Procedures
AWA Section 2143(a)(3)(B) 9 CFR, Part 2, Section 2.31 (d)(1)(ii)and (e); Section 2.32 (c)(2) and (5)(ii) Principles of Humane Experimental Techniques, William Russell and Rex Burch, 1959 Public Health Service Policy on Humane Care and Use of Laboratory Animals (IV,C,5) Animal Welfare Information Center
Replaces policies dated April 14, 1997, and June 21, 2000.
The Animal Welfare Act (AWA) regulations require principal investigators to consider alternatives to procedures that may cause more than momentary or slight pain or distress to the animals and provide a written narrative of the nethods used and sources consulted to determine the availability of alternatives, including refinements, reductions, and replacements.
Alternatives or alternative methods, as first described by Russell and Burch in 1959, are generally regarded as those that incorporate some aspect of replacement, reduction, or refinement of animal use in pursuit of the ninimization of animal pain and distress consistent with the goals of the research. These include methods that use non-animal systems or less sentient animal species to partially or fully replace animals (for example, the use of an n vitro or insect model to replace a mammalian model), methods that reduce he number of animals to the minimum required to obtain scientifically valid data, and methods that refine animal use by lessening or eliminating pain or distress and, thereby, enhancing animal well-being (for example, the use of appropriate anesthetic drugs). However, methods that do not allow the attainment of the goals of the research are not, by definition, alternatives. Alternatives should be considered in the planning phase of the animal use proposal. As indicated when these regulations were finalized in 1989, APHIS continues to recommend a database search as the most effective and efficient nethod for demonstrating compliance with the requirement to consider alternatives to painful/distressful procedures. However, in some circumstances (as in highly specialized fields of study), conferences, colloquia, subject expert consultants, or other sources may provide relevant and up-to-date information regarding alternatives in lieu of, or in addition to, a database search. Sufficient documentation, such as the consultant's name

alternatives in the specific field of study. For example, an immunologist cited as a subject expert may or may not possess expertise concerning alternatives to *in vivo* antibody production.

When a database search is the primary means of meeting this requirement, the narrative should include:

1. the name(s) of the databases searched (due to the variation in subject coverage and sources used, one database is seldom adequate);

Significant changes are subject to prior review by the IACUC. If those changes include a painful or distressful procedure, a consideration of alternatives or a revision of the prior search may be required

Although additional attempts to identify alternatives or alternative methods are not required by Animal Care at the time of each annual review of an animal protocol, Animal Care would normally expect the principal investigator to reconsider alternatives at least once every 3 years, consistent with the triennial *de novo* review requirements of the Public Health Service Policy on Humane Care and Use of Laboratory Animals (IV,C,5).