



Swiss TPH



Web of Science (WoS) and the Journal Citation Reports (Impact Factors)

Jacqueline Huber, 04th November 2021

Agenda

Short repetition: PICO and Boolean operators

Web of Science Core Collection

Simple and advanced search in WoS

Exercise 1

Analyze results of your search

Exercise 2

Bibliometrics

Exercise 3

Structuring a question for searching

PICO and other frameworks

- A framework allows you to structure your question and makes it more searchable → helps you to properly apply Boolean operators
- A framework defines the main concepts of your topic
- But you do not need to use the whole framework

P atient, P opulation or P roblem	Who and/or what is my question focused on?
I ntervention	What intervention is being considered?
C omparison or C ontrol	What intervention is this being compared with? (a comparison is not always necessary)
O utcome	What do you hope to accomplish, improve or affect?

Structuring a question for searching

PICO example

Is artesunate or quinine more effective for the treatment of malaria in adults?	
Patient, Population or Problem	Adults with malaria
Intervention	Artenusate
Comparison or control	Quinine
Outcome	effectiveness

Structuring a question for searching

SPIDER

Sample	The group of people being looked at
Phenomenon of Interest	Reasons for behaviour and decisions
Design	The form of research used, such as interview or survey
Evaluation	Outcome measures
Research type	Qualitative, quantitative or mixed methods

<https://libguides.city.ac.uk/c.php?g=663952&p=4696473>

Structuring a question for searching

SPIDER example

What are young parents' experiences of attending antenatal education?	
Sample	Young parents
Phenomenon of Interest	Ante-natal education classes
Design	Interviews? Surveys?
Evaluation	Experiences
Research type	Qualitative or mixed method?

<https://libguides.city.ac.uk/c.php?g=663952&p=4696473>

Structuring a question for searching

Short exercise: Formulate your own research question or try the below

- A major problem in the fight against malaria is the development of resistance. You wonder how this could be improved and would like to know the factors that can influence adherence to malaria treatment.

Boolean operators

There are three boolean operators

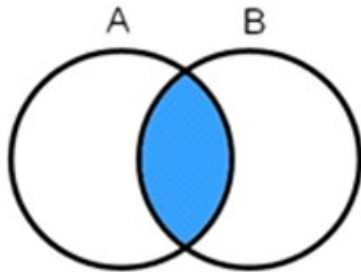
AND = both search terms occur

OR = at least one of the two search terms occurs

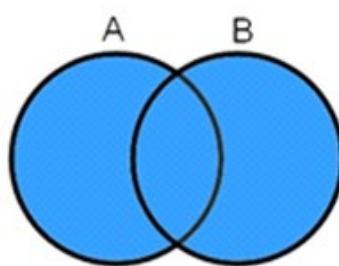
(NOT = without this search term)

Attention:
'NOT' usually leads to unwanted exclusions.
Get help from an
information specialist

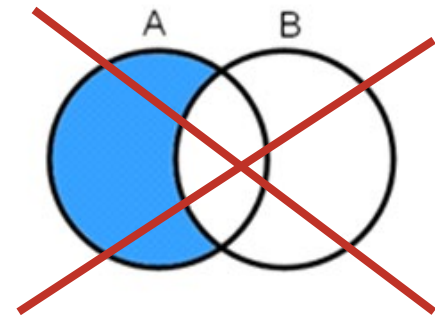
AND



OR



NOT



Adapted slide from the University Medical Library Basel

Boolean operators

Use the Boolean operators to combine your different aspects

P AND **I** AND **C** AND **O**

Intersection = final search results

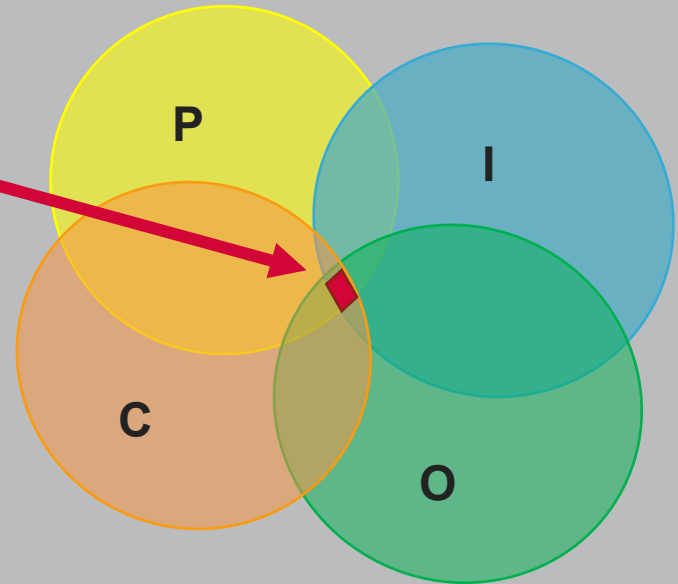
➤ You combine different synonyms for one aspect with **OR**

(Malaria OR Plasmodium Infection) AND

(Artesunate OR Malacef) AND

(Quinine OR Myoquin) AND

(Effectiveness OR efficiency)



Adapted slide from the University Medical Library Basel

Web of Science

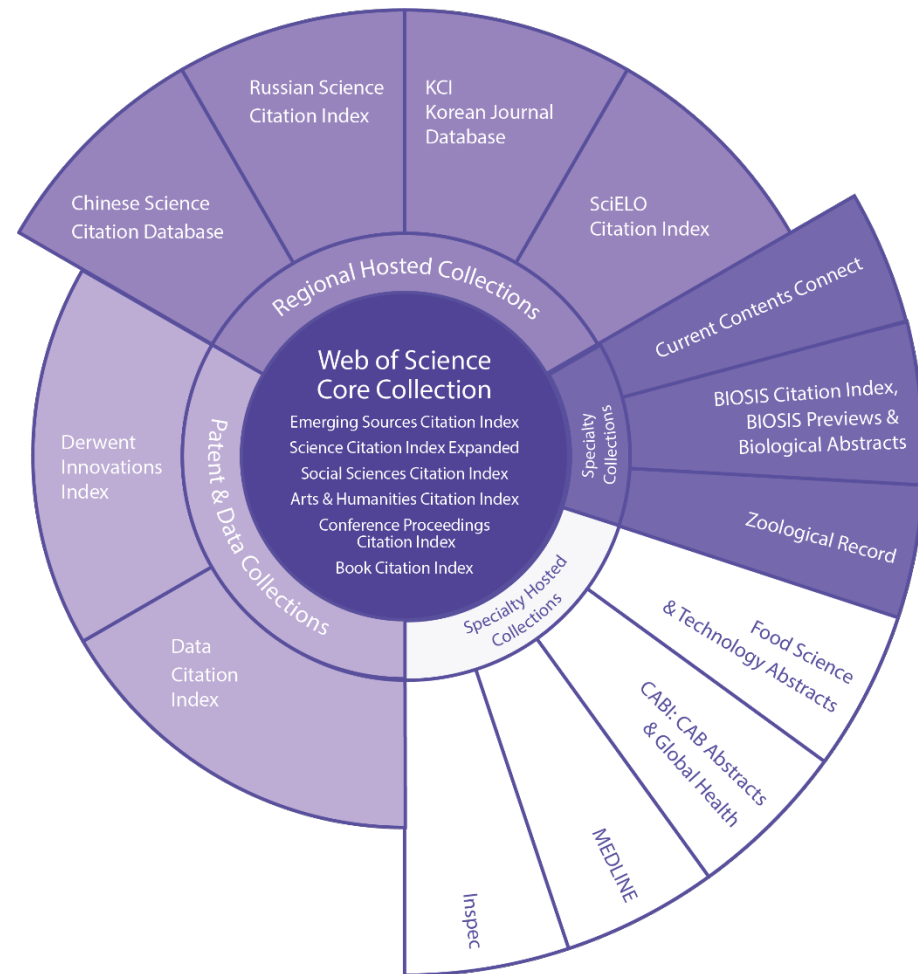
Some facts

- WoS is not free! Licensed through the University Library Basel
- Interdisciplinary, international but English-language journals are predominant
- WoS consists of several literature search databases across multiple disciplines
→ allows for a common search language and navigation of multiple databases
 - Subject focus like Medline
 - Document focus like Derwent Innovations Index (patents)
 - Geographic focus like Chinese Science Citation Database
- 230 million records (1900 to present) from journals, books, conferences, etc.
- Search in full text not possible! (abstracts freely accessible)
- <https://clarivate.libguides.com/webofscienceplatform/coverage>

Web of Science

Web of Science Core Collection

- Covers science, social sciences and humanities
- Over 21'000 peer-reviewed journals, books and conference proceedings
- Over 79 million records, updated daily
- Every citation is fully indexed (e.g. all authors and author affiliations), if possible ORCID and unified institutions names
- Most bibliometric and citation features are only available in the core collection
 - Citation Report, Analyze Results, etc.
- Same selection process for all records, publisher is Clarivate itself



WoS: simple and advanced search

WoS Live (check that no add-blocker is enabled!)

<https://www.webofscience.com/wos/woscc/basic-search>

WoS: Basic and advanced search

A note on word variations

- Lemmatization
 - reduces inflected forms of a word to their lexical root → e.g treatment, treated
 - Using wildcards to find plurals or variant spellings might not be needed
 - Quotation marks and wildcards turn off lemmatization
- Stemming
 - Stemming removes suffixes from words in a search query → treating
- Synonyms
 - WoS finds spelling variations (such as U.S. and U.K. spelling differences) in Topic and Title search terms by matching it with a table → color, colour
 - Quotation marks and wildcards turn off synonym search

WoS: Useful links

Video tutorials:

<https://videos.webofsciencegroup.com/>

Step by Step guide for searching:

<https://clarivate.com/webofsciencegroup/wp-content/uploads/sites/2/2020/03/wosg-woscc-qrg-final-dec2019.pdf>

Help

Old: http://images.webofknowledge.com/WOKRS535R111/help/WOS/hp_search.html

New: <http://webofscience.help.clarivate.com/Content/home.htm>

Structuring a question for searching

Short exercise: Solution

SPIDER question:

What factors influence the adherence to malaria treatment in patients with malaria?

Sample	Phenomenon of Interest	Design	Evaluation	Research type
Patients with malaria	what factors	Interview? Survey?	Adherence to treatment	Qualitative methods?

WoS: Simple and advanced search

Exercise 1

1. Search for these terms in the Core Collection in the field topic:
malaria treatment adherence factors
How many results do you get?
2. Try combining your search with the synonym “therapy” for “treatment”.
How many results do you get?
3. Filter search for the years 2020-2015. How many results do you get?
4. Limit your search to review articles. How many results do you get?
5. Limit your search to the Swiss TPH. How many results do you get?

WoS: “Analyze Results”

Analyse the results of your query

- Find out about trends in your field
 - Who are the prolific authors in my field?
 - Which journals publish in my field?
 - Which institutions produce high quality research in my field?
 - Who is funding the research I am interested in?
 - Which country published the most articles in my field?
- “Analyze Results” allows ranking and exporting of results

WoS: “Analyze Results”

Exercise 2

1. Search for these terms in the Core Collection in the field topic:
neglected tropical diseases
and click on “Analyze Results”
2. Answer the following questions:
 - a) Which 3 authors have published the most articles?
 - b) How many articles has the journal “Acta Tropica” published?
 - c) Which rank does Swiss TPH have?
 - d) Which funding agency was involved the most?
 - e) How many articles were published in Switzerland?

Break



Bibliometrics

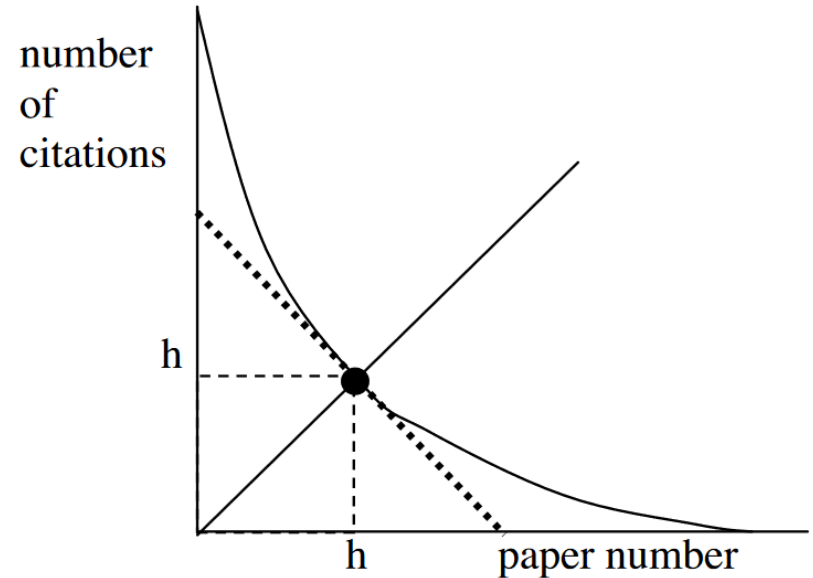
Assessing the quality of an article

- Author: H-Index
 - Measures the scientific output of a researcher
- Journal: Impact Factor
 - Measures the relative importance of a journal within its field
- Journal Article: citation count
 - Measures the influence of an article within its field

Bibliometrics

H-Index

- The number of items above this line, which is "h" have at least "h" citations.
 - H-index of 17 means that the scientist has published at least 17 papers that have **each** been cited at **least** 17 times.
- discounts the disproportionate weight of highly cited or not yet cited articles
- Specific to a research field
 - Does not account for the typical number of citations in different fields
 - discards the information contained in author placement
- ORCID ID helps to match correct author



The intersection of the 45 degree line with the curve giving the number of citations versus the paper number gives h. Hirsch, J.E. Proc Natl Acad Sci U S A. 102 (46): 16569-16572, 2005.

Bibliometrics

Exercise: Find your own H-Index

- <https://www.webofscience.com/wos/author/search>

DOCUMENTS **AUTHORS** CITED REFERENCES

Search for an author to see their author record. An author record is a set of Web of Science Core Collection documents likely authored by the same person. You can claim and verify your author record from your author record page.

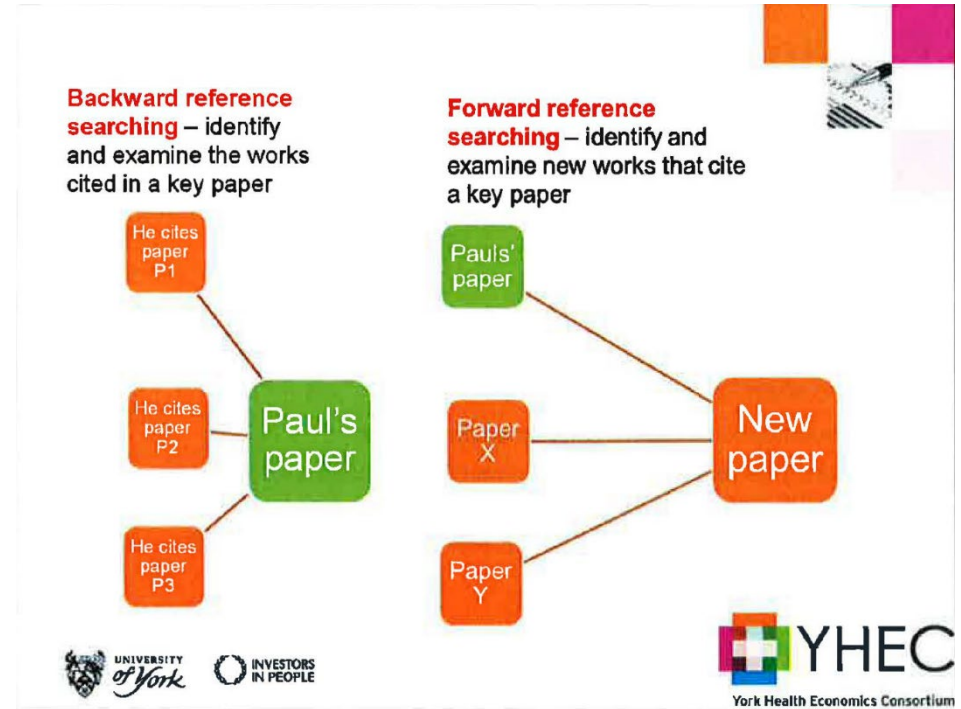
Last Name is Required

X CLEAR SEARCH

Citation tracking

Use selected known key papers as the seeds:

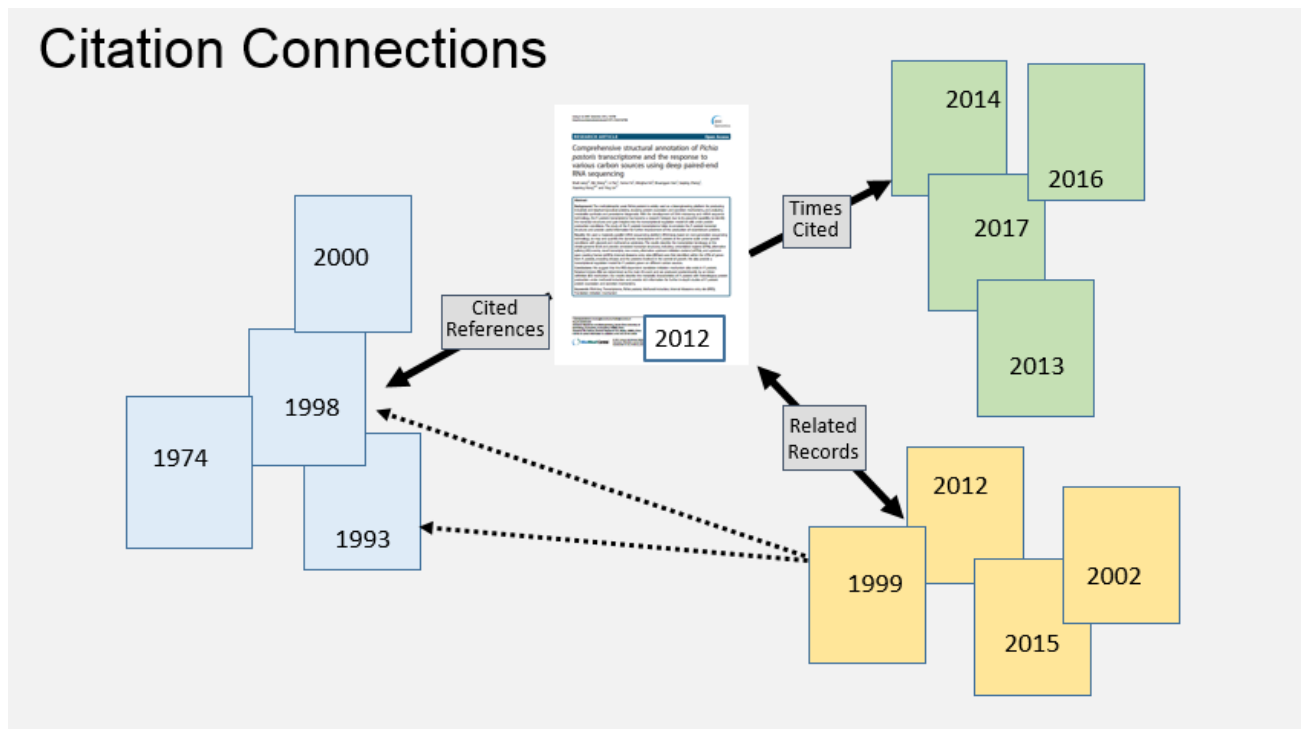
- Backward references
 - the research that this paper cites, and its discoveries were based upon
- Forward references
 - more recently published papers that cite this one



York Health Economic Consortium: Course on “Advanced Search Strategy Design for Complex Topics”, 2018

WoS: Citation Network

- **Cites References:**
the backward references
- **Times Cited:**
the forward citations
- **Related Records:**
papers which share at least one cited reference in common with this paper.
 - If they share citations, they're likely discussing similar topics.



<https://clarivate.libguides.com/woscc/citationnetwork>

Bibliometrics

Exercise : Find your own paper with «Cited References» search

- <https://www.webofscience.com/wos/woscc/cited-reference-search>

DOCUMENTS AUTHORS **CITED REFERENCES**

Cited Author

Select from Index

Cited Title

Bibliometrics

A subset of all citations to this journal in the calendar year (here 2020): citations only to items with a publication date from the prior two years (here 2019 and 2018).

Journal Impact Factor (JIF)

$$\blacksquare \text{ 2020 JIF} = \frac{\text{citations in 2020 to items published in 2018 (3398)+2019 (2643)}}{\text{number of citable items in 2018 (339)+2019 (345)}} = \frac{6041}{684} = \mathbf{8.83}$$

The number of citable items this journal published in the prior two years (here 2019 and 2018).

- A typical article or review from this journal has been cited about **8.8** times, one or two years after publication.
- The higher the number the greater the influence of a journal in its field
- Allows for comparison only in the **same** field!
- Only measures the quality of a journal, does not measure author contribution or quality of an article!

Bibliometrics

Journal Citation Reports (JCR)

- The Journal Impact Factor is only a number unless it is placed into context.
 - Compare only within same research area, as quotation behaviour is not the same between different fields → JCR categories

Bibliometrics

Journal Citation Reports (JCR): Live

<https://jcr.clarivate.com/JCRLandingPageAction.action>

Questions we will cover

- What is the performance of the journal “PLoS One” / “Malaria Journal”?
- How does “PLoS One” / “Malaria Journal” perform in the respective category?
- Which are the best journals in the field “Tropical medicine”?
- Should I publish in the journal “PLoS Neglected Tropical Diseases”?

Bibliometrics

Exercise 3

1. Go to JCR: <https://jcr.clarivate.com/JCRLandingPageAction.action>
2. "What are top 3 journals in my field? (in the field Immunology?)
 - Find out which journals are top ranked in your field
3. "Should I publish in journal X? (in "International Journal of Public Health"?)
 - Find journal X
 - Check out the best fitting categories
 - See how it performs in this category, what is its rank?

Bibliometrics

Criticism

- Be aware of self citation
- Controversial articles or articles with an important method can influence citation count
 - there is no differentiation between “positive” and “negative” citation
 - A highly cited article is not necessarily a good article
 - Take also author and journal into account
- Editorial policies can influence impact factor
 - Journals may publish more review articles as these are usually cited more often
 - Journals may limit the number of “citable items” = denominator of IF equation
 - Not publishing items which are unlikely to be cited
 - Changing articles to editorials or letters as these items are excluded as citable items

Take Home Message

- A framework makes a research question more searchable
- Boolean combinations with AND and OR require brackets
- WoS is a multidisciplinary, international database
- WoS Core Collection does not have a thesaurus → search with "Topics"
- WoS is very strong in citation indexing and therefore very useful for bibliometrics (citation analysis)

Please fill out the survey

<https://k11331.evasys.de/evasys/online.php?p=F3D9G>



Swiss TPH 

Thank you for your attention

Jacqueline Huber, jacqueline.huber@swisstph.ch