

Chien Shiung Wu

Believed to be the only Chinese person to have worked on the Manhattan Project

ABOUT

Chien-Shiung Wu was born in a small town near Shanghai, China. She attended a school founded by her father, who supported education for girls, an uncommon practice at that time. Chien-Shiung Wu studied physics at the National Central University in Nanjing. In 1936, Chien-Shiung Wu went to San Francisco and enrolled at the University of California, Berkeley where she completed her PhD in 1940. Unable to find a research position at a university, Wu became a physics instructor at Princeton University, New Jersey and Smith College, Massachusetts.

In March 1944, Chien-Shiung Wu joined the Manhattan Project's Substitute Alloy Materials (SAM) Laboratories at Columbia University. The SAM Laboratories, headed by Harold Urey, supported the Manhattan Project's gaseous diffusion (K-25) programme for uranium enrichment. She helped to develop a process for separating the isotopes U-235 and U-238 by gaseous diffusion. Chien-Shiung Wu worked with James Rainwater and William W. Havens, Jr., to develop radiation detector instrumentation. In September 1944, the Manhattan District Engineer, Colonel Kenneth Nichols contacted Chien-Shiung Wu because the newly commissioned B Reactor, the first practical nuclear reactor, had start up and shutting down problems. John Archibald Wheeler and his colleague Enrico Fermi thought that a fission product, Xe-135, with a half-life of 9.4 hours, was the reason and using work from Chien-Shiung Wu's PhD thesis they were able to confirm this.



Picture credit: Britannica

Chien-Shiung Wu used her work in radioactive uranium separation to build the standard model for producing enriched uranium for atomic bombs at the Oak Ridge, Tennessee, facility. She also built innovative Geiger counters that are used to measure ionising radiation. Chien-Shiung Wu distanced herself from the Manhattan Project due to the destructive nature of atomic bombs. She also recommended to the Taiwanese president, Chiang Kai-Shek, to never build nuclear weapons.

Did you know?

In 1978, Chien-Shiung Wu won the Wolf Prize in Physics. She also published *Beta Decay*, in 1965, which is still a standard text for nuclear physicists.

Chien-Shiung Wu was the first woman to serve as president of the American Physical Society. She won the National Medal of Science, the Comstock Prize, and was the first woman to receive an honorary doctorate awarded by Princeton University.

In 1958, Chien-Shiung Wu's research helped answer important biological questions about blood and sickle cell anaemia.



Picture credit: The National Science Foundation