



THE ANIMAL ALTERNATIVES SEARCH: TIPS FOR AN EFFECTIVE AND EFFICIENT SEARCH

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Journal Club Seminar
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Disclosure

I, Susan Steelman, do not have (nor does any immediate family member have) a vested interest in or affiliation with any corporate organization of which resources/products are included in this educational activity. Nor do I have any affiliation with an organization whose philosophy could potentially bias my presentation.

Overview

- Purpose of the animal alt search
- The 3 R's
- Components of the search
- Pre-formulated strategies
- PubMed
- Web of Science
- Zero Results
- RCSS

Purpose

AWA regulations require PIs to consider alternatives to procedures that may cause more than momentary or slight pain or distress to the animals and provide a written narrative

- **Animal Care Resource Guide (June 2000)**
- Consideration of Alternatives to Painful/Distressful Procedures

USDA Policy #12

- http://www.aphis.usda.gov/animal_welfare/downloads/policy/policy12.pdf

The 3 R's

- **Replacement** - replace animals with non-animal methods or with “lower” animals.
- **Reduction** - Minimize the number of animals used.
- **Refinement** –to minimize pain and distress.

Search Components: DOs

- Search multiple databases
- One database must cover at least 10 years
- Current search – no more than 3 months old.
- Include multiple “animal alternatives terms”
- Table w/ databases searched, date of search, results, and years searched
- Complete search strategy for each database
- Include your statement of review

Search Components: DONTs

- ⦿ Do not include the animal species in the search strategy *
- ⦿ Do not leave search results as zero for multiple databases
- ⦿ Do not include citations or abstracts of your results in the protocol

Search Strings - PubMed

animal use alternatives OR animal testing
alternatives OR biological models OR "animal
alternative" OR "alternative animal use" OR
"animal testing alternative" OR "animal replace"
OR "animal reduction" OR "computer model" OR
"computer simulation" OR software OR
"mathematical model" OR "animal welfare" OR
"animal pain" OR "animal distress" OR "animal
stress" OR "animal suffering" OR "animal housing"
OR caging OR "3Rs" OR "three Rs" OR
"Reduction Refinement Replacement"

Search Strings – Cont.

Science Citation Index Animal Alt. Search String (advance search format)

- TS=("animal use alternative" OR "animal testing alternative" OR "biological model" OR animal alternative* OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging) OR (TS=reduction SAME TS=refine* SAME TS=replace*)

AGRICOLA on EBSCO (paste into the first search box and hit search)

- (ZU "ANIMAL USE ALTERNATIVES") or (ZU "ANIMAL USE REDUCTION") or (ZU "ANIMAL USE REDUCTION") or (ZU "ANIMAL USE REFINEMENT") or (ZU "ANIMAL USE REPLACEMENT") or (ZU "ANIMAL WELFARE") or (ZU "ANIMAL WELFARE") or (ZU "ANIMAL STRESS") or (ZU "ANIMAL SUFFERING") or (ZU "ANIMAL TESTING ALTERNATIVES") or (ZU "ANIMAL DISTRESS") or (ZU "ANIMAL HOUSING") or (ZU "ANIMAL CAGES") or (ZU "ANIMAL CARE")

The Table

DATABASE	YEARS COVERED	RESULTS	DATE SEARCHED
PubMed (includes MEDLINE)	1947 – 2010	18 citations	June 20, 2010
Science Citation Index Expanded via WOS	1945 – 2010	1 citation	June 20, 2010

PubMed


Advanced Search



PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed


[Limits](#) [Advanced search](#) [Help](#)



PubMed comprises more than 20 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

MeSH

Using PubMed

- [PubMed Quick Start Guide](#)
- [Full Text Articles](#)
- [PubMed FAQs](#)
- [PubMed Tutorials](#)
- [New and Noteworthy](#) 

PubMed Tools

- [Single Citation Matcher](#)
- [Batch Citation Matcher](#)
- [Clinical Queries](#)
- [Topic-Specific Queries](#)

More Resources

- [MeSH Database](#)
- [Journals in NCBI Databases](#)
- [Clinical Trials](#)
- [E-Utilities](#)
- [LinkOut](#)

PubMed – Search Details

- [Monoclonal antibodies directed against protective antigen of Bacillus anthracis enhance lethal toxin activity in vivo.](#)
5. Little SF, Webster WM, Fisher DE.
FEMS Immunol Med Microbiol. 2011 Jan 13. doi: 10.1111/j.1574-695X.2011.00782.x. [Epub ahead of print]
PMID: 21231965 [PubMed - as supplied by publisher]
[Related citations](#)

- [A comparative evaluation of Golgi protein-73, fucosylated hemopexin, \$\alpha\$ -fetoprotein, and PIVKA-II in the serum of patients with chronic hepatitis, cirrhosis, and hepatocellular carcinoma.](#)
6. Morota K, Nakagawa M, Sekiya R, Hemken PM, Sokoll LJ, Elliott D, Chan DW, Dowell BL.
Clin Chem Lab Med. 2011 Jan 14. [Epub ahead of print]
PMID: 21231906 [PubMed - as supplied by publisher]
[Related citations](#)

- [\[Flow cytometry--the basis of cell surface analysis and clinical application\].](#)
7. Okada Y.
Rinsho Byori. 2010 Nov;58(11):1121-30. Japanese.
PMID: 21229711 [PubMed - in process]
[Related citations](#)

- [\[Evaluation and application of a newly developed highly sensitive HBsAg chemiluminescent enzyme immunoassay for chronic hepatitis B patients\].](#)
8. Shinkai N, Tanaka Y, Matsuura K, Kani S, Naganuma H, Mizokami M.
Rinsho Byori. 2010 Nov;58(11):1078-84. Japanese.
PMID: 21229705 [PubMed - in process]
[Related citations](#)

- [Synopsis of new antiangiogenetic factors, mutation compensation agents, and monoclonal antibodies in target therapies of breast cancer.](#)
9. Grammatikakis I, Zervoudis S, Kassanos D.

PubMed Central

Comparative Magnitude of Cross-Strain Conservation of HIV Variable LoC [PLoS One. 2010]
The HIV-1 Integrase α 4-Helix Involved in LTR-DNA Recognition Is also a Highly Ant [PLoS One. 2010]
Trace Levels of Innate Immune Response Modulating Impurities (IIRMs) S; [PLoS One. 2010]
[See all \(23162\)...](#)

Find related data

Database:

Search details

```
"antibodies, monoclonal"[MeSH Terms] OR ("antibodies"[All Fields] AND "monoclonal"[All Fields]) OR "monoclonal antibodies"[All Fields] OR ("monoclonal"[All Fields] AND
```

[See more...](#)

Recent activity

```
"antibodies, monoclonal"[MeSH Terms] OR ("antibodies"[All Fields] AND "monoclonal"[All Fields]) OR "monoclonal antibodies"[All Fields] OR ("monoclonal"[All Fields] AND "antibodies"[All Fields])
```

PubMed Search History u/ Advanced Search

PubMed Advanced Search

[← Back to PubMed](#)

Search Box

#1 AND #2 AND #3

[Limits](#) [Details](#) [Help](#)

Search

Preview

Clear

Search Builder

Search History

Search	Most Recent Queries	Time	Result
#4	Search #1 AND #2 AND #3	14:32:21	31
#3	Search prion* OR prion disease OR scrapie	14:28:30	17239
#2	Search monoclonal antibodies	14:16:48	191822
#1	Search animal use alternatives OR animal testing alternatives OR biological models OR "animal alternative" OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging OR "3Rs" OR "three Rs" OR "Reduction Refinement Replacement"	14:14:43	300635

Clear History

[Search History Instructions](#)

More Resources

[MeSH Database](#)

PM Search History – Copied into Word

Search History

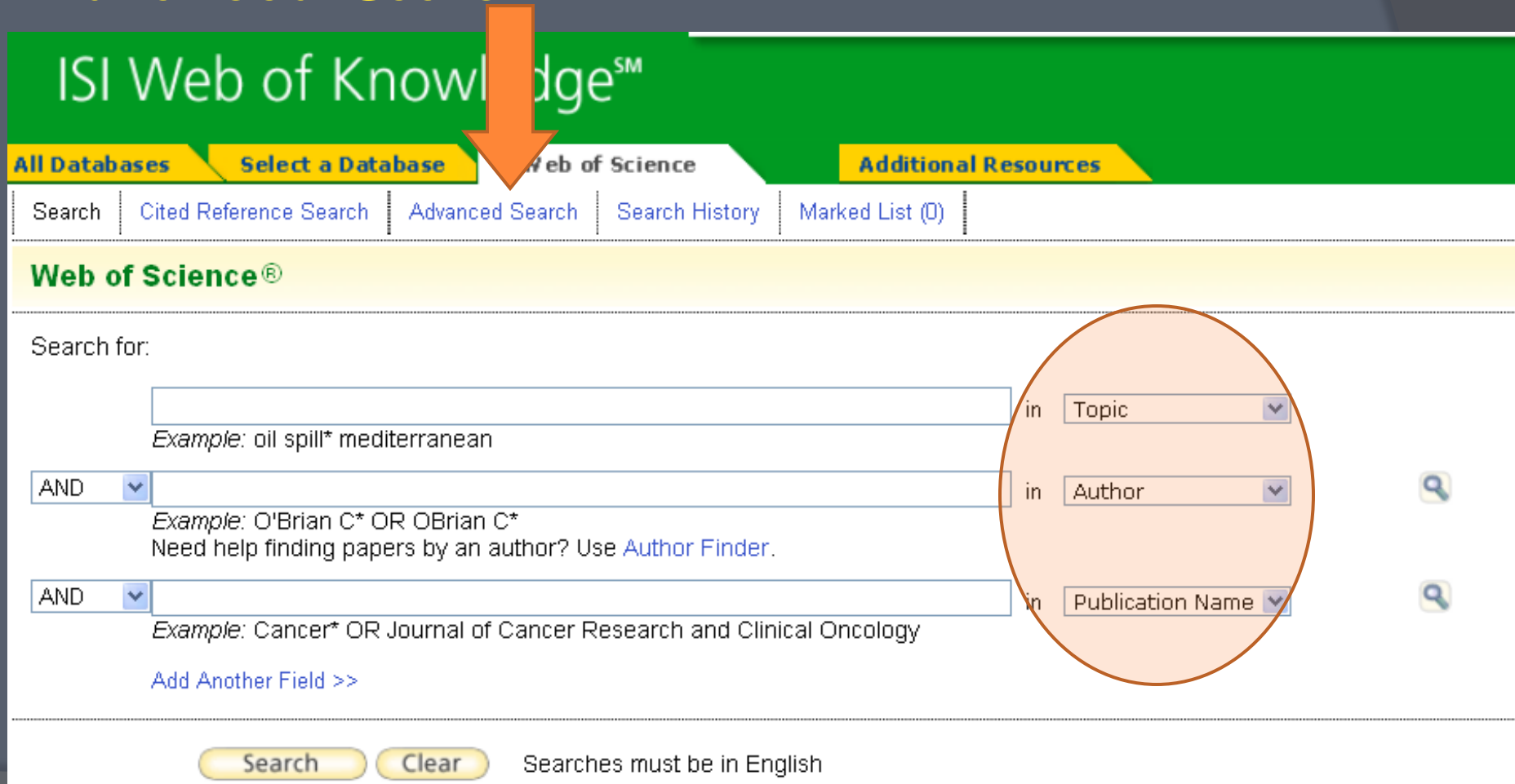
Search	Most Recent Queries	Time	Result
#4	Search #1 AND #2 AND #3	14:32:21	31
#3	Search <u>prion*</u> OR <u>prion disease</u> OR <u>scrapie</u>	14:28:30	17239
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#1	Search animal use alternatives OR animal testing alternatives OR biological models OR "animal alternative" OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging OR "3Rs" OR "three Rs" OR "Reduction Refinement Replacement"	14:14:43	800635

Clear History



WOS: Use Advanced Search

Advanced Search



ISI Web of KnowledgeSM

All Databases | Select a Database | Web of Science | Additional Resources

Search | Cited Reference Search | **Advanced Search** | Search History | Marked List (0)

Web of Science[®]

Search for:

in

Example: oil spill mediterranean*

AND in

Example: O'Brian C OR OBrian C**
Need help finding papers by an author? Use [Author Finder](#).

AND in

Example: Cancer OR Journal of Cancer Research and Clinical Oncology*

[Add Another Field >>](#)

Searches must be in English

WOS – Adv Sch – SCI Only

Web of Science®

Advanced Search. Use 2-character tags, Boolean operators, parentheses, and set references to create your query. Results appear in the Search History at the bottom of the page.

Example: TS=(nanotub* SAME carbon) NOT AU=Smalley RE #1 NOT #2 [more examples](#) | [view the tutorial](#)

TS=("animal use alternative" OR "animal testing alternative" OR "biological model" OR animal alternative* OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging) OR (TS=reduction SAME TS=refine* SAME TS=replace*)

Search

Searches must be in English

Current Limits: [Hide Limits and Settings](#) (To save these permanently, [sign in or register.](#))

Timespan:

- All Years (updated 2011-01-17)
- From 1945-1954 to 2011 (default is all years)

Citation Databases:

- Science Citation Index Expanded (SCI-EXPANDED) --1945-present
- Social Sciences Citation Index (SSCI) --1985-present

Field Tags	Booleans
TS=Topic	AND
TI=Title	OR
AU=Author	NOT
GP=Group Author	SAME
ED=Editor	
SO=Publication Name	
PY=Year Published	
AD=Address	
OG=Organization	
SG=Suborganization	
SA=Street Address	
CI=City	
PS=Province/State	
CU=Country	
ZP=Zip/Postal Code	
FO=Funding Agency	
FG=Grant Number	
FT=Funding Text	

WOS – Adv Sch - History

Restrict results by any or all of the options below:

All languages	All document types
English	Article
Afrikaans	Art Exhibit Review
Arabic	Bibliography

Search History

Set	Results		Combine Sets
		Save History / Create Alert Open Saved History	<input type="radio"/> AND <input type="radio"/> OR Combine
# 4	1	#1 AND #2 AND #3 <i>Databases=SCI-EXPANDED Timespan=All Years</i>	<input type="checkbox"/>
# 3	15,709	TS=(prion* OR prion disease* OR scrapie) <i>Databases=SCI-EXPANDED Timespan=All Years</i>	<input type="checkbox"/>
# 2	>100,000	TS=(monoclonal antibod* OR antibod* monoclonal) <i>Databases=SCI-EXPANDED Timespan=All Years</i>	<input type="checkbox"/>
# 1	>100,000	TS=("animal use alternative" OR "animal testing alternative" OR "biological model" OR animal alternative* OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging) OR (TS=reduction SAME TS=refine* SAME TS=replace*) <i>Databases=SCI-EXPANDED Timespan=All Years</i>	<input type="checkbox"/>

SCI search history – copied to Word

OR "3Rs" OR "three Rs" OR "Reduction Refinement Replacement"

Science Citation Index



Set Results

Save History / Create Alert

Open Saved History

Combine Sets

AND

OR

Combine

Delete Sets

Select All

Delete

- | | | | | |
|-----|-----------------------------|--|--------------------------|--------------------------|
| # 4 | 1 | #1 AND #2 AND #3
Databases=SCI-EXPANDED Timespan=All Years | <input type="checkbox"/> | <input type="checkbox"/> |
| # 3 | 15,709 | TS=(prion* OR prion disease* OR scrapie)
Databases=SCI-EXPANDED Timespan=All Years | <input type="checkbox"/> | <input type="checkbox"/> |
| # 2 | >100,000 | TS=(monoclonal antibod* OR antibod* monoclonal)
Databases=SCI-EXPANDED Timespan=All Years | <input type="checkbox"/> | <input type="checkbox"/> |
| # 1 | >100,000 | TS=("animal use alternative" OR "animal testing alternative" OR "biological model" OR animal alternative* OR "alternative animal use" OR "animal testing alternative" OR "animal replace" OR "animal reduction" OR "computer model" OR "computer simulation" OR software OR "mathematical model" OR "animal welfare" OR "animal pain" OR "animal distress" OR "animal stress" OR "animal suffering" OR "animal housing" OR caging) OR (TS=reduction SAME TS=refine* SAME TS=replace*)
Databases=SCI-EXPANDED Timespan=All Years | <input type="checkbox"/> | <input type="checkbox"/> |

Getting Zero? – Split Combos

[Print Search History](#) | [Retrieve Searches](#) | [Retrieve Alerts](#) | [Save Searches / Alerts](#)

Select / deselect all **Search with AND** **Search with OR** **Delete Searches**

	Search ID#	Search Terms	Search Options	Actions
<input type="checkbox"/>	S7	s5 or s6	Search modes - Boolean/Phrase	View Results (26) View Details
<input type="checkbox"/>	S6	s1 and s3	Search modes - Boolean/Phrase	View Results (5) View Details
<input type="checkbox"/>	S5	s1 and s2	Search modes - Boolean/Phrase	View Results (21) View Details
<input type="checkbox"/>	S4	s1 and s2 and s3	Search modes - Boolean/Phrase	View Results (0) View Details
<input type="checkbox"/>	S3	prion* or prion diseases or scrapie*	Search modes - Boolean/Phrase	View Results (2445) View Details
<input type="checkbox"/>	S2	monoclonal antibod*	Search modes - Boolean/Phrase	View Results (8535) View Details
<input type="checkbox"/>	S1	(ZU "ANIMAL USE ALTERNATIVES") or (ZU "ANIMAL USE REDUCTION") or (ZU "ANIMAL USE REDUCTION") or (ZU "ANIMAL USE REFINEMENT") or (ZU "ANIMAL USE REPLACEMENT") or (ZU "ANIMAL WELFARE") or (ZU "ANIMAL WELFARE") or (ZU "ANIMAL STRESS") or (ZU "ANIMAL SUFFERING") or (ZU "ANIMAL TESTING ALTERNATIVES") or (ZU "ANIMAL DISTRESS") or (ZU "ANIMAL HOUSING") or (ZU "ANIMAL CAGES") or (ZU "ANIMAL CARE")	Search modes - Boolean/Phrase	View Results (10477) View Details

AGRICOLA via EBSCO

Statement of Review

STATEMENT: I reviewed the results of this search and was unable to find any animal alternative methods of reduction, replacement or refinement that could be used in this research protocol.

[Customize this statement based on findings in search results.]

Important Links

**Animal Care Resource Guide (June 2000) -
Consideration of Alternatives to
Painful/Distressful Procedures**

USDA Policy #12

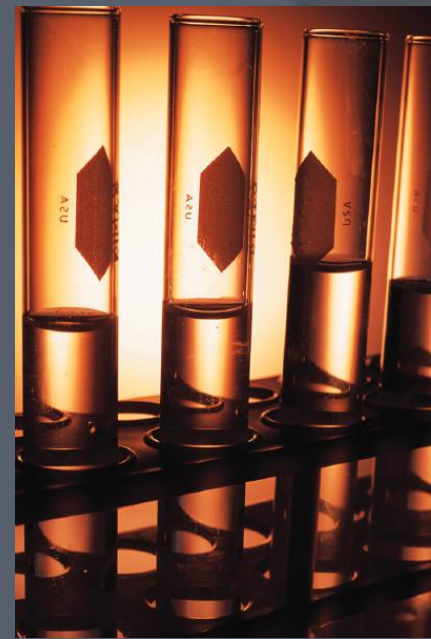
[http://www.aphis.usda.gov/animal_welfare/
downloads/policy/policy12.pdf](http://www.aphis.usda.gov/animal_welfare/downloads/policy/policy12.pdf)

**Guide for the Care and Use of Laboratory
Animals: Eighth Edition (2010)**

http://www.nap.edu/openbook.php?record_id=12910&page=1

RCSS

- Free Literature Searches
- One-on-one consultations
- Small group training
- House Calls



*Search
& Services*



RESEARCH & CLINICAL



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