# BES 311 Research Project Assignment Winter 2011

**Purpose**. This assignment will give you the opportunity to pursue in detail some aspect of environmental chemistry that particularly interests you. As indicated in class, each group of two students will work on a topic related to the Deep Water Horizon oil spill of last year. Your group will produce a short "report" and a one-half hour oral presentation on the topic, to be presented on the last day of class. If we have one person working alone due to an odd number of students, that person will provide an introductory background presentation on large oil spills of the past and their environmental chemistry implications.

**Length**. The report is to be no more than 1000 words (3-4 pages, double spaced, one inch margins, 12-pt font). *The four page will be absolutely observed.* The presentation is to take twenty-five minutes, with five minutes included for questions and answers. The overview background presentation will be approximately twenty minutes. *These time limits will also be strictly observed!*

**Breadth and Depth**. This presentation must explain clearly the nature of the problem you are studying and the chemistry involved in it. The scope of the paper may be broad enough to provide some context of the overall environmental issue, but it must go into depth on the main topic of your project. There should be a balance between detailed, in-depth explanation, and sweeping survey that serves to put the problem into context. You should have at least ten good quality, scholarly sources that you actually use in preparing the final presentation and report. These sources are most often papers that have appeared in the refereed scientific literature; this will be discussed more in class. In most cases, your paper will be a carefully presented research report, but in some cases it could be a well-researched thesis-driven paper.

**Organization**

- *Reports.* These are in the spirit of government or nongovernmental organization (NGO) white papers. They should be objective and persuasive, assuming that your group has come to a conclusion about the project topic. We are writing in a science class, so these papers should not only appear objective, but should actually be objective. For example, if you are arguing that dispersant was ineffective in mitigating the oil spill, you will have based your argument on credible, objective research sources. If you encounter a credible argument to the contrary, however, *you cannot simply ignore it.* Rather, you must inform the reader and indicate on what basis you have judged it to be relatively unimportant. *The paper should not be an exercise in subjective advocacy!* This paper should introduce the topic and thesis in the introductory section. The persuasive argument, supported by references, should then be presented, with a brief conclusion that summarizes it. A complete list of cited sources should follow as endnotes. You may use a smaller less-easily read font for the endnotes. *In general, these should flow from the research report material, although you may not use all of the discovered sources in the white paper. The writing center would be a good source of advice when crafting this report.*

- *Presentation.* Generally, you will follow the arguments and persuasive presentation of the report. You will need to think about what makes an effective presentation. It should be short on text to be read, have some easy to read graphics that make effective points,

and rely heavily on an outline that you will in turn speak from. The report is the fundamental document here and should be referenced in the introduction to the presentation. *The Writing Center can also help you evaluate your presentation in draft form.*

*Note that this model of presentation – where the oral presentation is accompanied by a detailed white paper – is much more effective in general than the more common presentation accompanied only by a printout of the Powerpoint slides.*

**Style:** This is formal writing and should be an example of good grammar, correct spelling, effective word choice, and articulate sentence and paragraph structure.

**Citations.** Most physical science articles use the endnote style of referencing; you should do the same. In various scientific publications, you will find both the name-year and citation-sequence systems of endnotes being used. In this class we will use the CSE (formerly CBE) citation-sequence system, with each endnote referenced by either a superscripted[4] or bracketed number (4). This will be discussed in more detail in a later class. The reference source for information about this is the *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers,* ed by Style Manual Committee, Council of Science Editors. (Rockefeller Univ Press, 2006). This style manual is available at the Reference Desk of the UWB Library. The UWB library provides on-line references to the CSE format at http://libguides.uwb.edu.offcampus.lib.washington.edu/content.php?pid=75218&sid=569006
There should be a single list of endnotes with general background references, references that provided the basis of your discussion, and of course, any references that give credit for data or arguments that are paraphrased or quoted. In general, paraphrasing is preferable to direct quotation, because it helps demonstrate that you actually understand the paper being cited. When you paraphrase a discussion presented elsewhere, be sure to add an endnote reference in the introductory part of that section. (e.g., "*Following the arguments presented by Nelson et al*[21]*, I will explain the importance of computational modeling to theories of the origin of the Universe..")* If you take a figure directly from another source, it should be referenced directly beneath the inserted figure.

If some of your working references are World Wide Web documents, they may be used in the final paper only if they are the best and most appropriate ones for your purpose. In many cases, the WWW sources should lead you to better ones in the course of your research. The topic chosen here is so current, that you may find some of the reports have not yet gone through normal peer review. Their citation should include the name of the author or sponsoring institution, the title of the actual document, the date on which you read it, and the complete URL ( e.g., *http://faculty.washington.edu/jackels/bes311.w11).* In other words, it must be complete enough for the reader to locate and read, without searching for it. Official reports of government agencies are examples of information that is commonly and accurately available on the www. *As with any source,* you bear the burden of evaluating it for merit. Just as with printed material, much of that on the web is simply opinion or worse and is unrefereed. When feasible, a good procedure is to verify that the web page author is also a recognized author or scholar in the area. Sometimes, the web page information can lead into that author's published contributions. *If you can find published sources for this information, they are very much preferred to the WWW sources. Many of the gov't pubs on the web are simply copies of usual printed documents and can be referenced as such.*

If you find that WWW sources are dominating your reference list and that you do not have the minimum number of good, high quality printed sources, talk to me about the situation.

**If you use WWW sources that are not readily available in the printed literature, you are expected to print those pages actually cited and have them attached as appendixes to your final paper.**

## Submissions (submitted electronically using Catalyst)

**First progress reports** will be due on January 23 This report should include:

- Topic definition and an annotated working bibliography of at least three solid sources. These bibliographies are to be annotated in order to provide some indication of what they contain, how you will use their information, and how authoritative they are.
- A list of at least six other sources or potential sources that may prove useful. These may be sources you are pursuing and intend to get. You don't need to have them in hand and annotated at this time. You should indicate why you think they may be useful.

**Second progress reports** will be due on Feb 13. This report should include:

- Any revision of topic definition that may be necessary.
- Hierarchical outline that gives planned detail within each proposed section of the paper. *This outline should give me a good idea of the form of your presentation and white paper.*
- Annotated working bibliography that has significant sources for each main topic to be covered. I would expect at least 8 solid, annotated sources at this point.
- List of potential sources still be retrieved and evaluated.

**Third progress report.** On Feb 27, your group will submit:

- A complete, detailed outline of your final presentation.
- An annotated working bibliography of at least 12 solid resources.
- Draft file of the presentation materials (slides) you will be using.
- Draft version of your white paper

I will comment upon the bibliographies, outlines, and proposals, giving specific suggestions as to the direction the paper should take. In some cases, I may require you to resubmit the preliminary material after revision. . The working bibliographies, outlines and drafts that I have read will be available with the final version so that I can judge how appropriately you have responded to my suggestions.

**Final Submission:** Due on March 9. The presentation will be made in class on this day, and copies of the white papers for your classmates will be distributed. Later that same day you are to deposit in the catalyst drop box: 1) a copy of the presentation (*ppt) file; 2) a copy of the white paper; and 3) a copy of your complete annotated working bibliography.

These preliminary materials and your response to my comments are worth 20% of the grade on your final paper. Failure to submit them on time will result in a 5% penalty on the paper. There will be no extension of the final deadline of March 9 for late submissions.

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**Schedule.**

- Progress reports: January 23, Feb 13, and Feb 27.
- Final presentations and papers will be due on March 9.
- All material will be submitted electronically at the course Catalyst site (never by e-mail).