



11.3 Joanne Simpson

Dr. Joanne Simpson was the first woman to serve as president of the American Meteorological Society. Her road to success was not easy. She chose to forge ahead in the field of meteorology for the sake of women who would enter the field after her.

Early goals



Joanne Simpson was born in 1923 in Boston, Massachusetts. At a young age, Simpson was determined to have a career that would provide her with financial independence. Her mother, a journalist, remained in a difficult marriage because she could not afford to provide for her children on her own.

Simpson knew at age ten that

she wanted to be able to support herself and any future children.

So Simpson's journey began. As a child, Simpson loved clouds. She spent time gazing at clouds when she sailed off the Cape Cod coast. Simpson's father, aviation editor for the Boston Herald newspaper, probably sparked Simpson's interest in flight. Joanne loved to fly and earned her pilot's license at 16. Her interest in weather took off.

The sky's the limit

Simpson earned her degree from the University of Chicago in 1943. It was here that she developed a love for science. She planned to study astrophysics. However, as a student pilot she was required to take a meteorology course. Meteorology was fascinating. She wanted to take more courses. Carl-Gustaf Rossby, a great twentieth century meteorologist, had just started an institute of meteorology at the university. Simpson met with Rossby and enrolled in the World War II meteorology program as a teacher-in-training. She taught meteorology to aviation cadets.

Women temporarily filled the roles of men away at war. At the end of the war, most women returned home, but not Simpson. She completed a master's degree and wanted to earn a Ph.D. Her advisor said that women did not earn Ph.D.s in meteorology. The all-male faculty felt that women were unable to do the work which included night shifts and flying planes. She was even told that if she earned the degree no one would ever hire a woman.

Determined even more, Simpson pursued her dream. She took a course with Herbert Riehl, a leader in the field of tropical meteorology. She asked Riehl if he would be her advisor and he agreed. Not surprisingly, Simpson chose to study clouds. Her new advisor thought it would be a perfect topic "for a little girl to study." Throughout her Ph.D. program, she studied in an unsupportive academic environment. She persevered and became the first woman to earn a Ph.D. in meteorology.

Working woman

As a woman, Simpson did have difficulty finding a job. Eventually she became an assistant physics professor. Two years later, she took a job at Woods Hole Oceanographic Institute to study tropical clouds. People at the time believed clouds were produced by the weather and were not the cause for weather. Simpson, studying cumulus clouds in the tropics, proved that clouds do affect the weather. She found that very tall clouds near the equator created enough energy to circulate the atmosphere. Together, Simpson and Riehl developed the "Hot Tower Theory." Tall cloud towers can carry moist ocean air as high as 50,000 feet into the air, create heat, and release energy.

While studying hurricanes, Simpson discovered that hot towers release energy to the hurricane eye and act as the hurricane's engine. Simpson's work with clouds continued as she created the first cloud model. Using a slide rule, she created a model well before computers were invented. She later became the first person to create a computerized cloud model.

A life of achievement

Simpson's career spans many decades, many institutions, and many positions. She has won numerous awards including the Carl-Gustaf Rossby Research Award. In 1979, she joined NASA's Goddard Space Flight Center and enjoyed finally working with other female scientists. As a NASA chief scientist, Simpson does not plan to retire. Today, she continues to study rainfall, satellite images, and hurricanes.



Reading reflection

1. Dr. Simpson achieved many “firsts” in the field of meteorology. Identify three of these first time achievements.
2. Simpson’s road to success in the field of meteorology was not easy. What obstacles did she overcome on her journey to eventual success?
3. What have you learned about working towards goals based on Simpson’s biography?
4. **Research:** What is a slide rule? What caused the slide rule to fade from use?
5. **Research:** What is the Carl-Gustaf Rossby Research Award?
6. **Research:** Where is the Woods Hole Oceanographic Institute located and what does it do?
7. **Research:** Use a library or the Internet to find a photo or sketch of hot tower clouds. Present the image to your class, citing your source.