



*Laurel J. ...*

## RALPH E. FADUM

*1912–2000*

Elected in 1975

*“For contributions as a civil engineer, educator, consultant, researcher and author, a pioneer in soil mechanics and foundation engineering.”*

BY PAUL ZIA

**R**ALPH E. FADUM, Emeritus Dean of Engineering at North Carolina State University, died of natural causes at Mayview Convalescent Center in Raleigh on July 12, 2000. He was 87 years old.

Ralph was born in Pittsburgh, Pennsylvania, on July 19, 1912, one of four children of Torgeir and Mimmi Fadum, who had immigrated to the United States from Norway. Around 1920, the family moved from Pittsburgh to Niagara Falls, New York, where Torgeir, an electrical engineer, joined Niagara-Hudson Power Corporation to work on a new generating station. Ralph, his two younger brothers, and an older sister were raised in Niagara Falls where they attended elementary and secondary school.

Inspired by a science teacher in high school, Ralph decided to study civil engineering at the University of Illinois, where an education cost less than at universities in the northeast. When Ralph graduated high school, the country was in the midst of the Great Depression, and he had to take on a variety of temporary jobs to meet his college expenses. These included working in the dining hall, tutoring fellow students, and painting steel transmission towers during the summer.

In 1935, after earning a B.S. in civil engineering from the University of Illinois, he was offered a fellowship to enter Harvard

University, where he became a member of the pioneering soil mechanics team headed by Karl Terzaghi and Arthur Casagrande. Under their tutelage, Ralph received his M.S. in 1937 and Sc.D. in 1941 in soil mechanics and foundation engineering. He remained at Harvard as a faculty instructor until 1943.

While at Harvard, he began his training in professional practice with full-time summer assignments at the Niagara-Hudson Power Corporation (1935); W.P. Creager Consulting Engineers, Buffalo, New York (1936); Chicago Bridge and Iron Company, Greenville, Pennsylvania (1937); Dry Dock Associates, Portsmouth, Virginia (1940); and Jackson and Moreland, Boston, Massachusetts (1942). In addition, he served as part-time assistant to both Casagrande and Terzaghi in their consulting engagements in dam and foundation investigations in many parts of the United States and Central and South America.

Ralph began his academic career in 1943 at Purdue University, where he assumed leadership of the university's soil mechanics program. He rose through the ranks quickly from assistant professor to professor of soil mechanics in a few years. In 1949, he accepted the position of professor and head of civil engineering at North Carolina State University in Raleigh, North Carolina. In 1962, he was appointed dean of engineering, and he served in that capacity for 16 years until his retirement in 1978.

His 29-year tenure as an engineering professor and administrator coincided with the great expansion of American engineering education in the 1960s and 1970s. Ralph provided leadership and guidance for the phenomenal growth of engineering programs at North Carolina State University, especially in enrollment, faculty, and graduate and research programs. He was instrumental in transforming a high-quality undergraduate engineering program into a first-class undergraduate and graduate program at a major research university.

As an engineering educator, Ralph believed that engineering is a practicing profession. He believed that everything practiced in the field should be brought into the classroom, and everything discovered in the laboratory should be brought into

practice. He was a strong advocate for a dual-track graduate engineering education, one track oriented toward research and the other toward practice.

After his retirement in 1978, he continued to advise a group of civil engineering students and regularly presented special lectures on engineering ethics and professionalism to graduating students in civil engineering. He enjoyed his contacts with these young people, and the students valued his advice and insights.

During his active years at North Carolina State, Ralph maintained an intense schedule, serving as a consultant or advisor to many federal agencies and national laboratories, including the U.S. Department of Defense, U.S. Department of the Army, U.S. Air Force, National Science Foundation, and U.S. Department of Transportation. As a consultant, he was involved in solving many complex geotechnical problems, such as the construction of airfields in Greenland; the Alaska pipeline; launch facilities for the National Aeronautics and Space Administration Apollo Project; the development of the road test program of the American Association of State Highway and Transportation Officials; landslide stabilization for the Panama Canal; the construction of underground ICBM missile silos that could withstand nuclear blast effects; and the development of foundation requirements for radar stations in the North American Defense System.

A long-time member of the American Society of Civil Engineers (ASCE) and the American Society for Engineering Education (ASEE), Ralph served on numerous boards and committees of these professional societies. He was a founding member and chairman of the Executive Committee of the ASCE Engineering Mechanics Division, a member and chairman of the Executive Committee of the ASCE Geotechnical Division, and a member of the ASCE Research Committee. In addition, over a period of 32 years, he served on some two dozen ASEE committees, including the Board of Directors, and as vice president from 1972 to 1974. He was also called upon by three North Carolina governors to serve on a variety of state boards and commissions.

For his many contributions to engineering education and geotechnical engineering, he received many honors and awards, including various citations and medals from the U.S. Depart-

ment of the Army, a Distinguished Civil Engineering Alumnus Award from the University of Illinois, an honorary doctorate in engineering from Purdue University, and an Outstanding Engineering Achievement Award from the North Carolina Society of Engineers. He was an ASEE fellow and was elected an honorary member of both ASCE and ASEE. In 1975, he was elected a member of the National Academy of Engineering for his pioneering work in soil mechanics and foundation engineering. In 1978, he was named a National Honor Member of Chi Epsilon, the honorary society of civil engineering. Shortly before his death, he was honored as a member of the charter class of fellows by the Professional Engineers of North Carolina.

Ralph enjoyed many sports activities, such as golf and fishing, and for many years he jogged regularly to maintain his physical fitness. He led the North Carolina State University Faculty Athletics Council for 12 years, served twice as president of the Atlantic Coast Conference, and served a four-year term as vice president of District 3 of the National Collegiate Athletic Association. Ralph was a caring and civic-minded person. For many years, he served as a commissioner of the Raleigh Housing Authority and was active with the Salvation Army.

Ralph is survived by his wife, Elaine; a daughter, Jane Fields Fadum of Raleigh; a brother, Torgeir B. Fadum Jr., and his wife, Mary, of Grand Island, New York; two stepdaughters, Cynthia Haverly of Valparaiso, Indiana, and Linda Eason of Canton, Michigan; and a stepgranddaughter, Kristen Eason.

A man of the highest integrity with a strong sense of loyalty to the institutions he served, his staff, and his friends, Ralph was an inspiring teacher and an outstanding leader. He will be greatly missed by his friends, colleagues, students, and all who knew him.

