Biology 4 Research project

Each of you will conduct research highlighting either a plant of economic value to humans or a more general topic related to this course. This research will culminate in a final PowerPoint presentation and paper. If plant specific, the paper should include (but is not limited to) information pertaining to methods of cultivation, origins, distribution, wild relatives, uses, economic importance (past and present), and associated human cultures. Take care not too choose an overly large topic (e.g., corn) or a plant that has very limited use (and thus not much literature). You can choose *any* plant that we have not already discussed extensively in class. Alternatively, you can write on a *more general topic*, such as the use of plants in horticulture, plants and liquors, plants of importance in religious rituals, or plants and renewable energy. *Please vet your topic with me in advance before you get too far along on your research*.

Oral presentations:

During the last weeks in April, each of you will give a 10-minute (plan for 8-9 minutes with at least 1 minute for questions) PowerPoint presentation of your research topic. Please organize your talk clearly and concisely and practice first!

Research papers (drafts for peer-review due in class on Thursday, April 23; final due Friday May 8):

Papers must be double spaced, 1-inch (2.5cm) margins, 11 or 12 point standard font (e.g., Times, Times New Roman, Arial, etc.), 8-10 pages.

Please use an interesting and relevant title for your paper. For example, not "Tobacco" but "The history, sociology, and addictive properties of tobacco (*Nicotiana tabacum*)".

You *must* include at least 10 sources, with at least 3 sources from the primary scientific literature. Information retrieved from a website is **not** considered a valid source for this assignment.

Amherst College has access to numerous useful databases for searching the primary literature. The one I prefer is the Web of Science. Click on the "AC links" button to find out what journals we have full-text access to. Many other journals (and books) are available via Interlibrary Loan (a free and super convenient service), but you must allow several days to receive these (thus, start early!).

All literature sources *must* be cited in the text (e.g., Jones et al., 2008) and in a literature cited section at the end of the paper. Use in-text citations (<u>not</u> footnotes) and use "et al." for more than two authors. For example: Bramon et al. (2005) argue that cotton was first domesticated in western Africa, whereas Smith and Morrissey (2008) suggest that domestication occurred in Mesoamerica.

Except in the rarest of occasions, <u>do not</u> use direct quotations. Instead, paraphrase. Imagine that you need to explain to your friend (using your own words) the authors meaning – write this down and then cite as appropriate.

Latin names should be formatted as *Genus species*. Spell the complete genus name (instead of using the initial abbreviation) at the first usage in a paragraph.

It is fine to include figures or tables from sources that illustrate your point, but cite the source appropriately in the legend [e.g., "Figure adapted from Pruden and Fox (2007)" or "Table taken from "Kinnison (2008)"]. Feel free to also include your own tables and figures if appropriate.

Remember to use topic sentences. Write your paper. Read it carefully. Work on it a bit more. Proofread!

Literature Citation Format:

Cite all references in the text by last name and year of publication (Tompkins and Fox 2005). Use "et al." for publications with 3 or more authors (Rock-Blake et al. 2002). Multiple citations should be arranged from earliest to most recent, alphabetized by name within year (Murdough 2002; Rock-Blake et al. 2002; Tompkins and Fox 2005). Separate multiple publications by the same authors using commas; multiple articles in the same year are distinguished with letters (Kinnison and Morrissey 2006a, 2006b, 2007).

For entries in the Literature Cited section, alphabetize by first author's last name and follow the styles below for capitalization, punctuation, and order of elements.

Journal articles:

- Agrawal, A. A. 2000. Overcompensation of plants in response to herbivory and the byproduct benefits of mutualism. *Trends in Plant Science* 5:309–313.
- Frederickson, M. E., M. J. Greene, and D. M. Gordon. 2005. 'Devil's gardens' bedeviled by ants. *Nature* 437:495-496.
- Gómez, J. M. and R. Zamora. 1999. Generalization vs. specialization in the pollination system of *Hormathophylla spinosa* (Cruciferae). *Ecology* 80:796–805.

Books and book chapters:

- Eckhart, V. M. 1999. Sexual dimorphism in flowers and inflorescences. Pp. 123-148 *in* M. A. Geber, T. E. Dawson, and L. F. Delph, eds. Gender and sexual dimorphism in flowering plants. Springer-Verlag, Berlin.
- Waser, N. M. and J. Ollerton, eds. 2006. Plant-Pollinator Interactions: From Specialization to Generalization. University Of Chicago Press, USA.
- **Note that **plagiarism** and other forms of academic dishonesty are a violation of the Amherst College Honor Code (https://www.amherst.edu/65945) and <u>will not be tolerated</u>. Plagiarism includes copying text directly from an article or book, as well as borrowing ideas from another source without appropriate acknowledgement (i.e., citation). If you are unsure, ask me or consult the following web page: https://www.amherst.edu/campuslife/deanstudents/acadhonesty