my protocol. It saved me a lot of time, was efficient, and was very helpful.

Committee Training
May, 2016-November, 2016

Committee Training at Monthly Meetings

May: ARROW Power User Tips

June-July: Viewing differences in protocols submitted in ARROW

July-August: How to inspect for Expired Materials

Aug.-Sept: ASHER Document

Aug-Oct: How to Decide Full Committee versus Designated Review

Oct-Nov: Legal advice on what should be reviewed in Closed Session [REDACTED]

Web Seminars*

May, 2016: Meet the New Head of APHIS Animal Care (NABR)

June 9, 2016: Balancing Public Interests, Benefits, and Risks in Animal Research by [REDACTED]
(OLAW)

July 19, 2016: Q&A with the USDA: The Next Generation (NABR)

September 8, 2016: Implementing Guidance on Significant Changes: One Institution's Experience (OLAW-no group viewing)

*Web Seminars are generally available in a recorded format for viewing at your convenience if you were unable to make the group event.



SVM ACUC Fall 2016 Program Review Report on Semi-Annual Inspections

Number of Inspections

Regularly Scheduled = 10

Hours Spent by Voting Members on Regularly Scheduled Inspections

~28 hours

Number of Rooms Inspected

Total = 309: Vivarium spaces = 267, Laboratory spaces = 42

Minor Deficiencies

Expired Items: 4 instances total, same as Spring 2016. These are further broken down into following categories:

- 0 instances of expired Anesthesia, Analgesia or Euthanasia drug.

- 2 instances of expired feed

- 1 instance of expired disinfectant

- 1 instance of expired OTC drugs in human first-aid kit

Animal Care & Safety: 0 instance, down from 1 in Spring 2016

Human Safety: 0 instances, down from 3 Spring 2016

Housekeeping/General: 6 instances, up from 3 in Spring 2016

- 2 instances of cardboard on the floor

- 3 instances of cloth chairs in procedure spaces

- 1 instance of brooms stored on the floor

General notes: [REDACTED] facility was decommissioned.

No Significant Deficiencies noted.

No overdue corrects as of 20Oct16.

DEPARTURES

As of October 17, 2016, the SVM ACUC animal program currently has the following departures from the Guide approved in protocols (out of 155 approved protocols total, 124 ARROW and 31 non-ARROW):

- 27 protocols (3 approved in the last six months) approved for housing animals individually for experimental or veterinary reasons:
 - to prevent conspecifics from damaging wound beds or bandaging
 - to collect food intake and fecal output from individual study animals
 - to mimic natural conditions of wild-caught hibernating animals
 - conditions described in the ASHER document (ACAPAC Policy 2011-042)
- 13 protocols (2 approved in the last six months) that involve restraint for more than one hour for the following reasons:
 - use of restraint tube to ensure stillness during CT scan
 - use of barometric plethysograph to record breathing capacity
 - manual restraint of calves during ultrasonography and respiratory scoring
- 15 protocols (2 approved in the last six months) that involve food or fluid restriction for the following reasons:
 - to encourage rats to hunt and ingest beetles injected with *Hymenolepis diminuta* for study purposes
 - fasting prior to blood collection for metabolomic analyses
 - restricting diets to reduce obesity in ground squirrel pups prior to hibernation
- 38 protocols (6 approved in the last six months) that use non-pharmaceutical grade compounds for the following reasons:
 - no pharmaceutical-grade formulation is available
 - an equivalent veterinary or human drug is available for experimental use but the chemical-grade reagent is required to replicate methods from previous studies because results are directly compared to those of replicated studies
 - the equivalent veterinary or human drug is not available in the concentration or formulation appropriate to meet experimental requirements
 - the available human or veterinary drug does not meet the nontoxic vehicle requirements for the specified route of injection or for the proposed research species

Spring 2016 program review data for comparison:

- 20 protocols approved for housing animals individually for experimental or veterinary reasons
- 13 protocols that involve restraint for more than one hour
- 16 protocols that involve food or fluid regulation
- 39 protocols use non-pharmaceutical grade compounds

		Air Handling Unit and Exhaust Fan Description and System Redundancy	Air Handling Unit Filter Rating	Constant Volume Manually Balanced System	Pressure Independent Air Supply and Exhaust Terminals	Reheat	Reheat Control Valve Failure Position Open/Closed/Last	Central Air Handling Unit Humidification	Local Humidification	Room Pressure Balanced by Supply/Exhaust Volume Offset	Room Pressure Indicator Device			DDC Control with Electric Actuation	DDC control with Pneumatics	Pneumatic Control				Emergency Power supplies /Vivarium Mechanical/Electrical Systems
										Magnetohelic Gauge	Ball in Tube	Digital Display					Room Temperature	Room Humidity	AHU Airflow Failure	
		1																		
		2																		
		3																		
		4	MERV 8	Yes	No	Yes		Yes	No	Yes	10	No	No							
		5	MERV 8	No	Yes	Yes		Yes	No	Yes	No	No	No							
		6	MERV 8	Yes	No	Yes		Yes	No	Yes	No	No	9							
		7	MERV 8	Yes	No	Yes		Yes	No	Yes	8	No	No							

NOTES:	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

AAALAC CERTIFICATION DATA LEGEND

AIRFLOW MEASUREMENT TEST EQUIPMENT USED:

Shortridge ADM-860,870 or 880C used with the following accessories:

- A. pitot tube
- B. velgrid
- C. airfoil
- D. 14"x14" airflow hood, short skirt
- E. 12"x48" airflow hood
- F. 5 ¼" x 47" airflow hood
- G. 24"x24" airflow hood
- H. 36"x36" airflow hood
- I. 24"x48" airflow hood
- J. 14"x14" airflow hood, long skirt
- K. 10"x18"x30" airflow hood
- L. 36"x12" airflow hood
- U. Unknown

AIR FILTER TYPES:

- M. pleated filters
- N. rolled filters
- O. bag filters
- P. HEPA filters
- Q. TA filters
- R. washable metal filters
- S. varicell filters
- T. cartridge filters

HUMIDITY CONTROL:

- W. system humidification
- X. room humidification
- Y. system humidification and room humidification
- Z. branch humidification

2017 AAALAC CERTIFICATION DATA

¹ Rm [REDACTED] is BSL-3 Lab. Requires special protocol to enter.



THE UNIVERSITY
of
WISCONSIN
MADISON

2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

ROOM NO.	ROOM USAGE	ROOM VOLUME (FT^3)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	recovery	19964	100% OA	M	G	positive	4313	13.0	0.093	W	06/13/17
[REDACTED]	surgery	21168	100% OA	M	G ¹	positive	4023	11.4	0.129	W	06/13/17
[REDACTED]	clean cagewash	2828	100% OA	M	G	positive	875	18.6	0.054	W	06/13/17
[REDACTED]	dirty cagewash	3820	100% OA	M	G	negative	415	6.5	-0.038	W	06/13/17
[REDACTED]	animal	511	100% OA	M	G	negative	224	26.3	-0.023	W	06/13/17
[REDACTED]	animal	511	100% OA	M	G	negative	248	29.1	-0.007	W	06/13/17
[REDACTED]	animal	3418	100% OA	M	G	negative	683	12.0	-0.008	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	272	26.6	-0.003	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	163	16.0	-0.003	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	186	18.2	-0.0015	W	06/13/17
[REDACTED]	animal	3418	100% OA	M	G	negative	586	10.3	-0.030	W	06/13/17
[REDACTED]	storage	613	100% OA	M	G	negative	198	19.4	-0.001	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	174	17.0	-0.036	W	06/13/17
[REDACTED]	animal	3418	100% OA	M	G	negative	755	13.3	-0.035	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	183	17.9	-0.006	W	06/13/17
[REDACTED]	storage	613	100% OA	M	G	positive	309	30.2	0.052	W	06/13/17
[REDACTED]	storage	806	100% OA	M	G	negative	205	15.3	-0.002	W	06/13/17
[REDACTED]	animal	3418	100% OA	M	G	negative	670	11.8	-0.042	W	06/13/17
[REDACTED]	storage	1618	100% OA	M	G	positive	363	13.5	0.0014	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	219	21.4	-0.016	W	06/13/17
[REDACTED]	procedure	1577	100% OA	M	G	negative	451	17.2	-0.003	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	210	20.6	-0.008	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	199	19.5	-0.008	W	06/13/17
[REDACTED]	animal	912	100% OA	M	G	negative	218	14.3	-0.004	W	06/13/17
[REDACTED]	animal	912	100% OA	M	G	negative	192	12.6	-0.0012	W	06/13/17
[REDACTED]	animal	456	100% OA	M	G	negative	115	15.1	-0.001	W	06/13/17
[REDACTED]	animal	456	100% OA	M	G	negative	121	15.9	-0.001	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	199	19.5	-0.008	W	06/13/17
[REDACTED]	storage	613	100% OA	M	G	positive	214	20.9	-0.001	W	06/13/17
[REDACTED]	animal	456	100% OA	M	G	negative	96	12.6	-0.002	W	06/13/17

¹ Remove deflector @ SA Register for Flowhood reading.



2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

ROOM NO.	ROOM USAGE	ROOM VOLUME (FT^3)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	animal	456	100% OA	M	G	negative	116	15.3	-0.004	W	06/13/17
[REDACTED]	animal	926	100% OA	M	G	negative	172	11.1	-0.001	W	06/13/17
[REDACTED]	animal	926	100% OA	M	G	negative	160	10.4	-0.001	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	355	34.7	-0.091	W	06/13/17
[REDACTED]	animal	613	100% OA	M	G	negative	181	17.7	-0.030	W	06/13/17
[REDACTED]	procedure	613	100% OA	M	G	negative	125	12.2	-0.024	W	06/13/17
[REDACTED]	animal	3359	100% OA	M	G	negative	1104	19.7	-0.020	W	06/13/17
[REDACTED]	animal	3176	100% OA	M	G	negative	985	18.6	-0.078	W	06/13/17
[REDACTED]	animal	3176	100% OA	M	G	negative	846	16.0	-0.015	W	06/13/17
[REDACTED]	animal	3176	100% OA	M	G	negative	906	17.1	-0.072	W	06/13/17
[REDACTED]	storage	926	100% OA	M	G	positive	170	11.0	0.0005	W	06/13/17
[REDACTED]	procedure	1008	100% OA	M	G	negative	301	17.9	0.004	W	06/13/17
[REDACTED]	animal	1103	100% OA	M	G	negative	255	13.9	-0.010	W	06/13/17
[REDACTED]	procedure	1288	100% OA	M	G	positive	305	14.2	0.002	W	06/13/17
[REDACTED]	surgery	964	100% OA	M	G	positive	295	18.4	0.030	W	06/13/17
[REDACTED]	animal	1129	100% OA	M	G	negative	277	14.7	-0.001	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	235	12.6	-0.005	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	266	14.1	-0.009	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	304	16.3	-0.008	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	379	20.1	-0.025	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	329	17.6	-0.002	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	262	13.9	-0.019	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	323	17.3	-0.005	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	330	17.5	-0.003	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	301	16.1	-0.034	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	302	16.0	-0.007	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	413	22.1	-0.064	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	454	24.0	-0.095	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	510	27.3	-0.155	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	519	27.5	-0.216	W	06/13/17



2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

ROOM NO.	ROOM USAGE	ROOM VOLUME (FT^3)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	animal	1120	100% OA	M	G	negative	395	21.2	-0.085	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	312	16.5	-0.110	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	418	22.4	-0.068	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	340	18.0	-0.106	W	06/13/17
[REDACTED]	animal	1120	100% OA	M	G	negative	359	19.2	-0.052	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	354	18.7	-0.054	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	265	14.0	-0.046	W	06/13/17
[REDACTED]	animal	1166	100% OA	M	G	negative	209	10.8	-0.090	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	271	14.2	-0.027	W	06/13/17
[REDACTED]	animal	2338	100% OA	M	G	negative	542	13.9	-0.061	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	420	22.0	-0.121	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	374	19.6	-0.050	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	339	17.8	-0.057	W	06/13/17
[REDACTED]	animal	2238	100% OA	M	G	negative	706	18.9	-0.180	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	396	20.8	-0.119	W	06/13/17
[REDACTED]	animal	1134	100% OA	M	G	negative	453	24.0	-0.223	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	369	19.3	-0.061	W	06/13/17
[REDACTED]	storage	1129	100% OA	M	G	positive	273	14.5	0.015	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	291	15.2	-0.063	W	06/13/17
[REDACTED]	animal	2338	100% OA	M	G	negative	663	17.0	-0.080	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	293	15.4	-0.004	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	458	24.0	-0.033	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	338	17.7	-0.002	W	06/13/17
[REDACTED]	animal	2338	100% OA	M	G	negative	731	18.8	-0.138	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	286	15.0	-0.004	W	06/13/17
[REDACTED]	animal	2322	100% OA	M	G	negative	673	17.4	-0.096	W	06/13/17
[REDACTED]	animal	1145	100% OA	M	G	negative	304	15.9	-0.127	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	410	22.8	-0.036	W	06/13/17
[REDACTED]	storage	862	100%OA	M	G	negative	604	42.0	-0.100	W	06/13/17



2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

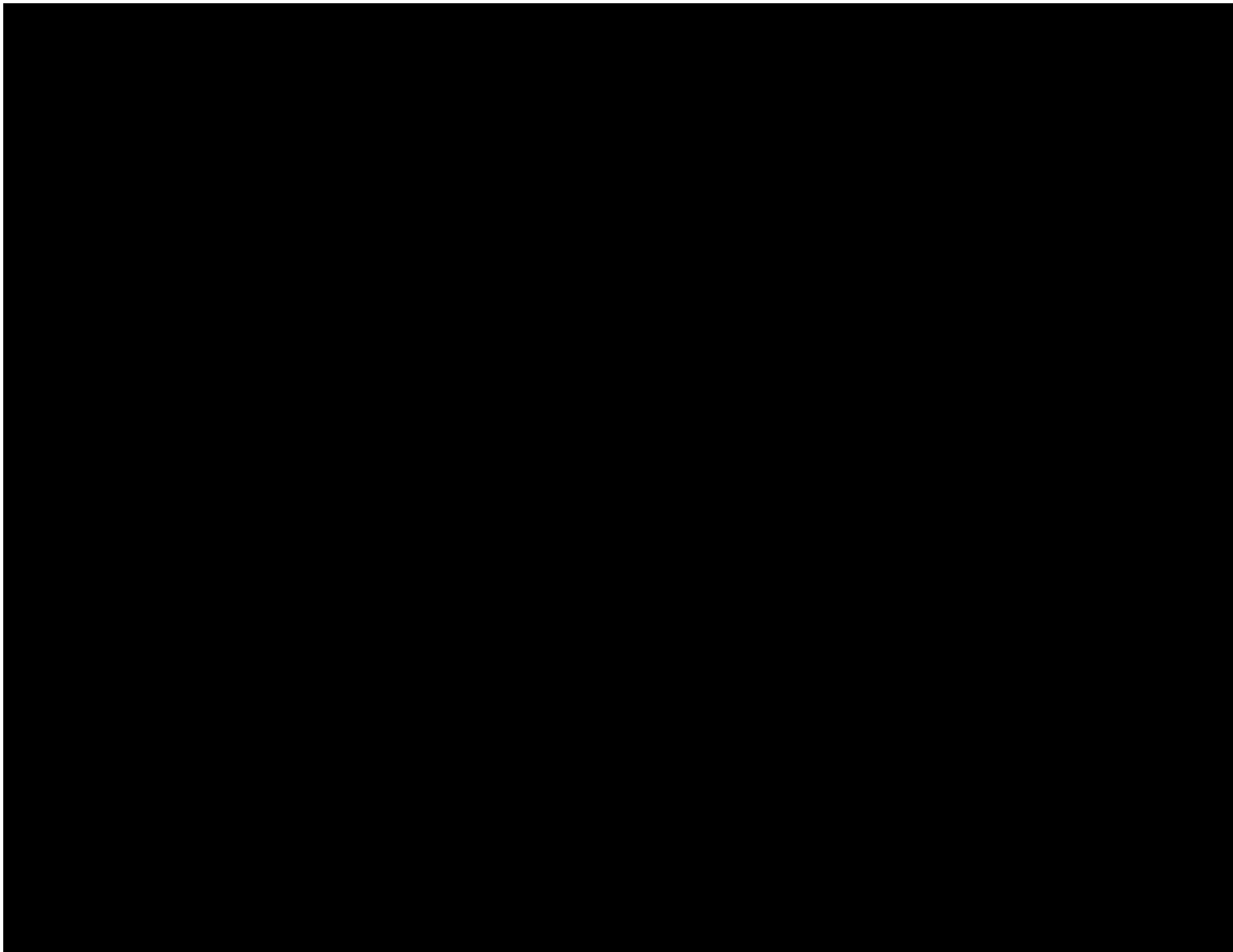
ROOM NO.	ROOM USAGE	ROOM VOLUME (FT^3)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	animal	1081	100% OA	M	G	negative	475	26.4	-0.052	W	06/13/17
[REDACTED]	animal	862	100% OA	M	G	negative	378	26.3	-0.047	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	434	24.1	-0.042	W	06/13/17
[REDACTED]	animal	862	100% OA	M	G	negative	290	20.2	-0.022	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	544	30.2	-0.074	W	06/13/17
[REDACTED]	animal	862	100% OA	M	G	negative	376	26.2	-0.042	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	375	20.8	-0.030	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	446	24.8	-0.051	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	449	24.9	-0.040	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	404	22.4	-0.039	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	388	21.5	-0.017	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	420	23.3	-0.029	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	406	22.5	-0.037	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	423	23.5	-0.021	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	336	18.6	-0.025	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	339	18.8	-0.041	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	350	19.4	-0.035	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	384	21.3	-0.033	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	297	16.5	-0.037	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	272	15.1	-0.038	W	06/13/17
[REDACTED]	necropsy	3427	100% OA	M	G	negative	575	10.1	-0.008	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	391	21.7	-0.033	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	452	25.1	-0.036	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	581	32.2	-0.051	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	430	23.9	-0.031	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	517	28.7	-0.031	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	313	17.4	-0.032	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	429	23.8	-0.029	W	06/13/17
[REDACTED]	animal	1081	100% OA	M	G	negative	417	23.1	-0.079	W	06/13/17



2017 AAALAC CERTIFICATION DATA

Bldg. No.

[illegible]



[REDACTED]
[REDACTED]
[REDACTED]



THE UNIVERSITY
of
WISCONSIN
MADISON

2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

ROOM NO.	ROOM USAGE	ROOM VOLUME (FT ³)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	animal	1408	100%OA	Q&M	G	negative	312	13.3	-0.0127	Y	06/23/17
[REDACTED]	animal	816	100%OA	Q&M	G	negative	318	23.4	-0.0040	Y	06/23/17
[REDACTED]	lab/demo	50652	100%OA	Q&M	A	negative	15114	17.9	-.0005	Y	06/23/17
[REDACTED]	animal	7837	100%OA	Q&M	G	negative	1738	13.3	-.0011	Y	06/23/17
[REDACTED]	procedure	1528	100% OA	Q&M	G	negative	298	11.7	-0.0004	Y	06/23/17
[REDACTED]	storage	2176	100%OA	Q&M	G	positive	401	11.1	.0427	Y	06/23/17
[REDACTED]	animal	4153	100%OA	Q&M	G	negative	1174	17.0	-.1145	Y	06/23/17
[REDACTED]	animal	4153	100%OA	Q&M	G	negative	935	13.5	-.0358	Y	06/23/17
[REDACTED]	animal	2238	100%OA	Q&M	G	negative	493	13.2	-.0244	Y	06/23/17
[REDACTED]	animal	317	100%OA	Q&M	G	negative	130	24.6	-.0119	Y	06/23/17
[REDACTED]	animal	472	100%OA	Q&M	G	negative	253	32.2	-.0363	Y	06/23/17
[REDACTED]	animal	472	100%OA	Q&M	G	negative	200	25.4	-.0336	Y	06/23/17
[REDACTED]	animal	472	100%OA	Q&M	G	negative	186	23.6	-.0012	Y	06/23/17
[REDACTED]	animal	1023	100%OA	Q&M	G	negative	633	37.1	-.033	Y	06/23/17
[REDACTED]	animal	1047	100%OA	Q&M	G	negative	598	34.3	-.1513	Y	06/23/17
[REDACTED]	animal	1047	100%OA	Q&M	G	negative	513	29.4	-.1513	Y	06/23/17
[REDACTED]	animal	1047	100%OA	Q&M	G	negative	527	30.2	-.1516	Y	06/23/17
[REDACTED]	animal	1023	100%OA	Q&M	G	negative	492	28.9	-.1148	Y	06/23/17
[REDACTED]	animal	1023	100%OA	Q&M	G	negative	608	35.7	-.1012	Y	06/23/17
[REDACTED]	animal	600	100%OA	Q&M	G	negative	126	12.6	-.0017	Y	06/23/17
[REDACTED]	animal	768	100%OA	Q&M	G	negative	226	17.7	-.0091	Y	06/23/17
[REDACTED]	animal	595	100%OA	Q&M	G	negative	148	14.9	-.002	Y	06/23/17
[REDACTED]	animal	450	100%OA	Q&M	G	negative	103	13.7	-.0196	Y	06/23/17
[REDACTED]	animal	485	100%OA	Q&M	G	negative	173	21.4	-.0044	Y	06/23/17
[REDACTED]	animal	450	100%OA	Q&M	G	negative	95	12.7	-.0013	Y	06/23/17
[REDACTED]	animal	584	100%OA	Q&M	G	negative	142	14.6	-.003	Y	06/23/17
[REDACTED]	animal	445	100%OA	Q&M	G	negative	249	33.6	-.0661	Y	06/23/17
[REDACTED]	animal	470	100%OA	Q&M	G	negative	118	15.1	-.0078	Y	06/23/17
[REDACTED]	animal	598	100%OA	Q&M	G	negative	155	15.6	-.0014	Y	06/23/17
[REDACTED]	animal	598	100%OA	Q&M	G	negative	144	14.4	-.0032	Y	06/23/17
[REDACTED]	animal	598	100%OA	Q&M	G	negative	183	18.4	-.0082	Y	06/23/17



2017 AAALAC CERTIFICATION DATA

Bldg. No. [REDACTED]

ROOM NO.	ROOM USAGE	ROOM VOLUME (FT^3)	AIR SUPPLY	AIR FILTER TYPE	TEST EQUIPMENT USED	DESIGN ROOM PRESSURE	MEASURED AIRFLOW SA (CFM) EX	AIR CHANGES (AC/HR)	STATIC PRESSURE (IN. W.C.)	HUMIDITY CONTROL	DATE ASSESSED
[REDACTED]	clean cagewash	2160	100%OA	Q&M	G	positive	561	15.6	.0185	Y	06/23/17
[REDACTED]	dirty cagewash	2160	100%OA	Q&M	G	negative	511	14.2	-0.0003 (1)	Y	06/23/17
[REDACTED]	animal	3200	100%OA	Q&M	G	negative	618	11.6	-0.0006	Y	06/23/17
[REDACTED]	anesthetic	1580	100% OA	Q&M	G	negative	398	15.1	-0.0006	Y	06/23/17
[REDACTED]	surgery prep	1411	100% OA	Q&M	G	negative	303	12.9	-0.0005	Y	06/23/17
[REDACTED]	surgery	1807	100% OA	Q&M	G	positive	414	13.7	0.0008	Y	06/23/17
[REDACTED]	surgery	2221	100% OA	Q&M	G	positive	403	10.9	0.0039	Y	06/23/17
[REDACTED]	animal	3200	100% OA	Q&M	A	negative	625	11.7	-0.0003	Y	06/23/17
[REDACTED]	animal	1493	100% OA	Q&M	A	negative	277	11.1	-0.0003	Y	06/23/17
[REDACTED]	animal	3240	100% OA	Q&M	G	negative	580	10.7	-0.0002	Y	06/23/17
[REDACTED]	animal	1488	100% OA	Q&M	G	negative	270	10.9	-0.0005	Y	06/23/17
[REDACTED]	animal	1600	100% OA	Q&M	G	negative	284	10.7	-0.0006	Y	06/23/17
[REDACTED]	animal	3452	100% OA	Q&M	A	negative	597	10.4	-0.0001	Y	06/23/17
[REDACTED]	animal	1600	100% OA	Q&M	G	negative	272	10.2	-0.0005	Y	06/23/17
[REDACTED]	animal	3200	100% OA	Q&M	A	negative	557	10.4	-.0005	Y	06/23/17
[REDACTED]	animal	3159	100% OA	Q&M	G	negative	552	10.5	-0.0002	Y	06/23/17
[REDACTED]	animal	1528	100% OA	Q&M	G	negative	480	18.8	-0.0756	Y	06/23/17
[REDACTED]	animal	1528	100% OA	Q&M	G	negative	444	17.4	-0.0561	Y	06/23/17
Large Animal thru [REDACTED]	animal	198594	100% OA	Q&M	A	negative	36417	11.0	-.0002	Y	06/23/17

Large Animal Holding ACH based on EF-1,EF-2 and EF-36 Totals.

(1) [REDACTED] Dirty Cage Wash -.0003 with Clean Side door open.

Appendix 11

Aquatic Systems Summary* – Part I

Please summarize water management and monitoring information programs for each animal facility, including all satellite facilities/rooms/enclosures. The following key will assist you in completing the form:

- (1) List location of aquaria, including outdoor enclosures (ponds or outdoor tanks). If indoors, list building and room number. Note that all species housed at the same location and maintained via the same design and monitoring may be listed in the same row.
- (2) Please indicate if embryonic (E), larval (L), juvenile (J) or Adult (A)
- (3) Group tanks (ponds, outdoor tanks, multiple aquaria) are arranged as arrays with shared water supply; individual aquaria have exclusive water handling systems.
- (4) Indicate water type, e.g., fresh, brackish, or marine.
- (5) Indicate water circulation, e.g., static, re-circulated, constant flow, or some combination of these. If applicable, indicate water exchange frequency and amount (percentage).
- (6) Provide a key word for filtration employed, e.g., biological, chemical, mechanical, etc. and type (e.g., mechanical-bead filter). A diagram may be provided showing the flow of water, filtration, source of “make-up” water and amount replaced daily.

Part I

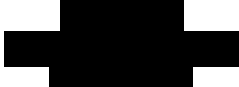
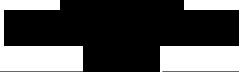
Location (1)	Species (2)	System Design					
		Group / Individual (3)	Water Type (4)	Pre-treatment	Circulation (5)	Filtration (6)	Disinfection (e.g., UV, ozone)
	Turtle	Individual	Fresh	De-chlorinated	Re-circulated	Mechanically filtered	NA
	Xenopus	Individual	Fresh	De-chlorinated	Static	N/A	N/A

*Records of equipment maintenance (filter changes, UV bulb changes, probe changes, calibrations, etc.) should be available for review.

Appendix 11

Aquatic Systems Summary – Part II

Part II

Monitoring <i>Indicate in the boxes below the frequency of monitoring and method of control for the following parameters. (1)</i>									
Location (from Part I)	Temperature	Salinity	pH	NH ₄	NO ₂	NO ₃	Dissolved O ₂	Total Dissolved gases	Other. Please List (2):
	Daily, controlled by heater	NA	Weekly	Weekly	Weekly	NA	NA	NA	Chlorine, Monthly
	Daily	NA	Weekly	Weekly	Weekly	NA	NA	NA	Chlorine, Monthly

(1) In these columns, please indicate monitoring frequency, e.g. daily, weekly, monthly or other point sampling frequency; continuous/real time, or none, if applicable. Also indicate method of control (heaters versus room HVAC, hand versus auto dosing, etc.).

(2) Indicate other parameters and their monitoring frequency, e.g., alkalinity, total hardness, conductivity, chlorine/chloramine, etc.

This information may be provided in another format, provided that all requested data is included.

Appendix 12

Primary Enclosures and Animal Space Provisions

Please complete the table below considering performance criteria and guiding documents (e.g. Guide, Ag Guide, ETS 123 and/or other applicable standards) used by the IACUC/OB to establish adequacy of space provided for all research animals including traditional laboratory species, agricultural animals, aquatic species and wildlife when reviewing biomedical, field and agricultural research studies.

Species	Dimensions of Enclosure (cage, pen, tank*, corral, paddock, etc.)	Maximum Number Animals/Enclosure	Guiding Document Used to determine the Institution's Space Standards (Guide, Ag Guide, ETS 123, Other)	Enclosure Composition & Description**
Horse	<div>8 stalls – 137-148 ft²</div> <div>3 stalls – 223-235 ft²</div> <div>9 pens – 231-237 ft²</div>	1	Guide	Walls are a pressure treated wood with glass board and metal panels Pen dividers are pressure treated wood and metal bars Floors are rough concrete with 5 stall floors covered with a rubber stall mat Ceiling is metal Windows on the [REDACTED] and [REDACTED] sides Temperature controlled exhaust fans on the [REDACTED] side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Hay feeders and rubber tubs
Horse	<div> <u>Exercise Areas</u> 1 corral – 2240 ft² 1 corral – 1920 ft² 1 corral – 4000 ft² 1 corral – 6000 ft² </div> <div> <u>Exercise Area</u> 1 corral – 6144 ft² 1 corral – 8064 ft² 1 corral – 11232 ft² </div>	<div>2</div> <div>1</div> <div>2</div> <div>2</div> <div>2</div> <div>2</div> <div>2</div> <div>4</div>	Guide	<div>Sand base, rough oak fence</div> <div>Sand base, rough oak fence</div> <div>Dirt base, portable corral panels</div> <div>Dirt base, portable corral panels</div> <div>Dirt base, portable corral panels, treated wood fence</div> <div>Grass base, portable corral panels</div> <div>Grass base, portable corral panels</div>

Horse	██████ Stalls – 114-126 ft ²	1	Guide	Walls are concrete block with epoxy paint Floor is concrete covered with diamond tread rubber Automatic water devices
Pony	██████████ 10 pens – 231-237 ft ²	2	Guide	Walls are a pressure treated wood with glass board and metal panels Pen dividers are pressure treated wood Floors are rough concrete Ceiling is metal Windows on the ██████ and ██████ sides Temperature controlled exhaust fans on the ██████ side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Hay feeders and rubber tubs
Pony	██████████ 6 pens – 152 ft ²	2	Guide	Walls are cement block with epoxy paint Pen floors are a ¾" resilient rubber Ceiling is drywall The area is heated and air conditioned Hay is provided in hay feeder or tubs Automatic water devices or tubs
Pony	██████████████████ Rooms – 97-101 ft ²	1	Guide	Walls are cement block with epoxy paint Floors are epoxy quartz Ceiling is drywall Exhaust air for Isolation (BSL-2) is HEPA filtered Large animal water can be provided by automatic water devices or tubs Large animal feed in hay feeder, tubs or troughs The areas are heated and air conditioned
Cattle	██████ Stalls – 98 ft ²	1	Guide	Walls are concrete block with epoxy paint Floor is concrete covered with diamond tread rubber Automatic water devices
Cattle	██████████ 10 pens – 231-237 ft ²	1	Guide	Walls are a pressure treated wood with glass board and metal panels Pen dividers are pressure treated wood Floors are rough concrete Ceiling is metal Windows on the ██████ and ██████ sides Temperature controlled exhaust fans on the ██████ side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Hay feeders and rubber tubs

Cattle	<div></div> <p>6 pens – 152 ft²</p>	1	Guide	<p>Walls are cement block with epoxy paint Pen floors are a ¾" resilient rubber Ceiling is drywall The area is heated and air conditioned Hay is provided in hay feeder or tubs Automatic water devices or tubs</p>
Cattle	<div></div> <p>2 tie stalls – 52" x 67" 2 tie stalls – 50" x 67" 1 stall – 172 ft² 1 open area – 23" x 106" species and project dependent 2438 ft²</p>	1 1 1 1	Ag Guide	<p>The walls are pressure treated wood with glass board and metal pandels Floors are a rough concrete Ceiling is metal Tie stalls are rough concrete covered Temperature controlled exhaust fans on the <div></div> side and exhaust fans on the <div></div> side Temperature controlled ceiling mounted circulating fans No air conditioning Automatic water devices Hay and grain provided on ground in front of stanchions and rubber tub</p>
Horse	<div></div> <p>Corral – 2278 ft²</p>		Guide	<p>Limestone, rough oat fence</p>
Horse	<div></div> <p>Horse barn – 1760 ft²</p> <p>Pasture – 1.25 acres</p>	10 10	Guide	<p>Floor is concrete Wood frame building covered in metal exterior Interior walls are insulated and covered with plywood Ceiling is metal Grass, dirt, and concrete pad Fence is wood and chain link Automatic watering device and stock tank</p>
Calves	<div></div> <p>7 pens – 40-46 ft² 10 pens – 231-237 ft²</p>	1 7	Ag Guide	<p>Walls are a pressure treated wood with glass board and metal panels Pen dividers are pressure treated wood and metal bars Floors are rough concrete Ceiling is metal Windows on the <div></div> and <div></div> sides Temperature controlled exhaust fans on the <div></div> side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Hay feeders and rubber tubs</p>

Calves	██████████ 6 pens – 152 ft ²	1	Ag Guide	Walls are cement block with epoxy paint Pen floors are a ¾" resilient rubber Ceiling is drywall The area is heated and air conditioned Hay is provided in hay feeder or tubs Automatic water devices or tubs
Calves	████████████████████ Rooms – 97-101 ft ²	1	Ag Guide	Walls are cement block with epoxy paint Floors are epoxy quartz Ceiling is drywall Exhaust air for Isolation (BSL-2) is HEPA filtered Large animal water can be provided by automatic water devices or tubs Large animal feed in hay feeder, tubs or troughs The areas are heated and air conditioned
Sheep	██████████ 10 pens – 231-237 ft ²	5	Guide	Walls are a pressure treated wood with glass board and metal Pen dividers are pressure treated wood and metal bars Floors are rough concrete Ceiling is metal Windows on the █████ and █████ sides Temperature controlled exhaust fans on the █████ side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Hay feeders and rubber tubs
Sheep	██████████ 6 pens – 152 ft ²	2	Guide	Walls are cement block with epoxy paint Pen floors are a ¾" resilient rubber Ceiling is drywall The area is heated and air conditioned Hay is provided in hay feeder or tubs Automatic water devices or tubs
Sheep	████████████████████ Rooms – 97-101 ft ²	2	Guide	Walls are cement block with epoxy paint Floors are epoxy quartz Ceiling is drywall Exhaust air for Isolation (BSL-2) is HEPA filtered Large animal water can be provided by automatic water devices or tubs Large animal feed in hay feeder, tubs or troughs The areas are heated and air conditioned
Sheep	██████ Stalls – 18-22 ft ²	1	Guide	Walls are concrete block with epoxy paint Floor is concrete covered with diamond tread rubber Automatic water devices Large animal feed in tubs

Swine	10 pens – 231-237 ft ²	5	Guide	Walls are a pressure treated wood with glass board and metal panels Pen dividers are pressure treated wood Floors are rough concrete Ceiling is metal Windows on the [REDACTED] and [REDACTED] sides Temperature controlled exhaust fans on the [REDACTED] side Temperature controlled ceiling mounted circulating fans Temperature controlled hot water unit heaters No air conditioning Automatic water devices Large animal feed in tubs
Swine	[REDACTED] <u>Semi-Isolation/Isolation Rooms</u> – 97-101 ft ²	2	Guide	Walls are cement block with epoxy paint Floors are epoxy quartz Ceiling is drywall Exhaust air for Isolation (BSL-2) is HEPA filtered Large animal water can be provided by automatic water devices or tubs Large animal feed in hay feeder, tubs or troughs The areas are heated and air conditioned Large animal feed in tubs
Swine	[REDACTED] <u>Stalls</u> – 18-22 ft ²	1	Guide	Walls are concrete block with epoxy paint Floor is concrete covered with diamond tread rubber Automatic water devices Large animal feed in tubs
Dogs	[REDACTED] <u>Dog Runs</u> 40 runs – 23-29 sq ft *some runs have doors in between runs to co-house* 10 runs – 23-29 sq ft 10 runs – 23-29 sq ft [REDACTED] <u>Semi-Isolation/Isolation Rooms</u> – 79-101 ft ² [REDACTED] <u>Dog Runs</u> 12 runs – 26 ft ²	1-2 3-5 1-2	Guide	Dogs are housed in dog runs Dog runs are cement block/glass board with epoxy paint Floors are epoxy quartz Ceilings are drywall covered with glass board Automatic water devices Food provided in J-Feeders The areas are heated and air conditioned
Mouse	7 ½" x 11 ½" x 5" cage	4 adults or female + litter and 1 other adult	Guide	Polycarbonate HT or Polysulfone static micro-isolator with stainless steel wire bar lid and filter top
Mouse	10 ½" x 19" x 6" cage	10 adults	Guide	Polycarbonate HT or Polysulfone static micro-isolator with stainless steel wire bar lid and filter top

Mouse	IVCS JAG PNC unit	5 adults	Guide	Polysulfone cage, stainless steel wire bar lid and reduced height micro-barrier filter top
Mouse	Innovive Disposable IVC	5 adults or female with litter and one other adult	Guide	PET plastic, cage lid, feeder, aquavive water bottle
Rat Hamster G. Pig	10 ½" x 19" x 8" cage	2 adults	Guide	Polycarbonate HT or Polysulfone static micro-isolator with stainless steel wire bar lid and filter top
G. Squirrel	10 ½" x 19" x 8" cage	1 adult	Guide	Polycarbonate HT or Polysulfone static micro-isolator with stainless steel wire bar lid and filter top
G. Squirrel	18" x 36" x 16" tank	Female + litter		Open topped, glass fish tank with wire mesh lid
Bearded Dragon	10" x 20" x 12" tank	1		Open topped, glass fish tank with wire mesh lid
Snake	10" x 20" x 12" tank 36" x 18" x 18" cage 44" x 20" x 18" cage 10 ½" x 19" x 8" cage	1		Open topped, glass fish tank or critter tank with wire mesh lid 3-sided reptile cage with plexiglass front 3-sided reptile cage with plexiglass front Polycarbonate HT or Polysulfone cage with microisolator filter top
Turtle	300 gallon livestock tank	15-20		Structural foam
Ferret	24" x 24" x 15" cage 30" x 24" x 15" cage 27" x 27" x 18" cage 11" x 14" x 11" cage	2 2 2 1		Stainless steel cages, 6 per unit Stainless steel cages, 6 per unit Stainless steel rack with plastic cage body, 6 per unit Stainless steel framed ventilated ferret isolators, box is alumite finish with polycarbonate door, cage is alumite finish
Rabbit	27" x 27" x 18" cage	2	Guide	Stainless steel rack with plastic cage body, 6 per unit

Rabbit	Floor housed – 119 ft ²	2	Guide	Walls are cement block with epoxy paint Floors are epoxy quartz
Rabbit	dog runs 20 runs 23-29 ft ²	4	Guide	Dog runs are cement block/glass board with epoxy paint Floors are epoxy quartz Ceilings are drywall covered with glass board Food provided in J-feeders Water provide in bottles The areas are heated and air conditioned
Cat	Modified Cage Unit – 4 ft ²	2	Guide	Connection between cages Stainless steel cages with perch, 4 per unit Walls are cement block with epoxy paint Floors are epoxy quartz The areas are heated and air conditioned Pens are chain link Removable floor and divider panels
	Cage, 5.4 ft ² quad	1-4		
Cat	Floor housed – 121 ft ² Floor housed pen – 60 ft ² Floor housed pen – 80.65 ft ² Floor housed pen – 84.2 ft ²	6 3 3 4	Guide	Removable floor and divider panels
Chinchilla	27" x 27" x 18" cage	1		Stainless steel rack with plastic cage body, 6 per unit
Frog	20-30 gal tank	2		Open topped fish tank with wire mesh lid
Spider	10 1/2" x 19 in. 8 in cage	1		Polycarbonate HT or polysulfone cage with microisolator filter top

*For aquatic species, provide tank volume.

**Include descriptors such as open-topped, static microisolator, individually-ventilated cage systems (IVCS).

Appendix 13

Cleaning and Disinfection of the Micro- and Macro-Environment

Please describe the cleaning and disinfection methods in the Table below. Note the washing/sanitizing frequency and method for each of the following:

Area	Washing/Sanitizing Method (mechanical washer, hand washing, high-pressure sprayers, etc.)	Washing/Sanitizing Frequency	Other Comments
Micro-environment			
Innovive mouse cage bottoms	Emptied and recycled	Every other week (EOW)	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Solid-bottom cages (static)	Mechanical washer	1-3 times/week	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Solid-bottom cages (IVC)	Mechanical washer	Every other week	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Suspended wire-bottom or slotted floor cages	Mechanical or hand washed	Weekly-EOW	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Innovive MV6 cage lids	Recycled	EOW	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Cage lids	Mechanical washer	Weekly-every 2 weeks	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Filter tops	Mechanical washer	Weekly –every two months	If items are used in sterile situations, they are sanitized weekly, otherwise every other month. Filters are changed when sanitized. Frequency is prescribed in procedures based on species, capacity, and project requirements.
Cage racks and shelves	Mechanical or hand washed	Weekly/quarterly	Wipe down weekly, cage wash quarterly. Frequency is prescribed in procedures based on species, capacity, and project requirements.
Cage pans under suspended cages	Mechanical or hand washed	EOW	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Play pens, floor pens, stalls, etc.	Pressure washer or hand washed	Daily-Monthly	Depending if contact bedding is used when pressure washing will occur. Frequency is prescribed in procedures based on species, capacity, and project requirements.

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Corrals for primates or outdoor paddocks for livestock	Mechanically scrapped	2 times/week	For outdoor paddocks that are concrete for agricultural animals. Frequency is prescribed in procedures based on species, capacity, and project requirements.
Aquatic, amphibian, and reptile tanks and enclosures	Mechanical or hand washed	1-2 times/week	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Feeders	Mechanical or hand washed	Weekly-Monthly	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Watering Devices	Mechanical or hand washed	Weekly/monthly	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Exercise devices and manipulanda used in environmental enrichment programs, etc.	Mechanical or hand washed	Weekly/Every 2 weeks	Frequency is prescribed in procedures based on species, capacity, and project requirements.
Transport cages	Mechanical or hand washed	After use	
Operant Conditioning & Recording Chambers, Mechanical Restraint Devices (chairs, slings, etc.)	Does not apply		
Euthanasia Chambers	Mechanical washer	Weekly	

Appendix 13

Area	Washing/Sanitizing Method (mechanical washer, hand washing, high-pressure sprayers, etc.)	Washing/ Sanitizing Frequency	Other Comments
Macro-Environment			
ANIMAL ROOMS			
Floors	Hand washed/Pressure washed	Daily/weekly/ every 2 weeks	
Walls	Hand washed/Pressure washed	Daily/weekly/ every 2 weeks/As emptied	Frequency depends on location, species, and animals with or without direct animal contact.
Ceilings	Hand washed/Pressure washed	Every other week/when room emptied	Frequency depends on location and species.
Ducts/Pipes	Hand washed/Pressure washed	Every other week/when room emptied	Frequency depends on location and species.
Fixtures	Hand washed	Monthly/every 2 months	Frequency depends on location and species.
CORRIDORS			
Floors	Hand washed/Floor scrubbers	Weekly	
Walls	Hand washed	As needed	
Ceilings	Hand washed	As needed	
Ducts/Pipes	Hand washed	As needed	
Fixtures	Hand washed	As needed	
SUPPORT AREAS (e.g., surgery, procedure rooms, etc.) Complete for each area:			
Floors	Hand washed/Pressure washed/Floor scrubber	Weekly/before and after procedure	
Walls	Hand washed	Weekly/before and after procedure	
Ceilings	Hand washed	Weekly/before and after procedure	

Appendix 13

Ducts/Pipes	Hand washed	Weekly/before and after procedure	
Fixtures	Hand washed	Weekly/before and after procedure	
IMPLEMENTS (note whether or not shared)			
Mops	Mop head replaced monthly		Shared in specified area
Mop buckets	Handwashed	Monthly	Shared in specified area
Aquaria nets	Mechanical washer	Weekly	Shared in specified room
Other			
OTHER			
Vehicle(s)	Hand cleaned/Pressure washer	Weekly	
Other transport equipment (list) Livestock Trailer	Hand cleaned/Pressure washer	After use	

Appendix 14: Biological Agents (page 1 of 3)

IACUC/OB No.	Species	BSL	Name of Biological Agent
V005016	sheep	1	Human iPSC-derived MSCs
V005096	mus	2	BPH-1 prostate cells Mouse tissue, immortalized mouse cells Uropathogenic Escherichia coli
V005140	mus rattus	1, 2	SVM Agent 1 Tetrodotoxin BFA Cholera toxin B fragment Diphtheria toxin Lipopolysaccharide rAAV
V005173	mus rattus	1, 2	Lipopolysaccharide
V005194	rattus	2	Porphyromonas gingivalis
V005206	pig	2	S. suis GDH mutant S. suis strain 1933 wild type
V005213	dog	2	Canine Influenza Canine Distemper virus Canine Adenovirus Bordetella bronchiseptica
V005220	mus	2	Recombinant modified vaccinia ankara virus Recombinant Raccoon Pox virus
V005277	Big brown bat Little brown bat	2	Pseudogymnoascus destructans Recombinant Raccoon Pox virus
V005278	Big brown bat Brazilian free-tailed bat mus	2	Rabies virus Recombinant raccoon poxvirus containing rabies antigen
V005305	mus	3+	SVM Agent 2
V005308	mus	2	Inactivated influenza virus Diphtheria toxin Influenza A virus Influenza A-PR8 Listeria monocytogenes Lymphocytic choriomeningitis virus Recombinant Listeria monocytogenes Recombinant Vaccinia virus Vaccinia virus
V005329	mus	2	Listeria monocytogenes Salmonella enterica
V005352	dog	2	Vesicular stomatitis virus VSV-IFNb-NIS

Appendix 14: Biological Agents (page 2 of 3)

IACUC/OB No.	Species	BSL	Name of Biological Agent
V005355	chicken	2	Subunit proteins of Infectious bursal disease virus Turkey Herpes Virus vector LaSota virus vector Infectious bronchitis virus Infectious bursal disease virus
V005384	pig mus rattus	2	Staphylococcus aureus Staphylococcus epidermidis Pseudomonas spp. E. coli Pig - Human MSCs
V005391	mus	2	Non-polio human enteroviruses Live-attenuated viruses
V005412	dog	2	Human oligodendrocyte progenitor cells
V005516	mus	2	Dengue virus Zika virus Venezuelan equine encephalitis virus
		3	West Nile virus Powassan virus Chikungunya virus Western equine encephalitis virus
V005517	mus	2	DanActive Florastor Culturelle Bio-K+ L. casei M36 HOWARU Restore Clostridium difficile Humanization of microbiota, fecal material
V005519	mus	2	Zika virus, virus like particles Dengue virus Zika virus
V00554	mus	1, 2	Tetanus Toxoid Diphthera
		3	SVM Agent 2
V005564	mus	2	Pregnant mare serum gonadotropin, Human chorionic gonadotropin Influenza A Virus Influenza A-PR8 Listeria monocytogenes Lymphocytic choriomeningitis virus Recombinant Listeria monocytogenes Recombinant Vaccinia virus Lentiviral infected cells Vaccinia virus
V005575	Common Canary chicken	2	Zika virus
V005576	rattus	2	Porphyromonas gingivalis

Appendix 14: Biological Agents (page 3 of 3)

IACUC/OB No.	Species	BSL	Name of Biological Agent
V005603	mus	2	RML strain of mouse-passaged scrapie
V005684	pig	2	Recombinant Modified vaccinia ankara virus Recombinant Raccoon Pox virus
V005720	mus	2	E. coli lipopolysaccharide Bartha's strain pseudorabies virus E. coli
V005733	mus	3	Chikungunya virus Yellow fever virus
V00806	chicken duck ferret guinea pig hamster mus quail	2, 3	Influenza virus
		3+	Streptococcus pneumoniae
		3+	Respiratory syncytial virus
		3+	SVM Agent 4
V01190	dog cat pig	2, 3	Influenza virus
V01312	mus	2	Modified vaccinia Ankara (MVA)
		3+	Raccoon pox (RCN)
		2, 3	Influenza virus
		3+	SVM Agent 4
V01441	mus	2	Vesicular Stomatitis virus Pichinde virus
		3+	SVM Agent 3 Mopeia virus
V01630	mus	2	M. marinum M. fortuitum M. chelonae M. paratuberculosis M. smegmatis
		3	Mycobacterium M. tuberculosis M. bovis
V01642	chicken	3	Influenza virus

Appendix 15: Chemical Agents (page 1 of 2)

IACUC/OB No.	Species	Hazard Category	Name of Chemical Agent
V005096	mus	carcinogen	Bromodeoxyuridine TCDD (2,3,7,8 tetrachlorodibenzo-p-dioxin)
		mutagen	Bromodeoxyuridine
		teratogen	Bromodeoxyuridine TCDD (2,3,7,8 tetrachlorodibenzo-p-dioxin)
		toxin	TCDD (2,3,7,8 tetrachlorodibenzo-p-dioxin)
V005140	mus rattus	toxin	tetrodotoxin
		teratogen	tetrodotoxin
V005173	mus rattus	toxin	5-bromo-2'-deoxyuridine (BrdU)
		carcinogen	Tamoxifen
		teratogen	Tamoxifen
V005225	dog	carcinogen	Carboplatin chemotherapy
		mutagen	Carboplatin chemotherapy
V005245	dog	carcinogen	CHOP-based chemotherapy protocol plus canine monoclonal antibody AT-004
		mutagen	CHOP-based chemotherapy protocol plus canine monoclonal antibody AT-005
V005298	cat	carcinogen	combination toceranib and doxorubicin
		toxin	Rapamycin
V005375	mus	mutagen	BrdU
		carcinogen	Rapamycin
		teratogen	Rapamycin
		carcinogen	Tamoxifen
		teratogen	Tamoxifen
V005376	cat	carcinogen	Bromodeoxyuridine (BrdU)
		mutagen	Bromodeoxyuridine (BrdU)
		teratogen	Bromodeoxyuridine (BrdU)
V005412	dog	carcinogen	Bromodeoxyuridine (BrdU)
		mutagen	Bromodeoxyuridine (BrdU)
		teratogen	Bromodeoxyuridine (BrdU)
V005423	rattus	carcinogen	Bromodeoxyuridine (BrdU)
		mutagen	Bromodeoxyuridine (BrdU)
		teratogen	Bromodeoxyuridine (BrdU)
V00554	mus	toxin	Lipopolysaccharides
V005547	dog	carcinogen	CHOP chemotherapy regime for canine lymphoma
		mutagen	CHOP chemotherapy regime for canine lymphoma

Appendix 15: Chemical Agents (page 2 of 2)

IACUC/OB No.	Species	Hazard Category	Name of Chemical Agent
V005564	mus	mutagen	Bromodeoxiuridine (BrdU)
		teratogen	Bromodeoxiuridine (BrdU)
		toxin	Rapamycin
		carcinogen	Tamoxifen
		teratogen	Tamoxifen
		toxin	5-bromo-2'deoxyuridine (BrdU) or iodo deoxyuridine (IdU)
V00806	chicken duck ferret guinea pig hamster mus quail	carcinogen	Estrone
		mutagen	Estrone
V01441	mus	carcinogen	Tamoxifen or Raloxifene
		teratogen	Tamoxifen or Raloxifene

Appendix 16: Physical Agents (page 1 of 2)

IACUC/OB No.	Species	Physical Agent(s)
V005016	sheep	radiograph (x-ray)
V005017	dog	radiograph (x-ray)
V005026	horse	Imaging (ultrasound, x-ray)
V005029	dog	Echocardiography (ultrasound)
V005031	dog	Radiograph (x-ray)
V005033	cat dog	Imaging (ultrasound)
V005057	Wildlife	Fluoroscopy (x-ray)
V005069	ferret	Echocardiography (ultrasound)
V005077	dog	Radiograph (x-ray)
V005098	cat	Imaging (ultrasound)
V005112	cattle	Imaging (ultrasound)
V005121	sheep	Fluoroscopy (x-ray) Radiograph (x-ray)
V005128	cattle	Imaging (ultrasound)
V005132	dog	Radiograph (x-ray)
V005139	dog	CT scan (x-ray) Radiotherapy (x-ray)
V005183	cat	CT scan (x-ray) Imaging (ultrasound)
V005209	mus	Imaging (x-ray)
V005225	dog	CT scan (x-ray) Radiotherapy (x-ray) Tomotherapy (irradiation)
V005250	cattle	Imaging (ultrasound)
V005256	mus rabbit rattus	Imaging: MRI (high magnetic field) Radiograph (x-ray)
V005308	mus	Irradiation (cesium)
V005320	dog	Radiographs (x-ray)
V005352	dog	Imaging (ultrasound) Radiography (x-ray)
V005371	horse	Imaging (ultrasound)
V005376	cat	Imaging: MRI (high magnetic field)
V005390	horse	Radiography (x-ray) Imaging (ultrasound)
V005391	mus	IVIS Optical imaging
V005412	dog	Imaging: MRI (high magnetic field)
V005425	cat dog	Imaging (ultrasound)
V005437	horse	Imaging (ultrasound) Radiography (x-ray)

Appendix 16: Physical Agents (page 2 of 2)

IACUC/OB No.	Species	Physical Agent(s)
V005453	dog	CT scan (x-ray) Fluoroscopy (x-ray) CT scan (x-ray)
V005463	dog	Imaging: MRI (high magnetic field) Radiography (x-ray)
V005463	horse	CT Gantry design (x-ray)
V005465	cat dog	Imaging (ultrasound) Imaging (x-ray)
V005499	dog	Radiography (x-ray) CT scan (x-ray)
V005516	mus	IVIS Optical imaging
V005537	dog	Imaging (ultrasound)
V00554	mus	IVIS Optical imaging
V005547	dog	Tomotherapy (irradiation)
V005564	mus	Irradiation (cesium)
V005582	horse	Radiography (x-ray)
V005583	cattle	Thoracic imaging (ultrasound)
V005584	horse	Imaging (ultrasound)
V005612	Alpaca Llama sheep goat	Imaging (ultrasound)
V005655	dog	Imaging (ultrasound) Radiography (x-ray)
V005663	dog	Radiography (x-ray)
V005666	Cockatiel	CT scan (x-ray) Fluoroscopy (x-ray)
V005683	Poison Dart Frog	Radiography (x-ray)
V005701	sheep	Radiography (x-ray)
V005703	sheep	CT scan (x-ray) Imaging: MRI (high magnetic field) Radiography (x-ray)
V005724	dog	Radiography (x-ray)
V005752	Western gorilla	Echocardiography (ultrasound)
V01553	cattle	Imaging (ultrasound)
V01625	dog	Echocardiography (ultrasound)

Appendix 17: Prolonged Restraint

IACUC/OB No.	Species	Type of Restraint	Duration	Acclimation	Monitoring
V005016	sheep	Limb immobilization	4 weeks	None	Monitored daily for discomfort caused by sling.
V005057	Wildlife	Manual restraint	20 min.	None	Monitor respiratory rate, heart rate and cloacal temperature. Measurements taken every 3-5 min.
V005140	rattus	Enclosure smaller than standard for species	< 12 hours	Acclimatized to chambers for 1-2 hrs prior to initiation of protocol.	Investigator present while rats in chambers.
V005375	mus	Limb Immobilization	14 days	None	Monitored daily and, if necessary, the immobilization device repaired.
V005402	rattus	Enclosure smaller than standard for species	140 min.	<p>Rats acclimate in Hargreaves apparatus to for 15-30 minutes pre-testing. If rat fails to acclimate, a further 15-30 mins may be given. If acclimation fails, experiment is aborted for the rat on that day.</p> <p>Rats placed in ~3-4 L barometric chamber allowing movement and comfortable sleep position. Up to 30 min. allotted for acclimation and baseline measurements before protocol begins.</p>	Observed continuously when in the plethysmograph and Hargreaves chambers.
V005487	cattle	Physical restraint	30 min.	None	Continuously monitored while in restraint chute.

IACUC/OB No.	Species	Type of Restraint	Duration	Acclimation	Monitoring
V005701	sheep	Enclosure smaller than standard for species	Up to 4 weeks	None	To prevent injury post-op, housed singly in small pens immediately adjacent other sheep. Monitored same as group housed animals.
V005701	sheep	Limb immobilization	4 weeks	None	Monitored multiple times daily for discomfort caused by sling.
V01640	rattus	Enclosure smaller than standard for species	up to 8 hrs	Acclimatized to the chambers for 1-2 hrs prior to the initiation of protocol.	Continuous

Appendix 18: Multiple Major Survival Surgeries (page 1 of 2)

IACUC/OB No.	Species	Surgery Description	Time Between Surgeries	Monitoring
V005140	rattus	Combination of EEG/EMG telemetry implantation, Diaphragm or phrenic nerve injections, catheter placement, spinal injury, or osmotic pump implantation	7 days	Monitor behavior (interaction with environment, body posture, teeth grinding, grooming, weight loss) post-op. If signs of pain or distress observed, analgesics administered and vet staff consulted.
V005140	mus	Combination of spinal injury, EEG/EMG telemetry implantation, or intrapleural injections	7 days between telemeter implantation and spinal injury, 1 day between intrapleural injections and other procedures	Monitor closely post-op for signs of pain / discomfort. Following spinal injury, monitor behavior every 15 min for 1 hr, then every hour for 5 hrs post-op, then daily until returned to facility or euthanized. Following CNS drug delivery or EEG/EMG placement, monitor every 15 min for 1 hr, then daily until returned to facility.
V005140	rattus	EEG/EMG telemetry implantation (rare cases is this more than one surgery)	7 days	Monitor behavior (interaction with environment, body posture, teeth grinding, grooming, weight loss) post-op. If signs of pain or distress seen, analgesics administered and vet staff called.
V005140	mus	EEG/EMG telemetry implantation (rare cases is this more than one surgery)	7 days	Following CNS drug delivery or EEG/EMG placement, monitor every 15 min for 1 hr, then daily until returned to facility. If signs of pain or distress seen, analgesics administered and vet staff called.
V005173	rattus	Gonadectomy Spinal Injury	at least one week	Monitored every hour for 5 hrs to assure ability to reach water, food, and bladder control. Monitored daily post-op for signs of distress (anorexia, dull attitude, prone position, scratching incision). If signs present, animals are euthanized upon consultation with RARC vet. After returned to vivarium, examined / weighed daily. Animals losing >15% of pre-surgical body weight are euthanized.

Appendix 18: Multiple Major Survival Surgeries (page 2 of 2)

IACUC/OB No.	Species	Surgery Description	Time Between Surgeries	Monitoring
V005173	mus	Gonadectomy Spinal injury	at least one week	<u>Gonadectomies</u> - one post-op dose of buprenorphine every 12 hrs for up to 48 hours as needed. Monitored daily for remainder of experiment. If any signs discomfort do not resolve within 48 hrs post-op, animal is euthanized immediately. <u>Spinal injury</u> - monitored every 15 min for 1 hr post-op, then every hour for the first 5 hrs post-op, then at least 3x/day until returned to facility, then once daily for the following 2 weeks or until used experimentally. During postsurgical period, we help animals express their bladder if necessary, and assist with feeding (gavage) or drinking for 2-3 days. Persistent deficits suggest euthanasia.
V005473	rattus	EMG/pressure Implantation then Spinal Injury, Phrenicotomy then Terminal Study	One to two weeks	Appropriate scheduled analgesic such as carprofen and buprenorphine. Pain assessed at least 2x daily post-op and if additional analgesia is required (beyond protocol spec.), RARC vet staff notified.
V005703	sheep	Periosteal Transection (Conventional Surgical Technique vs Histotripsy Technique)	4 weeks	Incision/Treatment sites checked for heat, pain, swelling and/or discharge. A mild infection at the incision site is treated locally by drainage and cleaning with povidone-iodine. If a severe infection develops with signs of septicemia as evidenced by rapid respiration rate, depression, and anorexia, we consult with RARC vet for use of appropriate antibiotics/treatment. Four doses of buprenorphine are administered over 2 days.
V005720	mus	Zymosan-induced prostatitis, labeling nerves and cystometry	at least 7 days	Placed in containers under lights to maintain ambient temperature >26 C. Continuously observed for 3 hrs post-op. Evaluated daily by PI, senior staff, or trained designee. Wound appearance recorded. If mice are to survive > 7 days, sutures or wound clips are removed when wounds are healed (usually within 7 days).

Appendix 19: Food and Fluid Regulation (page 1 of 5)

IACUC/O B No.	Species	Type of Restriction	Justification	Length of Restriction	Health Monitoring
V005023	cat	Fasting	Food restriction is required to limit lipemia in the serum and improve processing of the samples.	Up to 8 hours	If changes in serum biochemistry analysis which may reflect an adverse effect of fasting, cats are permitted to eat for all future blood samples.
V005038	rattus	To motivate desired behavior.	Overnight food restriction is used to stimulate neurochemical events involved in hunger and food seeking behavior.	Overnight	Monitored by PI each day at 9 AM and 4 PM.
V005077	dog	Fasting	BIPs must be fed according to previous investigations so we can compare to previous studies. The entire meal must be eaten and withholding food for 24 hrs prior to the meal will aid with this.	24 Hours	None
V005096	mus	Fluid Restriction-Void spot assay	Water is removed to avoid Water droplets leaked from the water bottle onto the filter paper, and voiding patterns can be analyzed without adjusting for water consumption by the mice during the 4 hr time period which can vary greatly.	4 hours	Body condition scores are assessed prior to starting the trial and again at the end of the trial.
V005096	mus	Feed and Fluid restriction - Uroflow analysis	Food and water restriction is needed to avoid food and water droplets leaked from the water bottle onto the scale and urinary flow patterns can be determined without adjusting for water or feed consumption.	4 hours	None

Appendix 19: Food and Fluid Regulation (page 2 of 5)

IACUC/O B No.	Species	Type of Restriction	Justification	Length of Restriction	Health Monitoring
V005096	mus	Feed restriction - Plasma glucose measurements and glucose tolerance test	Fasting is necessary to ensure that changes in plasma glucose and insulin levels do not correspond to the postprandial state.	4 hrs - plasma glucose measurements. 7 hrs - Glucose tolerance test.	None
V005096	mus	Milk restriction	This is an established method to determine milk yield per dam.	4 hours	Weighed and returned to the dam
V005140	rattus	Feed restriction	To measure ventilation in freely behaving rats they must be placed in a chamber. On rare occasions when rats must be in the chamber for more than 4 hrs, they are provided with nutrition and water in the form of hydrogel or dietgel.	Less than 4 hours	None
V005140	mus	Feed restriction	To measure ventilation in freely behaving rats they must be placed in a chamber. On rare occasions when rats must be in the chamber for more than 4 hrs, they will be provided with nutrition and water in the form of hydrogel or dietgel.	Less than 4 hours	None
V005375	mus	Feed restriction	48 hours of food deprivation produces a significant decrease in the rate of protein synthesis and skeletal muscle mass.	48 hours	Monitored for signs of distress every 10-12 hrs during the fasting period.

Appendix 19: Food and Fluid Regulation (page 3 of 5)

IACUC/O B No.	Species	Type of Restriction	Justification	Length of Restriction	Health Monitoring
V005460	Thirteen-lined ground squirrel	Feed restriction	Pups fed ad lib after weaning in captivity tend to get very obese. To reduce the tendency, in first year of life, after weaning from their mothers, pups are food restricted. Restriction is based on historical body weight records, and on observation of pup body morphology and unexpected deaths during hibernation if allowed to feed ad lib. The goal allows pups to be within a range of 170-225g by mid-late September, prior to start of hibernation. For all hibernating squirrels, food and water are removed because they do not eat or drink in the wild until they emerge in the spring. Providing food/water during hibernation would be unnatural and might affect normal hibernation rhythms.	About 2 weeks after weaning (removal from maternal tank), rodent chow placed in each cage per day is restricted to 12 g. Sunflower seeds are provided as a handful every other week. Chow restriction continues through summer until pups are used in an experiment or moved to begin hibernation. For all squirrels that are moved to cold room, food and water are removed from cages once an animal has begun regular torpor bouts (i.e., has begun hibernation).	For pups undergoing summer food restriction, daily health check by ARTs and/or lab staff allow monitoring of adverse signs including whether pups are becoming thin rather than gaining weight, are not drinking, have hunched posture, or failure to groom. For all squirrels in cold room, health check by lab staff allow monitoring of adverse signs including whether squirrels are terminating hibernation earlier than normal (i.e., not in torpor for two+ days in a row), or are losing weight at an abnormally rapid rate.
V005523	rattus	Feed restriction	Food withheld during parasite exposure period to encourage rats to find and ingest infected beetles.	Food withdrawn for a 12-hr period during which rats are exposed to beetles infected with Hymenolepis diminuta.	None
V00554	mus	Fasting	Fasted prior to blood collection to minimize metabolites.	2 to 4 hours	None
V005578	Zebra finch	Feed restriction	Provides time for the upper GI tract to clear ingesta and help birds to consume treated seed in the morning.	13 hours	None

Appendix 19: Food and Fluid Regulation (page 4 of 5)

IACUC/O B No.	Species	Type of Restriction	Justification	Length of Restriction	Health Monitoring
V005622	Thirteen-lined ground squirrel	Feed restriction	Minimizing dietary influences, fasting animals the day before analysis of the gut microbiome and metabolome helps reduce inter-animal variability when comparing summer and hibernating squirrels.	12 to 24 hours	Active season animals checked daily by care staff who provide general monitoring of food and water consumption. Lab staff and attending vet notified if animal exhibits adverse signs such as hunched posture, sluggish or erratic movements, body lesions, or reduced food/water consumption. Together the attending vet the PI make a decision to provide supportive care to see if normal behavior resumes, or euthanize if the animal continues to exhibit abnormal behavior or signs of disease.
V005659	dog	Feed restriction	Short term feed restriction enhances crypt cell turn-over and is a well-known adjunct to CPV-2 challenge regimens.	Dogs taken off solid feed the evening before challenge. Challenge administered the following morning, and feed immediately returned.	None

Appendix 19: Food and Fluid Regulation (page 5 of 5)

IACUC/O B No.	Species	Type of Restriction	Justification	Length of Restriction	Health Monitoring
V005720	mus	Feed and Fluid restriction	Food and water restriction is needed to avoid food and water droplets leaked from the water bottle onto the scale. Urinary flow patterns can be determined without adjusting for water or feed consumption.	4 hours	Monitored closely for any adverse events, particularly lethargy.
V01640	rattus	Feed and fluid restriction	No access to food or water when in chamber for ventilatory measurements or gas exposure.	Up to 8 hours	None

Appendix 20 Lab Housing for Greater than 12 Hours

PI	Protocol number	Species	Bldg/Room(s)	Justification	HVAC	Maximum Time
██████	V005173	Mouse	██████	<p>Animals recovering from spinal cord surgery will be housed in the post-surgical recovery area in the laboratory for up to one week post-injury (including the day of surgery). This request will ensure these animals receive the highest standard of care. Housing the animals in the laboratory enables our staff to better monitor the animals. Overnight housing in our laboratory is necessary because it prevents the need to continually move the animals (a source of stress) following spinal surgery. Moreover, it permits us to more accurately quantify food and water intake. Thus, we strongly believe the standard of post-surgical care required for these animals is best achieved via intensive monitoring provided by our laboratory staff. In addition, the complex gas exposure system in which our animals reside for varying lengths of time is too large and space consuming to exist in the vivarium. That system is in our laboratory, so the animals have to be there too. When animals are housed in the laboratory, laboratory staff will provide all of the husbandry that is normally provided by ██████ ARC animal care staff in the vivarium. Health checks will be performed for all animals housed in the laboratory at least daily (specific monitoring procedures are described in detail for all procedures and surgeries in this protocol). Animals housed in the laboratory will be subjected to the same dark/light cycle used by the animal care facility, room temperature and humidity are monitored and recorded daily.</p>	X Air Changes/Hour	2-3 days

				<p>either flushing gas mixtures at a rate sufficient to maintain chamber carbon dioxide levels below 0.5%, or at specified inspired percentages as required by experimental protocols (0 to 7% inspired carbon dioxide). The intermittent or sustained hypoxia exposures will be continued for variable periods per day (up to 12 hrs) and for a variable number of days (up to 60 days) as required by experimental protocols.</p> <p>room contains metabolic cages designed to measure water and feed intake and urinary and fecal output (metabolic cages). The cages have a wire bottom that permits passage of urine and feces. The custom equipment needed to conduct the necessary experiments does not fit in the standard vivarium. The cages are fitted with a specialized device for collecting and preserving urine and will be fitted with cameras to monitor urinary behavior. Mice will be housed in this room for 0-48 hours for acclimatization, then placed in the metabolic cage for 0-24 hours.</p>		
	V005140	Mouse		<p>Due to the complexity of our research and research equipment, we may prefer in-lab housing over vivarium housing. Animals recovering from spinal cord or EEG/EMG telemetry placement surgery will be housed in the post-surgical recovery area in the laboratory for up to one week post-injury (including the day of surgery). This request will ensure these animals receive the highest standard of care. Housing the animals in the laboratory enables our staff to better monitor the animals. Overnight housing in our laboratory is necessary because it prevents the need to continually move the animals (a source of stress) following surgery. Moreover, it permits us to more</p>	X Air Changes/Hour	2-3 days

				accurately quantify food and water intake. Thus, we strongly believe the standard of post-surgical care required for these animals is best achieved via intensive monitoring provided by our laboratory staff. In addition, the complex gas exposure system in which our animals reside for varying lengths of time is too large and space consuming to exist in the vivarium. That system is in our laboratory.		
██████	V005473	Rat	██████	Rats recovering from spinal cord surgery, CTB-S injections or electromyography/pressure implants be housed in our post-surgical recovery area in room ██████. Animals may be housed in rooms ██████ or ██████ for up to two weeks post-surgery which would allow the staff to monitor the animals between 6 AM and 8 PM and on an hourly basis if needed. Housing in our laboratory, including overnight housing, would also decrease the need to repeatedly transport the animals between the laboratory and the SVM animal housing facility, which is a source of stress on these animals following the surgeries. Intensive observance of these animals, including water intake and food consumption will allow us to better monitor the health and status of our animals post-surgery. A large fraction of animals usually recover and are ready to return to the ██████ animal care facility 2-3 days post-surgery. If a longer period of laboratory housing is required, an RARC will be consulted beforehand.	X Air Changes/Hour	2 weeks
██████	V005852	Rat	██████	Rats recovering from electromyography studies or esophageal (pleural) pressure surgeries be housed in our post-surgical recovery area in room ██████ for up to two days post-surgery which would allow the staff to monitor animals between 6 AM and 8 PM and	X Air Changes/Hour	2 days

				on an hourly basis. A large fraction of animals usually recover and are ready to return to the [REDACTED] animal care facility 2 days post-surgery. If a longer period of laboratory housing is required, an RARC veterinarian will be consulted beforehand. Due to frequency of ventilator, blood gas and pleural pressure measurements, that rats be housed in room [REDACTED] for up to 24 hours during experimentation to reduce travel stress.		
[REDACTED]	V005465	Dog & Cat	[REDACTED]	Room [REDACTED] has cages and runs for dogs and cats and is outside the vivarium but is an approved animal housing room	X Air Changes/Hour	4 days
[REDACTED]	V005519	Mouse	[REDACTED]	Mice will be housed in [REDACTED] room [REDACTED] for mosquito studies because mice are considered BSL3 once they enter the room and therefore cannot leave. This is the only facility on campus that is approved to perform studies involving virus infected mosquitoes.	X Air Changes/Hour	7 days
[REDACTED]	V005733	Mouse	[REDACTED]	Mice will be housed in [REDACTED] room [REDACTED] for mosquito studies because mice are considered BSL3 once they enter the room and therefore cannot leave. This is the only facility on campus that is approved to perform studies involving virus infected mosquitoes.	X Air Changes/Hour	7 days
[REDACTED]	V005720	Mouse	[REDACTED]	This housing is required to acclimate mice to environment and to repeat non-invasive testing (Void Spot Assay, Uroflow) to ensure fidelity of data without intermittent return to standard housing. All mice will be singly housed for duration of Void Spot Assay and Uroflow testing. Mice from other investigators may have varying health statuses, and not be eligible for housing in vivarium.	X Air Changes/Hour	Up to 28 days
[REDACTED]	V005847	Rat	[REDACTED]	Overnight housing in our laboratory is necessary because it enables our staff	X Air Changes/Hour	2-3 days

				to monitor the animals on an hourly (and even minute to minute) basis while they recover from anesthesia for intactness of the catheters placed for subsequent blood pressure measurements. It prevents the need to continually move the animals (a source of stress) following surgery. This will facilitate continuous blood pressure recording in acclimated, unstressed and quiet environment. Moreover, it permits us to more accurately quantify food and water intake. Thus, we strongly believe the standard of post-surgical care required for these rats is best achieved via intensive monitoring provided by our laboratory staff. Also, studies require continuous monitoring and recording of blood pressure over a period of 2-12 weeks using a specialized computer-operated telemetry system. This equipment is housed only in PI lab.		
██████	V005768	Brown Trout, Northern Pike	██████	Fish will be housed in a laboratory in the ██████ because due to viral inoculation a biosecure lab is required to contain and work with the virus.	NA – primary enclosures for aquatics	24 weeks
██████	V005851	Mus	██████	For one strain of mice that I will use (Arc-Cre), after injection with tamoxifen or 4-hydroxytamoxifen the animals must be maintained in a dark room with minimal noise interference (this is to minimize neuronal activity after the injection). Housing in the normal animal facilities would cause too much neuronal activity and would compromise the experiment. These injections will be done in my laboratory and the mice will be housed in a dedicated room in my laboratory under dark conditions for a maximum of 30 hours. After this time has elapsed, mice will be returned to the ██████ animal facility.	X Air Changes/Hour	30 hours

Appendix 21: Acronyms

ACAPAC	All Campus Animal Planning and Advisory Committee
ACRQ	Animal Contact Risk Questionnaire (UW-Madison's Medical Evaluation Form)
APV	Association of Primate Veterinarians
ARROW	Application Review for Research Oversight at Wisconsin (online protocol submission system)
ARC	Animal Research Center
ART	Animal Research Technician
BSL	Biosafety Level
[REDACTED]	[REDACTED]
CALS	UW-Madison College of Agricultural and Life Sciences
CBSP	Certified Biological Safety Professional
CDC	Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CIH	Certified Industrial Hygienist
CPIA	Certified Professional IACUC Administrator
[REDACTED]	[REDACTED]
DACLAM	Diplomate, American College of Veterinary Medicine
EHR	WNPRC's Electronic Health Records System
EH&S	Environment, Health and Safety. A Division of UW-Madison Facilities, Planning and Management (FP&M)
ETO	Ethylene Oxide (EtO) gas sterilization
HCG	Human Chorionic Gonadotropin
IBC	Institutional Biosafety Committee
IO	Institutional Official
IRRC	Invertebrate Research Review Committee
ISSCR	International Society for Stem Cell Research
IVCs	Individually Ventilated Caging Systems
L&S	UW-Madison College of Letters and Science
LSVC	The IACUC/OB that oversees both the College of Letters & Science and the VCRGE animal programs
MERI	Madison Environmental Resourcing, Inc. (contract environmental waste removal service)
MMM	Master of Medical Management degree
MPH	Master of Public Health degree
MUHL	Madison United Healthcare Linen, LTD (a contract laundry service)
NAS	National Academies of Science
NIH	National Institutes of Health
NSF	National Science Foundation
OBS	UW-Madison Office of Biological Safety
OLAW	PHS Office of Laboratory Animal Welfare
ORIP	NIH's Office of Research Infrastructure Programs
PAPR	Powered Air Purifying Respirator
PHS	Public Health Service

PPE	Personal Protective Equipment
RARC	Research Animal Resources Center
RSP	Research and Sponsored Programs. An office in VCRGE that oversee the lifecycle of research funding awards.
SCRO	Stem Cell Research Oversight Committee
SM(NRCM)	Specialist Microbiology, National Registry of Microbiologists
SMPH	UW-Madison School of Medicine and Public Health
SOP	Standard Operating Procedure
SPI	Scientific Protocol Implementation (a research support unit in the WNPRC)
SVM	UW-Madison School of Veterinary Medicine
UHS	UW-Madison University Health Service
USDA	United State Department of Agriculture
VCRGE	Office of the Vice Chancellor for Research and Graduate Education (formerly the Graduate School)
[REDACTED]	[REDACTED]
WNPRC	Wisconsin National Primate Research Center