PRINCETON UNIVERSITY
A3434-01
Animal Welfare Assurance

I, Pablo Debenedetti, Dean for Research, as named Institutional Official for animal care and use at Princeton University, provide assurance that this Institution will comply with the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (Policy).

I. Applicability of Assurance

This Assurance applies whenever this Institution conducts the following activities: all research, research training, experimentation, biological testing, and related activities involving live vertebrate animals supported by the PHS and NSF. This Assurance covers only those facilities and components listed below.

A. The following are branches and components over which this Institution has legal authority, included are those that operate under a different name: All components (Schools, colleges, centers, etc.) are physically located on the Princeton University Main Campus in Princeton, New Jersey and the Stony Ford Ecological Research Station that is a 99 acre historic farm located seven miles outside of Princeton borough, New Jersey.

B. The following are other institution(s), or branches and components of another institution: None/non-applicable

II. Institutional Commitment

A. This Institution will comply with all applicable provisions of the Animal Welfare Act and other Federal statutes and regulations relating to animals.

B. This Institution is guided by the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training."

C. This Institution acknowledges and accepts responsibility for the care and use of animals involved in activities covered by this Assurance. As partial fulfillment of this responsibility, this Institution will ensure that all individuals involved in the care and use of laboratory animals understand their individual and collective responsibilities for compliance with this Assurance, and other applicable laws and regulations pertaining to animal care and use.

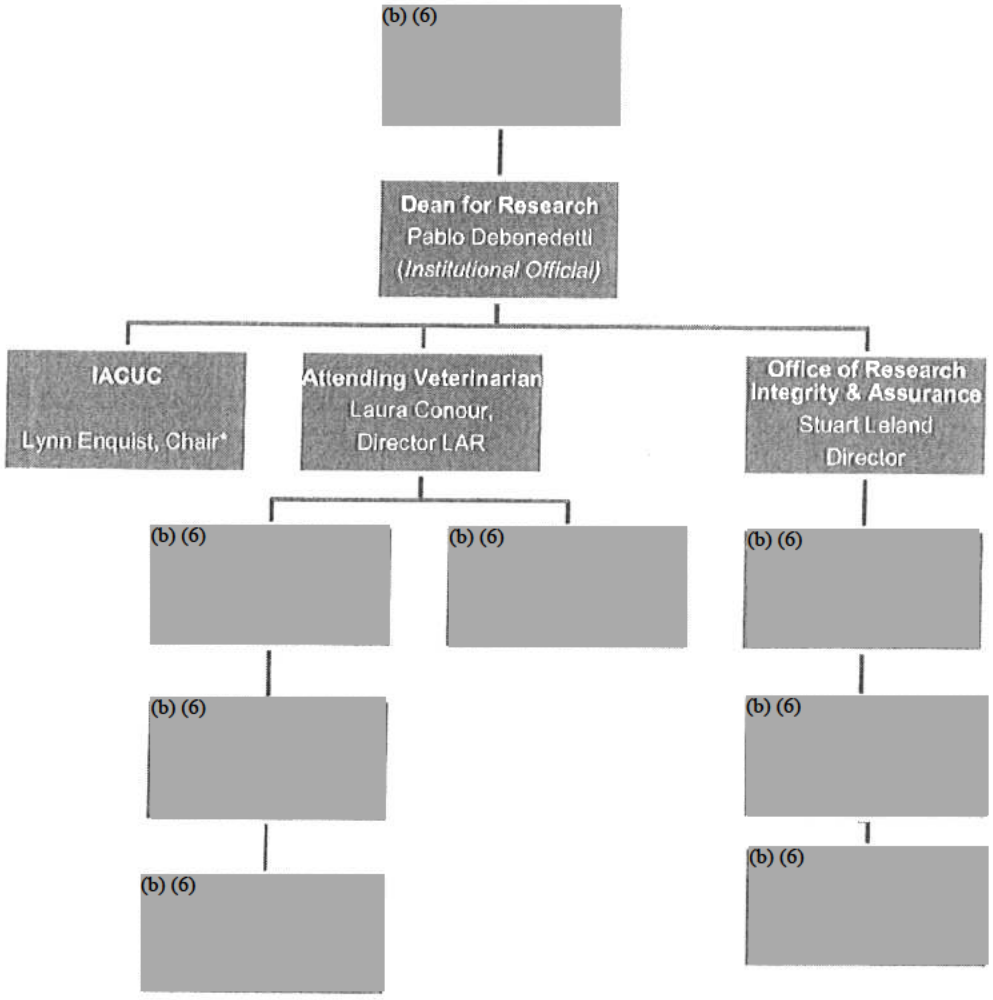
D. This Institution has established and will maintain a program for activities involving animals according to the Guide for the Care and Use of Laboratory Animals (Guide) 8th Edition.

E. This Institution agrees to ensure that all performance sites engaged in activities involving live vertebrate animals under consortium (sub-award) or subcontract agreements have an Animal Welfare Assurance and that the activities have Institutional Animal Care and Use Committee (IACUC) approval.

3/15/16

III. Institutional Program for Animal Care and Use

A. The lines of authority and responsibility for administering the program and ensuring compliance with the PHS Policy are as follows:



As indicated above, there are direct and open lines of communication between the IACUC and the Institutional Official (IO) and between the Veterinarian and the IO. *While the Chair does not have an organizational reporting line to the IO, he meets semiannually, or as needed, with the IO to discuss progress updates and issues relating to the program of animal care.

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

1. **Attending Veterinarian**
   Name: Laura Conour

   Qualifications
   - Degrees: DVM, University of Illinois, 1992; Diplomate of the American College of Laboratory Animal Medicine in 1999.
   - Training or experience in laboratory animal medicine or in the use of the species at the institution: NIH-funded training program in Comparative Medicine completed in 1994 at Washington University School of Medicine in St. Louis. NIH-funded research training program in Psychiatry completed in 1996 at Washington University School of Medicine in St. Louis. Nineteen years of experience in the field of Laboratory Animal Science and Medicine across all species of commonly used laboratory animals

   Authority: Dr. Laura Conour has direct program authority and responsibility for the Institution's animal care and use program including access to all animals.

   Time contributed to program: Full time / 100 %

2. (b) (6)

3.

(b) (6)

C. The IACUC at this Institution is appointed according to PHS Policy IV.A.3.a.and is qualified through the experience and expertise of its members to oversee the Institution's animal care and use program and facilities. The President, as Chief Executive Officer (C.E.O.), has delegated to the Institutional Official the authority to appoint the members of the IACUC. In accordance with the Health Research Extension Act of 1985, this delegation of authority is specific and is in writing. The IACUC consists of ~13 voting members, and its membership meets the composition requirements of PHS Policy IV.A.3.b. Part VIII is a list of the chairperson and members of the IACUC and their names, degrees, profession, titles or specialties, and institutional affiliations.

D. The IACUC will:

1. **Review at least once every six months the Institution's program for humane care and use of animals, using the *Guide* as a basis for evaluation. The IACUC procedures for conducting semiannual program reviews are as follows:**

   - The IACUC usually meets monthly with the exception of August to review the Institution's Program for Humane Care and Use of Animals.
   - The Committee uses the Guide and other relevant resources, e.g., the PHS Policy, the Code of Federal Regulations (Animal Welfare), as a basis for the review.
   - To facilitate the evaluation, the Committee uses various methods including but not limited to a modified version of the OLAW Program and Facility Review Checklist provided on the OLAW website.
   - The IACUC uses subcommittees appointed by the IACUC Chair to conduct portions of the review. However, no member will be involuntarily excluded from participating in any portion of the review.
   - The subcommittees' findings are reported to the full committee for review and approval. During the discussion, IACUC members have an opportunity to evaluate each component of the program.
   - The evaluation includes, but is not necessarily limited to, a review of the following:

a. Institutional and Individual Responsibilities;
b. IACUC Member Experience and Training;
c. Security (personnel and facility);
d. IACUC Membership and Functions;
e. IACUC Records and Reporting Requirements;
f. Husbandry and Veterinary Care (all aspects);
g. Personnel Qualifications (Experience and Training);
h. Occupational Health and Safety; and
i. Emergency and Disaster Planning.

- In addition, the evaluation will include a review of the Institution's PHS Assurance.

- If program deficiencies are noted during the review, they are categorized as significant or minor and the Committee will develop a reasonable and specific plan and schedule for correcting each deficiency. A significant deficiency is one that is or may be a threat to the health and safety of the animals or personnel.

2. **Inspect at least once every six months all of the Institution's animal facilities, including satellite facilities and animal surgical sites, using the *Guide* as a basis for evaluation. The IACUC procedures for conducting semiannual facility inspections are as follows:**

- At least once every six months at least two voting members of the IACUC visit all of the institution's facilities where animals are housed or used, i.e., holding areas, animal care support areas, storage areas, procedure areas, surgery areas, and laboratories where animal manipulations are conducted. University-owned vehicles and equipment used for transporting of the animals are also inspected.

- The Committee uses the *Guide* and other pertinent resources, e.g., the PHS Policy, the Code of Federal Regulations (Animal Welfare Act) as a basis for the inspection.

- The IACUC uses subcommittees appointed by the IACUC Chair to conduct portions of the inspection. However, no member will be involuntarily excluded from participating in any portion of the inspection.

- To facilitate the evaluation, the Committee uses a checklist based on the Sample OLAW Program and Facility Review Checklist from the OLAW website.

- The subcommittees' findings are reported to the full committee for review and approval.

- If deficiencies are noted during the inspection, they are categorized as significant or minor and the IACUC develops a reasonable and specific plan and schedule for correcting each deficiency. A significant deficiency is one that is or may be a threat to the health and safety of the animals or personnel.

3. **Prepare reports of the IACUC evaluations according to PHS Policy IV.B.3. and submit the reports to the Institutional Official. The IACUC procedures for developing reports and submitting them to the Institutional Official are as follows:**

   - After discussion and acceptance of the subcommittee reports, a memo is drafted to the IO from the IACUC Chair and IACUC which is known as the IACUC Report.

   - The approved subcommittee reports are appended to the memo. The IACUC Report describes the nature and extent of the institution's adherence to the *Guide* and the PHS Policy.

   - The report also identifies specifically any IACUC approved departures from the provisions of the *Guide* and the PHS Policy, and states the reasons for each departure. If there are no departures the reports will so state.

   - Approved departures must be approved as part of a protocol, protocol amendment, or other written document, using either FCR or DMR as delineated below in Section III.D.6.

   - Departures from the provisions of the Guide that are not IACUC approved would be considered deficiencies and addressed as such, i.e., the IACUC would develop a reasonable plan and schedule for discontinuing the departure or for having the departure properly reviewed and approved.

   - The report distinguishes significant deficiencies from minor deficiencies. If program or facility deficiencies are noted, the report contains a reasonable and specific plan and schedule for correcting each deficiency.

   - All of the institution's facilities are accredited by AAALAC International and the report identifies those facilities as such.

   - Copies of the draft subcommittee reports and the IACUC Report are reviewed, revised as appropriate, and approved by the Committee.

   - The approved IACUC Report with the approved subcommittee reports is signed by a majority of the IACUC members and includes any minority opinions. If there are no minority opinions, the report will so state.

   - The completed approved IACUC Report with the approved subcommittee reports appended are submitted to the Institutional Official within a timely manner following completion of the evaluations—generally less than 45 days.

   - The IO does not modify the content of the report nor may he request the report be changed. The IO may request IACUC clarification on specific aspects of the report. The IO uses the IACUC Semi Annual report to guide development the program.

- The IO and Committee will track all noted deficiencies to ensure that they are appropriately resolved.

4. **Review concerns involving the care and use of animals at the Institution. The IACUC procedures for reviewing concerns are as follows:**

   - The institution provides specific instruction for reporting animal welfare concerns via the Research Integrity and Assurance website. Additionally, the institution uses a posted notice in all animal use areas to assist personnel in identifying to whom concerns of animal use should be directed. The notice contains the following instructions:

     Any employee or member of the public who has a concern involving the care, use or welfare of animals at this institution may have those concerns investigated by contacting any of the following individuals. No person making such a report will be discriminated against or suffer reprisals or retaliation. Concerns can be directed to any member of the Institutional Animal Care and Use Committee, the office of Research Integrity and Assurance. Concerns may also be reported anonymously by calling the University Hotline (b) (6) *or by online submission via the Hotline website.*

   - This posting is in multiple clearly identified areas of each vivarium and includes the IACUC committee's phone numbers and the e-mail addresses. Also, additional informational postings within the vivaria include contact information for key personnel in the event of an emergency.

   - Further, Princeton University offers a Hotline as a formal option to report any concerns or violations which can be submitted anonymously. Additionally, the Ombuds Office and the Employee Assistance Program provide informal opportunities for advice and assistance.

   - All reported concerns will be brought to the attention of the entire IACUC.

   - If necessary the IACUC Chair convenes an ad hoc meeting to discuss, investigate, and address any reported concern.

   - The IACUC Chair may appoint a subcommittee of the IACUC to investigate a reported concern. At the conclusion of its investigation, the subcommittee provides a report, including any recommendations for corrective or disciplinary action, of its findings back to the IACUC for its consideration.

   - Reported concerns and all associated IACUC actions are recorded in the IACUC meeting minutes.

   - The Committee reports such actions to the IO and, as warranted, to OLAW, AAALAC, and USDA in a timely manner. Reports to the IO may be either via meeting minutes, semiannual report of IACUC evaluations, or separate document. Reports to OLAW will be in writing and through the IO. Preliminary reports to both the IO and OLAW may be made verbally.

5. **Make written recommendations to the Institutional Official regarding any aspect of the Institution's animal program, facilities, or personnel training. The procedures for making recommendations to the Institutional Official are as follows:**

   - Recommendations regarding any aspects of the institution's animal program or facilities are discussed and developed by the IACUC.
   - The IACUC Chair may appoint a subcommittee to provide recommendations to the Committee.
   - The IACUC discusses and accepts all or some the subcommittee's recommendations. That discussion and resolution are included in the IACUC Meeting minutes.
   - A report of the IACUC's recommendations is drafted and approved by the IACUC and then submitted to the IO for consideration.

6. **Review and approve, require modifications in (to secure approval), or withhold approval of PHS-supported activities related to the care and use of animals according to PHS Policy IV.C.1-3. The IACUC procedures for protocol review are as follows:**

   Protocol Preparation, Submission, and Receipt

   - The Research Integrity and Assurance (RIA) Compliance Staff maintains the IACUC website with current information and forms.
   - The PI generates a draft protocol using the forms downloaded from the IACUC website. If the proposed work involves category D or E pain and/or distress levels, the PI consults with the LAR Veterinarian prior to submitting the protocol. The PI electronically signs the assurance statement that indicates procedures are not unnecessarily duplicative, that aseptic procedures will be used on survival surgery of animals including rodents, that dedicated facilities will be used for non-rodent surgical procedures, that required pre- and post-surgical procedures will be administered, and that all personnel are appropriately qualified and trained.
   - The draft protocol with the signed assurance statement is then submitted by e-mail to the general IACUC email inbox to be logged in, undergoes a compliance review and is distributed to a LAR veterinarian for veterinary review.

   Pre-review

   - The RIA Compliance Staff ensures through the pre-review process that the protocol information is complete, that personnel are enrolled in the occupational health and safety program, and have completed required training.
   - A LAR veterinarian reviews all new and third year renewal protocols submitted to the IACUC to ensure that the animal-related procedures are in accordance with

all acceptable standards of veterinary care including proper use of anesthesia, analgesia, and tranquilizers (and that any non-use is justified), surgical techniques and procedures, pre- and post-surgical care, and the method of euthanasia.

- The LAR veterinarian provides feedback to the RIA Compliance Staff who in turn provides that feedback to the PI.

- If revisions are requested to the protocol form, a revised submission is requested. The protocols are then collected by the RIA Compliance Staff and assembled into a packet for distribution to the committee.

- As part of the review, the LAR veterinarian confirms that the requested preliminary revisions have been made. The packet is distributed to the Committee via email or in the event a member does not have email access, the packets are sent via Fed-Ex or other expedited delivery method.

IACUC Review (Full-Committee Review and Designated-Member Review)

- No member may participate in the IACUC review or approval of a protocol in which the member has a conflicting interest (e.g., is personally involved in the project) except to provide information requested by the IACUC; nor may a member who has a conflicting interest contribute to the constitution of a quorum.

- The IACUC may invite consultants to assist in reviewing complex issues. Consultants may not approve or withhold approval of an activity or vote with the IACUC unless they are also members of the IACUC.

- Any use of telecommunications will be in accordance with NIH Notice NOT-OD-06-052 of March 24th, 2006, entitled Guidance on Use of Telecommunications for IACUC Meetings under the PHS Policy on Humane Care and Use of Laboratory Animals.

- In order to approve proposed protocols or proposed significant changes in ongoing protocols, the IACUC will conduct a review of those components related to the care and use of animals and determine that the proposed protocols are in accordance with the PHS Policy. In making this determination, the IACUC will confirm that the protocol will be conducted in accordance with the Animal Welfare Act insofar as it applies to the activity, and that the protocol is consistent with the Guide unless acceptable justification for a departure is presented. Further, the IACUC shall determine that the protocol conforms to the institution's PHS Assurance and meets the following requirements:

  a. Procedures with animals will avoid or minimize discomfort, distress, and pain to the animals, consistent with sound research design.

  b. Procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedation, analgesia, or anesthesia, unless the procedure is justified for scientific reasons in writing by the investigator.

c. Animals that would otherwise experience severe or chronic pain or distress that cannot be relieved will be painlessly euthanized at the end of the procedure or, if appropriate, during the procedure.

d. The living conditions of animals will be appropriate for their species with species-specific enrichment, unless scientifically justified, to contribute to their health and comfort. The housing, feeding, and nonmedical care of the animals will be directed by a veterinarian or other scientist trained and experienced in the proper care, handling, and use of the species being maintained or studied.

e. Medical care for animals will be available and provided as necessary by a qualified veterinarian.

f. Personnel conducting procedures on the species being maintained or studied will be appropriately qualified and trained in those procedures.

g. Methods of euthanasia used will be consistent with the current recommendations of the American Veterinary Medical Association (AVMA) Guidelines for Euthanasia of Animals, unless a deviation is justified for scientific reasons in writing by the investigator.

IACUC Review – Designated-Member Review (DMR)

- The DMR method is generally used for significant amendments, annual renewals, post-meeting protocol revisions and new vertebrate or field protocols. However, new protocol submissions that involve animals assigned to category E pain/distress level; regulated species; food/water restriction/scheduling; departures / exceptions / exemptions to the Guide and/or AWR; prolonged physical restraint; and satellite locations not previously approved, are usually reviewed by Full-Committee Review (FCR).

- In instances where the IACUC uses the DMR method the protocol will be distributed to all IACUC members via email or mail to allow for a full three working day review and the opportunity to call for FCR.

- If FCR is requested, approval of those protocols may be granted only after review at a convened meeting of a quorum of the IACUC and with the approval vote of a majority of the quorum present.

- Records of polling of members to obtain concurrence to use the DMR method, or concurrence by silent assent after three full working days will be maintained.

- Concurrently, the Chair will assign the protocol to at least one voting IACUC member who is qualified to conduct the review.

- Approval of protocols via DMR are held until the DMR Review process completes its three-day allocation, i.e., all members have had at least three full working days to call for FCR. The approvals are maintained and recorded in the minutes of the next convened IACUC meeting.

- Other IACUC members may provide the designated reviewer with comments and/or suggestions for the reviewer's consideration. That is, concurrence to use the designated-member review (DMR) method may not be conditional.

- When multiple designated reviewers are used and additional modifications are required, each designated reviewer is provided via email with the same revised protocol for the review and approval.

- If multiple designated reviewers are used, their decisions must be unanimous; if not, the protocol will be referred for FCR.

- The possible outcomes of DMR are as follows:

  a. Approval;
  b. Require modifications (to secure approval); and
  c. Referral for Full-Committee review.

IACUC Review – Full-Committee Review (FCR)

- Generally, the Full Committee Review (FCR) method will be used for protocols involving animals assigned to category E, regulated species, food/water restriction / scheduling, departures / exceptions / exemptions to the Guide and/or AWR, prolonged physical restraint and satellite locations not previously approved.

- The RIA Compliance Staff assigns each protocol to a "reader" who is a voting member of the committee. The reader is responsible for presenting the protocol to the IACUC during the meeting. The reader, along with the AV, helps lead the discussion and answer questions raised by the committee.

- Meetings are conducted in person with limited participation by teleconference when a member cannot attend the meeting and quorum may be lost. Meetings are conducted in accordance with Roberts Rules of Order.

- There are no specific meeting requirements except for the establishment of a quorum. A quorum is an assembly of the majority (more than 50% of the IACUC members).

- After a thorough discussion of the protocol and confirmation of the presence of a quorum by the RIA Compliance Staff, the IACUC Chair calls for a vote.

- The votes are open and verbal and recorded by the RIA Compliance Staff. Any person with a conflict of interest is recused from the vote and asked to physically leave the room during the deliberation and vote. Non-voting members are allowed to be present for the deliberation and vote provided they do not have a conflict of interest.

- The possible outcomes of FCR are as follows:

a. Approval;
b. Require Modifications (to secure approval); and
c. Withhold Approval.

- For each instance, a vote is called for and taken and recorded in the IACUC minutes. A majority vote of the quorum is required to go forward with the noted action

- Review of Required Modifications Subsequent to FCR. When the IACUC requires modifications (to secure approval), of a protocol, such modifications are reviewed as follows:

  a. FCR or DMR following the procedures delineated above.

     OR

  b. DMR if approved unanimously by all members at the meeting at which the required modifications are developed delineated AND if the entire current Committee has previously approved, in advance and in writing (e.g., documented policy), that the quorum of members present at a convened meeting may decide by unanimous consent to use DMR subsequent to FCR when modification is needed to secure approval. However, any member of the IACUC may, at any time, request to see the revised protocol and/or request FCR of the protocol.

  Minor modifications of an administrative nature, i.e., typographical or grammatical errors, required signatures, etc. may be confirmed by IACUC administrative/support personnel.

- If the protocol [that requires modification to secure approval] is sent to designated member review, the IACUC Chair assigns the designated member reviewer(s).

- For protocols sent to DMR, the RIA Compliance Staff emails the PI the IACUC's requests for clarification or revision. The PI then returns his or her clarifications/revisions to the IACUC general email box. The RIA Compliance Staff forwards the PI's response to the DMRs for review.

- Approval of the protocol is not granted until such time that as each assigned DMR reviewer issues his or her approval.

Expedited Reviews

- As stated above, protocols involving animals assigned to category E, regulated species, food/water restriction/scheduling, departures/exceptions/exemptions to the Guide and/or AWR, prolonged physical restraint and satellite locations not previously approved are reviewed by the Committee. However, if there is a need, these protocols may be sent through the designated member review process provided that the IACUC Chair approves of the change in review procedure.

7. **Review and approve, require modifications in (to secure approval), or withhold approval of proposed significant changes regarding the use of animals in ongoing activities according to PHS Policy IV.C. The IACUC procedures for reviewing proposed significant changes in ongoing research projects are as follows:**

   - The IACUC requires that all proposed changes (amendments) be submitted in writing and be approved prior to implementation.
   - Review and approval of significant changes are handled in the same manner as new protocols. See Paragraph III.D.6. above.
   - Examples of changes considered to be significant include, but are not limited to changes:

     a. in the objectives of a study;
     b. from non-survival to survival surgery;
     c. resulting in greater discomfort or in a greater degree of invasiveness;
     d. in the housing and or use of animals in a location that is not part of the animal program overseen by the IACUC
     e. in the species
     f. in Principal Investigator;
     g. that impact personnel safety;
     h. in anesthetic agent(s) or the use or withholding of analgesics;
     i. in the method of euthanasia;
     j. in the duration, frequency, or number of procedures performed on an animal
     k. in approximate number of animals use (Note: changes requesting an increase in less than or equal to 10% of current approved animal use are considered minor amendments for non-AWA-covered species)

8. **Notify investigators and the Institution in writing of its decision to approve or withhold approval of those activities related to the care and use of animals, or of modifications required to secure IACUC approval according to PHS Policy IV.C.4. The IACUC procedures to notify investigators and the Institution of its decisions regarding protocol review are as follows:**

   - Principal Investigators are notified either by e-mail or letter from the IACUC Chair or his or her delegate—e.g., a RIA Compliance Staff member.
   - If the IACUC's decision is to require modifications to secure approval, the required modifications are delineated in the written notification to the PI.
   - For protocols for which approval is withheld by the IACUC, the RIA Compliance Staff informs the PI in writing of the reasons for disapproval and the PI is advised that he may appeal to the IACUC in person and/or writing.
   - The Institutional Official is notified by receiving a copy of the IACUC meeting minutes.

9. **Conduct continuing review of each previously approved, ongoing activity covered by PHS Policy at appropriate intervals as determined by the IACUC, including a complete review at least once every 3 years according to PHS Policy IV.C.1.-5. The IACUC procedures for conducting continuing reviews are as follows:**

Post-approval Monitoring

- A research compliance specialist has been recently hired to develop and implement a formal Post-Approval Monitoring program. Currently, there are various components of post-approval monitoring in place. Examples include daily observation of animals by trained animal care personnel and communication to the veterinary staff for follow-up, facility monitoring by LAR management and facility maintenance personnel, post-operative care by trained personnel, evaluation of outcomes of animal procedures by investigators and staff, hands-on training in animal procedures, and appropriate reporting of incidents involving occupational health and safety.

- Furthermore, the review of ongoing activities are monitored by the IACUC during semi-annual inspections and program review.

Continuing / Periodic Review

- All protocols are required to undergo annual review. The PI downloads, completes and submits to the IACUC general email box an annual renewal form.

- The RIA Compliance Staff ensures through the pre-review process that the information provided on the annual renewal form is complete and ensures all medical surveillance reviews are up to date.

- The annual renewal form is distributed via email or mail to all IACUC members to allow for a full three working day review and the opportunity to call for FCR; records of polling of members to obtain concurrence to use the DMR method, or concurrence by silent assent after three full working days will be maintained.

- Concurrently, the Chair will assign the protocol to a DMR and approval of protocols via DMR are held until the DMR Review process completes its 3-day allocation. The approvals are maintained and recorded in the minutes of the next convened IACUC meeting.

- If an IACUC member objects to the designated member review of the annual renewal, then the annual renewal is placed on the agenda of the next IACUC meeting for Full Committee Review using the procedures delineated in III.D.6 above.

- Protocols are approved for a maximum of 36 months. That is, all protocols expire no later than the three-year anniversary of the initial IACUC review.

- If activities will continue beyond the expiration date, prior to expiration of the original or preceding protocol a new protocol a new protocol must be submitted, reviewed, and approved as described in Part III.D.6. above.

10. Be authorized to suspend an activity involving animals as set forth in the PHS Policy at IV.C.6. The IACUC procedures for suspending an ongoing activity are:

- The IACUC may suspend an activity that it previously approved if it determines that the activity is not being conducted in accordance with applicable provisions of the Animal Welfare Act, the *Guide*, the institution's Assurance, or IV.C.1.a.-g. of the PHS Policy.

- The IACUC may suspend an activity only after review of the matter at a convened meeting of a quorum of the IACUC and with the suspension vote of a majority of the quorum present.

- If the IACUC suspends an activity involving animals, or any other institutional intervention results in the temporary or permanent suspension of an activity due to noncompliance with the Policy, Animal Welfare Act, the *Guide*, or the institution's Assurance, the Institutional Official in consultation with the IACUC shall review the reasons for suspension, take appropriate corrective action, and report that action with a full explanation, in writing, to OLAW and, as warranted, to AAALAC-International, USDA, and other funding agencies. Initial/preliminary reports may be made verbally.

E. The risk-based occupational health and safety program for personnel working in laboratory animal facilities and personnel who have frequent contact with animals is as follows:

1. Administration and Management

- The Princeton University Director of Environmental Health and Safety is responsible for the overall administration and management of the Occupational Health and Safety Program (OHSP). Specific responsibilities are as follows:

Institutional Biosafety Committee

- Reviews and approves of the use the following materials in animal research:

a. recombinant/synthetic nucleic acid molecules (r/s DNA)
b. biohazardous agents
c. human-derived materials
d. biological toxins
e. animal tissues that pose zoonotic disease risk

Radiation Safety Committee

- Reviews and approves of the use of the following in animal research:

a. energized equipment
b. radioactive materials

Office of Environmental Health and Safety (EHS)

a. Conducts risk assessments for animal research involving biohazards, chemicals, radioactive materials, energized equipment and physical hazards.
b. Develops standard operating procedures, guidelines and procedures for persons conducting animal research that poses a potential for exposure to biological, chemical, radiological or physical hazards.
c. Conducts health and safety training for faculty, staff and students who have contact with animal tissues, live animals and their housing.
d. Conducts safety audits and surveys, including biosafety surveys, job hazard analyses, controlled substance audits; and chemical safety surveys.
e. Oversees the purchase, use, storage and disposal of controlled substances.

University Health Services (UHS)

a. Administers the medical surveillance program for faculty, staff, students and contractors, including immunizations when indicated, diagnostic testing, counseling on issues such as lab animal allergies and zoonotic diseases;
b. Provides care and follow-up treatment for all University-affiliated persons who sustain exposures, injuries or illnesses related to work with animals or their living quarters.

2. Scope

- All Princeton University faculty, staff and students who are involved in the care of animals or their living quarters or have contact with animals (live or dead), their tissues and body fluids, are included within the scope of the Occupational Health and Safety Program (OHSP).

- University contractors who provide husbandry or veterinary care services are also eligible to participate, when specified in contract agreements between the University and the contractor. In those cases where the contractors are not covered by the University, the contractors' company must cover OHSP services.

- All contractors who enter non-human primate areas to provide services are required to provide documentation of medical clearance from a licensed medical professional.

3. Hazard Identification and Risk Assessment

Biological Agents, r/s DNA, biological toxins, human-derived materials

- Research with these materials in animals must be approved by the Institutional Biosafety Committee (IBC) before IACUC approval may be granted. IBC members include faculty from the life sciences and engineering departments, the University's Biosafety Officer; Attending Veterinarian; a physician from the

University's Health Services Department; and non-affiliated community representatives.

- The initial risk assessment for work with r/s DNA, toxins, human-derived materials and biohazards in animals is conducted by the Principal Investigator and is documented on an IBC registration form.

- Biosafety Officer will typically meet with the PI or lab members to discuss the risk assessment and the research prior to full review by the IBC. Issues considered include: characteristics of the biohazard, medical surveillance or immunizations that may be required for researchers and animal care staff, method of delivery of the material to the animal and exposures that could occur during delivery; containment; safety considerations for the animal caretakers performing husbandry, disinfection and waste disposal. Based on these discussions, the PI may need to revise the information provided on the IBC registration form.

- IBC issues approval for the research with medical surveillance recommendations, if necessary, and containment levels.

- After the IBC issues approval, and before introduction of a biohazard into the vivarium, the Principal Investigator meets with the animal caretaker staff, reviews the hazards of the material and the appropriate containment levels, as required by the IBC. Research staff are offered training by EHS on the safe conduct of animal biosafety level 2 research. Upon initiation of the research, the Biological Safety Officer conducts a survey of the animal research to verify compliance with the IBC's containment recommendations. The survey findings are documented and sent to LAR and the PI. If containment recommendations issued by the IBC are not being followed, the IBC Chair would also be notified of the survey outcome.

Chemical Hazards

Hazardous Chemicals Administered to Animals

- Principal Investigators must disclose the use of hazardous chemicals in animal research on the animal protocol form.
- EHS reviews the proposed use of hazardous chemicals, determines the potential for exposure to research and animal care staff and recommends the appropriate engineering and administrative controls to control exposure.
- EHS communicates the safe handling and disposal recommendations directly to LAR and research staff.
- A standard operating procedure on the use of hazardous chemicals in animal research provides general guidance for the research community.

Hazardous Chemicals Used in the Cleaning and Maintenance of Animal Facilities

- EHS reviews and approves of the use of hazardous chemicals for cleaning/disinfection. If necessary, approval will include recommendations for the use of PPE.

Ionizing Radiation

- When projects are proposed that involve the in vivo use of radioactive materials in animals or energized equipment, the PI is required to submit an application for authorization to use radioactive materials to the IACUC.

- The application is reviewed by the Radiation Safety Officer and is forwarded for approval to the University's Radiation Safety Committee. The project cannot be approved by the IACUC until the Radiation Safety Committee approves of the application.

Physical Hazards

- EHS regularly assesses the physical demands of the animal husbandry staff jobs. The performance of the physical demands assessment provides opportunities to identify inherently unsafe tasks and implement work practices designed to reduce the potential for musculoskeletal injuries.

- A Health and Safety Profile is conducted regularly to assess physical hazards that may be present in the animal research environment. EHS maintains the profiles and shares them with supervisory staff.

4. Health Histories

- An initial and interim health history form is completed by all faculty, staff and students who are involved in the care of animals or their living quarters or have contact with animals (live or dead), their viable tissues and body fluids.

Initial Health History

- The initial health history form screens personnel for: type of animal species handled, location of animal work (vivarium, field work, etc.), health conditions that may lower immunity, medication history, pregnancy, known allergies.

- Face-to-face consultations are required for all persons initiating animal research. Medical care, serum testing and counseling will be dependent upon the animal species handled, location of animal research and health history, including allergies.

Interim Surveillance

- All personnel included within the scope of the program are evaluated at regular intervals, depending upon the species of animal handled and the nature of research.

5/6 Common Identified Hazards and Risks and Procedures in Place to Reduce and Remediate Hazards

Hazard	Persons Affected	Measures in Place to Reduce or Remediate the Hazard
Physical Hazards		
Animal Bites and Scratches	All students, staff and faculty who work with animals or maintain their living quarters; researchers who conduct field work	• Education: Animal Worker Health and Safety training is mandatory for all in the OHSP. • Veterinary staff provide training on animal care, including how to administer injections. • Monkey bite kits available in all areas where Old World Monkeys are housed or treated.
Sharps Injuries	Researchers and animal husbandry staff	• Education: Mandatory training addresses safe disposal of sharps and a prohibition on needle-recapping. • Compliance with the prohibition on needle-recapping is checked during semi-annual inspections of the animal facility. . • Controls: Sharps disposal containers available in all procedure rooms.
Materials Handling	Animal Husbandry Staff and researchers	• Work practice controls to reduce weight loads, evaluation by EHS safety engineers of machine/equipment hazards. • Materials Handling education provided annually to animal husbandry staff
Noise	Animal Husbandry Staff	• EHS assesses exposure to noise levels on a regular basis. • Remediation measures are proposed if noise levels exceed OSHA Action Levels or Permissible Exposure Limits
Chemical Hazards		
Anesthetic Gases and Vapors	Researchers and animal husbandry staff	• Active and/or passive scavenging of waste anesthetic gas/vapors is required and verified during regular surveys of the animal surgery/procedure spaces.
Disinfectants	Primarily animal husbandry staff, research staff	• Animal husbandry staff receive chemical safety training; all staff who work in labs must attend Introduction to Laboratory Safety training. • Personal protective equipment, including respirators if indicated by the assessment. Personnel exposure monitoring may also be conducted.

Hazard	Persons Affected	Measures in Place to Reduce or Remediate the Hazard
Protocol-specific chemical hazards	Researchers, animal husbandry staff who change cages	• Controls: Use of Class II, Type B2 biosafety cabinets, fume hoods, PPE, hazard communication signs and cage labels; EHS-recommended waste disposal methods
Allergens	All persons who enter animal facilities and/or conduct research with animals	• Surveillance: Identification of persons with pre-existing allergies or those who suffer allergic symptoms when working with animals through the initial and follow-up health evaluation; referral when indicated to allergy specialists; control of exposure personal protective equipment when appropriate • Education: All persons who work with animals or in animal facilities learn about incidence and prevalence of lab animal allergies and how to report symptoms • Controls: Use of ventilated cage racks for housing of rodents; use of biosafety cabinets and animal transfer stations to change cages, PPE, use of ventilated cage dumping stations for disposal of bedding; maintaining a minimum number of air changes per hour within animal facilities
Biological Hazards		
Zoonotic Agents	All persons who enter animal facilities and/or conduct research with animals	• Assessment: Prior to work with new species, EHS, LAR and UHS work together to evaluate hazards. • Surveillance: UHS designs and implements specific medical surveillance as appropriate. • Education: All students, staff and faculty who are listed on animal protocol or maintain animal living quarters receive training on zoonotic agents relevant to their work, how to prevent transmission and what to do in the event of an exposure. • Control: Mandatory personal protective equipment when working with animals that may transmit zoonotic agents

Hazard	Persons Affected	Measures in Place to Reduce or Remediate the Hazard
Protocol-Specific Hazards	Animal husbandry staff, researchers,	• Assessment: EHS and IBC assess exposure hazards and with the PI, issue containment recommendations. • Education: Whenever a new biohazard is introduced, the PI meets with all caretaker staff to review safe work practices. All staff who work with biohazards must attend to Intro to Biosafety training, provided by EHS. • Controls: Implementation of the appropriate biosafety level; including PPE, use of biosafety cabinets, disinfection and waste disposal methods.

7. Immunizations

- The following immunizations are offered to affected persons; acceptance and/or declination is documented in the medical record and is re-offered at surveillance recall intervals.
    - **Tetanus** – Tetanus immunization is offered to all staff, students, and faculty included within the scope of the OHSP at the initial face-to-face appointment with a UHS clinician. Tetanus immunization is provided, if indicated by immunization history, to staff, students and faculty who report a work-related puncture wound or other skin wound to UHS.
    - **Hepatitis B** – The Hepatitis B vaccine series is offered to all those who work with human-source material that falls within the scope of the Occupational Safety and Health Administration Bloodborne Pathogen Standard (29 CFR 1910.1030). If the employee initially declines hepatitis B vaccination but at a later date decides to accept the vaccination, Princeton University will provide the hepatitis B vaccination at that time.
    - **Rubeola** – Staff, students and faculty who work directly with non-human primates are asked to provide documentation of rubeola infection or previous immunization. If documentation is not provided, they are screened to document laboratory evidence of protection from rubeola infection. If screening does not prove evidence of protection, they are offered the vaccine. Proof of rubeola immunity is required for clearance to conduct research with non-human primates.
    - **Other Immunizations** – Additional immunizations may be recommended by the UHS Medical Director, depending upon the species handled, location of field work and the biohazards that may be administered to animals in a specific protocol. Immunizations are offered to affected persons.

8. **Precautions Taken During Pregnancy, Illness or Decreased Immunocompetence**

   - Training and education regarding hazards posed to those who may be pregnant or immune-compromised is initiated with the Animal Worker Health and Safety Program, an on-line training program that is mandatory for all persons included within the scope of the OHSP.

   - Hazard-specific training is conducted by EHS staff and includes risks associated with exposure to a chemical, physical or biological agent for those persons who are pregnant, ill or immune-compromised.

   - All persons in the OHSP are asked to document pregnancy status, chronic illnesses and medication use in the health history forms, which are administered prior to work with animals or in their living quarters and again at regular intervals.

   - At the initial face-to-face health history appointment and follow-up visits with UHS clinicians, all persons are counseled on the importance of reporting pregnancy or illnesses that could reduce immunity.

   - If appropriate, UHS clinicians communicate restrictions to the affected person's supervisor.

9. **Provisions for Personnel Who Enter Areas where Animals are Housed or Used but do not Provide Animal Care**

   - University staff who provide maintenance support inside of animal living quarters are included within the scope of the OHSP. They attend instructor-led training administered by EHS. Based on the outcome of a risk assessment conducted by staff from EHS, UHS and LAR, all support staff who enter animal facilities to respond to urgent and emergent work orders must participate in the animal worker medical surveillance program.

   - Non-university personnel (e.g., cagewash and autoclave service providers, etc.) who provide preventive maintenance service within the animal facility must be trained, provided the appropriate PPE and access coordinated with LAR management. Furthermore, if they regularly enter the non-human primate facilities, evidence of annual TB screening and rubeola immunity must be provided.

   - University Public Safety staff who enter the animal facilities in an emergency, primarily to provide access for responding external agencies, such as paramedics, police or fire, are trained by EHS on hazards they may encounter and protective measures that must be taken prior to entering the animal facilities. They are also included in the animal worker medical surveillance program.

10. Availability and Procedures for Treatment of Bites, Scratches, Illnesses or Injuries

- Non-human bite scratch kits are located in the non-human primate holding areas, laboratory spaces where non-primate procedures are conducted, cage wash areas and surgery rooms and they are maintained by LAR Veterinary Services.

- In the event of an injury, animal bite, scratch, or exposure to hazardous agents, personnel are provided medical evaluation and care at UHS. If the injury or exposure occurs when UHS is not accessible, care is provided at the Emergency Room of the University Medical Center at Princeton.

- All persons within the OHSP receive information on how to respond to injuries and exposures in the Animal Worker Health and Safety training module, Introduction to Biosafety and Introduction to Laboratory Safety training classes.

Herpes B Exposures

- All macaques in the facility are tested regularly but assumed to be Herpes B positive. Written protocols and first aid supplies are maintained throughout the non-human primate housing, procedure and testing areas for post-exposure management of bites, scratches, and mucous membrane or sharps injuries associated with macaques. Post-exposure medical review and care are provided at UHS, or at the University Medical Center at Princeton, when UHS is closed. All persons who work directly with macaques are issued wallet cards that describe actions to take after an exposure.

- LAR veterinary staff and Employee Health follow a standard protocol for collection of serum and swabs from the exposed animal worker and the macaque. If the exposure is deemed significant, the exposed worker is provided with follow-up care and surveillance administered through UHS.

- A thorough investigation of all non-human primate exposures is conducted by the EHS staff, with the injured employee, the employee's supervisor and witnesses. All aspects of the incident are evaluated, including mechanism of injury, accessibility to first aid and medical follow-up.

11. Procedures for Reporting and Tracking Injuries and Illnesses

- All work-related injuries reported to and treated by UHS clinicians are reviewed by EHS staff. For most injuries, EHS conducts an investigation and completes an accident investigation report with suggestions for follow-up and prevention of further injuries, if indicated.

- All staff, faculty and students who enter animal facilities or conduct research with animals receive mandatory training on reporting and follow-up to injuries, illnesses and hazardous material exposures.

- Work and research-related injuries, illnesses and exposures are reported to and treated by UHS clinicians. All injuries and illnesses reported by employees and faculty are tracked in a database maintained by UHS.

- EHS has access to the UHS database and investigates all work and research-related injuries and illnesses. EHS is also notified by UHS of all student injuries, illness or exposures that are associated with research.

- EHS' injury and illness investigations include evaluations of how the event occurred, factors related to the event and recommendations for prevention of further incidents. Reports are sent to the supervisor or Principal Investigator who oversees the research and work of the injured/ill person.

- Significant injuries, illnesses or hazardous materials exposures associated with animal research are reported to the IACUC by the University Biosafety Officer.

F. The total gross number of square feet in each animal facility (including each satellite facility), the species of animals housed there and the average daily inventory of animals, by species, in each facility is provided in Part X., Facility and Species Inventory.

G. The training or instruction available to scientists, animal technicians, and other personnel involved in animal care, treatment, or use is as follows:

1. IACUC Member Training

- A member of the RIA Compliance Office provides training to new members of the IACUC prior to their attendance at an IACUC meeting.

- A "New Member Training Packet" is provided consisting of a summary of the responsibilities of IACUC members and of federal regulations. This packet includes administrative topics (i.e. meeting dates, instructions for reviewing the protocol forms.

- Each new IACUC member will be provided with a current copy of the following:

  a. The PHS Policy for the Humane Care and Use of Laboratory Animals;
  b. The National Research Council (NRC) Guide for the Care and Use of Laboratory Animals;
  c. The current AVMA Guidelines on Euthanasia;
  d. The current Guidelines of the American Society of Mammalogists for the use of wild mammals in research
  e. The Animal Welfare Act and Regulations
  f. A copy of this Assurance.

- All members of the IACUC will be provided access to the following modules in the AALAS Learning Library for further education:

  a. US Mandates and Guidelines

i. Guide for the Care and Use of Laboratory Animals, 8th Edition
ii. Working with Controlled Substances

b. Anesthesia and Analgesia

Post-Procedure Care of Mice and Rats in Research: Minimizing Pain and Distress

c. Working with the IACUC

i. Working with the IACUC: non-VA version
ii. The Semiannual Facility Inspection
iii. Common Compliance Issues

d. IACUC Members and Administrators

i. Essentials for IACUC Members
ii. Post-Approval Monitoring

2. Animal Care and Use Personnel

- Personnel involved in the care and use of animals are made aware of the Assurance document and its content in the following ways:
  - The document is referenced on the Research Integrity and Assurance website which provides information regarding the University's specific assurance.
  - New IACUC members receive a current copy of the Assurance during the initial training orientation.
  - The Assurance is discussed during orientation and provided to individuals involved in animal care and use upon request.
  - If requested, Departmental Administrators are provided a copy of the Assurance document.

- All personnel performing procedures using animals must be identified in the Institutional Animal Care and Use Protocol.

- A description of each individual's qualifications, experience and/or training with the specific animal species, model and procedures must be available for IACUC review.

- Any person needing additional protocol-specific training will be identified during the review process and such required training must be completed prior to performing the specified protocol related work involving animals.

- All "animal users," including principal investigators, graduate and undergraduate students, research staff, animal care staff, teaching assistants, post-doctoral fellows, summer students, visiting students, and others, who use animals in research, teaching or testing or care for animals through their employment at the

Princeton University, receive an initial training prior to commencement of any animal-based work.

- Each new animal user must complete the web-based Animal Worker Occupational Health and Safety Training, medical evaluation, relevant AALAS Learning Library modules and receives an animal facility orientation prior to getting access privileges to the animal care facilities. For USDA-regulated species, individual training records are generated with procedure endorsements either by senior LAR staff, or the Principal Investigator.

- All "animal users" are provided a comprehensive training program through the AALAS Learning Library. All users must take training modules in "All Personnel" and modules specific to the species with which they will be working. In addition, those performing rodent surgeries must take the courses related to rodent surgery and pain and analgesia prior to performing survival rodent surgery. Personnel working with old world primates must take the modules related to primates, including the NIH video "Working Safely with Nonhuman Primates."

- The training includes training or instruction on research or testing methods that minimize the numbers of animals required to obtain valid results and limit animal pain or distress as well as other requirements delineated in 9 CFR, Part 2, Subpart C, Section 2.32(c). Specifically, as applicable, training and instruction of "all animal users" includes guidance in at least the following areas:

    1. Humane methods of animal maintenance and experimentation, including:

        a. The basic needs of each species of animal;
        b. Proper handling and care for the various species of animals used by the facility;
        c. Proper pre-procedural and post-procedural care of animals; and
        d. Aseptic surgical methods and procedures;

    2. The concept, availability, and use of research or testing methods that limit the use of animals or minimize animal distress;

    3. Proper use of anesthetics, analgesics, and tranquilizers for any species of animals used by the facility;

    4. Methods whereby animal welfare or deficiencies in animal care and treatment may be reported by any employee of the facility. No facility employee, Committee member, or laboratory personnel shall be discriminated against or be subject to any reprisal for reporting violations of any regulation or standards under the Act;

    5. Utilization of services (e.g., National Agricultural Library, National Library of Medicine) available to provide additional information:

        a. On appropriate methods of animal care and use;
        b. On alternatives to the use of live animals in research;

c. That could prevent unintended and unnecessary duplication of research involving animals; and
d. Regarding the intent and requirements of the Animal Welfare Act and USDA-APHIS Regulations.

- All animal users receive training on the basis of the Animal Welfare Act and Regulations, along with the Guide, PHS Policy and other relevant policies and guidelines relevant to the care and use of laboratory animals.

Environmental Health and Safety Training

Training Program	Employees, Who Enter Animal Facilities to Provide Services	Staff who Conduct Animal Research	Laboratory Animal Resources Staff
Animal Worker Health and Safety Training	√	√	√
Laboratory Safety		√	
Intro to Biosafety		Research staff who handle biohazards	√
Biohazard and Chemical Hazard-Specific Exposure Control Plans		Research staff who administer biohazard and chemical hazards to animals.	√
Bloodborne Pathogens		Research staff who handle human-derived materials	√
Radiation Safety		Research staff who work with energized equipment and radioisotopes	Staff who work with energized equipment
Laser Safety		Researchers who work with Class 3b and 4 Lasers	
Chemical Safety	√	See Laboratory Safety, above	√
Materials Handling			√

√ = required training for all persons

- All instructors of undergraduate laboratory courses using animals are required to provide instruction to students on animal welfare, animal allergy, zoonotic diseases, and use of PPE.

- Principal Investigators, Lecturers, and Senior Staff provide daily instruction and leadership to all staff and students, as needed. The veterinarian, facility management, and supervisors are available to provide individual instruction, as needed, to personnel.

2. **Animal Husbandry Providers**

   - New animal care staff members are trained using the didactic methods described above and also undergo training with experienced mentors. The new member is paired with a seasoned colleague to acquire the skills and procedures of the job. The supervisor and facility management oversee this initial period to assist and provide additional resources.

IV. Institutional Program Evaluation and Accreditation

A. All of this Institution's programs and facilities (including satellite facilities) for activities involving animals have been evaluated by the IACUC within the past six months and will be reevaluated by the IACUC at least once every six months according to PHS Policy IV.B.1.-2. Reports have been and will continue to be prepared according to PHS Policy IV.B.3. All IACUC semiannual reports will include a description of the nature and extent of this Institution's adherence to the PHS Policy and the Guide. Any departures from the Guide will be identified specifically and reasons for each departure will be stated. Reports will distinguish significant deficiencies from minor deficiencies. Where program or facility deficiencies are noted, reports will contain a reasonable and specific plan and schedule for correcting each deficiency. Semiannual reports of the IACUC's evaluations will be submitted to the Institutional Official. Semiannual reports of IACUC evaluations will be maintained by this Institution and made available to the OLAW upon request.

B. This Institution is Category 1 — accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC). As noted above, reports of the IACUC's semiannual evaluations (program reviews and facility inspections) will be made available upon request.

V. Recordkeeping Requirements

A. This Institution will maintain for at least three years:

1. A copy of this Assurance and any modifications made to it, as approved by the PHS
2. Minutes of IACUC meetings, including records of attendance, activities of the committee, and committee deliberations
3. Records of applications, proposals, and proposed significant changes in the care and use of animals and whether IACUC approval was granted or withheld
4. Records of semiannual IACUC reports and recommendations (including minority views) as forwarded to the Institutional Official
5. Records of accrediting body determinations

B. This Institution will maintain records that relate directly to applications, proposals, and proposed changes in ongoing activities reviewed and approved by the IACUC for the duration of the activity and for an additional three years after completion of the activity.

C. All records shall be accessible for inspection and copying by authorized OLAW or other PHS representatives at reasonable times and in a reasonable manner.

VI. Reporting Requirements

A. The Institutional reporting period is the calendar year (January 1 – December 31). The IACUC, through the Institutional Official, will submit an annual report to OLAW by January 31 of each year. The annual report will include:

1. Any change in the accreditation status of the Institution (e.g., if the Institution obtains accreditation by AAALAC or AAALAC accreditation is revoked)

2. Any change in the description of the Institution's program for animal care and use as described in this Assurance

3. Any change in the IACUC membership

4. Notification of the dates that the IACUC conducted its semiannual evaluations of the Institution's program and facilities (including satellite facilities) and submitted the evaluations to the Institutional Official

5. Any minority views filed by members of the IACUC

B. The IACUC, through the Institutional Official, will promptly provide OLAW with a full explanation of the circumstances and actions taken with respect to:

1. Any serious or continuing noncompliance with the PHS Policy

2. Any serious deviations from the provisions of the Guide

3. Any suspension of an activity by the IACUC

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

VII. Institutional Endorsement and PHS Approval

A. Authorized Institutional Official	
Name: Pablo Debenedetti	
Title: Dean for Research	
Address: *(street, city, state, country, postal code)* 91 Prospect Ave Princeton, NJ 08544 USA	
Phone: (b) (6)	Fax: (b) (6)
E-mail: pdebene@princeton.edu	
Acting officially in an authorized capacity on behalf of this Institution and with an understanding of the Institution's responsibilities under this Assurance, I assure the humane care and use of animals as specified above.	
Signature: (b) (6)	Date: 3/10/16

B. PHS Approving Official *(to be completed by OLAW)*	
for Eileen M. Morgan Director, Division of Assurances Office of Laboratory Animal Welfare, NIH 6705 Rockledge Drive-Suite 360-MSC 7982 Bethesda, Maryland 20892-7982	
Signature: (b) (6)	Date: 3/16/16
Assurance Number: A3434-01	
Effective Date: 3/16/16	Expiration Date: 3/31/20

VIII. Membership of the IACUC

Date: March 2016

Name of Institution: Princeton University

Assurance Number: A3434-01

IACUC Chairperson

Name*: Lynn Enquist

Title*: Professor, Molecular Biology | Degree/Credentials*: PhD

Address*: *(street, city, state, zip code)*
314 Schultz Laboratory
Princeton, NJ 08544

E-mail*: lenquist@princeton.edu

Phone*: (b) (6) | Fax*: (b) (6)

IACUC Roster

Name of Member/ Code**	Degree/ Credentials	Position Title***	PHS Policy Membership Requirements****
Laura Conour	DVM, DACLAM	Attending Veterinarian	Veterinarian
Lynn Enquist	PhD	Professor	Chairperson
(b) (6)			Non-affiliated member
			Non-affiliated member
			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Nonscientist
			Scientist
			Veterinarian
			Scientist
			Alternate Scientist
			Alternate Chair
			Ex Officio, nonvoting
			Ex Officio, nonvoting

* 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:

Veterinarian	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.
Scientist	practicing scientist experienced in research involving animals.
Nonscientist	member whose primary concerns are in a nonscientific area (e.g., ethicist, lawyer, member of the clergy).
Nonaffiliated	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.

IX. Other Key Contacts (optional)

If there are other individuals within the Institution who may be contacted regarding this Assurance, please provide information below.

Contact #1
(b) (6)

X. Facility and Species Inventory

Date: March 2016			
Name of Institution: Princeton University			
Assurance Number: A3434-01			
Laboratory, Unit, or Building*	Gross Square Feet [*include service areas*]	Species Housed [*use common names, e.g., mouse, rat, rhesus, baboon, zebrafish, African clawed frog*]	Approximate Average Daily Inventory
(b) (4)	12,251 sq.ft	Mouse Rat	4834 89
	637.21 sq. ft.	Mouse	0
	4,196.56sq.ft.	Zebrafish Larval Tiger Salamander African clawed frog Crayfish	15,052 0 176 34
	4,332.96sq.ft.	Mouse Rat	1,635 6
	1,779.26sq.ft.	Golden Shiner Other Fresh Water Fish - variety of molly species & guppies; commonly available freshwater aquarium fish, none of which are endangered or pose any threat to human safety (EEB Teaching Lab)	560 55
	18,502.35sq.ft.	Rat Mouse Macaques: Cynomolgus Rhesus Common Marmoset	429 1,635 9 10 11
	1,059.00sq.ft.	Golden Shiner	930

*Institutions may identify animal areas in any manner, e.g., initials or ID number. However, the name and location must be provided to OLAW upon request.

Unless otherwise indicated, mice and rats means mice of the genus *Mus* and rats of the genus *Rattus* that are purposely bred for research