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Curiosity Driven Research Project

Biotechnology holds an increasingly prominent role in our society. While advancements in biotechnology continue to improve our ability to identify and treat many ailments of man, these advancements also force the contemplation of complex ethical issues. Stem cell technology may one day allow those suffering spinal cord injuries to once again walk. However, research on cells taken from developing embryos raise important questions about the definition of life and how to best protect it. Novel gene targeting practices make it relatively simple to manipulate our genetic code, which dramatically improves our potential ability to “cure” genetic diseases. However, this raises ethical questions involving unintended consequences of genetic manipulation. Finally, genetically modified crops make it possible to produce food in previously inhospitable climates allowing a dramatic improvement in access to nourishment. While this may be true, there remains the question of how GMO food impacts human health as well as natural biodiversity.

These are a few examples of biological issues facing our society today. For this assignment, I want you to choose an issue that you are interested in and develop a thesis to argue in a writing assignment. A thesis is defined as a “statement or theory put forward as a premise to be maintained or proved.” In this assignment, you will provide background on your chosen issue. Additionally, you will develop and state a thesis and spend the remainder of your article defending and supporting your thesis with evidence. You will need to use reliable sources as support for your thesis. One of these sources must be from a peer-reviewed academic source (i.e. a peer reviewed scientific journal such as the journals Nature, Science, or Cell). This paper should be 3-4 pages (double-spaced) with 12pt Arial font and 0.5 in margins. Key to this assignment is the use of critical thinking strategies when defending your thesis statement. You must think about, and utilize in your writing the “Critical Questions for Critical Thinking” as well as the “Six Steps of Critical Thinking” that we covered in class.

Important Dates for the Assignment:

Oct. 5 – Research Topic Choice Due

- Email your topic of choice as well as your “Thesis Statement” to the instructor
- Based on your topic and thesis statement, your proposal will be accepted or asked for revisions
- You will have 3 days to revise and submit a new proposal, if it is required

Nov. 2nd – 1st draft of 3-4 page research proposal due.

- Must have sources cited
- We will devote class time to revising/editing papers
- **** Note that this date is different than that outlined in the syllabus.

Nov. 30 – Final Draft Due

Guidelines for Content:

Background: This should be roughly ½ to 1 page in length. Describe what is known about your subject. You need not cover everything, rather you should make choices about what you think is important. Be sure to consider why certain information may be pertinent while other information is superfluous (this

doesn't need to be explained in your paper, but it should be a part of your thought process). You must cite work in an acceptable style.

Significance: Describe why your topic is important. How does it impact people/places/things? Why should we care about it? Should take ~ ½ page.

Thesis statement: Describe your thesis statement. How does it pertain to your topic of choice. Also, why is it important or significant?

Thesis argument: Provide evidence to support your thesis. Are there alternative views (i.e. other ideas that might disagree with your thesis?). Can you point to evidence that suggests why your argument might be superior to others? Are there obstacles that might stand in the way of people accepting your thesis? How can these obstacles be overcome? There are a lot of directions that you can take with this part of your paper. Be creative and explore your topic/thesis in detail. This should take up 2-3 pages.

**The above are guidelines to your paper. You may choose to craft it in a unique way, but you must cover the basics.

Here is an example of an acceptable citation from a peer-reviewed journal:

Researchers have long been searching for a therapy for myotonic dystrophy. Muscleblind overexpression has been shown to be a potentially effective treatment for this disease (1).

REFERENCES (*would come at the end of your document*)

1. Chamberlain, C.M. and Ranum, L.P.W. (2012) Mouse model of muscleblind-like 1 overexpression: skeletal muscle effects and therapeutic promise. *Hum. Mol. Genet.*, **21**, 4645–54.



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