The special committee of the General Faculty to prepare a memorial resolution for Clifford S. Gardner, professor emeritus, mathematics, has filed with the secretary of the General Faculty the following report.

Dean P. Neikirk, Secretary
General Faculty and Faculty Council

IN MEMORIUM
CLIFFORD S. GARDNER

Professor Emeritus Clifford Speer Gardner passed away September 25, 2013, in Austin, Texas, at the age of eighty-nine. Dr. Gardner was born in Fort Smith, Arkansas, on January 14, 1924. He obtained a Bachelor of Arts in Physics from Harvard in 1944. After four years working first for the National Advisory Committee for Aeronautics (the precursor for NASA) and then for the Control Instruments Company, in Brooklyn, he returned to academia working on a Ph.D. in mathematics at the Courant Institute of New York University, under Fritz John, from 1948 to 1952. He then combined his mathematics and physics training in a sequence of research scientist positions on both coasts: California Research and Development, Radiation Laboratory of University of California, Courant Institute, Stanford Research Institute in Palo Alto, Boeing Scientific Research Laboratory in Seattle, General Atomic Corporation in San Diego and RCA Laboratories in Princeton. He also included a couple of short academic positions, as assistant professor at Courant Institute and as visiting research professor at Princeton University. Dr. Gardner was rather shy and diffident, and he took some time in determining his preferred work environment, but he finally settled down in the middle of the country, as full professor at The University of Texas at Austin, in the spring of 1966.

Even after settling in Austin, Clifford maintained scientific connection with people he knew from Courant and Princeton, in particular John M. Greene, Martin D. Kruskal, and Robert M. Miura. Together they soon produced a landmark paper, ‘Method for solving the Korteweg-de Vries equation’, which appeared in Physical Review Letters in 1967. The paper is short, only two pages long, but is commonly cited as the most significant paper in applied mathematics in the twentieth century.

The Korteweg-de Vries equation is a nonlinear model for shallow water waves dating from the nineteenth century. The authors opened a new chapter in mathematical physics by the discovery of the inverse scattering method of integrating the Korteweg-de Vries equation. In 1967, this short paper initiated a great deal of further work, in part by the authors but quickly enticing many more in the growing area of integrable systems.

For his groundbreaking work in this area, Clifford was the recipient of the 1985 Norbert Wiener Award and the 2006 Steele Prize from the American Mathematical Society shared with Greene, Kruskal, and Miura. Quoting from the citation for the Steele Prize, before their work “there was no general theory for the exact solution of any important class of nonlinear differential equations. ... In applications of mathematics, solutions and their descendants (kinks, anti-kinks, instantons, and breathers) have entered and changed such diverse fields as nonlinear optics, plasma physics, and ocean, atmospheric, and planetary sciences. Nonlinearity has undergone a revolution: from a nuisance to be eliminated, to a new tool to be exploited.”

Dr. Gardner retired in 1990, and continued living in Austin. He was predeceased by his wife, Marilyn Rose Martinez Gardner, his parents, John and Caroline Gardner, and his siblings, John Gardner, Lucille Wolff and Jane Gardner. Surviving him are his nieces, Sara Jones of California, Virginia Wolff of New York, and Caroline Wolff of Great Britain.

This memorial resolution was prepared by a special committee consisting of Professors Charles Radin (chair), Ralph Showalter, and Mikhail Vishik.

Distributed to the dean of the College of Natural Sciences on April 25, 2014, and posted under “Memorials” at http://www.utexas.edu/faculty/council/.