III. Search the databases for journal articles and conference proceedings

1. What are databases?

In general, databases are organized collections of information. For example, the TSU library's online catalog would be considered an online database of books. There are also electronic periodical indexes which provide full-text articles. Some examples of these databases would be Ebscohost, ScienceDirect, and WileyInterscience. You can locate and access the library's databases online from our web page. The address is http://www.tnstate.edu/library. From this location, choose databases from the left-hand column. Depending on where you are, choose the appropriate link, i.e., on campus, off campus.

In order to use the databases properly, you should be able to understand the structure, type, coverage and attributes of them.

a. **Structure**

Databases are made up of records. Each record within a given database contains information. For example, the library's online catalog has a record for each book, journal, etc. owned by it. Each record contains information called **fields**. The fields for a book in the online catalog would include author, title, publisher, subject headings, etc. Periodical databases contain fields within records which give you the author, article title, volume number, date, year and page numbers.

b. **Type**

The nature of the information contained in a database determines its type. The main types of databases include **Bibliographic, Full-text, Numeric, Image, Audio** and **Mixed.**

1. **Bibliographic databases**

These provide a listing of sources. These sources will lead to information about a particular subject. Information contained in a bibliographic database will contain items such as author, title, publisher, date, volume number and page numbers. This information is usually referred to as a citation. A citation may include an abstract or summary. If you need to create bibliographies, this type of database is a good choice. An example of a record from a bibliographic database such as an online catalog may look like this:

Title: Origin and Evolution of Tropical Rain Forests / Robert J. Morley,

Call Number: SD247 .M67 1999

Publisher: Chichester; New York: Wiley, 1999

Subject Headings: Rain forests History
Forests and forestry—Tropics History
Paleobotany
Paleoecology
Rain forests
Plants-Evolution

Notes: Includes bibliographical references (p.) and index

ISBN: 0471983268

Item Holdings

Location – Shelf-TSU
Call Number—SD247 .M67 1999
Material—Book
Status—Available

Looking at the above citation, you can see that the information given is extensive. Basic information includes the author, title, publisher, year published and call number. In addition, you can obtain such items as subject headings, international standard book number (ISBN), and whether the book has a bibliography and/or illustrations. An important component to this citation gives you the location of the book and its availability.

Bibliographic indexes for journal articles provide citations and abstracts on your topic. Using the database Biosis as an example, you can search for citations on rainforests and plants. Before you execute your search, you have the option to limit your results by year, language, and document type. Your search results will be quite detailed. Each record will give you the article title, author, source (journal title), publishing date, and language. Following this basic information, a detailed abstract is given. You may choose to see the complete record. This gives you a detailed listing of subject headings.

2. Full-text Databases

These databases contain the complete text of publications. Unlike Biosis, ScienceDirect provides you with full-text articles, as well as citations with abstracts. These full-text citations also provide abstracts. It is a good idea to read these abstracts to make sure the article is appropriate for your topic. Like bibliographic databases, full-text databases allow you to limit your search.

3. Numeric Databases

These databases provide numeric data, including statistics, financial data census information, economic indicators and others. For example, FIS Online provides statistical information about companies and countries.

4. Image Databases

These are the databases that provide access to drawings, photos, animations, etc. For example, go to the library's virtual reference web page; choose the biology and chemistry resources link. From there choose the access excellence link. Within this web page you can access a visual library which can provide drawings of such subjects as meiosis and mutation of chromosomes.

c. Coverage

The selection of appropriate databases is an important factor in finding relevant information. A description of information covered by a database is usually found in the introductory screen.

1. Subject Area

Some databases cover a specific subject area or discipline such as engineering, psychology, nursing and others. The following databases provide information in biological sciences: Nature and its Subdivisions, ScienceDirect, Biosis, WileyInterScience, SpringerLink, and Wilson-Web (Applied Science and Technology Index. Others cover areas which are more general in nature or a mixture of subject areas. Some examples of these include Ebscohost (Acacemic Search Premier) and Infortrac (Academic ASAP) if you would like to see a listing of databases by subject, go to the library's home page (www.tnstate.edu) and choose the databases by subject link.

2. Type of Publication

Information found in a database may be limited to journal (periodical) citations. MIT Press is a good example of a journal database which gives you information in the life sciences. Other databases will contain both journal citations and chapters from books. Some examples of these include ScienceDirect, WilsonWeb-Applied Science and Technology Index and WileyInterscience. Most specialized databases contain scholarly or peer reviewed articles. General subject databases like Ebscohost (Academic Search Premier) and Infotrac (Academic ASAP) contain sources found in popular magazines such as Time, Sports

Illustrated, Ebony, etc. These databases also have sources found in scholarly journals. You may limit your search to peer reviewed or refereed publications. Databases differ in terms of frequency of updating materials, accessibility of the most recent periodical articles and the publication dates of the materials included. Sometimes publishers put an embargo on the availability of the recent issues. For example, while searching EBSCOHost, you may come across some periodicals that are not currently accessible. An embargo has been placed for the last two years. Another feature to consider in selecting a database is the availability of the materials. You may select a full-text database so that you can read the material immediately. Or you may choose a database that provides bibliographic information. If you are willing to wait, you may use a more comprehensive database that indexes a great number of items your library does not subscribe to but is able to obtain them through interlibrary loan.

d. Attributes

After you make the selection of the databases you would like to use, you will need to determine if the databases use controlled vocabulary and if the databases do field search or free-text indexing. In performing searches you will find that some databases use controlled vocabulary which is a specific list of subject terms in organizing the database contents by subject. If you want to retrieve relevant items or information, you should be aware of controlled vocabulary. For example, Biosis provides you with a controlled vocabulary. This is a list of subject headings you can use to retrieve the information you need. If you look under the word ecology you will have a choice of subject headings to choose from.

Most databases can be searched by subject (using controlled vocabulary) or they can be searched by keyword (using your own terms)

Some databases use field searching. This means that the search term you use is only found in specific fields. For example, if you are searching the Library's online catalog and you select the keyword search, your search will locate items with that specific search term in the title, subject or content fields. On the other hand, some databases use free text searching which means that the search term you have selected will locate items anywhere in a document or record. Because the term may be anywhere in the record, you will get false drops or irrelevant items. Some databases may give you the choice for field or free-text searching. Check the databases for this information before you begin your search.

2. Searching Databases

a Search Strategies

Your library provides access to over 101 databases. You can search these databases from any computer on campus as well as any computer in off-campus sites. In selecting the type of database that will provide appropriate and relevant articles, you may consider the following:

Subject discipline of your topic—specialized or multidisciplinary

Type of resources needed—basic sources, scholarly sources or professional/trade sources

Target audience – Is the research for a term paper, independent study, senior project, thesis or dissertation?

b. Biological Sciences Databases

Biosis Previews

Years Covered: 1990-Present

Relevancy: Life Sciences

Search Tips:

You need to use truncation(*) to search for words that begin with the same letters. For example, genom* retrieves the following words: genome, genomes, genomic, etc.

You can also use the wildcard symbol (?) as a substitute for one character or none. For example, using the name M?cdonald will find MacDonald or McDonald.

Biosis contains the following stopwords: an, and, by, for, from, of, the, to and with. When you conduct a search, Biosis will ignore these words if they are by themselves. Using quotation marks, you can search these words in a phrase. For example if you were researching natural selection, you would type in “selection of the fittest.”

MIT Press

Years Covered: Varies by journal titles. You may want to browse journals by subject or title to see the coverage for each journal.

Relevancy: Life Sciences

Truncation: *

Search Tips:

You can search this database by BROWSING the journals and/or by searching a phrase or phrases. For example, you can browse the MIT database by journals subscribed by your library. In this case you will have access to full-text articles. You may choose the format of the article by clicking next to RealPage, RealPage Plugin, PDF (full-document), PDF (page at a time). You can also browse by title, subject, publisher and LC Classification of the MIT journals. If you chose to browse all MIT Journals, you will only retrieve abstracts of articles that are not subscribed by your library. However, you may obtain these articlea through Interlibrary Loan.

You can retrieve information from this database by using the SEARCH mode. You can search for articles through combinations of authors, article titles and abstract keywords. To include the fulltext of the articles, please either check the Include Fulltext box, or select Fulltext from the drop down list of fields.

The following seven databases belong to the same family. Therefore, search tips and truncation symbols apply to all these databases. Because of this, search tips and truncation symbols will only be given for the Nature database.

Nature

Years Covered: 1997-present

Relevancy: Life Sciences

Truncation: (*)

Search Tips:

When searching for a particular article, try to be as specific as possible. Enter the minimum amount of information necessary to uniquely identify the article(s) required.

(+) (-) signs

Use a plus sign when your search term must appear in the search results. Use a minus sign to indicate undesirable term(s). Plus and minus signs can only be used when 'ANY of the words' is selected. Plus and minus are ignored if the 'ALL of the words' or 'the exact PHRASE' options are selected. Do not leave spaces between the plus or minus sign and the search term.

Quotation marks

Use quotation marks to find words that must be adjacent to each Each other. For example, the search "rainforest ecosystem" will find articles containing both words together.

Wildcards

The * character is used as the wildcard character. For example, searching for carbo* will retrieve carbon, carbonates, carbohydrate, and any word starting with carbo.

Nature Biotechnology

Years Covered: 1998-present

Relevancy: Agricultural Biotechnology, Engineering Biotechnology, Applied Immunology, Regenerative Medicine, Genetic Therapy

Nature Cell Biology

Years Covered: 1999-present

Relevancy: Cell Biology

Nature Genetics

Years Covered: 1998-present

Relevancy: Genetics

Nature Immunology

Years Covered: 2000-present

Relevancy: Immunology Research

Nature Medicine

Years Covered: 1998-present

Relevancy: Immunology Research

Nature Neuroscience

Years Covered: 1998-present

Relevancy: Biomedical Science

Nature Structural Biology

Years Covered: 1998-present

Relevancy: Neuroscience

ScienceDirect

Years Covered: Varies by journal titles. You may want to browse journals by title, and subject and publisher to find out the years covered. Usually the coverage is from the date the journal is published.

Relevancy: Biological Sciences, Microbiology and Immunology, Environmental Science, Biochemistry

Truncation: (!), (*), (**)

Search tips:

(!) Use this wildcard character to find root word plus all the words made by adding in letters to the end of it. For example, behave! will find behaviour, behavioural, behave.

(*) Use an asterisk to replace characters anywhere in a word, except the first character. Use one asterisk to each character you want to replace. For example, wom*n will find woman and women.

(*) Use an asterisk to hold a space for variations in spelling at any point in a word. For example, bernst**n will bring up the ei and the ie spelling of the name.

If you use (*) asterisks at the end of a word, they do not all have to be filled, but may find up to the specific number of characters. For example transplant** finds transplant, transplanted, and transplanter. Note that transplant** does not find transplantation or transplanting because only two wildcard characters are used. To find all the variations of transplant, use the (!) wildcard character.

To find a journal or publication, you can use the journal title finder search box, available when you click on journals on the navigation bar. Alternatively, you can browse the alphabetical journal list. The journal screen allows you different options for browsing the list. A drop down menu allows you to choose to view the entire journal list available on Sciencedirect (Subscribed (by your library) or Non-Subscribed (not subscribed by your library).

Quick Search – can be performed for an author, or a subject to interest. The search will look for any relevant results from abstracts, titles, authors and article keywords. Enter the search terms into the Quick Search bar beneath the main navigation bar. You can search all full-text sources, all journals, this journal, this issue, this article, etc. You may use the Boolean syntax to produce precise results. It is better to stay away from words that are too general, such as “cell” or “behaviour” as they will retrieve too many results.

Basic and Advanced Searching—will perform accurate or detailed search queries, improve the relevancy of the retrieved articles or save your search queries. With this type of search, you can search across all journals, a subset of journals (by subject), abstracts, databases, Scirus, etc. Additionally, you can specify to search for your phrase within the abstract, title, author, references, or full-text of the content. You can also limit your search by date or the journal volume, issue and page number.

Search within results—will enable you to refine your search. You can run a new search that is restricted to the list of articles you are already viewing. You can perform an unlimited number of refinements, each time restricting your search to only the list of results you already have. Each stage of refinement appears in the search history, allowing you to return to any stage of your search at any time.

Search using Scirus—You can search across the entire web for additional scientific information via the Scirus tab on the search form. This search complements the content available on ScienceDirect. A Basic Search under rainforest retrieves 1,047 articles, and 42,086 web results. Using the advanced search option will narrow down your results.

SpringerLink

Years Covered: Varies with title

Relevancy: Life Sciences

Truncation: (*) asterisk substitutes any character from none to infinite number

(?) question mark substitutes exactly one character

Search Tips:

Use quotation marks around keywords if you want to retrieve articles containing the exact phrase. For example, searching the term "rainforest near conservation" will literally look for the complete phrase rainforest near conservation. If you type the same query without quotation marks you will retrieve all occurrences of the phrase rainforest and conservation.

Use OR to find alternative spellings of words. For example, type behavior or behaviour to find all instances of the either spelling of the word behavior.

Wiley Interscience

Years Covered: Varies with journal

Relevancy: Life Sciences

Truncation: *

Search Tips:

Search allows you to locate articles in a goal-directed manner by restricting the scope of the search to individual fields of an article. Results are displayed whenever exact matches are found for search terms. Searching is supported for the following fields:

Search all text
Article title
Section title
Author
Keywords
DIO
Tables
Figures

Basic Search allows you to:

Select the desired field in the pull-down menu

Specify the search expression in the text field next to the menu. To search using word roots insert the asterisk(*). For example, environment* will find results for environments, environmentally, etc.

Advanced Search allows you to:

Find characterization of materials contents. Specify by entering any combination of article title, section title, author, keywords, DOI, table or figure.

Select the desired field in the first pull-down menu.

Specify the search expression in the text field next to the menu. To search using word roots insert the asterisk(*).

You can specify up to five search expressions, which are combined using AND or OR. For example you can search for all articles in which the title contains “rainforests” AND is authored by “Jackson”. As a short cut for OR you can use the comma. For example the search expressions gene, therapy and gene OR therapy returns items that contain either gene or therapy.

To limit the search to specific subject areas, select the appropriate button from the scroll down menu in the Journals in Subject Category

To limit the search to a specific date of online postings or to a range of dates, click the appropriate button and compete your date selections using the drop-down menus rovided.

Click on Begin Search button:

To search for variants on an author’s name, separate the parts of the author’s name with AND. For example to find Joel F. Liebman, enter Joel AND Liebman or Liebman AND Joel.

In the search results section you will find the relevancy value of the articles. The relevancy value is a number between .01 (partial match) and 1.00 (complete match)

Reference Works/Encyclopedias section allows you to peruse the alphabetically ordered listing of the encyclopedia’s articles by clicking on the articles button on the encyclopedia’s homepage or the A-Z button on the navigation bars.

Article content links allow you to follow other links that help to navigate to points within the article section or to a different article. They include:

Equations—displayed as “equation (1)”, the link shows image equation where it appears in the article.

Cross references—displayed as “(See Name of Article)”, the link opens the selected article in the window.

WilsonWeb-Applied Science and Technology

Years covered: 1983-Present

Relevancy: Atmospheric Sciences, Marine Technology

Truncation Symbol: *

Search tips:

You may use Basic Search by selecting one or more databases, selecting the Natural Language Search or Boolean Search. Enter a word or phrase and click start.
To use Natural Language Search, enter a phrase or complete sentence. For example,

What is the condition of rainforests?

Retrieves 88,813 records

To use Search/Boolean Operators, enter a constructed search string. For example,

Rainforests and ecology

Retrieves 63 records

In Boolean Searches the operators and, or, not and in do not require brackets. To eliminate stemming (variation of a word) include “” quotation marks around the word such as “painting”. Paint or painted will not be included in your results.

You can use a wildcard ? question mark as a substitute for a single alphanumeric character. It is very useful when you are unsure of a spelling. For example,

Einst??n retrieves the correct spelling of Einstein

Advanced Search enables you to enter a word or phrase in the first text entry area and make the appropriate selection form the as: drop-down list. (All-Smart Search). When using all-Smart Search query do not use truncation symbols or other special characters.

The search results will automatically show the most relevant articles at the top of the set when the sort by relevance option has been selected. To formulate a search within a specific field, select and, or not and enter additional terms in the secondary area. You can also use the third entry area for a more complex search. For example,

Rainforests _____All-smart Search

AND

Ecology_____All smart Search

Sorted by relevance will retrieve 83 records.

There are several general databases that will provide information in the area of Biological Sciences. They include: EBSCOHostAcademic Search Premier, InfoTrac Academic ASAP, CINAHL, PubMed.

Locating Print and Electronic Journal Articles

The quickest way to locate and access journals is via full-text electronic, print and microform journal holdings. This link will provide you either with accessibility to the journals you need, or it will give you a list of databases that include the journals you need.