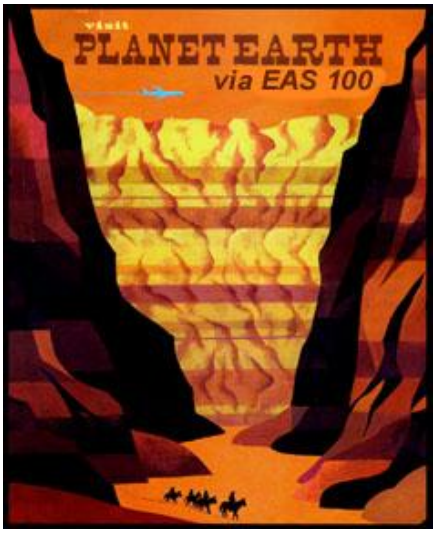

Writing Assignment 1

EAPS 10000 Y01 *Planet Earth* Online Course

Summer 2014

June 10, 2014

Earth Atmospheric Planetary Sciences
PURDUE UNIVERSITY

June 10, 2014 – **Writing Assignment 1:** As discussed in the Syllabus, there are 3 writing assignments during the course. WA 1 should include topics covered in Chapters I to 5 of the textbook. See the **Due Dates** file (in the **Course Content** area of BB Learn) for due dates of all assignments. **Be sure to read all the instructions below. Please pay particular attention to the plagiarism discussion (section 3, below)! In addition to avoiding plagiarism, you must understand and use correct citation and referencing in your paper (see more information and links to other citation and referencing resources below).**

The writing assignments are short papers (short, informative research papers on a geosciences topic) designed to allow you to explore (in greater depth) a topic of interest to you that we have covered in about 5 chapters in the textbook.

1. Instructions (please read carefully): Write a 1½ to 2 page paper on a geosciences topic of interest to you that is related to the material that we have covered in the textbook during approximately the last 5 weeks. Some suggested topics are listed below, but you are free to choose other relevant topics for your paper. **Your paper must use 12 point, Times Roman font (or equivalent), be single spaced and utilize one inch margins (sides, bottom and top).** With these formatting choices, the 1½ to 2 page paper (main body of paper, text only, not including references) should have approximately 750 to 1000 words.

In addition, provide a **references** section at the bottom of your paper (or on a separate page) listing your book, journal or internet (**complete URL**) references, and use **citations** in your text to note quotations or specific information that you used from your references. In order for a source to be included in your **reference** list, it needs to be **cited** in the text of your paper. Also, be sure to use **metric** units (used almost universally in science) in your paper.

You can also add (optional) copies of a small number of figures, photos or tables to support or illustrate the topics or concepts that you describe in your text. Figures, photos and tables must include a **caption** and a **citation** showing the source.

It is not necessary to have a large number of references – two or three, or so, good references are all that is necessary. You can use the textbook as a reference, but it cannot be the only reference that you use.

The easiest (and recommended) way to handle **references** and **citations** is illustrated by the examples below (the author's name(s); if more than 3, put first author's name *"and others"*; followed by the date of publication**. If publication is a book, also include the page number(s) in the citation, such as "(Lutgens, Tarbuck and Tasa, 2014, p. 107)"):**

Examples of citations (needed for referring to specific information, or quotes, that you obtained from your references) in your text:

Earthquakes which occur in stable continental crust are commonly associated with ancient rift zones (Johnston and Kanter, 1990). (Note: if the above sentence is a direct quote, it needs to be placed in quotation marks.)

.....

Johnston and Kanter (1990) show that although intraplate earthquakes occur less frequently than earthquakes at plate margins, their potential size and efficient wave propagation in stable continental crust results in significant seismic risk. (Note: if the above sentence is a direct quote, it needs to be placed in quotation marks.)

.....

Example of reference format for separate reference section (<u>all</u> sources cited in your text must be listed in the reference list [if it is an Internet source, the complete URL in parentheses can serve as the citation and the reference], and <u>all</u> entries in your reference list need to be cited in your text):

Johnston, A.C., and L.R. Kanter, Earthquakes in stable continental crust, *Scientific American*, **262**, 68-75, 1990.

Good references can be found in the Purdue libraries (the Earth and atmospheric sciences library is on the second floor of the Civil Engineering building), local public libraries and on the Internet. For internet sources, try to find reliable sites such as from government agencies (US Geological Survey, NOAA, NASA, EPA, DOE, etc.), and websites (search on a topic, but be selective in which website you use) developed by scientists or professional scientific societies. A wealth of geosciences educational materials can also be found at the following websites: www.geology.com (some advertising is included on this website), http://serc.carleton.edu/index.html, http://serc.carleton.edu/NAGTWorkshops/index.html. A list of useful references (books, journal articles, periodicals) on many geosciences topics can also be found at: http://web.ics.purdue.edu/~braile/eas100/reflist.htm.

2. Review of geoscience video option: For at most one of the three writing assignments this semester, you can choose to do a review of a video (or two or three videos if they are short); an education video – from Discovery, History, Science, National Geographic channels, etc. (some geosciences video series: *How the Earth was Made*, *Planet Earth*, *The Universe*, *Blue Planet*, *The Planets*, etc.), or a movie that covers a geoscience topic – *Dante's Peak*, *Volcano*, *Earthquake*, *Twister*, *It Could Happen Tomorrow* (series, Weather Channel), *Secrets of Earth* (series, Weather Channel) *The Core*, etc.) on a geosciences topic. Many videos (and animations and visualizations – see Carleton sites above) on geosciences topics can be found on the Internet.

You can also search on 'geology documentary', 'geophysics documentary', 'ocean documentary', 'atmosphere documentary', or 'astronomy documentary' on www.youtube.com and you will find many full-length and shorter geosciences videos.

If you choose to do a review of a geosciences video, provide a description of the video, the topic and the source. Be sure to check the scientific accuracy (and use and cite a reference that you checked) and comment on the accuracy and effectiveness of the video. Also, if the movie or video portrays inaccurate or exaggerated science occurrences, provide some description of the "real geosciences" that the video contains (this could also require consulting and citing additional sources). In other words, provide some accurate background information (and add citations and references to those sources to your paper) of the science that is related to the video. All other requirements of the writing assignment are the same as described above and below.

3. Information about plagiarism: IMPORTANT! – Do not be tempted to use a paper obtained from the Internet or some other source or to copy sentences or paragraphs (without citations and references) from the Internet or other reference! A simple Internet search can distinguish papers that are copied. When plagiarism is suspected, we also use an online tool that can detect plagiarism in submitted papers.

Plagiarism is just wrong (as a writer who plagiarizes is taking credit for someone else's work) and is educationally negative (as there is usually very little learning if material is just copied and pasted into a paper).

Plagiarism is copying or direct paraphrasing a sentence or more without citing the original source. ("Paraphrasing should not include the replication of vivid phasing, chains of syntax or sequences of ideas. Where those things are involved, direct quotation marks should be employed." Thomas Mallon, author of *Stolen Words*, 1989, as quoted in USA Today, January 17, 2002.)

Direct quotation (copying) is permissible but must be placed in quotes in your text and be cited (citations). Specific information that you obtain from a reference must be cited. You may copy a small number of specific sentences (must be in quotes), and Figures and Tables from an Internet, book or journal source to include in your paper to support your own writing and objective. However, the copied material (quotes, figures, photos, tables) must be cited (in the text, in the Figure caption, or Table information). Direct quotes should not be a major part of your paper.

To avoid plagiarism or filling your paper with direct quotes, a good method is to prepare notes and outlines from your reference material, then use only your notes and outlines (along with citation and reference information) to write your paper with your own organization and in your own words. Also, see additional resources below.

Sources cited in your paper must be included in your reference list. Also, in order for a source to be included in your reference list, it needs to be cited in the text of your paper. Be sure that you understand the difference between references and citations.

4. Grading: Each writing assignment is worth 40 points toward the semester point total. Grading of the paper will be on the following criteria: following directions and format, appropriate references and sources, organization of paper, clear and concise writing, and scientific content (explanations, scientific accuracy).

5. Submitting your paper: The writing assignments must be typed and can be submitted electronically through the **Blackboard Learn** pages. To submit your assignment (WA) on Blackboard, open the **Writing Assignment** folder, then click on the assignment name (such as **WA 1**) next to the icon; a new window will open (such as **Upload Assignment: WA 1**); under item **2. (Assignment Materials, Submissions**), you can attach the file **(.doc** or **.pdf** format) of your completed assignment by **browsing** to your computer. Please be sure your file has a name such as ***WA1.YourName.doc***.

For **Hw** and **WA** assignments, **you can submit more than once** if you make updates – for example, if you submit an incorrect file the first time, or if you have forgotten to add your references sections, you can submit a second (or more) time.

For more information, see **Directions for Submission** on the EAPS 10000 Y01 **Course Content** page on Blackboard for instructions for submitting homework and writing assignments. Additional information on the assignments is also included in the **Syllabus**.

6. Additional resources:

Hacker, Diana, and Nancy Sommers, *Rules for Writers*, 7th edition, Bedford/St. Martin's, 672 pages, 2011.

Modern Language Association, *MLA Handbook for Writers of Research Papers*, 7th edition, Modern Language Association of America, 292, pages, 2009.

Here are some resources for writing a research paper from the Purdue OWL.

http://owl.english.purdue.edu/owl/ – Purdue Online Writing Lab (OWL) home page

http://owl.english.purdue.edu/owl/resource/658/01/ – Writing a research paper

http://owl.english.purdue.edu/owl/resource/953/01/ – Writing reports, proposals, technical papers

http://owl.english.purdue.edu/owl/resource/560/03/ – In-text citations

http://owl.english.purdue.edu/owl/resource/560/05/ – References list basic rules

http://owl.english.purdue.edu/owl/resource/589/1/ – Avoiding Plagiarism

http://owl.english.purdue.edu/media/pdf/20090212013008_560.pdf – APA Sample paper (with annotations)

7. Suggested topics for Writing Assignment 1:

The scientific method
Minerals
Uses of minerals
The rock cycle
Volcanic rocks
Intrusive (plutonic) rocks
The Mississippi delta
Groundwater resources
Effects of mining
Causes of ice ages
Alfred Wegener
Evidence for plate tectonics
Paleomagnetism
Earth's spheres
Rocks
Mineral identification
Metamorphism
Sedimentary rocks
The water cycle
Flooding
Groundwater contamination
Glaciers
Future water resources
Continental drift
What drives the plates?

Suggested topics and Example References (links) for WA 1

The scientific method

General overview of the scientific method:
http://teacher.nsrl.rochester.edu:8080/phy_labs/AppendixE/AppendixE.html

A GSA article detailing the scientific method with added emphasis on application to the earth sciences: http://www.geosociety.org/educate/NatureScience.pdf

Minerals

Mineralogy database with general and detailed info: http://webmineral.com/

General overview of minerals:
http://hyperphysics.phy-astr.gsu.edu/hbase/geophys/mineral.html

Detailed "notes" for mineralogy course at the University of Colorado:
http://ruby.colorado.edu/~smyth/G30101.html

Uses of minerals

A comprehensive guide to mineral resources and related topics: http://minerals.usgs.gov/

Common minerals and their uses: http://www.mii.org/commonminerals.html

40 common minerals and their uses: http://www.nma.org/publications/common_minerals.asp

The rock cycle

Geologic Society of London presents the rock cycle and all its components in detail:

http://www.geolsoc.org.uk/rockcycle

A brief overview of the rock cycle and its components:
http://www.geology.wisc.edu/courses/g112/rock_cycle.html

Volcanic rocks

USGS overview of igneous rocks (NOTE: igneous rocks include volcanic and plutonic rocks): http://vulcan.wr.usgs.gov/LivingWith/VolcanicPast/Notes/igneous_rocks.html

A brief overview of igneous rocks:
http://www.tulane.edu/~sanelson/geol111/igneous.htm

Lava flows and pyroclastic materials discussions:
http://facweb.bhc.edu/academics/science/harwoodr/GEOL101/Labs/VolcanicMaterials/

Volcanic and extrusive rocks as a part of the rock cycle:
http://www.geolsoc.org.uk/page3597.html

Intrusive (plutonic) rocks

USGS overview of igneous rocks (NOTE: igneous rocks include volcanic and plutonic rocks): http://vulcan.wr.usgs.gov/LivingWith/VolcanicPast/Notes/igneous_rocks.html

A brief overview of igneous rocks:
http://www.tulane.edu/~sanelson/geol111/igneous.htm

Intro to structures and textures of igneous rocks:
http://www.tulane.edu/~sanelson/geol212/intro&textures.htm

The Mississippi delta

General stats of the river: http://www.nps.gov/miss/riverfacts.htm

Evolution of the Mississippi delta:
http://www.ce.berkeley.edu/projects/neworleans/report/Draft/CH_3.pdf

Links to additional Mississippi River info: http://www.tulane.edu/~mrbc/MRBClinks.htm

Groundwater resources

US groundwater resource info including studies, availability/sources, and uses:
http://water.usgs.gov/ogw/gwrp/

US groundwater basics, data and info, selected topics, publications, etc:
http://water.usgs.gov/ogw/

Effects of mining

Environmental impacts of mining with three additional references at page bottom:
http://ecorestoration.montana.edu/mineland/guide/problem/impacts/default.htm

An essay on the effects of mining in the Scranton, PA region:
http://www.wilkes.edu/pages/2299.asp

Causes of ice ages

A general discussion of ice age triggers:
http://www.pbs.org/wgbh/nova/earth/cause-ice-age.html

Lawrence Berkeley National Lab presents a brief intro to ice age theories:
http://muller.lbl.gov/pages/iceagebook/IceAgeTheories.html

Earth's spheres

Basic info, outside resources, related topics, and images: http://earth.rice.edu/earthupdate/

Interactions in Earth's Systems:
http://www.ucmp.berkeley.edu/education/dynamic/session4/sess4_interactions.htm

Rocks

*Rocks basics:*http://www.nature.nps.gov/Geology/usgsnps/rxmin/rock.html

Additional info on rocks including properties, characteristics, and case studies:
http://www.fi.edu/qa97/spotlight1/spotlight1.html

Mineral identification

Basics of mineral identification:
http://esa21.kennesaw.edu/activities/mineralid/mineralid.pdf

Additional general information on mineral identification:
http://faculty.chemeketa.edu/afrank1/rocks/minerals/minerals.htm

Metamorphism

Intro to metamorphism and metamorphic rocks:
http://www.tulane.edu/~sanelson/geol111/metamorphic.htm

Metamorphic rock classification:
http://geology.csupomona.edu/drjessey/class/gsc101/meta.html

Sedimentary rocks

Brief intro to sedimentary rocks: http://geomaps.wr.usgs.gov/parks/rxmin/rock2.html

Characteristics of sedimentary rocks:
http://www.physicalgeography.net/fundamentals/10f.html

Classification of sedimentary rocks: http://www-odp.tamu.edu/curation/gcr/geol106lab/classifications.htm

The water cycle

General info on the water cycle:
http://ga.water.usgs.gov/edu/watercycle.html

Global water distribution and brief discussion:
http://earthobservatory.nasa.gov/Features/Water/

Video presentation by NOAA discussing the water cycle:
http://www.montereyinstitute.org/noaa/lesson07.html

Flooding

Diverse resource database on flooding issues and topics:
http://www.floodsafety.noaa.gov/

Geology and geography of floods:
http://andrewsforest.oregonstate.edu/pubs/pdf/pub2812.pdf

Groundwater contamination

Summary of topic with specific examples of sources and types of contamination:
http://oceanworld.tamu.edu/resources/environment-book/groundwatercontamination.html

Basics of groundwater: http://techalive.mtu.edu/meec/module04/title.htm

Glaciers

General info on glaciers including formation, components, effects, etc:
http://nsidc.org/cryosphere/glaciers/index.html

The Forest Service presents an overview of glaciers:
http://www.fs.fed.us/r10/tongass/forest_facts/resources/geology/icefields.htm

Future water resources

Case study of issues surrounding future water resources for Maryland:
http://www.mde.state.md.us/programs/ResearchCenter/ReportsandPublications/Pages/ResearchCenter/publications/general/emde/vol3no7/wolfman_report.aspx

A paper discussing the many issues of water resources in the US:
http://ag.arizona.edu/azwater/files/Water.People.and.the.Future.pdf

Case study for Connecticut:
http://www.ct.gov/dep/lib/dep/air/climatechange/adaptation/090313_water_resources.pdf

Alfred Wegener

Brief bio and description of Wegener's contributions to science:
http://www.ucmp.berkeley.edu/history/wegener.html

http://www.pbs.org/wgbh/aso/databank/entries/bowege.html

http://pubs.usgs.gov/gip/dynamic/wegener.html

Evidence for plate tectonics

Brief history of the development of plate tectonic theory:
http://pubs.usgs.gov/gip/dynamic/historical.html

More detailed history of plate tectonic theory:
http://www.csa.com/discoveryguides/drift/review.pdf

Paleomagnetism

Basics of paleomagnetism:
http://geology.cr.usgs.gov/capabilities/paleom.html

List of links to all things geo- and paleo-magnetism:
http://www.agu.org/sections/geomag/background.html

Continental drift

Development of the theory in brief:
http://www.oregon.gov/dsl/ssnerr/docs/efs/efs25contdrift.pdf?ga=t

http://www.platetectonics.com/article.asp?a=18

What drives the plates?

Driving mechanisms of plate tectonics: http://www.umich.edu/~gs265/tecpaper.htm

Brief intro: http://www.geology.um.maine.edu/ges416/Lecture3/Lecture.html