

DUE: 24th Feb

Please use Cambria or Calibri 12 pt font, double spaced, regular margins (.8" or less) and don't forget the catchy title on the 1st page (no title page is needed). Please put your names at the very end of the paper on the last page after the references and put the title on that last page as well as at the top of the 1st page. Please do not use foul language in the papers either – it should be professional.

4 pages long, 4 scholarly articles/sources at least.

Don't forget to include your references in your "script" / research paper and please do MLA format, not just urls. (MLA format includes the article title, author, source, date AND the URL if you found it on-line.

TOPICS TO CHOOSE FROM:

- **Virus Background information: this should include structure, possible origination, classification, and transmission. Where and how did this virus emerge and how has it mutated and replicated? What is the structure of this virus such as whether it is an RNA or DNA virus and how many nucleotides is it composed of? How many proteins does it code for? How does it attach to a host cell? What are the different viruses within the Corona Viruses family that are able to infect humans? How can we avoid similar novel virus transmissions, and how did it spread so quickly throughout the world?**
- **Exploring the health affects of Covid-19: What are some of the viral affects and host immune system responses that are causing the varying symptoms of Covid-19? Is this infection primarily a respiratory or cardiovascular disease? What are some pre-existing health risks or life style choices that lead to more severe outcomes? Do different blood types pose different threats of COVID-19 progression? If so why? Tie some of these topics into the theory of Natural Selection – are some people better adapted to survive this pathogen? Have bats and other corona virus hosts evolved to survive this virus? What is the Red Queen Hypothesis and how does it relate to pathogen evolution and resistance?**
- **Community connections: What information was disseminated to the community during the start of the pandemic? Were there disparities in recommendations, community compliance, and opinions? If so, were these disparities based on geography, education, race, political preferences, or other factors? How well did our country responded to the spread of the virus in general compared to other top infected nations? If you were to give**

out recommendations to the country to stop the spread of the virus and disease what would your main messages be?

- **Racial disparities:** Are there disparities in the spread, testing, treatment, and death rates from SARS-CoV-2 by race? If so, how? How did the Black Lives Matter Protests in June 2020 affect the spread of the virus and COVID-19 cases? Did the police reaction to protestors in some cases (tear gas, incarceration, violence) affect the pandemic? How has our country responded to the increased cases of COVID-19 in the jails and prisons? How are refugees and immigrants detained in ICE and other detention facilities being treated and tested? What legislation would you propose to improve relations, conditions and equality in America? What are city, state and federal politicians doing in regards to racial disparities, white supremacy and police brutality in our country?
- **Scientific Research:** What are the different types of testing and how effective are they in detecting the virus and COVID-19? What are the different types of vaccinations and treatments being developed and tested? Are strategies such as testing and contact tracing effective to slow the spread of the virus? What are the most effective strategies being implemented to “flatten the curve” so far in the U.S. and around the world? Are health care professionals using the steps of the scientific method to answer questions about the virus? How? What % of the population needs to be resistant to the virus in order to acquire herd immunity? What are the best long- term plans for reaching our herd immunity goal?
- **Ecology and Conservation Connections:** How is the pandemic affecting anthropogenic climate change, pollution, wildlife exploitation, human population and carrying capacity around the globe? What legislation has been proposed to help our planet in response to this pandemic? What would you propose? What are some post-pandemic predictions? (What will our society be like after this event, we will learn from our mistakes? Will we be better prepared or educated in order to avoid future pandemics and become more respectful of our planet?) Discuss ecology and conservation issues related to this pandemic.