Houston Area Animal Care Facility for NASA Basic Skills Training in support of the Japanese Aerospace Exploration Agency (JAXA) Mouse Habitat Mission

Statement of Work

JAXA has previously flown 10 Mouse Habitat Unit (MHU) missions to the International Space Station (ISS) as part of their highest priority research. Previously, the National Aeronautics and Space Administration (NASA) has trained the astronaut corps in basic animal skills prior to having the specific mission skills taught in Japan. With the discontinuation of NASA's Rodent Research program, the training animal care facility (ACF) at the Johnson Space Center (JSC), home to the astronaut corps, has been discontinued. To this end, NASA, under agreement with JAXA, requires a location to perform this training which meets the programmatic and regulatory requirements for animal operations. For the MHU-10 mission, this work was performed at a commercial Animal Care Facility (Commercial Research Organization) which met all of NASA's requirements, K2-Bio.

1. Objectives and Requirements

Given the need for astronaut training to support the MHU-11 mission and the location of the astronaut corps in Houston, Texas, USA, a suitable location and support for training is required.

The main objectives for this purchase order are to:

Provide an ACF/Commercial Research Organization (CRO) which complies to NASA's regulatory standards to the include Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy) and the Guide for the Care and Use of Laboratory Animals for all NASA grants, contracts, cooperative agreements involving research with live vertebrate animals.

Ensure all animal training activities (defined below) are coordinated with NASA veterinarians (to ensure consistency with constraints presented by the space environment) and are included in an animal use protocol (AUP) approved by the awardee's Institutional Animal Care and Use Committee (IACUC). The approved AUP bust be provided to NASA for congruency [with SOW] and administrative reviews. IAW OCHMO 551, a Vertebrate Animal and Higher Order Cephalopod section must be drafted and submitted to NASA either prior to or with the AUP. NASA reviews of the AUP and VACS must be completed prior to initiation of animal activities.

One day setup/practice/familiarity with facility vet tech/handling staff and NASA veterinarian(s).

Six (6) half day training sessions during the summer of calendar year 2026 under the supervision and guidance of the NASA veterinarian(s) to support microgravity and safety-specific requirements in addition to generic animal handling and procedures. The procedures are intraperitoneal injection, anesthesia monitoring (using NASA-specific anesthetic cocktails), blood collection (via cardiac puncture), euthanasia, and cervical dislocation. Lab technician to demonstrate activities for crew under the direction of the NASA Veterinarian(s) prior to crew hand-on training.

Procurement, housing/husbandry of mice (5 each per half day, - adult, female C57Bl6) per facility standards to include supplies, bedding, chow, enrichment, daily health checks.

Procurement and syringe fills for:

Anesthetic (Imaging):

- Medetomidine (0.3 mg/kg)
- Midazolam (4 mg/kg)
- Butorphanol (5 mg/kg)

Anesthetic (Cardiac blood collection):

- Ketamine (100 mg/kg)
- Xylazine (10 mg/kg)

Antagonist:

- Atipamezole (1mg/kg)

Emergency Euthanasia:

- Pentobarbital.

Syringes for anesthesia/euthanasia, cardiac puncture tools, including blood tubes, syringes, toe pinch forceps, cervical dislocation bar. Basic laboratory supplies, including gloves, PPE, rodent handling gloves, wipes, etc.

Procedures included in each training session include:

General animal handling

Intraperitoneal Injection

Anesthesia and monitoring using NASA-specific Anesthetic cocktails

Blood collection via cardia puncture

Euthanasia and cervical dislocation

The provider shall provide a hands-on demonstration of each procedure under the direction of NASA's veterinarian(s) and crew.

2. Specifications

Facility shall be: Public Health Service (PHS) assured and AALAC Accredited

Location of facility shall be within 40 miles of NASA's Johnson Space Center.

3. Place of Performance:

K2 Biolabs 2710 Reed Rd Ste 160, Houston, TX 77051

4. Period of Performance:

Award thru November 2026

5. Payments

[redacted]

Milestone	Description	Due Date	Amount of Payment ($)
1	Training Completion for 3 crewmembers (6 half day sessions)	Not later than 15 August 2026	[redacted]

[redacted]