Animal Care and Use Program
Town Hall

Jason Villano
5/3/24

Important note:

Information presented here is program-wide
(that is, wherever live animal research is conducted),
unless otherwise indicated.
Agenda

- RAR per diem rate increases (RAR-specific)
- MRB/Ross global treatment for pinworms (RAR-specific)
- Animal Facility Access – emphasis on visitors
- Guidelines on Restraining Animals
- Animal Socialization guidelines
- Special Treatments or Procedures (SToP) guidelines for Rodents
- Single-housing animals
- Rodent Survival Surgery Guidelines
- Upcoming AAALAC site visit

Pls visit the websites for more info re the guidelines:
- ACUC - https://animalcare.jhu.edu/guidelines/
- RAR - https://researchanimalresources.jhu.edu/sop/

Per diem rate – FY25

- FY23 and FY24 – per diem increased after 15 years of being the same
- Other institutions – mouse cages
  - Univ of Maryland - $1.27
  - Univ of Michigan - $1.03
  - UCSF- $1.03
- FY25 – next slide
- Consulting company for per diem rate settings for after FY25
Per diem rate – FY25 – 20% increase from FY24

<table>
<thead>
<tr>
<th>Category</th>
<th>FYXX</th>
<th>FY23</th>
<th>FY24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frogs</td>
<td>$0.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owls</td>
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<tr>
<td>Finches</td>
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<td>Dogs</td>
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<tr>
<td>Ferrets</td>
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<tr>
<td>Sheep</td>
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<tr>
<td>Pigs (more than 60 lbs.)</td>
<td>$35.93</td>
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<td></td>
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<tr>
<td>Pigs (less than 60 lbs.)</td>
<td>$24.20</td>
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<tr>
<td>Lagomorphs</td>
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<tr>
<td>Non-Human Primates</td>
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<td>Monkeys</td>
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<td>Marmosets</td>
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<td>Rodents</td>
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<tr>
<td>Guinea Pigs</td>
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<tr>
<td>Mice (small cage)</td>
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<td>Mice (large cage)</td>
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<td>Rats</td>
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<tr>
<td>Satellite Units</td>
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<tr>
<td>Baboons</td>
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<td>Mice (small cage)</td>
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<td>Rats</td>
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<td>Swine (less than 60 lbs.)</td>
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<td>BSL3 Housing - MRB</td>
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</tr>
<tr>
<td>Rabbits</td>
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MRB global treatment for pinworms

- Cage wash renovations to be completed this summer.
- Animal treatment
  - Started transitioning animals on March 4th to fenbendazole (FBZ) feed
  - 8 weeks have since then passed
  - Putting animals on alternating weeks of FBZ and regular feed (week-on, week-off) with the decontamination week for the suite on FBZ feed, and then another 2 wks post-decontamination
  - When we end the animal treatment, animals will be placed on irradiated diet.
    - Cage wash can focus on cleaning cages, and together with the completion of the cage wash renovation, we anticipate that clean cage supply will be increased and optimal.
    - Cages will be assembled by cage wash without any feed.
    - Feed will be available in the rooms in feed bags placed in barrels.
    - Husbandry will change the cages and place feed appropriate to the cage density.
    - If you create new cages, please place the feed.
      - GUIDANCE: Appropriate volume of feed in the cage appropriate for the cage density and would last for 3 wks (2 weeks is when we do cage changing, but the extra week of feed provide buffer and ensure that the animals do not run out of feed).
MRB/Ross global treatment for pinworms

- Environmental treatment
  - We are working with a vendor to decon the imaging and behavioral cores.
  - RAR will do the rest of the facility, including housing and procedure rooms
    - Starting at the suites at the far end of the facility (except 20 which will coincide with the decontamination for the cores).
    - For the contiguous suites, the suite on the even side will be first followed by the suite on the odd side.
      - To go to the suites in the even side, still go through the adjacent suite on the odd side. However, pls wear additional PPE, especially shoe covers, as you cross that junction between the suites. Any equipment like carts that are brought to the even side will have to be deconned at this junction as well.
    - Each room will take one day, so an entire suite will take one week.
  - Schedule:
    - Apr 30th-May 3rd: Suite 18
    - May 6th-May 10th: Suite 19
    - May 13th-May 17th: Suite 16
    - May 20th-May 24th: Suite 17
    - May 27th-May 31st: Suite 12
    - June 3rd-June 7th: Suite 13
    - June 10th-June 14th: Suite 10
    - June 17th-June 21st: Suite 11

- Important for AAALAC site visit (see end of presentation)

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MRB/Ross global treatment

- Suite and room decon
  - Email will be sent out prior to decon
  - Removing the cages and racks out of each housing room, foaming the room, changing the cages in the corridor, and then repopulating the room
  - Order of room decon in MRB:
    - Even suites: B (Sunday), A (Mon), G (Tues), C (Wed), E (Thurs), D (Fri), F (Sat)
    - Odd suites: B (Sunday), D (Mon), E (Tues), C (Wed), G (Thurs), A (Fri), F (Sat)
  - Ross decon – will coincide with MRB decon for researchers with animals in both MRB and Ross
  - Pls refrain from bringing animals out the room to the procedure rooms during this decon week, if possible. If you need to bring animals out to a procedure room, please note procedure room designation. For MRB:
    - Procedure room B is for use for animals that are housed in rooms that have been decontaminated.
    - Procedure room F is for use for animals that are housed in rooms that have not been decontaminated yet.
MRB/Ross global treatment for pinworms

• Suite and room decon
  • During the decon week, the suite will be closed to all personnel.
  • Researcher access hours: before 9 AM, from 12-1, and then after 5:30 PM for rooms not actively being deconned. Rooms that are actively being deconned cannot be accessed otherwise from 9-5:30 on the day it is being decontaminated.
  • If you have items in the lockers in the suite, pls empty the lockers ASAP, as we also need to decon the lockers. We will empty lockers otherwise and put the items in a bag for your later collection.
  • If you have animals in multiple rooms and suites:
    • Please work first with animals that are housed in the decontaminated rooms/suites.
    • If possible, use dedicated sets of items (surgical instruments, weighing scale, etc.) for the animals in the already deconned rooms. If not possible for certain items, ensure that you decontaminate the items before and after each use.

MRB global treatment for pinworms

• Laboratory decontamination
  • Pls include in the process anything that comes in contact with the animals or their cages/containers and/or touched by gloved hands
    • Includes door knobs, carts, anesthesia equipment, surgical instruments, computer keyboards and mouse, and behavioral and imaging equipment
  • The lab decon needs to occur the same week of the animal facility decon. If you do this late, then the sanitized room will be re-contaminated and reinfection of the animals may occur.
  • As part of our process for ensuring lab decon occurs, each lab must fill out this form: https://forms.office.com/r/A3u2zI6dMd, which also provides further info on the decon process.
  • At least one response per lab is needed, but multiple lab personnel can fill out the form, especially for large labs.
  • We will monitor responses and will connect with labs who we have not heard from.
  • Dispose, heat treatment, physical removal, prevention (DHIPP it!)
Animal Facility Access

- Reviewed by the JHU legal office
- Visitor Guidelines for Johns Hopkins University Vivaria - [https://animalcare.jhu.edu/guidelines/](https://animalcare.jhu.edu/guidelines/)
- All personnel and visitors must adhere to Health, Safety, and Environment Policy HSE025 – “Access to Restricted Areas”.
- Visitors: students, visiting scientists, vendors training staff to use research equipment
- All visits must be approved, and visitors are to be escorted by trained authorized personnel approved by the Faculty Veterinarian, the Director/Managers of Laboratory Animal Management, or the ACUC Office. **Unescorted visits are prohibited.**
  - Valid reasons
  - May be restricted – both number of visitors and areas to be visited
- Visitors who have entered non-JHU animal facilities within the last 24 hours require additional approval by the Attending Veterinarian or designee
- Visitors who are not listed as JHU ACUC-approved personnel MAY NOT touch or physically handle any live animals.
- All persons entering the Vivarium must follow the instructions of their escort.
- Visitors are not allowed to take photos and videos within JHU vivaria without approval.

Animal Facility Access

Waiver and Release Form

Training Form - includes **Photography Guidelines**
Guidelines on restraining animals

• The period of restraint should be the minimum required to accomplish the objective. Species-specific methods of restraint should always be used.

• Frequent handling or desensitization of an animal to particular forms of restraint reduces the level of discomfort or distress. Routine restraint usually does not require detailed description in the animal protocol form. Restraint devices must not be used simply as a convenience in handling or managing animals.

• Short-term Restraint
  • involves manual restraint, animal confinement or placement in a standard restraining device for less than 30 minutes, wherein the device is appropriate for the species and the animal is in a natural body position, or less than 10 minutes in an unnatural or atypical body position, including fixation a body part.
  • The procedure is for the purposes of sample collection, substance administration, presentation of stimuli, conduct of procedures, including animal physical evaluation.

• Prolonged restraint
  • defined as restraint of a conscious animal for 30 minutes or longer in a natural body position, or 10 minutes or longer in an unnatural or atypical body position, including fixation a body part when the animal is not able to voluntarily free itself or its body part (e.g., head).
  • must be scientifically justified in the ACUC protocol
  • type and maximal duration of restraint must also be stated
  • The search for alternatives must include the phrase “prolonged restraint” or similar terms.
  • When prolonged physical restraint is required, animals should be desensitized to the restraint equipment by a gradual process, such as increasing the time of restraint on each occasion, and ideally via the use of positive reinforcement training following a shaping plan. A description of the desensitization or training regime should be included in the protocol, as well as a plan for monitoring the animal while restrained.

Guidelines on restraining animals

• Provisions must be made for monitoring the animal at appropriate intervals.

• Attention must be given to the possible development of lesions or illnesses associated with the restraint including contusions, decubital ulcers, dependent edema, and weight loss.
  • If these or other problems occur, prompt veterinary care must be provided.
  • This may require temporary or permanent removal of the animal from the restraint device depending upon advice of the attending veterinarian.

• Evidence of distress or behavioral change must be reported to the veterinarians and behavioral management team.
  • Animals that do not adapt to necessary restraint systems should be removed from the study.

• Personnel using restraint procedures must be trained on the specific equipment, procedures, duration, and monitoring.

• Less restrictive systems that do not limit an animal’s ability to make normal postural adjustments
  • Ex: tether systems for nonhuman primates and stanchions for farm animals
Animal Socialization Guidelines

- Social housing is considered as the default method of housing typical social nonhuman animal species by the Johns Hopkins University (JHU).
- When introducing animals together, some groupmate-directed wounding may be observed and mild to moderate wounding represents a typical element of nonhuman animal social introductions – both during the formation and maintenance of social bonds.
  - Therefore, wounding per se does not indicate that animals are incompatible and should be separated.
  - Any wounding observed is reported to veterinarians and behavioral management staff for evaluation.
- All social introductions are carefully planned, taking into consideration factors including, but not limited to, the animals’ temperament, sex, breeding requirements, and protocol assignment.
- For larger species (including nonhuman primates, swine, dogs, cats, and ferrets), introduction plans and goals are typically developed by the behavioral management team in consultation with veterinary staff
- Monitor the animals’ social interactions to determine the compatibility of the introduced animals.

Animal Socialization Guidelines

- Justifications outside of the ACUC-approved protocol exemption for socializing animals must be approved by the Attending Veterinarian (AV) or their delegate for one or more of the following reasons:
  - **Veterinary** health status
  - **Quarantine**
  - **Age**
  - **Behavioral**: Animals deemed to be overly aggressive through behavioral observations and/or interactions with conspecifics may be exempt from social housing, as will individuals that show other behaviors that make them inappropriate for social housing (e.g., they demonstrate inappropriate social interactions with cagemates, or abnormal behaviors that are exacerbated by social housing).
  - **Partner Availability**: No compatible social partners are available at the facility. Compatibility may be determined by protocol requirements, breeding requirements, viral status, immune status, or behavioral interactions. Animals that were previously socially housed may also become singly housed due to the death, experimental use, or other status change of their social partner(s).
  - **Timing or Moves**: Animals that are about to be transferred to a different facility or enclosure type may be singly housed in that interim period. This includes moves related to internal and external sales.
  - **Breeding**: Due to breeding-related requirements animals may need to be singly housed. This includes animals (stud males, pregnant females) that are being rotated between social groups and animals that are required to be singly housed between introductions to new social groups.
- For rodents, pls see next slides.
Special Treatments or Procedures (SToP) For Rodents

- To document experimental treatments and exceptions
  - Include those approved by the ACUC
  - Include those outside of typical husbandry procedures

- Request Form and Monitoring Sheet – available on https://researchanimalresources.jhu.edu/forms/

Really important!

Special Treatments or Procedures (SToP) For Rodents

**SToP Request Form**

- Fill this out and submit to the husbandry supervisor and/or team lead and Ms Destinee Lawson (dlawso21@jh.edu).

- Fill out one form for all relevant procedures.

- Completed and approved form will be posted in the room.

- Relevant for satellite facilities.
Special Treatments or Procedures (SToP) for Rodents

SToP Monitoring Sheet
- Print, and post this sheet in the room where your animals are. Use the sheet whenever you perform procedures and/or check on the animals.
- Place stickers on the cages to flag cages.
- Sheet and sticker are not needed for satellite facilities, but use the daily room sheet as a proxy.

No enrichment and single housing

- Needs ACUC justification
  - Section 18 of the ACUC protocol
  - Submit an amendment, if needed.

- Singly-housed animals
  - Need to have reason for single housing on the cage
  - Need additional enrichment
Single housing animals

- Use the following letters to indicate justification for single housing.
  - Veterinary (or "V") – fight wounds
  - Attrition (or "A") – includes last of cohort, single-sex weanlings
  - Experimental (or "E") – because of experimental design
  - Breeding (or "B") – includes stud males, pregnant females ordered from vendors (ex., E17.5)
- Methods of flagging cages:
  - Write the letter "B", "A", "V", or "E" on the cage card; OR
  - Write the letter on a sticky tab;
  - Use a letter sticker.
  - Use the paper flags that will be made available on cage changing stations in the animal rooms.

Guidelines on the Handling, Use, Storage, and Disposal of Drugs

- Label - full drug name, concentration, date of transfer (if applicable), and the expiration date. If the primary container is too small to fit all labeling information (ex. Eppendorf tube), the primary container must be labeled with at minimum the drug name and expiration date, and must be stored in a secondary container (ex. freezer box) which is labeled with full drug name, concentration, date of transfer, and the expiration date of all aliquots stored within the secondary container.

- Regardless of the route of administration, do not use any compound that has altered physical appearance (e.g., discoloration).

- Liquid compounds given parenterally (via subcutaneous, intraperitoneal, intramuscular, or intravenous routes) must be kept under antiseptic conditions.
  - Use only sterile needles and syringes.
  - Never replace a drawn-up drug back into its original vial.
  - Clean the stopper should also be cleaned with an alcohol wipe prior to puncture.
  - If precipitates, discoloration, leaks, or know breaks in sterility are noted for the fluid/container, do not use.
Guidelines on the Handling, Use, Storage, and Disposal of Drugs

- The expiration date for transferred drugs should be 30 days after drug transfer, or on the expiration date of the stock vial, whichever occurs sooner.
- For drugs that do not list expiration dates:
  - Powdered forms of drugs or compounds: the PI should determine stability of the drug to identify a reasonable shelf-life. This is commonly obtained from the manufacturer. The drug should be stored in a light proof airtight container and labeled as described in this document.
  - For drugs or solutions which have been reconstituted for use: Once reconstituted, they must be labeled as described in this document and expire 30 days following reconstitution, unless the manufacturer specifies a longer shelf-life for dilutions and the manufacturer specifications are followed for preparation and storage. Note that when combining drugs into a new vial (ex. ketamine/xylazine cocktail, “TKX”), the drugs should be compatible (ex. not result in precipitation or inactivation of mixed drugs), must be prepared antiseptically, and labeled as described above.

Guidelines on the Handling, Use, Storage, and Disposal of Drugs

- Single-use sterile fluids or fluid diluent vials (e.g. saline) may be accessed multiple times, as long as the fluid is accessed antiseptically and stored per recommendations of the manufacturer.
- Sterile fluids expire on whichever date or condition occurs first:
  - The manufacturer expiration date,
  - 72 hours after opening/puncture when administered intravenously,
  - 30 days after opening/puncture when administered via a route other than intravenous.
Rodent survival surgery guidelines

• Protocol compliance - Ensure procedures are described in the protocol.

• Survival rodent surgeries
  • Sterilize instruments and clean work surfaces. Since most rodent surgeries are done in batches, it is advisable to have more than one set of sterile instruments. In between animals, the instruments should be wiped clean of blood and tissues with sterile gauze, rinsed in sterile saline and sterilized using a glass bead sterilizer.
  • Give preemptive analgesia (analgesia given prior to making the incision).
  • Provide heat support.
  • Perform aseptic technique.
    • Clip hair (at least 2x the length of incision site length and width)
    • 3x alternating betadine or chlorhexidine with alcohol or sterile saline
    • Sterile gloves
    • While not required, sterile drapes covering incision site/surgical site are highly recommended in order to maintain a sterile surgical field. If drapes are not being used, extra precautions must be taken in order to maintain appropriate aseptic technique. Drapes can be cloth, paper, sterile stockinettes, 3M™ Steri-Drape™ Incise Drapes, or new and unused GLAD Press’n Seal® wrap.
  • Ensure animal recovery. Don’t leave the animals unattended until they regain their mobility.
  • Keep records of anesthesia and post-op monitoring for 7-10 days (including analgesic administration).

Rodent Survival Surgery Guidelines

Records:
• Surgical and post-operative records are required for each rodent cage that houses mice that have undergone surgery. The cage record can reflect all animals in the same cage.
  • Any individual animal with surgical complications and/or post-operative findings like pain/distress, dehiscence, infection, and hemorrhage should be identified on the record, with a notation of the finding and its remediation.
  • Associated “Clinical Call” documentation must also be maintained and completed at the cage level.
• Each day’s recording can only be recorded at the time that the post-operative monitoring is occurring.
• Records include:
  • anesthetics and analgesics administered for the surgical procedure and after for post-operative care (include the dose, frequency of administration, and route of administration)
  • frequency of monitoring
  • Findings and any intervention
• Surgical records (cage-card size) will be provided in the housing and procedure rooms, but you can create your own so long as similar necessary information are captured
Rodent Survival Surgery Guidelines

Records:
- If the animal is euthanized or dies within the post-operative period, this must be noted on the post-operative record.
- Records must be on the cage until at least 7 days after the surgery or until sutures/wound clips are removed, whichever is latest. Records may also be kept close to where the animals are but a system should be in-placed to cross-reference the records with the cages involved (i.e., the records clearly indicate the cages involved and the cages are labelled accordingly).
- After completion, keep records in the laboratory available for review for at least 3 years post-surgery.

Appendix 1: Sterilizing gloves for rodent surgeries

Appendix 2: Sample Surgical Records

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Protocol number</th>
<th>Surgeon</th>
<th># of animals in cage</th>
<th>Date of procedure</th>
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</thead>
<tbody>
<tr>
<td>For each of the following, provide the dose (mg/kg or %) administered per animal.</td>
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<td></td>
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<tr>
<td>Anesthetic:</td>
<td>Pre-emptive analgesia:</td>
<td>Anaesthesia and surgical notes:</td>
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</tr>
<tr>
<td>Post-op care:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date/T ime</td>
<td>Observations/1 and Treatment/2/Interventions/3</td>
<td>Initial</td>
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</tr>
</tbody>
</table>

1 If no pre-emptive analgesia is given, write “NA”. Note that this must be justified in the AUC/ICM approved protocol.
2 Include analgesics and other treatments not listed above, and (2) considerations the making of injectable anesthetic because of poor anesthesia, severe blood loss during the surgery, and prolonged anesthetic recovery. Otherwise, write “None” to mean that the procedures were uneventful.
3 Assess the overall condition of the animal and the incision site – normal vs. abnormal. If abnormal, provide info.
4 Include analgesics not noted above (provide doses and wound treatments)
5 Include euthanasia. As end of post-op care, write “Dead”. This means that the incision is healed and sutures/cips have been removed.
AAALAC site visit

- International accrediting body for animal care and use program
- Last here at Hopkins in 2021; does triennial site visits
- Site visit include central facilities, satellites, laboratory areas where live animal work is done.
- A team of 6 site visitors will be here on June 24th-June 28th
  - Will come and see the facilities
  - Talk to personnel (including researchers)
- We will have a town hall specific for AAALAC to prepare the community:
  - May 28th, Tuesday, noon – specific for satellite facilities
  - June 6th, Thursday, noon – for the entire program
  - More info to come

Questions?

ACUC Office – acuc@jhmi.edu
Program-wide and small animal program:
  - Jason Villano, DVM – jvillano@jhmi.edu
Large animal program:
  - Jessica Izzi, DVM – jizzi1@jhmi.edu
Old-World Nonhuman primates:
  - Amanda Maxwell, DVM – amaxwel5@jhmi.edu
Small animal program and All Children’s Hospital:
  - Cassie Moats, DVM: cmoats1@jhmi.edu
Behavioral management
  - Lydia Hopper, PhD: lhopper7@jh.edu
Business operations:
  - Vanessa Rodas-Eral, MS - vrodas@jhu.edu