1) Facility:
   a. A separate facility for rodent surgery is not necessary. A rodent surgical area can be a room or portion of a room that is easily sanitized. The immediate area should not be used for other purposes during the time of surgery.
   b. Surgery should be conducted on a clean, uncluttered lab bench or table. The surface of the lab bench or table should be impervious to liquids. The work surface should be wiped with disinfectant before and after use or covered with a clean drape.

2) Preparation of Animal:
   a. Hair should be removed from the surgical site and the skin should be cleansed with disinfectants (e.g., dilute betadine, Nolvasan brand chlorhexidine, or 70% ethanol).
   b. Surgical drapes are recommended for procedures that require exteriorization of the viscera, procedures performed on immune-suppressed rodents, or if the surgeon has difficulty preventing suture material or instruments from touching nonsterile areas.

3) Preparation of Surgeon/Surgery
   a. Hands should be washed with an antiseptic surgical scrub preparation and sterile surgical gloves must be worn.
   b. The surgeon should wear clean laboratory garments. Steam is the preferred method (autoclaving).

4) Intraoperative Monitoring
   a. The animal must be monitored carefully during the surgical procedure.
   b. Surgeons should pay close attention to the animal’s respiratory rate and character, and response to noxious stimuli (e.g., tail pinch).
   c. Monitoring of respiratory rate and character is facilitated by the use of transparent drapes.
   d. Although resting heart rate for rodents is rapid (typically more than 300 beats per minute), heart beat should be checked periodically for significant changes in rate or rhythm. Heartbeat can be palpated through a sterile drape by the surgeon, or by a second person who is not performing sterile procedures.
   e. The surgical team should know the correct initial responses to the most common emergencies associated with the type of procedure they are performing.
5) Postsurgical Care:
   a. Postsurgical care must include observing the animal to ensure uneventful recovery from
      anesthesia and surgery; administering analgesics as required; providing adequate care
      to surgical incisions and maintaining appropriate medical records.
   b. Placing the animals in a warm room or cage should prevent hypothermia. If necessary,
      the cage may be placed on a bedding or padded surface and supplied heat sources.
      Caution must be used with heat sources as they can cause thermal burns and
      hyperthermia if used inappropriately.
   c. For training in selection and use of supplemental heat sources, contact ACS staff at
      806-834-3437.
   d. Dehydration can be ameliorated by appropriate fluid therapy. Initially giving 1 to 2 ml
      of warm (approx. 37 degrees C) fluids (0.9% NaCl or equivalent) per 100 gm of body
      weight by subcutaneous injection may sufficiently ameliorate dehydration. If blood loss
      occurred during the surgical procedure or if the animal is slow to recover from
      anesthetic, additional fluids may be necessary.
   e. To prevent cannibalism or suffocation, rodents should be housed individually until they
      are ambulatory.
   f. If recovery from anesthetic will be prolonged, (i.e., over one hour), the animal should
      be rotated from side to side every 15-30 minutes to minimize hypostatic congestion of
      the lungs. This practice should be continued until the animal is able to maintain sternal
      recumbency or sit.
   g. Post-surgical animals should be seen every day by a member of the investigator’s staff
      or other individuals to whom post-operative care has been delegated until all sutures,
      would clips, or other implanted devices have been removed.
   h. Sutures and wound clips generally should be removed 7-14 days after surgery.

6) Surgical Records
   a. A “Surgical Record” should be completed.
   b. Records should indicate the type of surgical procedure performed, the date of the
      procedure, the person who performed the procedure, information on drug
      administration, intra-operative monitoring and should be maintained in the laboratory.
      This information must be available for review. Sample forms may be found following
      this SOP or online at www.depts.ttu.edu/acuc.
   c. In the event that infections or complications occur, the ACS staff must be notified. The
      ACS staff will review the entire surgical procedure (facility, preparation of the animal
      and instruments, expertise of the surgeon, and postsurgical care).
7) Sequential Surgeries:
   a. After using a set of instruments, remove all organic material and place in bead sterilizer for 10 seconds. Be sure to allow instruments to cool before using on the sequential animal.
   b. Maintain sterile operating procedures and good lab practices at all times.

8) In cases where adherence to the above procedures may invalidate research or complicate interpretation of research results, such as transplantation of cells or tissues, permission to use alternative methods may be granted by the ACUC.

9) Training:
   a. Professional and technical personnel and students who perform anesthesia and surgery should be appropriately trained to accomplish these tasks in a humane and scientifically acceptable manner. The ACS staff is available to provide assistance with, or training, in, aseptic technique and the proper administration of anesthesia, analgesia, and euthanasia.

10) Guidelines for the Use of Anesthetics and Analgesic Agents refer to tables available online at www.depts.ttu.edu/acuc or consult with Clinical Veterinarian.
Animal Surgery Record

PI Name:          ACUC #

Project Title:

Animal ID      Species    Date

Surgical Procedure:

Surgeon:

Assistant:

Presurgical Procedure: (Include surgical preparation, anesthetics and dose).

Brief Description of Procedure:

Post Surgical Care:

Individual Response:

Post Surgical Analgesic:
   Amount given:
   Frequency:
Results of Surgery: