a paper published in *Phys. Rev. Letters* in 1960 they showed that, in addition to having a critical temperature of 18 K, it also had an exceptionally high critical field. Superconduction in some parts of the specimen persisted to about 70 000 Oe.

He was associate editor of the *Journal of Applied Physics* and chairman of various research panels. His most outstanding organizational contribution was the initiation of the annual Conference on Magnetism and Magnetic Materials, sometimes known as the M³ or Bozorth Conference. It was started in 1955 and quickly became a major national scientific event which has continued with undiminished popularity for twenty-five years.

ELIZABETH A. WOOD
Bell Telephone Laboratories, retired

Willis H. Flygare

Willis H. Flygare died 18 May 1981 at the age of 44 after a long debilitating illness. He contributed significantly to our knowledge of molecular properties and structure in an amazing variety of ways.

After receiving his PhD at the University of California, Berkeley, in 1961, Flygare joined the chemistry faculty at the University of Illinois in Urbana. During the twenty years he worked here, he produced over 200 research publications and in 1978 completed his comprehensive treatise entitled *Molecular Structure and Dynamics*.

Flygare originated the technique of molecular Zeeman spectroscopy with which he measured most of the known molecular quadrupole moments and magnetic susceptibility anisotropies. By improvements affecting line widths, he and his students also built a microwave spectrograph with probably the best resolution in the world. Flygare determined structures of many chemi-

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cally interesting molecules and measured various internal rotation barriers, supplementing his previous work on hindered rotation of trapped species in solids. Among his many other contributions, Flygare was able to demonstrate for the first time the presence of formamide in interstellar space. He also devised a new and rapid method, involving laser light scattering, for determining electrophoretic mobilities and diffusion constants of large molecules.

As a natural extension of his work in microwave transient effects and the measurement of T_1 and T_2, Flygare developed a new spectroscopic tool: Combining the principles of pulsed microwave Fourier transform spectroscopy, a high-Q Fabry-Perot cavity and a high-pressure pulsed-nozzle source of molecules, he created a highly sensitive method of observing the direct rotational transitions of weak or transient molecular complexes. Very high resolution was also achieved. This, Flygare's most recent and perhaps most impressive contribution, has led to the assignment and structures of a large number of van der Waals molecules, and it facilitates high-resolution structural studies of radicals, ions and molecules in excited electronic states.

DAVID CHANDLER
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Robert M. Kalbach

Robert M. Kalbach, professor of physics at the University of Arizona, died last year at the age of 49. a popular teacher and active in particle physics research. At the time of his death he was involved in experiments at Fermilab and CERN.

He was born in Seattle and did his undergraduate and graduate studies at the University of Washington. He received his doctorate there in 1957. At the University of Arizona he was a skilled and well-liked teacher for 22 years. The Robert M. Kalbach Memorial Physics Colloquia have seen set up there in his honor.

His research was primarily in the field of hadronic interactions with measurements of elastic and inelastic scattering and total cross sections. He also carried out several searches for fractionally charged particles. Much of this work was carried out on sabbaticals and visits to Berkeley, Fermilab, CERN and the Max Planck Institute in Munich. Although he initially used photographic emulsion techniques, he changed to electronic detectors and became an expert in on-line computer techniques.

WINSLOW F. BAKER
Fermilab □