Vama Jhumkhawala

Species Genome to Sequence

A genome that I would like to sequence would be the *Notiluca scintillans* – a unicellular protist that is part of the Dinoflagellata phylum. They are known as the “sea sparkle,” because this species expresses bioluminescence when disturbed. This species has a circadian clock, so the bioluminescence is controlled to only occur at night. This is because the organelle in which the pH sensitive reaction for the bioluminescence occur, the scintillons, is at maximal abundance at night, and breaks down during the end of the night. This reaction is typically used as a defense mechanism, “lighting an alarm” in a sense in order to attract the predator of their predator.

I would choose to sequence this species because of its unique features in comparison to other algae. By being able to compare its genomes with other groups of algae, we could possibly better understand the differences and similarities that they share. It is suspected that the genome of this species has a lot of gene amplification and recombination, so sequencing this genome could shed light on the uniqueness of this genome.

Furthermore, this species has a long geological record, but has low occurrences, though they have been suggested to exist since the Early Cambrian period. They are also evolutionarily linked to being parasites. Better understand the genome of this species could help understand the parasitic mechanisms they undergo and its links to other species evolutionarily.