

Geology Librarianship 101

Reference and Instruction

Lura Joseph
Associate Professor
Geology Librarian
University of Illinois, Urbana-Champaign

Geology Librarianship 101

Reference

Introduction

- Basics

- Examples of Questions & Information Resources

Information Resources

- Introduction

- Indexes (Subscription & Free)

- Resources by Type

- Resources by Subject

- Things That Confuse Folks

Instruction

- Everything a Jr. or Sr. in College Should Know to be Information Literate

- How to drum up business

- Tips for Instruction

- Things to Include

Reference

Introduction

- Basics
- Examples of Questions & Information Resources

Reference: Basics

What do we mean by “Geosciences”?

Reference: Basics

What do we mean by “Geosciences”?

According to The Glossary of Geology, the term “geoscience” is synonymous with “geology”.

Geology: “The study of the planet Earth, the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. ..Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils. Clues on the origin of the planet are sought in a study of the Moon and other extraterrestrial bodies. The knowledge thus obtained is placed in the service of society...” Neuendorf, et al., Glossary of Geology, 5th ed.: AGI, p. 267.

Reference: Basics

What do we mean by “Earth Science”?

According to The Glossary of Geology:

“An all-embracing term for sciences related to the Earth (analogous, in educational parlance, to “life science”). It is occasionally used as a syn. for geology or geological sciences, but this usage is misleading because in its wider scope earth sciences may be considered to include such subjects as meteorology, physical oceanography, soil chemistry, and agronomy. The term is generally used in the singular”.

Neuendorf, et al., Glossary of Geology, 5th ed.: AGI, p. 200.

Geological Science: “Any of the subdisciplinary specialties that are part of the science of geology.” (Glossary of Geology)

- Economic Geology
- Environmental Geology
- Geoarchaeology
- Geobiology & Geomicrobiology
- Geochemistry
- Geohydrology/Hydrogeology
(subsurface and surface waters)
[hydrology: global water, all forms,
circulation & distribution including
atmosphere)
- Geoinformatics
- Geomorphology
- Geophysics
- Geoscience Education
- Historical Geology
- History of Geology
- Limnogeology
- Minerology
- Oceanography (syn. Oceanology)
- Paleontology (Palaeontology)
- Paleontology (Palaeontology)
- Paleopedology
- Palynology
- Petrology (Sedimentary,
Metamorphic, Igneous)
- Petroleum Geology, Coal Geology
- Physical Geology
- Planetary Geology & Earth’s Interior
- Quaternary Research
- Sedimentology
- Stratigraphy
- Structural Geology & Tectonics
- Volcanology
- and others

The Geosciences are interdisciplinary:

- Biology (Paleontology; Environmental)
- Anthropology (Physical Anthro/Paleontology; Archaeology/Geoarchaeology; Stratigraphy; Dating Methods)
- Environmental, Hydrology, Water, Oceanography/Oceanology , Soil (Geochemistry; Hydrogeology; Glacial Geology, Stratigraphy, others)
- Climate Change (Paleontology; Palynology; Isotope Research; Atmospheric Science/Meteorology/Weather; many others)
- Soil Science & Agriculture (Stratigraphy & Sedimentology; Paleopedology)
- Engineering, Mining, Military (Petroleum Geology; Structural Geology; Economic Geology; Geophysics; Field Geology & Mapping; Many others)
- Astronomy (Planetary Geology; Impacts & Meteorites; Volcanology)
- Physics (Geophysics; Earth's Interior, Rock Mechanics; Seismology, others)
- Chemistry & Crystallography (Geochemistry, Mineralogy, Petrology)
- Geography (Physical Geography/Geomorphology)
- Mathematics/Computer Science (Modeling)
- Others such as Health, Society, History of Science, Art, Music, etc. (Example: NDSU's lab course for non-science majors)

Geosciences

Scale:

Length: All the way from subatomic to solar system and beyond.

Time: Milliseconds to Billions of years.

Reference: Basics

Patrons (The types of questions and also our answers will be shaped by the types of persons asking the questions.)

The Reference Interview (Important, as always, but even more so given the interdisciplinary nature of geosciences)

Modes of Communication (in-person, telephone, e-mail, chat, texting...etc.)

Reference: Examples

Examples of Questions & Information Resources

- General Public
- K-12
- Undergraduate
- Graduate, Faculty, Professional

Reference: Examples

Examples of Questions & Information Resources

General Public

- Expect almost any sort of question; many levels of knowledge
- What kind of rock, mineral, or fossil is this?
 - Refer to state survey, geology department expert, museums, local clubs, etc.
 - Guides (consult online catalog)
- Where can I pick up rocks? What is the local geology?
 - Field Trip Guidebooks
 - State survey publications and pamphlets
 - State survey employees, trips for the general public
 - Roadside guide series (Mountain Press, etc.)
- I need a map showing...
 - Online catalog or card catalog
 - USGS or state survey
 - Online
 - Much more covered this afternoon
- Popular geology (national or state parks, etc.)
 - Online catalog
 - Park Service web sites
 - Field trip guidebooks
 - Library web sites (bibliographies for field courses)

Reference: Basics

Examples of Questions & Information Resources

K-12

- What kind of rock, mineral, fossil is this? (resources as above)

- For fun: Dinosaurs, volcanoes, meteorites (might have to refer to a public library for books, but you could use Amazon, etc. to suggest books; web sites)

- School:
 - Science Fair Projects
 - How the earth was formed
 - Geologic time
 - Places to find lesson plans & activities (more later)
 - GSA <http://www.geosociety.org/educate/resources.htm>
 - USGS <http://education.usgs.gov/>
 - DLESE <http://www.dlese.org/library/index.jsp>
 - Cutting Edge (higher level)
<http://serc.carleton.edu/NAGTWorkshops/index.html>
 - GEON (higher level) <http://www.geongrid.org/index.php>
 - AGI (Earth Science Week)
<http://www.agiweb.org/geoeducation.html>

Reference: Basics

Examples of Questions & Information Resources

Undergraduate

- All the same sub-disciplines as graduate/professional, but less technical. Some resources include:
 - Academic Search Premier (EBSCO)
 - Expanded Academic (Infotrac)
 - Periodical Abstracts
 - Journals such as Scientific American, Geology Today
 - Scirus
- Some Undergraduate topics:
 - Global warming
 - Mass extinctions
 - Drilling in the Arctic National Reserve
 - Environmental hazards (such as groundwater pollution)
 - Man's impact (building or removal of dams, etc.)
 - Natural hazards (hurricanes, tsunamis, earthquakes, volcanoes, meteor impacts)
- Might need to include some instruction on peer review, plagiarism, citations, etc. This will be included in instruction.

Reference: Basics

Examples of Questions & Information Resources Undergraduates (more):

Tip: Undergraduates often like current, controversial subjects.

For those resources, search a journal such as *Geology Today*, or an index such as GeoRef,

and use the search strategy “discussion and reply” along with terms or phrases that include the subject of interest (e.g. “mima mounds” or “life and mars”, or “2007 AND 2008 AND 2009”.)

That would automatically give two references, and it is usually easy to find others related to the dialog.

Reference: Basics

Examples of Questions & Information Resources

Graduate, Faculty, Professional

Same subjects as Undergrads, but on a more technical level.

Often, these folks help themselves. They only consult the library staff when they get stuck. Here are reasons they consult library staff:

- Can't figure out if something is online or in print
- Online resource is not working for them (many reasons; you have to trouble shoot; the more you know about what the patron tried, the better when resolving problems).
- Need help citing something
- Looking for an article title in the online catalog
- Bad citation
- Older, in print only material
- Need help with ILL or Document Delivery
- Changes in the library (shifting, switch to online only, change in vendors)
- Need figures, images, data sets, biographical material and contacts.

Reference

Information Resources: Introduction

Indexes (Subscription & Free)

Resources by Type

Resources by Subject

Things That Confuse Folks

Reference: Information Resources

Indexes: Subscription (Multiple vendors are often available for a single index)

- GeoRef
- Web of Science
- GeoBase
- OCLC WorldCat (books) (There is also a free version; more on that later)
- Others, depending on the subdiscipline
 - Biological Abstracts (BIOSIS) - includes environmental and paleontology
 - Engineering Village (Compendex, INSPEC, NTIS) - Engineering & Applied Science
 - ENTREZ (Life Sciences Search Engine from NCBI)
 - Environmental Sciences and Pollution Management
 - SciFinder Scholar (Chemical Abstracts)
 - Water Resources Abstracts - Water and environmental
 - Zoological Record - includes paleontology
 - PapersFirst - Identifies papers from congresses, conferences, expositions, workshops, symposia, and meetings
 - Proceedings First - Identifies conference proceedings
 - Scopus <http://www.library.uiuc.edu/orr/get.php?instid=396840>

Reference: Information Resources

Indexes: Subscription (possibly multiple choices for vendors)

Considerations:

The choice of index should depend upon availability and subject.

A study* of 11 databases on the subject of Quaternary Research showed a varying degree of overlap and uniqueness, but nearly every database had some unique material that would have been missed if that database had been left out of the search.

This is probably true of any subject and combination of subscription or free databases that could be searched.

How exhaustive does the search need to be?

*Joseph, Lura E. 2007. Comparison of retrieval performance of eleven online indexes containing information related to Quaternary research, an interdisciplinary science. *Reference and User Services Quarterly* 47(1):56-65.

Reference: Information Resources

Indexes: Free

GeoscienceWorld (need subscription to access articles)

Scirus

Others covered later in Resources by Type or by Subject

Reference: Resources by Type

Journal Articles (peer reviewed or not)

Books (Monographs)

Monographic Series (some major ones for geology)

Abstracts

Reference

Guidebooks

Government Documents

Theses and Dissertations

Repositories

People

Reference: Resources by Type

Journal Articles (peer reviewed or not)

- Indexes (above)
- Web
 - Scirus <http://www.scirus.com/srsapp/>
 - Google Scholar <http://scholar.google.com/>
- Publishers' Web Sites/ Journal Home Pages
 - ScienceDirect <http://www.sciencedirect.com/>
 - SpringerLink <http://www.kluweronline.com/>
 - Wiley Interscience <http://www3.interscience.wiley.com/cgi-bin/home>
 - American Geophysical Union
http://www.agu.org/pubs/search_options.shtml
- Aggregators
 - GeoscienceWorld (need subscription to access articles)
<http://www.geoscienceworld.org/>
 - Ingenta <http://www.ingenta.com/>
 - JSTOR (Includes older issues of Science and others)
<http://www.jstor.org/>
- Individual Journal Home Pages

Reference

Resources by Type

Books and Monographic Series

- Monographic Series (some major series for geology)
 - Geological Society of America (GSA) Memoirs and Special Papers
 - GSA Decade of North American Geology Project series
 - Geological Society (of London) Memoirs and Special Publications
 - American Geophysical Union (AGU) Series
 - American Association of Petroleum Geologists (AAPG) Series
 - Geological Congresses
 - Many other societies & series, including Special Publications, Proceedings, & Transactions

Reference

Resources by Type

Books and Monographic Series

- Online Library Catalogs

- WorldCat <http://www.worldcat.org/default.jsp>

- Multiple U.S. Online Catalogs

- <http://g118.grainger.uiuc.edu/voyagersearch/default.asp>

- Other Online Library Catalogs <http://lists.webjunction.org/libweb/>

- Lib-Web-Cats - A directory of libraries, worldwide

- <http://www.librarytechnology.org/libwebcats/index.pl>

- Association Publications

- <http://www.library.illinois.edu/gex/bookpubs.html#SOCIETIES> or

- <http://www.library.illinois.edu/gex/geoinfo.html#AGENCIES>

- Online Books Stores (Amazon, Barnes & Noble, etc.)

Reference

Resources by Type

Books and Monographic Series

- Full Text Books Online (free)
 - Google Books <http://books.google.com/>
 - Hathi Trust <http://www.hathitrust.org/>
 - Internet Archive <http://www.archive.org/details/texts>
 - USGS Contents
<http://infotrek.er.usgs.gov/pls/htmldb/f?p=127:5:653563621926001>
 - Million Books Project <http://www.archive.org/details/millionbooks>
 - Amazon.com (some tables of contents, etc.) <http://www.amazon.com/>

- Full Text Books Online (not free)
 - Springer and other packages
 - Sometimes there are delays in getting these into the online catalog. It is good to know where to check on the publisher sites.

Reference

Resources by Type

- Abstracts
 - GeoRef
 - Geological Society of America
 - American Geophysical Union
 - EOS Transactions
 - Institute on Lake Superior Geology (extended)
<http://search.grainger.uiuc.edu/ilsg/>
 - Others

Confusion about abstracts

People find references in indexes or references and think they are articles, when they are actually abstracts. In GeoRef, the abstract is in the record, so there is not much reason to find the original abstract.

Reference

Resources by Type

Reference (there are many; more are becoming available online; collection development and access considerations for print vs. electronic)

Dictionaries & Glossaries & Thesauri

Glossary of Geology, latest edition (5th), AGI

GeoRef Thesaurus

Other Scientific, English/Whatever

Encyclopedias (print vs. online), Examples

Encyclopedia of European and Asian regional

Encyclopedia of geochemistry

Encyclopedia of geomorphology

Encyclopedia of hydrology and water resources

Encyclopedia of oceanography

Encyclopedia of planetary sciences

Encyclopedia of sedimentology

Encyclopedia of soil

Encyclopedia of world regional geology

Many others

Encyclopedia of the Earth <http://www.eoearth.org/>

(Wikipedia) <http://www.wikipedia.org/>

(Webopedia) (computer science) <http://www.webopedia.com/>

Reference

Resources by Type

Reference (continued)

Handbooks

Style Manuals

Reference

Style Manuals

It is sometimes useful to quickly consult the appropriate style guide, and then look for examples in the references from a few articles in the appropriate journal.

[GSA Style Guide](http://gsa-bulletin.allentrack.net/html/gsab_author_instructions.html) < http://gsa-bulletin.allentrack.net/html/gsab_author_instructions.html >
or [Style for GSA Geology](http://www.geosociety.org/pubs/geoguid5.htm) < http://www.geosociety.org/pubs/geoguid5.htm >

[AGU Style Guide](http://www.agu.org/pubs/references.html) < http://www.agu.org/pubs/references.html >

[Nature style](http://www.nature.com/nature/submit/gta/index.html#5.4) < http://www.nature.com/nature/submit/gta/index.html#5.4 >

Nature uses abbreviations for journal titles. If you don't know the proper abbreviation, try looking in the [ISI database](#) (subscription), for example, Journal of Geophysical Research: J. Geophys. Res., and then check Nature online to see if they use the same form.

[Suggestions to Authors of the Reports of the United States Geological Survey](http://www.nwrc.gov/lib/lib_sta.htm)

<http://www.nwrc.gov/lib/lib_sta.htm>

[Citation Guides for Electronic Documents](http://www.ifla.org/1/training/citation/citing.htm) <http://www.ifla.org/1/training/citation/citing.htm>

[Writing Guidelines for Engineering and Science Students](http://www.writing.engr.psu.edu/) <http://www.writing.engr.psu.edu/>

[References for Scientific Communication and Literary Style](http://www.library.illinois.edu/gex/Classes/Sci_Writing_Ref's-GEOL_233.html)

[http://www.library.illinois.edu/gex/Classes/Sci Writing Ref's-GEOL 233.html](http://www.library.illinois.edu/gex/Classes/Sci_Writing_Ref's-GEOL_233.html) from Dr. Steven Altaner,
Geology Dept., UIUC

[Chicago Manual of Style](#) – available in print, or online by subscription

Using referencing/citing tools

There are now many good tools that can be used to create bibliographies, cite references while writing, and easily convert from one style to another. These include the following: [RefWorks](#), EndNote, and ProCite. Some universities have group subscriptions to one or more of these tools.

Reference

Resources by Type

Reference (continued)

Directories (Many online are restricted to members)

Earth Science Organizations <http://www.earthsciweek.org/gpn/>

Guide to Geoscience Departments (AGI)

<http://www.agiweb.org/ehr/ggd/>

Directory of Listservs <http://www.lsoft.com/lists/listref.html>

Other (text books, etc.)

Geologic Names Lexicon (USGS)

http://ngmdb.usgs.gov/Geolex/geolex_home.html

Ranking of Journals

ISI Journal Citation Reports (subscription)

Reference

Resources by Type

Government Documents

State Survey Publications

<http://www.library.illinois.edu/gex/bookpubs.html#SURVEYS>

USGS

USGS Library Catalog <http://igsrglib03.er.usgs.gov:8080/>

USGS Publications Warehouse - many with links to full text

<http://infotrek.er.usgs.gov/pubs/>

USGS Contents (shows what is online, by series)

<http://infotrek.er.usgs.gov/pls/htmldb/f?p=127:5:653563621926001>

Reference

Resources by Type

Government Documents (continued)

Science.gov - gateway to authoritative selected science information provided by U.S. Government agencies

Technical Report Archive and Image Library - a collaborative project to digitize, archive, and provide persistent and unrestricted access to federal technical reports issued prior to 1975.

Infotrieve Article Finder (searching is free; they charge for articles)

Energy Citations Database - bibliographic records for energy and energy-related scientific and technical information from the Department of Energy (DOE)

Reference

Resources by Type

Government Documents (continued)

GPO access <http://www.gpoaccess.gov/>

Environment Canada Library <http://199.212.19.41/>

Other Governments

<http://www.library.illinois.edu/gex/bookpubs.html#NATIONAL>

European surveys <http://www.uni-mainz.de/FB/Geo/Geologie/GeoSurv.html>

SuDocs Numbers

Interior Department

Geological Survey (Document I 19.)

Bulletins (Document I 19.3:)

Water Resources Bulletin (Document I 19.3/3:)

Circulars (Document I 19.4/2:)

Monographs (Document I 19.9:25)

Water-Supply Papers (Document I 19.13:)

Professional Papers (Document I 19.16:)

Water Resources Investigations (Document I 19.42/4:)

Water Resources Data for North Dakota (Document I 19.53/2:)

Open-File Report (Document I 19.76:)

Reclamation Bureau (Document I 27.)

Mines Bureau (Document I 28.)

National Park Service (Document I 29.)

Geographic Names Board (Document I 33.)

Land Management Bureau (Document I 53.)

Surface Mining Reclamation and Enforcement Office (Document I 71.)

Minerals Management Service (Document I 72.)

Agriculture Department

Soil Surveys (Document A 57.38/)

Reference

Resources by Type

Theses & Dissertations

ProQuest Digital Dissertations (USA) - many with full text (subscription) <http://proquest.umi.com/>

Canadian Theses and Dissertations - Full Text (Theses Canada Portal) <http://www.nlc-bnc.ca/6/4/index-e.html>

DissOnline - German Dissertations <http://search.dissonline.de/>

Index to Theses - Great Britain and Ireland <http://www.theses.com/>

University Repositories

Reference

Resources by Type

Guidebooks (useful for many purposes; grey literature)

Geologic Guidebooks of North America Database (GGNAD)

<http://www.agiweb.org/georef/onlinedb/gnaintro.html>

GeoRef

WorldCat

Guidebooks, Full Text Online

E.g. Institute on Lake Superior Geology Publications Search

<http://search.grainger.uiuc.edu/ilsg/>

Many others; often difficult to find

Reference

Resources by Type

People as Information Resources

Start with people you know

Web browsers (Universities, government agencies, associations...)

Contact information from publications, indexes, meetings

Experts, authors of difficult to obtain articles and guidebooks, to find other people....

Reference

Resources by Type

Repositories (Discipline specific & University)

[PerX Engineering Repository Cross Search Pilot Project](#) - searches across a variety of digital repositories of interest to the engineering

Illinois IDEALS <http://www.ideals.uiuc.edu/>

Many Other Institutional Repositories

Reference

Resources by Subject

Subdisciplines

Biography

Geographical

Teaching

Data Sets & Software

Images

Old Information

Employment

Journals

Reference

Resources by Subject

Subdisciplines

Know the major subdisciplines; the associated indexes, journals, monographic series, and reference books; and the relevant associations and meetings. I like to have a basic textbook of my own for many of the subdisciplines.

Reference

Resources by Subject

Example of resources for one subdiscipline: Soils (pedology)

List of Soil Surveys by State NRCS

http://soils.usda.gov/survey/printed_surveys/

Soil Series Descriptions NRCS, USDA

<http://soils.usda.gov/technical/classification/osd/index.html>

Compendium of On-Line Soil Survey Information (by Rossiter)

http://www.itc.nl/personal/rossiter/research/rsrch_ss.html

Soil survey manual USDA Agriculture Handbook no.18

<http://soils.usda.gov/technical/manual/>

Web Soil Survey NRCS, USDA

<http://websoilsurvey.nrcs.usda.gov/app/>

Reference

Resources by Subject

Examples of resources for subdisciplines: Class Guides

Structural Geology and Tectonics

<http://www.library.illinois.edu/gex/Classes/Geol311.html>

Sedimentology & Stratigraphy

<http://www.library.illinois.edu/gex/Classes/Geol340.html>

Reference

Resources by Subject

Associations, Societies, and Agencies

Know the major associations, societies, and agencies, and how they are organized. For example, Friends of the Pleistocene is organized by geographical “cells”, National Speleological Society is organized by “grottos”, Geological Society of America is organized both by regional “sections” and by subject “divisions”. Agencies nearly all have some sort of organization, such as by “section”.

<http://www.library.illinois.edu/gex/geoinfo.html#AGENCIES>

Reference

Resources by Subject

Biography (some of the most difficult questions).

Although many journals contain biographical material such as obituaries, memorials, and awards, these are not comprehensively indexed. Starting information is often scanty or incorrect.

Here are a few resources:

Know which journals contain biographical information (e.g. AAPG Bulletin, Geological Society of America Memorials, Arctic, Antarctic, and Alpine Research “In Memoriam”, American Association of Stratigraphic Palynologists Newsletter, etc.). Determine the subdiscipline of the person.

Commercial Biographical Indexes such as American Men and Women of Science, and Biography and Genealogy Master Index Genealogical Resources such as Ancestry.com (subscription), Rootsweb

<http://www.rootsweb.ancestry.com/> , FamilySearch

<http://www.familysearch.org/eng/default.asp>

Newspaper obituaries

People Finders for addresses, such as DexKnows

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

Reference

Resources by Subject

Geographical (Maps and GIS will be covered this afternoon)

Google Earth (must download software; tilt feature) <http://earth.google.com>

Flash Earth (uses software often already on computers) <http://www.flashearth.com/>

MapQuest <http://www.mapquest.com/>

National Geologic Map Database – USA <http://ngmdb.usgs.gov/>

North American Stratigraphic Code <http://www.agiweb.org/nacsn/code2.html>

Digital State Geologic Maps – USGS http://minerals.usgs.gov/projects/surveys_and_analysis/dig_geol_maps.html

Topo Map Indexes - Map Link <http://catalog.maplink.com/usgs/USMap.html>

TerraServer <http://terraserver-usa.com/>

National Map Viewer – USGS <http://nmviewogc.cr.usgs.gov/viewer.htm>

US Bureau of Land Management Maps <http://www.geocommunicator.gov/GeoComm/index.shtm>

GeoRef (subscription; search for maps)

Maps: Dealers, Catalogs, & Indexes <http://www.library.illinois.edu/gex/bookpubs.html>

Map Librarians' Toolbox – WAML <http://www.waml.org/maptools.html>

Commission for the Geological Map of the World http://ccgm.free.fr/index_gb.html

OneGeology.org - with links to national surveys <http://www.onegeology.org/>

U.S. National Atlas <http://nationalatlas.gov/>

The National Map <http://nationalmap.gov/>

GeoGratis - Canadian Geospatial Data <http://geogratis.gc.ca/geogratis/en/index.html>

Geological Maps - Natural Resources Canada http://gsc.nrcan.gc.ca/map/index_e.php

USGS Folio Maps - TAMU (search "usgs folio") <http://txspace.tamu.edu/search>

World Stress Map Project <http://dc-app3-14.gfz-potsdam.de/>

GEON (topography; geophysics) <http://www.geongrid.org/>

Gazetteers (any online catalog)

Geographic Names Information System (USGS)

<http://geonames.usgs.gov/pls/gnispublic/>

Government Depository Maps Used for Geoscience <http://www.library.illinois.edu/gex/govmaps.html>

The Degree Confluence Project <http://confluence.org/>

Other <http://www.library.illinois.edu/gex/geoinfo.html#GEOG>

Guide To Government Depository Maps Used for Geoscience

- A 13.28: Forest Service Maps
- C 55.418/7: Nautical Charts and Bathymetric Maps
- D 5.354: Print Navigation Charts
- D 5.356: Hydrographic Products (Bathymetric)
- I 19.41/6-2: USGS Catalog of Topographic and Other Published Maps
- I 19.41/6-3: USGS Index to Topographic and Other Map Coverage
- I 19.41/7: USGS Geologic and Water-Supply Reports and Maps
- I 19.81: 7.5' Topographic Series
- I 19.85: USGS Coal Investigations
- I 19.87: USGS Geophysical Investigations
- I 19.88: USGS Geological Quadrangle Maps
- I 19.89: USGS Hydrologic Investigations Atlases
- I 19.90: USGS Mineral Investigations Resource Maps
- I 19.91: USGS Miscellaneous Investigations
- I 19.92: USGS Oil and Gas Investigations Charts
- I 19.93: USGS Oil and Gas Investigations Charts
- I 19.98: 1:250,000 Scale Topographic Series
- I 19.102: USGS State Map Series, Planimetric 1:500,000
- I 19.103: USGS State Map Series; Topographic
- I 19.104: USGS State Map Series, Shaded Relief
- I 19.105: USGS State Map Series, Planimetric 1:1,000,000
- I 19.106: National Park Series
- I 19.108: County Map Series, USGS
- I 19.110: 1:100,000 Scale Topographic Series, USGS
- I 19.111/a: Separate Maps of the National Atlas, USGS
- I 19.112: USGS Land Use and Land Cover Maps
- I 19.113: Miscellaneous Field Studies Maps, USGS
- I 20.47: Maps and Atlases, Bureau of Indian Affairs
- I 29.8: Maps, National Park Service
- I 27.7/4: Maps (Miscellaneous), Bureau of Reclamation
- I 49.6/7-2: National Wetlands Inventory Maps, Fish and Wildlife Service
- I 49..9: Maps and Charts, Fish and Wildlife Service
- I 53.11: Maps and Map Folders, Bureau Of Land Management

Reference

Resources by Subject

Teaching & Curriculum

Cutting Edge <http://serc.carleton.edu/NAGTWorkshops/about.html>

Digital Library for Earth System Education (DLESE)

<http://www.dlese.org/library/index.jsp>

GEON <http://www.geongrid.org/index.php/education/>

Many librarians have created web resources for specific classes and field courses. E.G. <http://www.library.uiuc.edu/gex/Geohelp.html>

Reference

Resources by Subject

Data Sets & Software (Software is often included on sites offering data sets)

National Directory of Geoscience Data Repositories (cores, cuttings, and paper records)

<http://www.agiweb.org/ngdrs/overview/datadirectory.html>

Global Change Master Directory (NASA) <http://gcmd.nasa.gov/>

GEON (Topography/LiDAR, Geophysics, Geology)

<http://www.geongrid.org/>

Some other links <http://www.library.illinois.edu/gex/geoinfo.html>

Reference

Resources by Subject

Images, including video

Dinosaur Illustrations <http://www.search4dinosaurs.com/>

Earthscience Picture of the Day <http://epod.usra.edu/>

FEMA Photo Library <http://www.photolibrary.fema.gov/photolibrary/index.jsp>

Geologic Explorations

<http://www.ncsu.edu/sciencejunction/terminal/lessons/geo/index.html>

Geology by Light Plane - Louis J. Maher, Jr.

<http://www.geology.wisc.edu/~maher/air.html>

Glaciers - Shilts; ISGS <http://www.isgs.illinois.edu/shilts/shilts-gallery.shtml>

GRIN (Great Images In NASA) <http://grin.hq.nasa.gov/>

Imagebank; Earthscience World (AGI)

<http://www.earthscienceworld.org/imagebank/>

Images Canada - Natural Resources Canada <http://www.imagescanada.ca/>

National Archive of Geological Photographs - British Geological Survey

<http://www.bgs.ac.uk/photoarchive/home.cfm>

USGS Video and Image Gallery <http://gallery.usgs.gov/>

USGS Repeat Photo Project (Glaciers) <http://nrmsc.usgs.gov/repeatphoto/>

Visible Earth – NASA <http://visibleearth.nasa.gov/>

SciVee (Science Videos) <http://www.scivee.tv/>

Bing <http://www.bing.com/>

Search AltaVista or Google for Images

GeoRef via CSA

Reference

Resources by Subject

Old Information

Be familiar with the old surveys of the western US and the older geological journals. See USGS Bulletin 222, Series 6, Miscellaneous, 26: Catalogue and Index of the Publications of the Hayden, King, Powell, and Wheeler Surveys... by L. F. Schmeckebier, 1904

<http://ia331428.us.archive.org/0/items/catalogueindexof00schm/catalogueindexof00schm.pdf>

Reference

Resources by Subject

Employment & Careers

- AGI Workforce <http://www.agiweb.org/workforce/>
- AGU Careers in Science
<http://www.agu.org/outreach/education/careers.shtml>
- AGU Job listings (members only)
- GSA Resources and Jobs <http://www.geosociety.org/profdev/>
- AAPG Career Center
<http://www.aapg.org/careers/careercenter.cfm>
- Chronicle of Higher Education (subscription)
- IRIS Grant Finder <http://www.library.illinois.edu/iris/>
- PapersInvited - "Calls for Papers" from professional bodies, universities, journal editors and other conference organizers; includes student competitions and student volunteer opportunities.
<http://www.library.uiuc.edu/orr/get.php?instid=395387>

- Other: Browse publications such as EOS

Reference

Resources by Subject

Book Reviews

Earth Science Book Reviews Database

<http://g118.grainger.uiuc.edu/gexbookreviews/reviews/>

Choice Reviews (subscription)

Reviews in journals

Amazon

Reference

Resources by Subject

Used Books <http://www.library.illinois.edu/gex/bookpubs.html#USED>

Reference

Resources by Subject

Journals

GeoRef Serials List

<http://www.agiweb.org/georef/about/serials.html>

Journal Seek <http://journalseek.net/earth.htm>

Directory of Open Access Journals <http://www.doaj.org/>

Reference

Resources by Subject: Geology and

Geology and Art & Music

Earth Images <http://www.earth.uk.net/index.php>

Recent articles in *Geoscientist* and *Earth*

Geoscientist, 2009, v. 19 (6): p. 7

Earth, 2009, p. 66-67: Geomedia; Art: Old paintings give new insight into coastal change.

Earth, Web Geology Rocks! Part III: Soil Songs, p. 71.

Books

Simon Winchester, 2005, *Krakatoa; The Day the World Exploded; August 27, 1883*: Harper Perennial (Church/Atmosphere).

“Singing” Sands

Geology and Health

Geology and Society, Public Policy, etc.

Geology and Military

Those Weird Little Odds & Ends

Calculator

Converters

Money

Data <http://www.onlineconversion.com/>

Time [http://www.worldtimeserver.com/convert time in UTC.aspx](http://www.worldtimeserver.com/convert_time_in.UTC.aspx)

Exchange Rates

Translators

DOI Resolver <http://dx.doi.org/>

Google Earth <http://earth.google.com> , Flash Earth <http://www.flashearth.com/>

Gas Rates http://www.gasbuddy.com/gb_region.aspx?region=IL

Weather

National <http://www.nws.noaa.gov/forecasts/graphical/>

Global <http://www.ghcc.msfc.nasa.gov/GOES/>

Reference

Some Things That Confuse Folks

Citations (style, web resources, images, data)

An article IN a larger work. E.G.

Scott, K.M., 1988, Origin, behavior, and sedimentology of prehistoric catastrophic lahars at Mount St. Helens, Washington, *in* Clifton, H.E., ed., Sedimentologic consequences of convulsive geologic events: Geological Society of America Special Paper 229, p. 23-36.

Abstracts

Different vendors

Undergraduates, but also instructors: “Web resources” vs. literature

Instruction

Everything a Jr. or Sr. in College Should Know to be Information Literate

<http://www.library.illinois.edu/gex/Classes/ClimateChangeInformation.html>

How to drum up business

Know teaching faculty members' research and teaching interests. Use that knowledge when demonstrating resources and tools.

Attend department functions, especially field trips.

Continually remind teaching faculty and students that you are available for library instruction.

Tips for Instruction

Build Web resources for specific reoccurring classes.

<http://www.library.uiuc.edu/gex/Geohelp.html>

Teach to a specific assignment.

Combine reference and individual instruction.

Use instruction to encourage individuals to come for help.

Web pages in support of field courses are especially helpful.

Citing web resources, illustrations, etc.

Specific tools such as RefWorks, EndNote, etc.

Instruction

Things to Include

- How information is organized
- The research/publication cycles
- Using the right research tools for the project (online databases, etc.)
- The Search Process, including truncation, Boolean terms, etc.
- Journals and other resources related to the specific assignment
- Finding other information such as data sets, images, etc.
- Use and misuse of the web
- How to evaluate information
- How to read a scientific paper
- How to report information; the elements of a scientific paper; scientific method
- Plagiarism
- Style – what it is, and why it is necessary
- Citing web resources, illustrations, etc.
- Specific tools such as RefWorks, EndNote, etc.

You probably won't have time to cover all of the above adequately, especially if you only have one 30 minute shot at it, but over time, you will get a feel for what is appropriate for a specific class or teacher. It helps to find out what the instructor's expectations are (if any). Sometimes an instructor is merely looking for a last minute "baby sitter" for a class. I look upon those occasions as opportunities. Even if you don't have time to cover it all, you can tell the students "These are things that you should know by this point in your college career. If you don't know these things, come see me."

