BIOL 102 **Out-of-Class Assignment #2** **12 January 2010**

The purpose of this assignment is to increase your familiarity with the role that genetics play in disease. In addition, this assignment will require you to become more familiar with both how a disease affects an organism, the treatment methods for this disease and the costs associated with this disease. **This assignment is worth 50 points and is due no later than 8:10 A.M. on 30 March 2010.** Your answers must be typed and submitted in your folder or you will receive a grade of zero on this assignment. Late papers will be penalized 20% per day or portion of a day late (Turning in your paper at 8:11 A.M. on 30 March 2010 is considered a portion of a day). You must also submit an electronic version of your assignment using your **Shepherd University** e-mail account. Use the following format to name your file: initials of first and middle names, first two initials of your last name,OCA2. For example if I were submitting a paper I would name his file CJNOOCA2. This electronic copy will allow me to submit the papers to Turnitin for plagiarism checking.

I will be happy to help you by answering any questions that you may have regarding portions of the assignment. In addition I will be happy to read any papers in advance and make comments about the paper prior to 15 March 2010. If you would like me to review and comment on your paper please send your draft to me electronically at cnolan@shepherd.edu. I will attempt to return your paper with comments within four (4) *working days*. I would prefer that you use 1.5 line spacing, 11 or 12 point font and margins between 0.5 and 1 inch.

A number of genetic diseases affect plants, animals and humans. In this portion of the assignment you are to prepare a report/term paper discussing a specific genetic disease. This paper is to be a full discussion of this disease. You are free to select any disease/health related condition in humans, plants, or animals that has a known genetic cause. In your report you must include, but is not limited to the following:

1. A history of the disease.
2. The genetic basis of the disease.
3. The physiological basis of the disease.
4. The signs and symptoms of the disease.
5. Treatments and proposed treatments for the disease.
6. The morbidity and mortality resulting from the disease.
7. "Normal" causes of death resulting from the disease.
8. Screening/testing methods that might be used to detect the disease or individuals that are carriers of the disease.
9. Why you chose to write about this particular disease and what you learned in the process of preparing this report.

As you write your report/term paper you must use the correct scientific terminology and references as necessary to avoid plagiarism. In addition you are expected to demonstrate your understanding of the relationship that different concepts that you have discussed have with each other. For example you should be able to discuss how the genetic basis results in the physiological changes associated with the disease and how the physiological changes result in specific signs and symptoms. A minimum of eight different references are required. No more than two references can be web sites and Wiki sites are not allowed as references.

Do not copy verbatim from your textbook or any other source. Any information you use must be cited within the body of the text. You may do this by simply putting the author(s) last name(s) and the date in parentheses behind the relevant material: for example, (Gray and Coates, 2005). At the conclusion of your essay, the relevant bibliographic information should be included. Some sample citations are:

Book:

Nybakken, J.W., Bertness, M.D. 2005. *Marine Biology: An Ecological Approach*, sixth ed. Pearson Education, Inc., CA, pp. 25-31.

Article from a book:

Thompson, S.N. 1997. Physiology and biochemistry of snail-larval trematode relationships. In: *Advances in Trematode Biology* (Fried, B., Graczyk, T.K., eds.). CRC Press, NY, pp. 149-195.

Format for Journal References:

Twombly, S., Burns, C.W. 1996. Effects of food quality on individual growth and development in the freshwater copepod *Boeckella triarticulata. J. Plankton Res.* 18: 75-82.

Woodin, S.A., Lindsay, S.M., Wethey, D.S. 1995. Process-specific recruitment cues in marine sedimentary systems. *Biol. Bull.* 189: 49-58.

The report/term paper will be graded using the following rubric:

Content (35 points)
History of Disease (4 points)
Points Earned =

Genetic Basis of Disease (5 points)
Points Earned =

Physiological Basis of Disease (5 points)
Points Earned =

Signs and Symptoms Disease 4 points)
Points Earned =

Treatments for the Disease (5 points)
Points Earned =

Morbidity, Mortality and Normal Causes of Death for the Disease (5 points)
Points Earned =

Screening Testing Methods Available for the Disease (4 points)
Points Earned =

Additional Information About the Disease (3 points)
Points Earned =

Ability to Relate Different Areas of the Paper to Each Other (5 points)
Points Earned =

Mechanics—Organization, Sentence Structure, Spelling, Punctuation, References (5 points)
Points Earned =

Discussion of Why Disease Was Selected and Why You Learned (5 points)
Points Earned =