

## Annual Report to OLAW

Institution:	The Children's Hospital of Philadelphia
Assurance Number:	D16-00280 (A3442-01)
Reporting Period:	October 1, 2020 to September 30, 2021

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

- ☐ A. There have been **no changes** in this institution's program for animal care and use as described in the Assurance.
- ☒ 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.](#)).
- ☐ The individual designated by this institution as the Institutional Official has changed.
- ☒ The membership of this institution's IACUC has changed.

### 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.

#### A. Program Evaluations

Date 1:	November 9, 2020	Date 2:	May 10, 2021
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## B. Facility Inspections

Date 1: October 1, 3, 6, 7, 8, 13, 14, 15, 16, 19, and 20, 2020	Date 2: April 5, 6, 7, 8, 9, 13, 14, 15, and 19, 2021
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## III. Minority Views

- ☒ 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: CR Matthew Hodgson
Signature:  (b) (6)	Signature:  (b) (6)
Date: 11/30/2021	Date: 11/30/2021

## V. Change in Institutional Official

Name:	
Title:	Degree/Credentials:
Name of Institution:	
Address:	
Phone:	Fax:
E-mail:	

## VI. Change in IACUC Membership

[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.

### 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.

<b>IACUC Roster</b>			
Name of Member/ Code*	Degree/ Credential	Position Title/ Occupational Background**	PHS Policy Membership Requirements***
Judith Grinspan Scientist 2	PhD	IACUC Deputy Chair; Research Professor, Neurology; Neurology – CHOP	Scientist
(b) (6)			Scientist
			Scientist
			Scientist
			Scientist
			Scientist
			Nonaffiliated
			Nonscientist
			Nonvoting
Travis Seymour Veterinarian 1	VMD, DACLAM, MLAS	Attending Veterinarian, Senior Director, Department of Veterinary Resources – CHOP	Veterinarian
(b) (6)			Veterinarian

<div>(b) (6)</div> 	
	Veterinarian
	Veterinarian
	Veterinarian

### **Attending Veterinarian 1: Travis Seymour**

#### Qualifications

- Degrees:  
MLAS, VMD, DACLAM
- Training or experience in laboratory animal medicine or in the use of the species at the institution:  
Dr. Seymour received his VMD degree from The University of Pennsylvania, School of Veterinary Medicine and his Masters in Laboratory Animal Science from Drexel University. Prior to joining the DVR team, he completed his laboratory animal medicine residency at Stanford University School of Medicine. He is a Diplomate of the American College of Laboratory Animal Medicine (ACLAM) and has been with CHOP for five years.
- Responsibilities:  
Dr. Seymour is responsible for overseeing the daily operations of the rodent health surveillance program and controlled substances program. He directs veterinary medical, diagnostic, surgical and/or treatment services to a variety of research animals (swine, sheep, and nonhuman primates). He assists investigators with IACUC protocol development and refinement and assists the Senior Director in ensuring compliance with federal regulations and AAALAC international standards. Dr. Seymour participates in all IACUC activities as a voting member of the committee. He also participates in weekend/holiday/after-hours on call coverage for veterinary emergencies and has access to all research animals.
- Time contributed to program:  
Full-time employee, 100%

(b) (6)





- Time contributed to program:  
Full-time employee, 100%

(b) (6)



## **Summary of Changes**

### **Annual Report to OLAW for October 1, 2020 through September 30, 2021**

#### **I. B. Program Changes**

##### **Program Management Responsibility**

- Union Staff 1199c Contract Negotiations The collective bargaining agreement for the DVR union staff was renewed at the end of June 2021.
- PAM monitor I position was filled in July 2021.
- There has been ongoing recruitment for open positions within DVR. In addition to working with internal HR Talent Acquisition, DVR has begun working with external hiring companies to help fill open positions.

##### **IACUC Constitution and Function**

- The non-voting member from Academic Training & Outreach Programs is no longer on the Committee as of August 2021. This non-voting position will not be re-filled as Department of Veterinary Resources (DVR) and IACUC are now managing training items themselves.

##### **IACUC Policies, SOPs and Guidelines**

- The Committee reassessed and approved the following at the October 20, 2020 IACUC meeting:
  - “IACUC Charter”. Changes included: minor wording changes for clarity.
  - “Blood Collection Guidelines”. Changes included: adding a section for hemostasis, adding blood volume for 1% collection, and clarifying fluid replacement, monitoring, and common sites of blood collection.
  - “Euthanasia Policy”. Changes included: changing CO<sub>2</sub> flow rate to align with updated AVMA Euthanasia Guidelines, clarifying language for neonates, zebrafish, avian eggs, and frogs, clarifying use of scissors for decapitation, and clarifying secondary method of euthanasia.
  - “Guidelines for the Euthanasia of Rodents Using Carbon Dioxide”. Changes included: updating document name, changing CO<sub>2</sub> flow rate to align with updated AVMA Euthanasia Guidelines, and clarifying secondary method of euthanasia.
- The Committee reassessed and approved the following at the February 8, 2021 IACUC meeting:
  - “Protocol Review Processes & Guidelines”. Changes included: allowing animal number increases of up to 10% to be reviewed and approved administratively for non-USDA species protocols. Previously, this increase only applied to rodents.
- The Committee reassessed and approved the following revised IACUC documents at the March 8, 2021 IACUC meeting:
  - “Obtaining Animals from Unapproved Sources”. Changes included: removing May Farms as an approved USDA species vendor and adding three new approved USDA species vendors.
  - “Anesthesia/Analgesia Guidelines”. Changes included: clarified language regarding gas scavenging canisters, record keeping, and hypothermia.

- “Toe Clipping of Rodents”. Changes included: clarifying age, not allowing removal of a thumb, and not allowing use of razor blades or scalpels.
  - “Collection of Ear and Tail Tissue for Rodent Genotypic Analysis”. Changes included: clarifying use of bead sterilizer and not allowing use of razor blades or scalpels for tail snips.
- The Committee reassessed and approved the following revised IACUC document at the April 12, 2021:
  - “Obtaining Animals from Unapproved Sources”. Changes included: adding a new approved USDA species vendor.

### **Collaborations**

- A Memorandum of Understanding (MOU) with University of Piemonte Orientale was executed on November 18, 2020 for work performed under protocol 20-001396.
- MOUs with St. Jude’s Children Hospital and University of California, San Francisco were executed on March 4, 2021 for work performed under protocol 21-001414.
- A MOU with Benaryoa Research Institute was executed on June 8, 2021 for work performed under protocol 21-001427.
- The CHOP Comparative Medicine Service Core (CMSC) will be conducting GLP studies within the vivarium. The core is currently performing validations on dedicated vivarium space and associated equipment. The first studies are expected to begin at the end of 2021 or the beginning of 2022. Frequent leadership meetings are held with representatives from CMSC, DVR, OIA, and Project Management.
- The lease agreement with the Gene Therapy Group at Penn to house their NHPs in CTRB D-Level has been extended to Feb 14 2022.
- DVR finalized an agreement with Penn to allow access to the cesium irradiator by CHOP research teams.

### **Training and Education**

- OIA staff provided training sessions at IACUC meetings focused on Rodent Tail & Toe Clipping Training (appropriate ages and pain categorization), on Regulatory Reporting Criteria, and AAALAC site visits.
- IACUC members and staff from DVR, OIA, and Research Safety Programs attended various webinars.
- The online IACUC General Training requirement is recertified by animal users every three years with the completion of the online Common Compliance Topics course in the AALAS Learning Library. This course was updated to include recent compliance topics. The updated course was sent to IACUC members to pilot and provide feedback at the May IACUC meeting. This will also serve as the IACUC’s mandatory three-year training. The course was implemented on July 1, 2021.

### **Special Considerations for IACUC Review**

- DVR staff provided the Committee with presentations on the current state of NHP social housing at CHOP on December 14, 2020, March 8, 2021, June 14, 2022 and September 13, 2021. 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 11, 2021, April 12, 2021, and July 12, 2021 IACUC meetings, a representative from the research team presented data on recent animals and their outcomes for IACUC protocol 19-000984. The Committee accepted the reports.
- Monthly sheep ultrasound reports and blood pregnancy tests results were provided to the Committee beginning at the March 8, 2021 IACUC meeting.
- At the November 9, 2020, February 8, 2021, May 10, 2021, and August 9, 2021 IACUC meetings, reports were presented on recent animals and their outcomes for IACUC protocol 19-001206 and IACUC protocol 19-001327. The Committee accepted the reports.
- DVR contacted the USDA VMOs to discuss returning pregnant sheep to the vendor that have undergone a C-section and the VMO was receptive to this plan. The intent of recovering and returning the ewes is within the spirit of addressing the 3Rs. DVR is having discussions with the vendor regarding the tracking of these animals. Concerns were raised regarding who will be responsible for recovery and post-operative care of the ewes, risk of these sheep entering the food supply, and the risk of these sheep having multiple survival surgeries. There will be future discussions to determine the feasibility of this proposal and the roles and responsibilities with respect to the ewes.

### **Veterinary Care**

- Two rooms in the ARC animal facility had testing come back positive for pinworms in November 2020. It is unclear how the pinworms were introduced into the facility. A communication was sent to PIs with animals affected in these rooms. Two rooms in the ARC animal facility had animals test positive for pinworm infection. Animals were placed on medicated feed and there have been no recent outbreaks,
- ZooPharm, the company that supplies Buprenorphine SR, indicated that there could be some storage and syringe compatibility issues (regarding polycarbonate syringes) with the formulation that could affect the sustained release polymer matrix and potentially decrease potency or efficacy. DVR worked with Supply Chain to obtain new polypropylene syringes. The process for how DVR dispenses buprenorphine SR changed and communication was shared with the research community.
- DVR has been working with Research Information Services (IS) to identify and implement an Electronic Medical Records System (EMRS). The system that will be implemented is Cayuse from eSirius. The funding for this project has been approved. The Cayuse software will be used. DVR is currently evaluating which hardware to use and working with Research IS and the vendor regarding implementation and training. The DVR laptops and VDI systems are also being updated to ensure compatibility with this new system.

### **Environment, Husbandry, Housing and Management**

- **DVR Policies, SOPs and Guidelines**
  - The following DVR documents were presented to the IACUC during both Program Reviews:
    - 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
  - The Zebrafish Core Husbandry SOP and Disaster Plan were presented to the IACUC during the Spring Program Review.

- DVR SOPS were revised and integrated into myCareer and assigned as trainings for DVR staff. These uploaded SOPs will also have quizzes at the end to test for understanding of the SOP.
- The DVR Space and Housing policy has been drafted to provide a roadmap on how animal facility space is used and allocated. It will be presented to the Faculty Advisory Committee and shared with the IACUC at an upcoming meeting.
- **Husbandry/Housing**
  - 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 were transitioned to a harder pelleted chow. Since the change, there has been a significant decrease in the number of cages found with food grinders.
  - DVR is working on collecting data for a proposal for extended cage changes. The goal is to extend the cage change cycle to 10-14 days per cage for mice housed in individually ventilated cages.
  - Water cultures positive for bacteria and fungi were noted in several C-level holding rooms with the Edstrom/Avidity Auto-Water System. Water quality will continue to be monitored until a negative culture is obtained. In addition, the water pumps at the rack flushing station CTRB C-Level cage wash are scheduled to be replaced.
  - The new DVR cage card notification for breeding cages was presented to the Committee at the November 9, 2020 IACUC meeting. The new DVR cage card notification for breeding cages was deployed the first week in January 2021.

### **Research Safety**

- The Research Safety Program's document "Minimizing Occupational Exposure to Hazardous Chemicals Changes" was presented to the IACUC for information purposes; there were no comments or concerns raised by the Committee.
- DVR has been working with Research Safety and CHOP Sustainability to reduce PPE usage around the facilities, to reduce waste and improve financial stewardship. The use of bonnets and shoe covers in conventional rodent areas will no longer be required but will still be available for use as needed. There were no concerns from the Committee regarding this proposal. The PPE reduction change was implemented on April 1, 2021.
- DVR Ergonomic Taskforce is working with Research Safety to identify ways to reduce the number of repetitive motion injuries among DVR staff.
- The TB testing interval for personnel working with NHPs was changed from every 6 months to annually. The testing interval for the NHPs will remain at 6 months.

### **PHYSICAL PLANT**

- A new wet bench research building, Schuylkill Ave Research Building (SARB-1), is scheduled to be built in the Roberts complex. This will be a rodent only facility on the 12<sup>th</sup> and 13<sup>th</sup> floors of the building and will not have cage wash facilities, or automatic watering. Construction is expected to begin in 2022 with completion by 2024. DVR is also discussing transport needs to bring animals back and forth from this new building to the existing animal facilities in ARC and CTRB.

- Construction on the new in-patient facility (University City In-Patient Expansion-UCIE) will require the entrance to ARC to be relocated. Since the ARC animal facility is on the second floor, impact from vibration is expected to be minimal; noise and vibration monitoring will be ongoing throughout this project.
- Work is currently underway in CTRB B-Level for the installation of a -80° freezer (the BIORC project), drainpipe installation, and drain capping. The work in CTRB A-Level for the Pathology Core has been completed.
- The proposal for the CTRB D-Level Large Animal MRI was approved by the Board in June 2021. The large animal MRI facility is planned for the existing shelled space, which is outside the existing vivarium footprint. The expected timeline for this new MRI area to be operational is mid-late 2022. A transport vehicle will also be purchased to move animals between the ARC and CTRB animal facilities. The project is currently with the schematic design team. It is estimated that the space will be ready for use by mid to end of 2022. It was noted that the IACUC will need to inspect the space before animals are used there.

**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).