FRINK, Aline (Huke). March 2, 1904–March 14, 2000.

Mount Holyoke College (BA 1924), University of Chicago (MA 1927, PhD 1930).

Aline Huke was born in Torrington, Connecticut, the elder of two daughters of Mary Evelyn (Feustel) (b. 1872), of Massachusetts, and Allen Johnson Huke (1883–1956), from Connecticut. It appears that her parents married in May 1903 and divorced after a few years. Her father had remarried by 1910 and was later in the building supply business.

Her mother, Mary Feustel Huke, had been a special student in languages at Mount Holyoke College 1893–95. This classification was open without examination to teachers who were over twenty and who had taught for at least a year. Aline Huke's sister, Barbara Allen Huke, was born in Massachusetts in 1905, earned a BS degree from Massachusetts Agricultural College (now University of Massachusetts at Amherst), and died in 1927 while a graduate student in microbiology at Yale. In 1920, Aline Huke, her mother, and her sister were living in South Hadley Falls, Massachusetts, with her maternal grandmother and her aunt. Her mother was a public school teacher there.

Huke received her elementary and secondary education in the public schools of South Hadley, Massachusetts, and attended the high school there 1916–20. She wrote in 1982 that she "first really liked mathematics when [she] studied plane geometry in high school" (Smithsonian questionnaire). At Mount Holyoke College she took thirteen courses in mathematics, eight in German, six in physics, and four in music. She earned sophomore honors and was elected to Phi Beta Kappa in her junior year. During the summer of 1923, she studied education at Columbia before completing her work at Mount Holyoke and graduating magna cum laude in 1924. After her graduation from Mount Holyoke, Huke taught physics and algebra at the high school in Cobleskill, New York, for two years. In the summer of 1926 she took courses in pedagogy at the New York College for Teachers in Albany (now SUNY at Albany).

Aline Huke began her graduate work at the University of Chicago in October 1926 and remained through August 1927, when she completed her work for a master's degree with a thesis in mathematical physics, directed by A. C. Lunn of the mathematics department. During the year 1927–28, she held a resident fellowship in mathematics at Bryn Mawr College, where she studied with D. V. Widder and Echo D. Pepper. Huke returned to Chicago in the fall quarter of 1928 and held a graduate service scholarship for four consecutive quarters. She left Chicago to take a position as instructor of mathematics at Mount Holyoke College for the year 1929–30. She completed her dissertation in the calculus of variations and received her PhD from Chicago in 1930.

In 1930 Aline Huke went to Pennsylvania State College (now Pennsylvania State University) as an instructor of mathematics. On June 3 of the following year she married Orrin Frink, Jr., who had joined the mathematics faculty at Penn State in 1928. Frink, born May 31, 1901, in Brooklyn, New York, had earned his BA in 1922, MA in 1923, and PhD in 1926, all from Columbia University. He was an instructor at Princeton 1925–26 and a National Research Council fellow at Chicago 1926–27 and at Princeton 1927–28. Except for short periods on leave, Orrin Frink

remained at Penn State for the rest of his career. He was assistant professor 1928–29, associate professor 1929–33, and professor 1933–69. He was at the Institute for Advanced Study in 1940–41 and later was head of the department at Penn State for just over a decade.

Aline Frink gave up her full-time position for several years after her marriage in 1931. Orrin III, the first of their four children, was born in 1932. The other children were: Peter Hill, born 1939; John Allen, born 1941; and Elizabeth, born 1945. Aline Frink published mathematics papers in 1937 and 1938 and taught as an instructor at Penn State part time 1936–37 and occasionally, some part time and some full time, through 1944. She reported in a letter to one of the authors in 1977 that it was because of the efforts of Helen B. Owens that she was able to continue to teach after her marriage; Owens's husband, F. O. Owens, was the chairman of the Penn State mathematics department. Aline Frink wrote that she had somewhat annoyed him "by becoming pregnant and giving up the position that he had gotten for me somewhat in opposition to the administration." She also noted that Helen Owens "was thwarted by discrimination against women and determined that the same attitudes should not be held toward women in the future."

All but one of the children graduated from Pennsylvania State University. Orrin Frink III graduated from Haverford College and earned a PhD in Slavic languages and literature from Harvard before pursuing a career as a professor of foreign languages and literature; his last position was at Iowa State University. Peter H. Frink received an MFA degree from Yale and became an architect in Philadelphia. John A. Frink, became a computer analyst in Wilmington, Delaware, after having graduated with a mathematics major. Elizabeth Frink received an MFA degree from the University of North Carolina at Greensboro and studied at the Slade School of Art in London. She lives in Kennebunkport, Maine.

In 1947 Aline Frink resumed her career as a full-time faculty member. She was assistant professor until 1952, associate professor until 1962, and professor until her retirement in 1969, after which she was professor emeritus. Orrin Frink was head of the department from 1949 until 1960. In 1977 Aline Frink wrote that "needless to say, I wasn't appointed a full professor during that time." While at Penn State, she directed several master's theses; she published her last research paper in 1960.

Orrin Frink was an assistant chief engineer at the Special Projects Laboratory at Wright Patterson Air Force Base 1944–45. He was a Fulbright lecturer in Dublin, Ireland, 1960–61 and 1965–66. During the latter visit, Aline Frink lectured for a month at University College, Dublin, after she was asked to fill in for the analysis lecturer who was ill.

Having long had an interest in languages, Aline Frink began to study Russian in the late 1940s. This, together with her mathematical expertise in the calculus of variations, resulted in the book translation listed as **1962** below. She began the study of Chinese shortly before her retirement.

After the Frinks retired in 1969, they moved to a house in Kennebunkport, Maine, that had been in Aline Huke Frink's family since 1747. Her obituary indicates that she was a lifelong summer resident there. Orrin Frink died on March 4, 1988. Aline Frink was a member of the Congregational church, was treasurer of the Olympian Club of Kennebunkport and was vice president of the Kennebunkport Historical Society. She had a strong interest in music, bird watching, and her grandchildren.

Aline H. Frink died at the Kennebunk Nursing Center in Kennebunk, Maine, in 2000. She was ninety-six. Her obituary notes that she "stayed independent and strong-willed, driving and living alone" until about a year before her death. She was survived by her four children and eight grandchildren. In 2006 John Frink gave Penn State $100,000 in his parents' memory to create the Orrin and Aline Frink Trustee Matching Scholarship in the mathematics department.

Organizational affiliations: AMS, Sigma Delta Epsilon, Phi Beta Kappa, Sigma Xi, Pi Mu Epsilon.

Thesis and dissertation:
1927 [Huke, A.] Some relativity fields in n dimensions. MA thesis, University of Chicago, directed by Arthur Constant Lunn. Typescript.
1930 [Huke, A.] An historical and critical study of the fundamental lemma in the calculus of variations. PhD dissertation, University of Chicago, directed by Gilbert Ames Bliss. Typescript. Private edition, distributed by the University of Chicago Libraries. See also **1931**.

Publications:
1931 [Huke, A.] An historical and critical study of the fundamental lemma in the calculus of variations. In *Contributions to the Calculus of Variations, 1930*, 131–89. Chicago: University of Chicago Press. Published version of PhD dissertation. Reviews of book: *Bull. Amer. Math. Soc.* 38:617–21 (A. Dresden); *JFM* 57.0590.02 (J. Radon); *Zbl* 003.40001 (L. M. Graves).
1937 Distance functions and the metrization problem. *Bull. Amer. Math. Soc.* 43:133–42. Reviews: *JFM* 63.0571.03 (K. Künneth); *Zbl* 016.08205 (G. Nöbeling). Presented as "General distance functions and the metrization problem" to the AMS, Cambridge, MA, 1 Sep 1936; abstract: *Bull. Amer. Math. Soc.* 42 (7, pt. 1): 491–92 #291.
1938 with O. Frink. Polygonal variations. *Bull. Amer. Math. Soc.* 44:539–47. Presented by A. Frink to the AMS, Charlottesville, VA, 15 Apr 1938; abstract: *Bull. Amer. Math. Soc.* 44:198 #142. Reviews: *JFM* 64.0504.01 (H. Boerner); *Zbl* 019.21902 (L. M. Graves).
1960 Special variations. *Tôhoku Math. J.* 2nd ser., 12:203–207. Review: *Zbl* 100.09801 (Th. Lepage).
1962 (Translator from the Russian) *The Calculus of Variations*, by N. I. Akhiezer. New York: Blaisdell Publishing Co. Reviews: *Amer. Math. Monthly* 71:224–25 (L. M. Graves); *MR* 25 #5414; *SIAM Review* 5:161–62 (W. Flemming).
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1964b Review of *Variationsrechnung und ihre Anwendung in Physik und Technik*, by P. Funk. *Amer. Math. Monthly* 71:932–33.

References to: AmMSc 5–8, 9P–11P; AmMWSc 12P–13P; AmWom 1935–40; WhoAmW 4–6; WorWhoW 2.
"Only Problems, Solving Them: Husband, Wife Add Answers; Won't Discuss Mathematics." *State College and Bellefonte Centre* (*PA*) *Daily Times*, 19 Mar 1969.
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"Math Faculty Couple's Son Creates Trustee Matching Scholarship In Their Honor." Penn State, Eberly College of Science, Alumni Relations and Development. May 2006.

Other sources: MA thesis vita 1927; PhD dissertation vita 1930; Owens questionnaire 1937; letter from Aline H. Frink to author, 2 Jun 1977; Smithsonian questionnaire 1982; Mount Holyoke College Archives; "Orrin Frink, Mathematician, 86," (Obituary) *New York*

Times, 17 Mar 1988; US Census 1900 CT, 1910, 1920, 1930 NY, 1900, 1910, 1920, 1930 MA.

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