

James F. Crow, Past President of ASHG and World-Renowned Population Geneticist, Dies at Age 95

James F. Crow, PhD (1916-2012), a pioneer and giant in the field of genetics, died peacefully at the age of 95 on January 4, 2012. He made historic contributions to the scientific community – and to the public at large – through his research, teaching, public service, ethical analysis, and his leadership in the fields of genetics and human genetics. He was world-renowned for his role as a pioneer in the field and one of the ‘founding fathers’ of population genetics. He was also a legendary leader of the genetics community in its early years, serving as a past president of both the American Society of Human Genetics in 1963 and the Genetics Society of America in 1960, and as co-Editor-in-Chief of the journal *GENETICS* from 1952 to 1957.



Crow received his A.B. in Biology and Chemistry from Friends University in 1937, and his Ph.D. in Zoology from the University of Texas, Austin, in 1941. He taught at Dartmouth College from 1941 to 1948, and then spent the rest of his career at the University of Wisconsin, Madison, until his retirement in 1986. He chaired the University of Wisconsin’s Department of Medical Genetics for five years, and the Laboratory of Genetics (that is, Genetics and Medical Genetics) for a total of eight years. He also served as Acting Dean of the UW Medical School for two years. The J. F. Crow Institute for the Study of Evolution at the University of Wisconsin was named in his honor in 2010.

Much of Crow’s research has been in the area of theoretical population genetics, but he had also often ventured into the laboratory. Over a career that has spanned more than 50 years, Jim and his collaborators studied a variety of genetic traits in *Drosophila*. His theoretical work touched virtually every important subject in population genetics. Some of the scientific areas in which Jim was most influential include his work on estimates of mutation rates, the evolutionary consequences of deleterious mutations, the evolution and maintenance of sexual reproduction and recombination, the mathematics and implications of genetic drift (including the neutral theory of molecular evolution), the genetics of departures from Mendelian segregation, and the genetics and evolution of insecticide resistance.

In addition to a plethora of articles published in scientific journals, he wrote *Genetic Notes: An Introduction to Genetics* (Burgess Publishing, 1950), which saw eight editions, and *Basic Concepts in Population, Quantitative, and Evolutionary Genetics* (W. H. Freeman, 1986). He is also well known for the classic text he co-authored with Motoo Kimura entitled, *An Introduction to Population Genetics Theory* (Harper & Row, 1970).

Professor Crow was well-known for his exemplary career teaching genetics at both the undergraduate and graduate level. For many alumni of the University of Wisconsin, the class that stands out as the most stimulating, the most satisfying, and simply the best of all the courses they took in college, is the General Genetics course they took from Dr. Crow. Students remember the amazing clarity and simplicity of Dr. Crow’s lectures. His *Genetics Notes* – virtually everyone calls it “Crow’s Notes” – became the foundation for genetics courses around the world.

Furthermore, Jim Crow is legendary as a world-leader in public health for his involvement in committees that studied the effects of radiation on human populations. Following World War II and the atomic bombing of Hiroshima and Nagasaki, the National Academy of Sciences (NAS) convened committees to address the issue of the health effects of ionizing radiation, including a Genetics Committee to develop a rational basis for estimating the risk to a population from exposure to low doses of radiation. This resulted in the pioneering report that was published in 1956. In 1957, the first United Nations Scientific Committee on the Effects of Atomic Radiation was convened and Crow served as chair of the genetics section. From 1969 to 1972, the NAS convened the second review committee on radiation effects, and he once again chaired the genetics section.

In 1975, the Atomic Bomb Casualty Commission – a program initiated by President Truman in 1946 to study the effects on the health of Japanese survivors of the atomic bombings – was transformed into a joint U.S.- and Japanese-financed program. Crow was asked to chair the Scientific Advisory Committee to the new organization, whose membership included experts in all aspects of health effects analysis. The Crow Committee Report followed after an intensive visit with the scientific and administrative staff in Hiroshima and Nagasaki. Many of the recommendations for research programs that were proposed by the Crow Committee are still in effect today. One of his suggestions was that biochemical genetics studies be conducted on the families of the survivors. The data was collected from a total of 1,000 families whose DNA have been permanently stored. Perhaps the most important recommendation of the Crow Committee was the strong support that it gave to maintaining the newly established cancer epidemiology program. This has turned out to be the most important research bearing on radiation health risks to the atomic bomb survivors. In 1979, the NAS asked Jim to chair a new committee on chemical environmental mutagens to look at the diverse test systems that might best be used to assess potential damage to human reproductive cells and how to estimate the potential impact on future generations.

Other NAS committees on which Jim served included: the Committee on Nuclear and Alternative Energy Systems; as chair of the Risk/Impact Panel (1977–1982); as chair of the Committee for Scholarly Communication with the People’s Republic of China, Science and Engineering Committee (1983–1985); and as chair of the Committee on DNA Technology in Forensic Science (1994–1996). It seems that when the NAS wanted an exemplary scientific report that was lucidly written and completed on time, they always called on Dr. Crow to chair it!

He has served at the national level as a member of the General Advisory Committee to the Director of NIH, and he also chaired the NIH Genetics Study Section and the NIH Mammalian Genetics Study Section. In addition, he served as vice chair on an important committee of the National Institute of Justice, namely, the National Commission on the Future of DNA Testing. He was also chair of the Research and Development Working Group of the Commission (1998-2000).

Professor Crow was recognized as a leader and statesman of science. He was a member of the National Academy of Sciences, the National Academy of Medicine, the American Philosophical Society, the American Academy of Arts and Sciences, and the World Academy of Art and Science. He was an honorary Fellow of the Japan Academy and a Fellow of the Wisconsin Academy of Sciences, Arts, and Letters. He was also named as a foreign member of the Royal Society.

Aside from his scientific contributions, Jim was a talented musician and played viola in the Madison Symphony Orchestra for many years. He also served as President of the Madison Civic Music Society and of the Madison Symphony Orchestra. Recently, he led a fund-raising drive to establish an endowment for the Pro Arte String Quartet.

Professor Crow generously contributed his talents to many good works in the university, the profession, and the community. Upon learning of Crow's death, saddened leaders of the human genetics community described Jim as "a brilliant scientist, but modest" and "a kind and gentle soul." All those who had the privilege of knowing Jim will agree that with his passing, we have lost one of the 'greats of science.'