

Annual Report to OLAW

Institution: The Children's Hospital of Philadelphia
Assurance Number: D16-00280 (A3442-01)
Reporting Period: January 1, 2020 – September 30, 2020

This institution's Institutional Animal Care and Use Committee (IACUC), through the Institutional Official, provides this annual report to the Office of Laboratory Animal Welfare (OLAW).

I. Program Changes [*Select A or B*]

- ☐ A. There have been **no changes** in this institution's program for animal care and use as described in the Assurance. [*Skip to Item II.*]
- ☒ B. Change(s) in this institution's program for animal care and use as described in the Assurance have occurred during this reporting period.

Select all that apply:

- ☐ This institution's AAALAC accreditation status has changed ([PHS Policy IV.A.2.](#)).
- ☐ [AAALAC Accredited](#) – Category 1
- ☐ Non-Accredited – Category 2
- ☒ This institution's program for animal care and use has changed ([PHS Policy IV.A.1.a-i.](#)). [*Attach a full description of the changes.*]
- ☐ The individual designated by this institution as the Institutional Official has changed. [*Provide name, title(s), address, e-mail, phone, and fax numbers in Item V.*]
- ☒ The membership of this institution's IACUC has changed. [*Provide current roster of members in Item VI.*]

II. Semiannual Evaluations

This IACUC has conducted semiannual evaluations of the institution's program and inspections of the institution's facilities (including satellite facilities) on the dates below. Reports of the evaluations and inspections have been submitted to the Institutional Official. The reports include any IACUC-approved departures from the *Guide* with a reason for each departure, any deficiencies (significant or minor) that were identified, and a plan and schedule for correction of each deficiency. [*Do not provide semiannual reports unless they include a minority view.*]

A. Program Evaluations

[Two dates (month/day/year) must be provided to satisfy the PHS Policy requirement that evaluations be done at 6-month intervals. If the IACUC conducted more than 2 evaluations of the program during the reporting period, please attach a list showing the dates.]

Date 1: May 11, 2020	Date 2: Conducted in November 2020.
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B. Facility Inspections



[Two dates (month/day/year) must be provided to satisfy the PHS Policy requirement that facility inspections be done at 6-month intervals. If the IACUC conducted more than 2 inspections of each site during the reporting period, please attach a list showing the dates.]

Date 1: A waiver for the facility inspections during the Spring semi-annual period was granted by OLAW on April 14, 2020. (Documentation attached)	Date 2: Conducted in October 2020.
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III. Minority Views [*Select A or B*]

- [☒] A. There were **no minority** views during this reporting cycle.
- [☐] B. Any minority views submitted by members of the IACUC regarding reports filed under [PHS Policy IV.F.](#) for this reporting cycle are attached.

IV. Signatures

IACUC Chairperson	Institutional Official
Name: Laurence Eisenlohr, VMD, PhD	Name: Bryan A. Wolf, MD, PhD
Signature:  (b) (6)	Signature:  (b) (6)
Date: 11-23-2020	Date: 11/24/2020

V. Change in Institutional Official

Name:	
Title:	Degree/Credentials:
Name of Institution:	
Address: [<i>street, city, state, zip code</i>]	
Phone:	Fax:
E-mail:	

VI. Change in IACUC Membership [*Current roster*]

[illegible]

* Names of members, other than the chairperson and veterinarian, may be represented by a number or symbol in this report 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 or former user. A consulting veterinarian may not be considered nonaffiliated.

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

Statement of Burden

Public reporting burden for this collection of information is estimated to average 90 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: NIH, Project Clearance Branch, 6705 Rockledge Drive, MSC 7974, Bethesda, MD 20892-7974, ATTN: PRA (0925-0765). Do not return the completed form to this address.

IACUC Roster			
Name of Member/ Code*	Degree/ Credential	Position Title/ Occupational Background**	PHS Policy Membership Requirements***
(b) (6)			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Nonaffiliated
			Nonscientist
			Nonvoting

(b) (6)			Nonvoting
Laike Stewart; Veterinarian 1	DVM, DACLAM	Attending Veterinarian, Senior Director, Department of Veterinary Resources – CHOP	Veterinarian
(b) (6)			Veterinarian
			Veterinarian
			Veterinarian
			Veterinarian

Attending Veterinarian, Veterinarian 1: Laike Stewart

Qualifications

- Degrees:
DVM, DACLAM
- Training or experience in laboratory animal medicine or in the use of the species at the institution:
Dr. Stewart has approximately 20 years of experience in the field of laboratory animal medicine. He is a Diplomate of the American College of Laboratory Animal Medicine (ACLAM). He received his veterinary degree from Tuskegee University, School of Nursing and Allied Health, and completed his laboratory animal medicine residency training at Columbia University, School of Physicians and Surgeons and Merck. Prior to joining CHOP he has held clinical faculty positions at Memorial Sloan Kettering Cancer Center, Weill Medical College of Cornell University, Icahn School of Medicine at Mount Sinai, and the Miller School of Medicine at the University of Miami. He has also held Director-level positions at Wyeth and Pfizer Inc.
- Authority: Dr. Stewart is the Attending Veterinarian. He has direct program authority and responsibility for the Institution's animal care and use program including access to all research animals.
- Time contributed to program:
Full-time employee, 100%

(b) (6)

Summary of Changes
Annual Report to OLAW for January 1, 2020 through September 30, 2020

I. B. Program Changes:

NASA Funding

- The Children's Hospital of Philadelphia does receive funding from NASA for research involving live vertebrate animals.

Program Management Responsibility

- Non-scientist IACUC member was appointed on January 1, 2020.
- Senior Research Veterinarian was successfully recruited and started January 27, 2020. (b) (6) was appointed an alternate IACUC member (veterinarian role) on April 1, 2020.
- Scientist and alternate scientist member were appointed on February 1, 2020.
- Senior Research Veterinarian who was previously appointed as an IACUC member, was appointed as an alternate member (Veterinarian role) on April 1, 2020.
- The Associate Director for the Department of Veterinary Resources (DVR) was successfully recruited and started on February 24, 2020. (b) (6) was appointed as an IACUC member (Veterinarian role) on April 1, 2020.
- PAM monitor I resigned her position effective August 11, 2020. To support the organization's financial contingency efforts during the COVID-19 pandemic, recruitment for this second PAM position will be held until January and then reevaluated.
- Several Animal Care Technicians were hired to backfill open positions and for newly created positions.
- There has been ongoing recruitment efforts for an Animal Facilities Supervisor position that was vacated in August 2020.

IACUC Constitution and Function

- Policies, SOPs and Guidelines:
 - The Committee assessed and approved the following at the February 10, 2020 IACUC meeting:
 - "Adverse Events or Unexpected Complications with Animal Research". This is a new policy and includes a form for researchers to use to standardize these reports.
 - The Committee assessed and approved the following at the March 9, 2020 IACUC meeting:
 - "Expired Drugs and Medical Materials in Animal Research". This is a new policy.
 - "Prolonged Physical Restraint of Laboratory Animals". Changes included: clarifying the definition of physical restraint and other minor clarifications.
 - The Committee assessed and approved the following at the April 13, 2020 IACUC meeting:

- “Principal Investigator Eligibility for IACUC Animal Protocols”. Changes included: updating the title, clarifying definitions, clarifying instructor eligibility and other minor clarifications.
- The Committee assessed and approved the following at the May 11, 2020 IACUC meeting:
 - “Reporting and Investigating Animal Care and Use Concerns”. Changes included: clarifying the types of allegation and clarifying how the initial review of the allegations are performed.
- The Committee assessed and approved the following at the July 13, 2020 IACUC meeting:
 - “IACUC Conflicts of Interest Policy”. Changes included: clarifying the language regarding meeting conduct for IACUC members with COIs.
- The DVR Emergency Management Plan was reviewed at the May 11, 2020 IACUC meeting. This plan was utilized for the COVID-19 pandemic. Revisions were made based on information gained and outcomes during the pandemic. The OIA is developing an IACUC Operations Contingency Plan.
- At the September 14, 2020 meeting, due to the COVID-19 pandemic and labs still not operating at full capacity, for the Fall 2020 semiannual facility inspections, the IACUC voted to have non-USDA areas inspected by staff in the Office of IACUC Administration and USDA areas inspected by two IACUC members.

Collaborations

- A Memorandum of Understanding (MOU) with University of Pennsylvania (Penn) was revised on 4/24/2020 to document the collaborative working relationship for animal research between Penn and CHOP.
- A MOU with Massachusetts General Hospital was executed on 7/22/2020 for work performed under protocol 20-001380 “Therapeutic APOE2 Overexpression for Early Alzheimer's Disease”.
- A MOU with Thomas Jefferson University was executed on 7/23/2020 for work performed under protocol 20-000983 “Transgenic Modeling of Partial Bladder Outlet Obstruction”.

Protocol Review

- The Committee assessed and approved the following at the February 10, 2020 IACUC meeting:
 - “Protocol Review Processes & Guidelines”. Changes included: updating annual review requirements and other minor changes for clarity.
- The new PI Procedure Library functionality was made available in eIACUC. Any procedures being added that are marked for the PI’s procedure library will be reviewed by the DMR/FCR process, not by the VVC process. The approved PI Procedure Library entries will be periodically reviewed by the Office of IACUC Administration to determine if it would be beneficial to convert common PI Procedure Library entries into IACUC standard entries.
- Some research teams use toe clipping or ear punches to both perform genotyping and identify the animals. In the current system, this would require the use of both a

Genotyping procedure entry and an Animal Identification procedure entry in the protocol, which is duplicative. A new procedure type, Genotyping/Animal Identification, was created to avoid to duplicative entry.

- A new procedure type, Animal Models with Painful Phenotypes, is being developed to replace the current painful phenotype section in the protocol form (section 2.7.2).

Training and Education

- OIA staff offered training sessions at IACUC meetings focused on the new IACUC website, DMR process, hemostasis in the protocol form, Facility Inspections and accessing IACUC policies via the Policy Manager site.
- IACUC members and staff from the Office of Research Safety (ORS), the Academic Training and Outreach (ATOP), DVR and OIA attended various webinars, meetings and conferences.

Special Considerations for IACUC Review

- DVR staff provided the Committee with presentations on the current state of NHP social housing at CHOP on March 9, 2020, June 20, 2020 and September 14, 2020. The Committee discussed the social housing status, exposures, escapes and the corrective actions for the exposures and escapes. There were no concerns raised during either of these presentations.
- At the January 13, 2020, April 13, 2020, July 13, 2020 and October 12, 2020 meetings, a representative from the research team presented data on recent animals and their outcomes for IACUC protocol 19-000984 (“Extrauterine Environment for Neonatal Development (EXTEND) in Sheep”). The Committee accepted the reports.
- At the May 11, 2020, June 8, 2020, July 13, 2020, August 10, 2020, and September 14, 2020 meetings, reports were presented on recent animals and their outcomes for IACUC protocol 19-001327 (“Improving Pediatric Cardiac Arrest Survival and Neurologic Outcome”). The Committee accepted the reports. Future reports will be presented quarterly.
- At the August 10, 2020 meeting, a review of approved protocols using foot shock was performed focused on the pain categories. A total of ten protocols use foot shock and species involved are mice and rats. The Committee discussed this summary and it was proposed that procedures with inescapable foot shock should be listed as pain category E and those with escapable foot shock listed as pain category D. The Committee was asked to provide feedback on this proposal and it will be further discussed and voted on at a future IACUC meeting.

VETERINARY CARE

- During sentinel testing on CTRB C-Level in January- February 2020, rats tested positive for KRV (Kilham Rat Virus). Additional testing is being performed but it does not appear to be a widespread infection.
- DVR has made a recommendation to Research IS for an electronic medical records system (Cayuse (eSirius))
- Policies, SOPs and Guidelines

- The Committee assessed and approved the following at the February 10, 2020 IACUC meeting:
 - “Rodent Surgical Monitoring”. Changes included: clarifying documentation and post-operative care guidelines.
 - “Euthanasia of Rodents Using Carbon Dioxide”. Changes included: the flow rate will be adjusted based on new AVMA Euthanasia Guidelines once OLAW adopts the new Guidelines and clarifying language regarding use of the euthanasia chamber.
- The Committee assessed and approved the following at the March 9, 2020 IACUC meeting:
 - “Rodent Survival Surgery”. Changes included: changing the document from an SOP to a guideline, changing “should”s to “must”s, adding using of stainless steel staples and other minor clarifications.
- There have been some issues with the sheep on the last few shipments regarding Q-fever status and overall health and well-being of incoming animals. The sheep research teams are working with DVR to switch to a different sheep vendor.
- As a result of the updated AVMA Euthanasia Guidelines, the flow rate on the Euthanex machines is now being re-calibrated to displace 50% of the chamber or cage volume/min.
- DVR is working with Penn to allow access to the cesium irradiator by CHOP research teams. Approvals and contracts are being reviewed by legal departments at both institutions.

Environment, Housing and Management

• DVR Policies, SOPs and Guidelines

The following DVR documents were updated and presented to the IACUC for informational purposes:

- Emergency Management Plan
- Non-human Primate Behavioral Management
- Non-human primate (NHP) Environmental Enrichment
- Exercise and Environmental Enrichment for Dogs
- Environmental Enrichment and Social Housing for Rodents, Rabbit, Pigs, and Sheep
- **IACUC Policies, SOPs and Guidelines**
 - The Committee assessed and approved the following at the September 14, 2020 IACUC meeting:
 - “Obtaining Animals from Unapproved Sources”. Changes included: adding sections for Principles/Requirements/Standards and Approved Sources, updating the language in the Policy Statement and Purpose sections, and removing the Process section.
 - “Rodent Colony Management and Overpopulation Policy”. Changes included: adding section for Definitions, adding information regarding the larger mouse cages, clarifying use of both post-partum estrus and extended weaning, clarifying how overcrowded cages are addressed, and adding Exhibit A for Rodent Group Housing Criteria.
- **Husbandry/Housing**
 - A larger size mouse cage (180 inch²) has been put into use for those teams who utilize specialized breeding paradigms that require more floor space.
 - New DVR per diem rates were released on July 1, 2020.

- A research lab has proposed performing Good Laboratory Practices (GLP) work with rodents and NHPs at CHOP. Efforts are underway to identify space in the animal facility for this proposed work.
- Several proposals have been submitted by research teams to start working with Mouse Hepatitis Virus (MHV). DVR is in the process of identifying suitable space in the facility where this work can be performed.
- DVR is trying to find more sheep housing space in the animal facilities for a new PI's studies. DVR has also been in contact with the ULAR group at Penn as a possible housing alternative.
- A proposal was presented by DVR regarding cage changes for a subset of mice to transition from a weekly cage change schedule to an every other week schedule. The proposal provided information from a literature review, the impact of cage changes, benefits of every other week cage changes, other institutions that perform every other week cage changes, and the results of a pilot study. The Committee voted to approve the proposal as presented. A research team has been identified to help pilot this project. The goal is to extend the cage change cycle to 10-14 days per cage for mice housed in individually ventilated cages.
- It has been noted that animals in the ARC and CTRB animal facilities are grinding their feed into dust which is causing an increase in the number of cage changes needed. The rodents that are grinding their feed into dust are being transitioned to a harder pelleted chow.
- In the spirit of the 3Rs, DVR will be looking into repurposing retired breeding rodents from investigators for use as DVR training animals.

PHYSICAL PLANT

- Vacuum lines were installed in several CTRB B level procedure rooms to facilitate movement of animals to an adjacent housing space.
- Additional oxygen support for the ARC operating rooms is being assessed with support from CHOP Facilities and Construction.
- A new wet bench research building is scheduled to be built in the Roberts complex, is expected to open in 2024, and will contain a vivarium for rodents and possibly fish. DVR has attended meetings regarding the design of this new vivarium.
- Flooring was patched in the Zebrafish rooms within the ARC vivarium based on semiannual inspection findings from October 2019.
- The cage wash ceiling in CTRB C & D-Levels is in the planning process of being replaced.
- Linen Services is taking over a portion of CTRB A-Level feed room, and a door widening is in progress for the current PPE storage area.
- The proposed construction in CTRB C & D-Levels is currently on hold due to financial constraints.
- The D-level expansion project and the new Schuylkill Ave Research Building adjacent to Roberts is also on hold until further notice.

The following departures have been reviewed and approved by the IACUC:

Columbus Instruments' Comprehensive Laboratory Animal Monitoring System (CLAMS)

Cage Height Exception was originally approved by the IACUC on December 12, 2011 and each subsequent semiannual period. The CLAMS for mice is 3.5 inches in height. The *Guide* requires 5 inches. The IACUC approved a cage height exception to the *Guide* with scientific justification for housing mice in the CLAMS. Mice will be housed in the CLAMS for only the minimal time required to achieve scientific objectives. Current protocols are approved for 24 hours up to 21 days. The first 1 to 2 days serve as an acclimation period. The remaining days are testing days.

- a) Animals have enough space to express postural adjustments without touching the enclosure walls or ceiling. They have the required amount of floor space and are able to turn around freely. They have ready access to food and water. There is sufficient space for animals to comfortably rest away from areas soiled by urine and feces.
- b) Because mice have enough space to make normal postural adjustments, no measures have been implemented to compensate for the reduced cage height.
- c) The CLAMS provides fully automated operation to monitor body weight, food and water intake, energy expenditure, activity, oxygen consumption, carbon dioxide production and respiratory exchange ratios. The system is used to characterize mouse models of metabolic, degenerative and genetic pediatric disorders and to investigate potential therapeutic approaches to treat these diseases.

Housing of Nonhuman Primates

The *Guide* recommends physical separation of animals by species to prevent interspecies disease transmission and to eliminate the potential for anxiety and physiologic and behavioral changes due to interspecies conflict (Arndt et al. 2010). The CTRB vivarium currently houses two different species of nonhuman primates (*Cynomolgus* macaques and Rhesus macaques). These species are housed in separate rooms. The DVR clinical veterinarians proposed housing both species in the same room when needed for study requirements or behavioral requirements. The IACUC approved an exception to allow the housing of both species in the same room at the May 9, 2016 meeting. The exception is reviewed and approved at each semiannual period.

Housing of Mice and Rats

The *Guide* recommends physical separation of animals by species to prevent interspecies disease transmission and to eliminate the potential for anxiety and physiologic and behavioral changes due to interspecies conflict (Arndt et al. 2010). The CTRB C-level reorganization has allowed a room (CTRB 312) to be designated as a DVR training room, which allows for housing of training mice and rats on separate ventilated racks. This does not apply to any PI-owned animals. The IACUC approved an exception to allow the housing

of both species in the same room at the December 11, 2017 meeting. The exception is reviewed and approved at each semiannual period.

Social Housing

All social species are socially housed unless single housing is scientifically justified and approved by the IACUC, or unless deemed necessary by the DVR veterinary staff (for veterinary care or social incompatibility reasons).



DEPARTMENT OF HEALTH & HUMAN SERVICES

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

FOR US POSTAL SERVICE DELIVERY:

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The NIH Office of Laboratory Animal Welfare (OLAW) is deeply concerned about the impact of the expanding outbreak of the respiratory illness known as COVID-19 on the ability of Assured institutions to maintain an animal care and use program in complete accordance with the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (Policy).

OLAW recognizes that as the novel coronavirus outbreak continues, it becomes increasingly difficult for Assured Institutions to adhere to provisions of the PHS Policy, the *Guide for the Care and Use of Laboratory Animals (Guide)*, and the commitments detailed in their Animal Welfare Assurance. In accordance with PHS Policy Section V.D., OLAW has reviewed and approved your institution's request for a temporary waiver of Section IV.B.2. of the PHS Policy regarding the inspection, at least once every six months, of your institution's animal facilities (including satellite facilities). OLAW expects your IACUC to complete inspections of your animal facilities that were postponed and schedule the next inspections within 6 months.

If OLAW can be of further assistance, please contact olawdpe@mail.nih.gov.

Sincerely,

(b) (6)

Patricia A. Brown, VMD, MS, DACLAM
Director, Office of Laboratory Animal Welfare,