

# [Mr. director of the virusstructure research group](https://assignbuster.com/mr-director-of-the-virusstructure-research-group/)

Mr. Perry9th Grade Biology7 December 2017Aaron Klug: DNAAaron Klug, also known as Sir Aaron Klug, was born in August of 1926 in Zelvas, Lithuania to Bella and Lazar Klug. He then moved to South Africa two years later, where heattended Durban High School, where he read the novel, Microbe Hunters, which lead to hisinterest in microbiology. Klug soon later graduated with a Bachelor degree in science at theUniversity of Witwatersrand and studied for his Master degree in science at the University ofCape Town. As an extremely smart student, he was awarded an 1851 Research Fellowship fromthe Royal Commission for the Exhibition of 1851. Klug then moved to England on hisscholarship that he had earned and completed his PhD at Trinity College, in Cambridge in 1953.

Later, Klug moved to Birkbeck College in the University of London in late 1953 andstarted working with Rosalind Franklin in John Bernal’s lab where he worked with viruses. Therehe made important discoveries about the structure of the tobacco mosaic virus. Klug created hisown techniques of crystallographic electron microscopy, where he created a series of electronmicrographs, taken of two-dimensional crystals from various angles, that can be combined toproduce three-dimensional pictures of particles. In 1951, he became the director of the VirusStructure Research Group at Birkbeck College.

After working for the Virus Structure ResearchGroup for four years, he returned to Cambridge and joined the Medical Research Council in1962 as a staff member. He then spent the next ten years using procedure X-ray diffraction, microscopy, and fundamental modeling to create crystallographic electron microscopy in whichAgin 2an arrangement of two-dimensional pictures of crystals taken from multiple angles which arecombined to produce three-dimensional images of the target. Later, he worked on exposing thestructure of the DNA-protein complex, chromatin.

In 1974, along with his collaborators, Klugbecame the first to collect crystals of a transfer RNA and determine its structure. Aaron Klug worked in part for the work he started with Rosalind Franklin at in JohnBernal’s lab where he worked with viruses, he, unlike the DNA trio, honored Franklin’scontribution to the project. Rosalind died at the age thirty-seven with no idea of having beenedged out in a race that only James Watson and Francis Crick knew was a race, two otherscientists working on DNA.

Klug’s work on DNA (deoxyribonucleic acid), during the 1960s, Klug combined methods from x-ray crystallography with electron microscopy in order to studycomplex structures of DNA, which helped in the study of DNA. Aaron Klug’s research and discoveries are still relevant to today because they have leadto many others. Such as X-ray crystallography, which is a tool used for identifying the atomicand molecular structure of a crystal, in which the crystalline atoms cause a beam of incident X-rays to diffract into many specific directions. X-ray crystallography is still the chief method forcharacterizing the atomic structure of new materials and in discerning materials that appear verysimilar by other experiments. X-ray crystallography has led to a better understanding of chemicalbonds and non-covalent interactions. As said before, Klug worked with Rosalind Franklin, andthey worked well together because Klug acknowledged the works of Franklin.

When scientist are in competition, it increases the time the discovery is made because ifpeople are working to finish first, they are going to be faster than just putting it off to the side fora day or two. However, it may slow down the process because the stress of having a limitedamount of time can create a stalemate within the process, causing the discovery process to slow