



June 16, 2020

To: Distribution

From: Pandemic Working Group

Re: **COVID-19: Alabama Revue ~ Natural Origins ~ Foggy Glasses**

Alabama Hospitals. As reported on AL.com, the number of COVID patients in hospitals within Birmingham, Tuscaloosa, Montgomery and Decatur has hit all time highs this month with nearly one-third on ventilators. As per the graph below (from AL.com), the seven-day trailing average of coronavirus hospitalizations has ascended above 600. Not all areas have experienced surges, however; for example, Mobile has experienced a huge drop in patients. Further, as reported by the Alabama Political Reporter, up until today, Dr. Donald Williamson of the Alabama Hospital Association had expressed confidence that statewide hospital bed capacity was sufficient; now he is saying that he is “growing worried about the system.” He also noted that the concentration of cases is straining regional hospital staffs who are working long hours on the stream of severe cases. As reported in Yahoo.com, cases within Alabama are on the upswing with about 26,000 total cases during the pandemic and nearly 8,000 in the last 14 days alone, with the highest concentration in Montgomery County. Further, while statewide testing has increased, so has the positivity rate (that is, the number of infections per number of tests). Consequently, Dr. Williamson continues to encourage social distancing even while the state reopens its economy.

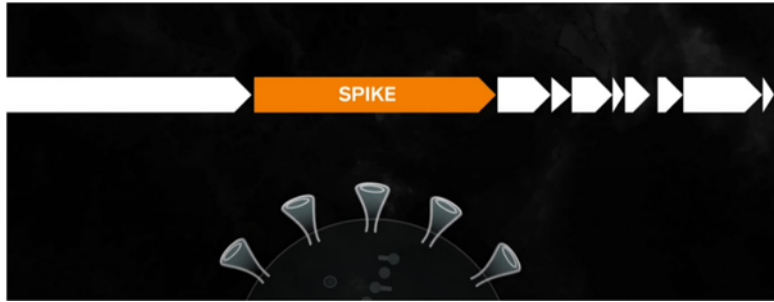
**7-day average for current hospitalizations in Alabama**



Chart: Ramsey Archibald - Source: Alabama Department of Public Health - Get the data - Created with Datalwrapper

COVID's Natural Origins. Earlier in the week, Business Insider covered the question of whether the coronavirus could have been manufactured in a laboratory. From a genome researcher's point of view, the answer is no. And here's why. According to Tulane's Robert Garry, in order to concoct a virus in a lab, one would either have to make it from scratch or modify, or accelerate the mutation of, an existing virus. Let's take these one-by-one. While only a few microns in size, viruses have a genomic backbone (a template that defines its structure and functions) of about 30,000 nucleotides. And, while we can figure out the correspondence between certain nucleotides and certain traits – as, in the case of humans, brown eye color – it is currently beyond our knowledge to put together the unique chain that would result in a pathogenic virus.

So, what about modifying an existing virus? According to Penn State's Macieg Boni, genomically speaking, the backbone is kind of like cryptocurrency. If you make a change, you leave a trail. Removing nucleotides and replacing them with other ones is kind of like replacing a few bricks in a red brick wall with black bricks. In the coronavirus backbone, there is no evidence of alterations. What about accelerating the mutation of an existing virus? The nearest virus in similarity to coronavirus is RaTa13 which is still 400 nucleotides and 50 years of serial passage away from being identical. Also – stay with me here – a critical attribute of “making” an infectious virus is that its “receptor binding domain” – the thing that enables it to latch onto a receptor – must be successful. Interestingly, by all accounts, the spike-like features on the coronavirus that latch onto



ACE2 receptors (which regulate blood pressure in human beings) should not work. They are counterintuitive – no one would have chosen them. Taken together, then, these researchers conclude that we do not know enough to make a pathogenic virus from scratch, there is no evidence of

intentional modification, there is not time to accelerate mutation, and, even if one were trying to tweak a virus to latch onto receptors, he or she would never have chosen the spike construct and ACE2 as the binding site. QED.

### Seeing Through the Fog.



Line the inside top edge of your mask with a facial tissue, and you'll be seeing clearly.

Have you had this happen? You put on a cloth face covering, and your glasses fog up. You start humming the Johnny Nash song, “I Can See Clearly Now,” but that doesn’t change anything. So, you take them off, but then you can’t read anything. What’s to be done? Try this from the Wall Street Journal – fold a piece of facial tissue or a napkin and line the inside top edge of your mask. Make sure the folded material crosses the tip of your nose. The paper serves as an absorbent space filler. I am following this approach even while typing – it seems to be working. In fact, I can see all obstacles in my way, and, I will add, it’s gonna be a bright, bright sunny day. - TD

If you have any questions or comments on this advisory, please contact either [kellyw@amvac.com](mailto:kellyw@amvac.com) or [timd@amvac.com](mailto:timd@amvac.com).