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GEOL 106N.01: The History of Life

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The University Of Montana

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GEOL. 106N HISTORY OF LIFE
Fall, 2000

Instructor: George Stanley **Req. Text:** Cowen: THE HISTORY OF LIFE
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DATE	TOPIC	READING ASSIGNED
Sept 06	Introduction	--
11	A new view of evolution	Gould, 1994
13	The origin of life	Ch. 1
18	Earth's earliest rocks and fossils	Ch. 2
20	Sex and the single cell	Ch. 3
25	Earth's first metazoans	Ch. 4
27	The great explosion of life	Nash, 95
Oct 02	Discussion Group I	[assigned readings]
04	Effects of a changing world	Ch. 5
09	Plate tectonics and terranes	TBA
11	The first vertebrates	Ch. 7
16	Life moves to land	Ch. 8
18	Amphibians and reptiles	Ch. 9
23	Early reptiles & body heating	Ch. 10
25	The Triassic takeover	Ch. 11
30	Dinosaurs	Ch. 12
Nov 01	Discussion Group II	[assigned readings]
06	What killed the dinosaurs?	Ch. 18
08	Mass extinction and recovery	Ch. 6
13	Exam I	--
15	Discussion Group III	[assigned readings]
20	The evolution of flight	Ch. 14
22	THANKSGIVING HOLIDAY-no meeting	--
27	The rise of mammals	Ch. 15
29	Cenozoic mammals	Ch. 19
Dec 04	Geography and evolution	Ch. 20
06	Evolution of Primates	Ch. 21

11	How we became human	Ch. 22
13	Ice Ages and the last extinction	CH. 23 & 24
Dec. 18	FINAL EXAM --(comprehensive)	7:40-9:40 pm

GRADING BASIS FOR COURSE

Attendance (it's required) as is reading of assignments and participation in group discussions. Other basis below:

First exam	30%
Short essays on reading assignments	20%
Participation in group discussions I-III	20%
Final exam [comprehensive]	30%

CLASS GROUP DISCUSSIONS (specific readings announced in class)

- I. Explosion of life, the Burgess Shale and the new view of life
- II. Dinosaurs and new views on how they lived
- III. The great dyings of life: what killed the dinosaurs and other kinds of life on earth and how they recovered

GROUP DISCUSSION TOPICS- How they work

Here is a chance for you, not only to have direct input into the course, but also to share in group efforts toward learning and enjoying some of the truly interesting and important aspects of the history of life. It will require that you do some extra reading and meeting outside of class and outside the regular assigned chapters in Cowen. You will present and discuss these topics (listed above) during the class time.

The extra readings related to the topics are on reserve in the Mansfield Library Reserve Reading Room and on electronic reserve. During the semester there will be three discussion topics (see syllabus) which deal with important but controversial aspects of the history of life. The topics are selected to elicit debate and discussion. You will be assigned to one of several discussion teams and each team is assigned a different subject and reading. You should research your topic as soon as you can in fact, you can start ahead of the assigned dates but on the indicated dates be prepared to discuss your group topic.

Before each assigned discussion topic (see syllabus), each

group will elect a **scribe** and **spokesperson**. You can serve on either job only once. Spokesperson and/or scribe plus any interested members of your team must meet with me, outside class and well ahead, to discuss how you will approach your topic. During the class time, the spokesperson will start off by giving a brief discussion (5-10 minutes max.) on your topic followed by discussion by the whole class. Plan to meet with your group outside class before the discussion. You will be graded on the quality of both your presentation and the one-page writeup. The scribe is responsible for writing a concise summary (max. one page) of your team's topic which reflects the consensus of the whole team. Scribe will show his or her draft to the group for approval and turn it in to me at the start of class, **one week** after the discussion (typed, single spaced, one page max.) **To receive credit scribe write your name at the bottom of your writeup along with the names of the group members who participated, indicating who was scribe and who was spokesperson.** If you missed the class meeting, you can't receive credit for participation. Your one-page summary will be collated, reproduced and distributed to everyone and it will form part of your class notes. If typos or grammatical problems the essay will be returned for rewrite and points will be deducted.

OUTSIDE READINGS

For use in group discussions, outside readings are available at the reserve desk, Mansfield Library on limited reserve. They also are available on electronic reserve. Open over the library web site. When looking for reserve readings look under course number and *author* or *chapter*. For group discussion readings, they are filed by the group discussion number, for example, I, II, and III. You will need to decide which readings are most relevant to your group's particular topic. Examples of possible readings:

- Alper--94 Earth's Near Death Experience. Earth, January.
- Angier-85-Did comets kill the dinosaurs? Time Magazine, May.
- Begley-91-How dinosaurs lived. Newsweek, Oct.
- Burney-93-Recent animal extinctions: Recipes for disaster. American Scientist, Nov./Dec.
- Glen-90-What killed the dinosaurs? Am. Scientist, July-August.
- Gore-93-Explosion of life. National Geographic Magazine, Oct.
- Gore-1989-Extinctions. National Geographic Magazine, June.
- Gould, S.J. 1994. The power of this view of life, Natural History, v. 103, no. 6, p. 5-8.
- Gould--Treasures in a taxonomic wastebasket. Natural History, Dec., 1985.
- Gould--The lesson of dinosaurs: evolution didn't inevitably lead to us. Discover Magazine, March, 1987.
- Kerr-1990-Dinosaur death blow in the Caribbean sea? Science May.
- Kerr-1992-Extinction by a one-two comet punch? Science, Jan.
- McMenamin-87-The emergence of animals. Sci. American, v. 256.
- Milius--98-Feather dinosaur found in China. Sci. News, June 27
- Morell-87-The birth of a heresy. Discover Magazine, March.
- Monastersky-92-Counting the dead. Science News, Feb. 1.
- Monastersky--Impact wars. Science News
- Monastersky-92-Closing in on the killer. Science News, Jan 25.
- Monastersky--1996-Deflating the biological big bang. Science News
- Monastersky--1996-Global crisis:The fungi stand alone. Sci. News
- Monastersky--1994-The first monster. Sci. News
- Monastersky-1997-Life's Closest Call. Science News
- Nash-1995-When Life Exploded. Time Magazine, Dec. 4.
- Seilacher-84-Alien life here on Earth? Science, 6 Jan.
- Sepkoski-94-Extinction and the fossil record. Geotimes, March.
- Stanley-87-Travels of an ancient reef. Natural Hist. Mag., Nov.
- Stanley-87-ch. 6. In Extinctions, Scientific American Library.
- Stolzenburg-90-When life got hard. Science News Magazine, Aug.
- Thompson--Signs of Nemesis. Science News, v. 131, p. 100.
- Weisburd-1986-Extinction wars. Article from Science News.
- Weisburd-1986-Volcanoes and extinctions. Science News.
- Weisburd-1986-Brushing up on dinosaurs. Science News, no.14.