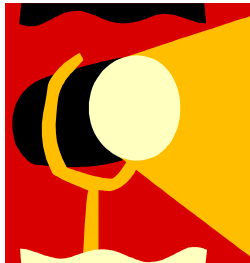


# AIHA Internet Resources Digest

*Supporting Access to High Quality Online Resources*

February 2016

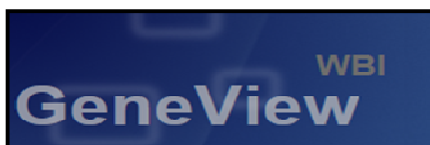


## Spotlight on: MEDICAL INTERNET SEARCH TOOLS

The vast amount of medical information available on the Internet is not useful unless you know how to find it. This issue lists some less known search engines that help to find very specific types of information (on genes, proteins, medical images, contact information of medical experts, on rare diseases, thesis and dissertations), or use different ways of searching and presenting search results (results are returned as a graph, using text similarity searching, performing statistical analysis of results, and other).

### Search Engines

#### GeneView



GeneView is an online tool that lets you search scientific articles using keywords and identifiers for specific biological entities. With this tool one can search for PubMed abstracts and PubMed Central open access full-texts. Compared to tools like PubMed, it has the following advanced features:

- recognizing several biological entities in each article, including all genes and SNPs. Such objects are highlighted in the text.
- one can sort the results of a query according to what an articles contains: (a) the number of genes or (b) the number of SNPs.

Each user you can define his/her own set of interesting genes and filter search results according to that list.

<http://bc3.informatik.hu-berlin.de/>

#### BioText Search Engine



Developed as part of the BioText project at the University of California, Berkeley, the BioText Search Engine is a freely available Web-based application that provides biologists with new ways to access the scientific literature. One can search in 300 free full-

text journals. Three views allow different types of browsing:

- *Abstracts (List View)*: Allows users to search over titles, abstracts and authors. Returns a list of abstracts showing the figures associated with each article.
- *Captions (List View)*: Allows users to search over captions. Returns a list of captions and their figures.
- *Captions (Grid View)*: Allows users to search over captions. Returns figures and truncated captions in a grid arrangement.

<http://biosearch.berkeley.edu/>

### Chilibot



Chilibot searches PubMed database (abstracts) about specific relationships between

**proteins, genes, or keywords**. The results are returned as a graph. In contrast to the PubMed interface where results are organized based on articles, Chilibot directly presents the key information user is seeking, i.e. sentences containing both of the terms. These sentences are organized into different relationship types based on linguistic analysis of the text.

Chilibot is especially suited to batch process large number of terms (e.g. microarray results). The relationships are summarized into as a graph, with links to sentences describing the relationships, as well as the terms themselves. Many advanced options are available, including color coding the terms, editing the synonyms (e.g. gene/protein names), and context restricted search. It also automatically suggests new hypotheses based on information in the literature.

<http://www.chilibot.net/>

### HelioBLAST



HelioBLAST is a free service provided by HelioText. The HelioBLAST text similarity engine finds text records that are similar to the submitted query searching in Medline. This service is provided to demonstrate what can be done using text similarity searching. HelioBLAST can be customized to search a particular database or multiple ones; and proprietary databases can be created for individual clients.

<http://helioblast.heliotext.com/>

### ExpertScape



The purpose of the site is to provide names and contact information for physicians listed as noted experts in their field (as a result of your search you get lists of top experts, top institutions and top cities in the USA and around the world, as well as their articles).

The entries are based on the number of publications the physician has authored that have been indexed in MEDLINE. The information for each medical condition is listed alphabetically. Expertscape objectively ranks people and institutions by their expertise in more than 26,000 biomedical topics.

<http://www.expertscape.com/>

### GoldMiner



Search- ing 516,000 radiology images from 780 peer-reviewed journals. This free web-based system allows viewers to search for images by findings, anatomy, imaging technique, and patient age and sex.

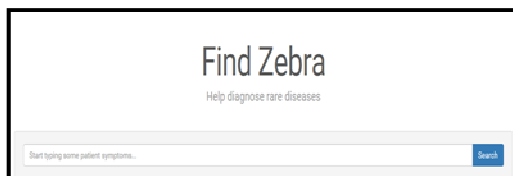
“Unlike most internet search engines, ARRS GoldMiner understands medical vocabulary.

It uses sophisticated techniques from the U.S. National Library of Medicine (part of NIH) to discover medical concepts in free-text figure captions, and uses that information to quickly retrieve relevant images. ARRS GoldMiner recognizes abbreviations, synonyms, and kinds of diseases.”

GoldMiner searches by both concepts and keywords. “Click on the small “thumbnail” image to open a full-size image on the original journal’s web site. You can link to the full text of the article as well — just click on the article’s name. “

<http://goldminer.arrs.org/home.php>

### FindZebra

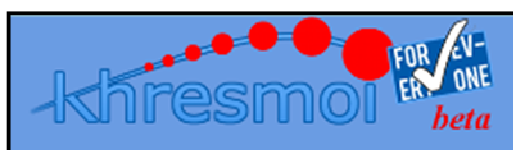


FindZebra is a tool that helps to find diagnosis of rare diseases. It uses freely available high quality curated information on rare diseases and open source information retrieval software (Apache Lucene Solr) tailored to the problem.

Traditional search engines need to be optimized to help diagnose rare diseases from symptoms. This is where FindZebra comes in: it is a specialized search based on symptoms. Enter clinical and phenotype information, symptoms and findings and FindZebra returns potential diseases and genes involved. FindZebra.com contains more than 36,000 articles on approximately 7,000 diseases.

<http://www.findzebra.com/>

### Khresmoi for Everyone



Khresmoi for Everyone is a search engine for online health information. It was developed in the framework of a project funded by the European Union from 2010 to 2014. Twelve organizations across Europe took part in the development of Khresmoi for Everyone. The major contribution in the development was done by the Health on the Net Foundation (Switzerland), which manages and supports the web site.

The Health on the Net Foundation is known to be a world pioneer and leader in promoting quality of online health information. Its most important innovation is the HONcode. The HONcode is a set of eight principles to guide and motivate web masters to apply an ethical and transparent approach to content production and presentation. Compliance with the HONcode is recognized by the HONcode certification. Once a web site is compliant with the HONcode, it is certified and holds a HONcode seal that remains valid for two years.

Khresmoi for Everyone contains all currently certified web sites (approximately 8.300 web sites in 25 languages in 2013). As HONcode certification is a voluntary process, not all health web sites of high quality and transparency hold a HONcode seal. To overcome this obstacle they selected such web sites to be included in Khresmoi for Everyone. They meet high standards of quality and transparency set by HONcode and largely come from authoritative sources of several countries: Austria, the Czech Republic, France, Germany, Ireland, Spain, Switzerland and the UK.

<http://everyone.khresmoi.eu/hon-search/>

### XplorMed



XplorMed is a word relationship search engine for PubMed. It searches for articles based on word semantics and relationships. The XplorMed server allows you to explore a set of abstracts derived from a MEDLINE search.

The system gives you the main associations between the words in groups of abstracts. Then, you can select a subset of your abstracts based on selected groups of related words and iterate your analysis on them.

"XplorMed is recommended for cases in which you do not know exactly what are you expecting to find. Your interests may be modified by the results obtained, or you may want to enquire new questions as the analysis develops. Also, the results may suggest you additional words that should be used to expand your query in MEDLINE (e.g., unexpected abbreviations of a protein name, or synonyms of a disease)."

<http://xplormed.ogic.ca/>

### iHop (information Hyperlinked Over Proteins)



A network of concurring genes and proteins extends through the scientific literature touching on phenotypes, pathologies and gene function. *iHOP* provides this network as a natural way of accessing millions of PubMed abstracts. By using genes and proteins as hyperlinks between sentences and abstracts, the information in PubMed can be converted into one navigable resource, bringing all advantages of the Internet to scientific literature research.

<http://www.ihop-net.org/UniPub/iHOP/>

### BioMedLib Search Engine

## BioMedLib Search Engine

BioMedLib Review uses the 'semantic technology'. For example, when you choose 'gene or genome' from the drop-down list, BMLR searches for over 500,000 unique gene names occurring in publications. This greatly simplifies the search, plus makes it possible to search for the 'class of all genes', which we call a 'semantic type'. There are over one hundred semantic types (however not all of them are equally useful for search).

These are some of the types of questions you can answer by using BioMedLib Review:

- "What are the new treatment options for breast cancer?"
- "What are the genes that are discovered for Parkinson's in the past two years?"
- "What are the diseases that could cause tinnitus (noises in ears)?"

<http://bmlsearch.com/>

### Global Electronic Thesis and Dissertation Search

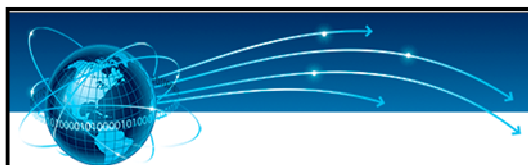


Central portal to search and locate Electronic Theses and Dissertations (ETDs) from

universities around the world. This new service was launched by The Networked Digital Library of Theses and Dissertations (NDLTD) in July 2015. Search the 4,334,592 electronic theses and dissertations contained in the NDLTD archive. Once researchers have located the ETDs of interest, they are able to access the original documents from the originating institutions.

<http://search.ndltd.org/>

### WorldWideScience.org



WorldWideScience.org is a global science gateway—accelerating scientific discovery and progress through a multilateral partnership to enable federated searching of national and international scientific databases and portals.

Multilingual WorldWideScience.org provides real-time searching and translation of globally-dispersed multilingual scientific literature.

<http://worldwidescience.org/>

### Articles and Blogs

**Thomas P., Starlinger J., Vowinkel A., et al. GeneView: A comprehensive semantic search engine for PubMed.** Nucleic Acids Research, 2012.

GeneView is built upon a comprehensively annotated version of PubMed abstracts and openly available PubMed Central full texts. Free full-text.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3394277/>

**Wang L, Wang J, Wang M, Li Y, Liang Y, Xu D. Using Internet Search Engines to Obtain Medical Information: A Comparative Study.** J Med Internet Res 2012;14(3):e74



„We applied usability testing as a software engineering technique and a standard industry practice to compare the four major search engines (Google, Yahoo!, Bing, and Ask.com) in obtaining health and medical information. All six standard websites were among the top 30 in search results of all four search engines. Google had the best search validity (in terms of whether a website could be opened), followed by Bing, Ask.com, and Yahoo!.

The search results highly overlapped between the search engines, and the overlap between any two search engines was about half or more. On the other hand, each search engine emphasized various types of content differently. In terms of user satisfaction analysis, volunteer users scored Bing the highest for its usefulness, followed by Yahoo!, Google, and Ask.com.“

<http://www.jmir.org/2012/3/e74/>

### 25 Search Engines Every Medical Professional Should Bookmark



<http://www.nursingdegree.net/blog/25/25-search-engines-every-medical-professional-should-bookmark>

**Kahn CE Jr, Thao C. GoldMiner: a radiology image search engine.** AJR Am J Roentgenol. 2007 Jun;188(6):1475-8

The GoldMiner search engine provides easy, rapid access to a large library of images and their associated text, and it is freely available for use on the Internet. Free full text.

<http://www.ajronline.org/cgi/content/full/188/6/1475>

**De-Arteaga M, Egel I, Do B, Rubin D, et al. Comparing image search behaviour in the ARRS GoldMiner search engine and a clinical PACS/RIS.** J Biomed Inform. 2015 Aug;56:57-64

A comparison between a hospital PACS/RIS search and a web system for searching images of the biomedical literature is the goal of this paper. Objectives are to identify similarities and differences in search behaviour of the two systems, which could then be used to optimize existing systems and build new search engines

[http://www.j-biomed-inform.com/article/S1532-0464\(15\)00087-8/abstract](http://www.j-biomed-inform.com/article/S1532-0464(15)00087-8/abstract)

**Haddaway NR, Collins AM, Coughlin D, et al. The Role of Google Scholar in Evidence Reviews and Its Applicability to Grey Literature Searching.** PLoS One. 2015 Sep 17;10(9):e0138237. eCollection 2015.

The authors conclude that whilst Google Scholar can find much grey literature and specific, known studies, it should not be used alone for systematic review searches. Rather, it forms a powerful addition to other traditional search methods. Free full-text

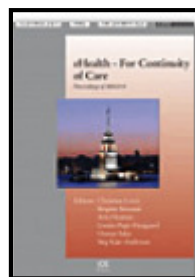
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0138237>

**Corrigan CP. Search engine secrets: Finding reliable health information.** Nursing. 2015 Sep;45(9):1-3.

Knowing if the retrieved information is reliable can be challenging. In order to advise patients accurately, nurses must first learn how to determine the credibility of a health information website and become familiar with high-quality resources. This article provides guidance for assessing Internet health information with quick-look tips to determine a website's validity. Free full-text

[http://journals.lww.com/nursing/Fulltext/2015/09000/Search\\_engine\\_secrets\\_\\_Finding\\_reliable\\_health.23.aspx](http://journals.lww.com/nursing/Fulltext/2015/09000/Search_engine_secrets__Finding_reliable_health.23.aspx)

**Samwald M, Hanbury A. An open-source, mobile-friendly search engine for public medical knowledge.** Stud Health Technol Inform. 2014;205:358-62.



„To complement the capabilities of currently available web search engines we developed FindMeEvidence, an open-source, mobile-friendly medical search engine. In a preliminary evaluation, the quality of results from FindMeEvidence proved to be competitive with those from TRIP Database, an established, closed-source search engine for evidence-based medicine.“ Free full-text

<http://ebooks.iospress.nl/publication/37508>

<http://www.slideshare.net/matthiassamwald/samwald-mie204-presentation-find-meevidence>

## AIHA Internet Resources Digest Forthcoming Topics [Provisional]

- Adolescent Health
- Hospital Information Systems

## AIHA Related Resources

Internet Resources Digest, December 2013  
- EBM Search Tools  
[http://www.healthconnect-intl.org/IRD\\_dec13.html](http://www.healthconnect-intl.org/IRD_dec13.html)

## About the AIHA Internet Resources Digest

The *Internet Resources Digest* — previously called the *Health Resources Digest* — is distributed free of charge as a service of the American International Health Alliance's Knowledge Management Program thanks to the generous support of the American people through the US President's Emergency Plan for AIDS Relief (PEPFAR). This Program is implemented through AIHA's HIV/AIDS Twinning Center Program, which is funded through a cooperative agreement with the US Department of Health and Human Services, Health Resources and Services Administration (HRSA).

The *Internet Resources Digest* is compiled by Irina Ibraghimova, PhD, Library and Information Management Specialist HealthConnect International ([www.healthconnect-intl.org](http://www.healthconnect-intl.org)). The contents are the responsibility of AIHA and do not necessarily reflect the views of PEPFAR, HRSA, or the United States Government.

If you have a suggestion for a Digest topic, or would like to contribute information about Internet resources, please contact [ibra\[at\]zadar.net](mailto:ibra[at]zadar.net).

Back issues of the *Internet Resources Digest* for 2011-2016 are archived at [www.healthconnectintl.org/resources.html](http://www.healthconnectintl.org/resources.html).

If this document is to be redistributed or posted on another Web site, we request that it be posted in full without alteration, and credit is given to the AIHA as the source of the document.

