

Christine Ladd-franklin | Encyclopedia.com

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Christine Ladd-Franklin (1847-1930) was a noted logician and psychologist who added to the literature in both fields during the late nineteenth and early twentieth centuries. She proposed the antilogism, a major contribution to the field of logic. As a psychologist, she contributed theories of color vision. Despite her contributions, she was denied acceptance in the scientific community because she was a woman.

Ladd-Franklin was born Christine Ladd in Windsor, Connecticut, on December 1, 1847. Her parents came from influential and well-to-do families. Her father, Eliphalet Ladd, was a [New York](#) merchant and the nephew of [William Ladd](#), founder of the American Peace Society. Her mother, Augusta Niles Ladd, was the niece of [John Milton Niles](#), former postmaster-general of the [United States](#). Augusta Ladd was a staunch supporter of women's rights who often attended suffrage meetings. In a letter to her sister, Augusta described a lecture she had attended, saying that women belonged "every place where a man should be." Her mother's beliefs regarding women's rights had an early influence on Ladd-Franklin during a time in American history when women's sphere was expected to be the home and family.

Ladd-Franklin, known as Kitty, was the oldest of three children in the family. She spent her childhood in her native town and in [New York](#) City until the age of 12, when her mother died. She then moved to Portsmouth, [New Hampshire](#), to live with her paternal grandmother. She did exceptionally well in school where she studied Greek and math alongside boys who were preparing to attend [Harvard University](#).

Ladd-Franklin's father was very warm and supportive. Father and daughter exchanged frequent letters in which Eliphalet Ladd encouraged his daughter's educational pursuits. In an article in *American Psychologist*, Laurel Furumoto said, "Kitty's father also abundantly praised her academic achievement and communicated an unwavering belief in her potential to excel." Ladd-Franklin graduated from Wilbraham Academy as valedictorian of her class.

Ladd-Franklin aspired to a career and wanted to attend Vassar College, a new college that would offer women a curriculum comparable to men's colleges. However, she faced some obstacles. Although Ladd-Franklin's father had supported her educational endeavors, he did not believe it was necessary for her to attend college. He was also experiencing financial difficulty and could not afford to pay college tuition. Ladd-Franklin's grandmother, who had raised her after Ladd-Franklin's mother died, believed that if Ladd-Franklin attended college, she would be too old to marry after graduation. Ladd-Franklin convinced her grandmother to allow her to attend college with the argument that she was not attractive enough to find a husband and that there was a shortage of men as a result of the [Civil War](#). Therefore, she needed education in order to support herself. Finally, her grandmother gave in. Her father also agreed.

Attended Vassar

Untold Lives states that shortly before entering Vassar, Ladd-Franklin wrote in her diary, "Vassar! Land of my longing! Mine at last. In a month I shall pace the spacious corridors and busy myself in the volumes of forgotten lore at Vassar!" Ladd-Franklin's mother's sister, Juliet Niles, another women's rights supporter, paid Ladd-Franklin's tuition to Vassar. Ladd-Franklin was interested in physics but could not pursue that subject in college because women were denied access to laboratories. She studied mathematics instead. Ladd-Franklin attended Vassar in the 1866-1867 school year, the college's second year of operation. She then taught for a year, before returning to Vassar to complete her degree in 1869.

Eliphalet supported his daughter's career goals. *American Psychologist* reported that in 1867 he wrote, "We all miss you very much and wish you was at home but it is for your advantage and good to have some occupation and to be of some use in the world and acquire habits of independence and self-reliance and know that if you have health you can take care of yourself."

At Vassar, Ladd-Franklin met astronomy professor [Maria Mitchell](#), who became a mentor to Ladd-Franklin. Mitchell was a renowned astronomer and the first woman admitted to the [American Academy of Arts and Sciences](#). Ladd-Franklin excelled in Mitchell's astronomy classes and took observations for her in the college observatory, which had the third largest telescope in the country. Mitchell helped Ladd-Franklin and other women gain experience and self-confidence so they would pursue science as a career.

Ladd-Franklin earned an A.B. degree in 1869. She then taught in secondary schools in Pennsylvania, Massachusetts, and New York for nine years. Ladd-Franklin hated teaching. In 1872, according to *Untold Lives*, she wrote in her diary, "Sunday evening is the most miserable time of all the week. The burdens of the morrow look impossible to be born. Teaching I hate with a perfect hatred... I shall not be able to endure it another year." Ladd-Franklin did continue teaching and also published articles about mathematics in the *Educational Times*, an English periodical, and *The Analyst*, an American publication.

Earned Graduate Degree

Ladd-Franklin applied to [Johns Hopkins](#) University in Baltimore as a graduate student. Although the school did not admit women, a mathematics professor, J. J. Sylvester, noticed her application. He was familiar with her writings and persuaded the university to admit her on a special status, which allowed her to attend only lectures given by Sylvester. After a year, the university allowed her to attend other lectures and granted her a \$500 annual stipend, which she held for three years. Male students who received this award were called fellows, but Ladd-Franklin was denied this title and was not even listed on the roster of students at the university. Ladd-Franklin qualified for a PhD in 1882 but was denied the degree because she was a woman. The university eventually granted her degree in 1926, when she was nearly 80 years old.

While studying mathematics at [Johns Hopkins](#), Ladd-Franklin became interested in [symbolic logic](#), which was taught by C. S. Peirce. She published her thesis, "The Algebra of Logic," in Peirce's *Studies in Logic by Members of the Johns Hopkins University* in 1883. Ladd-Franklin's thesis proposed a way to analyze logical statements for validity using an inconsistent triad, which she called an antilogism. *Notable Mathematicians* defines an antilogism as "three statements that are together incompatible" and lists the following example: "It is impossible that any of these measures should be idiotic, for none of them is unnecessary, and nothing that is necessary is idiotic." Ladd-Franklin's work was praised in its time and is still regarded as a major contribution to the field of logic.

While attending Johns Hopkins, Ladd-Franklin met mathematics professor Fabian Franklin, who she married in 1882. Franklin was a native of Hungary who had worked as a civil engineer and surveyor before earning his PhD in Mathematics at Johns Hopkins. As a fellow academic, Franklin was extremely supportive and proud of his wife's work. The Franklins had a son, who lived only a few days, and a daughter, Margaret.

Studied Color Theory

Ladd-Franklin began studying vision and theories of color perception. It is unclear why Ladd-Franklin became interested in vision, but one possibility, according to Furumoto, is that she had suffered from eye troubles since adolescence. Ladd-Franklin published her first paper in the field in 1887.

As a married woman, Ladd-Franklin was denied a research position at American [colleges and universities](#). In 1891 and 1892, Ladd-Franklin, her husband, and their daughter traveled to Germany where Franklin was pursuing mathematical research. Ladd-Franklin used the opportunity to pursue research in Germany. German professors were opposed to women researchers, but Ladd-Franklin was not a threat to them. As an American, she would return home and would not compete for a teaching position in Germany.

Ladd-Franklin studied color theory in the laboratories of G.E. Müller and theories of color vision with Hermann von Helmholtz. Ladd-Franklin's study led her to propose her own color theory, which she presented to the International Congress of Psychology in London in 1892. The theory was controversial but gradually gained acceptance.

Ladd-Franklin returned to Germany alone in 1894 to do lab work with Arthur König, a physicist interested in color vision. During her four months there, she wrote home frequently to share her discoveries with Franklin who continued to provide encouragement and praise. The experience turned out to be a disappointment as she felt König was not providing good direction. According to *American Psychologist*, he also took credit for her work, causing Ladd-Franklin to lament, "what can one expect from a man!" She traveled to Germany again in 1902 to consult with Müller.

Despite the fact that Ladd-Franklin contributed to scientific literature and psychological research, she was denied a research-teaching position at a college or university. Although her work on color vision was widely accepted, without an academic affiliation, she felt illegitimate. In 1904, she was appointed lecturer in psychology and logic at Johns Hopkins. She taught one course per year, on a year-to-year basis.

In 1895, Fabian Franklin left Johns Hopkins to become editor of the *Baltimore News*. In 1909, the couple moved to New York when Franklin became associate editor of the *New York Evening Post*. Unable to obtain an official

appointment, Ladd-Franklin lectured on psychology at [Columbia University](#), although she drew no salary and was not considered faculty. She remained at Columbia until 1927.

Shunned by Male Scientists

One of her greatest disappointments was exclusion from an elite group of experimental psychologists known as the Experimentalists. [Cornell University](#) psychologist E.B. Titchener began the club in 1904 and invited the heads of psychological laboratories and up-and-coming junior faculty and graduate students to attend the informal meetings. Titchener specified that no women would be allowed to participate. Ladd-Franklin had known Titchener, who was 20 years younger than she, for many years and was incensed at her exclusion. When the group met at Columbia in 1914, Ladd-Franklin told Titchener that not inviting her to the meeting at her own university represented a medieval attitude and that his policy was "so unconscientious, so immoral,—worse than that—so unscientific." Finally, Ladd-Franklin was permitted to attend one session but was never invited back. She continued to protest the group's men-only policy, but the group continued to exclude women until long after Ladd-Franklin's and Titchener's deaths.

During the final years of her career, Ladd-Franklin studied "blue arcs," which she believed showed that active nerve fibers emit a faint light. Ladd-Franklin published *Colour and Colour Theories* in 1929. It was comprised of her major works on vision.

Ladd-Franklin died of pneumonia in New York City on March 5, 1930. She was 82 years old. Although she had made many contributions in the fields of logic and vision, she was never fully accepted in the male-dominated scientific community.

Books

Notable Mathematicians, Gale Research, 1998.

Scarborough, Elizabeth, and Laurel Furumoto, *Untold Lives: The First Generation of American Women Psychologists*, [Columbia University](#) Press, 1987.

Periodicals

American Psychologist, February 1992. □