Systematic Reviews and Harm-Benefit Assessment,
Voss 27-28 May 2015

Tools for better 3R-searches

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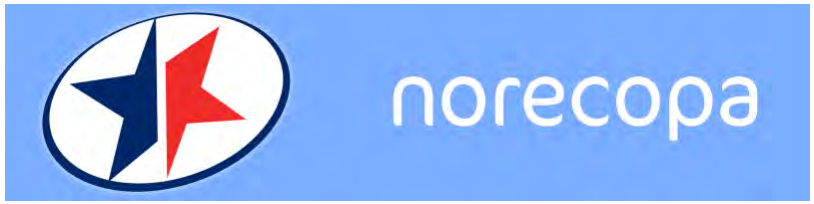
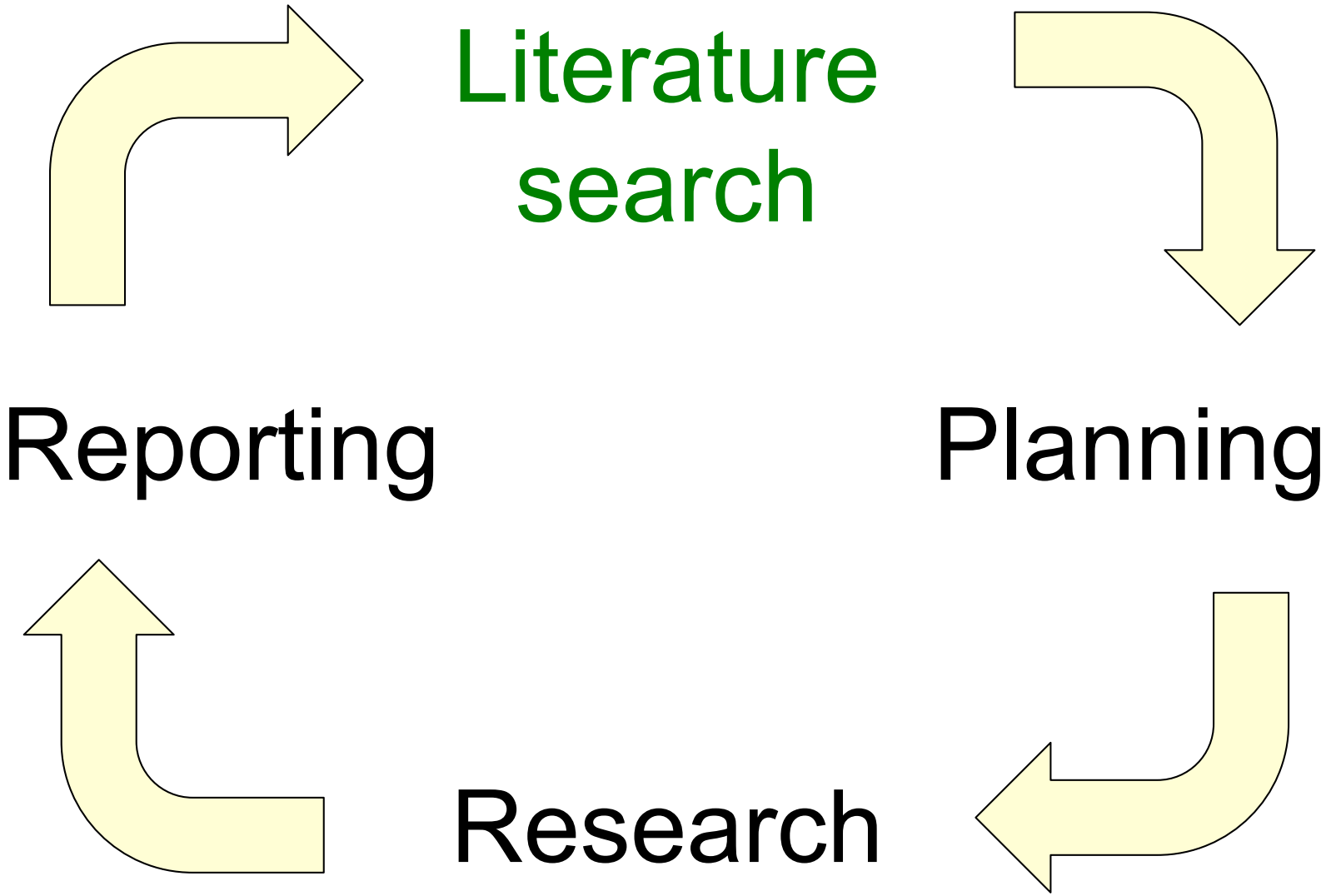


www.norecopa.no



Correctly performed literature searches are a vital part of the work to advance the 3Rs

- *Many scientists need help with a literature search*
- *“What’s the problem? We have the internet!”*

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The Surface Web

The Deep (Invisible) Web

The Surface Web is useful for

- Searching for a specific document which we know exists
- Looking for a starting-point for information on a specific topic
- Finding ”grey literature” (e.g. ”unpublished” reports)

’The thing about quotes on the Internet is that you cannot confirm their validity’

Abraham Lincoln

The Deep Web

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Many times larger than the Surface Web, material may be:

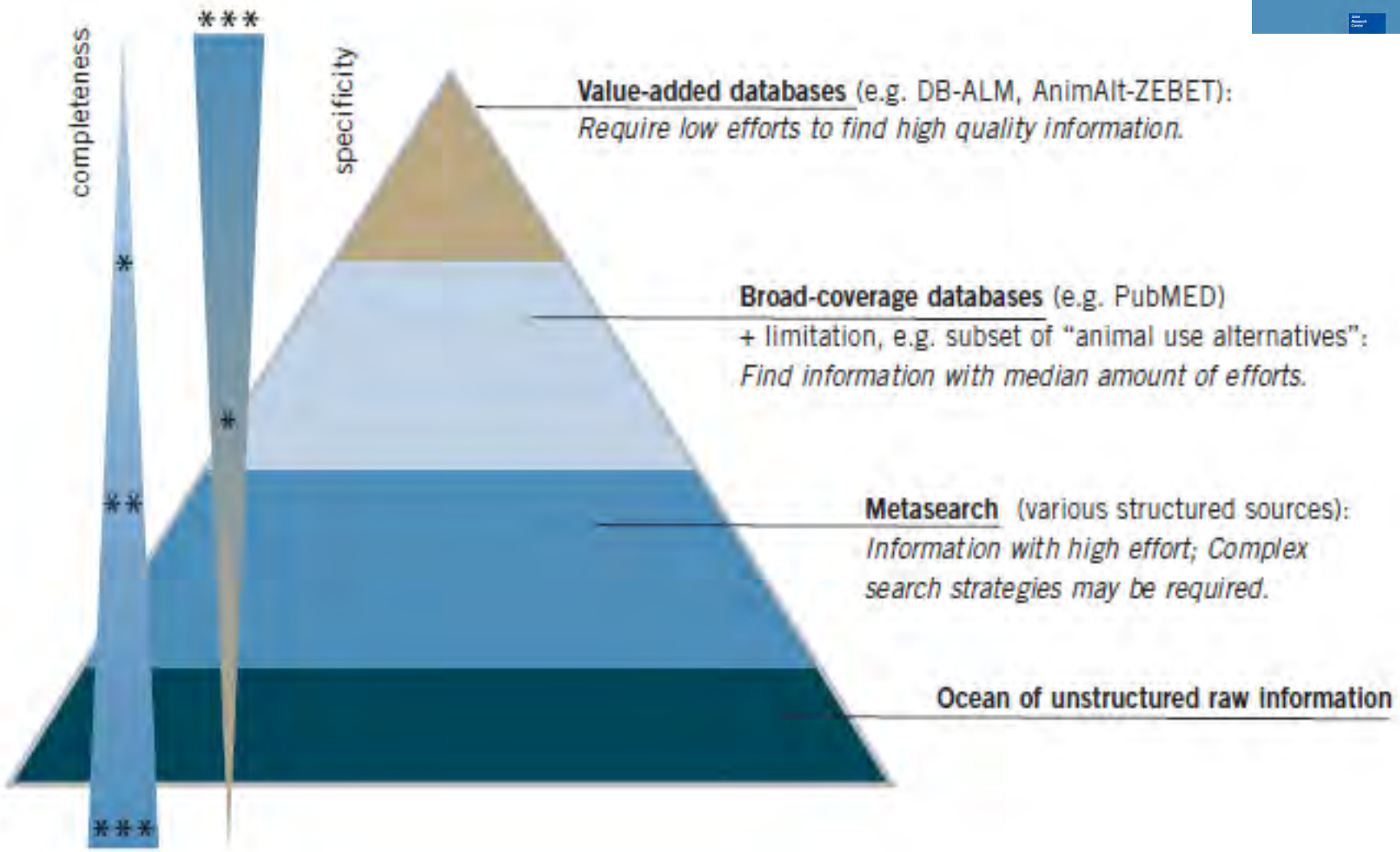
- Encrypted
- Registration/subscription
- Password-protected databases
- Not formatted for, or accessible by, standard search engines e.g. text in image or video files
- Material on company intranets

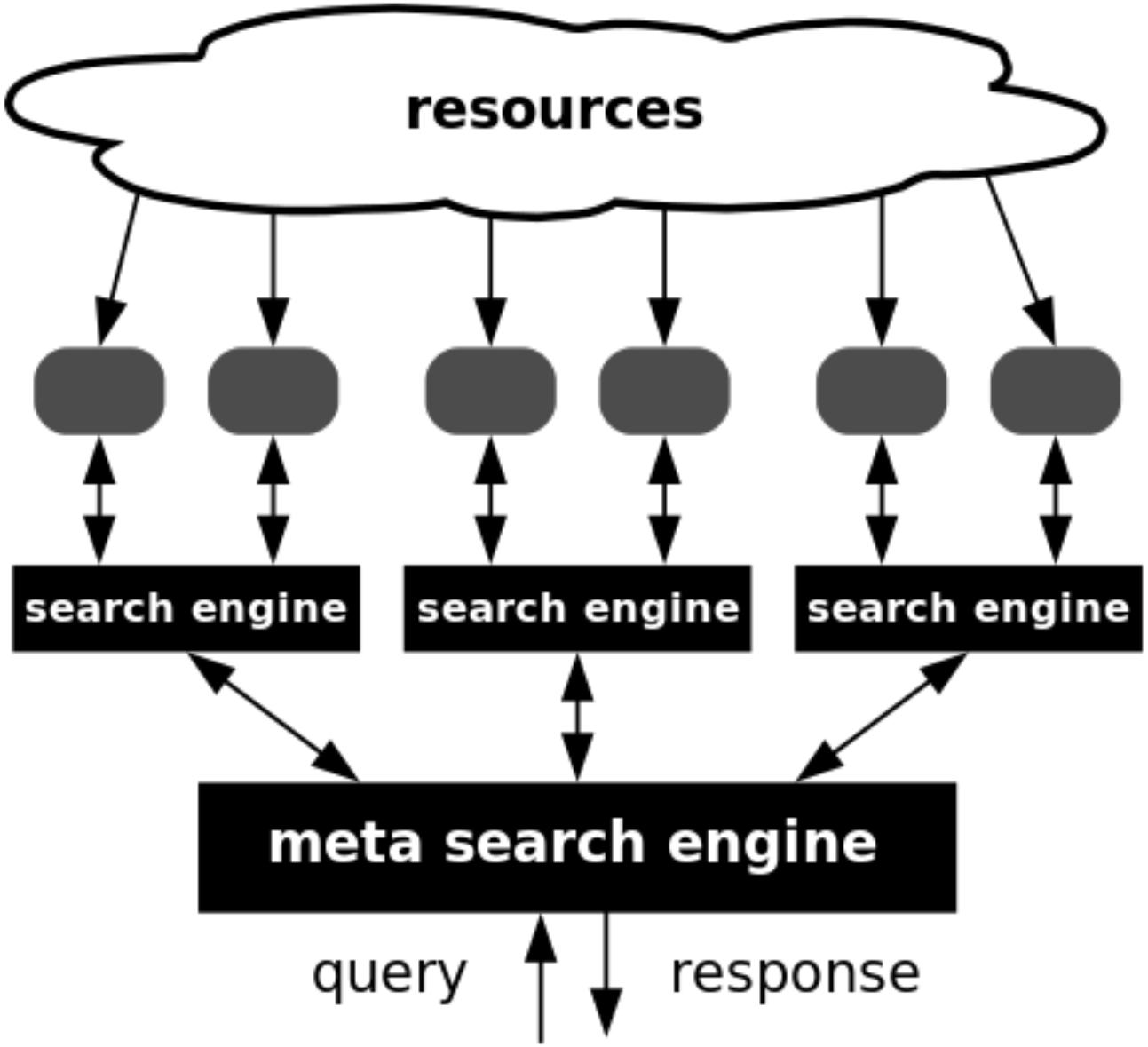
Principles of setting up a search

- Efficiency (specificity) – minimise the number of irrelevant or poor-quality results

- Effectivity (selectivity) – maximise the number of high-quality results


European Commission
THE EURL ECVAM SEARCH GUIDE
GOOD SEARCH PRACTICE
on Animal Alternatives
Re-edition
Joint Research Centre


completeness
specificity
***
*
*
**
***
Value-added databases (e.g. DB-ALM, AnimAlt-ZEBET):
Require low efforts to find high quality information.
Broad-coverage databases (e.g. PubMED)
+ limitation, e.g. subset of "animal use alternatives":
Find information with median amount of efforts.
Metasearch (various structured sources):
Information with high effort; Complex search strategies may be required.
Ocean of unstructured raw information



http://en.wikipedia.org/wiki/Metasearch_engine

The key is to adopt a structured approach

Systematic searches, part of a systematic review!

Identifying search terms: Thesauri and synonyms

A thesaurus is a closed list of terms used to index and search databases. Often a good idea to start a search with a database using a thesaurus.

- "animal use alternatives" in the NLM MeSH (Medical Subject Headings) used by MEDLINE/PubMed

- NAL's thesaurus for alternatives to animals

http://www.nal.usda.gov/awic/alternatives/alternativeanimalusethesaurus.htm

- EURL ECVAM's thesaurus (focus on *in vitro* toxicology):

http://ecvam-dbalm.jrc.ec.europa.eu/f_main.cfm?idmm=7

Sample searches are available

http://awic.nal.usda.gov/literature-searching-and-databases/sample-searches

Sample Searches

Sample Literature Searches for Alternatives

The search strategies below are provided as examples of how to structure a search. They are examples only and should not be interpreted as all inclusive, exact or the only way to retrieve information on the subject.

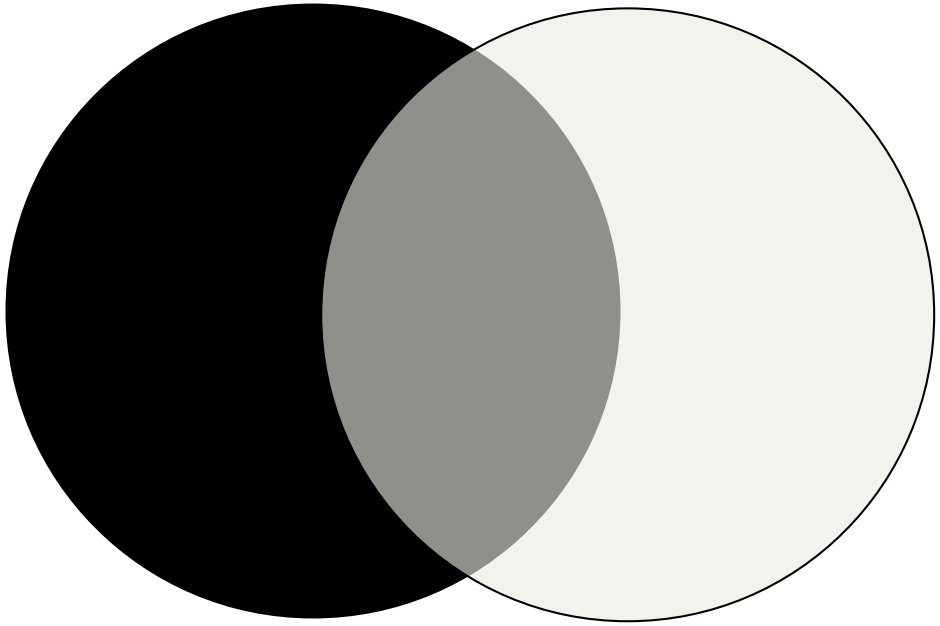
Also remember that the search methodology will also depend on the search engine used.

- Osteomyelitis
- Trauma Life Support Training Course
- Delivery of Test Articles to Mouse Lungs

Please review the literature search instructions (PDF | 103KB) for m
database selection, terminology, etc.

Set	Terms	Items
1	osteomyelit*	23636
2	"L fucose" OR "arachidonic acid"	54910
3	#1 AND #2	5
4	acute NEAR/3 (osteomyelitis OR osteomyelitic)	1554
5	"staph aureus" OR "s aureus" OR "staphylococcal aureus"	39743
6	#4 AND #5	75
7	trauma* OR posttrauma*	348717
8	#7 AND #5	374
9	#8 AND #1	57
10	vitro OR culture OR (isolated NEAR/4 (bone OR tibia))	2689101
11	#10 AND #1	1673
12	#11 AND #5	196
13	ketamine OR xylazine OR acepromazine OR buprenorphine OR yohimbine	41546
14	#13 AND #1	7
15	#13 AND #2	83
16	imaging OR noninvasive OR "non invasive" OR biomarker*	934240
17	#16 AND #1	2973
18	model* OR mouse OR mice OR rat OR rats OR rabbit* OR pig OR pigs OR rodent* OR rabbit*	8398084
19	#17 AND #18	119

Boolean logic



Transgenic AND Mice
(grey)

Transgenic OR Mice
(everything)

Transgenic NOT Mice
(black)

Truncation and the use of wildcards
(e.g. * or ? or !, check which ones work!)

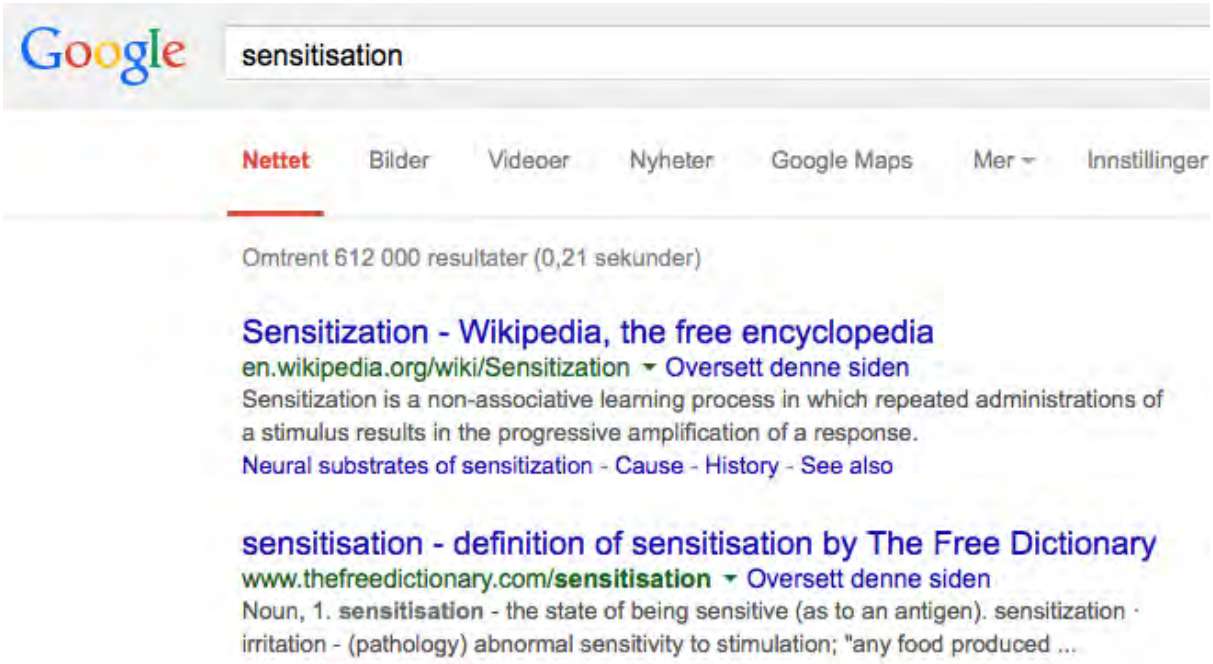
e.g. TRANSGEN*

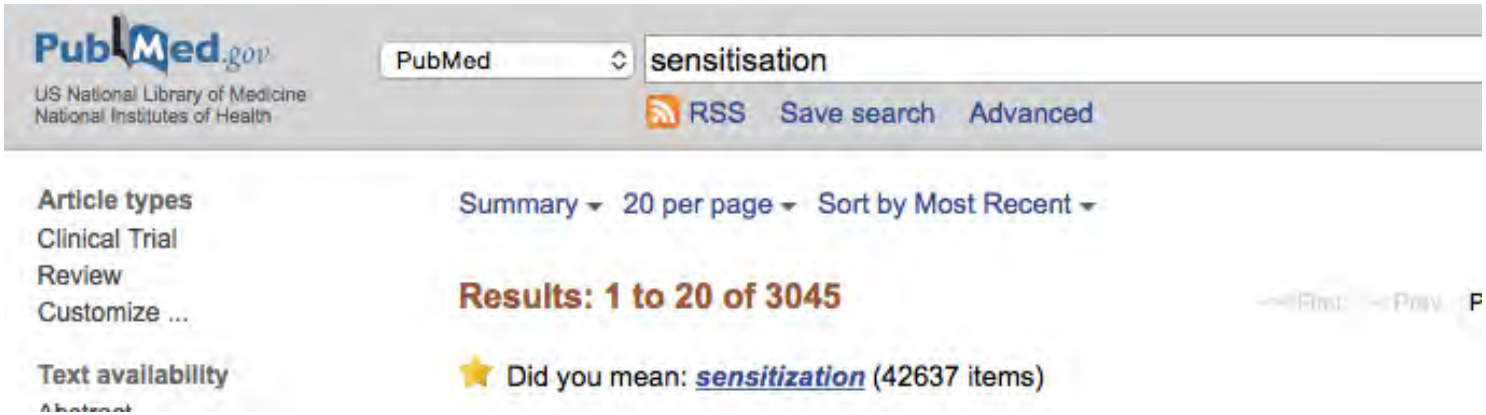
Transgene(s)
Transgenic(s)

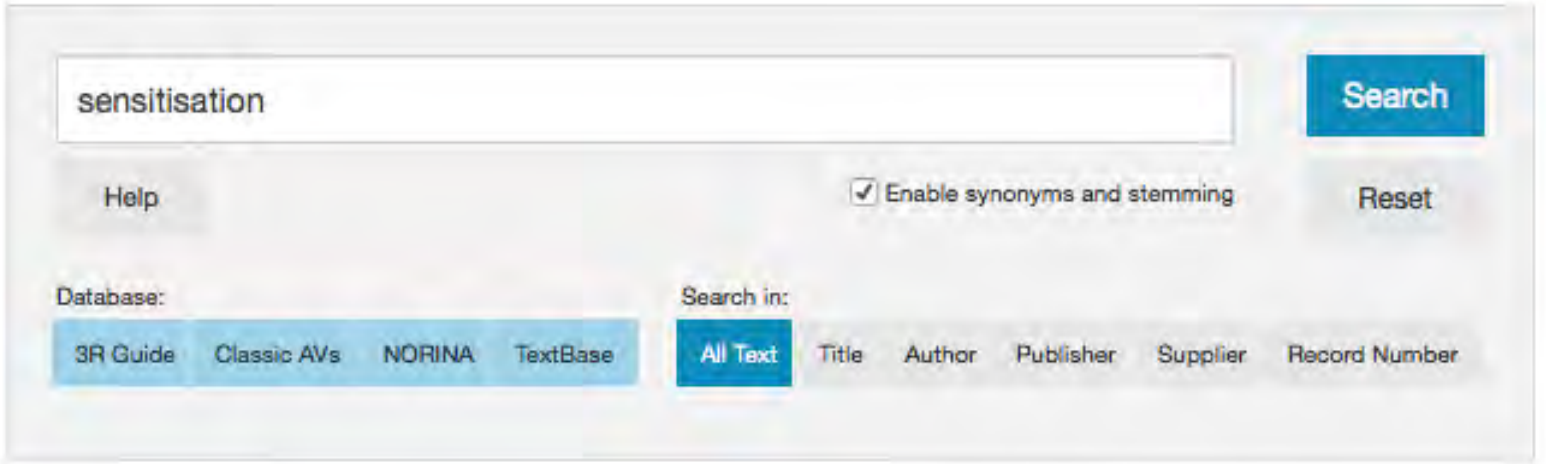
Wildcards may lead to unwanted results:
Transgender

Transgenic AND (mice OR rats OR (pigs NOT guinea))

protection NEAR animals NEAR scientific


Google
sensitisation
Nettet
Bilder
Videoer
Nyheter
Google Maps
Mer
Innstillinger
Omtrent 612 000 resultater (0,21 sekunder)
Sensitization - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Sensitization ▾ Oversett denne siden
Sensitization is a non-associative learning process in which repeated administrations of a stimulus results in the progressive amplification of a response.
Neural substrates of sensitization - Cause - History - See also
sensitisation - definition of sensitisation by The Free Dictionary
www.thefreedictionary.com/sensitisation ▾ Oversett denne siden
Noun, 1. sensitisation - the state of being sensitive (as to an antigen). sensitization · irritation - (pathology) abnormal sensitivity to stimulation; "any food produced ...


PubMed.gov
US National Library of Medicine
National Institutes of Health
PubMed
sensitisation
RSS
Save search
Advanced
Article types
Clinical Trial
Review
Customize ...
Text availability
Summary
20 per page
Sort by Most Recent
Results: 1 to 20 of 3045
Did you mean: sensitization (42637 items)



2 results

Order by: Relevance

Progress in the Reduction, Refinement and Replacement of Animal Experimentation

TextBase/6884

Proceedings of the 3rd World Congress on Alterna[illegible]imal Use in the Life Sciences, Bologna, Italy, 29 August-2 September [illegible].

sensitisation

Author: Balls, M; van Zeller, A.-M. & Halder, M. **Publisher:** Elsevier

Respiratory Pharmacology

NORINA/858

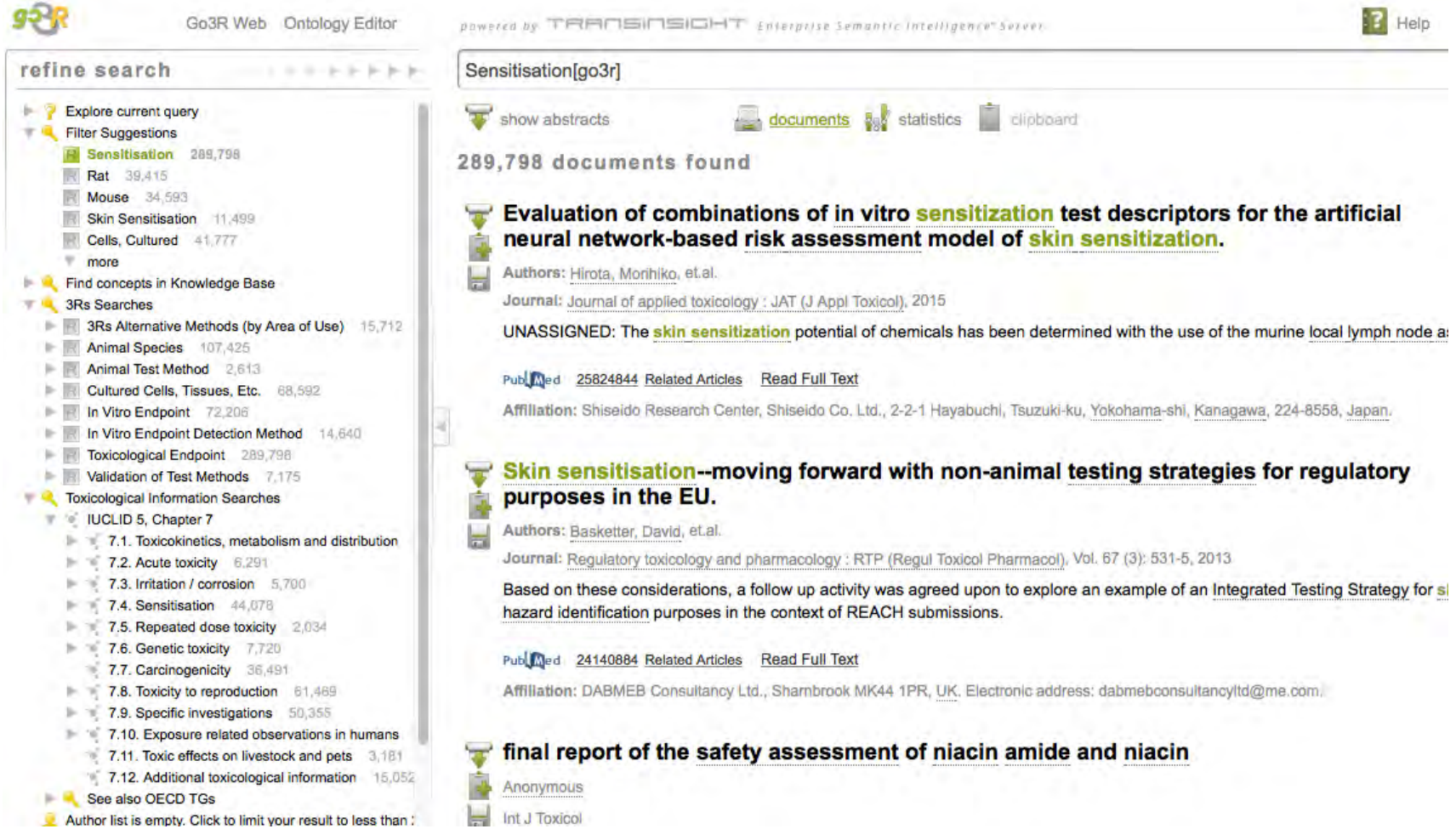
An interactive program based on pulmonary function [illegible] guinea pig to teach the fundamental pharmacology of the airway [illegible]omputer program. Category: Pharmacology (animal) & Physiology (animal).

sensitised

Author: David Dewhurst, Clive Page, Steve Fox & Helen Jone **Supplier:** Sheffield BioScience Programs, Dr. David Dewhurst

www.Go3R.org

semantic search to avoid animal experiments



Intelligent (semantic) search engines

e.g. search.norecopa.no

May use some or all of these:

- fuzzy logic (”breeding” / ”bleeding”)
- Boolean logic
- a synonym list
- an autocomplete function (cardiac)

The trick is to weight these different functions correctly

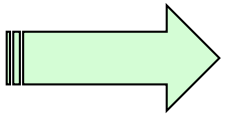
http://oslovet.norecopa.no/helpfile.pdf

AJ Smith & T Allen, 2005

The use of Databases, Information Centres and Guidelines when planning research that may involve animals

Animal Welfare, 14 (4): 347-359

www.nal.usda.gov/awic/newsletters/v13n3/AWICBulletinV13N3.pdf



3R Guide

norecopa

USDA

3R Guide

www.3RGuide.info

Databases, Guidelines, Regulations, Information Centres, Journals, E-mail lists

Audiovisual products

Textbooks

NORINA

oslovet.norecopa.no/NORINA

TextBase

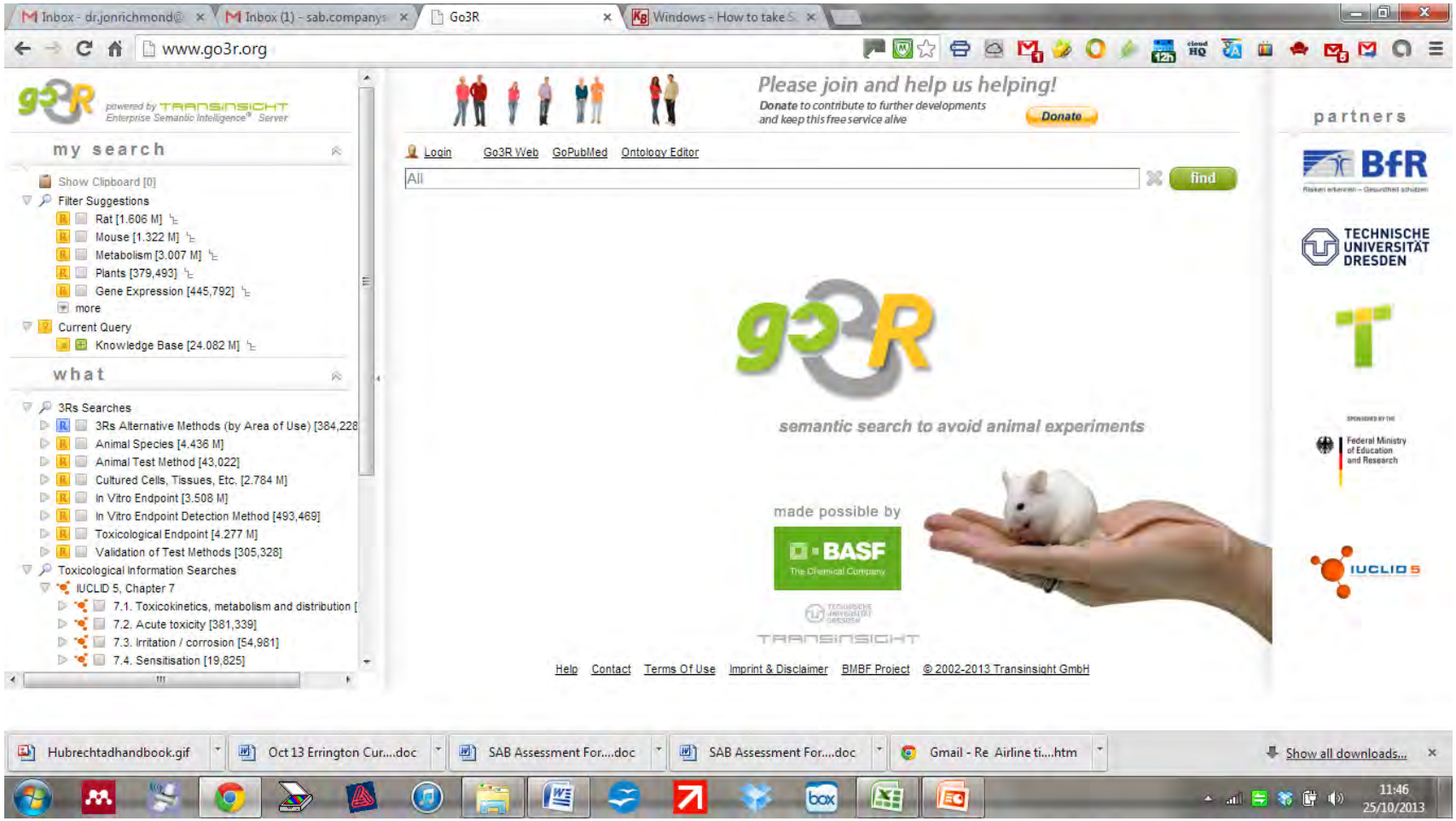
oslovet.norecopa.no/textbase

Intelligent search engine:

search.norecopa.no

Intelligent (semantic) search engines

e.g. www.go3R.org



The EURL ECVAM Search Guide

Can be ordered free of charge from

bookshop.europa.eu

Contents

- Data sheets on
  - Journals
  - Databases
  - Open Access resources
  - Organisations
  - Internet search engines

Contents

- Data Retrieval Procedures
  (basic principles)
- Check-list for searching for information on alternative methods
- Tables comparing the features of
  - Databases
  - Journals
  - Organisations

Contents

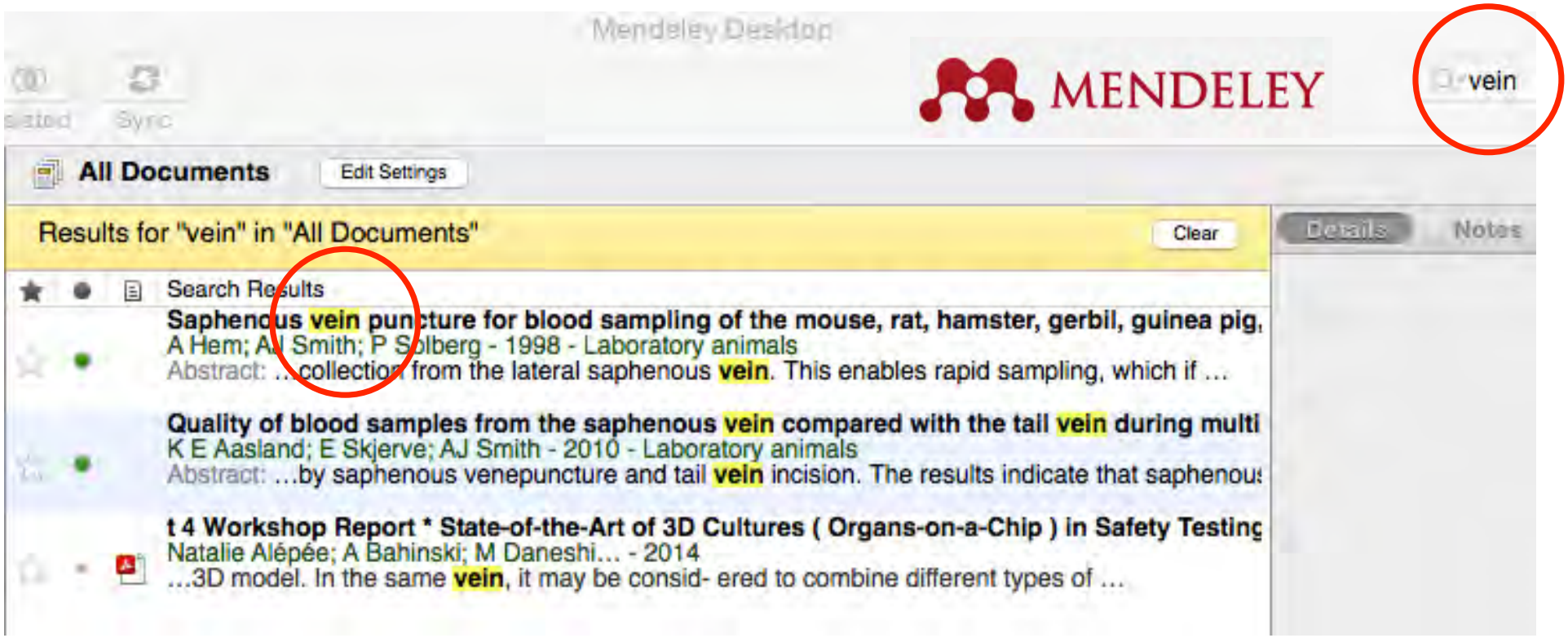
Seven Golden Steps to Successful Searching

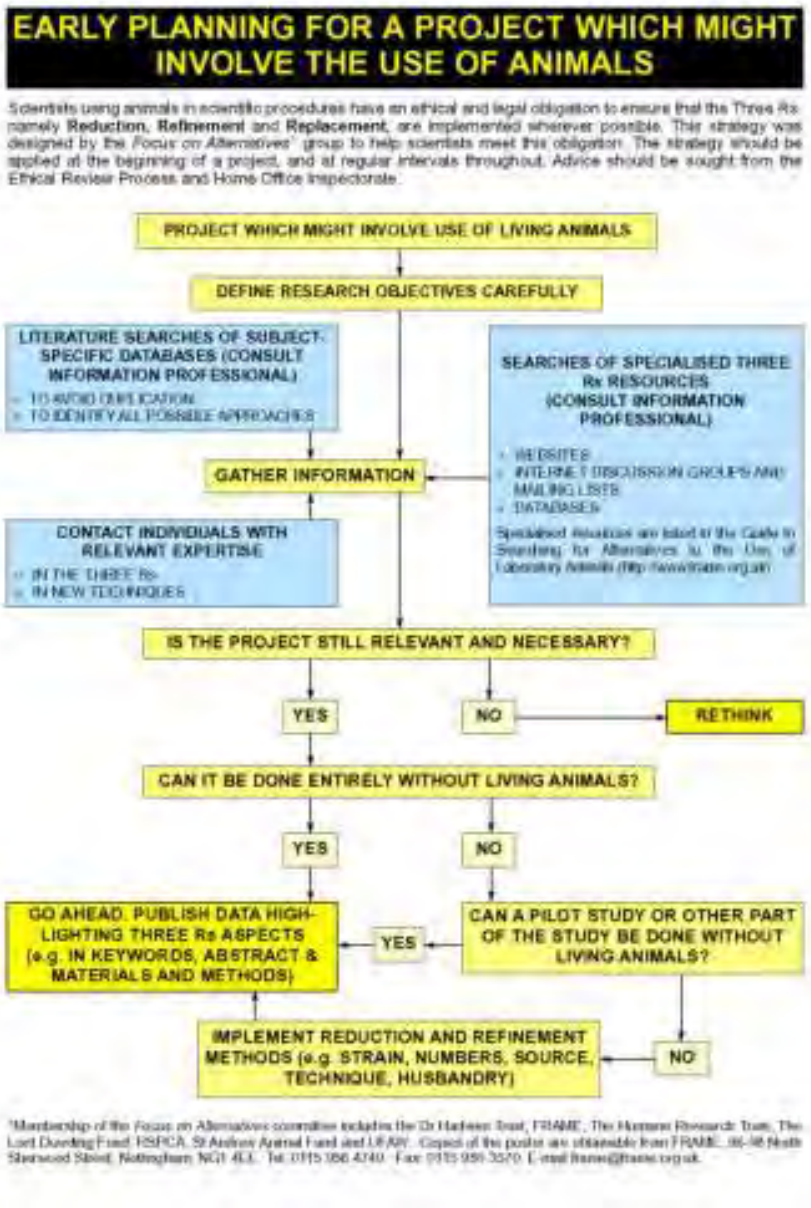
1. Clearly define and be aware of your specific information need
2. Identify the fundamental components of your scientific approach
3. Choose the most appropriate information resources
4. Compile relevant and necessary search terms
5. Start your search with a simple query in a 3Rs specific context
6. Limit search results from more extensive resources
7. Broaden the search horizon

Archive your searches so you can document them and avoid repeating them

http://search.norecopa.no/?q=mouse%20bleeding

Archive key documents you retrieve, e.g. in Mendeley





Focus on Alternatives (FoA)

A consortium of UK animal welfare organisations

http://oslovet.norecopa.no/EarlyPlanningPoster.pdf

and

http://oslovet.norecopa.no/InvestigationPoster.pdf

Search strategies in a nutshell

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- Define the search as well as possible
- Identify synonyms and 3R terms
- Remember the differences between British & American English
- Use several databases (little overlapping)
- Learn the differences between the search engines (read the instructions!)
- Get used to using Boolean logic and check which terms are supported by the search engine
- Learn how to expand/narrow your search
- Look for core articles and key authors
- Use the possibilities on the Internet to get in touch with the best research labs

Some references for search guides:

The EURL ECVAM search guide (2013):
http://bookshop.europa.eu/en/the-eurl-ecvam-search-guide-pbLBN124391

CCAC Three Rs Search Guide:
http://3rs.ccac.ca/en/searches-and-animal-index/guide

AltWeb: A step-by-step approach to an alternatives search:
http://altweb.jhsph.edu/resources/searchalt/index.html

UC Davis guide to bibliographic databases for alternatives searching:
http://lib.ucdavis.edu/dept/animalalternatives/databaseapproach.php

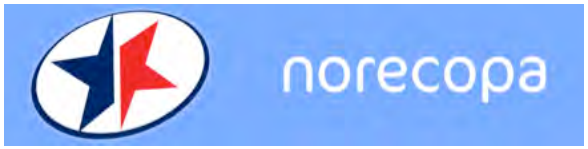
IMPI I3R working party report on Searching for 3Rs Information – Published Literature Sources (2002):
http://www.impi.org.uk/i3r_v2_jul2002.pdf

Guidelines for systematic reviews:

http://3rs.ccac.ca/en/research/systematic-reviews.html

A step-by-step guide to systematically identify all relevant animal studies:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3265183



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- Laboratory Animals Ltd.
- Dag S. Stiansen Foundation
- Scottish Accreditation Board

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