GURNEY, Margaret. October 28, 1908–March 19, 2002.
Swarthmore College (BA 1930), Brown University (MA 1931, PhD 1934).

Margaret Gurney was the eldest of three children of Anna Elizabeth (Pickett) (1885–1966) and Dayton Alvin Gurney (1883–1965), both natives of Michigan. Her parents both graduated from the State Agricultural College in Michigan (now Michigan State University); her mother received a bachelor's degree in 1905; her father received a bachelor's degree and a master's degree. Margaret Gurney noted in a conversation with one of the authors in 1996 that her mother, who had been good in mathematics, had gone to college at age fifteen and her father at age sixteen. Her parents married on September 7, 1907, and Margaret was born just over a year later in Washington, D.C. Her siblings, John O. (1911–1992) and Ruth H. (1913–1995), were also born there while her father was an engineer in the US War Department. He later became chief engineer in the Ordnance Office. Margaret Gurney's brother received a BS degree from the University of Michigan in 1933 and became a mechanical engineer with the US Department of Defense; her sister attended the University of Maryland and El Camino College in California, married, and had a family.

Margaret Gurney attended public schools and graduated from Central High School in Washington, D.C., in 1926. She held a White open scholarship for women at Swarthmore College 1926–30 and graduated with highest honors in mathematics, physics, and astronomy in 1930. In the 1996 conversation, Gurney, who had planned to be a Latin major, credited Arnold Dresden at Swarthmore with being an inspiration for her in mathematics. Gurney studied at Brown University, where she was a University junior fellow 1930–31, earned her master's degree in 1931, and continued her graduate studies as a Joshua Lippincott fellow from Swarthmore College 1931–32. Two articles by Gurney appeared in 1932 dealing with convergence and summability in series.

In 1932–33 Gurney studied at the university in Göttingen as a Miss Abbott's School Alumnae fellow from Pembroke College, Brown University. While there she met Hans Lewy, a privat-docent at Göttingen, who had received his doctorate there in 1926. In 1933 Gurney returned to Brown to continue her graduate work. Lewy also went to Brown at that time. He was a research associate 1933–35 before moving to the University of California for the remainder of his career. Gurney worked extensively with Lewy as she completed her work for the PhD in 1934 with a dissertation in partial differential equations directed by J. D. Tamarkin. In 1938 Lewy referred to her unpublished dissertation in an article in the *Transactions* of the AMS (43:437–64).

Gurney's first jobs after receiving her doctorate were as a teacher in girls' preparatory schools. She taught at Ogontz School in Ogontz, Pennsylvania, just northwest of Philadelphia, 1935–36, and at Wykeham Rise School in Washington, Connecticut, 1936–38.

In 1938 Gurney began her government career, in which she was to work in statistics with an emphasis in sampling. She passed her civil service examination in statistics even though she had had no official statistics courses. She first worked for the US Bureau of the Budget in Washington, D.C., as statistical consultant 1938–40 and as economist 1940–44. In 1944 she moved to the US Bureau of the Census, where she was a mathematical statistician until her retirement in about 1973. Much of her work at the census bureau involved planning and implementing

sample surveys in demographic and economic fields. As part of her job, Gurney programmed on the first Univac I, which had been built by the Eckert–Mauchly Computer Corporation for the Bureau of the Census, and which became operational in 1951.

In addition to her work at the Bureau of the Census, Gurney taught a course in sampling theory as a visiting lecturer at Stanford University in 1952 and worked many years as a consultant. She served as a consultant in Puerto Rico for the Bureau of Labor Statistics, US Department of Labor, six times in the period 1961–71. During the period 1962–76, she was a consultant for the US Agency for International Development. She was in Thailand in 1962 and the Dominican Republic in 1963. She gave a workshop in household sample surveys to Latin-American statisticians in Mexico City from February to April 1965. She was in Brazil in 1971 and 1976; in Kenya, Uganda, and Ethiopia in 1968 and 1970; and in Vietnam in 1972. Much of her consulting work dealt with aspects of agricultural census, sampling, and the computation of reliability.

Gurney was much honored for her work at the census bureau. In February 1966 she was awarded a US Department of Commerce Silver Medal for "her continuous contributions to the theory and application of sample survey methods over a long period" (*Amer. Statist.* 20 no. 2 (1966): 9), and in 1968 she was elected a fellow of the American Statistical Association "for distinguished contributions to the theory of recurrent sample surveys, to the measurement of nonsampling errors, and to training programs of foreign statisticians in sample surveys of their own countries" (*Amer. Statist.* 22 no. 4 (1966): 48). Prior to receiving these honors, Gurney had been active in the Washington Statistical Society, a chapter of the American Statistical Association (ASA). She served as the secretary-treasurer 1949–53 and as a representative-at-large to the executive committee 1952–53. She was also a referee for the *Journal* of the ASA and was the Washington correspondent for *The American Statistician*, the news publication of the ASA.

In the late 1970s Gurney moved to Quilcene, Washington, on the Olympic Peninsula, near her sister. She died in Quilcene in 2002 at age ninety-three, survived by nieces and nephews. Her obituary described her as having an "active spiritual life," having attended Episcopal churches in Maryland, in Washington, D.C., and in Port Townsend, Washington. It also noted that her pastimes included reading mystery novels, gardening, weaving, knitting, crocheting, and needlepoint, and that she had been a member of the National Association for Retired Federal Employees, the Order of the Eastern Star, and the local Grange.

Organizational affiliations: AMS, ASA, IMS, Inter-American Statistical Institute, International Association of Survey Statisticians, Phi Beta Kappa, Sigma Xi.

Thesis and dissertation:
1931 An introduction to factorial series. Master's thesis, Brown University. Typescript.
1934 Some general existence theorems for partial differential equations of hyperbolic type. PhD dissertation, Brown University, directed by Jacob David Tamarkin. Typescript.

Publications:
1932a Cesaro summability of double series. *Bull. Amer. Math. Soc.* 38:825–27. Reviews: *JFM* 58.0231.03 (F. Lösch); *Zbl* 006.05201 (L. Leja).
1932b A non-uniformly convergent series. *Amer. Math. Monthly* 39:108–109. Review: *JFM* 58.0216.01 (H. Falckenberg).
1943 with W. E. Deming. Government standards of sampling practice in the United States. *Estadística* 1 (2): 124–26.

1946 with M. H. Hansen and W. N. Hurwitz. Problems and methods of the sample survey of business. *J. Amer. Statist. Assoc.* 41:173–89. Correction: 41:529. Presented to the ASA, Cleveland, OH, 26 Jan 1946; abstracts: *J. of Marketing* 11:203 #24.2, 11:301–2 #24.1.

1951 with T. Dalenius. The problem of optimum stratification II. *Skand. Aktuar.* 34:133–48. Reviews: *MR* 14,64e (W. G. Cochran); *Zbl* 044.34103 (M.-P. Geppert).

1955 with M. Bershad. Within-P.S.U. variance of the composite estimate. *J. Amer. Statist. Assoc.* 50:718–19, Appendix to "The redesign of the census current population survey" by M. H. Hansen, W. N. Hurwitz, H. Nisselson, and J. Steinberg, 701–19.

1962 with J. Steinberg and W. Perkins. The accuracy of the 1960 census count. *Proc. Social Statist. Sect.* (Amer. Statist. Assoc.) 76–79. Presented to the ASA, Minneapolis, MN, 9 Sep 1962; summary: *J. Amer. Statist. Assoc.* 58:562.

1965 with J. F. Daly. A multivariate approach to estimation in periodic sample surveys. *Proc. Social Statist. Sect.* (Amer. Statist. Assoc.) 242–57. Presented to the ASA, Philadelphia, PA, 11 Sep 1965; summary: *J. Amer. Statist. Assoc.* 61:546.

1969 with B. F. Tepping. Max A. Bershad, 1913–1969. *Amer. Statist.* 23 (4): 49.

1975 with R. S. Jewett. Constructing orthogonal replications for variance estimation. *J. Amer. Statist. Assoc.* 70:819–21. Review: *Zbl* 322.62014 (Autorreferat).

Technical reports:

1962 The variance of the replication method for estimating variances from the CPS design. Dittoed memorandum. US Bureau of the Census.

1963a The current population survey, a report on methodology. Bureau of the Census Technical Paper 7. Washington, DC.

1963b With B. Gura and A. D. Casey. Report on the 1960 censuses of the Dominican Republic and on the National Statistical Office. US Bureau of the Census.

1964 McCarthy's orthogonal replications for estimating variances, with grouped strata. Dittoed memorandum. US Bureau of the Census.

1966 Atlantida: A case study in household sample surveys, Unit IV, Sample design. US Bureau of the Census. Series ISP01, No. 1-E. Washington, DC. Based on materials prepared by the US Bureau of the Census under the auspices of the US Agency for International Development. Presented in collaboration with the Inter-American Statistical Institute at workshop, 15 Feb–9 Apr 1965, Mexico City.

1972 Sampling applications of the 1970 census publications, maps, and public use summary files. Bureau of the Census Technical Paper 27. Washington, DC. Abstract: *Popul. Index* 38 (1972) #4560.

Presentation not listed above:

1972 with M. E. Gonzalez. Estimates for samples from frames where some units have multiple listings. Presented to the ASA, Montreal, QC, Canada, 15 Aug 1972.

References to: AmMSc 10S–11S; AmMWSc 12S, 13P, 14–15.

"Margaret Gurney." (Obituary) *Port Angeles* (*WA*) *Peninsula Daily News*, 24 Mar 2002.

Other sources: PhD dissertation vita 1934; Owens questionnaires 1937, 1940; authors' questionnaire 1992; conversation with author, 14 Aug 1996, Quilcene, WA; Brown University Archives; "Washington Statistical Society, Past and Present, 1896 to 2002"; US Census 1920 DC; SSDI.

Last modified: March 6, 2009.