VIVIAN, Roxana H. December 9, 1871–May 31, 1961.
Wellesley College (BA 1894), University of Pennsylvania (PhD 1901).

Roxana Hayward Vivian was the daughter of Roxana (Nott), born in 1848 in New Hampshire, and Robert Hayward Vivian, born in 1843 in Nova Scotia, Canada, a tailor. Her parents married in about 1870. She was born in Hyde Park (now part of Boston), Massachusetts, the eldest of three daughters, all born in Massachusetts. Her sisters were Anna G. (b. ca. 1874), a teacher in 1900, and Margaret W. (b. 1878).

Roxana Vivian attended public schools in Hyde Park. She gave the salutatory address at her graduation from the Grew School in 1886 and graduated from Hyde Park High School in 1890. She then enrolled at Wellesley College, where she majored in Greek and mathematics before graduating in 1894. She taught in the Stoughton, Massachusetts, public high school for the year 1894–95. Vivian held a secondary school teaching certificate and after the year of teaching took the examination for Boston High School Class A principal's certification. She then taught Greek and mathematics 1896–98 at the Walnut Hill School, a private boarding school in Natick, Massachusetts, while also pursuing graduate work in those subjects at Wellesley.

Vivian spent the years 1898–1901 as an alumnae fellow for women at the University of Pennsylvania in Philadelphia. She received her PhD in 1901 with a minor in astronomy, having been presented to the faculty of the university by the chairman of the mathematics department, Edwin Cawley. The method of presentation was new in 1901 and was described in an article in *Science*: the candidate "is presented by the professor under whom he has taken his major subject. The presentor reads a sketch of the candidate's academic life and an outline of the scope and contents of his thesis, after which any member of the faculty may make enquiries of the candidate or the presentor" (n.s. 14 (1901): 334). An example of the credentials of a candidate from each science was given, with those of Roxana Vivian representing mathematics.

After receiving her PhD, Vivian returned to Wellesley as instructor; she was the first member of the mathematics department to possess a doctorate. She made what was probably the first of many trips to Europe in summer 1902. In addition to her regular teaching assignments, Vivian was a reader for the College Entrance Examination Board in 1904.

Roxana Vivian was granted a leave of absence from Wellesley for the academic year 1906–07 to teach in Turkey at the American College for Girls (also known as Constantinople Woman's College). She continued her leave for 1907–09 to remain as acting president of the school while the president was in New York raising funds for the college. In 1908, while still in Turkey, Vivian was promoted to associate professor at Wellesley. She returned to Wellesley in 1909, having weathered a precarious time in Turkey because of the Young Turks Revolution in 1908. She described the situation in a "life history" she wrote in 1949 for the Wellesley College seventy-fifth anniversary. "Those three years ... were worth a great deal to me, teaching girls of thirteen nationalities and being in charge at a dangerous interval when I slept with my revolver and cartridge belt by my bedside, ready to take charge of four or five armed men, servants and night guards" (Wellesley College Archives).

Vivian spent a summer, most likely in 1912, at Cold Spring Harbor, New York, preparing to teach a course in statistics that had been suggested by a member of the economics department at Wellesley. In 1914 her first statistical article appeared. This article was coauthored with J. Arthur Harris, a botanist and biometrician at the Station for the Experimental Study of Evolution at Cold Spring Harbor.

In 1913–15 Vivian had a partial leave of absence from Wellesley and reduced her teaching load to a one-hour course while she worked as financial secretary of the Women's Educational and Industrial Union (WEIU), a non-profit social and educational agency that was concerned with training, placement, and legal protection for working women in Boston. In 1913–14 she gave an extension course in statistics for Boston University, and

in connection with her work with WEIU, she published another statistical article in 1916. Vivian continued her interest in statistics in social science and in 1924 published a book about the distribution of college students among the states.

In 1918 Vivian was promoted to professor and was appointed director of Wellesley's department of hygiene and physical education. She again had a leave from Wellesley's mathematics department and served as director until 1921, when she returned to the mathematics department. In the years 1922–25 she was chairman of the committee on investments for the Wellesley College Alumnae Association. During 1925–26 she visited Cornell University and attended classes in algebra, complex variables, differential equations, geometry, and probability and statistics. She left Wellesley in 1927. That summer Vivian made a lengthy trip that included a visit to Constantinople and countries around the Mediterranean.

Vivian spent the spring and summer of 1928 organizing and equipping the Eagle Wing School, a private college preparatory school for girls in Orleans, Massachusetts; her title there was principal. The school was unable to open because of financial circumstances. She then spent the year 1928–29 teaching mathematics in Oak Grove Seminary, a private school in Vassalboro, Maine. In 1929 she accepted the position of professor recently vacated by Mary Gertrude Haseman at Hartwick College in Oneonta, New York. Vivian also served in the newly created position of dean of women 1929–30; she resigned her professorship and left the college at the end of the first semester 1930–31. She was replaced in fall 1931 by Hazel Schoonmaker (Wilson). Vivian was next instructor and dean of girls at Rye Public High School, also in New York, 1931–35.

Vivian's reports to Wellesley over the years indicate that sometime after she left the college, she spent three or four winters in Chicago with her Wellesley freshman roommate, Ada Belfield, and several winters in Stamford, Connecticut. In a May 1940 letter to Helen B. Owens, Vivian wrote that "my life consists in visiting and in serving my invalid family members as I can — they are in Wellesley and South Natick. . . . With such a schedule as this you can see that I did not succeed in finding any professional opening after 1935" (Owens Papers). A later report to Wellesley notes that she motored across the country one summer in the early 1940s. In 1952, when she was eighty, she reported to Wellesley that she had spent two years in Greece and was then helping in an office of statistics at a Red Cross blood bank; she was also guiding visitors on Friday afternoons in Trinity Church, Boston. Vivian belonged to the Boston College Club and was an Episcopalian and a Republican.

Roxana H. Vivian died at age eighty-nine in 1961 at the Sophia Snow House of the Roxbury Home for Aged Women in the Roslindale neighborhood of Boston. She was buried in Newburyport, Massachusetts.

Organizational affiliations: AMS, MAA (charter member), Sigma Delta Epsilon, ACA (now AAUW), Phi Beta Kappa.

Dissertation:
1901 The poles of a right line with respect to a curve of order n. PhD dissertation, University of Pennsylvania. Printed by New Era Printing Co., Lancaster, PA. Abstract: *Science* n.s. 14:338.

Publications:
1914 with J. A. Harris. Variation and correlation in the mean age at marriage of men and women. *Amer. Naturalist* 48:635–37.
1916 An application of statistics to budget making for lunch rooms. *J. Home Econ.* 8:19–28.
1917a Mathematics: a great inheritance. *Educ. Rev.* 53:30-43. Presented to entering students at Wellesley College, Sep 1915.
1917b Review of *A History of Elementary Mathematics, with Hints on Methods of Teaching*, rev. and enlarged ed., by F. Cajori. *Amer. Math. Monthly* 24:385–87.

1919 Statistics in relation to the war. *Amer. Math. Monthly* 26:32–35. Review: *JFM* 47.0500.04 (G. Szegö).

1924 *A Brief Study of State Distribution of College Students.* Newton, MA: Graphic Press.

References to: AmMSc 3–8, 9P; BiDWSci; BioWMath; WomSc A; WomWWA.

Other sources: Owens questionnaire 1937; Owens Papers; Cornell University Archives; University of Pennsylvania Archives; Wellesley College Archives; communication with Hartwick College Archives; "Presentation before the faculty of candidates for the doctorate at the University of Pennsylvania," *Science* n.s. 14 (1901): 333–38; US Census 1880, 1900, 1910 MA, 1930 NY.

Last modified: March 9, 2009.