**Project 1**

**Using Concepts from an Introductory Statistics Course to Understand Health Effects of Airborne Emissions from a Louisiana Petrochemical Facility**

Please watch this video <https://youtu.be/OYRop6uum_U> before beginning the project. This video discusses the purpose of these project and the expectations for project completion.

Please utilize the study in this link <https://drive.google.com/file/d/12n4vag-05p2KCoqgfiPORrpjFdH7CvaB/view> to answer the questions below. I recommend reading the questions before you read the article. I recommend reading the abstract and the introduction thoroughly. Skimming through the remainder of the article as needed should suffice, but you can read everything in entirety if you wish to or feel you need to.

1. (2 points) What are the researchers questioning?
2. (6 points) Please summarize the background research discussed in this manuscript. Do this by picking at least three sources used by these researchers and summarize what those sources say in a few sentences.
3. (1 point) What is the population discussed in this study?
4. (1 points) What is the sample discussed in this study?
5. (6 points) What variables are considered in this study? Classify each of these variables as qualitative or quantitative. If quantitative, discuss if the variable is continuous or discrete and give reasoning for your choice. You need to name and classify at least three variables correctly to earn full credit.
6. Scroll down to the “Methods” portion of this study (p. 6). Read through the content under the headings “study design” and “study protocol”.
   1. (2 points) Describe two things the researches did to make their study more substantial/valid. At least one of your descriptions must address a “gold standard” method of research.
   2. (2 points) Describe two flaws you found with the methodology. You must use statistical vocabulary to identify/describe these flaws.
7. (4 points) Skim through the “Data Analysis” portion of this study (p. 9). Describe one thing that makes sense to you. Describe one thing that seems statistical, but does not make sense to you.
8. (4 points) Continue onto “Results” (p.10). You do not need to read through all of this, but please list each heading given by the researchers to understand components that they analyzed.
9. Consider the conclusion of the researchers on p. 16.
   1. (1 points) Do you think this conclusion is reasonable considering what you have examined in the article? Explain.
   2. (1 points) Do you see potential flaws in the argument? Explain if you do.
   3. (1 point) What does the researcher suggest to help resolve this issue?
   4. (1 point) Can you think of any negative impacts resolving this issue may have on people in the area that is discussed?
   5. (5 points) Connect the ideas in the project to the concept of climate justice. More specifically, discuss how the environmental impacts of the plants in cancer corridor may have disproportionate impacts on the population living in that corridor relative to it’s impacts on the population who may be “consuming” what is produced by these plants. In this discussion, recall from class that humans may not the only population impacted.
10. (4 points) Consider the scientific method discussed in class (https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method). Does it seem this process was followed? Take special note of the 4th step down (green box) and explain your reasoning.