Ontario Women: Vanguards of Science

Irene Uchida, scientist

Irene Ayako Uchida (1917-2013) was a scientist who worked all over Canada - at hospitals, universities, and laboratories. Her most famous scientific accomplishment was finding the specific problem in human genes that causes Down Syndrome.

Doctor Uchida was born in Vancouver in 1917; her father owned two bookstores. She played violin and piano and was given the nickname "Irene" by her piano teacher; she loved watching the Japanese-Canadian baseball team the Vancouver Asahi play. When she graduated from high school, she decided to study English literature at the University of British Columbia. She joined the Japanese Canadian Citizens League and became active in lobbying for greater civil rights.

During World War II Irene, her father, her brother, and his wife and children were sent to internment camps. Irene was made principal of a primary school in the camp, teaching 500 students. Her father's two stores, their home, and their car were all confiscated by the government.

In 1944, they were released, and Irene's father decided to move to Japan. Irene headed to Toronto for university, and to pay for her education she worked as a seamstress in a factory, and as a dishwasher in a restaurant. She graduated in 1946.

> *There were many obstacles to her progress in her education. One was the racism of the times. She confessed to me that some of her professors did not like her in their precious school and so tormented her with epithets that surprised and stung.*

Doctor Uchida worked at Toronto's Hospital for Sick Children from 1951 to 1959, where she studied twins to learn more about the genetic basis for heart disease. She was hired away to Winnipeg, where she founded Canada's first cytogenetics laboratory ("cytogenetics" means the study of how chromosomes affect the way cells grow and change). She also travelled the world as a visiting scientist.

She started a cytogenetics laboratory at McMaster University in Hamilton. She and her labmates would search out people across Ontario with a Down Syndrome diagnosis to take blood samples from them and their family members. Before Doctor Uchida's research, many people believed that mothers caused Down Syndrome by becoming pregnant when they were over 35. Doctor Uchida was able to correct this mistaken assumption. French scientists had recently discovered that people with Down Syndrome have an extra chromosome. She looked into that finding, and discovered that women exposed to X-rays and other radiation could sometimes develop the genetic mutation that caused Down Syndrome in their children. She also discovered that men passed down the extra chromosome that causes Down Syndrome to their children in 25% of cases.

Doctor Uchida died in 2013 at the age of 96, passing away peacefully in a nursing home in Toronto. She never married or had kids. Throughout her career she published almost 100 scientific papers about aspects of her research.

Doctor Uchida has been given a number of honourary degrees, made an Officer of the Order of Canada, named a Woman of the Century for Manitoba, and given the Founders Award from the Canadian College of Medical Geneticists. In 1970, Prime Minister Pierre Trudeau named her to the Science Council of Canada and in 1975 she was selected as one of 25 outstanding Ontario women as part of its celebration for International Women's Year. She is remembered for "her feistiness, her sense of humour, her love of music, and her insistence on proper grammar."