Finding and Managing Scientific Information
Svetla Baykoucheva (sbaykouc@umd.edu)

Research Guide: http://lib.guides.umd.edu/chemistryresources
Click on the tab “Course Materials” to find a specific course.

White Memorial Chemistry Library: http://www.lib.umd.edu/chemistry
UMD Libraries Web page: http://www.lib.umd.edu

Finding scientific literature

- Google Scholar
- PubMed
- SciFinder (create an account using your @umd.edu email address)
- Web of Science

Finding information about properties of chemical compounds

- ChemSpider
- PubChem
- CRC Handbook of Chemistry and Physics
- Knovel
- Merck index
- Reaxys
- SciFinder
Difference between Research articles and Review articles:

Research articles, called primary sources, provide direct or firsthand evidence about an experiment, event, object, person, or work of art and are. They have a Materials & Methods section (it could be called just “Methods” or “Experimental”) that describes how the experiments were performed. Review articles are secondary sources, as they describe, discuss, interpret, comment upon, analyze, evaluate, summarize, and process primary sources. They usually DO NOT have an experimental section.

Additional information about finding and manage scientific information:


Scientific ethics

What constitutes scientific misconduct?

- Prior publication: Presented at a conference or published elsewhere
- Plagiarism: Can take different forms—completely or partially copying text without acknowledging the primary source, borrowing ideas and fragments of text without quotation, and (very often) self-plagiarism
- Omitting citations: Not disclosing that there was another similar work already published.
- Submitting to multiple journals at the same time
- Data or image fabrication, falsification, or manipulation: Making up, changing, or omitting data (e.g. manipulating gels)
- Authorship ethics: The author should have made a significant contribution
- Conflict of interest (e.g., funded by a company to perform the research and not disclosing this fact)

Retraction Watch monitors articles that have been withdrawn from scientific journals because of unethical behavior of authors.

For more information about scientific ethics, see this book chapter:

Bibliographic Management Programs:  EndNote Online / Mendeley / Zotero

Using EndNote Online (Formerly, EndNote Web)

Use Internet Explorer for EndNote Online

Create an account for EndNote Online: www.myendnoteweb.com
Use the Word plugin to format bibliographies and cite references while you write: Cite While You Write™ Plug-In, create a formatted bibliography, format a paper

Downloading EndNote Plug-in for Word and the Capture Reference button
Importing references downloaded from a database into EndNote
Inserting Citations in a Word document: Cite While You Write (CWYW)

Creating a bibliography with EndNote Online

Once you have selected a style, it will show up in this pull-down menu.

Select a bibliographic style (e.g., one of the ACS styles and click on “Copy to Favorites”).

The selected style will be included in your Favorites list.

Select a group with references from your EndNote Library.

Select a bibliographic style (for example, ACS styles).

Type a keyword here.

Select one or more citations and click on the “Insert” button.

Point the cursor to where you want to insert a citation and click on “Insert Citation.”
Searching SciFinder

SciFinder is published by the Chemical Abstracts Service (CAS) and gives you access to current high-quality scientific information in chemistry and related sciences. Content at a Glance: searching MEDLINE and Chemical Abstracts (CAPLUS) individually or at the same time.

You must first create an account using your @umd.edu email address to use the web version of SciFinder.

- Choose “Explore References” to search for literature and select the “concept” option for retrieving the references.
- Since SciFinder executes searches simultaneously in the Chemical Abstracts database (CAPLUS) and MEDLINE, there will be some duplicate references in the retrieved set (there is some overlap in the journal coverage by the two databases). Before proceeding further with the search, remove these duplicates (select "Remove duplicates" from the Tools menu).

SciFinder is a platform that provides access to the following databases:

- CAPLUS (the Chemical Abstracts database, which has patents, books, dissertations, in addition to journal articles; it also has the largest database for property information of chemical compounds); and
- MEDLINE (known also as PubMed) (covers the biomedical literature)
- CAS REGISTRY (Choose “Explore Substances” to search for property information)
- CAS REACT (Choose “Explore Reactions” to search for reactions)
- MARPAT
- CHEMLIST
- CHEMCATS

For more details on performing literature searches in SciFinder, see this article:

Additional reading:


SciFinder training videos
Export references from SciFinder and save them on your computer (use the Tagged format); then import them in EndNote as shown on pp. 3-4

Finding properties of chemical compounds in SciFinder

Properties of chemical compounds can be searched by chemical name, molecular formula, CAS registry Number, property, or chemical structure.
Knovel's collection includes over 2,000 leading reference works and databases from over 70 leading technical publishers and professional societies. Content collection includes material properties, process and design information, best practices, equations and formulations for specific industries and engineering disciplines such as Chemical and Biomolecular Engineering and Materials Science and Engineering.
Finding properties of chemical compounds in Reaxys

Reaxys is a web-based platform based on three chemical information databases. It is an extensive repository of experimentally validated data, including structures, reactions and physical properties. Reaxys allows searching for substances by chemical name or by structure, as well as for single and multi-step reactions. Searches can also be performed for citations, which are indexed from the primary organic, inorganic and organometallic chemistry journal literature going back to 1772, as well as from the patent literature.

Click on “New Reaxys”

The Merck Index

The Merck Index is a major reference work for scientists and professionals looking for authoritative information on chemicals, drugs and biologicals. The Merck index Online is an online platform featuring text and structure search functionality and a user-friendly interface.