Gamma-aminobutyric acid type A receptor subunit alpha1, or GABRA1, is a gene that provides instruction for a single piece, the alpha-1 subunit, of the GABAA receptor protein. This receptor protein contains a hole in which negatively charged chlorine ions can flow through. In order for this pore to be opened, a chemical by the name of gamma-amino butyric acid must attach to the receptor. This will allow for the pore to open and the ions to flow through the cell membrane. The primary role of GABA in humans, specifically adults, is to prevent the brain from being overloaded with too many signals, so the ions that flow through the membrane will create an environment in the cell that blocks signaling between neurons.

What makes this gene important is what happens when it is not there. There have been reports of people who do not have this gene who experience anxiety, depression, and a slew of other mental health issues. But the big issue is the lack of this gene can cause epilepsy.

My big question is, where and when did this occur? Did our ancestors have this gene or is it a newer, relatively speaking, addition to our complex genome? Can this gene be found in all great apes or even all primates?

I want to create a family tree of this gene within primates. I have another class this semester that has given me a website that I can use to convert the coordinates of a gene in an organism and convert that same gene into another organism. So assuming that the gene is in the same place within primates, I should be able to obtain the sequences for all the primates I intend to use for this project. Using consensus models and outliers, I plan on trying to find where this gene might have shown its face in our history.