INTRODUCTION

to Medical Information Retrieval & Management

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Course Information

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- **Office hours**: M To Fr or via email
- **Class meets on Fridays**: 2:30-4:55 PM in Room 609, Library Building or by arrangement
Course activities

• The organization of this course is somewhat different than that of other courses.
• It is classically a method course.
• In addition, lectures often take the form of slide demonstrations.
• The result is that, on many occasions, computer operating and lecture will be combined into a single learning experience.
Course Schedule

• Lectures: 11 times
• Exercises: 4 times
• Presentations: 2 times, 10mins/group
  – Divided into groups, 4-5 persons/group
  – Each group has to select a search topic in order to finish a retrieval report finally
Grades and Grading

• Your participation in this course, measuring both your efforts and accomplishments, will be evaluated on the percentage of points earned on exam(60%), retrieval report(20%), Presentation(5%) and attendance(15%).

• Call the roll randomly
• Exam: 3 class hrs
• Library Homepage
  http://lib.smu.edu.cn/tsgredoOLD/english/index.asp
Welcome to the Medical Library

We hope you will find all the services you need during your clinical years, and that these pages will prove a useful starting point in identifying the services that the Library provides.

The Library is always eager to get feedback regarding what we are doing right, and what we could improve upon - so please feel free to contact us.
Attendance

• Given your status as upper division students, I expect you to make every effort to attend all of the scheduled class meetings.

• My colleagues and I will be teaching this course using a large number of illustrations via slide shows, which includes some material not found in the readings.
INTRODUCTION

to Medical Information Retrieval & Management

- Overview of Information
- Types of Information
- Types of Information Tools
- Key Concepts
- Search Models
- Learn to Use Database
- Bio-Medical Information Retrieval from Net
Overview of Information
Purposes of Information Searching

• Identify extent and quality of work already carried out in the subject area
• Identify key contacts
• Avoid duplication!
Manifestations of information explosion

- Many phenomena in scientific information grow exponentially:
  - number of classical (paper) publications,
  - number of e-documents,
  - number of web servers,
  - usage of web information tools...
Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information

T. S. Eliot
(1888-1965)
History of Scientific Information

20th century

• 50’s: Specialised information centres and services, secondary bibliographic publications had grown quickly.

• 60’s: Introduction of computers to scientific information. First bibliographic databases.
20th century

- 70’s: On-line access to bibliographic databases. Successful experiments in automatic indexing.
- 80’s: Bibliographic databases on CD-ROMs.
- 90’s and later: Access to information is independent of its position. Networks prevail.
The role of scientific information

• Information tools alleviate the consequences of information explosion.

• Approx. 10% --15% of research deals with problems which were already solved and results published.
The role of scientific information

• Without information tools
  – this proportion would be much higher, and
  – absolute amount of research done would be much lower.
Types of Information
Primary Literature

Scholarly journal articles
Conference proceedings/abstracts
books, Theses, Reports
Official publications
Grey Literature

• That which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers.
Secondary Literature

Structured abstracts + comments
Index
Catalogue
Books: edited collections
Books: monographs/surveys
Tertiary Literature

Research Papers
Planning for the Transition to Tertiary Study: A Literature Review
Merran Evans (2000)

Introduction
Problems associated with the transition process from secondary school to the first year at university are not new in Australia; see for example Powell (1979) but the issues change with time. Transition problems can be devastating for individuals and their families, and can result in enormous social and economic waste (Parlett 1995). A 1997 study by the Higher Education Funding Council for England (HEFCE) estimated the direct costs to taxpayers of higher education non-completion to be about 50 million pounds a year.

Research on student transition, attrition and performance generally and in various discipline areas and educational institutions, has generally increased in quantity and methodological complexity in recent years. The findings are not always consistent, and international studies need to be analysed carefully to ascertain their validity in the current Australian context. As noted by Clarke et al. (1994), a significant problem related to reviewing the international literature results from different types of admission policies. Many overseas institutions, particularly in North America, have an open-door as opposed to the Australian competitive, and hence selective, admission policy. Another relevant difference is the residential nature of the institution much of the American research is undertaken in two-year residential (liberal arts) colleges.

This review focuses primarily on the recent Australian literature and key works from...
Types of Information Tools
Types of information tools

• Library catalogues (originating in ancient times), e.g. OPAC of SMU Library, NLM, etc.

• Secondary publications (Printed bibliographies)

• Bibliographic databases, e.g. BP, MEDLINE, etc.
Types of information tools

- Document (full-text) databases, mostly on Web
  - access organised by web search engines,
  - access organised by web directories,
  - documents organised by digital libraries,
    e.g. ScienceDirect, EBSCOhost

- Compound web information tools – web portals.

- The central problem of them all
  How to describe the document’s content.
Types of information tools

... Not forgetting....

• Hand searching of core journals
• Reference lists / footnote chasing
• World wide web search engines
• Picking colleagues’ brains
  (such as they are...)
Bibliographic database vs. library catalogue

- Bibliographic database is not library catalogue.
- The essence of library catalogues are the location data – positions and holdings of library units.
- Library catalogues normally have data on books, proceedings, journals, and very rarely on journal articles.
- Bibliographic databases and library catalogues are complementary.
Secondary publications

• The oldest of “modern” information tools.
• Designed to help users find primary documents.
• “Pointers” to primary documents were bibliographic records.
Secondary publications

• Users were directed to bibliographic records
  – from abstracts of primary documents (abstract journals),
  – from subject description of primary documents with key-words or key-phrases (index journals).

• Index Medicus – well developed index journal.
Bibliographic databases

• Basically computerised secondary (index) journals.

• Born in early 60’s.

• Great advantage:
  – searching instead of browsing,
  – searching through long periods of time instead of one issue.
Key Concepts
The quick guide...

- **Keywords**: words identifying the concepts of your research
- **Boolean Search**:  
- **Boolean Operators**: words combining the keywords  
- **Truncations**: a truncation mark is a symbol added to the stem of a word in order to search all forms of the word
The quick guide…

• **Abstract**: a summary of the article
  (anything from 10 words to a few hundreds)

• **Citation**: the basic information of a record
  (Author, title of the article, title of the periodical, date, page…)
Keywords are words or concepts extracted from your topic (subject of research).

They are unique and related to the field being investigated.

Do not forget that you are dealing with a computer, not a human being! Do not write a full sentence, just words (including synonyms) unique to your topic.
• A Boolean Search is a computerized search using “operators”
• They are words by which search terms (keywords) are combined
• The operators may be used to expand or narrow a search
• Simple commands that tell search engines which terms you want your search results to include or exclude

• Most widely used are
  ▪ AND
  ▪ OR
  ▪ NOT

• By convention, **Boolean terms are usually typed in all caps**
AND

- All terms must be present in each record retrieved (overlapping area indicates terms retrieved)

- Use to combine different concepts

Weight loss dieting  Eating disorders
OR

- At least one of the terms must be present in each record retrieved (blue area indicates terms retrieved)

- Use to combine synonyms or similar terms
The designated term must NOT be in any records retrieved (orange area indicates records that will be excluded).

- Use to exclude all records containing a term.
- BUT may eliminate relevant records as well, so use only after consulting a librarian.
Proximity operators allow you to locate one word within a certain distance of another.

The symbols generally used in this type of search are \( w \) and \( n \).

The \( w \) represents the word "with(in)" and the \( n \) represents the word "near."

This type of search is not available in all databases.
Near Operator (Nx) finds words within x number of words from each other, regardless of the order in which they occur.

**Example:** television n2 violence would find "television violence" or "violence on television," but not "television may be the culprit in recent high school violence."
**Within Operator (Wx)** — finds words within x number of words from each other, in the order they are entered in the search.

Example: Franklin w2 Roosevelt would find Franklin Roosevelt or Franklin Delano Roosevelt or Franklin D. Roosevelt, but would not find Roosevelt Franklin.
The truncation mark is usually an “*”, an asterisk.

It tells the software that you wish to obtain ALL possible terminations.

“Teen*” will retrieve “teen”, “teens”, “teenager”… It is compatible with all computerized search (online or CD). Google and other search engines recognize it.
Abstract

• A summary of the article (anything from 10 to 200 words).

• Helps you assess if the article is relevant to your search/topic.

• Tells you more about an article than just reading the title.
• A “citation” is the way you tell your readers that certain material in your work came from another source.

• It also gives your readers the information necessary to find that source again, including:
CITATION

• information about the author
• the title of the work
• the name and location of the company that published your copy of the source
• the date your copy was published
• the page numbers of the material you are borrowing
[Thrombophlebitis of venous sinuses in otitis media]

Kuczkowski J.


PMID: 18552016 [PubMed - indexed for MEDLINE]
Related Articles
Search models
Search models

• **Boolean search model:**
  – Mostly is used for searching in databases where subject is described with few key-words or key-phrases (e.g. bibliographic databases).
  – Divides database in two simple sets: relevant documents (hits) and non-relevant documents. Relevancy is a binary property.
Boolean search model

- Boolean operators AND, OR and NOT.
- Query **diabetes AND insulin** finds documents that contain both descriptors.
Boolean search model

• Query **diabetes OR insulin** finds documents that contain at least one of the descriptors.

• Query **diabetes NOT insulin** finds documents that contain first descriptor, but not the second one.
Critique of the Boolean model:

• With the query
  \[d_1 \text{ AND } d_2 \text{ AND } d_3 \text{ AND } d_4\]
  only the document that contain all four descriptors will be found.

• Probably the document with three or even two of the descriptors could be useful but it will never be among hits.
Boolean search model

Critique of the Boolean model:

• With the query
  \[d1 \text{ OR } d2 \text{ OR } d3 \text{ OR } d4\]
  all documents that contain at least one of the descriptors will be found.
Search models

• Non-Boolean search model:
  – Relevancy is non-binary property –
    documents could be more or less relevant.
Learn to Use Database
What is a Database?

• A database is a collection of organized data that can be searched to retrieve information.

• Information about each document is contained in a record

• Each record is made up of fields that contain specific information (e.g., author name, article title)
Examples of Database Records

- PubMed record:
  No abstract available.
  PMID: 18240848
  [PubMed - indexed for MEDLINE]
Learn to Use Databases

• Be familiar with:
  – Coverage
  – Controlled vocabulary
  – Search engine
  – Search limits
  – Bibliographic versus full-text
Be familiar with database

- **Coverage**
  – Subject areas covered?
  – Literature types included?
  – Years of coverage?
  – Geographical areas?

- **Controlled Vocabulary**
- **Search engine**
- **Search limits**
- **Bibliographic versus full-text**
Be familiar with database

• Coverage
• Controlled Vocabulary
  – Frequently called subject headings or descriptors
  – Words or phrases assigned to each document
  – Describes what the document is about
  – Drawn from a pre-defined list of terms

• Search engine
• Search limits
• Bibliographic versus full-text
Describing the subject of documents

• Most information needs could be fulfilled with documents on specific subject.
• To find such documents we need to describe their subject in a database prior to searching.
• The procedure is called *indexing*.
Describing the subject of documents

- In bibliographic databases it is done intellectually ("manually").
- In big databases of full-text documents it is done automatically.
Indexing bibliographic databases

• **Indexing** and **searching** are mirror images of the same procedure.

• While indexing the document $D$ the indexer tries to guess key-words which the searcher would use to find documents with subject like $D$.

• While searching for documents with subject $S$ the searcher tries to guess keywords which the indexer would use to index documents with subject $S$. 
Descriptors form artificial language, which is used for indexing and searching:

- for each object or conception only one descriptor exists (control of synonyms), and
- each descriptor describes only one object or conception (control of homonyms)
Be familiar with database

- Coverage
- Controlled Vocabulary
- Search Engine
- Search limits
- Bibliographic versus full-text
There’s the database…
And then there’s the search engine you use to access the database...

PubMed search interface

OVID search interface
In PubMed, a search on “obesity” retrieves 78,685 citations*

*For the yrs 1966-current
In Ovid MEDLINE, a search on “obesity” retrieves 57,458 citations.
Why the different search results?

• PubMed: obesity as sh. OR obesity as key word

• Ovid Medline: obesity as sh
Be familiar with database:

- Coverage
- Controlled Vocabulary
- Search engine
  - Subject heading search versus key word search
- Search limits
- Bibliographic versus full-text
Subject Heading Search

• SH is the “official” term for a concept—picked by indexers from a pre-set list

• The same SH is assigned to all articles addressing a concept, even if the article’s authors use other terms to describe that concept

EX: All of these articles have the SH “breast neoplasms”:
  – Secretory carcinoma of the breast. A case report and literature review
  – Multiple cutaneous acral metastases in a woman with breast adenocarcinoma …
  – The experience of making treatment decisions for women with early stage breast cancer: a diagrammatic representation
Subject Heading Search

- You must identify SH that reflect your topic of interest
- Search engine searches only within SH field, and retrieves only records with chosen SH
- Since only the contents of the SH field are searched, you are likely to cut down on the number of irrelevant citations retrieved.
Key Word Search

• “Natural language”: You use ANY terms as search terms
• Search engine looks for your terms in all parts of the record
• If your chosen terms fail to match terms in a record, you will not retrieve that record (even if it’s relevant)

• EX: if you use “breast cancer” in a key word search, you will not retrieve records that contain only other terms for this concept
  – *Secretory carcinoma of the breast*
  – *breast adenocarcinoma*
Be familiar with database

- Coverage
- Controlled Vocabulary
- **Search engine**
  - Subject heading search versus key word search
  - Boolean operators
- Search limits
- Bibliographic versus full-text
Be familiar with database

• Coverage
• Controlled Vocabulary
• Search engine
• **Search limits**
  – Year of publication
  – Publication type (journal article, RCT, meta-analysis)
  – Journal subsets
  – Age of study participants
  – Limits vary from database to database
• Bibliographic versus full-text
Be familiar with database

- Coverage
- Controlled Vocabulary
- Interface characteristics
- Search limits
- Bibliographic versus full-text
**Bibliographic versus full-text**

**Bibliographic**
- Contain basic descriptive information about a document (author, title, publication date)
- Does not contain full-text
- Abstract provides summary information
- You use descriptive info to find the full-text

**Full-Text**
- Contain basic descriptive information about a document (author, title, publication date)
- Contains complete document
- Default search is usually key word
Bio-Medical Information Retrieval from Net
PLAN

- Problem of Plenty on Net.
- Without a proper plan, you would lose in the sea of Information.
- Therefore, have a PLAN:
  - Choose the most appropriate place to look
  - Develop an effective search strategy
  - Carry out the search
  - Critically evaluate the results obtained
Appropriate Place?
Appropriate Place?

Will depend on what you are looking for !!!

- General Information
  - Web Search Engines / General Web Resources
- Journal References
  - Databases like PubMed / Scholar Google
- Full Text Articles
  - Free Open Access
  - Fee Based – From Libraries
- Best Practices / Evidence Based Medicine
  - Cochrane Library
General Information
Best for Non-Scholarly Information
General Information – Web Search Engines / Resources

• Search Engines
• Meta-Search Engines
• Subject Directories
• Subject Guides
Search Engines

- Full-text of selected Web pages.
- Search by keyword, trying to match exactly the words in the pages.
- No browsing, no subject categories.
- Databases compiled by "spiders" (computer-robot programs).
Meta-Search Engines

• Meta-Search Engines quickly and superficially search several individual search engines at once.
• Return results compiled into a convenient format.
• They only catch about 10% of search results in any of the search engines they visit.
Web Directories

• Hand-selected sites. Organized into hierarchical subject categories.
• Often annotated with descriptions (not in Yahoo!).
• Browse subject categories or search using broad, general terms.
• NO full-text of documents. Can search only the subject categories and descriptions.
Google Directory

Web Images Groups News Froogle Local Desktop more »

Search Directory Preferences Directory Help

The web organized by topic into categories.

Arts
Movies, Music, Television,...

Business
Industries, Finance, Jobs,...

Computers
Hardware, Internet, Software,...

Games

Home
Consumers, Homeowners, Family,...

Kids and Teens
Computers, Entertainment, School,...

News
Media, Newspapers, Current Events,...

Recreation

Regional
Asia, Europe, North America,...

Science
Biology, Psychology, Physics,...

Shopping
Autos, Clothing, Gifts,...

Society
Nutrition.gov Homepage
Category: Health > Nutrition > Resources
US federal guide offering access to all government web sites with reliable and accurate information on nutrition and dietary guidance.
www.nutrition.gov/

Nutrition - Wikipedia, the free encyclopedia
Category: Science > Technology > Food Science > Nutrition
An encyclopedia article on nutrition, including sections on history, health, food processing, longevity, lifestyle, policy, holistic approaches, ...
en.wikipedia.org/wiki/Nutrition

MyPyramid.gov - United States Department of Agriculture - Home
Category: Health > Nutrition > Dietary Options > Food Pyramid
Featuring information on the new food pyramid, its 12 models geared to different people. Also

Sponsored Links
GCC Corporate Challenge
A exciting health and wellbeing initiative for the workplace
www.gccevent.com

Nutrition Facts
Turn your nutrition analysis into a camera-ready Facts panel in minutes
www.FoodCompliance.com

Diet & Nutrition Info
Information you can trust on diet nutrition and more.
Resources

Health > Nutrition > Resources

Related Category:
Health > Resources (252)

Web Pages

<table>
<thead>
<tr>
<th>View in Google PageRank order</th>
<th>View in alphabetical order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Data</td>
<td><a href="http://www.nutritiondata.com/">http://www.nutritiondata.com/</a></td>
</tr>
<tr>
<td>Offers nutrition tools and articles.</td>
<td></td>
</tr>
<tr>
<td>Yahoo! Health - Nutrition and Food</td>
<td><a href="http://health.yahoo.com/topic/nutrition">http://health.yahoo.com/topic/nutrition</a></td>
</tr>
<tr>
<td>Find information on nutrition and fitness. Includes tips, recipes, daily features, and interactive tools.</td>
<td></td>
</tr>
<tr>
<td>Nutrition.gov</td>
<td><a href="http://www.nutrition.gov/">http://www.nutrition.gov/</a></td>
</tr>
<tr>
<td>U.S. federal guide offering access to all government web sites with reliable and accurate information on nutrition and dietary guidance.</td>
<td></td>
</tr>
<tr>
<td>BBC - Health - Healthy Living - Nutrition</td>
<td><a href="http://www.bbc.co.uk/health/healthy_living/nutrition/">http://www.bbc.co.uk/health/healthy_living/nutrition/</a></td>
</tr>
</tbody>
</table>
Subject Guides

• Web pages of collections of hypertext links on a subject.
• Compiled by "expert" subject specialists, agencies, associations, and hobbyists.
Evaluating Your Web Search Results

Each page should be examined and the following questions answered:

1. **Who?** Who is the authoring agency or individual?

2. **What?** What is the author's credentials?

3. **Where?** Where is the author's affiliation?

4. **When?** When was the page last updated?

5. **Why?** Why is the page in existence? What is the author's purpose?

6. **How?** How does the page appear?
Remember !!!

• The Web just does not have it all. Even the best search engine will only search what is available. Remember that the Web is only the first tool in your arsenal of available resources.

• Each search engine is different. Read the help before you proceed. Determine if you are using a Web directory or a search engine. See if there is an "advanced search" feature.
So, What we have learned?

For General Information
(Non-Scholarly / Non Peer-Reviewed)
– Search Engines
– Meta Search Engines
– Web Directories
– Subject Guides
• Evaluate Your Web Search Results
Scholarly Information

- References

- Bibliographic Databases
  - PubMed

- Search Engine
  - Google Scholar
Bibliographic Databases

- Cover Peer Reviewed Literature.
- Journals are selected after quality checks.
- References along with abstracts are available sometimes links to free full text of articles.
- Require familiarization on searching.
- Knowledge of Boolean Operators; Medical Subject Headings (MeSH) and Qualifiers are required for advanced searching.
### Overview of Boolean Searching

<table>
<thead>
<tr>
<th>Boolean Operator</th>
<th>Examples</th>
<th>Retrieves</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AND</strong></td>
<td>children and television</td>
<td>Retrieves records containing both terms</td>
</tr>
<tr>
<td></td>
<td>rodgers AND hammerstein</td>
<td></td>
</tr>
<tr>
<td></td>
<td>children AND poverty</td>
<td></td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td>television or television viewing</td>
<td>Retrieves records containing either one or both terms</td>
</tr>
<tr>
<td></td>
<td>sixties OR 60s OR 1960s</td>
<td></td>
</tr>
<tr>
<td></td>
<td>labor OR labour</td>
<td></td>
</tr>
<tr>
<td><strong>NOT</strong></td>
<td>television not movies</td>
<td>Excludes records containing the second term</td>
</tr>
<tr>
<td></td>
<td>caribbean NOT cuba</td>
<td></td>
</tr>
<tr>
<td></td>
<td>s1 NOT s2</td>
<td></td>
</tr>
</tbody>
</table>
Problem is with Natural Languages

• Synonyms
  – (One Concept – different Words)
    • Female
    • Lady
    • Woman

• Homonyms
  – (One Word – different Concepts)

• Multiple Words (Phrase)

• Punctuation

• etc..
So, for Scholarly Information

- We start with Bibliographic Databases having references to journals and other scholarly literature
- Different from Search Engines in respect to relying on Boolean Operators and Controlled Vocabularies.
- PubMed, Scirus – International
- Google Scholar special in some aspects but scope not clearly defined.
Scholarly Information

Full text Journal Articles

- Most expensive library resource
- No Library can afford all the journals / Not even the core Journals of a subject
- Things can improve with “Open Access” to scholarly literature
Some Free Resources for Full Text Articles

• From Open Access Publishers
• From Institutional / Subject Repositories
The research articles in all journals published by BioMed Central are *Open Access*. They are immediately and permanently available online without charge. A number of journals require an institutional or a personal subscription to view other content, such as reviews or paper reports. Free trial subscriptions to these journals are available.

see also: Chemistry Central journals PhysMath Central journals

A

Acta Veterinaria Scandinavica  all content Open Access
AIDS Research and Therapy  all content Open Access
Algorithms for Molecular Biology  all content Open Access
Annals of Clinical Microbiology and Antimicrobials  all content Open Access
Annals of General Psychiatry  all content Open Access
Annals of Surgical Innovation and Research  all content Open Access
Arthritis Research & Therapy  all research articles Open Access; subscription required for other content; free trial available
Australia and New Zealand Health Policy  all content Open Access

B

Behavioral and Brain Functions  all content Open Access
Beilstein Journal of Organic Chemistry  all content Open Access
BioData Mining  now accepting submissions
Biology Direct  all content Open Access
BioMagnetic Research and Technology  all content Open Access
Biomedical Digital Libraries  all content Open Access
Biomedical Engineering OnLine  all content Open Access
PubMed Central (PMC) is the U.S. National Institutes of Health (NIH) free digital archive of biomedical and life sciences journal literature.

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Browse by title
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Browse by subject

- Agriculture and Food Sciences
- Arts and Architecture
- Biology and Life Sciences
- Languages and Literatures
- Law and Political Science
- Mathematics and Statistics
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A more detailed description of this site is available in the FAQ list.

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Please email us at freefulltext@yahoo.com to report any broken links, titles we have missed which fit our criteria for inclusion, or titles on our list which have ceased to offer any of their online content for FREE.
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- Archives may belong to institutions, such as universities and laboratories, or disciplines, such as physics and economics.
### Registry of Open Access Repositories (ROAR)

- **Home**
- **Browse**
- **Search**
- **Content Search**
- **Register a Repository**
- **Help**
- **Login**
- **Register in ROARMAP**

Please sign the petition in support of the European Commission's proposed Open Access Self-Archiving Mandate.

<table>
<thead>
<tr>
<th>Any Geographic Country</th>
<th>Any System Software</th>
<th>Any Content Type</th>
<th>Sort by Name</th>
<th>Filter</th>
</tr>
</thead>
</table>

Your query resulted in 962 repositories matching.

**View this result set as a chart:**
- Comma-Separated Format
- Google Earth Overlay
- Thumbnails / Bars
- other formats

**Export this result set as:**
- Comma-Separated Format
- Google Earth Overlay
- Thumbnails / Bars
- other formats

**Export repository records summary as:**
- Cumulative Graph
- Cumulative Table

**View repository contents as:**
- File Format Graph

---

### ARCHIVESCIE (893 records)

- Not registered in Celestial:
  - Either the OAI-PMH interface isn't working or it is awaiting action by a ROAR editor

### Aberdeen University Research Archive: AURA (133 records)

- Not registered in Celestial:
  - Either the OAI-PMH interface isn't working or it is awaiting action by a ROAR editor

---

Running **HAL**, based in **France** and is registered as **Research Cross-Institutional**
- Registered on 2002-05-17
- Cumulative deposits: 893 total [table] [graph]
- Daily deposits in last year: 90 days of 1-9, 0 days of 10-99, 0 days of 100+ [table] [graph (PNG format)] [interactive graph] (requires SVG format support)
- OAI Interface: Identify List Metadata Formats List Sets [harvest status]

Running **DSpace**, based in **United Kingdom** and is registered as **Research Institutional or Departmental**
- Registered on 2008-01-27
- Cumulative deposits: 133 total [table] [graph] [Preserv Profile]
- Daily deposits in last year: 21 days of 1-9, 0 days of 10-99, 0 days
Most of the Journals Requires High Subscription Fee – Libraries find it difficult to afford even the core journals.

Some relief by Open Access Journals / Repositories

Use Directories like DOAJ and ROAR locate free resources
Was That Tooo Much?
Further training: 1

Online resources

• Literature searching for research (Bath)
  http://www.bath.ac.uk/health/rdsu/hints_search.htm

• Information retrieval skills for biological sciences (Leicester)
  http://www.le.ac.uk/li/sources/subject3/biol/ist/sources.html

• Intute online tutorials: nursing and midwifery
  http://www.vts.intute.ac.uk
3. Sources of Information

3.1 How Information is Organised

Information is diverse and is made available through a wide variety of information sources. These range from general sources aimed at a wide audience to very specific sources aimed at specialists in the subject.

3.2 Information Flow

Information flows from the informal to the formal and from the specific to the general.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Examples</th>
<th>Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific sources</td>
<td>journal articles, conference proceedings, theses</td>
<td>specialist audience</td>
</tr>
<tr>
<td>Intermediate sources</td>
<td>textbooks, reviews, specialised texts</td>
<td></td>
</tr>
<tr>
<td>General sources</td>
<td>dictionaries, encyclopaedias, handbooks</td>
<td>general audience</td>
</tr>
</tbody>
</table>

Informal communication - unpublished research. Ongoing research may be first communicated through discussions, e-mails etc. amongst colleagues and friends. Once the research findings are complete, the information can then be published.
The **Intute: Virtual Training Suite** provides free Internet tutorials to help you learn how to get the best from the Web for your education and research.

Our tutorials are written and updated by a **national team of subject specialists** based in universities and colleges across the UK.

**Pick the tutorial that interests you:**

- **Science, Engineering and Technology**
  - Aeronautical Engineering
  - Chemist
  - Civil Engineer
  - Construction
  - Earth Scientist
  - Electrical Engineer
  - Engineering (General and Automotive)
  - Geographer
  - Health and Safety
  - ICT

- **Arts and Humanities**
  - Archaeologist
  - Architecture
  - Art and Design
  - Arts and Crafts
  - Digital Photography
  - English
  - ESOL
  - Fashion and Beauty
  - Historians
  - History and Philosophy of Science
  - Learning Languages

- **Social Sciences**
  - Anthropologist
  - Business Manager (HEI)
  - Business Studies (FE)
  - Development
  - Economist
  - Education
  - European Studies
  - Government and Politics
  - Hospitality and Catering
  - International

- **Health and Life Sciences**
  - Agriculture, Food and Forestry
  - Allied Health
  - Biosciences
  - Dentistry
  - Gardening
  - Health and Social Care
  - Health and Well-being
  - Medicine
  - Natural History
  - Nursing, Midwifery
Further training: 2

External training providers 1

- CILIP
  runs a variety of courses on information searching in health care
  (these were formerly provided by the British Library)
  http://www.cilip.org.uk

- BMA Library
  runs workshops covering online searching, evidence-based healthcare, and critical appraisal skills
  http://www.bma.org.uk/ap.nsf/content/LIBCoursesUpdate
• Should you have any questions, comments, complaints, etc., do not hesitate to call or email us at the library.
THANK YOU!