

## Writing Emphasis for NATS 104

The goal of the workshops, rough drafts and reviews in this timeline is to provide you with an opportunity to revise a term paper based on both **peer** and **instructor** reviews. The procedure is designed to provide students with a close approximation of the requirements and process by which scientific papers are reviewed. Each of the six steps must be completed to be eligible for the next step. After the due date, the credit drops to zero for the associated workshop, but it must still be completed, for 0 points credit, before the next step. For example, students cannot deposit a 1<sup>st</sup> rough draft until they have selected a topic; they cannot attempt WK 9 until WK 8 is completed; they cannot submit a term paper until the WK 9 revised rubric and revised paper are submitted in the discussion folder and graded by the GTA.

	<b>Exercise</b>	<b>Materials Due</b>	<b>Pts</b>	<b>Due FI 09</b>
1	<b>Workshop 6</b>	Complete D2L Workshop 6: Library Resource Exercises	10	10/16/09
2	<b>Choose Topic</b>	Complete D2L Workshop "Required for Peer-Review"	0	10/16/09
3	<b>Peer Pairing</b>	<b>Complete</b> 1 <sup>st</sup> Rough Draft (for D2L Discussion Folder)	0	10/23/09
4	<b>Workshop 8</b> Peer review 1 <sup>st</sup> Rough Draft (only peer pairs eligible)	Peer Review In D2L Discussion Folder (both 1 <sup>st</sup> rough draft & peer-review needed for Workshop 9 eligibility): a. <b>Submit 1<sup>st</sup> Rough Draft</b> for partner (4 days before WK 8 due date) b. <b>Submit Peer Review</b> of partner's paper (rubric p. 8)	10	10/23/09 11/02/09 11/06/09
5	<b>Workshop 9</b> Self Review 2 <sup>nd</sup> Rough Draft	Self Review in D2L Discussion Folder (both 2 <sup>nd</sup> rough draft & revised peer review needed for Term Paper eligibility): a. <b>Submit 2<sup>nd</sup> Rough Draft</b> b. <b>Complete Self Review</b> (see rubric p. 9)	10	11/06/09 - 11/13/09
6	<b>Term Paper</b> TurnItIn.com Final Draft	a. <b>Revise</b> 2 <sup>nd</sup> Rough Draft with any GTA suggestions b. <b>Submit Final Draft</b> to TurnItIn.Com GTA grades Final Draft on TurnItIn (same rubric as p.8, 9)	200	11/13/09 - 11/23/09
			230	pts.total

	<b>1<sup>st</sup> Rough Draft WK 8</b>	<b>2<sup>nd</sup> Rough Draft WK 9</b>	<b>Final Draft 11/13/09</b>
<b>Title Page</b>	1 page	1 page	1 page
<b>Body</b> Introduction Body Conclusion	3 pages	4 pages	4-5 pages
<b>Works Cited</b>	3 references max. 1 web page	4 references max. 1 web page	At least 4 references max. 1 web page

# 1. Library Resources and Scientific Writing

**Introduction:** This exercise will introduce you to the online resources including those provided by the UA Library. You will learn how to conduct searches for books and journal articles, which you could use in preparing a research paper. This exercise also introduces you to the requirements for the **TERM PAPER** that you will submit in four weeks. You will be introduced to scientific writing including using and citing literature sources, including internet pages, and peer review. You will use this lab to begin locating references for the NATS104 TERM PAPER.

See also: [http://www.geo.arizona.edu/Antevs/nats104/wk06\\_libr\\_outln.html](http://www.geo.arizona.edu/Antevs/nats104/wk06_libr_outln.html)

## **Key concepts:**

- Scientific writing and the peer review process.
- Finding & evaluating resources in the library and on the internet.
- Not all literature sources are reliable, primary and secondary sources.

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## **Paper Organization:**

- A **title page** with the paper title, "NATS 104," due date, and your name (1 pg.).
- 4 –5 typed pages using Times or Times New Roman font, 12 point, double-spaced with 1 inch margins. All figures must be included on separate sheets at the end of the paper and do not count in the page limit. The 4-5 pages must include an **Introduction**, a **Body** and a **Conclusion**. (see p. 3)
- A separate "**Works Cited**" page, maximum length 1 page, with at least four references. References must be in the NATS104 format (see p. 4). Encyclopedias (including Wikipedia) are **not** acceptable as references.

## **Plagiarism:**

"**Plagiarism**" means representing the words or ideas of another as one's own." (ABOR, 2003) Your paper must be your own original work. Under no circumstances can you submit a paper or any part of a paper that has been submitted in any other class, anywhere, for any other reason. This paper must have been written solely for this class. Anything else will be considered cheating.

You will submit your paper to **TurnItIn.com**. See the class syllabus regarding this policy.

### **Plagiarism:**

"Stem cells are cells that have the remarkable potential to develop into many different cell types in the body." Copied word-for-word from <http://stemcells.nih.gov/info/faqs.asp#whatare> (note quotation marks)

### **Altered but still plagiarism:**

Stem cells have the potential to develop into many different cell types in the body.

### **Same source, but no longer plagiarism.**

Stem cells have the unique ability, among the body's cells, to differentiate into new kinds of cells rather than produce more cells exactly like themselves.

## **Gathering information:**

### A. Choosing a topic

Pick a topic from the “topics list” after you have checked out the resources available (see “Library Research Worksheet” below). **Choose carefully, because once it is chosen, it cannot be changed!** Be sure to consult with your GTA if you have any questions or problems.

### B. Research

You are required to have at least four sources. At least three must come from books, periodicals, scientific journals, etc. Of the four, only one can be a web page, and it must be a reliable web page. If there are any questions as to whether a page is acceptable ask a TA. Papers with more than four references may have more than one web page.

## **Writing the paper**

A good paper contains a clearly separated introduction, body, and conclusion.

**Introduction** Outline your topic. Create a *thesis statement* - a sentence that basically sums up the topic of the paper. Include the history of the topic and its importance. Briefly explain how the rest of the paper will support your topic.

**Body** The body is the part of the paper where you develop and expand on your topic. It is the main section of the paper in which you present arguments that support your thesis statement. You should have three or four main points which support your thesis statement, and each point should be a detailed, separate paragraph.

**Conclusion** The conclusion reiterates the topic of the paper and briefly sums up the body of the paper. The conclusion is where you state the outcomes of your research. Begin by writing an outline of your ideas and research findings. This will help you organize your thoughts and make it easier to separate paragraphs.

Then, write a rough draft. Edit and rewrite this rough draft many times until you are satisfied with it. This is will be reviewed by your peers in class.

After you receive your reviewed rough draft, use the feedback to write a final paper.

## **Citations in the Text**

Always cite direct quotations and ideas that are not originally yours. **Word-for-word quotes must be in quotation marks.** Otherwise, you are plagiarizing and this is considered cheating. The **citations** must appear immediately after the quoted material and refer to a full reference in the bibliography.

Citation with one author – One reason for the extinction of the Neanderthals is that they may have been out-competed by *Homo sapiens* (Tattersall, 1999).

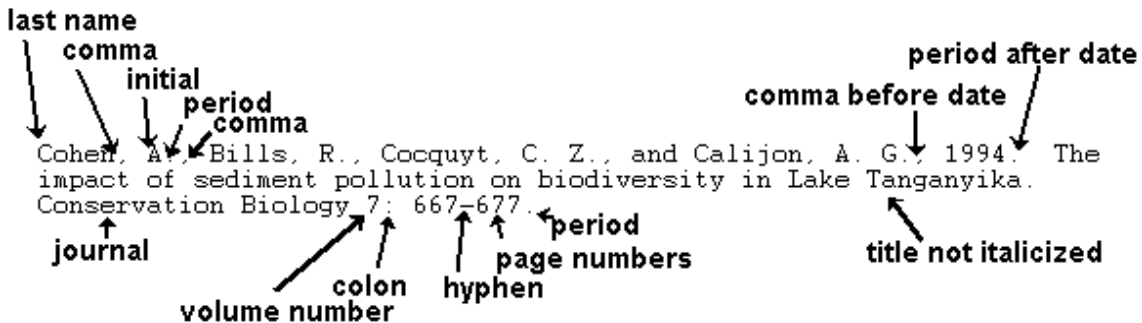
Two authors – Deforestation is having a significant impact on biodiversity in Lake Tanganyika (Cohen and Jones, 1992).

Three or more authors – African megadroughts forever altered human evolution (Cohen et al., 2007).

## **References in the “Works Cited” – NATS104 Format**

The final page of your paper should contain a bibliography, entitled “Works Cited”, where you provide the full reference for all the papers, books, and other materials you used when writing your paper. References are listed in *alphabetical order* by the first author. Examples of the correct format for different types of reference material are shown below, and you may also want to look at the bibliography in the workbook. (***M.L.A. style is not acceptable! Use this guide carefully!***)

Below is an illustration of the NATS104 format. Note the punctuation and placement of initials after the authors’ names, etc. Every comma, colon and capitalization has to be right. *Note the use of italics.*



The basic format is

<b>Author(s)</b>	in the order shown on the publication, Last name, First initial...
<b>Date</b>	original publication’s year, followed by a period
<b>Title</b>	italics if a book, not-italics otherwise
<b>Publisher</b>	replaced by journal title if a scientific article

Book –

Tattersall, I., 1999. *The last Neanderthal: The rise, success, and mysterious extinction of our closest human relatives.* Nevrault Publishing, New York.

Journal article –

Cohen, A., Bills, R., Cocquyt, C. Z., and Calijon, A. G., 1994. The impact of sediment pollution on biodiversity in Lake Tanganyika. *Conservation Biology* 7: 667-677.

In addition to the journal reference format, above, “paper” articles distributed online should be followed by the URL and when you read it, because journals may correct mistakes in the online article and they do not always make that obvious.

Article published online –

Laird, K. R., Fritz, S. C., Maasch, K. A., and Cumming, B. F., 1996. Greater drought intensity and frequency before A. D. 1200 in the Northern Great Plains, U. S. A. *Nature* 384: 552-554. Available from: [www.nature.com/nature/](http://www.nature.com/nature/) Accessed Sept. 1, 2003.

ABOR (Arizona Board of Regents). Policy Name: Student Code of Conduct, Policy Number: 5-308. [http://www.abor.asu.edu/1\\_the\\_regents/policymanual/chap5/5-308.pdf](http://www.abor.asu.edu/1_the_regents/policymanual/chap5/5-308.pdf). Last updated July, 2003. Viewed September 1, 2003.

Web pages typically don't include all the information found in books and journal articles, making them potentially a less reliable source of information. Furthermore, web pages are frequently taken offline making their content impossible to check. Web references that are not electronic copies of published (paper) journal articles should contain the same information (if included!)

<b>Author(s)</b>	in the order shown on the web page, Last name, First initial...
<b>Date</b>	moved to the end of the reference as "last updated"
<b>Title</b>	the largest font at the top of the page, usually; not-italics
<b>Publisher</b>	replaced by URL, last updated, date viewed

Web site –

NOAA: Paleoclimatology Program. Paleoclimate Data: Paleolimnology.  
[www.ngdc.noaa.gov/paleo/paleo.html](http://www.ngdc.noaa.gov/paleo/paleo.html). Last updated August 11, 2000; date viewed September 29, 2000.

Additional reference types (for example: dissertations, chapters in book) are listed under "Bibliography" at the bottom of the class schedule.

## **Grading of your Term Paper**

The workshops are designed to help you write your term paper, which will be handed in as a first rough draft three weeks after workshop 6. The term paper itself is worth 180 points. (The workshops are worth an additional 30 points)

### **Grading Rubric for Term Paper:**

Organization	(30 points)	see "Paper Organization" & "C" below
Scientific Format	(30 points)	see "D" & "E" below
Scientific Content	(70 points)	check periodically with your TA!
Spelling Grammar	<u>(70 points)</u>	see previous graded writing material!
<b>200 points</b> for term paper		

See detailed grading rubrics for peer- and self-reviews, below. The same rubric will be used by the GTA to grade your term paper.

**Workshop 6 Library Research Worksheet** (D2L 10 points)

See [http://www.geo.arizona.edu/Antevs/nats104/wk06\\_libr\\_outln.html](http://www.geo.arizona.edu/Antevs/nats104/wk06_libr_outln.html) for links to the **UA Library Catalog, Academic Search Complete** etc.

1. Topic: \_\_\_\_\_  
(Must be from the following page)

2. Use the **UA Library Catalog** to select an appropriate book on your research topic. Copy below using the format on the bottom of p. 4.

Title:

Author:

Call No.

Location in Library System (main library, science, etc.)

Science-Engineering Library

3. Locate an article from a scientific journal *on your research topic* click on “Search & Find” > “Article & Database Searching” > click on “A” > **Academic Search Complete**  
List the reference for this article in NATS104 format, p. 4 of this exercise.

4. Locate information on *your research topic* on the **Internet** (**not** an article from a journal, magazine or newspaper that also has been printed on paper).  
Write the web-page reference below in the format as shown on p. 4 of this exercise.

**AUTHOR** (the goal is to find a web page authored by an “expert”)

Is the author listed? Yes No

Is the author’s occupation, training, or job/office/position listed? Yes No

With this information, is the author qualified to write on the topic? Yes No

**CURRENTNESS** (find the most up-to-date)

Is the web page’s latest revision date listed? Yes No

Is the web page more than a year old? Yes No

**PURPOSE:** What is the primary purpose of this web site? (Not “sales” or advocacy)

Provides information Yes No

Teaches you something Yes No

Sells you something? Yes No

**AUDIENCE:** Who is the intended audience? (The higher the better)

Kindergarten through grade school Yes No

Middle school through high school Yes No

University undergraduate Yes No

Professional Yes No

**CONCLUSION:** (three out of four criteria should be “the best”)

Given the information above, is this site an appropriate source of information for your topic?  
Yes No

If your answer is “No,” be sure to find a web page that is “good” before attempting workshop 6

PAPER TOPICS: After completing workshop 6, select *one of these topics* in the “workshop: *REQUIRED for Workshops 8, 9 and Term Paper*”

- a. How many species are there on Earth and where is biodiversity greatest, and why?
- b. Biodiversity: How has human activity influenced global biodiversity? Compare and contrast factors affecting biodiversity before and after the industrial revolution.
- c. Drug Resistant Bacteria: Discuss the disease shigellosis. What is this disease and, where has drug-resistant *Shigellae* bacteria been most widespread? How does this bacterium become drug resistant? Which human activities have created drug resistant bacteria?
- d. What are the benefits and risks to human health of diets very high or very low in meat? How can one reduce the risks associated with both? Are certain meats healthier than others? <http://www.bio-medicine.org/medicine-news/Cut-meat-to-cut-blood-pressure-4368-1/>
- e. Environmental Impact: Drought, discuss the effects of the 1998-2007 drought on the Sonoran Desert.
- f. What is an oceanic “dead zone?” Where are these dead zones located worldwide and what are the major causes of these zones? Discuss the effect that dead zones have upon ocean food chains and ocean fisheries. What steps can or have been taken to prevent or restore dead zones?
- g. Exotic species: Biologists note with alarm the discovery of zebra mussels in the Colorado River. How did they get there, what problems do they create in other areas they have invaded?
- h. Exotic species: One of the most recent dangerous aquatic species to be concerned about are “snake heads.” What problems do they create and why are they particularly likely to spread?
- i. Extinction: What was the relative timing of the arrival in Europe of anatomically modern humans and the extinction of the Neanderthals, and what was the causal connection between the two events?
- j. Extinction: What was the relative timing of the arrival in the New World of humans and the extinction of most species of large (over 100 lbs adult weight) animals, and what was the causal connection between the two events?
- k. Extraterrestrial Life: What is life and where might it be found besides planet Earth? Evaluate the likelihood of finding life on other planets and moons in the solar system. What earth-organisms would this life resemble most closely?
- l. Global Warming: Compare and contrast the effects of recent summer heat waves in Arizona and in Europe (most notably France in 2003). Where were the temperatures highest above normal temperatures? Where were the death tolls highest and the economic impacts greatest? Why?
- m. Global Warming: What were the primary factors affecting global temperature during the past 200 years?
- n. Human Biology: What environmental and social factors affect the prevalence of the gene for red hair in humans? How is the gene inherited - dominance, recessiveness, which chromosome(s)? How has the frequency of red-haired people changed over time, and how might it change in the future?  
[http://www.digitaljournal.com/article/220229/National\\_Geographic\\_says\\_Redheads\\_set\\_for\\_extinction](http://www.digitaljournal.com/article/220229/National_Geographic_says_Redheads_set_for_extinction)
- o. Human Evolution: What are the oldest human (human family) fossils, where, when and by whom were they found, and how do they relate to the genus *Homo*?
- p. Infectious Diseases: Malaria kills millions every year (75% of them children in Africa). Cases have been found in Egyptian mummies. Recently, malaria parasites have become immune to drugs used to prevent or treat it. What medications have been used and are being developed to treat malaria? What kinds of malaria organisms have become immune, in which parts of the world? <http://www.cdc.gov/Malaria/>
- q. Eating “raw” salt-water animals has become common over the last decade: fish, crabs, shrimp, mollusks, dolphins, whales, seals and sea lions. Compare the likelihood of getting parasites from eating freshwater vs. saltwater raw “fish.” Regarding saltwater raw “fish”: How common are the parasite infestations in worldwide, what kinds of parasites are in the “fish,” and which saltwater “fish” are most likely to have parasites?
- r. Marine Biology: What is happening to the Arctic ice pack, what is the impact of this change on arctic animals, and what is its likely cause?
- s. On every food item there is a label of percent daily values (dv), based on 2000 calorie diet. Describe the nutritional system of the Institute of Medicine of the USA National Academy (IOM) and how the DV relates to the average .  
<http://www.iom.edu/CMS/3708.aspx> <http://www.cfsan.fda.gov/~dms/foodlab.html#dvs>
- t. Parasitism, Human: There are many organisms that live on humans. Most are beneficial or benign. Describe two and discuss how and when they may become pathogenic (i.e. *Candida albicans*, Epstein Barr virus, human polyomavirus, intestinal bacterial microflora, etc.).
- u. Exobiology: What is the evidence for “panspermia”: That life on Earth could have developed elsewhere, or that Earth life may have spread to other bodies in the solar system. Mention “spores” in Martian Meteorite ALH 84001, and “water bears in space.” What kinds of organisms could survive the voyage between planets? <http://astrobiology.nasa.gov/>
- v. Human population continues to grow. How many people can the earth sustain: It’s “carrying capacity?”  
<http://www.thecornerhouse.org.uk/item.shtml?x=52014>
- w. Human population continues to grow. How does global population impact the quality of life in developed and developing countries? What is the current ecological footprint of the average American? What will be the maximum ecological footprint that an average person on the planet, in 2050? [http://www.footprintnetwork.org/gfn\\_sub.php?content=footprint\\_overview](http://www.footprintnetwork.org/gfn_sub.php?content=footprint_overview)

#### 4. Peer Review Wksp 8 (10 pts., based knowledge and objectivity)

If you do not submit your paper in time for your partner to review, you receive 0 points and cannot attempt WK 9 until it is completed.

Deposit your 1<sup>st</sup> draft 4 days before due date. Read your peer-review partner's paper, fill-out the grading rubric (below) and deposit it in your Discussion folder for your partner to use in their self-review. Your grade for this workshop depends on **how well you understand the grading rubric for the term paper**, for example: "homonyms," "first-person" and "topic sentence" for grammar; the correct reference format and the required length of the paper (p.1). The GTA assigned to your topic will read the paper **and** your revised rubric in your discussion folder and award points (see **GTA \_ pts** below) based on how closely your rubric matches their own review of your partner's paper. For example, if there is no Title Page, but you award full credit (5 pts) for the title page, you will lose points from your score. Another example: If you deduct no points for reference format, but there are errors in their reference formats, you will lose points for this workshop.

Name of the Reviewer \_\_\_\_\_

Name of student whose paper was reviewed \_\_\_\_\_

##### PAPER ORGANIZATION: (add up to max 30 points)

Title page (6 pt) \_\_\_ \_\_\_  
Intro/Body/Concl. format (6 pt) \_\_\_ \_\_\_  
Correct font/spacing (6 pt) \_\_\_ \_\_\_  
Long enough (6 pt) \_\_\_ \_\_\_  
Works Cited  
3 references (4 pt) \_\_\_ \_\_\_  
1 web only (2 pt) \_\_\_ \_\_\_

Sub Total \_\_\_ \_\_\_/30  
GTA \_/2pts

##### SCIENTIFIC FORMAT (add up to max 30 points)

Use of 1<sup>st</sup> or 2<sup>nd</sup> person (2 pt) \_\_\_ \_\_\_  
Many (more than 2) direct quotes (4 pt) \_\_\_ \_\_\_  
Incorrect internal citations (6 pt) \_\_\_ \_\_\_  
Wrong reference format (6 pt) \_\_\_ \_\_\_  
No citations in text (12 pt) \_\_\_ \_\_\_

Sub Total \_\_\_ \_\_\_/30  
GTA \_/2pts

##### SCIENTIFIC CONTENT (add up to max 70 points)

Factual errors (12 pt) \_\_\_ \_\_\_  
Misquoting sources (12 pt) \_\_\_ \_\_\_  
"I believe" or "I think" statements (12 pt) \_\_\_ \_\_\_  
Bad Science (illogical, mythological, pop-science) (34 pt) \_\_\_ \_\_\_

Sub Total \_\_\_ \_\_\_/70  
GTA \_/3pts

##### SPELLING, GRAMMAR (add up to max 70 points)

Spelling, homonyms, confusing pairs (8 pt) \_\_\_ \_\_\_  
Punctuation (7 pt) \_\_\_ \_\_\_  
Sentence structure: fragments, run-ons, incorrect word usage (10 pt) \_\_\_ \_\_\_  
Paragraph construction (topic sent., 1 idea per para., para.cohesion) (45 pt) \_\_\_ \_\_\_

Sub Total \_\_\_ \_\_\_/70  
GTA \_/3pts

**TOTAL** \_\_\_ \_\_\_/200  
GTA \_/10pts

## 5. Self Review Wksp 9 (10 pts., based knowledge and improvement)

Not available until WK 8 in Discussion folder & graded.

Your grade for Wk 9 depends on how well you understand the requirements for the term paper. First, rewrite your paper to accommodate your partner's review. Then, add points to your rubric, for these corrections. Mark your revised points next to your peer-reviewer's original points. (See the "\_\_\_" below, one is for what your partner marked, one for what you mark.) For example, if you didn't have a title page and your review partner marked 0 points, and you have added a title page, mark "5" next to the "0" he/she marked). If you believe your partner is wrong in a specific area, do not change that part of your paper, give yourself points, and say why on the rubric. Then, deposit the edited rubric and your revised paper in your Discussion folder. The GTA assigned to your topic will read the papers **and** your revised rubric in your discussion folder and award points (see **GTA \_ pts** below) based on how closely your changes match their own evaluation of your partner's rubric. For example, if you added a title page and gave yourself 5 points, you get points. Another example: if your peer-reviewer was correct, but you said they were wrong and gave yourself points, you lose points.

### PAPER ORGANIZATION: (add up to max 30 points)

- Title page (6 pt) \_\_\_
- Intro/Body/Concl. format (6 pt) \_\_\_
- Correct font/spacing (6 pt) \_\_\_
- Long enough (6 pt) \_\_\_
- Works Cited
  - 3 references (4 pt) \_\_\_
  - 1 web only (2 pt) \_\_\_

Sub Total \_\_\_/30  
GTA \_/2pts

### SCIENTIFIC FORMAT (add up to max 30 points)

- Use of 1<sup>st</sup> or 2<sup>nd</sup> person (2 pt) \_\_\_
- Many (more than 2) direct quotes (4 pt) \_\_\_
- Incorrect internal citations (6 pt) \_\_\_
- Wrong reference format (6 pt) \_\_\_
- No citations in text (12 pt) \_\_\_

Sub Total \_\_\_/30  
GTA \_/2pts

### SCIENTIFIC CONTENT (add up to max 70 points)

- Factual errors (12 pt) \_\_\_
- Misquoting sources (12 pt) \_\_\_
- "I believe" or "I think" statements (12 pt) \_\_\_
- Bad Science (illogical, mythological, pop-science) (34 pt) \_\_\_

Sub Total \_\_\_/70  
GTA \_/3pts

### SPELLING, GRAMMAR (add up to max 70 points)

- Spelling, homonyms, confusing pairs (8 pt) \_\_\_
- Punctuation (7 pt) \_\_\_
- Sentence structure: fragments, run-ons, incorrect word usage (10 pt) \_\_\_
- Paragraph construction (topic sent., 1 idea per para., para.cohesion) (45 pt) \_\_\_

Sub Total \_\_\_/70  
GTA \_/3pts

**TOTAL \_\_\_/200**  
GTA \_/10pts