

and he and his constant flow of ideas will be sorely missed by all who knew him.

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David Sloan

David Sloan, a prominent figure in physics for over half a century, died on 30 September 1990, at the age of 86.

Sloan was among the first members of Ernest O. Lawrence's team at the University of California, Berkeley, before the birth of the Radiation Laboratory there. He was enticed by Lawrence to come from the General Electric research lab at Schenectady to do graduate work at Berkeley. As a graduate student, Sloan built the first practical version of the Wideroe ion accelerator (also known as the Sloan-Lawrence accelerator), and in 1932 he built a machine that accelerated mercury ions to 2.85 MeV. It was said Sloan had a substantial influence on every accelerator that was made in Berkeley until the time he left in the early 1960s. He influenced not only the development of accelerators intended for nuclear research but also the invention of a novel type of high-voltage x-ray generator, referred to as the Sloan tube, that was used for clinical studies at the University of California Hospital in San Francisco. Among the patients who benefited was Lawrence's mother, who was successfully treated for cancer in 1937. Sloan also invented a resonant transformer that was used to drive a single drift-tube accelerator for positive ions. It was characteristic of Dave that he did not allow his contributions to lapse during some of the extended periods when severe back trouble confined him to his bed in the men's faculty club on the Berkeley campus.

During World War II, Sloan contributed to the development of radar and his resonatron tubes were used for jamming German radar.

Sloan pursued a career in industry after leaving Berkeley. He joined Physics International in 1963 and stayed there as a senior scientist until his retirement in the early 1980s. Sloan's role was to arrive at original concepts for new technical challenges. From his days at the Rad Lab, Sloan brought much experience with the

problem of transient breakdown to the field that became pulsed power. Those in the field were just beginning to use stacked lines to store energy transiently at high electric fields. Sloan's forte was techniques for avoiding flashover of insulators. He brought to this challenge a depth of understanding: He regarded charges, currents and fields in graphically physical terms, and his simple, elegant explanations of complex phenomena were well known. He was instrumental in convincing the government to build the large pulsed-power generators of the time, culminating in Aurora, which was commissioned at the Harry Diamond Laboratories in 1971. Sloan was an early advocate of inductive energy storage and conducted experiments on opening-switch technology in the 1970s, long before it became a major national program.

Sloan was a fount of ideas: It was said that Physics International needed 40 engineers to follow up on all of them. He was famous for stating a problem and then immediately giving the answer, leaving his colleagues to work out the connecting argument. However, he never cared about taking credit for his many inventions and concepts. Sloan cared only that the problem be solved and that the equipment work.

In his private life he was fascinated with geology and spent much time in the deserts and mountains of the West, which he knew intimately from many years of hiking. Sloan's legacy lives on in the many devices he conceived and developed.

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William L. McLean

On 7 December 1990 William L. McLean died of cancer in the 57th year of his life and in his 30th year at Rutgers University. He had continued to work and teach until the day before he entered the hospital for his final stay, and it was characteristic of his intensely private nature that few people knew of his illness.

He was born in New Zealand, where he remained until he became a graduate student at Cambridge University after getting his bachelor's and master's degrees at the University of Otago. At Cambridge he was a stu-

dent of Brian Pippard. His PhD thesis on measurements of the superconducting penetration depth led to his lifelong interest in superconductivity.

After one year at the University of British Columbia, Bill came to Rutgers. Among the subjects to which his research contributed were helicon propagation, flux penetration and vortex dynamics in type-II superconductors, and the superconducting proximity effect. He and his student Joseph C. Amato demonstrated third-harmonic generation in a superconductor in response to a microwave field, and they used this process to determine the relaxation time of the superconducting order parameter.

In 1980 Bill's attention shifted to disordered superconductors as exemplified by granular metals and to the relation between the existence of superconductivity and the metal-insulator transition. After 1987 he worked on high- T_c superconductors, particularly on dimensional effects in multilayers.

All these endeavors were characterized by meticulous attention to detail, both in the experiment and in the analysis. Bill brought the same powers of analysis to all his work and was widely sought after as a reviewer and referee. In his graduate courses also he looked at each subject as if it were new, rather than just following a standard outline. Bill almost never talked about himself, but he was always open to hearing from others. He had friends in many parts of the world and particularly enjoyed environments and experiences among cultures different from his own. In many ways Bill was the antithesis of the modern aggressive and competitive scientific entrepreneur. We will remember him rather as a person of quiet integrity who devoted himself to thoughtful search after meaning and understanding.

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Kundan S. Singwi

Kundan S. Singwi, Fayerweather Emeritus Professor of Physics and Astronomy at Northwestern University, died suddenly of a heart attack on 18 October 1990, at the age of 71.

Singwi was born in Udaipur, India. He received his undergraduate and graduate education at Allahabad University and was awarded the doctor of science degree in 1949. After doing postdoctoral work at the University of Birmingham in England and the Uni-