

BARTON, Helen. August 9, 1891–March 19, 1971.

GOUCHER COLLEGE (BA 1913), JOHNS HOPKINS UNIVERSITY (MA 1922, PhD 1926).

Martha Helen Barton was born in Baltimore, Maryland, the daughter of Mary Irene (Eichelberger) (b. 1860) and James Sheridan Barton (b. 1858), both Maryland natives. She had an older brother, Alan Eichelberger (1889–1964), and a younger sister, Vola Price (1893–1982), also born in Maryland, presumably in Baltimore, where her family made its home. In 1900 her parents had been married eleven years. At that time her father's occupation was listed as groceryman; in 1910 he was a coal merchant and in 1920 a retail merchant, general store. Her brother became a contractor in Baltimore, and her sister became a college physics professor.

Helen Barton received her primary and secondary education in the public schools of Baltimore and graduated with honors from Western High School. She attended Goucher College (Woman's College of Baltimore until 1910) as a Western High School alumnae scholar 1909–11 and graduated in 1913, a member of Phi Beta Kappa. While Barton was a student at Goucher, two faculty members there were awarded PhD's in mathematics at Johns Hopkins; they were [Clara L. Bacon](#) in 1911 and [Florence P. Lewis](#) in 1913. Barton mentioned in a letter of Sept 22, 1937, to [Helen Owens](#) that Clara Bacon "was my beloved teacher at Goucher and has been a real friend through these many years." The year after her graduation Barton served as an assistant in physics at Goucher and the following year, 1914–15, did graduate work in mathematics and physics as a Goucher alumnae fellow at the Johns Hopkins University. In 1915 her sister, Vola Price Barton, graduated from Goucher with a major in mathematics, also as a member of Phi Beta Kappa. Vola Barton earned a master's degree from Mount Holyoke College in 1917 and immediately was hired at Goucher; she earned a PhD in physics from Johns Hopkins in 1923 and served as professor of physics and department chairman at Goucher before her retirement in 1958.

From 1915 until 1919 Helen Barton served as head of the department of chemistry and physics at Salem College, a private college for women in Winston-Salem, North Carolina. The following two years she was an instructor in mathematics at Wellesley College. She continued her graduate work at Johns Hopkins during the summers of 1920 and 1921 and did some graduate work at Harvard University during the winter of 1921 while also teaching at Wellesley. She received the master's degree in June 1922 from Johns Hopkins.

Barton left her position at Wellesley in 1921 and moved to Albion College in Michigan, where she was associate professor of mathematics and dean of women 1921–25. In 1925 she resumed her full-time graduate work at Johns Hopkins and was a university scholar for the year 1925–26. Her language requirements in French and German were approved in October 1925; and she passed written and oral examinations in mathematics as principal subject, physics as first subordinate subject, and applied mathematics as second subordinate subject in May 1926. In a letter of May 13, 1926, recommending the acceptance of her dissertation, Frank Morley and Francis D. Murnaghan wrote that she "has considerably simplified the exposition of Grassmann's theory of extensive magnitudes by the use of [the generalized Kronecker symbol]" (Ferdinand Hamburger Archives of The Johns Hopkins University, RG 13.010, Office of the Registrar, Subgroup 1, Series 2, [Barton, Helen]).

The doctorate was awarded in June 1926. Barton spent the following year as professor and head of the department at Alabama College, then a college for women in Montevallo, Alabama; it is now the coeducational University of Montevallo.

In 1927 Helen Barton joined the faculty of the North Carolina College for Women (later Woman's College of the University of North Carolina and now the University of North Carolina at Greensboro), where she was to remain until her retirement. She began her career there as associate professor and acting head of the department, and the following year, 1928, became professor and head of the department. She retired as professor emeritus at age sixty-eight in 1960 but continued teaching part time.

In addition to teaching and chairing the mathematics department, Barton was active both on campus and in various professional groups. She was president of the faculty science club at Woman's College 1929–30 and was president of the campus chapter of Phi Beta Kappa. Later in her career Barton was chairman of the faculty planning committee for the new McIver classroom building, and the faculty lounge in McIver was named in her honor in 1960. Barton was on the accrediting committee of AAUW and was a member of the North Carolina Education Association, serving as president of the mathematics section 1933–34. She was also an active member of the North Carolina Academy of Science and was vice president 1933–34; she was president 1928–29 and secretary 1931–32 of the mathematics section; and she was elected a life member of the Academy in 1961.

At one point after her most active period in professional organizations but before her retirement, Barton described her hobbies as “travel when I can find time and money at the same time” (University of North Carolina at Greensboro Archives). Her travel included a trip in the summer of 1958 to the Canadian Rockies, Glacier National Park, Lake Louise, Banff, and Jasper National Park. She was a member of a Methodist church in Baltimore but attended the Presbyterian Church of the Covenant in Greensboro.

Helen Barton died at the Greensboro Convalescent Center at age seventy-nine after a long illness and was buried in Baltimore, where her surviving sibling, Vola P. Barton, still lived. Helen Barton left \$5000 to the University of North Carolina at Greensboro to establish the Helen Barton Mathematics Scholarship Fund. A second bequest of \$500 was made to the Helen Barton Professorship Fund, which was established in 1962 and helps support the Helen Barton Excellence Professorship.

Organizational affiliations: AMS, MAA (charter member), AAUP, AAUW, Phi Beta Kappa, Sigma Xi.

Thesis and dissertation:

1922 The fundamental theorem of algebra. MA thesis, Johns Hopkins University, directed by Frank Morley. Handwritten.

1926 Some applications of the generalized Kronecker symbol. PhD dissertation, Johns Hopkins University, directed by Frank Morley. Printed version, 1927, reprinted from *Amer. J. Math.* 49:598–614.

Publications:

1915 On a degenerate curve. *Johns Hopkins Univ. Circular* 7:22–26. Review: *JFM* 45.0838.03 (W. Fr. Meyer).

1926a Generalization of Kronecker's relation among the minors of a symmetric determinant. *Proc. Natl. Acad. Sci. USA* 12:393–97. Based on part of PhD dissertation. Review: *JFM* 52.0086.02 (K. Fenchel-Sperling).

1926b On a circle attached to a collapsible four-bar. *Amer. Math. Monthly* 33:462–65. Review: *Rev. semestr. publ. math.* 34, pt. 1: 22 (R. C. Archibald).

1927 A modern presentation of Grassmann’s tensor analysis. *Amer. J. Math.* 49:598–614. Published version of PhD dissertation. Reviews: *JFM* 53.0713.03 (J. Radon); *Rev. semestr. publ. math.* 34, pt. 1: 2 (W. G. J. ten Pas).

References to: AmMSc 5–8, 9P–11P; AmWom 1935–40; WhoAmW 1; WhAm 9.

“Dr. Barton Dies at 79.” *Greensboro Record*, 20 Mar 1971.

“Ex-UNC–G Professor Dies at 79.” *Greensboro Daily News*, 21 Mar 1971.

Other sources: MA thesis vita 1922; PhD dissertation biographical note 1926; Owens questionnaires 1937, 1940; Owens Papers; Cockey, “Mathematics at Goucher”; Ferdinand Hamburger Archives, The Johns Hopkins University; University of North Carolina at Greensboro Archives; communication with Goucher College Alumnae Office; US Census 1900, 1910, 1920, 1930 MD.

Last modified: March 6, 2009.