

Famed cancer theorist Dr. Alfred G. Knudson Jr. dies at 93

July 11 2016

Scientist and oncologist Dr. Alfred G. Knudson Jr., who was renowned for a groundbreaking theory of how cancer develops, has died after a long illness, according to a funeral home and the research center where he worked for decades. He was 93 years old.

A representative of the Oliver. H. Blair Funeral Home said Knudson, who had been with the Fox Chase Cancer Center for decades, died Sunday at his home in Philadelphia.

Knudson, who was born in Los Angeles, served in the Navy and the Army and earned a medical degree from Columbia University in New York and a doctorate from the California Institute of Technology.

He was renowned for his two-hit hypothesis, published in 1971 and based on his studies of children with retinoblastoma, a rare cancer of the eye. He suggested that people with hereditary cancers inherit one copy of a damaged gene, the first hit, but develop cancer only if they develop a second hit, the loss of the good copy in a gene pair. By contrast, people who develop nonhereditary forms of cancer must get both hits, meaning such cancers often occur later in life.

Knudson also predicted the presence of genes in the cell that could function to stop abnormal cell growths, which are now called [tumor suppressor genes](#).

The American Society of Clinical Oncology called Knudson "a

pioneering [cancer](#) geneticist" and credited him with "helping to usher in a new era of research on tumor suppressor genes."

Knudson received many major medical awards, including the 2004 Kyoto Prize, the 1998 Albert Lasker Clinical Medical Research Award, the American Society of Hematology's Distinguished Career Award and the American Association for Cancer Research Award for Lifetime Achievement in Cancer Research.

His survivors include his wife, Dr. Anna Meadows, and three daughters from an earlier marriage. Services are to be held in September.

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Citation: Famed cancer theorist Dr. Alfred G. Knudson Jr. dies at 93 (2016, July 11) retrieved 25 April 2024 from <https://medicalxpress.com/news/2016-07-famed-cancer-theorist-dr-alfred.html>

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