Before the literature search...

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 Reference Department
  http://guides.library.manoa.hawaii.edu/sciref/

  SOEST liaison – Myra Waddell
  waddellm@hawaii.edu | 956.2544

  Oceanography Library Resources:
  http://guides.library.manoa.hawaii.edu/oceanography

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

Formulate your 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”
What you’re looking for: Published Papers!

Example from Elsevier’s *ScienceDirect* database:

Abstract: From late 1995 through early 2001, three major interannual climate events occurred in the tropical Pacific: the 1995-97 La Niña (LN), 1997-98 El Niño (EN), and 1998-2001 LN. We analyze atmospheric and 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"

- The simple 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"
The biggest problem with Keyword Searching is...

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

Remember:

\( X \text{ and } Y \) - looks for both words anywhere in a source

“XY” - looks for only that exact sequence

See database “help” for more information

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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 specific subject phrase/descriptor, in contrast to broader terms like *bottom deposits, marine deposits, and deep-sea deposits*
Know Database Search Syntax

Combine keywords and/or phrases with **Boolean operators**:

- “marine ecosystems” **and** ocean?
- “aluminum cycling” **and** (ocean* **or** sea)

**Truncation operators** (*, ?) can save time:

- * = any string of characters
- ? = any one character

See database “help” for more information

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Search by Keywords and Subject

Search in “OneSearch Manoa” and then in specialized electronic databases....

![OneSearch Manoa Screenshot](image_url)
OneSearch Manoa

For Indexes, select Databases
http://guides.library.manoa.hawaii.edu/az.php

- Search by Subject or the name of the Index
- Accesses citation and full-text databases
- Requires authentication to access on and off-campus
Journal “abstract” databases (some with full-text links)
- Aquatic Sciences and Fisheries Abstracts (ASFA)
- Meteorological & Geoastrophysical Abstracts (MGA)
- Oceanic Abstracts (OA)

Deep indexing categorizes data other content represented in tables and figures. Applicable journal article records are enhanced with thumbnails showing the tables and figures contained with that article.

Full-text journal article database, e.g.
- ScienceDirect

Full-text journals (if library has subscriptions), e.g.
- Marine Environmental Research
- Limnology and Oceanography
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 format.

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

Author Searching

- It is often useful to look at all of the papers by a particular person
- Use the Web of Science (find in Databases) and use pull-down menu for Author Search:

Enter author surname and initials (e.g., f t mackenzie) or go to More Settings
Citation Searching

- It is often useful to know who has cited the published work of a particular person
- Use the Web of Science (find in Databases) and use pull-down menu for Cited Reference Search:
Use the library’s “Intro to Research Tools” for lots of additional help:
If what you want is not online from UHM ...

- Use Open URL technology ("Find it") to find the article

  1. Decomposition of four macrophytes in wetland sediments: Organic matter and nutrient decay and associated benthic processes
     Leppä, C., Balas, M., Vianello, P.
     Decomposition rates of Phragmites australis, Carex rostrata, Nuphar lutea, and Sabina nana sedges and benthic processes were measured from December 2003 to December 2004 in a shallow wetland (Fratelli da Coste, Northern Italy) by means of litter bags ...
     View Record | Full-Text Linking | Find it

- 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:
- Increasingly useful
- Growing database
- Many pdf’s of articles are linked
- Citations for a paper are linked!

Cons:
- Inconsistent full-text availability
- Links often lead to sites you cannot access
Citing your Sources

As you search, keep a record of the resources you use. You will use these for your ‘Sources Cited’ or ‘References’ pages.

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

Use a consistent scientific format 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://guides.library.hawaii.edu/sciref