Literature Searching

Part 3: Scopus and Web of Science databases

Eleni Borompoka & Susan McCourt - Library

Postgraduate Research School: 2020/2021

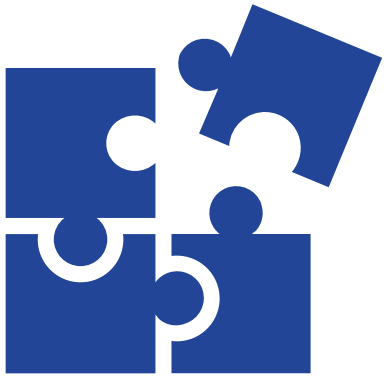
This slide was added after the presentation for MyAberdeen use

- This online session was held on Thursday 17 December 2020 in the PGR Collaborate Meeting Room
- A recording is available in MyAberdeen: MyPGR > Meeting room > Meeting Room (Collaborate Room) > 3 lines on top left > Recordings (thank you to Anton for the instructions ☺)
- Each of the sessions is supported by worksheets and information sheets – you learn more by doing than watching and listening! The worksheets are available in the Library folder/module along with the presentation slides

Outline: support materials

- Recordings and/or presentation slides
  - Library induction (in pandemic times)
  - **Literature searching: Part 3 - Scopus and Web of Science databases**
  - Off-campus access

- Live online sessions and worksheets
  - Literature searching: Part 1 - Overview, plan, access and library support
  - Literature searching: Part 2 - Primo, Ebooks & Google
  - Literature searching: Library Q&A



Library

Build Content | Assessments | Tools | Partner Content

Worksheets - Databases

Worksheets for a range of different databases including Scopus, Web of Science and Medline.

Worksheets - Primo, Ebooks, Google

Support Documents - Plan, search rules, library guides

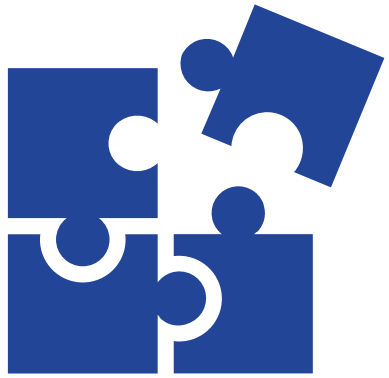
Availability: Item is hidden from students. It will be available after 16-Dec-2020 08:30.

Aim and outline

Feel confident that you can make effective use of databases to find **journal articles** and **research level material** to support your research

[Note – we covered books and other support materials in Part 2 of this series, and the basics – planning a search – in Part 1]

- Identify suitable and relevant databases
- Highlight powerful search features
- Introduce the idea of managing references



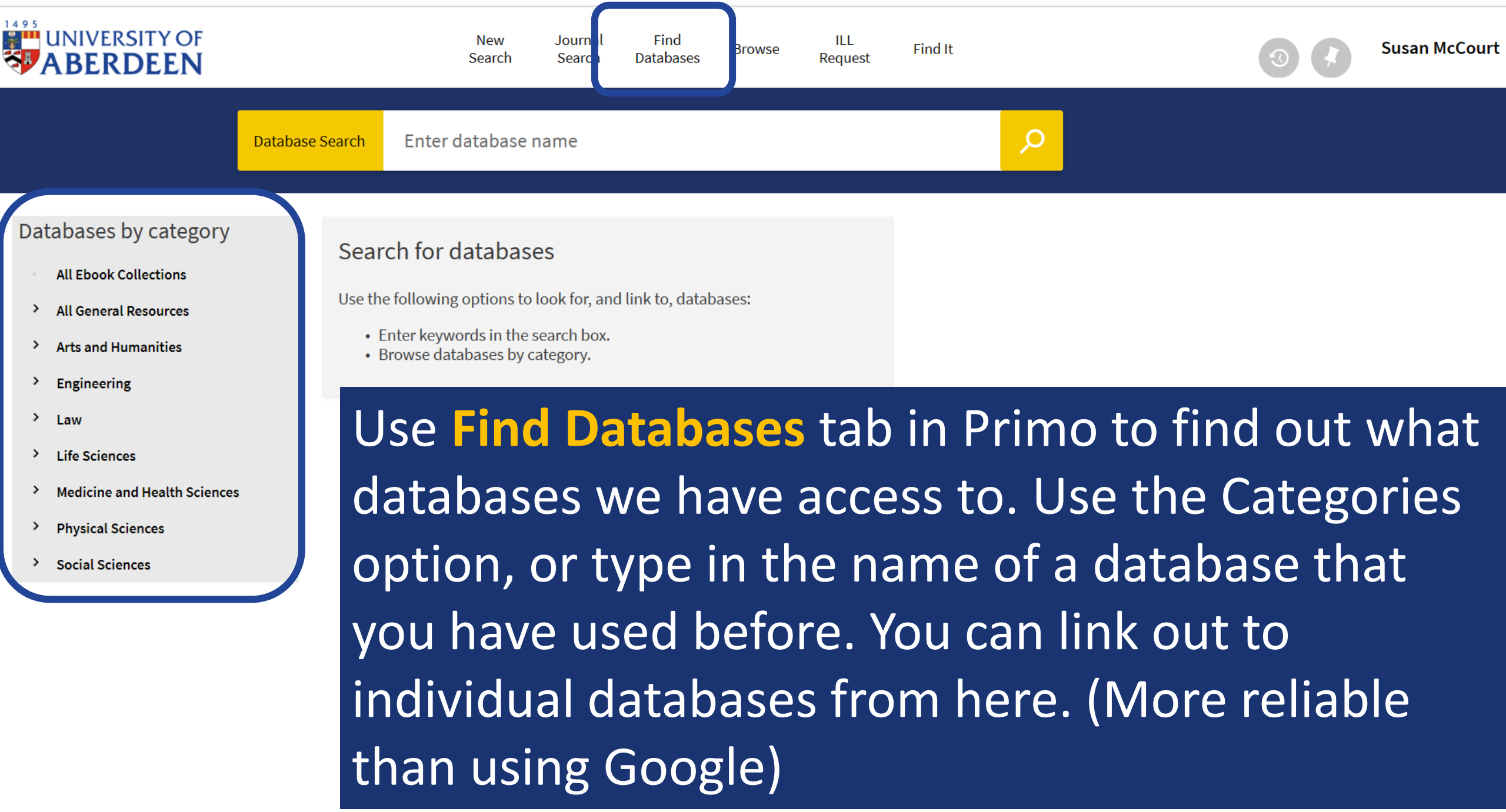
Information in academic environment

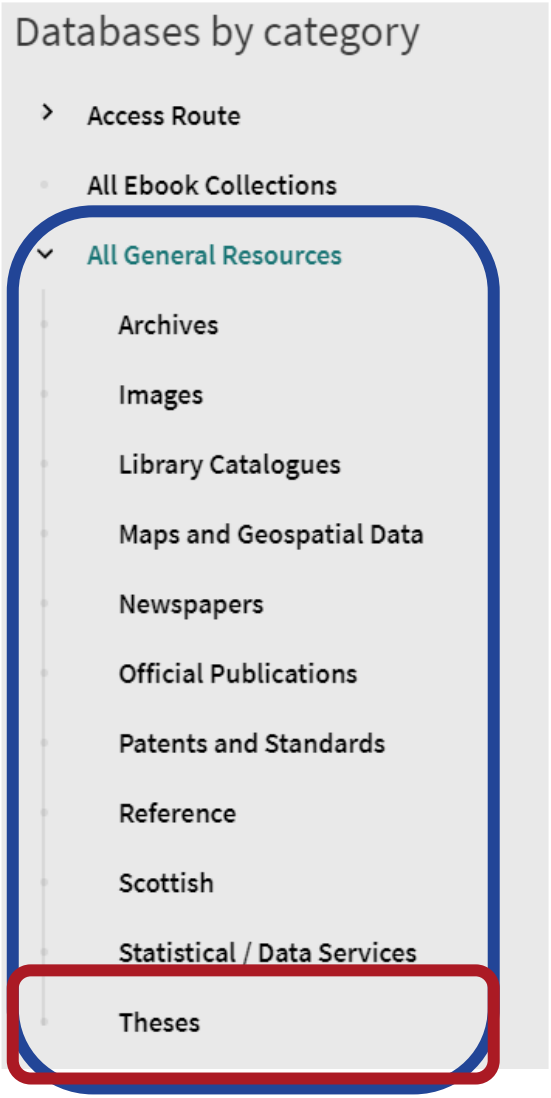
- Reliable = authoritative, scholarly, current, academic, respected
- Format can be a helpful indicator of this
  - **Books** and **Journal articles/papers** – written by academics, articles= original research, editorial control or peer reviewed before publication
  - **Conference papers** and **reports** – may be written by academics or industry specialists, original research, generally not peer reviewed/checked
  - **Web pages** – may be written by anyone…
- Many tools available to find **reliable** information
  - Primo, databases (e.g. Scopus), search engines (e.g. Google and Google Scholar)

Tools/resources for academic information

- Tools/resources depend on the type of information you're looking for
  - **Books**: Primo, subscribed sites (ebrary, Springer, ScienceDirect etc.) Google and Google Scholar
  - **Journal articles** (research papers): Databases
  - **Technical standards**: BSOL database, OHSIS database, IEEE Xplore, Google (we have limited access to this type of material)
  - **Reports and commercial/trade information**: Google (Advanced search)

Identify relevant databases


1495 UNIVERSITY OF ABERDEEN
New Search
Journal Search
Find Databases
Browse
ILL Request
Find It
Susan McCourt
Database Search
Enter database name
Databases by category
All Ebook Collections
All General Resources
Arts and Humanities
Engineering
Law
Life Sciences
Medicine and Health Sciences
Physical Sciences
Social Sciences
Search for databases
Use the following options to look for, and link to, databases:
Enter keywords in the search box.
Browse databases by category.
Use Find Databases tab in Primo to find out what databases we have access to. Use the Categories option, or type in the name of a database that you have used before. You can link out to individual databases from here. (More reliable than using Google)



PAGE 1 *42 databases found for* ***All General Resources***

TIP: perhaps it would be useful to carry out an initial search on published theses in your research area?

December 2020: We have a small number of specialist theses database records in the system – more will be added. In the meantime see the handout in MyAberdeen for details on how to link to them in advance of records being added to Primo

journals, magazines and trade publications, many in full text. There are also hundreds of books, as well as selective coverage for additional publications, and an Image Collection of many thousands of images provided by Picture Desk and others. The subject coverage includes archaeology, architecture, history of architecture, history of art, history of design.
Publication coverage: 1937 - current.

Available Online

*3 databases found for **Theses***

1

Dissertations & Theses @ University of Aberdeen (ProQuest)

As part of a digitisation partnership between the University of Aberdeen and ProQuest this database gives access to the full text of University of Aberdeen doctoral theses from 1925 onwards. Many more theses are indexed, from 1883 onwards. Abstracts are available for many of these titles.

Available Online >

2

EThOS - e-theses online service

EThOS provides a single point of access to UK doctoral theses. It contains over 500,000 records, with more than half of the titles available in full text. Using the Advanced Search option, it is possible to search by author, research supervisor, title, subject, institution, year of award, and more. It is necessary to register with EThOS to access full text or order a thesis not yet digitised.

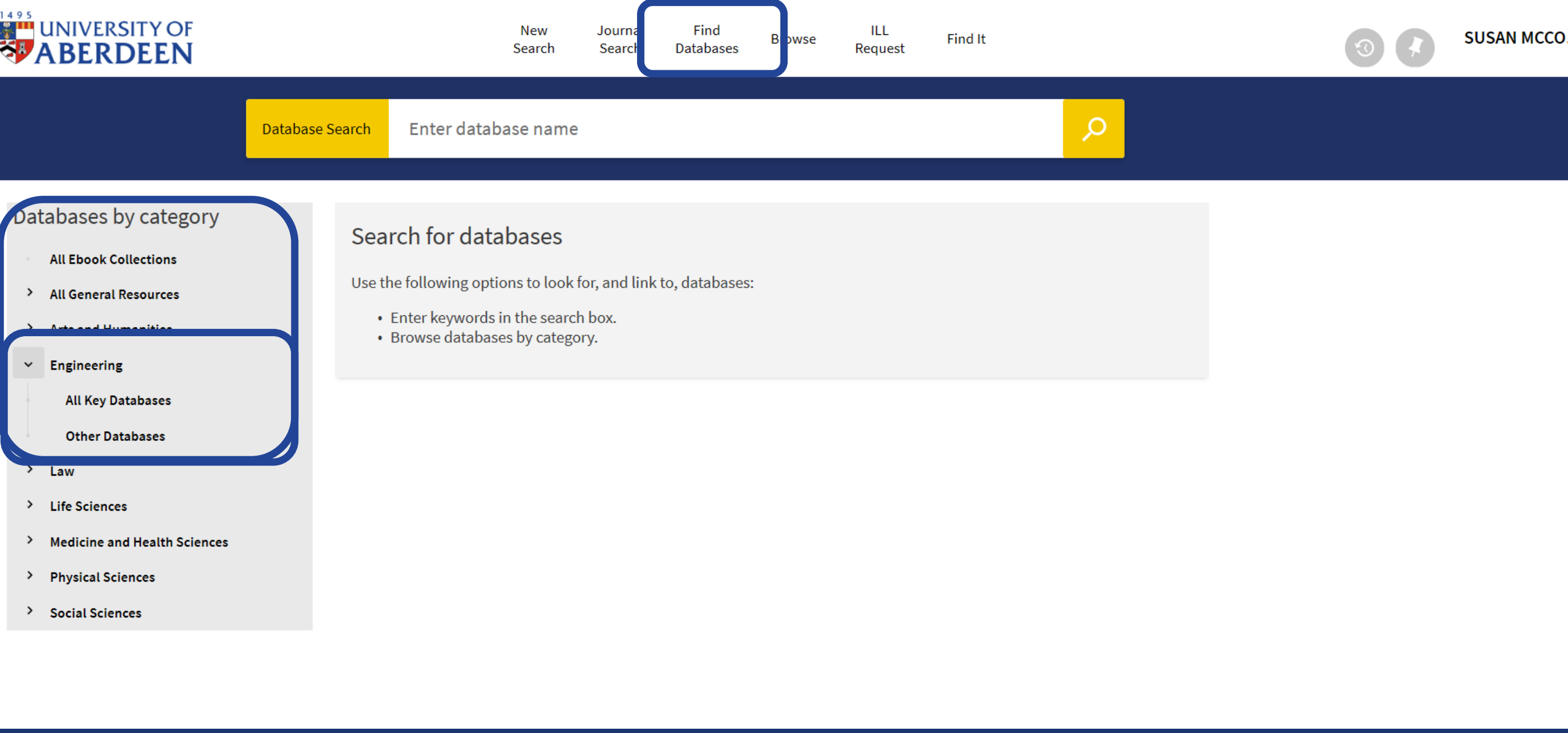
Available Online >

3

ProQuest Dissertations & Theses A&I

This database is the world's most comprehensive collection of dissertations and theses from around the world, spanning from 1743 to the present day.

Available Online >



Categories: to view a list of Key databases (you should search these!), and Other more specialised/niche databases in the topic

4 databases found for **All Key Databases**

Engineering – All Key Databases: short list of important resources.

Use Other Databases sub-category for a more extensive list

- Engineering
  - All Key Databases
  - Other Databases
- Law
- Life Sciences
- Medicine and Health Sciences
- Physical Sciences
- Social Sciences

2

OnePetro (SPE)

19??

You MUST use the VDI to access this database off-campus. Details available at https://www.abdn.ac.uk/toolkit/systems/remote-access/ OnePetro is an online library that provides a simple way to search for and access a broad range of technical literature related to the oil and gas exploration and production industry. The following organisations have their technical documents available through OnePetro: American Petroleum Institute (API), American Rock Mechanics Association (ARMA), American Society of Safety Engineers (ASSE), International Society for Rock Mechanics (ISRM), Offshore Technology Conference (OTC), NACE International (corrosion engineers), Petroleum Society of Canada (PETSOC), Society of Petroleum Engineers (SPE), Society of Petrophysicists and Well Log Analysts (SPWLA), The Society of Underwater Technology (SUT), World Petroleum Council (WPC).

Available Online

3

Scopus (Elsevier)

Scopus is one of the largest multidisciplinary databases that we have access to. Subject coverage is scientific, medical, technical and social science. Scopus contains more than 70 million records covering articles from peer-reviewed titles from 20,000 international publishers. More than 4,000 open access journals are included. References go back to 1996. Records go back to 1788.

Available Online

4

Web of Science (Clarivate)

Access from on- and off-campus: login process

Top
View Online
Details
Send to
Links

View Online

Full text availability

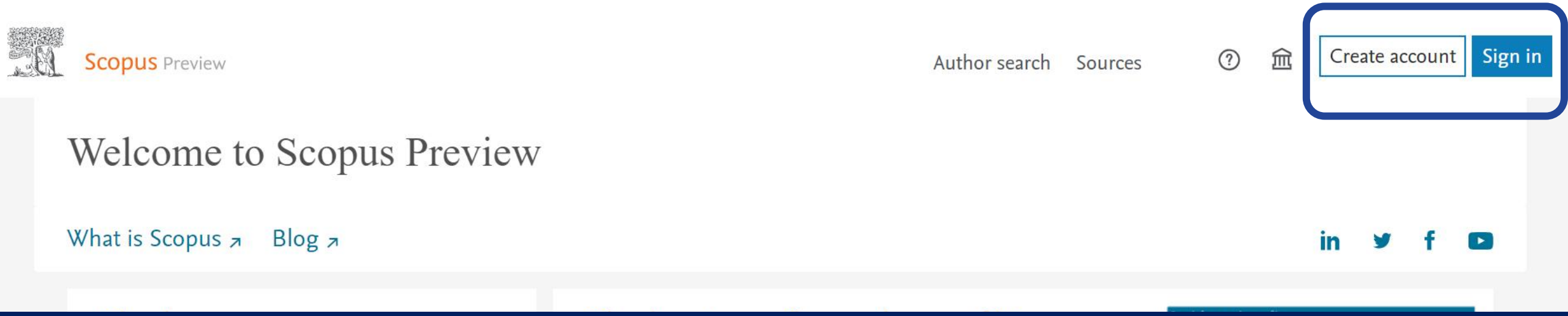
Scopus (Elsevier)

Online version available for university members only. This requires an institutional login off-campus

Details

Title	Scopus (Elsevier)
Summary	Scopus is one of the largest multidisciplinary databases that we have access to. Subject coverage is scientific, medical, technical and social science. Scopus contains more than 70 million records covering articles from peer-reviewed titles from 20,000 international publishers. More than 4,000 open access journals are included. References go back to 1996. Records go back to 1788. Publication coverage: 1788 - current.
Publisher	Elsevier
Language	English
Shelfmark	e Database
Source	Library Catalog

Send to

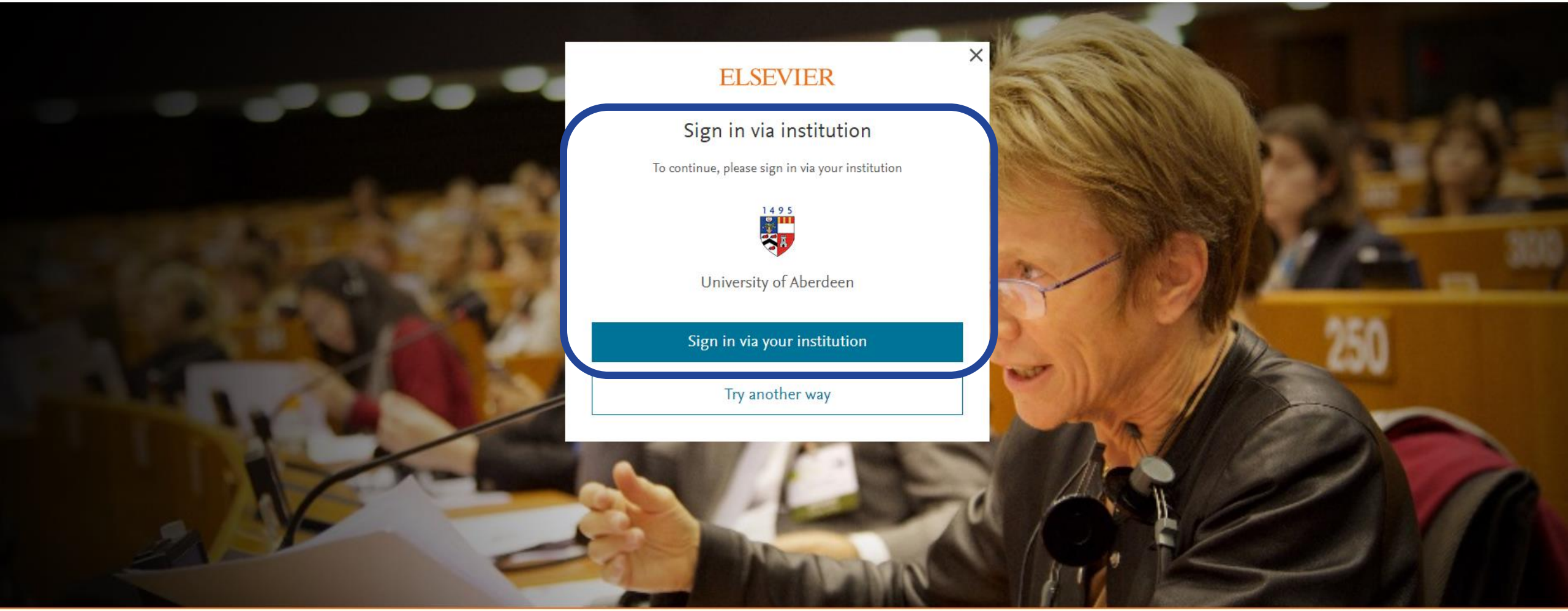


Scopus options appear confusing - you may go round in circles a few times. First time user? Use Sign in and as part of that create your personal account.

Sign in: an authentication process using your computer username and password. Use this every time you access the database

Create account: a personal account that gives you access to extra services. Only need to do this once

Scopus



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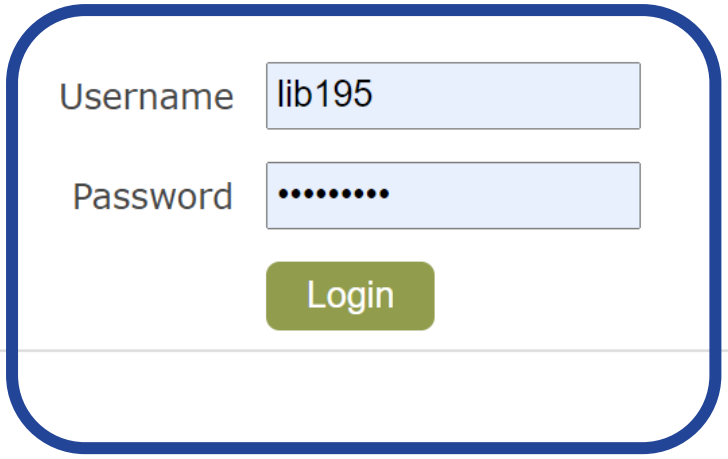
UNIVERSITY OF ABERDEEN

Login

Please login using your University username and password.



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Scopus

Search Sources Lists SciVal

SM

Document search

Compare sources

Documents Authors Affiliations Advanced

Search tips

Search

E.g., "Cognitive architectures" AND robots

Article title, Abstract, Keywords

> Limit

Reset form Search

About Scopus

What is Scopus

Language

日本語に切り替える

Customer Service

Help

Databases: personal account - advantages

In many instances:

- An allocation of space on the database's servers
- Ability to:
  - Save items to Lists
  - Save complex search strategies to re-run at a later date
  - Set up Alert features, e.g. new papers on a topic or by your supervisor (or by you ☺), notification of who is citing specific papers
  - Can set up speedier access to your reference management software (if using), e.g. RefWorks account

Searching databases: Web of Science & Scopus

Scopus & Web of Science

- We have access to several hundred databases (use Primo – Find Databases to identify and link to these)
- Scopus and Web of Science are the two largest
  - They cover most disciplines although there will be alternative and additional “go to” specialist databases for subject areas including Law (Lexis and Westlaw) and Medicine (Medline)
  - In many subject areas we suggest starting with both of the “big two” (one then the other) THEN move into niche databases

Safety issues related to wind farms particularly those located offshore

Library Information Skills Workshop: Designing your Search Strategy – Search grid/matrix

Try brainstorming to analyse your topic. In the blank box below write any words, phrases and authors that come to mind regarding your assignment. The words don't have to be in any order. Think about acronyms, singular and plural forms, word endings and spelling differences, e.g. US and UK English.

Now group your terms together. Look at the most important idea in your assignment = concept/idea 1. Do you have more than one word/phrase for that idea e.g. oil OR gas OR petroleum? Place the words in the 1st row of the grid/matrix below. What is your second most important concept/idea? Do you have more than one word/phrase for that idea? Write them in the 2nd row. If you have an additional concept/idea, write words/phrases for this in the 3rd row. Now apply the search rules (e.g. truncation symbol; "quotation marks" for phrases - where applicable) for the database you wish to search.

Concepts	**Alternative keywords/phrases**				
Concept/Idea 1		**OR**		**OR**	
AND					
Concept/Idea 2		**OR**		**OR**	
AND					
Concept/Idea 3		**OR**		**OR**	

You are now ready to construct your "search string" in your selected database using the Boolean operators **OR** and **AND**. Many databases use a search interface which where you only need to type the **OR** operator within the search line/row as the **AND** operator between lines is already assumed (it is the default setting – do not change it!)

You do not need to fill every box or line however for some assignments you may need a grid that is greater than 3 x 3. The same process applies no matter the grid/matrix size: words/phrases on same line/row = same idea/concept and remember to apply the search rules (e.g. truncation symbol; "quotation marks" for phrases - where applicable) for the database you wish to search.

Plan your search – never type in sentences!

Apply correct search rules to your keywords and phrases

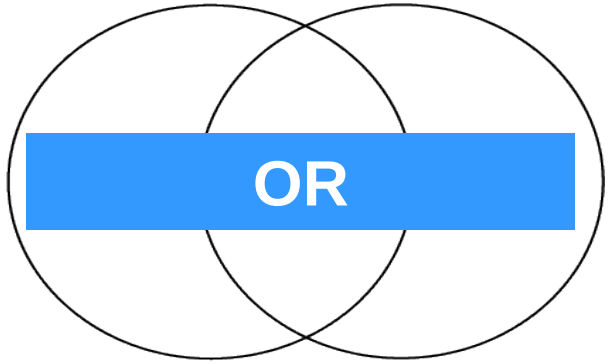
Safety issues related to wind farms particularly those located offshore

Idea 1	“wind farm*”	**OR**	wind turbine*”	**OR**	
AND					
Idea 2	maintenance	**OR**	inspection*	**OR**	access
AND					
Idea 3	offshore	**OR**		**OR**	

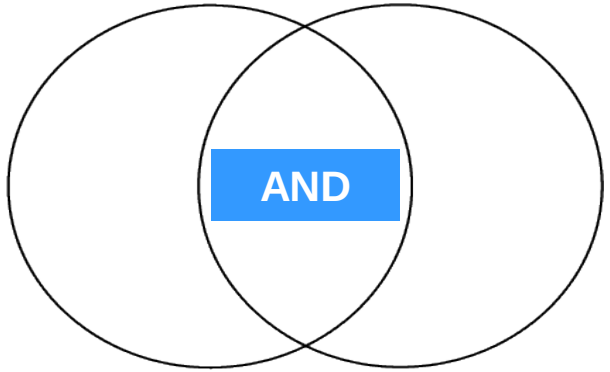
Fourth idea could be safe* OR risk*

Linking words (Boolean operators)

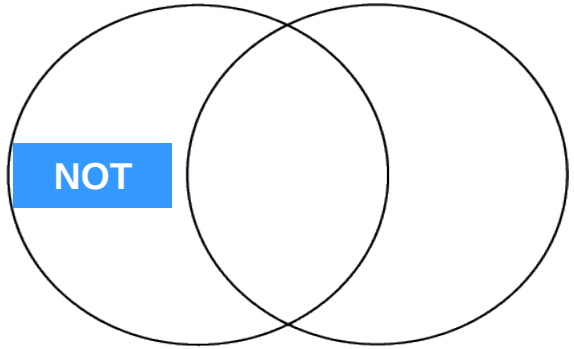
- **OR** Broadens the search
  Use alternative words



- **AND** Narrows the search
  More specific



- **NOT** Cuts out unwanted terms
  Use with care!



Search rules – Web of Science & Scopus

- **Boolean connecting words**
  - AND e.g. safety AND offshore
  - OR e.g. safety OR risk
  - NOT e.g. wind NOT solar (wind AND NOT solar – Scopus)
- **Not case sensitive – do not need to use capital letters**
- **Truncation symbol** *
  - environment* looks for environment, environments, environmental, environmentalist, environmentalists
- **Wildcard symbol** ?
  - wom?n will find woman, women
- **"Phrase search"**
  - "wind turbine"
  - "word1 word2 word3" = these words in this order
  - {word1 word2 word3} used in Scopus as exact search, " " is a looser phrase search
- **Can use * in a phrase search**
  - "wind farm*" (but not if using the braces search, e.g. {wind farm} in Scopus)

Home
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Master Journal List

Search for journals covered in the Web of Science - Core Collection (includes all journal titles covered in CA products). Note – not a search of the databases.

Search by:
Title Word

Search term*:
GO

*enter a title word, full title, or ISSN

Web of Science Service for UK Education

The Web of Science Service for UK Education provides a single route to all the Clarivate Analytics products subscribed to by your institution. Connect to the Web of Science Service, search using the 'All Database search' or select an individual product from the drop down list.

Check the **Subscribers List** to see if your institution has a subscription to Web of Science and any additional resources.

Access now

Problems with access? Try this Alternative Link. Institution name, username and password required. Please note you may need to try alternative options.

Join the Web of Science mailing list where all future Web of Science news and information/updates regarding the service will be posted: mimas-wok@jiscmail.ac.uk

Service Information - Running Normally.

Please send all enquiries and report any problems about this service to the Web of Science Service for UK Education Helpdesk at: webofscience@jisc.ac.uk or alternatively you can use the support form.

Useful Links.

Explore the Master Journal List

Explore Web of Science LibGuides

Find out more about the Web of Science Editorial Process

Explore the latest reports from the ISI

Sign up to the Web of Science Group newsletter

Web of Science

Clarivate Analytics

We're building the new Web of Science. Click here to access the preview

Select a database: Web of Science Core Collection

Basic Search | Author Search BETA | Cited Reference Search | Advanced Search | Structure Search

Example: oil spill* mediterranean

Topic

Search

Search tips

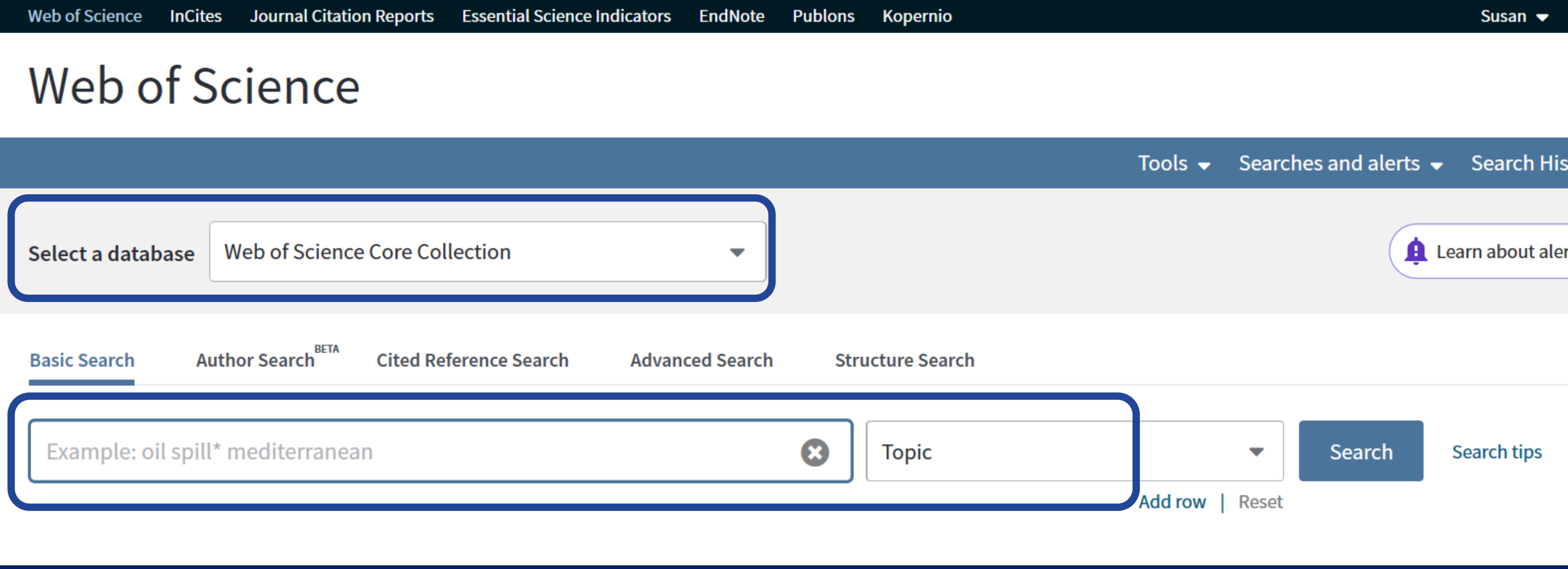
+ Add row | Reset

Timespan

All years (1900 - 2020)

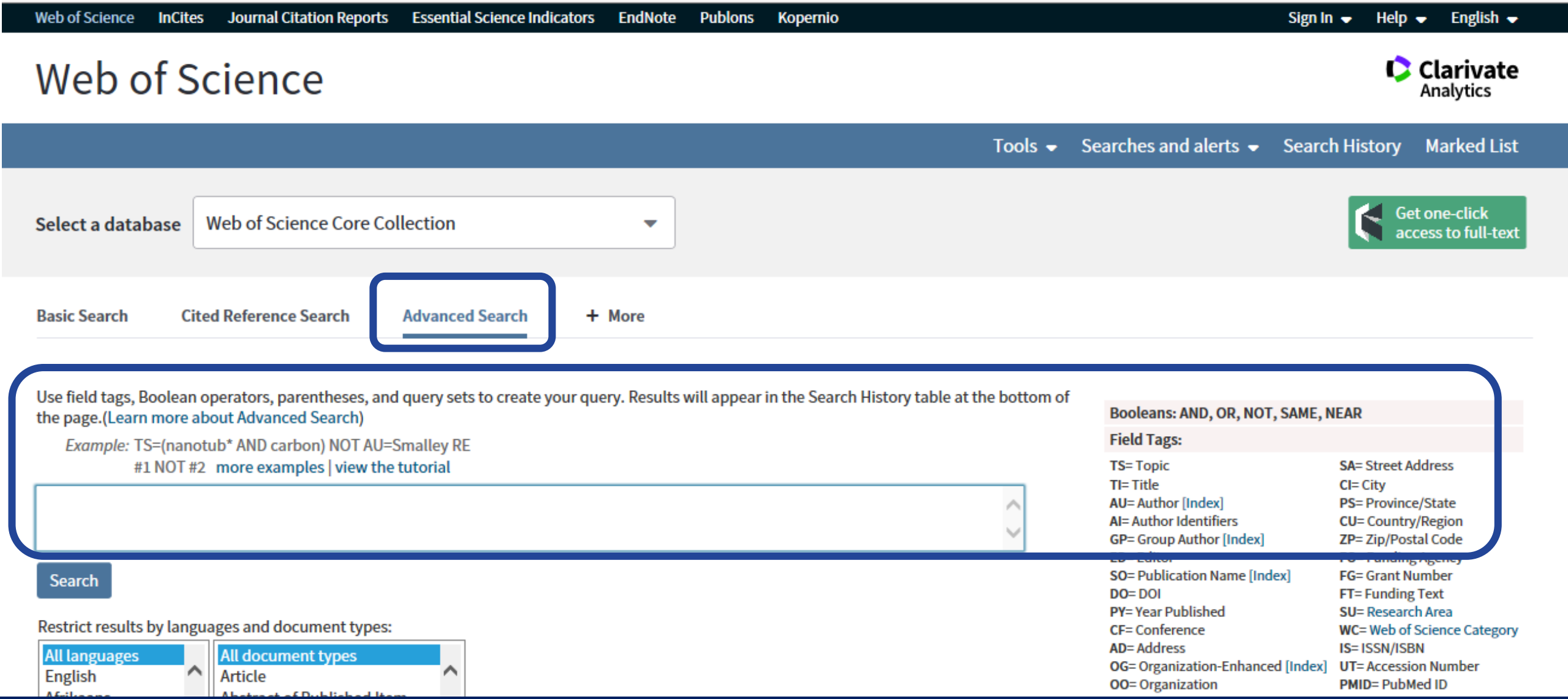
More settings

University of Aberdeen



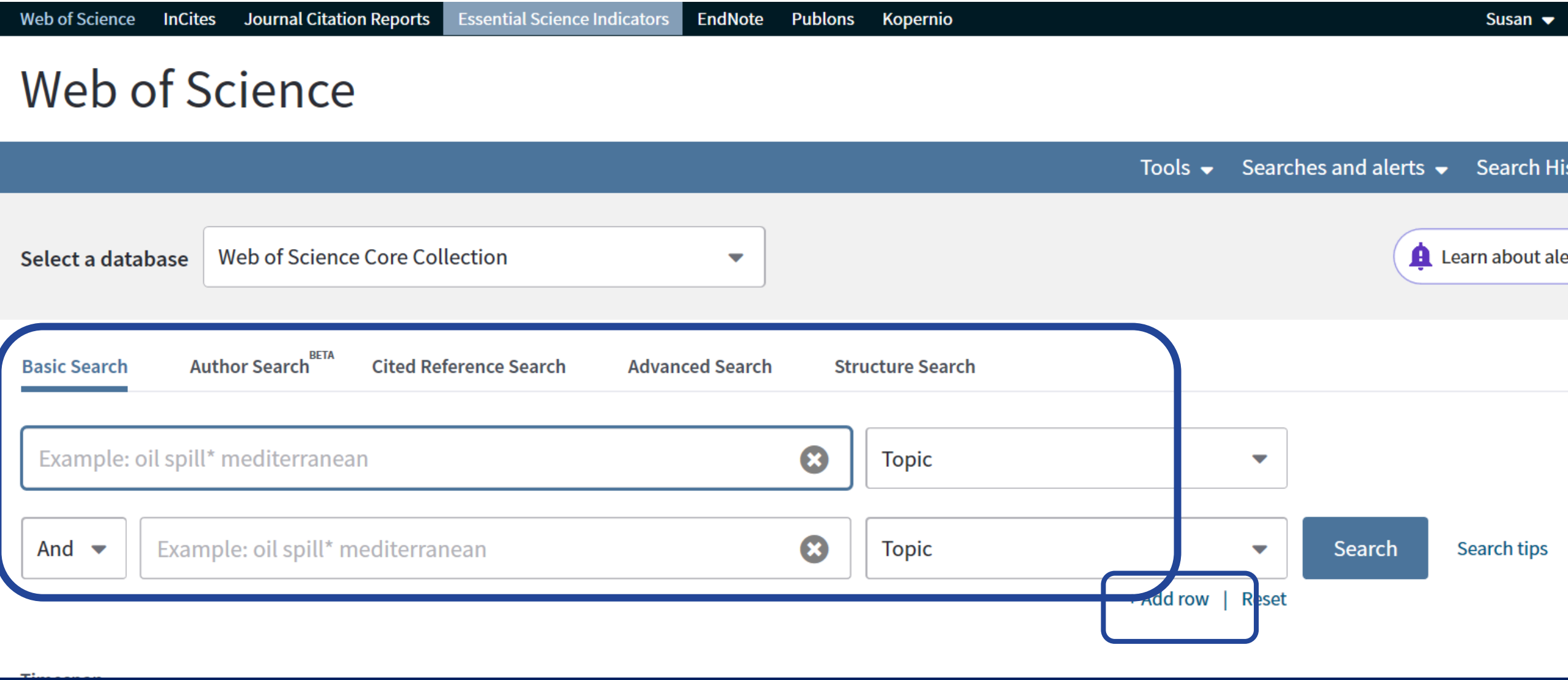
Every database looks different but they often share similar features. *Web of Science*: Basic Search

Note: WoS is a platform for many databases. The Core Collection is the default



Web of Science: Advanced Search

The Basic Search option is satisfactory for most searches!



Web of Science: use Add row to reproduce your planning grid/matrix

Brought to you by Library, Special Collections and Museums, University of Aberdeen

Scopus

Search Sources Lists SciVal ↗

Document search

Compare sources >

Documents Authors Affiliations Advanced

Search tips

Search

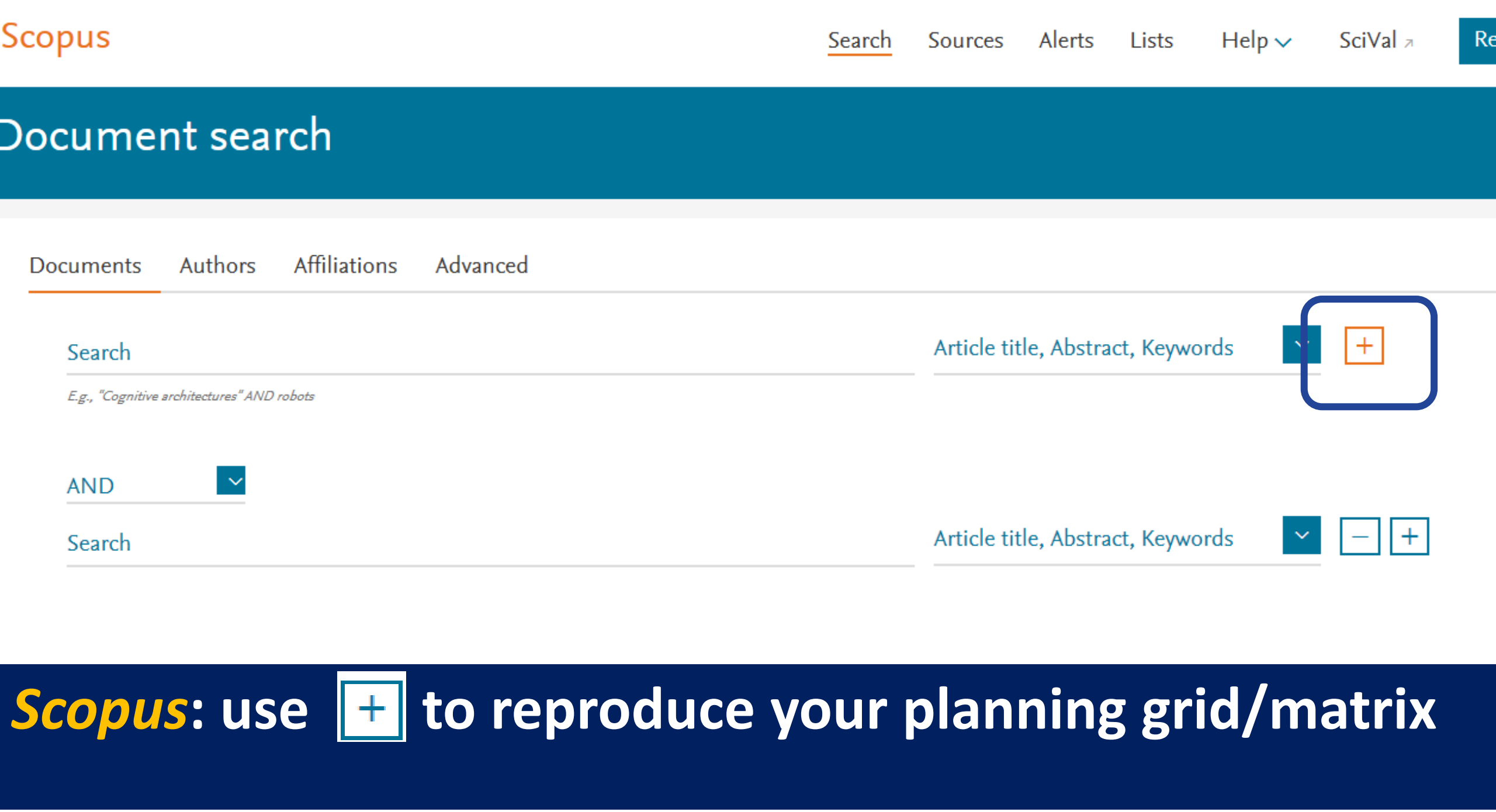
Article title, Abstract, Keywords

E.g., "Cognitive architectures" AND robots

> Limit

Reset form Search

Every database looks different but they often share similar features: *Scopus*



Scopus: use + to reproduce your planning grid/matrix

Search approach: Method 1

Method 1

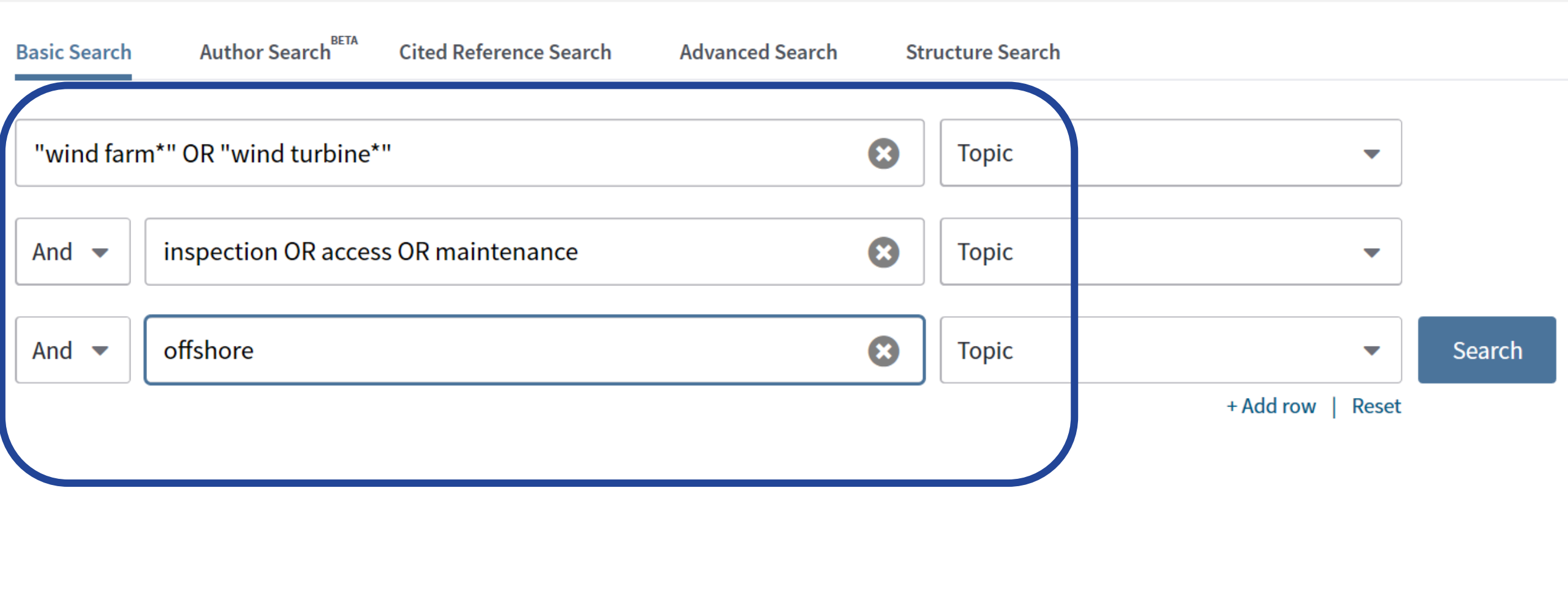
- As on your planning grid
- Multiple lines/boxes each containing an individual concept
  - Use the OR operator between each separate search word or search phrase describing an individual concept
  - Use the default AND operator between each line/box
  - Obtain results
  - Add further search terms as needed

Advantages

- Immediate results to skim, analyse, evaluate

Method 1: Standard search approach in many databases:

Each idea on a separate line. Combine in one step. Gives immediate results



Web of Science

Clarivate Analytics

Search | Tools | Searches and alerts | Search History | Marked List

Results: 766
(from Web of Science Core Collection)

You searched for: TOPIC: ("wind farm*" OR "wind turbine*") *AND* TOPIC: (inspection OR access OR maintenance) *AND* TOPIC: (offshore) ...More

Create Alert

Refine Results

Search within results for...

Filter results by:

- Highly Cited in Field (5)
- Open Access (243)
- Associated Data (1)

Sort by: Date | Times Cited | Usage Count | Relevance | More

1 of 77

Select Page | Export... | Add to Marked List

Analyze Results

Create Citation Repor

1. **On offshore wind farm maintenance scheduling for decision support on vessel fleet composition**

   By: Gutierrez-Alcoba, A.; Hendrix, E. M. T.; Ortega, G.; et al.
   EUROPEAN JOURNAL OF OPERATIONAL RESEARCH Volume: 279 Issue: 1 Pages: 124-131 Published: NOV 16 2019
   View Abstract

   Times Cited: 0 *(from Web of Science Core Collection)*
   Usage Count

2. **A dynamic programming-based maintenance model of offshore wind turbine considering logistic delay and weather condition**

   By: Zhu, Wenjin; Castanier, Bruno; Bettayeb, Belgacem
   RELIABILITY ENGINEERING & SYSTEM SAFETY Volume: 190 Article Number: UNSP 106512 Published: OCT 2019
   View Abstract

   Times Cited: 0 *(from Web of Science Core Collection)*
   Usage Count

3. **Reliability prediction of an offshore wind turbine gearbox**

   By: Bhardwaj, U.; Teixeira, A. P.; Guedes Soares, C.

   Times Cited: 0 *(from Web of Science Core Collection)*

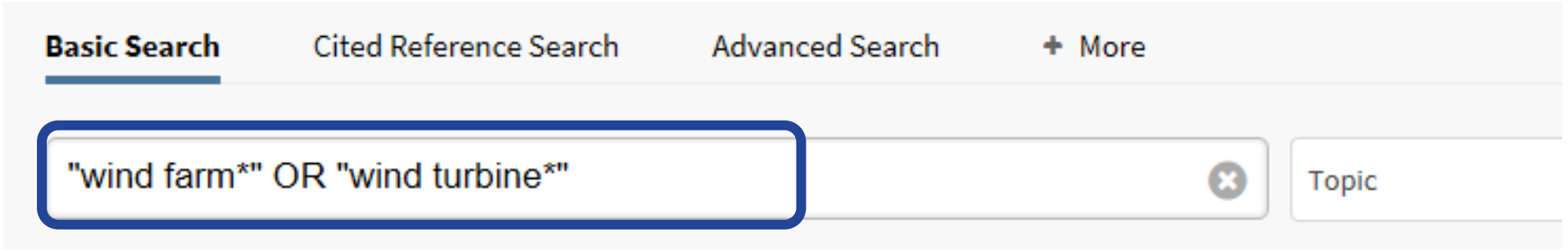
Search approach: Method 2

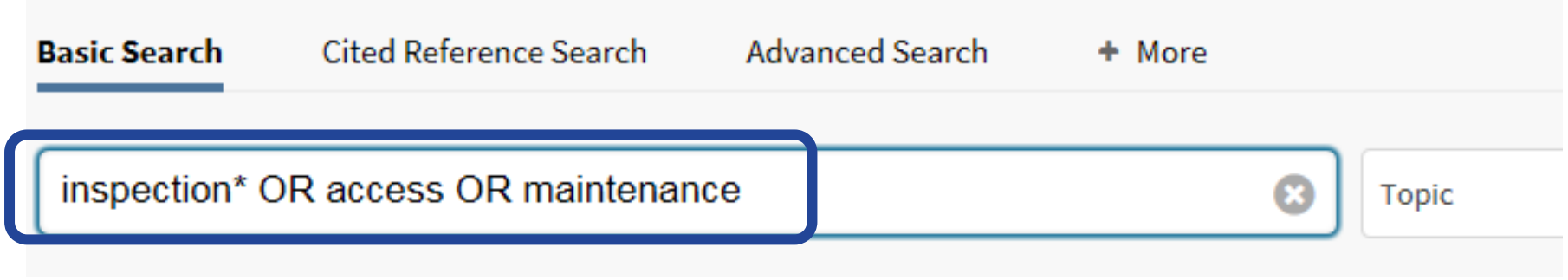
- Method 2 (= the only available option within Medline)
  - As on your planning grid/matrix, but one step at a time
  - Single line/box
    - Idea/Concept 1: Use the OR operator between each separate alternative search word or search phrase
    - Obtain results for that single Idea/Concept – “sets”
    - Clear the search box
    - Insert the terms for Idea/Concept 2
    - Obtain results for that single Idea/Concept
    - Repeat as needed for further ideas/concepts – lots of sets of results
  - Combine the sets in different ways

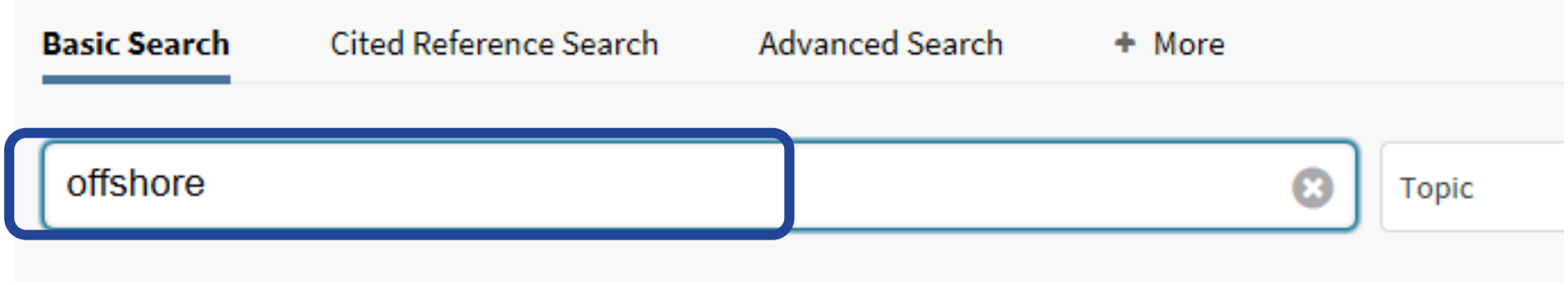
Advantages:

- Flexible. Can get a “feel” for each Idea/Concept within the database. Can identify areas where search terms may need further consideration
- Can save time when carrying out more complex searches

Method 2: One idea/concept at a time. Combine in different ways. (This is the only search method available in Medline)







Search | Tools | Searches and alerts | Search History | Marked List

Search History

Web of Science Core Collection

Set	Results		Edit Sets	Combine Sets	Delete Sets
		Save History / Create Alert Open Saved History		AND OR Combine	Select All Delete
# 4	60,896	TOPIC: (offshore) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit		
# 3	1,096,808	TOPIC: (inspection OR access OR maintenance) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit		
# 2	42,054	TOPIC: ("wind farm*" OR "wind turbine*") *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit		
# 1	766	TOPIC: ("wind farm*" OR "wind turbine*") *AND* TOPIC: (inspection OR access OR maintenance) *AND* TOPIC: (offshore) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit		
				AND OR Combine	Select All Delete

Web of Science - Method 2: One idea at a time then combine in different ways. This lesser used, more traditional, approach may provide added flexibility at PGR level

Search History | Web of Science Core Collection

Web of Science - Method 2: Use tick boxes to Combine

Set	Results	Save History / Create Alert / Open Saved History	Edit Sets	Combine Sets (AND / OR) Combine	Delete Sets Select All / Delete
# 9	310	#8 AND #3 AND #2 *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 8	3,107,829	TOPIC: (safety OR risk*) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 7	2,940	#4 AND #3 *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 6	2,650	#3 AND #2 *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 5	6,244	#4 AND #2 *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 4	60,896	TOPIC: (offshore) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 3	1,096,808	TOPIC: (inspection OR access OR maintenance) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 2	42,054	TOPIC: ("wind farm*" OR "wind turbine*") *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐
# 1	766	TOPIC: ("wind farm*" OR "wind turbine*") *AND* TOPIC: (inspection OR access OR maintenance) *AND* TOPIC: (offshore) *Indexes=SCI-EXPANDED, CPCI-S Timespan=All years*	Edit	☐	☐

AND OR Combine | Select All | Delete

Search history

Combine queries...

12	(TITLE-ABS-KEY (safe* OR risk*)) AND ((TITLE-ABS-KEY (inspection OR maintenance OR access)) AND ((TITLE-ABS-KEY ("wind farm*" OR "wind turbine*")) AND (TITLE-ABS-KEY (offshore))))	205 document res
11	(TITLE-ABS-KEY (inspection OR maintenance OR access)) AND ((TITLE-ABS-KEY ("wind farm*" OR "wind turbine*")) AND (TITLE-ABS-KEY (offshore)))	907 document res
10	(TITLE-ABS-KEY ("wind farm*" OR "wind turbine*")) AND (TITLE-ABS-KEY (offshore))	7,623 document res
9	TITLE-ABS-KEY (safe* OR risk*)	4,443,597 document res
8	TITLE-ABS-KEY (offshore)	139,477 document res
7	TITLE-ABS-KEY (inspection OR maintenance OR access)	1,584,076 document res
6	TITLE-ABS-KEY ("wind farm*" OR "wind turbine*")	55,373 document res

Scopus - Method 2: One idea at a time then combine in different ways

In *Scopus*: to combine the results of each individual idea/concept you type the set number (prefixed with #) rather than the tick box approach provided in Web of Science

Example: #6 AND #8

Recommendation: try the different search approaches for yourself

Scopus

Search Sources Lists SciVal

1,392 document results

(TITLE-ABS-KEY ("wind farm*" OR "wind turbine*") AND TITLE-ABS-KEY (access OR maintenance OR inspection*) AND TITLE-ABS-KEY (offshore))

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Databases index different journals → different results

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All

Web of Science

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Results: 796
(from Web of Science Core Collection)

You searched for: TOPIC: ("wind farm*" OR "wind turbine*") *AND* **TOPIC:** (inspection* OR maintenance OR access) *AND* **TOPIC:** (offshore) ...More

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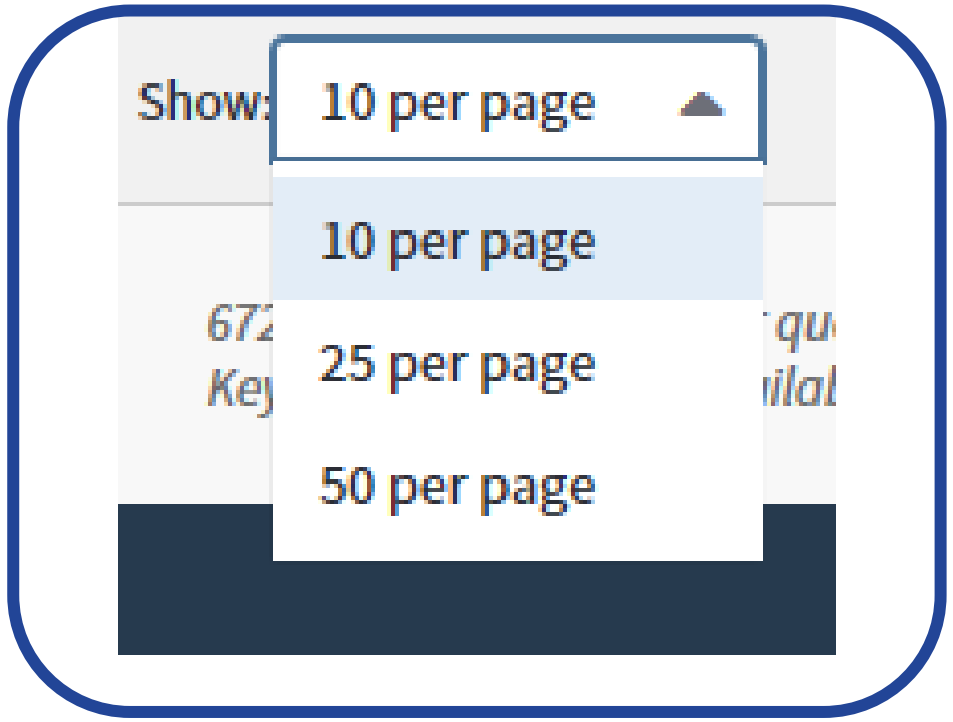

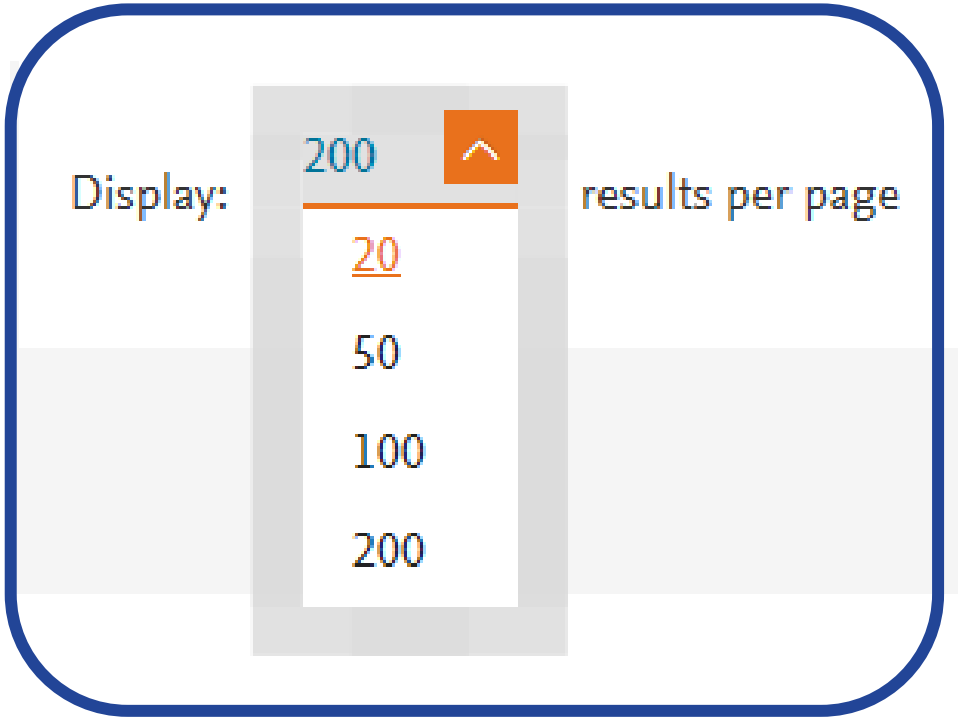

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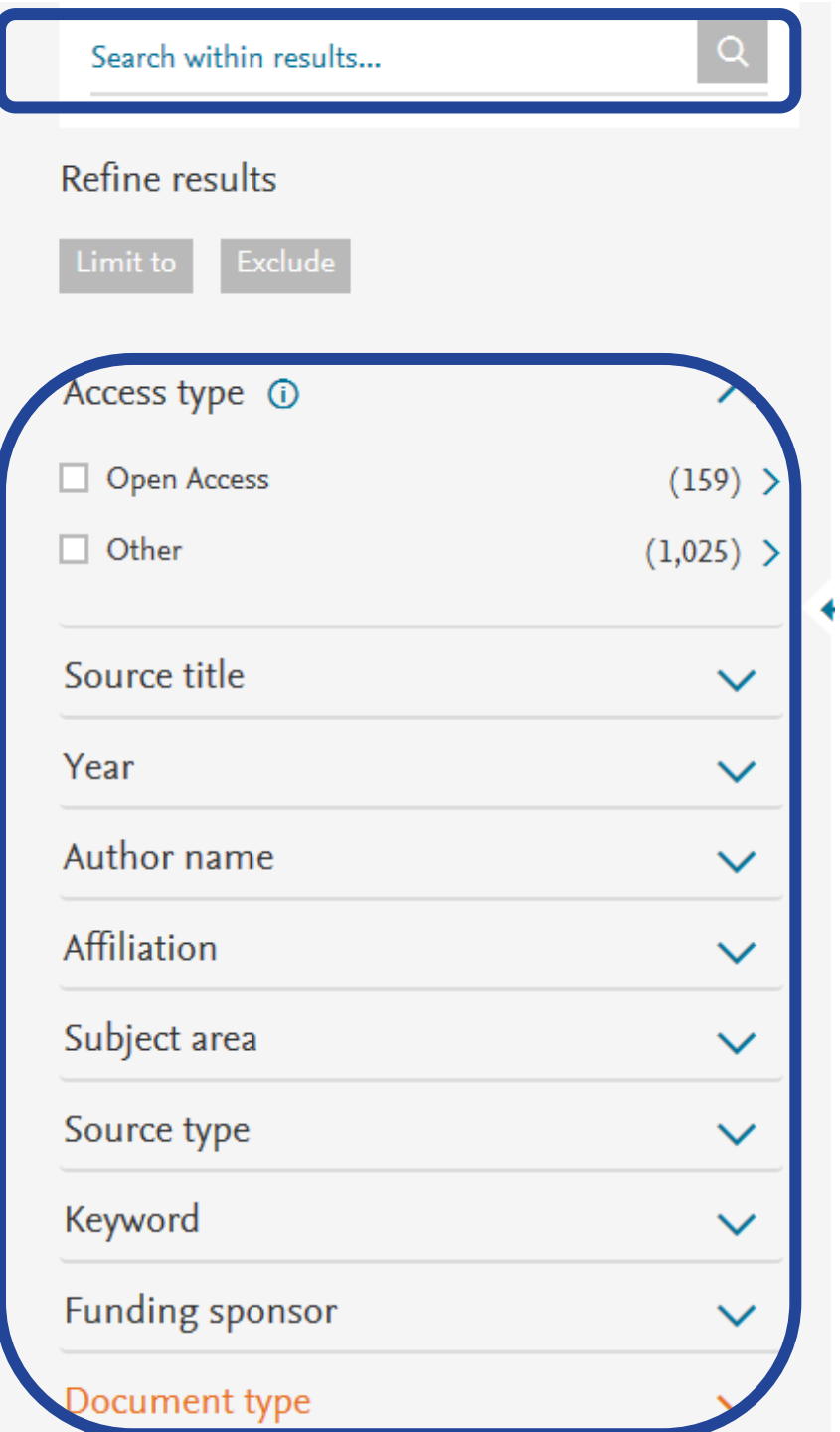
Can do this at the bottom of your list of results

Sort your results

Do not rely on the default Sort option - change order of results to view them in different ways

- **Publication Date (by Newest or Oldest)**
  - Most recently published
  - Oldest material (in this database)
  - Useful for trends/development type analysis
- **Times Cited**
- Most frequently referenced papers - may identify classic/important papers
  - Favours older papers over newer ones
  - Can indicate subject areas not heavily researched
- **Relevance** (based on search terms used)
  - Useful when carrying out initial searches
- **Authors or Source Title**
  - Papers from high impact or important journals, or respected authors, are well-regarded



Refine and limit your results

Depends on the database. Look for options to:

- **Add extra keywords** (will operate an AND search or your previous set)
- **Categories or Subject Area**
  - Can help to narrow the focus of your results
- **Document Type**
  - Very useful for Review articles!
- **Source Title**
  - If you are aware of important journals in the discipline
- **Various others including**
  - Authors
  - Publication Years
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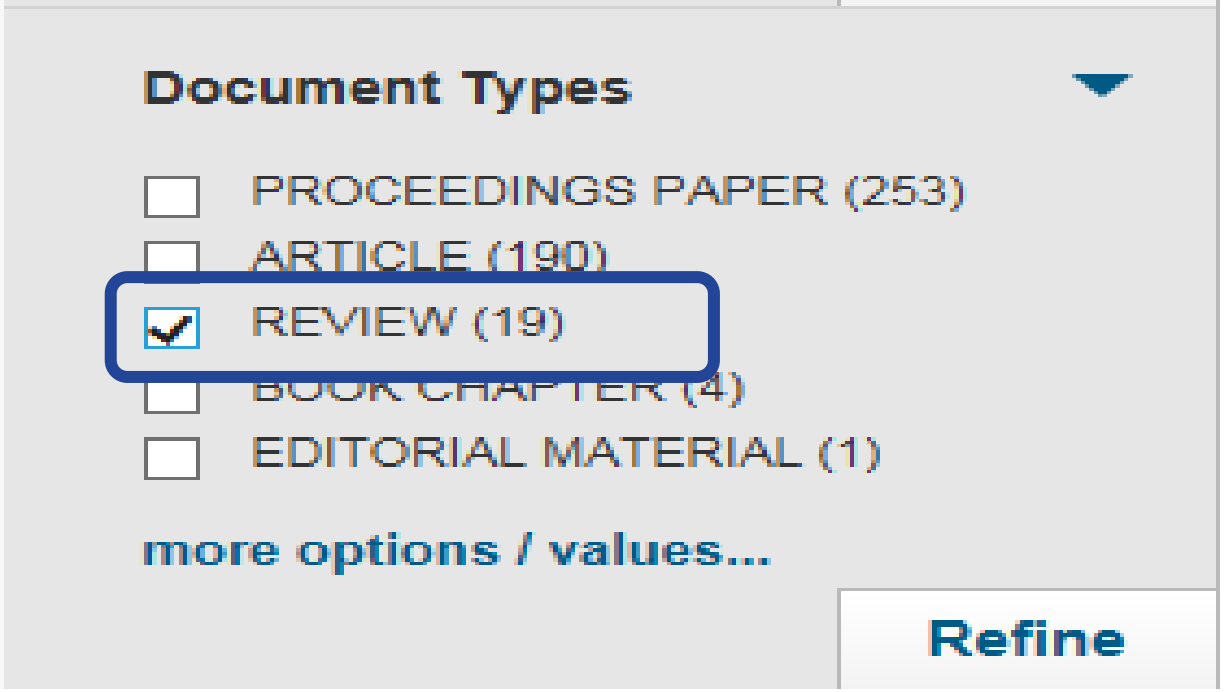
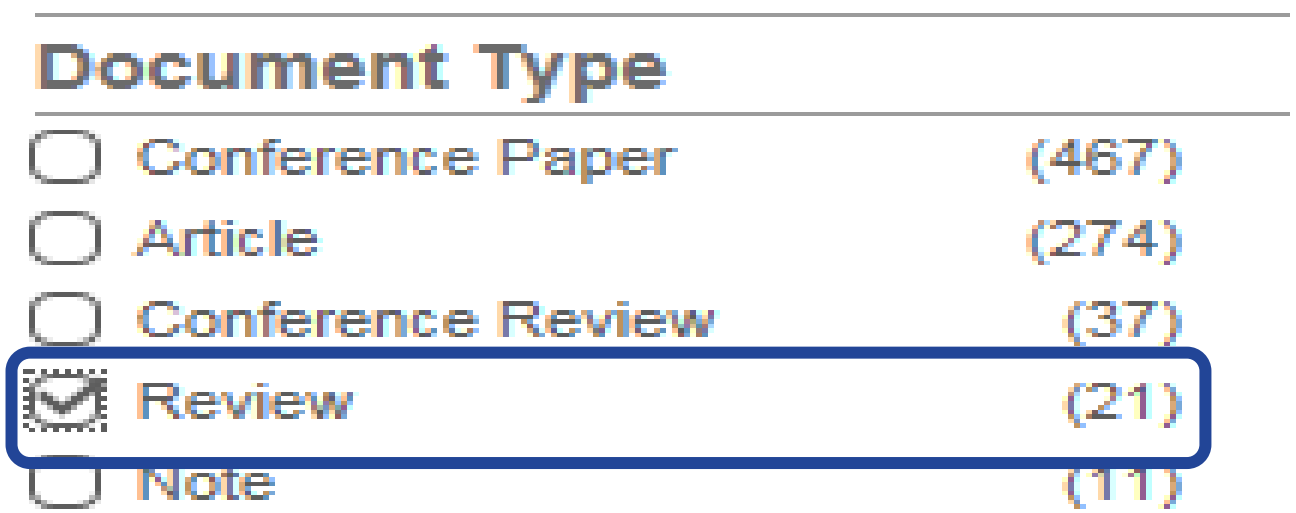
  - Countries/Territories



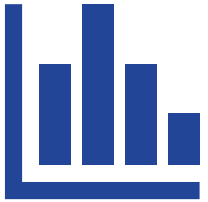


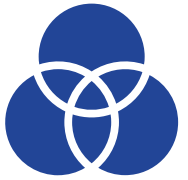
TIP: if available refine/limit Document Type to Review at the start of a piece of research – overview, background, trends, gaps, authors, references.

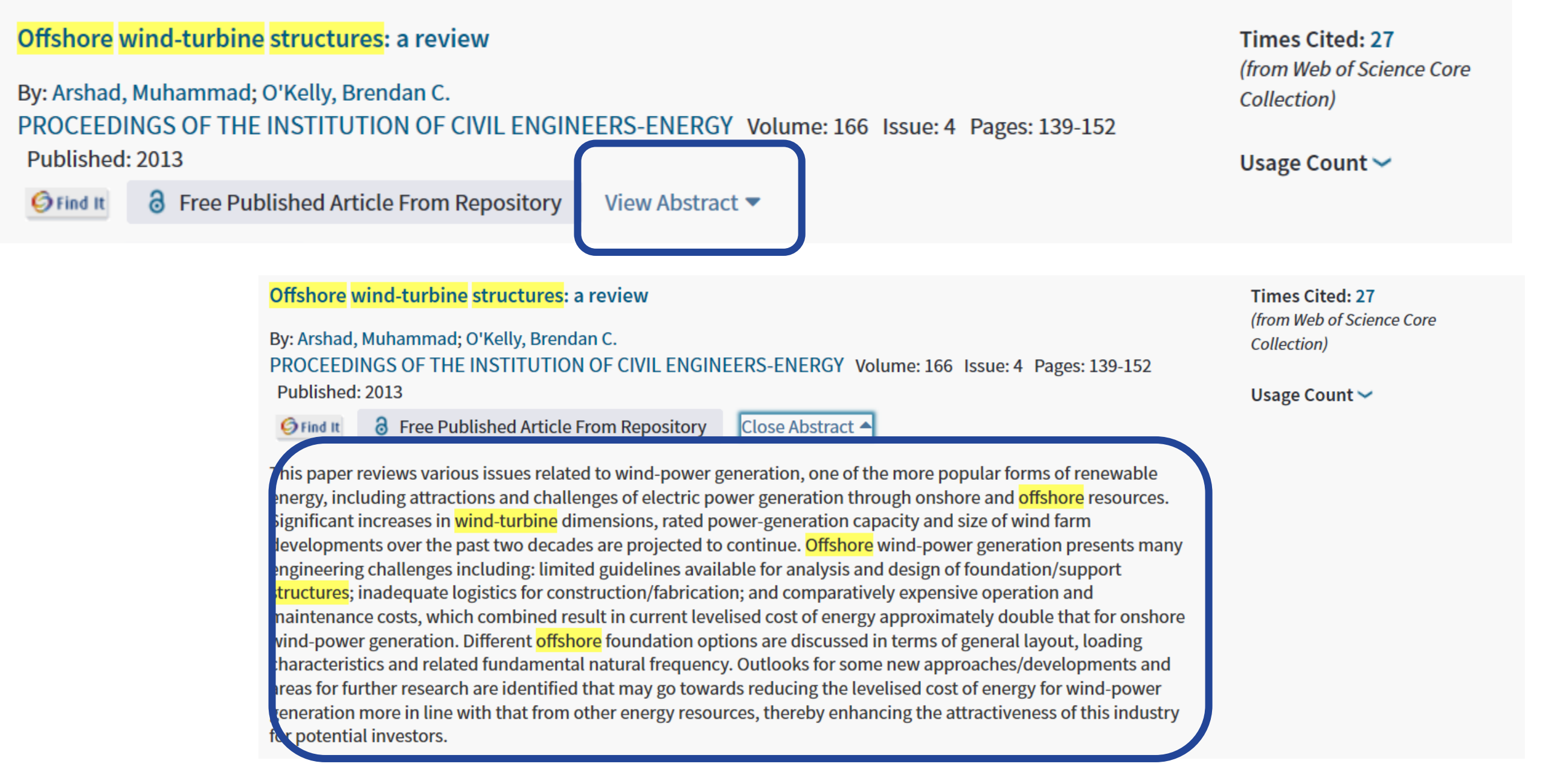
Particularly useful if Review paper has been published in last few years

What is a Review Article?

- Special type of journal article
- Author(s) provide an overview or summary i.e. a review of a specific subject or topic
- Presents critical evaluation from many different research papers
  - Often include an extensive bibliography/reference list of primary literature, original research articles. Can be 100+ items
- Examines, comments and evaluates progress in a particular area
- May highlight areas of difference or similarity
- May identify areas for future research
- Good for background information and identifying key areas of interest, and useful keywords







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By: Arshad, Muhammad;

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Offshore wind-turbine structures: a review

By: Arshad, M (Arshad, Muhammad)[1,2]; O'Kelly, BC (O'Kelly, Brendan C.)[1]

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Volume: 166 **Issue:** 4 **Pages:** 139-152

DOI: 10.1680/ener.12.00019

Published: 2013

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Abstract

This paper reviews various issues related to wind-power generation, one of the more popular forms of renewable energy, including attractions and challenges of electric power generation through onshore and offshore resources. Significant increases in wind-turbine dimensions, rated power-generation capacity and size of wind farm developments over the past two decades are projected to continue. Offshore wind-power generation presents many engineering challenges including: limited guidelines available for analysis and design of foundation/support structures; inadequate logistics for construction/fabrication; and comparatively expensive operation and maintenance costs, which combined result in current levelised cost of energy approximately double that for onshore wind-power generation. Different offshore foundation options are discussed in terms of general layout, loading characteristics and related fundamental natural frequency. Outlooks for some new approaches/developments and areas for further research are identified that may go towards reducing the levelised cost of energy for wind-power generation more in line with that from other energy resources, thereby enhancing the attractiveness of this industry for potential investors.

Keywords

Author Keywords: foundations; offshore engineering; renewable energy

KeyWords Plus: PILES

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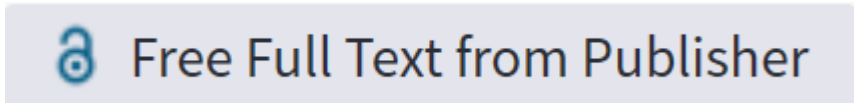

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O'Kelly, Brendan C.; Arshad, Muhammad; O'Kelly, Brendan C

ISSN: 1751-4223 , 1751-4231; **DOI:** 10.1680/ener.12.00019

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Offshore wind-turbine structures: a review

Authors: Muhammad Arshad, MSc, ME, , , and Brendan C. O'Kelly, PhD, FTCD, CEng, CEnv, MICE, ,

Author Affiliations

https://doi.org/10.1680/ener.12.00019
Published Online: May 25, 2015

Keywords: foundations ; offshore engineering ; renewable energy

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Offshore wind-turbine structures: a review

1 **Muhammad Arshad** MSc, ME
PhD candidate, Department of Civil, Structural and Environmental Engineering, Trinity College Dublin, Ireland; Lecturer, Department of Geological Engineering, University of Engineering and Technology, Lahore, Pakistan

2 **Brendan C. O'Kelly** PhD, FTCD, CEng, CEnv, MICE
Associate Professor, Department of Civil, Structural and Environmental Engineering, Trinity College Dublin, Ireland

This paper reviews various issues related to wind-power generation, one of the more popular forms of renewable energy, including attractions and challenges of electric power generation through onshore and offshore resources. Significant increases in wind-turbine dimensions, rated power-generation capacity and size of wind farm developments over the past two decades are projected to continue. Offshore wind-power generation presents many engineering challenges including: limited guidelines available for analysis and design of foundation/support structures; inadequate logistics for construction/fabrication; and comparatively expensive operation and maintenance costs, which combined result in current levelised cost of energy approximately double that for onshore wind-power generation. Different offshore foundation options are discussed in terms of general layout, loading characteristics and related fundamental natural frequency. Outlooks for some new approaches/developments and areas for further research are identified that may go towards reducing the levelised cost of energy for wind-power generation more in line with that from other energy resources, thereby enhancing the attractiveness of this industry for potential investors.

Notation

A	scalar
EI	bending stiffness
f_{nat}	first natural frequency
f_{wind}	probability density function
k	shape factor quantifying width of wind-speed distribution
L	strut length
M	turbine mass

generate electricity. Wind turbines are categorised by axis of rotation of the main rotor shaft (either horizontal or vertical axis) and whether they are located onshore or offshore (Tong, 2010). For modern commercial wind turbines, the main rotor shaft is horizontally aligned. Rated power-generation capacity is mainly dependent on rotor diameter and wind speed (IRENA, 2012); for example, if wind speed increases two-fold, its energy content increases eight-fold. Two key speed terms

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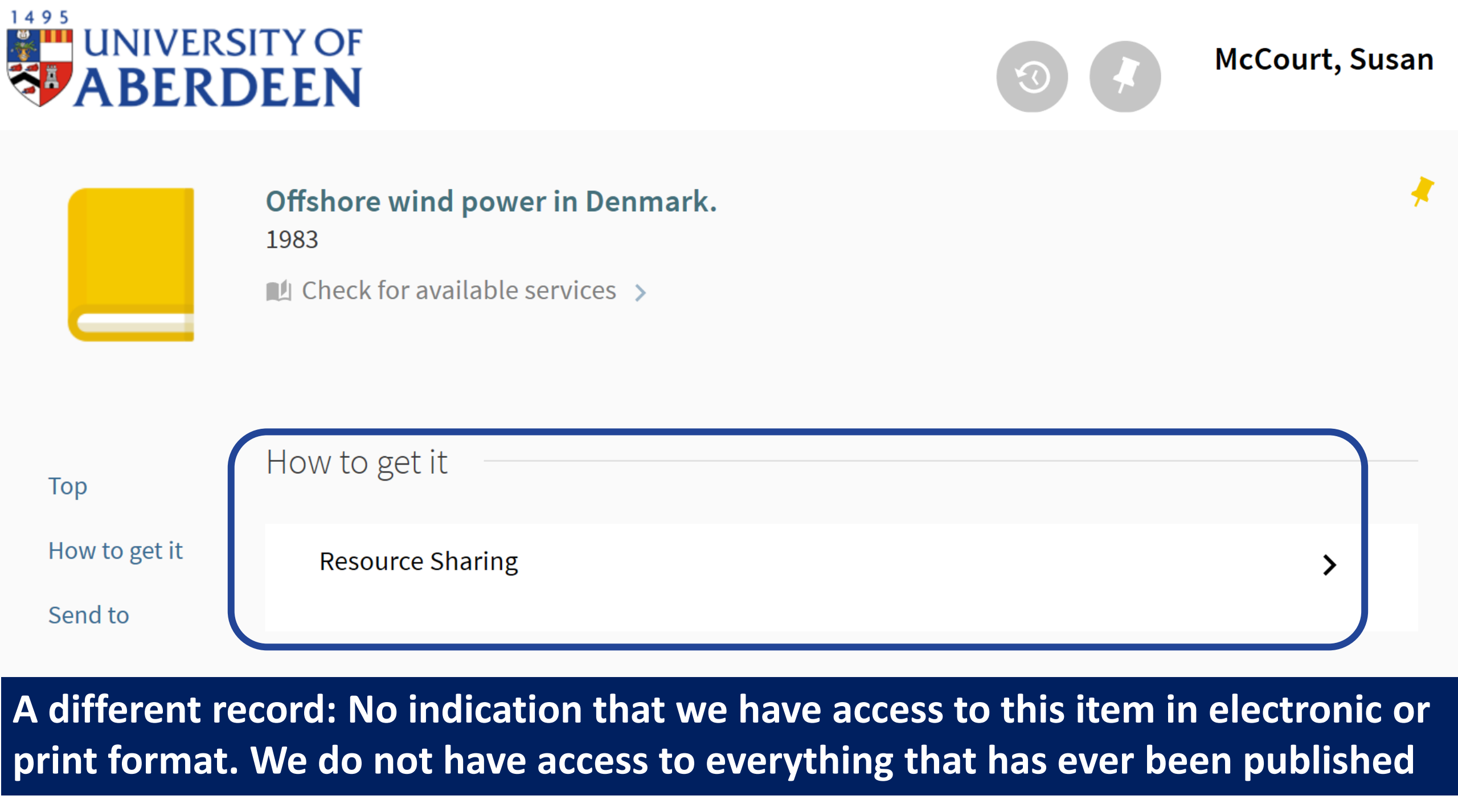

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[a]New and Renewable Energy Group, School of Engineering, Durham University, Durham DH1 4RL, United Kingdom
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Abstract

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Modern wind turbines are complex aerodynamic, mechanical and electrical machines incorporating sophisticated control systems. Wind turbines have been erected in increasing numbers in Europe, [illegible] Europe, Germany and Denmark have played a particularly prominent part in developing the technology, and both countries have installed large numbers of turbines. This article is concerned with understanding the historic reliability of modern wind turbines. The prime objective of the work is to extract information from existing data so that the reliability of large wind turbines can be predicted, particularly when installed offshore in the future. The article uses data collected from the Windstats survey to analyse the reliability of wind turbine components from historic German and Danish data. Windstats data have characteristics common to practical reliability surveys; for example, the number of failures is collected for each interval but the number of turbines varies in each interval. In this article, the authors use reliability analysis methods which are not only applicable to wind turbines but relate to any repairable system. Particular care is taken to compare results from the two populations to consider the validity of the data. The main purpose of the article is to discuss the practical methods of predicting large-wind-turbine reliability using grouped survey data from Windstats and to show how turbine design, turbine configuration, time, weather and possibly maintenance can affect the extracted results. Copyright © 2006 John Wiley & Sons, Ltd.

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Topic: Wind turbines | Condition monitoring | Turbine gearbox

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Author keywords

Electric network | Homogeneous Poisson process | Power law process | Reliability | Wind turbine

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  - Use keywords from relevant papers to revise your search
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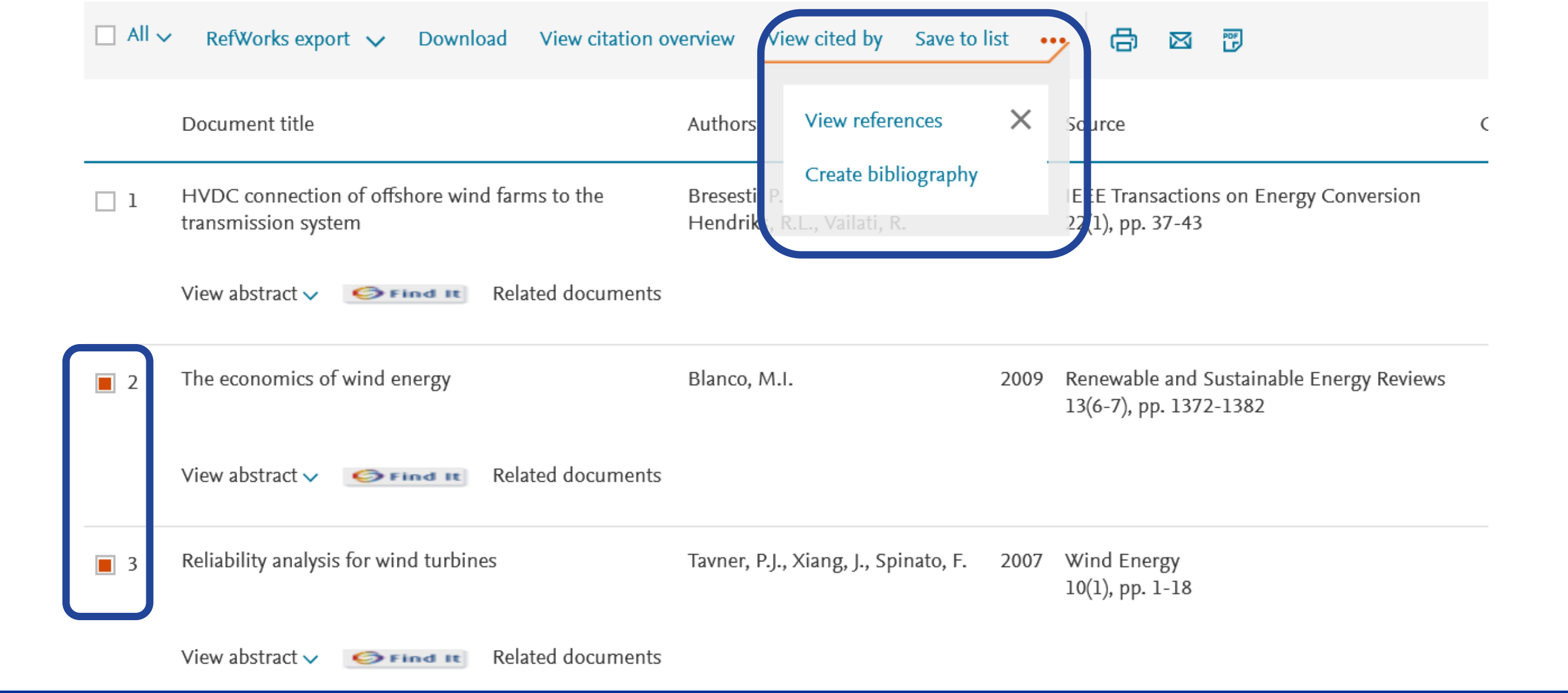

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Tavner, P. J., J. Xiang, and F. Spinato. 2007. "Reliability Analysis for Wind Turbines." *Wind Energy* 10 (1): 1-18. doi:10.1002/we.204. www.scopus.com.

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Yang, W., P. J. Tavner, C. J. Crabtree, Y. Feng, and Y. Qiu. 2014. "Wind Turbine Condition Monitoring: Technical and Commercial Challenges." *Wind Energy* 17 (5): 673-693. doi:10.1002/we.1508. www.scopus.com.

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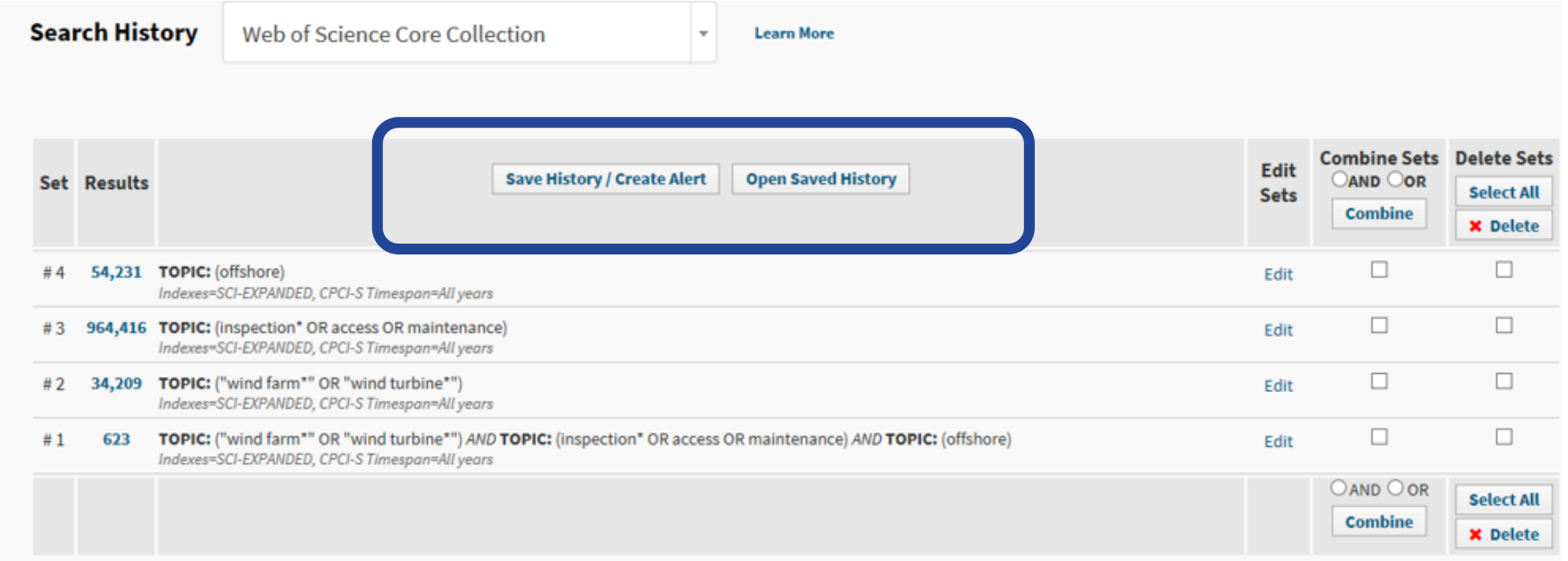

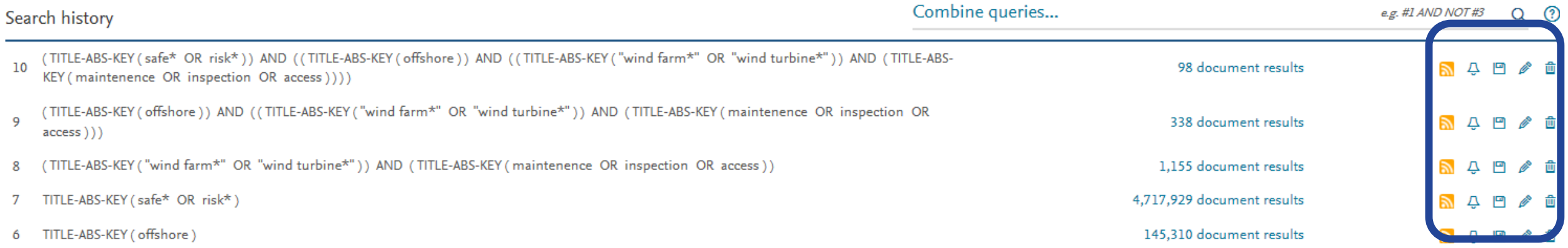

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WoS and Scopus: Additional features available from the Search History screen

Search process - results

- **Decide on relevance to your topic**
  - Skim and scan titles and abstracts
  - Evaluate - change sort order, use refine options
- **Check availability**
  - Link to full text if available
  - Keep a note of shelfmark for items in paper format
  - Keep a note of important unavailable items
    - try specific search (exact title plus author surnames) in Google in case item is in institutional repository or on author website
    - check with departmental colleagues – personal subscription (paper format)?
    - contact the author to ask for a copy
    - discuss interlibrary loan (ILL) possibility with supervisor
- **Note new keywords or search terms**
  - Refine/improve/modify your search terms
- **Manage the references that you find - export relevant items, save a list**
- **Save your search strategy, set up an alert**
- **Repeat in another database**

Scopus & Web of Science: Advanced features

Advanced features

- Vary from one database to the next
- Generally require a personal account (look for Register/Sign In, or as part of Institution/Shibboleth login)
- Can be time effective and impressive
  - Save complicated search searches to run when you want
  - Alerts – get information on new items pushed to you
  - Citation Alerts – keep on top of what your supervisor is publishing (and who is citing it!), and who is citing your papers
  - Easy export to RefWorks or similar reference management software
- See video tutorials by database providers for more detail
- May offer additional workshops in 2021 which will cover individual databases/platforms (and extra features)

Many other databases are available

Suggested approach

- Use biggest and most comprehensive databases first and see what you get

- Then move off into smaller or more specialised databases to find research papers from subject specific sources

✓ Use Scopus and/or Web of Science for most topics (Westlaw, Lexis & Hein Online for Law; Medline for Medicine and Medical Sciences)

✓ Use Primo > Find Databases to help identify these

Pick’n’Mix databases

- Many specialised databases are hosted on supplier platforms (search interfaces): Examples:
  - ProQuest (wide subject range)
  - EBSCO (wide subject range)
  - Ovid (Medicine, Medical, Psychology)
  - Clarivate = Web of Science (Core Collection + specialised others)
- Single platform databases include:
  - JSTOR
  - OnePetro
  - Reaxys

Each platform, and each independent database, applies its own search rules – check the handout in MyAberdeen, or the Help screens in each database

Anthropology Plus (EBSCO)

19??

Anthropology Plus brings together into one resource the highly respected Anthropological Literature from Harvard University and Anthropological Index, Royal Anthropological Institute from the UK. Anthropology Plus provides extensive worldwide indexing of journal articles, reports, commentaries, edited works, and obituaries in the fields of social, cultural, physical, biological, and linguistic anthropology, ethnology, archaeology, folklore, material culture, and interdisciplinary studies. The index offers excellent coverage of all core periodicals in the field in addition to local and lesser-known journals. Coverage is from the late 19th century to the present.

Available Online >

British Education Index (EBSCO)

19??

The British Education Index database provides bibliographic references to hundreds of British and selected European English-language periodicals in the field of education and training. Monographic, report and conference literature is limited, but increasing - full text links are provided to selected European education conferences. There are also thousands of records for UK theses. Content ranges from early years education to the education of older adults, including coverage of relevant training and management literature.

Available Online >

IBSS - International Bibliography of the Social Sciences (ProQuest)

19??

International Bibliography of the Social Sciences (IBSS) focuses on the four core social science disciplines: anthropology, economics, politics and sociology. The database also covers interdisciplinary subjects and supporting subjects ranging from

DATABASE

MEDLINE (Ovid)

19??

Produced by the US National Library of Medicine, the MEDLINE database is widely recognised as the premier source for bibliographic and abstract coverage of biomedical literature. There is a focus on clinical medicine and biomedical literature, including pathology, surgery and all clinical medical specialities. MEDLINE encompasses information from Index Medicus, Index to Dental Literature, and International Nursing, as well as other sources of coverage in the areas of allied health, biological and physical sciences, humanities and information science as they relate to medicine and health care, communication disorders, population biology, and reproductive biology. Millions of records from thousands of journals are indexed, plus selected monographs of congresses and symposia (1976-1981). Abstracts are included for most records.

Available Online >

Top

View Online

Details

Send to

Links

View Online

Full text availability

MEDLINE (Ovid)

Link through to the Ovid platform where Medline and other medical/health databases reside

My Account My PayPerView

Search Journals Multimedia My Workspace

Select Resource(s) to search:

- All Resources
  - Journals@Ovid Full Text February 03, 2020
  - Your Journals@Ovid
  - PsycARTICLES Full Text
  - EBM Reviews - ACP Journal Club 1991 to January 2020
  - EBM Reviews - Cochrane Central Register of Controlled Trials December 2019
  - EBM Reviews - Cochrane Database of Systematic Reviews 2005 to January 29, 2020
  - EBM Reviews - Cochrane Clinical Answers January 2020
  - EBM Reviews - Cochrane Methodology Register 3rd Quarter 2012
  - EBM Reviews - Database of Abstracts of Reviews of Effects 1st Quarter 2016
  - EBM Reviews - Health Technology Assessment 4th Quarter 2016
  - EBM Reviews - NHS Economic Evaluation Database 1st Quarter 2016
  - EBM Reviews Full Text - Cochrane DSR, ACP Journal Club, CCA, and DARE
  - All EBM Reviews - Cochrane DSR, ACP Journal Club, DARE, CCA, CCTR, CMR, HTA, and NHSEED

OK Add Group Delete Group

TIP: we recommend use of Ovid Medline (not Pubmed)

Many entries for Medline – click on the entry for the year range you require

Access from on- and off-campus

Remote access to resources – covered in Part 1

To access our electronic books, journals and databases you must prove that you are a student from University of Aberdeen (= authentication)

- Several authentication/login methods used by our suppliers
  - Use **Primo > Find Databases** route for reliable access
  - **Shibboleth/Institution login** works on and off campus – for most databases. (A very small number require use of VDI)
  - Virtual Desktop Infrastructure (VDI) – makes your personal PC look as if it is a classroom PC. Access to classroom software…
    - **Using the VDI is essential if you are off campus and want to access classroom specific software**
  - Toolkit (Remote Access module) and Library guides available

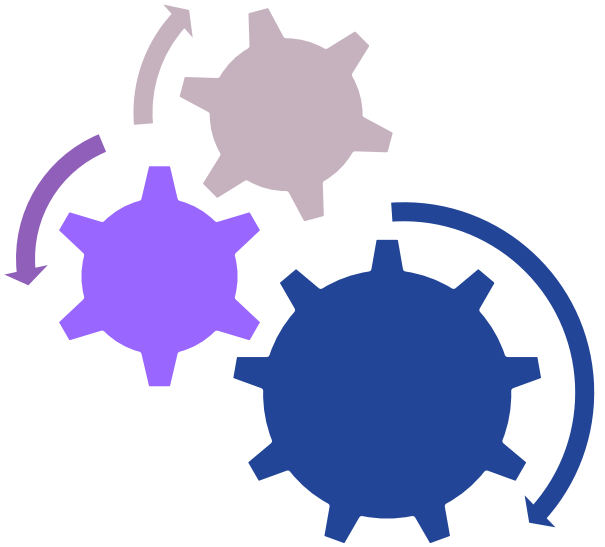
Finishing off…

Why use databases?

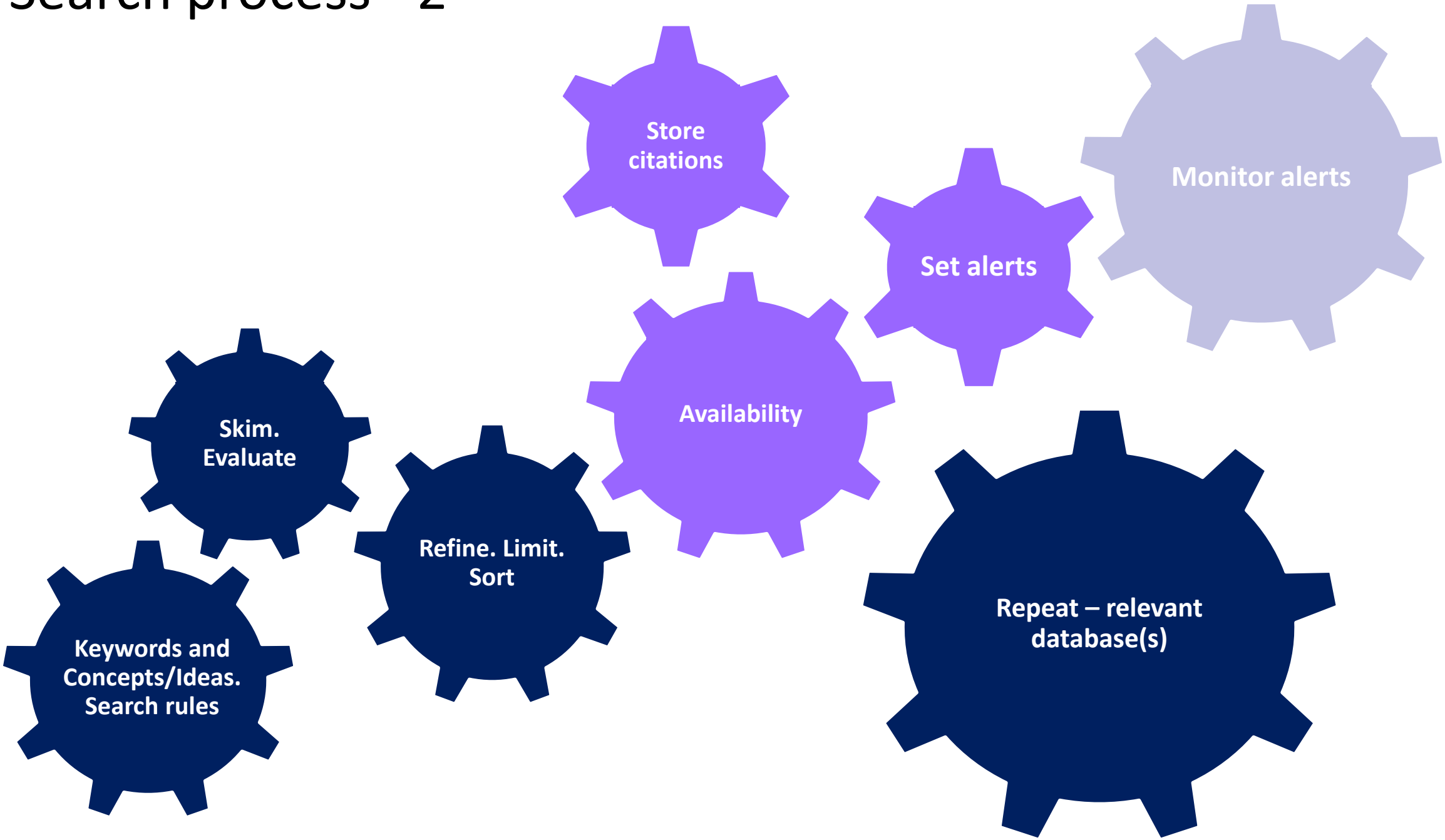
- **Essential** that you use research information in support of your research reading
  - Academic databases contain information about research published in journals, at seminars and conferences
  - Databases offer powerful searching, sorting, displaying and alerting features
  - If we could get by using just Google and Google Scholar we wouldn't spend >£300,000 each year on databases
- Most effective way to find out about published academic research is to search across academic databases
  - Time-saving features, e.g. personal accounts to save lists and complex search strategies, run saved searches, "push" features from Alerts
  - Analytical options (not covered in this workshop)

Databases – search process

- Plan your search, check search rules
- Link to relevant database (use Primo – Find Databases for this, not Google!)
- Try a quick/simple search – any results?
- Improve your search using your search plan/matrix
  - Remember to apply search rules correctly – each database may have own rules
- View and Evaluate results
  - Skim titles and abstracts
  - Check keywords used in relevant papers
  - Refine, limit, sort results
- Check availability – full text, paper format, not held
- Record/Manage your results
- Repeat in other relevant databases
- Critical Appraisal of found papers



Search process - 2



Complying with copyright – your responsibility

Basic allowances: 1 chapter from a book, 1 article from a journal

However, some publishers work with more generous restrictions within our online licences e.g.:

- ScienceDirect (Elsevier)
  - Books: can download multiple chapters
  - Journal articles: can download multiple papers from a relevant issue of a journal
- SpringerLink (Springer)
  - Books: can download complete book or multiple chapters
  - Journal articles: can download multiple papers from a relevant issue of a journal

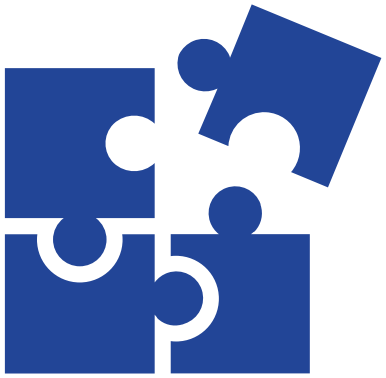
All publishers monitor downloads and will contact us if misuse, e.g. mass download occurs. Our advice is to take only those items that are required for personal study/research

Aim and outline

Feel confident that you can make effective use of databases to find **journal articles** and **research level material** to support your research

[Note – we covered books and other support materials in Part 2 of this series, and the basics – planning a search – in Part 1]

- Identify suitable and relevant databases
- Highlight powerful search features
- Introduce the idea of managing references



Library: Help & support - Subject contacts

- Arts & Humanities
  - Ewan Grant – e.grant@abdn.ac.uk
- Business & Law
  - Janet MacKay – j.i.mackay@abdn.ac.uk
- Dentistry, Medicine & Medical Sciences
  - Mel Bickerton – m.bickerton@abdn.ac.uk
- Education & Social Science
  - Claire Molloy - c.a.l.molloy@abdn.ac.uk
- Engineering, Life & Physical Sciences
  - Susan McCourt – s.mccourt@abdn.ac.uk
- General
  - Eleni Borompoka – eleni.boro@abdn.ac.uk

https://www.abdn.ac.uk/library/support/contacts-106.php#panel162

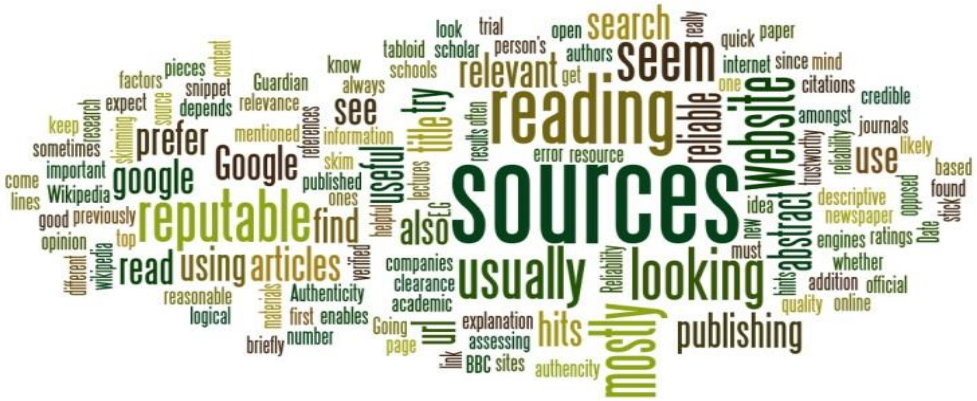
Going further – next year

- Library session – RefWorks (basics)
  - Reference management – RefWorks software
- Library induction
  - Monthly slots
  - Will be added to the course booking system
- Critical Appraisal of the Literature (Life & Physical Sciences)
  - To be arranged (a March or April date is likely)

All confirmed workshops are listed in the course booking system

Now…

- Any questions?
- Try things out for yourself
  - See the database worksheets in the Library folder in MyAberdeen
- Next slot (11.30 am) is a Q&A session. Will be guided by questions raised at the session



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