WVU IACUC POLICY:  
Toe Clipping for Animal Identification

Animal Identification
The Guide for the Care and Use of Laboratory Animals (Guide) and the National Institutes of Health, Office of Laboratory Animal Welfare recognize many acceptable methods for individually identifying research animals. These methods include, but are not limited to, collars and bands; colored dyes; ear notches or ear tags; tattoos; sutured beads; subcutaneous transponders; and freeze brands. Because toe clipping [removal of the last phalangeal (toe) bone of a digit from one or more limbs corresponding to a predetermined numbering code] can be painful, affect behavior, and alter the gait or weight-bearing ability of an animal’s limbs, the Guide limits its use to justified instances. According to the Guide, toe clipping "As a method of identification of small rodents, toe-clipping should be used only when no other individual identification method is feasible. It may be the preferred method for neonatal mice up to 7 days of age as it appears to have few adverse effects on behavior and well-being at this age, especially if toe clipping and genotyping can be combined. Under all circumstances aseptic practices should be followed. Use of anesthetic or analgesia should be commensurate with the age of the animals." The US Food and Drug Administration (FDA) policy also discourages toe clipping for animal identification. In one survey of toe-clipping in rats and mice involving approximately 150 IACUCs, ~35% allowed it. Among the institutions allowing toe clipping for identification purposes, only 1/3 allowed more than 1 toe amputation per foot, and of those that allowed clipping, 79% required a definitive justification for toe-clipping use. It is important to recognize that research on the impact of this technique is sparse, and species differences may exist. For example, one study measuring corticosterone levels in reptiles suggested that subcutaneous passive integrated transponder (PIT) tag placement was actually more stressful than toe-clipping.

The WVU IACUC strongly discourages the practice of toe clipping for the purpose of animal identification, but acknowledges that under certain circumstances it may be necessary. Toe clipping is regarded as a potentially painful procedure that shall be conducted only with scientific justification and prior approval from the IACUC. Convenience, tissue/DNA collection and cost savings are not adequate justifications by themselves. Toe clipping as a method of identification of small mammals (e.g. rodents and shrews) and amphibians shall only be used when no other individual identification method is feasible. If used on rodents and shrews, it shall only be performed on neonates up to 7 days of age. It shall not be performed on animals destined for use in some types of behavioral studies as it may reduce grip strength and affect other behaviors such as feeding and grooming.

When toe clipping is approved by the IACUC, it must be conducted in the least painful and most humane manner possible, using a new sharp surgical blade or carefully maintained surgical scissors. In order to obtain IACUC approval for toe clipping for animal identification, the Principal Investigator must provide the IACUC with strong scientific justification in his/her animal use protocol and indicate why other methods of identification are unsuitable for use. The OLAR Staff is available for consultation. The Principal Investigator must also provide a detailed description of the amputation technique in his/her animal use protocol. (A template describing the technique for rodents and shrews, and a Standard Operating Procedure for amphibians, are provided below to aid investigators). Should a suitable alternative method of animal identification become available, the Principal Investigator should examine that method and determine its feasibility for use with his/her animals in an effort to eliminate toe clipping.
Toe Clipping Procedure for Rodents and Other Small Mammals:
(This template may be used in the Nonsurgical Procedure Description of your protocol.)
“Each pup is placed under hypothermic anesthesia for pups 0-5 days of age or under isoflurane between 5-7 days of age [or fill in an equivalent anesthetic regime]. A sterile scalpel blade or sharp surgical scissors will be used to cleanly amputate the last (phalanx) bone of the digit. [Analgesic should be used, but selection should consider its potential effect on maternal acceptance.] If necessary, silver nitrate, a clotting agent or direct pressure will be used to stop any bleeding. The animal’s body temperature, hemostasis and maternal re-acceptance back to the litter will be assured prior to leaving the animal unattended in its home cage.”

Standard Operating Procedure for Toe Clipping of Amphibians (Courtesy of USGS):
www.nwhc.usgs.gov/publications/amphibian_research_procedures/toe_clipping.jsp

NOTE: In addition to the above procedural descriptions, the Principal Investigator must provide scientific justification for toe clipping in the appropriate nonsurgical procedural section of the protocol. Convenience, tissue/DNA collection and cost savings are not adequate justifications by themselves.

Toe Clip Identification References:
(www.nwhc.usgs.gov/publications/amphibian_research_procedures/toe_clipping.jsp)