The History And Discovery Of DNA

DNA, or deoxyribonucleic acid, is found in the shape of a double helix, two strands with nucleotide bases in between them. Many people learn about this just in school, but it is important that the scientists behind the discovery of DNA are properly recognized for their achievements. It took many people to get the information and each one couldn't have contributed without a different scientist's discovery. Science, as a whole, is a team effort.

Our story starts in the early 1920's with scientist Frederick Griffith. Griffith was studying two strains of bacterium when he made his contribution. He would inject the strains into mice and record whether or not the mouse would die. The mice that received the deadly strain, S, would die, and the mice that received the non-deadly strain, R, would survive. This basic concept was expanded on by switching out dead strains between the combinations. He noticed that a mouse that received a dead S strain and a living R strain would still die, as the bacterium picked up the deadly traits in a process called transformation. The concept of transformation inspired other scientists to get closer to our current knowledge of DNA.

A scientist by the name of Oswald Avery saw Griffith's discovery of transformation and wanted to look into what the transforming substance was. Avery, and two colleagues Colin McLeod and Maclyn McCarty, worked to replicate Frederick Griffith's experiment, but this time he added a step. He tested the substance's chemical make up along with its ultraviolet light absorption, which showed the substance as DNA. At the time, geneticists and scientists believed proteins to be what made up genes, but this new discovery contradicted that knowledge. Avery's discovery is essentially what caused people to realize that genes were made up of DNA.

Alfred Day Hershey and Martha Chase were the next steps of DNA's journey. The two worked with a virus that affects DNA called T2. T2 infects E. coli and is a bacteriophage. When a bacteriophage enters a cell, some of its DNA is included in the cell's replication process and reproduces to eventually take down the cell. The scientists noted that bacteriophages that received a radioactive injection were able to infect non-radioactive cells, but when infected on the surface instead of inside, radioactivity couldn't be found in future generations. Because no radioactivity was passed on from the surface, this meant DNA is what passes on traits, instead of protein like originally suspected.

Frederick Griffith, Oswald Avery, A.D. Hershey, and Martha Chase are the ones responsible for the discovery of DNA's function. DNA is mainly used for storing genetic information, but it is also responsible for genetic traits. Segments of DNA that code these genetic traits are called genes. The previous mindset of proteins making genes is somewhat ironic considering DNA actually codes for amino acids, which are the monomer of protein. Thankfully, the important discoveries of these scientists helped us correct our knowledge of DNA function.