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OMB APPROVED
0579-0036

This report is required by law (7 U.S.C. 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

Interagency Report Control
No. 0189-DOA-AN

Fiscal Year: 2009

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

REGISTRATION NUMBER: 23-R-0046

Customer Number: 347

2. HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA, include ZIP Code)

Bucknell University
Dept. Of Biology And Psychology
Lewisburg, PA 17837

Telephone: (570) 577 3811

DEC 14 2009

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets if necessary.)

FACILITY LOCATIONS (Sites) See Attached Listing

(b)(2)High, (b)(7)f

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary or use APHIS FORM 7023A.)

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. (An explanation of the procedures producing pain or distress on these animals and the reasons such drugs were not used must be attached to this report.)	F. TOTAL NUMBER OF ANIMALS (Cols. C + D + E)
4. Dogs					
5. Cats					
6. Guinea Pigs					
7. Hamsters	57	51	137		190
8. Rabbits					
9. Non-human Primates		43			43
10. Sheep					
11. Pigs					
12. Other Farm Animals					
13. Other Animals					
Bats		103			103

ASSURANCE STATEMENTS

- 1.) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.
- 2.) Each principal investigator has considered alternatives to painful procedures.
- 3.) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). A summary of all such exceptions is attached to this annual report. In addition to identifying the IACUC approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.
- 4.) The attending veterinarian for this research facility has appropriate authority to ensure the provisions of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer (C.E.O.) or Legally Responsible Institutional Official (I.O.))

(b)(6), (b)(7)c

DATE SIGNED

12/14/2009

NP 12/18/2009

APHIS Form 7023 Site Addendum for FY: 2009

Registration Number: 23-R-0046
Customer ID Number: 347

Facility Business Address Information:

Bucknell University
Dept. Of Biology And Psychology
Lewisburg, PA 17837

Telephone: (570) 577 3811

Facilities Site(s) Address Information:

Site Code(s):

001

(b)(2)High, (b)(7)f

Assigned Inspector: David Oelberg, D V M

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ANNUAL REPORT OF RESEARCH FACILITY, continuation

3. Reporting facilities

(b)(2)High, (b)(7)f

IACUC approved exceptions to standards and regulations

1. Exception to regulation discouraging multiple surgeries

Female hamsters serving as subjects in studies of the neural and neuroendocrine control of reproductive behavior will often undergo gonadectomy followed by brain surgery, the latter involving the placement of a lesion or the implantation of the guide cannula required for intracranial drug administration. Such combinations of procedures are central to our goals and experimental designs, both of which revolve around the observation of responses to brain manipulations (requiring the brain surgery) in animals with controlled levels of gonadal hormones (requiring the gonadectomy). The rationale for separating these procedures (leading to multiple surgeries) is two-fold. First, we are convinced that a sequence of surgical procedures is less stressful than a single operation including both of the necessary procedures. Second, some of the behaviors of interest are subject to large individual differences, with the potential to obscure treatment effects. In such situations, it often is useful to use a within-subjects experimental design, in which the impact of individual differences is reduced by using each subject as its own control. In many of our studies, however, this requires that a subject be gonadectomized (so as to bring hormone levels under control), then undergo an initial round of behavioral testing (to establish baseline levels of behavior), then receive a brain manipulation or control treatment, then undergo additional behavioral testing (to measure the treatment's impact). Such designs obviously require multiple surgeries.

In addition, some subjects may undergo more than one brain surgery. However, this will occur infrequently, and only when the sequence or combination of procedures and responses is itself a focus of study (e.g., comparison of responses to simultaneous vs. sequential lesions) or is otherwise crucial to the success of the project (e.g., the use of sequential unilateral lesions to eliminate mortality that would be induced by a single procedure placing bilateral lesions). A typical experiment of this type might include: (1) the screening of prospective subjects; (2) gonadectomy; (3) at least 1 week of recovery; (4) 1-2 weeks of behavioral testing; (5) an initial round of brain surgery for the placement of a lesion; (6) at least 1 week of recovery; (7) possibly a second round of behavioral testing, depending on the experimental goals and design; (8) a second

round of brain surgery, for the placement of a second lesion; (9) at least 1 week of recovery; (10) a final round of behavioral testing; (11) euthanasia. Again, such sequences are employed only where critical to the relevant experimental goals and designs, seem to be tolerated well, and seem to us to be less stressful than single operations including all of the necessary procedures.

The number of animals that were affected by this exception in 2008-09 was 34.

2. Exception to regulation requiring that bats be housed in flight cages, i.e., cages sufficiently large for flight

Some of the bats housed in our facility are subjects in studies of the neuroendocrine and metabolic changes that help to support hibernation. During their participation in these studies, these subjects are hibernating and inactive, making opportunities for flight both unnecessary and inappropriate (e.g., due to the need for elevated humidity, see below). The number of animals that were affected by this exception in 2008-09 was 103.

3. Exception to regulation establishing 30-70% as normal range of humidities

As noted above, some of the studies supported by our facility focus on neuroendocrine and metabolic correlates of hibernation. The successful induction and maintenance of hibernation requires the creation of conditions such as bats encounter during the winter in their natural environments. These are characterized by levels of humidity at or near saturation. Despite their departure from the humidities that otherwise might be normal, such elevated levels of humidity are entirely normal for these animals in this condition. The number of animals that were affected by this exception in 2008-09 was 103. These were the same 103 animals referred to in #2 just above.

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