General Arc of a Search

1. Define information need, get vocabulary
2. Choose information source
3. Decide on your search strategy (keyword/author, citation analysis, related item search, etc.)
4. Construct your search syntax (choose keyword list and fields/limits to use or choose your source document for citation analysis or related article searches)
5. Refine your strategy (get more/less/different)
6. Repeat from #1 above, as needed

Information Sources of Interest to BME 235

See the **BME library page** at http://library.ucsc.edu/subjects/biomolecular for more links and information.

Format	Search Tool/ Info Source	Subject	Time Period	Other Features & Notes
Background Information and Vocabulary See BME library page, "Get Started" tab **Review Articles (aka Survey Articles)** can also be used for background info and vocabulary – see Journal Articles section below	Wikipedia	All subjects	Varies, updated continually	With Wikipedia have to be VERY CAREFUL about accuracy.
	Encyclopedia of Life Sciences	biology	varies	
	Online Encyclopedia of Genetics, Genomics, Proteomics and Bioinformatics	See title	varies	
	STATSnetBASE: Statistical Sciences Handbooks	statistics	Varies, updated yearly and selectively	This is a set of online books/handbooks that can all be searched full text from a single search box.

Journal Articles • **Review Articles** can also be used for background info and vocabulary – look for built in limits to isolate these from research articles in your results • All article databases have a time lag before articles appear – time varies • **No one database covers everything!** • See also the BME library page, "Articles" tab • See Using UC Elinks to get the full text of articles indexed by these tools (http://library.ucsc.edu/help/howto/use-uc-elinks)	Web of Science	All subjects	1900 – current	• Truncation symbol is * • Can limit to Review Articles • Has Related Articles link

	Google Scholar	All subjects	Dates unknown	• Google Scholar does not allow truncation. It will search for simple plurals automatically, but will not search other variations. You will need to use OR to combine variant forms of a word (eg: child OR childhood)
				• OR should be in capital letters (if not in caps does an "and" instead of an "or")
				• Exact phrases in quotes
				• No way to limit to Review Articles
				• Says searches patents too, but see separate Google Patent database below
				• Best for keyword searches
				• Has Related Articles link
				• NOT recommended for: [1]
				  ○ author searches due to faulty data
				  ○ Citation counts – data suspect
				  ○ Publication year - data suspect

	Scopus	All subjects (but more depth in sciences)	**1996** – current with references and full metadata 1823 – 1995 without full metadata or abstracts	• Truncation symbol is * • Can limit to Review Articles • Has Related Documents options (many) • Citation data from 1996 only
	BIOSIS	biology	1926 - current	• Truncation symbol is * • Can limit to Review Articles (Literature Review under Literature Types)
	PubMed	Medicine, genetics	1966 - current	• Truncation, Boolean (AND, OR, NOT) not recommended (turns off vocabulary help) • LOTS of auto vocabulary help – very smart • Check "Search Details" box on search results to see auto search enhancements • Can limit to Review Articles • Related Articles link is useful

[1] Jacso: Metadata Mega Mess in Google Scholar
Online Information Review 34 (1) 2010: 175-191.

Conference Articles There isn't necessarily a full-length published paper for every abstract published or presented at a conference or meeting. Some conference proceedings are published as special issues of journals. These may be indexed in the sources listed above for journal articles. Listed here are some search tools that index conference papers published outside of journals.	Google Scholar	All subjects	unknown	No way to limit to only conference articles
	Scopus	All subjects	(assume same dates as article coverage)	Scopus says it indexes 3.6 million conference papers (in all subjects) Can limit to only conference articles
	BIOSIS	Biology	1926 – current (assume same dates as article coverage)	BIOSIS says it indexes 165,000 conference papers from more than 1,500 meetings (biology only) Can limit to only conference articles on search results page under Literature Types under Refine Search
Theses/Dissertations (see How To Find Dissertations page with links at http://library.ucsc.edu/help/how to/find-ucsc-theses-and-dissertations)	Proquest Theses and Dissertations Database	All subjects	1637 – current (time lag for processing can be months)	International. Twenty-four page PDF previews of most post-1997 titles. Most post-1997 University of California titles (depending on authors' agreements concerning electronic distribution) are available in complete full-text PDF format. UCSC master's theses are currently not submitted and so not found here. Not all universities participate.
	CRUZCAT	All subjects	Varies (time lag for processing can be months)	UCSC theses/dissertations, plus any (very few) that were purchased individually and added to the collection. No electronic full text. Searched by title, author, keyword, or the **subject headings masters theses** or **academic dissertations**; most may also be searched by department.

Theses/Dissertations Continued	Google Scholar	varies		Links to the Proquest database above for full text. Cannot limit to thesis or dissertation. NOT recommended for: [2] ○ author searches due to faulty data ○ Citation counts – data suspect ○ Publication year - data suspect
Protocols (online) See also BME library page, "Protocols" tab For protocols published in other journals, see journal articles above, for those published as print books see books below.	Cold Spring Harbor Protocols	Molecular, cell and develop. biology; bioinformatics	2006 - current	CSHP is a journal published monthly.
	Current Protocols in Cell and Molecular Biology (series of 7 titles)	Cell biology, pharmacology, protein science, Stem cell biology, Molecular biology, cytometry	Varies by title	This is not a journal, more like a series of online books with periodic (although not regular) updates.
	Nature Protocols	biology and medicine	2006 – current	Nature Protocols is a journal published monthly.

[2] Jacso: Metadata Mega Mess in Google Scholar
Online Information Review 34 (1) 2010: 175-191.

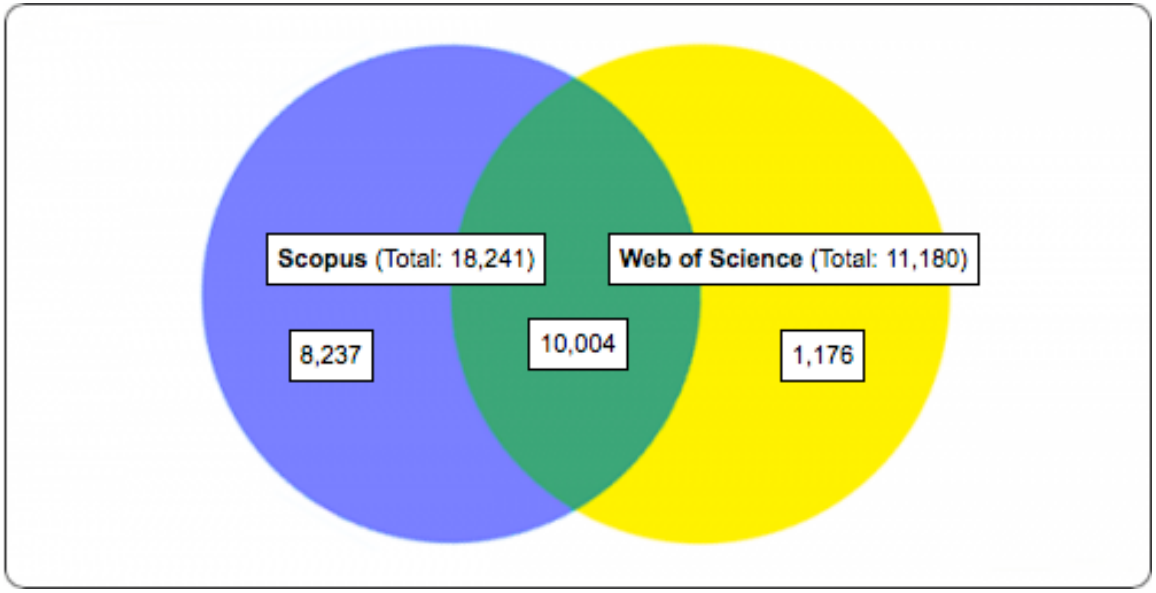
Patents	Google Patent Search http://www.google.com/patents	US patents	1790s - current	Covers the entire collection of issued patents and millions of patent applications made available by the United States Patent and Trademark Office. International patents are not included here. • No way to truncate words • Advanced Search allows limit to title, inventor or assignee which may be helpful • Assignees can be corporations
	Scopus	US and international patents	Unknown (don't know if patents are from same dates as articles)	23 million patents from: U.S. Patent and Trademark Office, European Patent Office, Japan Patent Office, World Intellectual Property, U.K. Intellectual Property Organization Office • Patents are tab on results page • Links to full text of patents not as good as Google Patent Search • No way to limit to inventor or assignee ("author" search may cover both?)
	BIOSIS	US patents in biology	Unknown (don't know if patents are from same dates as articles)	Approximately 16,000 references are to US patents – not sure how actively these are added

Books (print and online) UCSC is participating in scanning our books for Google Books. For UCSC scanned books that are still in copyright, the results are like a card catalog; they show you info about the book and, generally, a few snippets of text showing your search term in context. For UCSC scanned books that are out of copyright you can read and download the entire book. Google Books is still working on a settlement with publishers and others to be able to offer more full text.	CRUZCAT	UCSC owned materials		
	Melvyl	UC owned materials		
	Google Books http://books.google.com/	Scanned books from many sources, including UCSC		Not recommended for book subjects (classifications) or publication dates due to egregious errors caused by automated indexing[3], poor data sources and/or human error. Google Books Advanced Search page allows limit to books with "full view" only (entire book is online)
Websites (freely available)	Google	All subjects	varies	It's worth repeating here, not all websites are authoritative or accurate.
Government Information (online)	Science.gov http://www.science.gov	US Gov't Science Information	varies	Science.gov searches over 40 databases and over 2000 selected websites, offering 200 million pages of authoritative U.S. government science information, including research and development results.

[3] Google's Book Search: A Disaster for Scholars. Geoffrey Nunberg Chronicle of Higher Education. August 31, 2009. http://chronicle.com/article/Googles-Book-Search-A-Dis/48245/

Scopus vs. Web of Science – **size of circles not proportional to databases size**

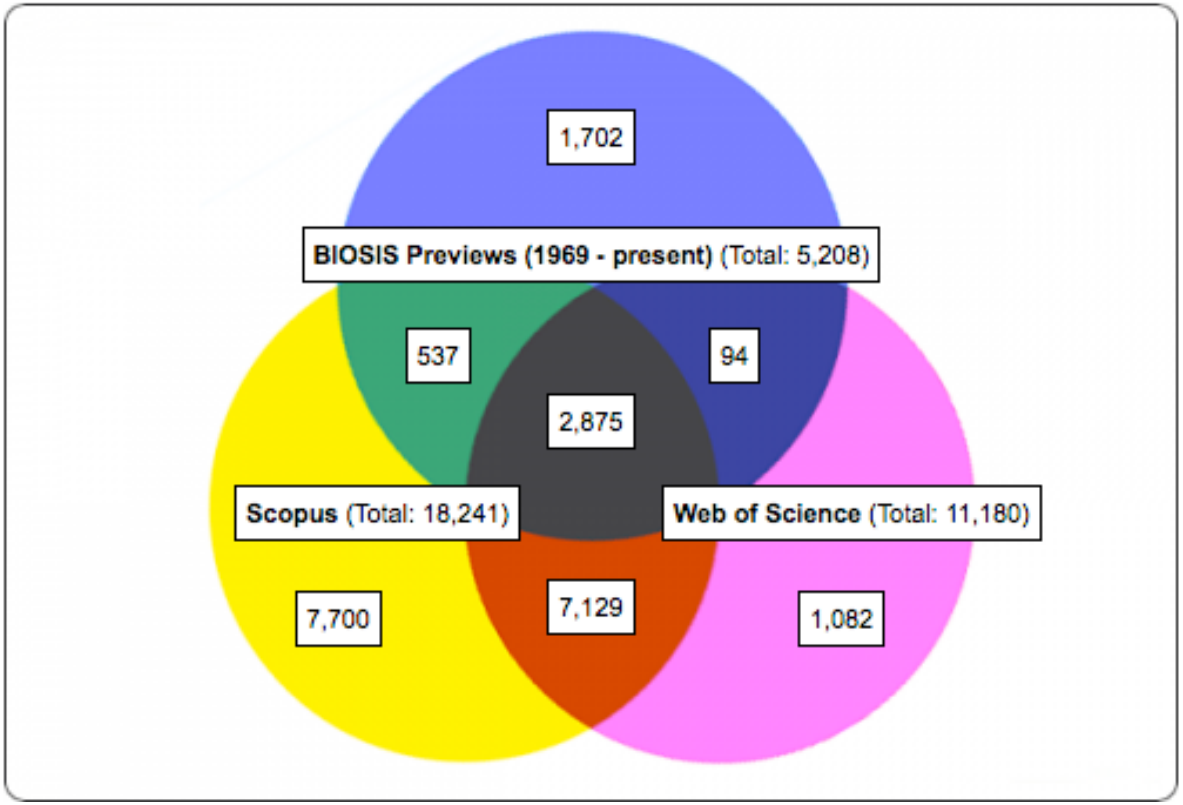
(The diagrams below are from JISC Academic Database Assessment Tool at http://www.jisc-adat.com/adat/home.pl)



- WOS's editorial philosophy has always been to index "The Best" (thus the invention of the Impact Factor), and not everything
- Scopus' philosophy appears to be more open in terms of what it will include in terms of perceived quality, as well as format
- Scopus indexes conference papers and patents, WOS does not cover patents, and conference papers cost extra (we did not buy)
- Both do citation analysis, both allow sorting of search results by times cited
- Scopus includes patents and conference papers in their citation analysis too
- Scopus has complete indexing (abstracts and metadata) for items from 1996 to present only (earlier citations have less complete records)

Note: Scopus is currently only a trial (through 2010). We would appreciate getting your feedback on it. It is expensive, should we buy it?

Scopus, Web of Science, and BIOSIS – size of circles not proportional to database size



- Note this compares BIOSIS from 1969 to present only, we have it from 1926 to present
- BIOSIS and WOS can be searched simultaneously and duplicates are not seen twice