Frederick Reines 1918–1998

Frederick Reines, who shared the Nobel Physics Prize in 1956 for his historic 1956 experiment with Clyde Cowan which discovered the neutrino, died in August.

After graduate studies at New York University, Reines was recruited into the wartime Theory Division at Los Alamos, eventually working at the laboratory for 15 years. In 1951 he was side-tracked into an ambitious project, with Clyde Cowan, to search for Pauli's elusive neutrino, first at the Hanford nuclear reactor, then at the more powerful Savannah River facility. As well as discovering the neutrino, this work also led to important advances in detectors to monitor radioactive tracers for medicine.

In 1959 Reines moved to the Case Institute of Technology, Cleveland, where he continued to promote neutrino experiments at reactors and pioneer studies deep underground to search for atmospheric and cosmic particles.

In 1966 he went to the University of California, Irvine, whose neutrino group still plays a leading role in major neutrino experiments, including the famous "IMB" (Irvine/Michigan/Brookhaven) underground detector.

He was showered with honours, including the J Robert Oppenheimer Memorial Prize, the US National Medal of Science, the Bruno Rossi Prize, the Michelson–Morley Award, the W K H Panofsky Prize, and the Franklin Medal as well as the Nobel.

As well as being a distinguished physicist, Fred Reines also had a fine singing voice, with which he would occasionally entertain close friends with Gilbert and Sullivan lyrics. He claimed the peak of his musical career was when he performed with the chorus of the Cleveland Symphony Orchestra.