

Basic Guide to Research

This packet is designed to help you with the basic steps used in researching a topic, whatever your interest or major. You should learn these basic steps and apply them to whatever database or information system you choose, seeking help from the University Libraries as needed.

1. **How To Get Started** Learning what steps to take *BEFORE* you begin your research, specifically before you begin using a computerized database, will make the research process much easier.
2. **How To Search Computerized Databases** Knowing and applying a few simple concepts can mean the difference between success and frustration.
3. **How To Find Information On The Web** Understanding some of the realities of the Web will help you search it more effectively.
4. **How To Find Books** Searching the University Libraries' Library Catalog should be your first step in locating information about your topic
5. **How To Find Articles** Searching online databases for articles and then locating them in the University Libraries are important skills you will need to develop for locating important sources for your assignment.
6. **How To Tell If You Have Found Good Information** Knowing what questions to ask about a source you found is an important step in judging whether the information is appropriate for your assignment.
7. **Glossary** Learning some common research and library terms will help to demystify the process.

HOW TO GET STARTED

The ability to express your topic in a researchable way is the first step in developing a successful search strategy. Simply stating, “I need information about global warming for an English paper” is not enough; it’s like going to the doctor and saying, “OUCH! It hurts.” But where does it hurt? How long has it been hurting? Just as important as your topic are what types of sources you use, how much information you need, and when the project is due. Write out the answers to the following questions as a way to start expressing your information need. Grammar is not as important right now as it is to **BE SPECIFIC**.

- ◆ What is my topic?
- ◆ How long is the assignment, paper, presentation, etc.?
Time needed to do the research for a 5-page paper is different than for a 10-page paper
- ◆ What kinds of sources may I use or NOT use for the assignment?
The kinds of sources needed indicates the types of databases you will use
- ◆ How many sources am I required to use?
The length of the paper and number of sources helps to give you a picture of how much time you may need to complete the research
- ◆ When is the assignment due?
The closer you are to your due date, the fewer options you have for getting information

Here is an example that answers these questions. Notice the responses are specific.

I’m writing a five to seven-page paper on the politics related to global warming. I need to use at least five sources, three of which have to be scholarly. The paper is due in four weeks.

Choosing Keywords

Computers search databases in specific ways using keywords. Keywords are terms that have specific meaning to your topic. Your initial keywords are taken directly from the sentence(s) you write about your topic in response to the questions above. When choosing your keywords, **BE SELECTIVE**.

In our example, **politics** and **global warming** are the keywords that define the topic. Notice that a keyword is not always just one word. (Read about Phrase in the next section.)

Brainstorming Synonyms And Alternative Keywords

Not every database uses the same words you use to describe your topic. You may have to try synonyms or alternate terms (broader or narrow) to find information. Brainstorm synonyms and alternative words before you start searching so you are ready to adjust your search if you do not get good results with your first keywords. Now you can **BE CREATIVE**.

Alternatives to global warming could be **ozone layer** or **greenhouse effect**.

Alternative to politics could be **government** or **legislation**

You can use the Search Strategy Worksheet found at the end of this guide to help you get started with this process.

HOW TO SEARCH A COMPUTERIZED DATABASE

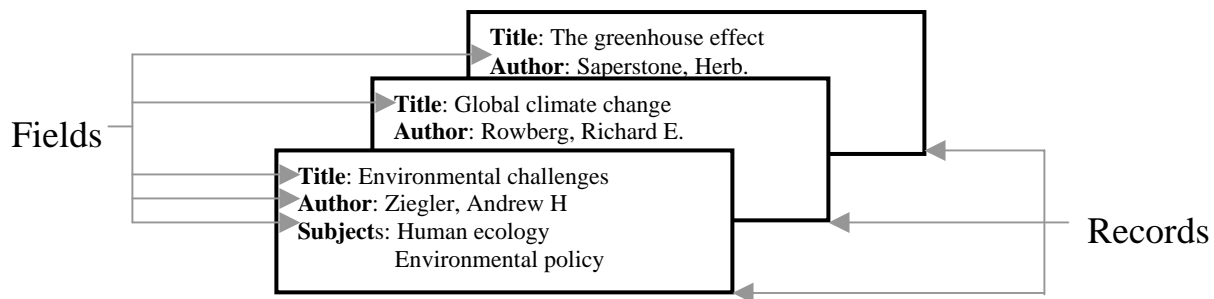
To effectively search a computerized database for information, whether it is a library catalog, article database, or the Web, you have to use the right instructions.

What A Computerized Database Is

A computerized database is an electronic filing cabinet. The beauty of the computerized part is you can search the content of all the “folders” in the filing cabinet in seconds or less.

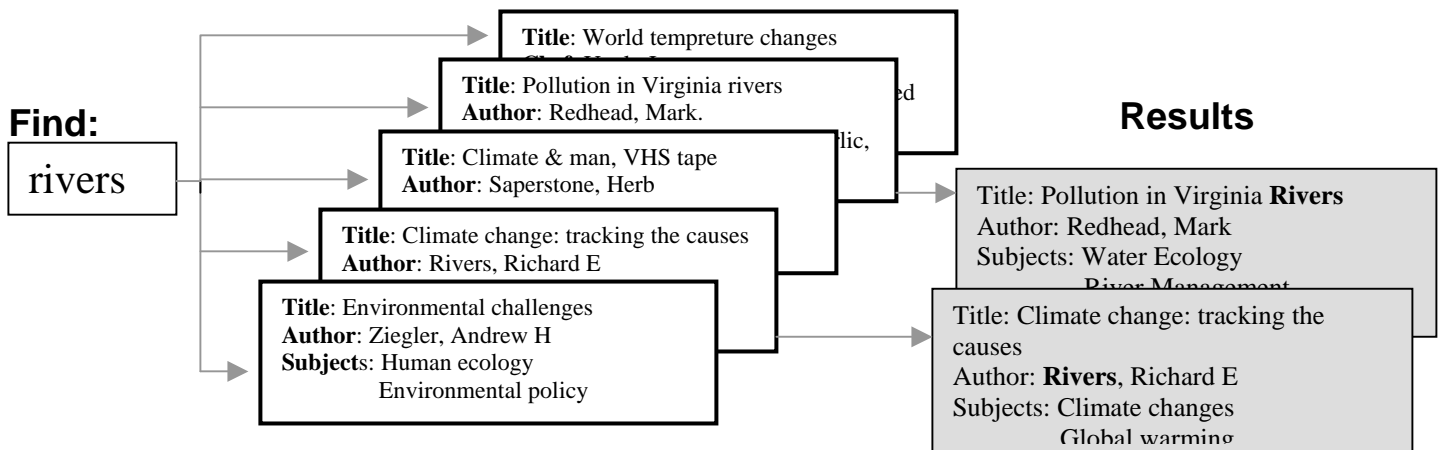
The folders in a computerized database are called **records**. Each record identifies something specific, such as a book, an article, a music CD, or a Web site.

Each record has descriptive **fields**, such as, the author of a book, the ingredients of a recipe, the songs on a CD, or the title of a magazine in which an article is found.



How A Computer Searches A Database

Words mean nothing to a computer. **COMPUTERS ARE FAST, BUT THEY CANNOT THINK!** When you type words in a database search window, the computer searches the database only for the **occurrence** of the word(s) as they appear in the fields in each record. If the word(s) appear, that record becomes part of your results list. Searching for the word rivers in a database of environmental resources will give you records with rivers in any field even if the material has nothing to do with rivers.



How You Begin A Computerized Database Search

There are dozens of different commands and instructions you can give a computerized database to find information. This guide gives you the first and the most important instructions to begin finding information. You use these instructions with your keywords. How these instructions are applied will differ depending on the database you are using. Look in the HELP screens of the database you are using for these terms: **Boolean** (sometimes called **Logical Operators**), **Truncation** (sometimes called **Wildcard**) and **Phrase** (sometimes called **Proximity** or **Adjacency**)

Phrase

Keywords may not be just single words. A keyword may be two or more words strung together that express a mental picture you have (i.e. chili paste or climate change). Many times you have to tell this to the computer in your search statement. Otherwise it might search for each word separately giving you rather wacky results (**chili** dog with anchovy **paste**, or the **change** in the political **climate**). Quotation marks are common phrase instructions for many databases, and are used when searching Mason's Library Catalog. Remember to look in HELP for phrase or proximity or adjacency for directions.

Example	Results
"global warming"	You will get the record containing the sentence –The greatest threat to mankind is <u>global warming</u> !
	You will not get the record containing the sentence-The Prime Minister is <u>warming</u> up to the idea of a <u>global</u> economy.

Truncation

Use truncation to find all the occurrences of a keyword plus all of its possible word endings. Because computers are so literal, if you type in the keyword cause, you will not see records containing the word causes because the additional "s" at the end of the word makes it a completely different word. The question mark is the way Mason's Library Catalog truncates a keyword. Other databases may use a different symbol, or may not allow truncation at all. Remember to look in HELP for truncation or wildcard for directions.

Example	Results
caus?	Computer will search for all these possibilities: <u>causable</u> , <u>causality</u> , <u>cause</u> , <u>causes</u> , <u>causing</u> , <u>caustic</u> , etc.

Boolean operator AND

Use the operator AND to combine your keywords to narrow your results. This operator tells the computer that all the keyword terms you typed in the search box **MUST** be in a record for that record to be part of your results. Some databases use the plus sign before each word (+ "climate change" + caus?) to perform the AND operation. Once again, remember to look in HELP for Boolean, or logical operators for directions.

Example	Results
"climate change" and caus?	Computer will display only those records that have both the phrase " <u>climate change</u> " AND any words that begin with <u>caus</u> .

HOW TO FIND INFORMATION ON THE WEB

You probably already know that the World Wide Web can be a wonderful place to find information. But the simple fact that it is “World Wide” means the amount of information you can access is almost inconceivable. According to the Web Characterization Project (OCLC Online Computer Library Center, Inc., Office of Research, <http://wcp.oclc.org>) in 2002 there were over 3 Billion public Web sites, each averaging over 400 separate Web pages.

Definitions

Web Page: A document formatted using HTML for display on the World Wide Web.

Web Site: A distinct Web location that is created and maintained by individuals or organizations to disseminate information. A Web site contains numerous Web pages.

Online database: A computerized database that is accessed using the World Wide Web for its connection. Online databases display the results of your search as a Web page created by the computer in response to your search.

Surface Web and Deep Web

Basically, there are two parts to the World Wide Web: the public, or Surface Web and the Deep Web. Understanding the difference will make your search for information more efficient.

Surface Web

Anyone in the world with a connection (through services like AOL) can put information on the surface Web for you to view. There is no control over what can be put on the surface Web. This puts to burden on you to evaluate surface Web information for its authority, bias, and reliability. Therefore, the surface Web is usually not the best place to find information for your assignments.

Information on the surface Web is located by using any number of search services like altavista and Google. While no two services are the same, there is one very important constant among them all: **NONE OF THEM LOOK ON THE WEB WHEN YOU ENTER A SEARCH.** The Web is simply too big and unorganized (over 7 million new Web pages per day) to be searched. Each service maintains a database that represents that services’ memory of what is out there on the Web. These databases are created and maintained with computer programs called spiders and robots that “harvest” Web pages and then dump them into a database. Therefore, surface Web information is not organized for efficient access.

Deep Web

The deep Web consists of information kept in databases created by companies and organizations that charge fees for access. The World Wide Web is used to access these databases, but only for individuals with authorization. Deep Web databases cannot be searched using surface Web search services. To be in a deep Web database, information is selected by people, not just “harvested” by a spider or robot. Information in a deep Web database is organized for efficient access. As a George Mason student, you have access to nearly 400 deep Web databases selected specifically to give you information for your assignments. Your access to the deep Web, from on or off campus, is through the University Libraries home page at <http://library.gmu.edu>.

HOW TO FIND BOOKS

Because so much information is available on the Web, many students assume they can find and print all they need from a computer. This assumption simply is not true. The University Libraries buy books, journals and access to databases produced by experts and reputable publishers specifically to help Mason students do their research. You need to learn how to find what the library owns related to your topic.

The library has a computerized database, called **Library Catalog**, of all the books and other materials owned by the five libraries (Prince William, Arlington, Johnson Center, Fenwick and Law Library) at Mason.

Finding The Library Catalog

Mason's Library Catalog is available from the University Libraries' homepage at <http://library.gmu.edu/>. Follow the Library Catalog links to this page.



Database Name: George Mason University

Simple Search **Builder Search** Course Reserve

Find:

Quick Limit:
None

Find Results in:
Keyword
Title
Author (Last First)
Call Number
Subject
Journal Title
Search ISBN

15 records per page Search Reset Set Limits

Searching The Library Catalog

There are a number of ways to search for books and other materials using the Library Catalog. If you know specifically what you want (the movie *Blair Witch Project*, the CD *Licensed to Ill* by the Beastie Boys, the novel *Moby Dick* by Herman Melville) you can search by Title or Author. If you don't have a specific title or author and want to see what the library may have, use the Keyword search option with your keywords.

Simple Search **Guided Keyword** Course Reserve

Find: "global warming" and caus? ← truncation

Quick Limit: None ← phrase Boolean operator

Find Results in: Keyword, Title, Author (Last First), Call Number, Subject, Journal Title, Search ISBN

15 records per page Search Reset

Locating Material In The Library

Assuming your search is accurate, you will see a display of materials owned by the University Libraries. Three very important pieces of information you need from the display in order to actually get material in the library are **Location**, **Call Number**, and **Status**.

#	Title Long	Library	Date
1	<u>Climate change : challenging the conventional wisdom / edited by Julian Morris ; with contributions by Robert Balling ... [et al] ; and with a foreword by Deepak Lal.</u>	GM	1997
	Title has multiple holdings		
2	Climate change [videorecording] : science vs. politics.	GM	1997
	Library Location: Johnson Center Call Number: QC981.8.C5 Videotapes C5125 1997	Status: Not Charged	
3	Decision making in a glass house : mass media, public opinion, and American and European foreign policy in the 21st century /edited by Brigitte L. Nacos, Robert Y. Shapiro, and Pierangelo Isernia.	GM	2000
	Library Location: Fenwick Stacks Call Number: P96.P83 D43 2000	Status: Not Charged	

Location: which of the four Mason Libraries have the item

Call Number: the item's specific "address" on the shelf

Status: the item's availability. Charged: item is checked out
Not Charged: item should be on the shelf.

HOW TO FIND ARTICLES

The University Libraries buys access to databases designed specifically to help you find articles on your topic. Some (about ¼) contain full text articles, but most do not because of copyright. You will have to search the **Library Catalog** to see if the University Libraries own the magazine(s) that contains your articles. It is also important for you to learn the difference between the two main types of articles, scholarly and popular/general interest.

Types Of Records In An Article Database (Remember records and fields from page 2)

Three types of records that identify or reference an article in a database are Citation, Abstract, and Full Text.

Citation: Provides just enough information for you to find the item (book, article, speech, etc.)

Abstracts: Provides a citation plus a brief summary of the item

Full Text: Provides the citation as well as the entire text of the item

Types Of Articles

The two most common types of articles are Scholarly and Popular/General interest. Here are some general characteristics of each type of article. If you are unclear about the appropriateness of a source for your assignment, ask your instructor.

Scholarly articles (also called Refereed or Peer Reviewed)

- ◆ Submitted for review by the author(s), who do not work for the publication
- ◆ Written by experts, to be read by other experts, using the specific language of the discipline
- ◆ Have a bibliography, usually at the end of the article
- ◆ Have few or no pictures or advertising in the publication
- ◆ Appear in journals published by professional or educational organizations

Popular/General Interest articles

- ◆ Written by writers employed by the publication
- ◆ Written using language that is easy to read and appeals to a mass audience
- ◆ Usually do not have bibliographies
- ◆ Has advertising and a format that appeals to a diverse population
- ◆ Published by commercial publishers

Selecting An Article Database

The University Libraries subscribe to nearly 400 different computerized databases, in all subject areas, that identify articles. These databases are accessed from the University Libraries' Web site (<http://library.gmu.edu/>) by clicking on **Databases**. The databases are grouped by broad subject areas and are also listed alphabetically. For those using this guide in English 100/101 you should use the **Expanded Academic ASAP** and **ProQuest General Reference**. These databases are multidisciplinary, have references to both scholarly and popular/general interest articles, and contain all three types of records.

HOW TO TELL IF YOU HAVE FOUND GOOD INFORMATION

Just because you can get information from a computer -- and the Web is a great example -- doesn't mean the information is authoritative, unbiased and reliable. You have to evaluate the information you find according to your topic and the requirements of your assignment. Evaluating information may be the most important part of your research.

Begin evaluating the information you find using these criteria:

Authority

Is the producer of the information (author, publisher, organization, etc.) knowledgeable or an expert?

What to look for:

Evidence of authoritative credentials like advanced education degrees (MA or Ph.D.) or national/state/local certification. Biographical or other notes that contain information about the author or organization. Ask yourself if the author or organization or publication has a well-known reputation.

Example:

An article written about the effects of pollution on global warming may be by someone with a master's degree in environmental sciences working for the World Wildlife Fund, or a 6th grader whose paper on global warming was posted on the Web to commemorate Earth Day.

Bias

Why was this information produced and made available? Have the views of the author or organization affected the objectivity of gathering, producing, and presenting the information?

What to look for:

Statements of the purpose of the author, organization, publisher, etc. Legal requirements for producing and making information available. Funding sources.

Example:

Views of gun control will have an impact on the information available from the National Rifle Association as opposed to the office of a Senator who is a strong supporter of gun legislation.

Reliability

What methods were used to gather or produce the information?

What to look for:

Statements about the methods used to collect or present the information. Bibliographies of literature from other sources.

Example:

A survey of 25 George Mason Students may not reliably represent the views of the entire student body.

Glossary Of Library Research Terms

Here are some common terms you will come across frequently while doing research.

- Boolean Operators:** Words used with keywords and phrases that give the computer instructions for searching a database.
- Charged:** Item is “checked out” of the library. There will be an accompanying due date when the item is to be returned.
- Discharged:** Item has just been returned to the library but may not be on the shelf yet.
- Internet:** Literally millions of computers worldwide that are connected to each other.
- Journal:** Type of periodical most often associated with scholarly articles and focuses on a specific subject.
- Keyword:** Words that succinctly describe the topic being researched. (See also Phrase.)
- Library Catalog:** Computerized database that identifies books, periodicals, and other material the library owns.
- Magazine:** Popular/General interest periodical
- Not Charged:** Item is not checked out and should be available.
- Periodicals:** Generic term used to describe many types of resources published in a sequence (daily, monthly, yearly, etc.) and include journals and magazines.
- Phrase:** Two or more words searched together in the exact order entered in the search box.
- Stacks:** Bookshelves that hold materials available to be checked out of the library.
- Truncation:** Instructions given to a computer to search all the possible word endings in a database.
- World Wide Web:** A subset of the Internet that consists of a system of computers that support a specific computer language or protocol called HTML (short for Hypertext Markup Language). This language format allows you to jump, or link, to other documents on the Internet that are in the same format. This format also supports audio and video files.