GEOL 204: The Fossil Record
Team Project

There are several steps for this project. The first one is forming your teams:

**STEP ONE—Team Formation:** Form a team of three to four (3-4) people. We are giving you a chance during Discussion Section to form groups.

Choose your teams wisely: everyone is expected to contribute to the team, and everyone gets the same grade for it. If someone slacks off or screws up, you all get penalized.

Make sure that you share contact information with each other so you can collaborate.

Your teams should be formed by the end of the Discussion Section meeting on **Mar. 4.**

**STEP TWO—Picking a Topic:** Your task is to research, record, and present information concerning a topic of paleontological research, comparable to but not the same as the ones discussed in lecture. Below is a guide for ideas:

Excluded Topics:
Particular ones we’ll cover in class: Was *Tyrannosaurus* a Predator or Scavenger?; The Cretaceous/Paleogene Extinction; The Permian/Triassic Extinction; Identity and Biology of Ediacaran Organisms; the Cambrian Explosion; the Colonization of Land by Plants; the Colonization of Land by Vertebrates; Dinosaur Size; Dinosaur Physiology; the Origin of Birds and of Avian Flight; the Rise and Impact of Grasslands; the Origin of Humans; “Out-of-Africa”; Peopling of the New World; the Quaternary Extinctions
Outside the scope of the project: the history of paleontology; the societal aspects of paleontology

Possible Topics (by no means an exhaustive list!):
Particular Major Events in the History of Life: Archean Fossils; the Great Ordovician Biodiversification Event; the Ordovician/Silurian Extinction; the Devonian Nekton Revolution; the Devonian/Silurian Extinction; the Triassic/Jurassic Extinction; the Mesozoic Marine Revolution; the Cretaceous Terrestrial Revolution Origin, Adaptations, and Diversification of some major group of fossilizing organisms, whether as inclusive (big a category) as Arthropoda and Angiospermae (flowering plants), or as restricted as lions.
Examination of the taphonomy and reconstructed life of particular specimens or of the origins of particular Lagerstätten
Evolution of Major Life Habits: Forests; Reefs; Tetrapods Return to the Sea (Mesozoic marine reptiles; whales; etc.); Styles of Predation; Cursoriality (running); Grazing; Display structures in fossils; etc.
The Use of a Particular Analytical Technique or Type of Study: CT scan; Diversity curves; Stable isotope research; Molecular vs. fossil divergence times; Preservation of colors in fossils; Experimental taphonomy; etc.
Discuss amongst your group some ideas for possible topics. Please have a team list and a preliminary topic idea by the next discussion section (Mar. 11), which you will email to your TA and Dr. Holtz (tholtz@umd.edu). We’ll reply by the end of the week if we think you should modify the topic (for example, it might not have a lot of useful publications, but a related idea might) or if it is unsuitable. By Mar. 26 you should have agreed upon and have approved a topic of research. By Apr. 1 you must have a short preliminary bibliography (more details to come) for your project.

STEP THREE—Researching and Writing a Wiki: On the ELMS site for GEOL 204 we will have created a Wiki site. You will find online resources about actually working with the Wiki editing software (Campus Pack Wiki) at http://otal.umd.edu/sites/default/files/CampusPack/wikis.pdf

We suggest the following Wiki pages for your structure, but depending on what you pick as a topic this structure may not be appropriate:

- Introduction to the topic (i.e., what is the item of concern) (necessary for all projects)
  - State your question (like the lectures, you should be able to develop a one-sentence question that describes what you are testing) (necessary for all projects)
- Alternative hypotheses concerning the topic, if any
- Critical analyses of the alternative hypotheses (i.e., what is the evidence and support for the different models? How would we choose between them?)
- Summary of your study
- Annotated Bibliography (necessary for all projects: more details below)

We encourage the use of hotlinks, images, embedded videos, etc., keeping in mind at all times University regulations about plagiarism, proper citations, etc.

Annotated Bibliography: All data in your wiki MUST be referenced. (After all, it is almost certain that you are not digging up your own fossils: instead, you are reporting the results of other people’s research.) Trace your data back as far as possible to the original source: we don’t want to see Wikipedia as a reference!!!! (Wikipedia is a great place to start, but follow the links on Wikipedia to find where they got their information, and cite the original source, not Wikipedia!)

We expect a minimum of five research articles from the peer-reviewed literature included in the annotated bibliography, following the preferred bibliographic style at http://www.geol.umd.edu/~tholtz/G204/204bib.html

Additionally, this is intended to be an annotated bibliography: each item should have a short (1-2 sentence summary) of the information which that paper provides.
Note that the faculty & TA of GEOL 204 will be able to monitor who has contributed to the Wiki. It is important to divide up your responsibilities clearly in the project (for examples, maybe giving each person some subtopic; or some people writing responsibilities, others graphics/illustrations, still other general editors; whatever works for you.)

As you can see, this will take a fair amount of work. **ABSO-FRIGGIN-LUTELY do NOT** put this off until the last minute (i.e., the night or weekend before it is due), because there is no reasonable way you will do a decent job on it in that case, and you will sink together collectively. Also, you absolutely need to get this done prior to/simultaneous with generating your PowerPoint presentation, as that presentation will be condensed from the research you do in the wiki.

The due date for the wiki is whatever day your team gives its presentation.

See the grading rubric at the end of this packet for grading details for individual and group components.

**STEP FOUR—Presenting Your Research in Class:** On **Apr. 22, Apr. 29,** and on **May 6** we will have two teams per day present the results of their research in Discussion Section. This will be in the form of a PowerPoint presentation.

Plan for 15 minutes of presentation time. The topics should generally follow this structure:

- Overview of the topic (i.e., what topic of paleontological research you studied)
- The Science of the Topic (i.e., various hypotheses; their evidence; etc.)
- Summary of your Research

But feel free to show your creativity. Feel free to examine the following online resources for suggestions on effective PowerPoint Presentations:

http://communication.howstuffworks.com/effective-powerpoint-presentations.htm
http://www.lifehack.org/articles/technology/10-tips-for-more-effective-powerpoint-presentations.html
http://mason.gmu.edu/~montecin/powerpoint.html

We definitely recommend practicing this among your group several times before your presentations.

Choose among yourself how you plan to present this. Everyone should contribute to the presentation, but you may wish to do this in different ways. For example, you may break the team up into those who design the PowerPoint vs. those who do the presentation in class; or, alternatively, each person may be responsible for certain sections (both for designing and presenting.)

See the grading rubric at the end of this packet for grading details.
The due date for the presentation will be on **Apr. 22**, **Apr. 29**, and on **May 6**: your TA will help choose which team presents which day.

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**GRADING RUBRIC – Group Grades**

<table>
<thead>
<tr>
<th>GRADE:</th>
<th>WIKI</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Content is factually correct; Spelling, grammar (English and technical), punctuation, etc. are correct; All required components are answered in sufficient detail; All factual content, figures, tables, and the like are appropriately referenced; References are in appropriate format; All hotlinks are operational</td>
<td>Content is factually correct; Spelling, grammar (English and technical), punctuation, etc. are correct; All required components are answered in sufficient detail; Individual slides, transitions, figures, animations (if any), etc. are effective and non-distracting; Presentation is in a logical sequence; Presentation is completed in a timely fashion</td>
</tr>
<tr>
<td>90</td>
<td>Problems with any one of the above items</td>
<td>Problems with any one of the above items</td>
</tr>
<tr>
<td>80</td>
<td>Problems with any two or three of the above items; or one required component insufficiently addressed</td>
<td>Problems with any two or three of the above items; or one required component insufficiently addressed</td>
</tr>
<tr>
<td>70</td>
<td>Problems with any four or five of the above items; or two required components insufficiently addressed</td>
<td>Problems with any four or five of the above items; or two required components insufficiently addressed</td>
</tr>
<tr>
<td>60</td>
<td>Problems with more than five of the above items; or more than two required components insufficiently addressed</td>
<td>Problems with more than five of the above items; or more than two required components insufficiently addressed</td>
</tr>
<tr>
<td>0</td>
<td>Not completed or grossly inadequate</td>
<td>Not presented or grossly inadequate</td>
</tr>
<tr>
<td>GRADE:</td>
<td>WIKI</td>
<td>PRESENTATION</td>
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</tr>
<tr>
<td>100</td>
<td>Contributions on par with other members of the team; Specific entries by student are free of factual, typographical, and grammatical errors</td>
<td>Speaks clearly and precisely; Demonstrates mastery of the knowledge presented; Appropriate and effective use of text and graphics</td>
</tr>
<tr>
<td>85</td>
<td>Contributions noticeably less than some members of the team; Specific entries by student typically with a few factual, typographical, and/or grammatical errors</td>
<td>Student at ease with presentation but does not clearly have mastery of the topic; Some inappropriate use of graphics and text</td>
</tr>
<tr>
<td>70</td>
<td>Contributions considerably less than other team members; Specific entries by student typically with a fair number of factual, typographical, and/or grammatical errors</td>
<td>Student mumbled, incorrectly pronounced words, or spoke far too softly; Did not understand the material presented; Considerable inappropriate use of graphics and text</td>
</tr>
<tr>
<td>0</td>
<td>No indication this student contributed to the Wiki, or only did so inaccurately</td>
<td>Not presented or grossly inadequate: Audience cannot understand or follow presentation; Visuals and text did not contribute to presentation</td>
</tr>
</tbody>
</table>

The TA may reward up to 5 points in any category for exceptional quality of the writing/research/presentation

**REMINDER:** This activity (as all activities in the class) is governed by the University regulations with regards to plagiarism, falsification, cheating, and other forms of academic dishonesty: see [http://www.lib.umd.edu/guides/citing.html](http://www.lib.umd.edu/guides/citing.html) for more information. Use of graphics in the Wiki is governed by Fair Use: you can use them, but please cite your references. Please follow [http://www.geol.umd.edu/~tholtz/G204/204bib.html](http://www.geol.umd.edu/~tholtz/G204/204bib.html) for the preferred citation and reference style for this project.

Each student will get four (4) grades associated with the project:

- Group Wiki grade (all members of the team get the same grade for this)
- Group Presentation grade (all members of the team get the same grade for this)
- Individual contribution to the Wiki
- Individual Presentation grade