

Membership of the IACUC

Date: January 27, 2017			
Name of Institution: Brigham Young University			
Assurance Number: D16-00461(A3783-01)			
IACUC Chairperson			
Name*: David Kooyman			
Title*: IACUC Chair, Professor			Degree/Credentials*: PhD, Physiology Developmental Bio
Address*: (street, city, state, zip code) 3051 LSB, Provo, Utah, 84602			
E-mail*: david_kooyman@byu.edu			
Phone*: (b) (6)		Fax*: (b) (6)	
IACUC Roster			
Name of Member/ Code**	Degree/ Credentials	Position Title***	PHS Policy Membership Requirements****
David Kooyman	PhD, Physiology	IACUC Chair, Professor	Scientist
Sandra Garrett	DVM, Veterinarian	University Veterinarian	Veterinarian
(b) (6)			Non-affiliated Member
			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Non-Scientist
			Non-Affiliated Member
			Non-Scientist

* This information is mandatory.

** Names of members, other than the chairperson and veterinarian, may be represented by a number or symbol in this submission to OLAW. Sufficient information to determine that all appointees are appropriately qualified must be provided and the identity of each member must be readily ascertainable by the institution and available to authorized OLAW or other PHS representatives upon request.

*** List specific position titles for all members, including nonaffiliated (e.g., banker, teacher, volunteer fireman; not "community member" or "retired").

**** [PHS Policy](#) Membership Requirements:

<i>Veterinarian</i>	veterinarian with training or experience in laboratory animal science and medicine or in the use of the species at the institution, who has direct or delegated program authority and responsibility for activities involving animals at the institution.
<i>Scientist</i>	practicing scientist experienced in research involving animals.
<i>Nonscientist</i>	member whose primary concerns are in a nonscientific area (e.g., ethicist, lawyer, member of the clergy).
<i>Nonaffiliated</i>	individual who is not affiliated with the institution in any way other than as a member of the IACUC, and is not a member of the immediate family of a person who is affiliated with the institution. This member is expected to represent general community interests in the proper care and use of animals and should not be a laboratory animal user. A consulting veterinarian may not be considered nonaffiliated.

[Note: all members must be appointed by the CEO (or individual with specific written delegation to appoint members) and must be voting members. Non-voting members and alternate members must be so identified.]

IX. Facility and Species Inventory

[illegible]

*Institutions may identify animal areas (buildings/rooms) by a number or symbol in this submission to OLAW. However, the name and location must be provided to OLAW upon request.

INSTITUTIONAL ANIMAL CARE
AND USE COMMITTEE
BRIGHAM YOUNG UNIVERSITY
A-285 ASB
PROVO, UTAH 84602-1231
(801) 422-3841 / FAX: (801) 422-0620



December 1, 2016

(b) (6)

To: Alan R. Harker, Ph.D.
Animal Welfare Institutional Official
BYU, Associate Academic Vice President

From: David Kooyman, Ph.D.
Chair, BYU IACUC

Subject: IACUC semi-annual report, October 2016

This is the semi-annual report of the Institutional Animal Care and Use Committee (IACUC), covering the May 1, 2016 to October 31, 2016 period. Animal care facilities were inspected on October 13, 2016 using the Guide for the Care and Use of Laboratory Animals (Guide), and, as applicable, 9 C.F.R. § 2.31. A Program Review was conducted on October 18, 2016. A vote to accept this semi-annual inspection and review occurred during the November 3, 2016 IACUC meeting. The voting was as follows:

Motion to Approve
Approved 7:0

The IACUC meets on a monthly basis. Meetings are held the first Thursday of each month at 3:00 pm in (b) (4) or other identified location on BYU campus. Adjustments are made to this schedule if full quorum is unable to convene or to accommodate for holidays. The requirement to meet on a semi-annual basis stems from the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animal Welfare (OLAW), and USDA Animal Welfare Regulations (9 CFR Chapters 1 and 3, sub-chapter A) as applicable.

Current members of the IACUC are as follows: David Kooyman, Ph.D. Physiology & Developmental Biology, Chair; (b) (6) Sandra Garrett, DVM, University Attending Veterinarian; (b) (6)

Items generated as a result of the semi-annual inspection provide the IACUC with a guide for developing policies and procedures, aid in understanding IACUC member roles, and raise BYU's animal care program to a level of full compliance with PHS and USDA policies and regulations.

The following IACUC members participated in the October 13th BYU-facilities inspection: (b) (6) Sandra Garrett, (b) (6) and David Kooyman. All deficiencies listed below are considered "minor" unless otherwise indicated.

A. Semi-annual Inspections Findings (Deficiencies) of the Animal Facilities:

- (b) (4)
1. (b) (4) (b) (6)
A/R charcoal canister- weigh regularly- needs connector, not tape.
 2. (b) (4) (b) (6)
Method for mouse euthanasia does not match protocol- no ketamine or guillotine use. Students don't know which protocol they are working on.
They were using isoflurane and then decapitating the animals with razorblades.
Students were training other students on the wrong way to euthanize.
*Major- Protocol was not being followed as currently outlined. This is NIH funded and was reported to OLAW 11/16/16.
 - (b) (4)
No non-compliance deficiencies noted.
 - (b) (4)
No non-compliance deficiencies noted.
 - (b) (4)
No non-compliance deficiencies noted.
 - (b) (4)
 1. (b) (4) (b) (6)
Biohazardous waste is not being picked-up- consult (b) (6)
 - (b) (4)
 1. (b) (4) (b) (6)
(b) (6) Styrofoam is covered in blood. Clean or replace with surgical boards.

2. (b) (4) (b) (6)
Some cages are overcrowded (3B5). Wean out animals to ensure there is no overcrowding.
Animal care: ORCA staff is noting cage overcrowding, and PIs must respond to notification of overcrowding within 48 hours. Low humidity was noted in the room (Less than 30). This should be acknowledged and approved by the veterinarian daily.
3. (b) (4) (b) (6) - (b) (6)
(b) (6) – Electrical daisy-chaining is a concern- extension cord plugged into a power strip. Please correct. The Guide page 141 “The electrical system should be safe and provide appropriate lighting, a sufficient number of power outlets, and suitable amperage for specialized equipment.”
4. (b) (4) (b) (6) –Nude Mice
An open bag of food was found in the animal housing room. The Guide says” Areas in which diets and diet ingredients are processed or stored should be kept clean and enclosed to prevent the entry of pests. Food stocks should be stored off the floor on pallets, rack, or carts in a manner that facilitates sanitation. Open bags should be stored in vermin proof containers to minimize contamination and avoid the potential spread of pathogens.”

Autoclaved bottles need to be recovered after opening.
5. (b) (4) Clean Room
Autoclave should have a spore indicator that is used on a regular basis.

General remarks: There is a fire extinguisher in the hall that has not been checked since 2014, but this is the fire department’s responsibility.
Security in the building was impressive, especially in (b) (4)
The facility was especially clean and tidy. There was good airflow, no/limited animal smell.
A sick animal was found and appropriately identified for impending treatment.
Overall, the animal care staff is doing an excellent job. They are well trained and informed.
6. (b) (4) (b) (6)
Food found in lab, was not being eaten- warning given. Food is not allowed in labs. See (b) (6) and the LSB policy.
7. (b) (4) (b) (6)
Everything looks neat and clean. Everything was labeled. Looks good. However, a student was questioned about protocol and didn’t know where to find it. Please make sure students are aware of where the protocol as and that they have read it.
8. (b) (4) (b) (6)

Everything looks neat and clean. Everything was labeled. Looks good. However, a student was questioned about protocol and didn't know where to find it. Please make sure students are aware of where the protocol as and that they have read it.

9. (b) (4) (b) (6)

Retractable razor left on counter

No alcohol should be stored outside of non-flammable containers.

10. (b) (4) (b) (6)

Food/smoothie? Left out, not in backpack. LSB policy does not allow food or drink in labs.

Student doesn't appear to be properly trained because they don't know what a protocol is. All personnel should be trained. See LSB Lab Policy. The Guide discusses protocol review on page 26.

Cleaning of the lab is needed.

11. (b) (4) (b) (6)

Razorblade on counter.

No food/drink should be in the lab.

No alcohol should be stored outside non-flammable containers.

Glass is poking up out of the sharps deposit.

12. (b) (4) (b) (6)

Razorblade left out.

13. (b) (4) (b) (6)

Flammables not stored in fire safe container.

Razorblade left out.

14. (b) (4) (b) (6)

Sharps container overflowing.

15. (b) (4) (b) (6)

Empty cage. Please ensure that no vivarium cages are being transported.

One razor blade left out.

Lab gloves in regular trash.

16. (b) (4) (b) (6)

Razorblade left out.

Correction letters were sent to each Principal Investigator responsible for the noted deficiencies. All deficiencies were required to have been corrected by November 22, 2016. The IACUC office received a written response from each Principal Investigator whether or

not he or she agreed with found deficiencies, or with a statement assuring that deficiencies were corrected within the correction period listed above. The IACUC office approved any alternate correction plans, if the responsible investigator proposed such plans. Additionally, the IACUC re-inspected all deficient facilities on November 22, 2016 to ensure correction and compliance.

I. Program Review

A. Minor deficiencies:

1. Section 10- Occupational Health and Safety of Personnel: We have a written and approved Medical Surveillance Program but it has not been implemented. Russ Matheson, the Animal Care director has spoken with (b) (6) at (b) (4) and he has approved our forms for the Occupational Health & Safety Program (OHSP) to distribute. That project has been granted funding and approval as of the week of November 6, 2016.

B. Personnel Qualifications and Training:

1. David Kooyman attended the following:
 - Balancing Public Interests, Benefits, and Risks in Animal Research | Jun 2016
 - OLAW Webinar- FW: Implementing Guidance on Significant Changes: One Institution's Experience | Sep 2016
2. Sandra Garrett attended the following:
 - OLAW Webinar- FW: Implementing Guidance on Significant Changes: One Institution's Experience | Sep 2016
3. (b) (6) attended the following:
 - Balancing Public Interests, Benefits, and Risks in Animal Research | Jun 2016
4. (b) (6) attended the following:
 - National AALAS Conference | Oct 2016
5. (b) (6) attended the following:
 - IACUC 101 | Sep 2016
 - IACUC 301 | Sep 2016

II. Notable IACUC Action: None

III. Current IACUC-approved departures from the PHS policy and the Guide

- A. In protocol 14-0402 the IACUC approved the use of non-pharmaceutical grade preparations of PMSG (b) (4) and HCG (b) (4) for the superovulation of mice embryo collection, as it will significantly reduce the number of animals used in the protocol. The pharmaceutical-grade formulations for these hormones have not been tested in mice and the PI is familiar with the use of the non-pharmaceutical grade formulations.
- B. In protocol 14-0803 the IACUC approved the use of non-pharmaceutical grade drug Tamoxifen, as there is not suitable pharmaceutical-grade formulation for mice. While Tamoxifen is available in pharmaceutical-grade (it is routinely given to humans), it is only provided in tablet form.
- C. In protocol 15-0109 the IACUC approved the use of the following non-pharmaceutical grade compounds: ethanol, dihexylphthalate, monohexylphthalate, bisphenolA, NAPQI, sulforaphane, quercetin, EGEG, curcumin, tert-butylhydroquinone, oltipraz, and dithiolethione. These compounds are not pharmaceuticals but rather are environmental contaminants or natural products collected from various plants. As such they are not commercially available as pharmaceutical grade compounds. The PI obtained these compounds/substances from (b) (4) in the highest grade possible to minimize contamination.
- D. In protocol 15-0201 the IACUC approved the use of non-pharmaceutical grade dexamethasone (b) (4). This specific compound has been previously used in rodents in multiple studies (Crowley et al., JCI: 2005; 155(4)) widely and without incident. Because the non-pharmaceutical grade has been used previously, and the PI and personnel are familiar with the precise dose and timing of the reagent, its use will allow the PI to reduce the waste of animals in an effort to optimize an unfamiliar compound.

IV. Minority Views: None

If there are any questions relating to this report, please feel free to contact David Kooyman (IACUC Chair), Sandra Garrett (University Attending Veterinarian), or (b) (6)
(b) (6)

Sincerely,

BYU Institutional Animal Care and Use Committee (IACUC):

(b) (6)

David Kooyman, Chair

Sandra Garrett, UAV

(b) (6)

INSTITUTIONAL ANIMAL CARE
AND USE COMMITTEE
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June 2, 2016

(b) (6)

6/7/16

To: Alan R. Harker, Ph.D.
Animal Welfare Institutional Official
BYU, Associate Academic Vice President

From: David Kooyman, Ph.D.
Chair, BYU IACUC

Subject: IACUC semi-annual report, April 2016

This is the semi-annual report of the Institutional Animal Care and Use Committee (IACUC), covering the November 1, 2015 to April 30, 2016 period. Animal care facilities were inspected on April 12, 2016 using the Guide for the Care and Use of Laboratory Animals (Guide), and, as applicable, 9 C.F.R. § 2.31. A Program Review was conducted on April 18, 2016. A vote to accept this semi-annual inspection and review occurred during the May 5, 2016 IACUC meeting. The voting was as follows:

Motion to Approve
Approved 7:0

The IACUC meets on a monthly basis. Meetings are held the first Thursday of each month at 3:00 pm in (b) (4) or other identified location on BYU campus. Adjustments are made to this schedule if full quorum is unable to convene or to accommodate for holidays. The requirement to meet on a semi-annual basis stems from the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animal Welfare (OLAW), and USDA Animal Welfare Regulations (9 CFR Chapters 1 and 3, sub-chapter A) as applicable.

Current members of the IACUC are as follows: David Kooyman, Ph.D. Physiology & Developmental Biology, Chair; (b) (6) Sandra Garrett, DVM, University Attending Veterinarian; (b) (6)
(b) (6)

Items generated as a result of the semi-annual inspection provide the IACUC with a guide for developing policies and procedures, aid in understanding IACUC member roles, and raise BYU's animal care program to a level of full compliance with PHS and USDA policies and regulations.

The following IACUC members participated in the April 12th BYU-facilities inspection: (b) (6)
(b) (6) Sandra Garrett, (b) (6)
and David Kooyman. All deficiencies listed below are considered "minor" unless otherwise indicated.

A. Semi-annual Inspections Findings (Deficiencies) of the Animal Facilities:

- (b) (4)
1. (b) (4) Wash and Prep
 - Metal cart rusted- needs to be replaced
 - 2 broken tiles with a hole in the flooring
 2. Store ladder securely, ladder safety training required for those who use it, document ladder safety.
 3. (b) (4) All doorframes have chipped paint. (will be redone next year when no animals are in the space)
 4. (b) (4) (b) (6)
 - How often are the test cages sanitized? Where's the record? Documentation needed.
 5. (b) (4) Cage and Bedding Storage
 - Holes in the cinderblock walls need repair.
 6. (b) (4) Bottle Storage
 - No noncompliance issues.
 7. (b) (4) Hallway
 - Chlorhexidine- no expiration date
 - (b) (6) Zicam nasal spray- Expired. Corrected.
 - (b) (6) Fruit loops expired. Corrected.
 - (b) (6) Dates and concentration needed on sugar solution. Refrigeration needed?
 - Broom has wood handle.
 - Water jug- Fill and clean dates needed.
 8. (b) (4) – (b) (6)
 - Temp high of 98- defective gauge- equipment failure. (will remove)
 9. (b) (4) (b) (6)
 - (b) (6) 16-0301 Drug log for administration of post-surgery analgesics needed.
 - Feces in scale and on floor- scale is dirty.
 - Temp-thermometer hit max of 108 (user error/defect)- potential equipment failure. (will remove)
 10. (b) (4) (b) (6)
 - Bottle of sugar solution- Needs to be dated with mix and expiration dates, concentration should be listed. May need to be refrigerated or mixed daily to avoid any growth.

11. (b) (4) (b) (6)
Animal freezer is in this room with the alcohol chamber and mice.
12. (b) (4) (b) (6)
Cook- f/air canister needs to be weighed in grams, not just dated.
Solutions need to be labeled- names, concentration, expiration date (2 bottles)
13. (b) (4) (b) (6)
Food being eaten in open lab- surgery in progress a few feet away.

- (b) (4)

1. (b) (4) (b) (6)
No noncompliance issues. Tanks and fridge fixed since last inspection- great!
2. (b) (4) (b) (6)
No noncompliance issues.
3. (b) (4) (b) (6)
Recommendation- The room is very dusty, cleaning would be good.

- (b) (4)

1. (b) (4) no-non-compliance issues noted; recommendation: this room was the messiest that the inspectors have ever seen it. The inspectors recommend tidying up.

- (b) (4)

1. (b) (4) this was the old reptile room, there are not any animals currently in there, and so this room was not inspected.
2. (b) (4) A cabinet had snacks or treats that were past their expiration date, which were properly discarded to correct the problem. The canned food storage and dry food had some cans/canisters that were out-of-date. The old ones should be thrown away and in the future they should rotate their supplies to avoid this problem. (Rotate disaster food)

- (b) (4)

1. (b) (4) no-non-compliance issues noted; recommendation: currently, the MRI is cleaned by the researcher (or team) after each scan (both human and animal) and at the end of each day by the MRI Facility staff. IACUC inspectors recommend posting a cleaning log and cleaning SOP so that researcher (or team) knows what is expected, and so that there is a record showing that the MRI was cleaned.

- (b) (4)

1. (b) (4) (b) (6) # 14-0303
Dirty Rack – Needs wiped down
No Date on Disinfectant (b) (6)
2. (b) (4) Procedure Room – Multiple PI's
2 syringes filled and left in drawer – One labeled “Ketamine” the other unlabeled (sent to all (b) (6)
(b) (6) Spray bottle “70% E +OH” has no expiration date
Untidy – feces and bedding on counter and in sink
3. (b) (4) (b) (6)
(b) (6) Needs expiration Date on “SGI Diet” Pellets
(b) (6) No contact info on cage cards
No documentation on cage card of why animal is singly housed
4. (b) (4) (b) (6)
(b) (6) No Contact Number on cage card
5. (b) (4) (b) (6)
No Contact Info on Card Cages
Does Protocol 14-0406 allow for single housed animals?
6. (b) (4) Multiple PI Procedure Room
(b) (6)
(b) (6) has Regular Heating Pad
(b) (6) Corrugated Cardboard Box – (Must be able to sanitize surfaces)
(b) (6) Expired Lidocaine Cream
(b) (6) Expired Lidocaine Cream
(b) (6) Spray Bottle – Undated,
Sharps container full/sealed
7. (b) (4) Multiple PI Procedure Room
(b) (6) – Corrugated Cardboard maze
(b) (6) Isoflurane – Expired
Injectable saline – Expired march 2015
Mislabeled container – Fluid
Particle Board / Wood board – Cannot sanitize (b) (6)
8. (b) (4) Cage Wash
No eye station (In process)
9. (b) (4) Bedding & Storage Room
10. (b) (4) Staging room (Cages)
Expired drugs in first aid kit (2005)
11. (b) (4) (b) (6)
4 cages with males are singly housed – missing justification notation on cage cards
12. (b) (4) Bedding Cage Staging room
13. (b) (4) Clean Room
Power strip by sink (pending correction)
14. (b) (4) Kooyman, (b) (6)
(b) (6) Need Contact # (protocol number listed in place of)
Males are singly housed – missing justification notation on cage cards
(b) (6) Cage Card missing investigator name

- Animals singly housed – missing justification notation on cage cards
15. (b) (4) (b) (6) (Hamster)
Need Census data for animals generated, used – (b) (6) to send access to Google Doc to Sandy Garrett, Russ Matheson, (b) (6)
Bottle of Eye Med without date
 16. (b) (4) (b) (6) (Hamster) and multiple PIs
(b) (6) ashes and residue from smoking experiments in hood area
Multiple corrugated boxes – cannot sanitize
Bags of food/pellets without any label for expiration throughout room
Glass bottle jugs on upper shelving with limited restraint from toppling over onto floor.
Sharps container too full- over flowing
Expired drugs
 17. (b) (4) (b) (6)
Open food, wrappers, candy on shelves in lab.
Many blades left in the open on multiple surfaces (shelves, work benches)
 18. (b) (4) (b) (6)
(b) (6) Encourage to be careful of food spillage when feeding fish.
(b) (6) Recommendation to list name and protocol on door to room.
 19. (b) (4) (b) (6)
Razor blades free on shelves.
 20. (b) (4) (b) (6)
Razor blades left free on shelves.
 21. (b) (4) (b) (6)
Razor left on counter
 22. (b) (4) (b) (6)
Pas Kinase protocol- student in lab said that retro-orbital bleeding and cervical dislocation is being performed without anesthesia. Protocol in lab lists CO2 as a requirement with this procedure. Check with Sandy and review protocol and amendments for any changes. (Major- no retro-orbital bleeding is on the protocol)
 23. (b) (4) (b) (6)
Razor blades left resting on top of orange magnetic device
 24. (b) (4) (b) (6)
Several razor blades free on shelves
 25. (b) (4) Multiple PIs
(b) (6) No food should be in the lab- a bag of candy was on the counter.
 26. (b) (4) (b) (6)
Label food and include dates when transferred to a separate container.

B. Semi-annual Inspection Findings (Deficiencies) of the Animal Care Program:

1. The statistician needs to review the CO2 policy.
2. An MOU file for sub-award involving Animal Research needs to be created and maintained by the ORCA office.
3. A skills assessment should be conducted on all personnel by the PI, the requirement of which should be added to the annual review form.

4. Hardcopy of Disaster plans needs to be maintained.
5. IACUC SOPs should be reviewed and signed off on every three years.
6. An SOP on a formal orientation of new members is recommended.
7. The university veterinarian should be able to highlight any concerns noted in the past month (should be on the meeting agenda regularly).
8. An SOP is needed to formalize and identify the Occupational Health person and their role

Correction letters were sent to each Principal Investigator responsible for the noted deficiencies. All deficiencies were required to have been corrected by May 23, 2016. The IACUC office received a written response from most Principal Investigators whether or not he or she agreed with found deficiencies, or with a statement assuring that deficiencies were corrected within the correction period listed above. The IACUC office approved any alternate correction plans, if the responsible investigator proposed such plans. Additionally, the IACUC re-inspected all deficient facilities on June 1 & 2, 2016 to ensure correction and compliance.

I. Program Review

A. Personnel Qualifications and Training:

1. David Kooyman attended the following:
 - Essentials of IACUC Administration | Mar 2016
 - NWABR Regional IACUC Conference | Mar 2016
 - 2016 IACUC Conference by PRIM&R | Apr 2016
2. Sandra Garrett attended the following:
 - OLAW Webinar: "The 2016 Vertebrate Animals Section, Grants Policy, and Congruence". | Mar 2016
3. (b) (6) attended the following:
 - OLAW Webinar : "The 2016 Vertebrate Animals Section, Grants Policy, and Congruence" | Mar 2016
 - Essentials of IACUC Administration | Mar 2016
 - NWABR Regional IACUC Conference | Mar 2016
 - 2016 IACUC Conference by PRIM&R | Apr 2016

II. Notable IACUC Action: None

III. Current IACUC-approved departures from the PHS policy and the Guide

- A. In protocol 14-0402 the IACUC approved the use of non-pharmaceutical grade preparations of PMSG (b) (4) and HCG (b) (4) for the superovulation of mice embryo collection, as it will significantly reduce the number of animals used in the protocol. The pharmaceutical-grade formulations for these hormones have not been tested in mice and the PI is familiar with the use of the non-pharmaceutical grade formulations.
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IV. Minority Views: None

If there are any questions relating to this report, please feel free to contact David Kooyman (IACUC Chair), Sandra Garrett (University Attending Veterinarian), or (b) (6)

Sincerely,

BYU Institutional Animal Care and Use Committee (IACUC):

(b) (6)

David Kooyman, Chair

Sandra Garrett, UAV

(b) (6)