

Weather She Qualified: Meteorology for women was not an accepted or even an available area of academic study, occupational training, or employment prior to the middle 19th Century. In America, the only acceptable occupation for women (unmarried only) was teaching. Still, brave and hardy, intelligent women forged and found methods to become atmospheric scientists.

Sarah Frances Whiting (1847-1927) was tutored in mathematics and physics by her father, a New York state college professor. Upon receiving her bachelor's degree in 1865, she taught at the Brooklyn Heights Seminary for Girls where she attended scientific lectures and visited local laboratories, as she could. In 1875, she accepted a position teaching physics at Wellesley College in Boston and she attended the laboratory physics classes of Edward C. Pickering at MIT. His was the first undergraduate physics laboratory in the United States. Hers was the second, which she opened in 1878 at Wellesley College.

At Wellesley, Whiting introduced a course in meteorology, put together a meteorological observing station, and had her students collect data for the U.S. Weather Bureau. In 1895, she was the first scientist, male or female, to make the first X-ray photographs in the United States. She was the first woman invited to join the New England Meteorological Society; she was a member of the American Physical Society that, initially refused to invite women to its banquets; she was one of five women to be elected a fellow of the American Association for the Advancement of Science; and she received an honorary degree from Tufts College.

Grace Evangeline Davis (1870-1955) studied physics and meteorology under Whiting at Wellesley where she earned her B.A. and M.A. degrees. Davis was the associate professor of physics at Wellesley from 1899-1936 best known there for her popular meteorology course. Davis studied at Radcliffe, Harvard, MIT, and was a charter member of the American Meteorological Association founded in 1919.

Gladys Wrigley (1855-1974) earned a fellowship to Yale where she became the first woman in the United States to earn a Ph.D. in geography for her work on the Roads and Towns of the Central Andes. Wrigley worked at the American Geographical Society and was the first editor of their highly respected Geographical Review. She held this position for twenty-nine years until her retirement and was one of the most influential scientific editors of first half of the 20th Century. Still, she was never invited to dine with councilors of male staff members, and was referred to as "Miss Wrigley" while male Ph.D.s were addressed as "Dr." Dr. Gladys Wrigley, Ph.D. also was a charter member of the American Meteorological Association.

Hundreds of thousands of opportunities for women availed themselves in the 1940s as hundreds of thousands of men were sent overseas to fight in World War II. Meteorologist positions were opened to and undertaken by qualified women. When the men returned, the women were expected to return their positions to the RETURNING men who expected this.

Bernice Ackerman (1928-1995) started her career during the war with the Women Accepted for Volunteer Emergency Service (WAVES). After the war, she earned a B.S. in meteorology with a minor in mathematics from the University of Chicago in 1948 and

worked for the U.S. Weather Bureau. She went on to earn her M.S. in meteorology in 1955, and her Ph.D. specializing in cloud physics in 1965 both also from UC. She was an associate professor of meteorology at UC (1965-67), at Texas A&M (1967-70), and an associate meteorologist in the Atmospheric Sciences Section at Argonne National Laboratory (1970-72). Ackerman's credentials are numerous. She is considered to be one of the most important women meteorologists of the second half of the 20th Century.

Hazel Tatro (1920-1974) received her meteorological training while serving in the WAVES during World War II. She earned her B.S. in meteorology from Florida State University on a Weather Bureau scholarship and then worked for the Weather Bureau. Tatro was the first woman to be a MIC, Meteorologist in Charge, of a U.S. Weather Bureau Office.

Beryl Bedgood Beaurepaire was a member of the Women's Auxiliary Australian Air Force (WAAAF) in the 1940s. She chose to join the WAAAFs because her father was in the Air Force, she was interested in science, and she understood there would be openings in the meteorological section. In her interview she was told, "Oh no, they won't allow any women into that." She joined anyway and was able to "re-muster" as a meteorological assistant with two other women in a class of forty. The three women, who needed a matriculation or a university year to be accepted, were better educated than the thirty-seven men who needed only the equivalent of intermediate (high school) education.

Beaurepaire recalls that the men were posted to the Weather Bureau but the women worked alongside public servants. As well, the women received about a quarter of the pay of the men with no extra pay for weekend shifts for which the men got time-and-a-half or three times pay. The women complained to the Director of the WAAAF, a woman, stating they did not join the WAAAF to be public servants. Some months later they were reassigned more respective to their weather observation talents. Still, until the mid-1970s observer positions were not fully open to any woman despite whether she qualified.

Sources: <http://brianna.laughter.id.au/blog/tag/bureau-of-meteorology/>;
<http://passporttoknowledge.com/storm/who/bios/women1.htm>.

Next month: The first female Ph.D. in meteorology whose defining work on tropical storms and hurricanes changed weather forecasting for all time.