



DEPARTMENT OF HEALTH & HUMAN SERVICES

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Bethesda, Maryland 20817  
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August 21, 2018

Re: Animal Welfare Assurance  
#A3245-01 (OLAW Case 3N]

Dr. Melur K. Ramasubramanian  
Vice President for Research  
Professor, Mechanical Engineering  
University of Virginia  
Box 400301  
Charlottesville VA 22904-4301

Dear Dr. Ramasubramanian,

The Office of Laboratory Animal Welfare (OLAW) acknowledges receipt of your July 26 and August 20, 2018 letters reporting five instances of noncompliance with the PHS Policy on Humane Care and Use of Laboratory Animals at the University of Virginia, following up on an initial report on June 14, 2018. According to the information provided, OLAW understands the following about the incidents and the corresponding corrective actions:

- 1) Several captive lizards had escaped from their cages on numerous occasions and were assumed dead. The animals were funded by NSF grants DEB-1601148 and DEB-1453089.

Corrective action: Compromised lids and cages were replaced, laboratory staff was trained to inspect and replace cages and lids, the feeding check list now includes ensuring that lids are secure, and staff was instructed to search for missing animals and then report to senior staff.

- 2) A Principal Investigator (PI) and the husbandry staff failed to separate an older mouse litter and dam in a breeding cage which was contrary to Institutional Animal Care and Use Committee (IACUC) policy.

Corrective action: The PI informed the IACUC that the litters had been purposely left together for cross fostering and that no pups had died. The protocol was modified to include an exemption of the breeding policy for this strain. The PI will monitor the breeding closely. The animal care staff was retrained on the policy for separating litters.

- 3) The PI and husbandry staff failed to separate an older mouse litter and dam in a breeding cage.

Corrective action: The laboratory staff was counseled and will monitor the breeding colony more closely and discuss breeding issues during staff meetings. The animal care staff was retrained on the requirement to separate rodents when this is not done by the laboratory staff.

- 4) Expired euthanasia solution had been used on mice on eight separate occasions.

Corrective action: The expired solution was discarded, a tracking calendar for drug expiration was implemented, expiration date reminders will be sent to the laboratory staff and discussed during meetings.

5) A dead mouse was not identified by the husbandry staff during the daily health check.

Corrective action: A letter of counsel was issued to the husbandry staff.

Based on its assessment of these explanations, OLAW understands that measures have been implemented to correct and prevent recurrence of these problems. OLAW concurs with the actions taken by the institution to comply with the PHS Policy and we reiterate the guidance shared with Ms. Angela Gamble to submit all preliminary reports and subsequent final reports independently. When submitting a preliminary report, it would be useful to include the UVA Compliance Case # to allow OLAW to cross reference, track, and complete the cases correctly. Thank you for keeping OLAW apprised on these matters.

Sincerely,

(b) (6)

Axel Wolff, M.S., D.V.M.  
Deputy Director  
Office of Laboratory Animal Welfare

cc: IACUC Chair  
Director, Office of Animal Welfare  
NSF Animal Welfare Officer

**UNIVERSITY OF VIRGINIA**  
**ANIMAL WELFARE COMPLIANCE REPORT**

***PHS Assurance # A3245-01***

A preliminary email notification was sent to Dr. Brent Morse of OLAW by Angela Gamble, Director of the Office of Animal Welfare. It was understood that a full report would follow IACUC investigation. This document is a summary of the incident, actions taken, and final resolution.

**UVA Compliance Case #: 2018-C**

|   |  |
|---|--|
| <b>Nature of Incident(s):</b>             | Chronic failure to provide housing conditions for animals in accordance with recommendations of the <i>Guide</i> (lizards)   |
| <b>Summary of Incident:</b>               | During the semi-annual inspection of the PI-managed permanent housing facility, the inspectors examined a log for recording escaped animals and determined that the frequency of animal escaped was too high. The missing animals were assumed to be dead.   |
| <b>Action taken by IACUC:</b>             | The IACUC discussed the incident at the Program Review meeting and determined that incident was a significant deficiency because the housing posed a direct impact on animal welfare and was not in accordance with the recommendations of the <i>Guide</i> . The PI was required to provide an analysis of why animals are escaping and a corrective action plan including mitigation and prevention strategies for reducing the number of escaped animals.   |
| <b>Action taken by PI:</b>                | The PI responded to the IACUC concerns and identified methods for correction. The staff inspected and replaced many UVB exposed weakened lids and caging, and PI trained staff to inspect and replace cages/lids on a routine basis during health checks and sanitation of equipment. PI modified the feeding procedures and added lid checks to the list of procedures to ensure that cage lids are secure after feeding. PI retrained all staff on checking for cage integrity, new feeding methodology, lid closure procedures, and task documentation. Staff was also instructed to first attempt to relocate missing animals and then report to senior staff. |
| <b>Action taken by IACUC:</b>             | The IACUC felt that the PI responded appropriately and no further action was deemed to be necessary.   |
| <b>Decision/Resolution:</b>               | The IACUC accepted the corrective action plan as submitted by the PI and considered the incident resolved.   |
| <b>Federal Funding:</b>                   | NSF funding: DEB-1601148; DEB-1453089  |
| <b>Notification of Final Disposition:</b> | <input checked="" type="checkbox"/> IO <input checked="" type="checkbox"/> OLAW <input type="checkbox"/> AAALAC  |

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**UNIVERSITY OF VIRGINIA**  
**ANIMAL WELFARE COMPLIANCE REPORT**

***PHS Assurance # A3245-01***

A preliminary email notification was sent to Dr. Brent Morse of OLAW by Angela Gamble, Director of the Office of Animal Welfare. It was understood that a full report would follow IACUC investigation. This document is a summary of the incident, actions taken, and final resolution.

**UVA Compliance Case #:**   **2018-D (PI)**  
  **2018-E (husbandry staff)**

|                               |  |
|-------------------------------|--|
| <b>Nature of Incident(s):</b> | Condition that jeopardized the health or well-being of an animal resulting in the potential for harm (mice)  |
| <b>Summary of Incident:</b>   | During the semi-annual inspection, inspectors observed one cage of breeding animals wherein the PI and husbandry staff failed to remove the older litter and dam from the cage in accordance with the IACUC breeding and weaning policy. In the event that a PI fails to separate animals appropriately, the husbandry staff is required to separate animals.  |
| <b>Action taken by IACUC:</b> | The IACUC discussed the incident at the Program Review meeting and determined that incident was a significant deficiency because of the potential impact on neonatal animal welfare and the deviation from IACUC policy. The IACUC notified both the PI and Attending Veterinarian (AV) of the deficiency and provided the policy to review with the staff. Both the PI and AV were required to respond in writing with a corrective action plan to prevent reoccurrence with staff members (researchers and animal husbandry staff).  |
| <b>Action taken by PI:</b>    | The PI responded to the IACUC concerns, provided additional background related to the particular cage found, and identified methods for correction. The first small litter (2 pups) was kept with the second litter (3 pups) because the first litter failed to thrive. They kept the two small litters together with the two dams for the benefits of cross-fostering. The PI reported that none of the pups died. The PI modified his protocol to include an exemption to the breeding/weaning policy, specific for the strain of mice involved, in order to house small litters together for three days beyond the breeding/weaning policy requirements. The PI will also continue to monitor breeding closely. |
| <b>Action taken by AV:</b>    | The AV responded with a corrective action plan. The vivarium facility supervisor retrained the animal husbandry staff regarding their responsibility for separating animals when the research staff fails to do so.  |

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| <b>Action taken by IACUC:</b>             | The IACUC felt that the PI and AV responded appropriately and no further action was deemed to be necessary. The PI protocol policy exemption was approved by the IACUC. |
| <b>Decision/Resolution:</b>               | The IACUC accepted the corrective action plans as submitted by the PI and AV and considered the incident resolved.  |
| <b>Federal Funding:</b>                   | 1R01NS077926-01A1; 1R01NS090914-01A1  |
| <b>Notification of Final Disposition:</b> | <input checked="" type="checkbox"/> IO <input checked="" type="checkbox"/> OLAW <input type="checkbox"/> AAALAC   |

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**UNIVERSITY OF VIRGINIA**  
**ANIMAL WELFARE COMPLIANCE REPORT**

***PHS Assurance # A3245-01***

A preliminary email notification was sent to Dr. Brent Morse of OLAW by Angela Gamble, Director of the Office of Animal Welfare. It was understood that a full report would follow IACUC investigation. This document is a summary of the incident, actions taken, and final resolution.

**UVA Compliance Case #:** 2018-F (PI)  
2018-E (husbandry staff)

|                               |  |
|-------------------------------|--|
| <b>Nature of Incident(s):</b> | Condition that jeopardized the health or well-being of an animal resulting in the potential for harm (mice)  |
| <b>Summary of Incident:</b>   | During the semi-annual inspection, inspectors observed one cage of breeding animals where the PI and husbandry staff failed to remove the older litter and dam from the cage in accordance with the IACUC breeding and weaning policy. In the event that a PI fails to separate animals appropriately, the husbandry staff is required to separate animals.  |
| <b>Action taken by IACUC:</b> | The IACUC discussed the incident at the Program Review meeting and determined that incident was a significant deficiency because of the potential impact on neonatal animal welfare and the deviation from IACUC policy. The IACUC sent a letter to both the PI and Attending Veterinarian (AV) notifying them of the deficiency and provided the policy to review with the staff. Both the PI and AV were required to respond in writing with a corrective action plan to prevent reoccurrence with staff members (researchers and animal husbandry staff). |
| <b>Action taken by PI:</b>    | The PI responded to the IACUC concerns and identified methods for correction. The PI was very concerned about the finding and reviewed the incident and the details of the breeding and weaning policy with his staff. They will ensure that they monitor the breeding colony more closely and ensure that someone monitors the breeding colony daily (M-F). Monthly they will discuss the breeding and weaning policy and other IACUC policies during their weekly staff meeting.   |
| <b>Action taken by AV:</b>    | The AV responded with a corrective action plan. The vivarium facility supervisor retrained the animal husbandry staff regarding their responsibility for separating animals when the research staff fails to do so.  |
| <b>Action taken by IACUC:</b> | The IACUC felt that the PI and AV responded appropriately and no further action was deemed to be necessary.  |



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| <b>Decision/Resolution:</b>               | The IACUC accepted the corrective action plans as submitted by the PI and AV and considered the incident resolved. |
| <b>Federal Funding:</b>                   | 5R00HL12148404; 1R56HL13849601   |
| <b>Notification of Final Disposition:</b> | <input checked="" type="checkbox"/> IO <input checked="" type="checkbox"/> OLAW <input type="checkbox"/> AAALAC    |

**UNIVERSITY OF VIRGINIA**  
**ANIMAL WELFARE COMPLIANCE REPORT**

***PHS Assurance # A3245-01***

A preliminary email notification was sent to Dr. Brent Morse of OLAW by Angela Gamble, Director of the Office of Animal Welfare. It was understood that a full report would follow IACUC investigation. This document is a summary of the incident, actions taken, and final resolution.

**UVA Compliance Case #: 2018-G**

|   |   |
|---|---|
| <b>Nature of Incident(s):</b>             | Use of expired euthanasia solution (mice)   |
| <b>Summary of Incident:</b>               | During the semi-annual inspection, inspectors found euthanasia solution that had been used beyond the expiration date on eight separate occasions.  |
| <b>Action taken by IACUC:</b>             | The IACUC discussed the incident at the Program Review meeting and determined that incident was a significant deficiency because the use of expired euthanasia solution is prohibited due to the potential impact on animal welfare. The PI was required to properly dispose of the expired material and provide a written corrective action plan to prevent reoccurrence.  |
| <b>Action taken by PI:</b>                | The PI responded to the IACUC concerns and identified methods for correction. The PI was very concerned about the finding and reviewed the incident with his staff. The PI created a new laboratory calendar to track the expiration dates of compounds used with animals. All staff will receive reminders when the expiration date has been reached. Once a month during the weekly laboratory meeting, the laboratory will discuss the expiration date of the current bottle of euthanasia solution. |
| <b>Action taken by IACUC:</b>             | The IACUC felt that the PI responded appropriately and no further action was deemed necessary.  |
| <b>Decision/Resolution:</b>               | The IACUC accepted the corrective action plan as submitted by the PI and considered the incident resolved.  |
| <b>Federal Funding:</b>                   | 5R00HL12148404; 1R56HL13849601  |
| <b>Notification of Final Disposition:</b> | <input checked="" type="checkbox"/> IO <input checked="" type="checkbox"/> OLAW <input type="checkbox"/> AAALAC   |

**UNIVERSITY OF VIRGINIA**  
**ANIMAL WELFARE COMPLIANCE REPORT**

***PHS Assurance # A3245-01***

A preliminary email notification was sent to Dr. Brent Morse of OLAW by Angela Gamble, Director of the Office of Animal Welfare. It was understood that a full report would follow IACUC investigation. This document is a summary of the incident, actions taken, and final resolution.

**UVA Compliance Case #: 2018-H**

|   |  |
|---|--|
| <b>Nature of Incident(s):</b>             | Inadequate veterinary care (mice)  |
| <b>Summary of Incident:</b>               | During the semi-annual inspection, inspectors found a dead mouse after the husbandry staff had performed animal health checks for the room. The animal should have been found by the husbandry staff and documented on the morbidity report or reported for a health evaluation by the veterinary staff. Veterinary care was inadequate only because of the failure to report the dead animal. |
| <b>Action taken by IACUC:</b>             | The IACUC discussed the incident at the Program Review meeting and determined that incident was a significant deficiency due to the potential impact on animal welfare. The IACUC was concerned that the husbandry staff did not identify and report the animal in poor health. The letter requested a corrective action plan to prevent reoccurrence.   |
| <b>Action taken by PI:</b>                | The AV responded to the IACUC. The husbandry staff received an official Letter of Counseling regarding the importance of a thorough check of all animals to determine those that required husbandry and those that require veterinary care.  |
| <b>Action taken by IACUC:</b>             | The IACUC felt that the PI responded appropriately and no further action was deemed to be necessary.   |
| <b>Decision/Resolution:</b>               | The IACUC accepted the corrective action plan as submitted by the PI and considered the incident resolved.   |
| <b>Federal Funding:</b>                   | NA   |
| <b>Notification of Final Disposition:</b> | <input checked="" type="checkbox"/> IO <input checked="" type="checkbox"/> OLAW <input type="checkbox"/> AAALAC  |

**Wolff, Axel (NIH/OD) [E]**

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**From:** OLAW Division of Compliance Oversight (NIH/OD)  
**Sent:** Thursday, July 26, 2018 12:59 PM  
**To:** (b) (6)  
**Cc:** OLAW Division of Compliance Oversight (NIH/OD)  
**Subject:** RE: UVA OLAW report IACUC

Thank you for these reports. We will send replies soon.  
Axel Wolff

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**From:** (b) (6)  
**Sent:** Thursday, July 26, 2018 12:27 PM  
**To:** OLAW Division of Compliance Oversight (NIH/OD) <olawdco@od.nih.gov>; Ward, Joan (NIH/OD) [E] <wardjoa@od.nih.gov>  
**Cc:** (b) (6) Ramasubramanian, Melur K. (Ram) (mkr5a) <mkr5a@virginia.edu>  
**Subject:** UVA OLAW report IACUC

Dr. Axel Wolff, Director of Compliance Oversight Office of Laboratory Animal Welfare National Institutes of Health RKL 1,  
Suite 360, MSC 7982  
6705 Rockledge Dr., Bethesda, MD

Dr. Wolff:

I attach compliance reports from our IACUC.

In these cases, the IACUC has investigated thoroughly, taken appropriate action and the committee has determined that these matters have been resolved to their satisfaction.

I have reviewed these reports and I concur with the committee response and final determination.

Best regards,

(b) (6)

For Melur K. (Ram) Ramasubramanian

Melur K. (Ram) Ramasubramanian, Ph.D.  
Vice President for Research  
Professor, Mechanical Engineering  
University of Virginia  
Box 400301  
Charlottesville VA 22904-4301  
(b) (6) (Office of VPR)  
(Direct)  
[rammk@virginia.edu](mailto:rammk@virginia.edu)

**Morse, Brent (NIH/OD) [E]**

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**From:** OLAW Division of Compliance Oversight (NIH/OD)  
**Sent:** Monday, August 20, 2018 4:18 PM  
**To:** (b) (6) OLAW Division of Compliance Oversight (NIH/OD); Wolff, Axel (NIH/OD) [E]  
**Cc:** Ward, Joan (NIH/OD) [E]; (b) (6) Ramasubramanian, Melur K (mkr5a)  
**Subject:** RE: UVA OLAW compliance reports

Thank you for providing these two reports. We will send official responses soon.

Best regards, Brent Morse

Brent C. Morse, DVM, DACLAM  
Director  
Division of Compliance Oversight  
Office of Laboratory Animal Welfare  
National Institutes of Health

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**From:** (b) (6)  
**Sent:** Monday, August 20, 2018 4:03 PM  
**To:** OLAW Division of Compliance Oversight (NIH/OD) <olawdco@od.nih.gov>; Wolff, Axel (NIH/OD) [E] <wolffa@od.nih.gov>  
**Cc:** Ward, Joan (NIH/OD) [E] <wardjoa@od.nih.gov>; (b) (6) Ramasubramanian, Melur K (mkr5a) <mkr5a@virginia.edu>  
**Subject:** UVA OLAW compliance reports

Dr. Axel Wolff, Director of Compliance Oversight Office of Laboratory Animal Welfare National Institutes of Health RKL 1, Suite 360, MSC 7982  
6705 Rockledge Dr., Bethesda, MD

Dr. Wolff:

I attach compliance reports from our IACUC.

In these cases, the IACUC has investigated thoroughly, taken appropriate action and the committee has determined that these matters have been resolved to their satisfaction.

I have reviewed these reports and I concur with the committee response and final determination.

Best regards,

(b) (6)  
For Dr. Melur Ramasubramanian

Melur K. (Ram) Ramasubramanian, Ph.D.  
Vice President for Research

Professor, Mechanical Engineering  
University of Virginia  
Box 400301  
Charlottesville VA 22904-4301  
[REDACTED] (Office of VPR)  
[REDACTED] (Direct)  
[rammk@virginia.edu](mailto:rammk@virginia.edu)

**Wolff, Axel (NIH/OD) [E]**

**From:** OLAW Division of Compliance Oversight (NIH/OD)  
**Sent:** Thursday, June 14, 2018 10:13 AM  
**To:** Gamble, Angela Rinker (adr8s)  
**Cc:** OLAW Division of Compliance Oversight (NIH/OD)  
**Subject:** RE: preliminary compliance report - UVA (Assurance A3245-01)

Thank you for this preliminary report, Ms. Gamble. We will open a new case file and look forward to receiving the final report from the IO after the IACUC has completed its investigation.

Axel Wolff, M.S., D.V.M.  
 Deputy Director, OLAW

**From:** Gamble, Angela Rinker (adr8s) [mailto:adr8s@virginia.edu]  
**Sent:** Thursday, June 14, 2018 9:52 AM  
**To:** Morse, Brent (NIH/OD) [E] <morseb@mail.nih.gov>; OLAW Division of Compliance Oversight (NIH/OD) <olawdco@od.nih.gov>  
**Cc:** Gamble, Angela Rinker (adr8s) <adr8s@virginia.edu>; (b) (6)  
**Subject:** preliminary compliance report - UVA (Assurance A3245-01)

Dear Dr. Morse,

This is to provide preliminary notification that the University of Virginia IACUC (PHS Assurance #A3245-01) has identified five significant deficiencies during our recent semi-annual inspection. Although still under investigation, the deficiencies are as follows: use of an expired anesthetic, failure to follow IACUC policy (two occurrences), the existence of conditions that jeopardize the health or well-being of animals resulting in the potential/actual harm to animals housed in a PI-managed housing facility, and insufficient veterinary care (health observations) in an isolated case. We will be working with the PIs towards resolution, and we will send you a complete report once the investigations have concluded.

Should you have any questions or concerns prior to receiving our final reports, please do not hesitate to contact me.

Sincerely,  
 Angela Gamble

Angela Gamble  
 University of Virginia  
 Director, Office of Animal Welfare  
 Charlottesville, VA 22908  
 PH: (b) (6)

Phone call  
 8:00 AM  
 7/27/18

- 1) expired anesthetic - final in August
- 2) failure to follow policy - 2018D, 2018 E ✓
- 3) 2nd report in Aug
- 3) Potential harm to animals - 2018 C  
 is actually chronic failure to provide housing
- 4) insufficient 2018- H  
 Vet care