Annotated bibliography

GEOL 3231, Fall 2015

The purpose of this assignment is to gain experience with finding scientific research papers and evaluating their quality and usefulness.

*Tasks*:

1. Find and print out 5 research papers on one of the topics listed below. You may use Google Scholar or library databases, or ResearchGate, or similar scholarly search engines. Papers must have been published in peer-reviewed scientific journals.

1. On the printouts, highlight and label:
   1. The hypothesis or research question.
   2. The part where they say why the research is important (justification).
   3. The part where they put their results into context with previous research.
   4. The main conclusions.

Did they include a review of previous literature? Did they talk about limitations or problems with their study? If so, mark and label these, too.

1. Type out a bibliography entry for each paper using the references format from the GSA Bulletin, as we discussed in lab.
2. Below each bibliography entry, summarize the paper briefly. Be sure to include the following:
3. A one or two sentence statement of what the paper is about.
4. A summary of the methods used.
5. The main conclusions, briefly.
6. Say what, if anything, is particularly noteworthy about the paper. For example, maybe it includes a very useful review of previous literature, or introduces a novel method.
7. Note any problems or deficiencies with the paper. Examples include non-standard or error-prone methods, poor or incomplete analysis in the discussion, actual errors in stating facts or math or logic or thought, the writing being obtuse or difficult to follow.
8. Answer the following 2 questions for each paper:
9. How useful do you think this paper would be, and in what way? Examples include adding to our body of knowledge about a fundamental question, answering a big problem that applies widely, describing a new method, answering a small question or problem of limited scope and interest, data reports.
10. Is the abstract an accurate reflection of the contents and conclusions of the paper?
11. How important is this paper to making overall scientific progress in understanding the topic you chose? Briefly explain your assessment (1 or 2 sentences).

Possible topics:

*Sedimentology*

Storm effects on marshes.

Storm effects on beaches.

Fluvial processes on Mars.

Tsunami deposits.

River delta formation.

Modeling of any sediment transport phenomenon.

*Sedimentary rocks*

Paleotempestology.

The dolomite problem.

Cretaceous Shaftsbury formation, Alberta, Canada.

Sedimentary rocks on Mars.

*Stratigraphy*

Stratigraphic completeness.

Sequence stratigraphy of Gulf Coast USA.

Fractal behavior in the stratigraphic record.

Methods for measuring eustasy.

Stratigraphic modeling methods.

*Particular formations and regions*

Paradox Basin formation.

Michigan basin formation.

Khuff Formation in south-central Saudi Arabia

New Jersey coastal plain rocks.

Permian Basin in west Texas.

Marcellus Shale.

Athabasca Oil Sands, Alberta, Canada.

Catskill Delta in NY and PA.

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| **Rubric for grading:** | **Proficient** | **Intermediate** | **Beginner** |  |
| **Finding scientific papers**  Task A | * 5 papers found. * All printed out. * All are from peer-reviewed scientific journals. * All are relevant to the chosen topic. | * 3-4 papers found. * 5 papers found, but some not printed out. * Some are not from peer-reviewed scientific journals. * Some are not relevant to the topic. | * 1-2 papers found.   > 2 papers, but:   * None were printed out. * None are from peer-reviewed scientific journals. * None are relevant to the topic. | * Missing entirely. |
| **Finding important parts of the papers**  Task B | * Correctly identified all of the parts of a paper that were requested. * Marked and labeled them clearly. | * Incorrectly identified some of the parts of a paper. * Marks and/or labels were unclear or illegible. | * Did not correctly identify any of the parts of a paper that were requested. | * Missing entirely. |
| **Bibliography**  Task C | * Used correct references style. * Correctly identified the journal, authors, title, volume, issue, and page numbers for every paper. | * Did not correctly identify the journal, authors, title, volume, issue, and/or page numbers for 1 or 2 papers. | * Used incorrect reference style. * Incorrectly identified the journal, authors, title, volume, issue, and/or page numbers for 3 or more papers. | * Missing entirely. |
| **Annotation**  Task D | * Summaries of paper, methods, and discussion are accurate reflections of the contents of the paper. * Summaries are in the student’s own words. | * Summaries of paper, methods, and/or discussion do not accurately reflect the contents of the paper. * Summaries appear to be edited versions of the abstracts. * Summary quality varies between papers. | * Summaries of paper, methods, and/or discussion have no connection to the paper. * Summaries were copied straight from the abstract. | * Missing entirely. |
| **Interpretation**  Task E | * Correctly assessed how each paper would be most useful. * Correctly assessed the importance of each paper to overall scientific progress. * Justification of importance ranking shows use of reasoning skills and makes sense scientifically. | * Correctly assessed how some papers would be most useful, but incorrectly assessed others. * Correctly assessed the importance of each paper to overall scientific progress. * Justification of importance ranking is illogical or does not make sense scientifically. | * Does not appear to understand the contexts in which a paper will be most useful. * Does not appear to understand what makes a paper important. * Did not justify assessment of papers importance. | * Missing entirely. |