

Outline for Comprehensive Science Literature Reviews

Define and Refine Your Topic

- Choose a Research Topic of Interest; Think Critically About It; Formulate a Title.
- Start a General Review (browse textbooks, encyclopedias, wikipedia, web pages)
- Identify the Major Ideas & Issues & Researchers
- Define the Time Period (i.e. how far back do you need to search the literature)
- Formulate Keywords = Main Concepts & Related Terms (use thesauri, subject headings, etc.)
- Craft Search Statements for Indexes/Databases/Catalogs (utilize Boolean operators, truncation, parentheses, proximity operators, phrase searching); Record your methods.
- Narrow or Broaden your Topic as appropriate based on literature search results

Search All Relevant Sources Systematically & Efficiently

- Current Awareness Sources
 - Identify & Browse Current Issues of the Most Relevant Journals for your topic
 - Setup Alerts (Email; RSS) – Journal Table of Contents; Indexes; Web Pages
 - Grant Databases (e.g. NSF; NIH; CRIS; Science Accelerator)
 - Conference Presentations (e.g. Geological Society of America, etc.)
 - Internet Discussion Groups, Listservs, Blogs, Twitter, Social Networking Sites, etc.
 - Newspaper Indexes (e.g. Lexis Nexis Academic; Google News; individual newspapers)
- Journal Indexes/ Databases & Ejournal Packages – find citations of articles and full articles
- Bibliographies – from relevant journal articles, books, etc. (cycle backwards in time)
- Citation Indexes –e.g. Web of Science/ Scopus; Google Scholar (cycle forwards in time by identifying citing articles; find the most cited articles on your topic)
- Specialized Data (e.g. chemical/ molecular name & structure; genetic sequence, patents; etc.)
- Book Catalogs (find books, government docs, media materials, theses/ dissertations, etc.)
 - Your Local Library Catalog; Other Libraries – i.e. WorldCat; Google Books
- Library Web Scale Discovery Search (e.g. NCSU Libraries, Dartmouth College Library, etc.)
- Web Search Engines (e.g. Google, Yahoo, Bing, Scirus, Science.gov, etc.) and
 - General Web Directories (e.g. BUBL, Google Directory, InfoMine, Yahoo Directory)
- Experts (Scientists: Scholars: Librarians, etc.) @ Institutions/ Organizations/ Agencies/

Find & Evaluate & Manage the Information

- Analyze Your Database Search Results (citations) & Revise/ Improve Your Search Statement (find the best balance/ tradeoff between comprehensiveness and precision)
- Understand the Scholarly/ Scientific Research & Peer Review Publication Process
- Evaluate the Type of Information Found and its Relevance to your Topic (Determine the Source; Credentials of the Author; Objectivity, Accuracy, Currency, etc.)
- Retrieve the Information Source from the Database or Library or ILL/ Document Delivery
- Critically Read and Analyze Articles; Review Methods, Data, Statistics, etc.
- Gather, Store, and Annotate relevant Citations (e.g. Refworks, Endnote Web, Zotero, Mendeley)

Synthesize the Literature and Integrate it Into Your Writing

- Choose the Appropriate Type and Style of Publication/ Presentation
- Move Back and Forth between Writing and further Literature Research