# *Donald S. Fredrickson, M.D.*

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■ Donald S. Fredrickson possibly has worn a wider selection of hats than, and as many at once as, any scientist during his nearly twenty years at the National Institutes of Health.

Beginning as a clinical associate in 1953, he rose to become director of the National Heart and Lung Institute in 1966. Because he wanted to stay closer to the laboratory, he later moved to his present posts as director of the institute's intramural research and chief of its molecular disease branch. The 46-year-old physician has never regretted his love affair with government medicine or his decisions to swap one hat for another.

"I like the intellectual stimulation, the enthusiasm, and the quality of NIH," he says. "Here you can find an expert in almost every aspect of biology. And one of the beauties of this environment is a complete lack of barriers."

The small-town boy from Canon City, Colo., who headed east during World War II and has never had a yearning for the wide open spaces since, switched from engineering to medicine while in the Army's specialized training program at the University of Michigan.

The institute's programs change flexibly with new needs and opportunities. "We're planning a new branch for pulmonary research," Dr. Fredrickson observes, "and that means recruiting new people, assigning priorities, and setting goals. As it has done in cardiology, the institute wants to establish a national center for training physicians who will think of the lung as an organ rather than just a bellows."

All research is interrelated. And the ultimate focus of disease-oriented research is prevention. As Dr. Fredrickson points out, "To connect an artificial heart to bad arteries is a costly design for relieving the world's burden of cardiovascular problems."

Atherosclerosis and its prevention have occupied more and more of Dr. Fredrickson's own research interest in recent years. His earlier work included pioneer studies of radioactively labeled chylomicrons and the establishment of the speed of turnover of plasma free fatty acids.

In more recent years, he has directed laboratory and clinical research on the structure of plasma lipoproteins and their role in fat transport. From his laboratory has emerged a system for classifying hyperlipidemia.

Also interested in the study of inheritable diseases of fat storage and metabolism, he discovered the lipoprotein deficiency state, Tangier disease, and a rare disease superficially resembling it, which he named hepatic cholesteryl ester storage disease.

The area of his deepest interest is in the human mutants with abnormal lipoprotein metabolism. He and R. S. Lees first described a new system for utilizing plasma lipoprotein patterns to identify and classify excesses of blood cholesterol and other fats in 1965. With the collaboration of R. I. Levy, the system was refined and has led to the establishment of syndromes not previously recognized as separate diseases.

The wide adoption of this system for classifying not only familial but acquired forms of hyperlipidemia has kept the Bethesda group busy in trying to simplify the methods required.

When he joined the institute in 1953, Dr. Fredrickson brought with him five years of intensive experience in teaching and research at Peter Bent Brigham Hospital and Harvard Medical School. In the years since, he has won two major awards—the 1967 gold medal of the American College of Cardiology and the 1968 International Award for Heart and Vascular Research from the James F. Mitchell Foundation for Medical Education and Research.