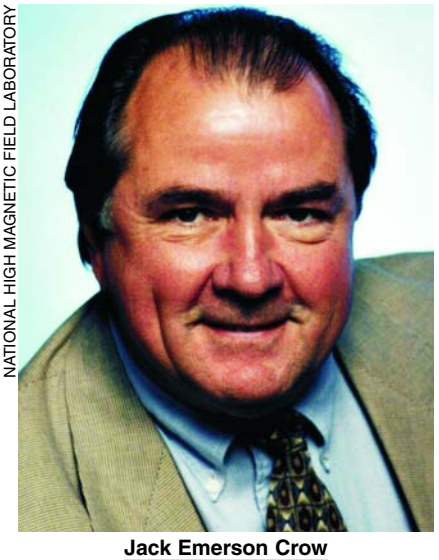


NATIONAL HIGH MAGNETIC FIELD LABORATORY

Jack Emerson Crow

D. Parks. The subject of his dissertation was the effect on superconductivity of pair-breaking mechanisms. In one widely cited work, he found that the critical-field-phase boundaries of superconductors that have large amounts of magnetic rare-earth impurities increased and then decreased with decreasing temperature, a feature he determined was due to an additional pair-breaking mechanism from the molecular field of incipient magnetic impurity correlations.

Jack's first position, in 1967, was with Brookhaven National Laboratories. His supervisor there, Myron Strongin, remembers the speed with which Jack could develop an idea, design an experiment, and produce meaningful results. Strongin and Jack's areas of investigation included fluctuations and inhomogeneous effects in thin film superconductivity.

Jack joined Temple University in 1973 and codirected a laboratory that focused on uranium- and cerium-based highly correlated electron systems and, later, magnetic impurity effects on high-$T_c$ superconductivity. He chaired the physics department from 1979 to 1982 and honed administrative and leadership skills he would later find essential. He took leave from Temple in 1984 to work for two years as a program director in solid-state physics at NSF.

In 1990, Jack became the director of MARTEC, the center for materials research at Florida State University (FSU). That same year, NSF had launched an open competition to relocate the national magnet laboratory or to have it remain at MIT, where it had been since its inception in 1960. By aggressively marshalling the resources of the state of Florida, the University of Florida's ultra-low-temperature group, and the pulsed-field group at Los Alamos National Laboratory, Jack pulled together an impressive team of scientists and engineers to write a competitive proposal. The world of science was stunned when, in August 1990, NSF awarded the contract to the consortium led by Jack, despite several scientific-panel recommendations to retain the location at MIT. The story made front-page news. At the time, not one resistive magnet of any significant size had been constructed in Tallahassee.

The task of building a new national magnetic field research facility was daunting. Jack used his formidable powers of persuasion to recruit world-class magnet designers and engineers to create an entirely new lab in an unused state-owned building three miles from the FSU campus. The 300 000-square-foot NHMFL was dedicated in 1994, with Vice President Al Gore participating in the ceremony. Jack was the founding director, and he headed the lab until five months before his death. In short order, the lab was running as a user facility with record-breaking high-DC magnetic fields—45 tesla with hybrid technology as of press time. Central to Jack's vision was that NHMFL's research efforts would be fundamental and multidisciplinary and that the lab would also be dedicated to outreach education. The NHMFL—"the house that Jack built"—currently employs about 350 people and provides comprehensive research in fields ranging from geochemistry to high-field magnetic resonance.

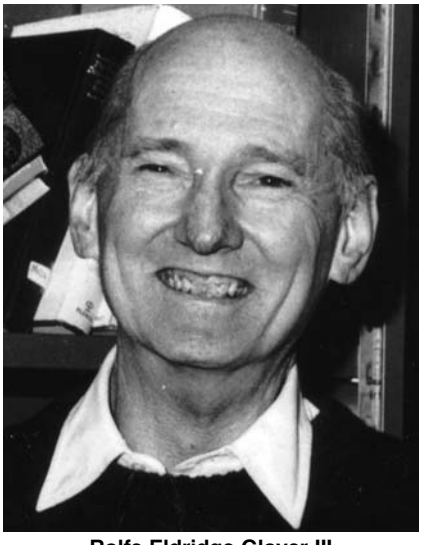
The lives of hundreds of people in the region and beyond were greatly enriched by their contact with this remarkable individual, whose extraordinary generosity of time and effort was legendary. Jack was loved and admired by those who were fortunate to know him.

**Robert P. Guertin**
*Tufts University*
*Medford, Massachusetts*
**J. Robert Schrieffer**
*Florida State University*
*Tallahassee*

## Rolfe Eldridge Glover III

Rolfe Eldridge Glover III, professor emeritus of physics at the University of Maryland, College Park, died in Baltimore on 15 July 2004 of complications ensuing from kidney failure.

Rolfe was born in Wilmington, Delaware, on 6 September 1924. Following two years of service in the US Army Air Force, he received, under a cooperative program, an AB from Bowdoin College and a BS from MIT in 1948. He carried out his graduate studies in physics at the University of Göttingen, which led to his PhD in 1953 under Robert W. Pohl. Rolfe's dissertation was based on measurements of the effect of F centers on physical properties of crystals. He stayed one more year in Göttingen to do postdoctoral research in Rudolf Hilsch's physical institute, where he worked on superconducting films.



Rolfe Eldridge Glover III

On returning to the US in 1954, Rolfe accepted a postdoctoral position at the University of California, Berkeley, in the solid-state physics group led by Arthur Kip and Charles Kittel. One of us (Tinkham) joined the group at about the same time. The Berkeley group embarked on a sustained effort to observe quantitatively the effect of the superconducting transition on the transmission of radiation through a thin metallic film. The group's data gave clear evidence of the superconducting energy gap and was soon seen to be in accord with the new Bardeen-Cooper-Schrieffer theory. The data also led to a sum rule relating the absorptive spectrum to the strength of the superconducting current.

In 1957, Rolfe left Berkeley for Chapel Hill to join the physics faculty of the University of North Carolina. After several years, he accepted a job as an associate professor of physics at the University of Maryland. He was appointed a professor in 1966 and held that position for the rest of his life.

Of his achievements during his career, an especially noteworthy accomplishment was Rolfe's meticulous study during the 1970s in which he

traced the temperature dependence of a metallic film's conductivity well above its superconducting transition temperature. That dependence was subsequently identified by Lev Aslamazov and Anatoly Larkin as evidence of thermal fluctuations of the order parameter.

One of Rolfe's most memorable characteristics was that he was not garrulous. He evidently followed the adage to avoid speaking if you could not "improve upon the silence." He nevertheless could offer a pithy and cogent comment when the occasion called for it. Once he heard a student adviser lecturing to a large audience of scientists and scholars who had spent considerable time on exchange visits in Germany. The lecturer was insisting that everyone, students and professors alike, should schedule two hours of "fun" every day. When Rolfe's opinion was solicited in the discussion period, he replied, *"Arbeit macht das Leben suess"* (Work makes life sweet). It was exactly the right remark for the situation and rendered the "fun" advocate speechless.

Many years ago, soon after the discovery of high-$T_c$ superconductivity, Rolfe took advantage of an open house at the University of Maryland to demonstrate levitation in the physics building's lobby. His demonstration greatly intrigued those present—students, townsfolk, and state officials—and led to the establishment of the Maryland Center for Superconductivity Research.

An avid sailor who took his 40-foot sloop across the Atlantic Ocean to Europe and back, Rolfe also sailed along the East Coast of the US. He was an enthusiastic skier and mountain climber, and accomplished several significant ascents. Rolfe was a good friend and is greatly missed.

**Richard A. Ferrell**
**Christopher J. Lobb**
*University of Maryland*
*College Park*
**Michael Tinkham**
*Harvard University*
*Cambridge, Massachusetts*

## William Westerfield Havens Jr

Known to his many friends and acquaintances as Bill Havens and officially as W. W. Havens Jr, the subject of this obituary made major contributions to nuclear physics research, the Allies' victory in World War II, international efforts to use nuclear energy for peaceful purposes, the administration of Columbia University, and the American Physical Society (APS). Havens was born in New York City on 31 March 1920 and died there on 29 June 2004 of complications from leukemia.

**William Westerfield Havens Jr**

After graduating at age 19 with a BS in mathematics from the College of the City of New York, Havens embarked on graduate studies in physics at Columbia University, where he received an MA in 1941 and his PhD in 1946. His thesis, under John R. Dunning, was on the feasibility of constructing a time-of-flight neutron spectrometer.

Havens was on Columbia's faculty from 1940 until his retirement in 1985. From 1941 to 1945, he worked on the Manhattan Project. Together with James Rainwater, he built the time-of-flight spectrometer envisaged in his thesis, and it and several Havens-designed successors were used for decades in important research. Not only did they allow very precise testing of theories of nuclear structure, but they also supplied fundamental information to the University of Chicago's Metallurgical Laboratory for the design and construction of the Oak Ridge and Hanford reactors and for Los Alamos.

After the war, Havens and his collaborators continued to obtain fundamental neutron cross-sectional data for use in the US nuclear energy program, both for thermal and fast-breeder reactors. From 1948 to 1951, Havens worked in meson physics, designing and constructing equipment to be used with the new Columbia synchrocyclotron at Irvington-on-Hudson. He then returned to neutron physics and was active in that field for the remaining decades of his research career. Having become a full professor at