Oceanography 401 -
Global Biogeochemical Systems

The Literature Search

Courtesy of Kevin Roddy, KCC
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Before the literature search...

Develop a research topic first

• Budget your search/retrieval time for:
  - changing your topic approach
  - modifying your topic statement
  - changing your topic entirely
Consult Information Specialists

Hamilton Library Science and Technology Department
http://www.hawaii.edu/sciref/
Sara Rutter - srutter@hawaii.edu
808 956-2540

• Specialists suggest effective search strategies to:
  - Select appropriate literature databases
  - Formulate effective search statements
  - Find information at UH and elsewhere

Formulate the Research Question

Narrow your topic by:

- **Time frame** – e.g., last five years, decade, millennium, etc.
- **Geographic location** – e.g., Western Pacific, California coast
- **Process, system, phenomena** – modeling/sampling, El Nino, coral environments, watersheds, volcanism
- **Relationship** – cause/effect, correlation, compare/contrast

Sample thesis:

“Effects of El Nino events on coral environments in the Northwest Hawaiian Islands, 1990-2001”
Abstract From late 1995 through early 2001, three major interannual climate events occurred in the tropical Pacific: the 1995-97 La Nina (LN), 1997-98 El Nino (EN), and 1998-2001 LN. We analyze atmospheric and upper oceanic anomalies in the northeast Pacific (NEP) during these events, and compare them to anomalies both elsewhere in the north and tropical Pacific, and to typical EN and LN anomaly patterns. The atmospheric and oceanic anomalies varied strongly on intraseasonal and interannual scales. During the 1995-97 LN and 1997-98 EN, the Northeast Pacific was dominated by negative SLP and cyclonic wind anomalies, and by upper ocean temperature and sea surface height (SSH) anomalies. The latter were positive along the North American west coast and in the NEP thermal anomaly pool (between Hawaii, Vancouver Island, and Baja California), and negative in the central north Pacific. This atmospheric/oceanic anomaly pattern is typical of EN. An eastward shift in the atmospheric teleconnection from east Asia created EN-like anomalies in the NEP during the 1995-97 LN, well before the 1997-98 EN had begun. The persistence of negative sea-level pressure (SLP) and cyclonic wind anomalies in the NEP during the 1997-98 EN intensified pre-existing upper oceanic anomalies. Atmospheric anomalies were shifted eastward during late 1996-early 1998, leading to a similar onshore shift of oceanic anomalies. This produced exceptionally strong positive upper ocean temperature and SSH anomalies along the west coast during the 1997-98 EN.

Keyword searching

- Go with specific keywords, technical terms and phrases

'biogeochemical' 'biomineralization'
'biosphere' 'wetlands'
"reef sediments" "aquatic ecosystems"

Combine a common keyword with other keywords and/or phrases

"aluminum cycling" and (ocean* or sea)
"marine ecosystems" and ocean?

Truncation operators (*) can save time:
* = any string of characters
? = any one character
Know database search syntax

The keyword search *marine ecosystems* could retrieve

- Records containing both words, in and out of context (AND)
- Records containing either word (OR)

- Most databases allow phrase searching using quotation marks
  "marine ecosystems"

Review database “help” for more information

Search by Keyword and Subject

Use one or more keywords to find useful books or articles, then look at the subjects/descriptors. **Search in Voyager:**

"aquatic ecosystems"
The biggest problem with Keyword searching is...

The keywords you select may not always retrieve results in the context that you want them!

Where to Search??

UHM Library on the Web
http://library.manoa.hawaii.edu/

Books and Media, select Hawai‘i Voyager
http://uhmanoa.lib.hawaii.edu:7008/vwebv/searchBasic?sk=manoa

For articles, select Electronic Resources
Journal article Databases at UH

UH “Electronic Resources – Databases and Indexes”

contains:

- Citation and full-text databases
- Individual subscriptions to online journals
- Requires authentication to access on and off-campus

E-Resources and Databases

Journal “abstract” databases (+/- full-text linking)

- **Cambridge Scientific Abstracts** -
  - Aquatic Sciences and Fisheries Abstracts (ASFA)
  - Meteorological & Geostrophysical Abstracts (MGA)
  - Oceanic Abstracts (OA)
  - "Deep indexing" categorizes data, variables and other content represented in tables, maps, photographs and other figures. It allows users to search and retrieve information from these resources typically embedded in scholarly publications. Applicable journal article records are enhanced with thumbnails showing the tables and figures contained with that article.

Full-text journal article database
- **ScienceDirect**

Full-text journals (library has individual subscriptions)
- Marine Environmental Research
- Limnology and Oceanography Bulletin
- More...
Use the library’s “Research Tools” for lots of additional help:
Synonyms & Broader/Related terms

Finding the right search terms in particular combinations is key

“Sediments” - too broad to be used alone

“Volcanogenic deposits” is a newer subject phrasedescriptor, replacing older terms like bottom deposits, marine deposits, and deep-sea deposits

Narrower terms for Carbonate Sediments include coccoliths, estuarine sediments, and manganese nodules

Citation vs. Full-Text databases

* Citation databases only contain information about an article: the author, article title, article length, publication date, subject descriptors that categorize the paper by topic, and usually an abstract that summarizes the article in one or two paragraphs.

* Full-text databases contain all of the above information along with the complete article in HTML or PDF formats, and references.

* Not all journal articles are available online.
Full-text is not always available because...

- Publisher “Embargoes” – licensing agreements that give a 1 year advantage to print subscription holders
- Library budgets struggle to keep up with information industry’s annual inflation rate and cannot always afford to purchase access
- Not all authors agree to make their publications available online

If what you want is not online...

- Use Open URL technology (“Find it”) to find the article
- Check Hawaii Voyager to see if UH subscribes to the print journal, then find it on library shelves
- Use InterLibrary Loan to request a photocopy of an article from a journal UH does not have
Google Scholar
http://scholar.google.com

Pros:
• Potentially useful
• Growing database but currently offers inconsistent full-text availability
• Many pdf’s of articles are linked

Cons:
• Inconsistent full-text availability
• Links often lead to sites you cannot access
• Cited reference service available but difficult to use

Sample search: sansone fj and “marine sediment”

Citation Searching
It is often useful to know who has cited the published work of a particular person
Use the Web of Science:

Enter author surname and initials, .e.g, mackenzie ft
Citing your Sources

As you search, keep a record of the resources you use for your ‘sources cited’ page.

You must always indicate the source of your information you use if it is not your own. It is unethical to do otherwise (plagiarism).

We will recommend several possible scientific formats to follow for parenthetical referencing (in your text) and bibliographic citations (at the end of your paper).

Help is available…

by email, telephone, or visit Hamilton Sci-Tech.

Subject specialists are available to help you at any stage of the research process

Hamilton Library’s Science and Technology department Web site:

http://www.hawaii.edu/sciref/

Sara Rutter is the subject specialist for SOEST