ture to the Navier–Stokes equation for the hydrodynamic velocity field.

In addition to his work on turbulence during his years in Delft, Burgers collaborated with his brother in work on dislocation in crystal lattices; in 1939 he introduced the Burgers vector, which is a measure of the strength of a dislocation in a lattice. He also studied the fluid dynamics of dilute polymer solutions and wrote some of the fundamental papers on the intrinsic viscosity of suspensions. This work, like that on turbulence and on dislocations, provided the foundation for much of the recent work on this topic.

In 1955, at age 60, Burgers left Delft to join the faculty of the University of Maryland. There he developed his interest in the relation of the Boltzmann equation to the equations of fluid dynamics. His book *Flow Equations for Composite Gases* (1969) represents some of his work during that period. His studies in plasma physics, shock waves and related phenomena were recognized at his retirement by a symposium and volume *The Dynamics of Fluids and Plasmas* (1965) edited by S. I. Pai.

In addition to his purely scientific work, Burgers found the time to work on subjects of wider social or philosophical interest. He always was trying to find ways to use science to improve society, and he had a deep interest in the most fundamental problems—the structure of the universe, the origin of and the proper description of life. His preoccupation with such philosophical issues led him to the writings of A. N. Whitehead, whose ideas he tried to develop in his own book, *Experience and Conceptual Activity* (1965).

Jan Burgers was an exceptionally kind and throughtful man. He took seriously anyone who presented an idea to him, and he devoted a large fraction of his time to trying to understand new ideas and new developments. His devotion to both science and society is an inspiration to all of us. We mourn his loss, and we rejoice in our good fortune to have known and worked with him.

J. R. Dorfman
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John Lamarsh

John R. Lamarsh, professor and head of the department of nuclear engineering of the Polytechnic Institute of New York, died of a heart attack on 26 July 1981.

A graduate of MIT, where he carried out a thesis on inelastic neutron scattering under Herman Feshbach, Lamarsh went on to a distinguished ca-

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reer as a reactor physicist, a teacher of nuclear engineering, an advocate of nuclear power and a consultant to the Congress on energy policy and nonproliferation.

Lamarsh was perhaps best known for his textbooks, *Nuclear Reactor Theory* and *Introduction to Nuclear Engineering*, which have become standards in their fields. Their clarity of presentation reflects John's excellence as a teacher. He also helped arrange the orderly incorporation of New York University's School of Engineering with the Polytechnic Institute of Brooklyn to form the Polytechnic Institute of New York and was the first to head the combined faculties.

A steadfast advocate of nuclear power, he worked hard as consultant and adviser to ensure that its realization would be rational and amply safeguarded. He contributed to the Aircraft Nuclear Propulsion Project, to fast-reactor safety, to breeder-reactor theory and to the problem of creating and maintaining a flat flux profile in reactors.

Less public, but of enormous importance, were Lamarsh's efforts toward reactor safety and the control of nuclear weapons proliferation. A consultant for many years to the Congressional Research Service of the Library of Congress, the General Accounting Office and the Office of Technology Assessment, he sought, behind the scenes, to have policy benefit from clear analysis of the relevant technology. His contributions to those advisory sessions have been characterized as lucid and hard-headed.

He maintained that the risk of nuclear proliferation came from nations using small reactors and small processing plants to create weapons material rather than from plutonium diverted from a large nuclear power industry. Lamarsh was in the vanguard of those physicists calling for renewed attention to issues of safeguards and proliferation (see PHYSICS TODAY, August 1981, page 96).

DAN COOPER
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Paul Herget

Paul Herget, an outstanding celestial mechanician, died last summer.

Herget was born in 1908 in Cincinnati, received his degrees from the University of Cincinnati (AB 1931, MA 1933, PhD 1935), and rose from instructor to Distinguished Service Professor during his career at the University (1931–1978). (Herget liked to tell that before he was awarded a membership in the National Academy of Sciences, one of the arguments made in his favor was that he was able to do it all in Cincinnati.) Director of the Cincinnati Observatory from 1943 to 1978 and director of the International Astronomical Union Minor Planet Center from 1947 to 1978, he also held positions as scientist at the US Naval Observatory (1942–1946) and at Watson Scientific Computing Laboratory (1951–1952). He was also consultant for the Manhattan Project and for projects Atlas, Vanguard and Mercury.

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The application of computers, mainly to the problems of celestial mechanics, was his life-long interest. During World War II he computed tables needed for plotting the positions of enemy submarines, based upon surveillance with direction-finding antennae. These proved effective in diminishing casualties to allied convoys. He also devised the first plan for computing LORAN tables by means of punched card machines, which led to the concept of optimum interval tables.

During the war years, Herget, with