Better Know a Seed Plant Family
(50 points of extra credit)

You must indicate your interest in doing this exercise by **11 March 2010** by e-mailing Dr. Clark (lgclark@iastate.edu). You will then be assigned a family (or subfamily or, if appropriate, a large genus), which we may or may not have covered in class. The exercise will be due on **31 March 2010**, preferably in electronic form.

For this exercise, you need to read up on your family (or subfamily or genus) using your textbook or on-line sources. Then complete the exercise in the form of a report organized according to the parts and questions listed below.

**Part I: Basic information** (15 points)

1) What is the overall diversity of the family or subfamily (number of species, number of genera) (or if a genus, just the number of species)? Within which order (and family or subfamily as appropriate) is it classified? To which major group of seed plants does it belong?

2) What is the distribution of the family (or subfamily or genus)? In what habitat(s) is it primarily found?

3) What are the five most diagnostic features of the family or subfamily (or genus)? Is it considered monophyletic? Which of the diagnostic features are considered to be synapomorphies?

4) What is the economic importance of the family (or subfamily or genus)?

5) Cite at least two and up to five sources for the information in Part I (see information below for correct formatting).

**Part II: Systematics and evolution of the family** (35 points)

1) Using your library and on-line skills, find a journal article published within the last 10 years on the systematics or evolution of your family (or subfamily or genus) from one of the following journals: *Systematic Botany, Systematic Biology, American Journal of Botany, Taxon, Plant Systematics and Evolution, Molecular Phylogenetics and Evolution, Botanical Journal of the Linnaean Society, or International Journal of Plant Sciences*. Provide a full citation of the paper using the information below for correct formatting.

2) What source(s) of data is(are) used in the paper?

3) Summarize the results in a couple of paragraphs.

4) What is the main take-home message in the paper about the evolution of the family (or subfamily or genus)?
Citation of References
In the text of a scientific paper, a reference is cited in one of two ways:

(1) There are an estimated 1,500 pandas left in the wild. There has been much controversy over how best to preserve their habitat and manage their populations (Schaller 1994).

(2) Lewis (1998) provides an overview of the conservation status of the land plants of Iowa.

In the Bibliography (or Literature Cited), references should be cited as follows:

**Journal Articles:**

**Books:**

**Article or Chapter from a Book:**

**Web Site (list the name of the Web site and the URL for the home page):**
The Tree of Life: [http://tolweb.org/tree/](http://tolweb.org/tree/)

**Plagiarism**
When you use information from another source, you must cite the reference appropriately in the text and list it in the Literature Cited. It is permissible to quote small portions from another author, but such quotes should not be longer than three or four sentences, should be set off in quotation marks, and the exact page number should be given when citing the reference. If you take someone else's words and present them as your own, that is plagiarism and is a very serious offense. Write your answers in your own words!