Literature Search

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Policy Statement **Background** **Policy** **Effective:** 1.2015 **Last Updated:** 1.2015	**Responsible University Office:** Office of Research Compliance IACUC Office(s) **Responsible University Administrator:** Vice President for Research **Policy Contacts:** Indianapolis: somiacuc@iupui.edu

Policy Statement

The Institutional Animal Care and Use Committee (IACUC) has developed the following policy to help research investigators complete the 'Literature Search for Alternatives' section of the protocol, which is required by Animal Care Policy #12 (USDA) and the Welfare Assurance.

Background

The literature search should be documented so that IACUC members, inspectors, or others viewing the protocol can follow a printed search strategy, view the list of databases and keywords and verify that the investigator has made a good faith effort to demonstrate whether or not alternatives exist and/or whether or not there are less painful experimental methods available.

Policy

The purpose of the literature search is to look for ways to incorporate the "3 Rs" into an animal use protocol:

- **Replacement:** Replacement refers to methods that avoid using animals. The study uses a non-animal model or a species deemed to be lower on the phylogenetic scale, e.g. in vitro culture instead of an animal, or a mouse model instead of a dog.

- **Refinement:** Refinement refers to modifications of husbandry or experimental procedures to enhance animal well-being and minimize or eliminate pain and distress. This includes using the least painful technique, using appropriate anesthesia and analgesia, and incorporating humane endpoints for treatment or for early intervention, potentially with removal of an animal from the study prior to the experimental endpoint.

- **Reduction** involves strategies for obtaining comparable levels of information from the use of fewer animals or for maximizing the information obtained from a given number of animals (without increasing pain or distress) so that in the long run fewer animals are needed to acquire the same scientific information. Statistical tests (e.g. power analysis) should be used to confirm that the minimum number of animals is requested for the protocol.

Consider contacting a IACUC's librarian to assist in the search at: http://iupui.campusguides.com/iacuc
There is no actual USDA requirement that two databases be used; however, best practices would indicate that the following procedures be utilized.

Using Only One Database

The preferred resource if using only one database is Medline (via either PubMed or Ovid). When performing searches to address the question of alternative animals, non-animal alternatives, refinement, and duplication, always include the:
- Name of the database(s)
- Date the search was performed
- Time period covered by the search (e.g. 1946-present)
- Search strategy (including scientifically relevant terminology)
- **Refinement** searches must include names of the specific painful procedures used in the protocol
- **Alternative** searches should include specific types of alternatives and not just the word "alternatives"
- *For additional documentation on searching see the Animal Care Resource Guide Consideration of Alternatives*

The search result does not need to be included on the application but should be the basis for addressing the remaining questions in the IACUC application.

The USDA recently indicated that if a librarian is involved in performing or verifying searches, then two databases may not be needed. Any IACUC member can ask for a librarian search if they feel they need assistance.

If an investigator uses the same due diligence when searching and documenting their research, two databases may not need to be used.

Using More than One Database

If a protocol involves specialized equipment (e.g. new electronic device) or some other unique characteristics OR if an initial search in Medline does not locate any relevant results, searching more than one database might be necessary. There are engineering, education, agricultural, and other scientific databases available as well as general resources like Google Scholar. See the IUSM *Animal Research & Welfare Guide* at: http://iupui.campusguides.com/iacuc to locate additional databases and searching tips.

- Separate search strategies should be documented for each database because the terminology may not necessarily be the same in each database.

Frequency of Searches
- Alternatives should be considered in the planning phase of the animal use proposal. This is with every new submission or 3-year replacement protocol (de novo review).
- 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 is required.

Results of Searches
- The IACUC does not need to review the actual results of the search. However, the Principal Investigator (PI) must maintain them in the event that an USDA inspector requests them, or if IACUC member asks to view them during a lab inspection, or if they are asked for them during a PAM visit.

Resources

The Animal Welfare Act (Title 7, U.S. Code), section 13(a)(3)(B):

Title 9 of the Code of Federal Regulations (9CFR, Part 2, Sec. 2.31 (d)(1)(ii))

The Federal Register (Vol. 54, No. 168, Thursday, August 31, 1989)

Policy #12: Consideration of Alternatives to Painful/Distressful Procedures