

# Herbert Frank Newhall

*June 13, 1916 — November 6, 1988*

Herbert F. Newhall, professor of physics, died November 6, 1988 in Robert Packer Hospital, Sayre, Pennsylvania, after a discouraging ten-month battle to recover from a heart attack and stroke.

Born in Santa Fe, New Mexico, Newhall spent his early years in Colorado. Following graduation from Colorado College in 1937, he came to Cornell as a graduate student in physics. For the next 44 years, until his retirement and assumption of emeritus professor status on July 1, 1981, he was engaged in research and teaching in physics at Cornell. Following completion of the Ph.D. degree in 1942, he served as instructor in physics during World War II, then worked at Cornell during 1945-46 on a research project in physical electronics sponsored by the Stromberg-Carlson Company. In 1946, he returned to his duties as assistant professor of physics. For several years he also held a joint appointment in the School of Engineering Physics.

Newhall carried out a research program in the area which was then called “Physical Electronics” for several years following World War II. He supervised half a dozen M.S. and Ph.D. thesis students in the period from 1946 to 1952. Not long ago, Newhall commented, in characteristic understatement, that his work had “not noticeably set back progress in the area.”

He was instrumental in the planning and construction of the Technical Operations Laboratory in Rockefeller Hall, the base upon which the current extensive facility of the Materials Science Center in Clark Hall was built.

But the primary focus for his faculty career at Cornell was in the pursuit of excellence in his own teaching and in helping young physicists at Cornell become better teachers. The constant quality of his effort and the unflagging energy of his search for better ways to achieve the goal of effective instruction in physics was remarkable. That persistence is perhaps best exemplified in his development of computer-assisted instruction materials in the years following his retirement. Here was a retired, emeritus professor leading the physics faculty into the use of computers to enhance the effectiveness of instruction!

Several milestones along the way are notable. In 1957, the late Professor J.E. Hedrick of the School of Chemical and Metallurgical Engineering wrote to Newhall, “... Somewhat to the surprise [of freshmen in the School] physics has proved to be their most interesting course. They agree that it’s tough but expected this at Cornell. . . . Of course, several are having trouble, but it is significant that even including these, there is unanimous agreement that your teaching is excellent. Now this is a rare situation. Students don’t usually go around praising anything, least of

all professors . . .” The dedicated teacher doesn’t need much more than this. In years following, several notable contributions serve as further milestones along Newhall’s path of excellence. He wrote and used his own textbook, *Introductory Analytical Physics*, in his teaching of freshmen engineers. In 1972 he launched a new teaching format for Cornell’s one-year, calculus-based physics course. This “core-and-branch” plan, described by Newhall in an article published in the *American Journal of Physics* in 1978, was used successfully for several years by Newhall and other instructors. His interest in electronics and computers next led to a stint in teaching a junior-level electronics course. Newhall then turned to his final accomplishment—launching the computer-assisted instruction program noted previously.

Many graduate student teaching assistants and junior faculty members assigned to teaching with Newhall soon found that he was much more than a first-rate lecturer. By example, through obviously thorough preparation for lecture recitation section or staff meeting, lucid explanations of physics content, clear and equitable policies in dealing with students, and consistent good nature and civility with everyone he encountered, he became a mentor to his own staff—an educator of teachers. He thus had great influence on the professional development of literally hundreds of young physicists, whether or not their future work centered on teaching.

Newhall led a quiet personal life. Unmarried, his social life centered around interaction with close friends on the faculty. In the early 1960s, Newhall acted as convener of an informal faculty luncheon group which met daily at 11:30 a.m. in the Rathskeller of the Statler Club. Members of the group, who on any given day between three and ten, operated under a set of unwritten rules: there was to be no talk of either politics or the academic shop. In the daily repartee, Newhall’s succinct comments, leavened by a dry wit, are remembered by the group as a particular delight. All returned to their several academic responsibilities with a light heart.

Newhall’s deep interest in classical music led him to study the physical capabilities of several woodwinds, horns, strings, and percussion instruments. His interest in music and his quiet humor came together in a collection of recordings of various musical spoofs. His musical knowledge was accompanied by an unusually complete knowledge of the classical literature.

Newhall is survived by a sister-in-law, Marianne M. Newhall of Pinellas Park, Florida; two nephews, Steven W. Newhall of Pinellas Park and Michael M. Newhall of Milwaukee, Wisconsin; and a niece, Mrs. Paul (Nancy Ann) Hannon of Boulder, Colorado.

*Dale Corson, Robert Cotts, Alvin Sellers, Donald Holcomb*