



N. M. Newmark

Professor Nathan Mortimore Newmark (1910 – 1981)



The ASCE Newmark Medal

See:

<https://www.nap.edu/read/6061/chapter/12#169>

https://en.wikipedia.org/wiki/Nathan_M._Newmark

<http://cee.illinois.edu/about/history-excellence/nathan-m-newmark>

<http://www.asce.org/templates/award-detail.aspx?id=1496>

<https://www.nationalmedals.org/laureates/nathan-m-newmark#>

<http://sandbox.archon.org/latest/?p=collections/controlcard&id=11987>

From the biography by William J. Hall:

Internationally known educator and engineer, died January 25, 1981, in Urbana, Illinois. Dr. Newmark was widely known for his research in structural engineering and structural dynamics at the University of Illinois at Urbana-Champaign, for his contributions to the design of earthquake-resistant structures—including the Latino Americana Tower in Mexico City—and, most recently, for his work on the design of the trans-Alaska pipeline.

Beginning in 1930 as a graduate research assistant, Nate Newmark held a succession of positions for over half a century at the University of Illinois. He was appointed research professor of civil engineering in 1943, skipping the intermediate rank of associate professor. Early in his career he contributed significantly to the fields of structural analysis and structural materials and received national and international recognition for his work pertaining to highway bridges. His contributions in the area of structural dynamics, including consideration of impact, wave action, wind, blast, and earthquakes, greatly influenced structural and mechanical design throughout the world.

In 1956 he was appointed head of the Department of Civil Engineering of the University of Illinois at Urbana-Champaign, a position he held until 1973. He retired from his university position in 1976. Although the reputation of the department had been great almost since its founding, under Professor Newmark's leadership its stature rose to new heights.

From 1947 to 1957 he was chairman of the Digital Computer Laboratory at the university. During this period he had a major hand in developing one of the first modern, large-scale, digital computers (ILLIAC-II)—work that eventually led to the university's eminent position as a developer of computer science for engineering.

Newmark served in many important leadership capacities in the university and had the distinction of the longest tenure to date on the University Research Board. This board was in large part responsible for making the university one of the world's great research institutions, and Nate's vision and foresight played no small role in the success of this effort.

Nate played a major role in many of the most important technical activities of the American Society of Civil Engineers. He was one of the founding members of the Engineering Mechanics Division and a prime mover in furthering the Society's computer application activities. Having received virtually every major award given out by the American Society of Civil Engineers and the Engineering Foundation Founders Society, he was an honored member of the many learned societies to which he belonged.

He was elected a fellow of the American Academy of Arts and Sciences in 1962, a founding member of the National Academy of Engineering in 1964, and a member of the National Academy of Sciences in 1966.

Among his many NAE/ NAS/NRC activities were the following: NAE Council, 1964-1968; NAE/NAS Joint Board, 1966-1968; NAE Committee on Earthquake Engineering Research, 1965-1970; NAS/ NAE Committee on Scientific and Technical Communication, 1966-1969; and NAE/NRC Committee on Natural Disasters, 1971-1977 (member and chairman).

In 1968, Nathan Newmark received the National Medal of Science from President Lyndon B. Johnson. A year later he received the Washington Award—a joint award given annually by the major engineering societies of the United States. In 1979, Dr. Newmark was presented the John Fritz Medal, an all-engineering society award. In 1980 he received the sixteenth Gold Medal in the fifty-seven-year history of the Institution of Structural Engineers of Great Britain—the second American engineer to be so honored. He also received honorary degrees from several universities: Rutgers University (his alma mater) in 1955, the University of Liège in Belgium in 1967, the University of Notre Dame in 1969, and the University of Illinois in 1978.

On February 19, 1981, three weeks after his death, the Board of Trustees of the University of Illinois renamed the Civil Engineering Building the Nathan M. Newmark Civil Engineering Laboratory, in commemoration of his contributions to the university.

Nate Newmark was a university unto himself. Whether in academia or professional practice, engineers young and old sensed the challenge of this man's education and intellect. His penetrating insight, his keen engineering judgment, and his genuine interest in people were a constant source of inspiration to all who had the privilege of working with him.

Professor Newmark possessed an unusual ability to attract young people to the field of civil engineering, to inspire them with the confidence for undertaking new and varied tasks, and to guide but not direct their thinking. He insisted they receive appropriate recognition as individuals for their accomplishments. His

unceasing devotion to research, his noteworthy and continuing contributions to the betterment of structural design practice, and his leadership in engineering education, teaching, and professional activities had a profound influence on civil engineering. It is no accident that there grew up around him one of the most active research centers in civil engineering in this country, or that the alumni of this group have assumed broad leadership in education, industry, and government throughout the world.

Selected Publications:

Robertson A, Lundquist EE, Wilson WM and Newmark NM The Strength of tubular struts. Report and Memorandum No 1185 (1929).

Wilson WM and Newmark NM. The strength of thin cylindrical shells as columns. Bulletin no. 255. Engineering Experimental Station, University of Illinois; 1933.

Newmark, N.M. (1943). Numerical procedure for computing deflections, moments and buckling loads, Transaction, ASCE, Vol.108, pp.1161.

Newmark NM, Siess CP, Viest IM. Tests and analysis of composite beams with incomplete interaction. Proc Soc Exp Stress Anal 1951;9(1):75e92.

Weil, N. & Newmark, N., 1955. Large plastic deformations of circular membranes, J. appl. Mech., No. 4.

Newmark, N.M., "A Method of Computation for Structural Dynamics", Proceedings of the American Society of Civil Engineers, Journal of the Engineering Mechanics Division, Vol. 85, pp. 67-94, 1959

Newmark, N. M. and Rosenblueth, E. Fundamentals of Earthquake Engineering, Prentice-Hall, Englewood Cliffs, N.Y, 1971.