

**BARNUM, Charlotte C.** May 17, 1860–March 27, 1934.

VASSAR COLLEGE (BA 1881), YALE UNIVERSITY (PhD 1895).

Charlotte Cynthia Barnum was born in Phillipston, Massachusetts, the third of four children of Charlotte (Betts) (1823–1899), of Connecticut, and Samuel Weed Barnum (1820–1891), born in New York. Two brothers of her mother received MD's from Yale in the 1840s. Samuel Weed Barnum received a BA in 1841 from Yale and a BD in 1844 from the Yale Divinity School. Her parents married in 1849; their other children were Samuel Horace (b. 1852), Thomas Rossiter (1857–1938), and Clara Louisa (1866–1953). The two sons graduated from Yale in 1875 and 1879, respectively, and the younger daughter graduated from Vassar in 1888 and attended the Yale graduate school 1892–94. Samuel Weed Barnum was pastor of Congregational churches in Connecticut and Massachusetts before moving to New Haven in 1865. He was engaged in various editorial projects, including the 1847 revision of *Webster's Dictionary*, *Smith's Comprehensive Dictionary of the Bible* (1868), and *Webster's International Dictionary* (1890).

Charlotte Barnum attended Hillhouse High School in New Haven before enrolling at Vassar College in 1877 and graduating in 1881. Following her graduation she taught at Betts Academy, a boys' preparatory school in Stamford, Connecticut, 1881–82. She also taught at Hillhouse High School in 1883 and 1885–86. She did computing for the Yale Observatory 1883–85 and, also in 1885, computed angles of crystals for a revision of James Dwight Dana's *System of Mineralogy*. She worked in 1886–90, and again in 1897, as editorial assistant on *Webster's International Dictionary*. During the academic year 1889–90, Barnum was a teacher of astronomy at Smith College.

In 1890 Charlotte Barnum requested that she be allowed to take courses at the Johns Hopkins University. However, in 1890 Johns Hopkins did not officially admit women, even for graduate work, and was not to do so for another seventeen years. Barnum was supported in her request by Simon Newcomb, professor of mathematics and astronomy at Johns Hopkins, who wrote to President Daniel Coit Gilman on November 6, 1890, making an argument for allowing qualified women to study mathematics and astronomy at the graduate level at the university. He added, "The immediate occasion of this communication is the residence in Baltimore of Miss Barnum, whom I believe you have seen, as a candidate for instruction. I would like to submit a special request that Drs. [Thomas] Craig and [Fabian] Franklin be allowed to admit [Miss Barnum] to their post-graduate classes without committing the university to any policy as to future cases of the same class. And, as a reason for this course I may say that I know of no inconvenience that would thus arise" (MS 137, Johns Hopkins University Collection, Special Collections, Sheridan Libraries, The Johns Hopkins University). In December the executive committee of the board of trustees voted that Barnum be allowed to attend Dr. Craig's lectures without enrollment and without a charge for tuition. Consequently, she studied mathematical astronomy and physics at Johns Hopkins University 1890–92.

Wishing to earn a degree, however, Barnum entered Yale University in 1892, the first year women were officially admitted to the graduate school there. Her sister, Clara, who had graduated from Vassar in 1888, also attended the Yale Graduate School in 1892–94; her studies were interrupted by illness. In late August 1893,

Charlotte Barnum attended the International Mathematical Congress held in connection with the World's Columbian Exposition in Chicago. She was one of four women, of forty-five in total attendance. During her first two years at Yale, Charlotte Barnum's course work was taken with Hubert A. Newton (Integral Calculus and Mechanics; Celestial Mechanics; Shooting Stars and Meteors); J. Willard Gibbs (Vector Analysis; Multiple Algebra); and Andrew W. Phillips (Analytic Geometry; Salmon's Conic Sections; Theory of Functions; Higher Plane Curves). In her last year, she took courses in the Theory of Numbers with Irving Fisher, a young assistant professor, and in the Theory of Functions with James Pierpont, an 1894 Vienna PhD and first-year lecturer at Yale. It is unclear from the record who directed her dissertation. She received her PhD in 1895.

In 1895–96 Barnum was an instructor of mathematics at Carleton College in Northfield, Minnesota. After this one year of college teaching, she spent most of the remainder of her career working in applied areas of mathematics and in editorial work. Many of the following details are reported in the Yale Obituary Record. She joined the American Institute of Actuaries in 1898 and worked as an actuarial computer for the Massachusetts Mutual Life Insurance Company, Springfield, in 1898 and for the Fidelity Mutual Life Insurance Company, Philadelphia, 1900–01. The AMS membership lists during this period do not indicate any employers, but do list Barnum's address in New Haven in January 1898 and 1899, in Stamford, Connecticut, in January 1900, and in Philadelphia in January 1901. From 1901 to 1913 she was in Washington, D.C.: as a computer for the US Naval Observatory in 1901 and for the tidal division of the US Coast and Geodetic Survey 1901–08, and as editorial assistant in the biological survey for the US Department of Agriculture 1908–13, where she “wrote articles on tides, currents, annuities, and social legislation” (Williams Papers). An article she wrote suggesting a limit on the amount of money working women should spend on clothing appeared in the journal of the Women's Trade Union League in 1911. She also did editorial work on books by the Carnegie Institution of Washington. Although Barnum was at the US Naval Observatory for less than a year, she is one of twelve women profiled in “The Contributions of Women to the United States Naval Observatory: The Early Years.”

Barnum indicated in her last entry in *American Men of Science* that from 1914 to 1926 she was an editor and proofreader of scientific works. From 1914 until 1918 she was, for the most part, in New Haven and engaged mainly in editorial work: for the Yale Peruvian Expeditions 1914–15, for the Yale University secretary's office 1915–16, and for the Yale University Press in 1915 and 1918–19. AMS membership lists indicate the following. From January 1914 through January 1916 her address is in New Haven, but the January 1917 AMS membership list puts her in New York City as a consulting actuary; her address remains in New York City through December 1922, although no positions are listed. In October 1926 she is again using a New Haven address. In a letter of January 14, 1920, she wrote that she had “worked for a year here in New York on the *Chronicles of America*, published by the Press” and that she had just finished editing a book on labor unrest (Charlotte C. Barnum to Miss Margaret Corwin, Graduate School of Arts and Sciences, Yale University, Student Records (RU 262), Manuscripts and Archives, Yale University Library). She taught in 1922 in the Scoville and the Columbia preparatory schools in New York and in 1923 in the Walnut Hill School in Natick, Massachusetts.

Barnum was one of the early members of the AMS, having been admitted in October 1894, about three years after the first women joined the society. During her life she was involved in various social and charitable activities; these included the Associated Charities and the National Conference of Charities and Corrections (now the National Conference on Social Welfare). When she was living in New York she was a member of the Women's Joint Legislative Commission [for Equal Rights] and of the Broadway Tabernacle, a Congregational church known for its social activism.

Barnum died of cerebrospinal meningitis at seventy-three in Middletown, Connecticut, in 1934. She was survived by her two brothers and her sister and is buried in the Grove Street Cemetery in New Haven.

**Organizational affiliations:** AMS, Amer. Inst. of Actuaries, AAAS (fellow), ACA (later AAUW), Phi Beta Kappa.

**Dissertation:**

**1895** Functions having lines or surfaces of discontinuity. PhD dissertation, Yale University.

**Publication:**

**1911** The girl who lives at home: Two suggestions to trade union women. *Life and Labor* 1:346.

**References to:** AmMSc 1–5; AmWomSc; BiDWSci; [BioWMath](#); WhoAm 1; WomSc-Search; WomWWA.

“Charlotte Cynthia Barnum, B.A. Vassar College 1881.” *Alumnae Graduate School Yale University: 1894–1920*. New Haven: Yale University, 1920.

“Charlotte Cynthia Barnum, Ph.D. 1895.” *Yale Obituary Record* 1933–1934.

Whitman, Betsey S. “Women in the American Mathematical Society before 1900.” Pt. 2. *AWM Newsletter* 13 (Sep-Oct 1983): 7–9.

**Other sources:** Williams Papers; Ferdinand Hamburger Archives, The Johns Hopkins University; Manuscripts and Archives, Yale University Library; Grove Street Cemetery, New Haven; [“The Contributions of Women to the United States Naval Observatory: The Early Years”](#); NCAB 10 (1909) (Barnum, Samuel Weed); US Census 1860 MA, 1870, 1880, 1900 CT, 1900 PA, 1930 CT.

Last modified: August 21, 2010.