Writing Assignment 5

3-3-21

The company, Pfizer, has proposed a third dose of their Covid-19 vaccine as an effort to prohibit new mutated strains of the virus from taking over. They claim that this initial vaccine will be effective against new strains currently circulating as they prepare for a vaccine-resistant strain to emerge. While they are administering this third dose to volunteers who previously took the vaccine, they are working on revising their vaccine recipe to match variants such as the one from South Africa.

Genetics is the core concept to be understood when creating these vaccines. The main ingredient in the vaccine is an mRNA strand that is identical to that of the virus. This strand is trimmed and cut down into an “inactive” strain to prevent an infection, while keeping enough of the viral genome for our cells to identify and register it to make effective antibodies. The genetic material of the virus is a crucial tool used to create a custom antibody for Covid-19.

Most vaccines currently being administered identify and neutralize the spike protein of the virus to prohibit infiltration of cells. Because the virus is spreading faster than it can evolve, there is a limited diversity in the spike protein mutation (Dearlove, 2020). Due to this lack in drastic change, the statements made in the press article are correct in that a third dose of the current vaccine would be effective against most mutated strains that currently exist.

The Virginian-Pilot. *Pfizer testing whether third dose of vaccine would ward off COVID-19 mutations* (2021). <https://www.pilotonline.com/coronavirus/ct-aud-nw-pfizer-vaccine-third-dose-coronavirus-mutations-20210225-xu4cxpuarjccbg6cu45txsvtb4-story.html>

Dearlove, B. et Al. A SARS-CoV-2 vaccine candidate would likely match all currently circulating variants. *PubMed.gov* DOI: 10.1073/pnas.2008281117 (2020)