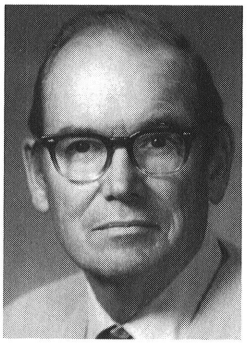
Ruth Allen Award

The Ruth Allen Memorial Fund was established in 1965 by means of gifts from the estate of Dr. Ruth Allen through the generosity of her heirs: Sam Emsweller, Mabel Nebel, Hally Sax, and Evangaline Yarwood. The award, consisting of a certificate and income from the invested fund, is given for outstanding contributions to the science of plant pathology.

The 1987 Ruth Allen Award is made to honor the pioneering research by Drs. D. C. Arny. S. E. Lindow, and C. D. Upper, which resulted in the discovery of the role of epiphytic ice nucleation-active bacteria in frost damage to plants. Their research, first reported in 1976, documented for the first time the role of epiphytic bacteria in limiting the supercooling of leaves and the importance of this phenomenon in frost damage to plants. Prior to their discovery, frost injury was considered a purely physical and physiological phenomenon. This discovery opened new possibilities for control involving the reduction in population of ice nucleation-active bacteria.

Deane C. Arny

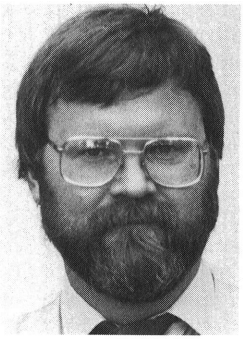


Deane C. Arny was born May 22, 1917, in St. Paul, MN. He received his B.S. degree from the University of Minnesota in 1939 and his Ph.D. degree in 1943 in agronomy, plant pathology, and genetics from the University of Wisconsin where he accepted a joint appointment in the Departments of Agronomy and Plant Pathology. In 1964, he became a full-time member of the Department of Plant Pathology and became an emeritus professor in 1984.

Dr. Arny has had general responsibility for diseases of field crops. i.e., small grains, corn and alfalfa. On corn, he identified, with R. R. Nelson, *Phyllosticta maydis* as the incitant of yellow leaf blight of corn, and along with others showed that *Kabatiella zeae* caused corn eyespot, a new disease in the United States.

Dr. Arny has also participated in international agriculture, serving as head of the Plant Sciences Department at the University of Ife in Nigeria from 1966 to 1968 and as a consultant of Andalas University, Padang, Indonesia, for six months in 1986.

Steven E. Lindow

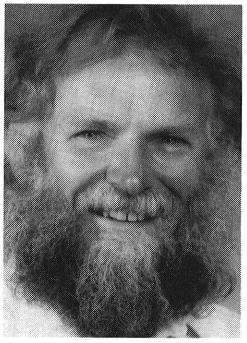


Steven E. Lindow was born on May 20, 1951, in Portland, OR. He received his B.S. degree from Oregon State University in 1973 and his Ph.D. degree in plant pathology from the University of Wisconsin-Madison under the direction of Dr. Upper in 1977. He joined the University of California-Berkeley in 1978, and was promoted to associate professor in 1983. His Ph.D. research showed the importance of ice nucleation-active bacteria in frost injury and that *Pseudomonas syringae* and *Erwinia herbicola* were important ice nucleation-active bacteria.

Drs. Arny and Lindow hold patents on the use of biocontrol agents to reduce frost injury. Lindow and co-workers at Berkeley used recombinant DNA techniques to remove the gene conferring ice nucleation in nonpathogenic strains of *P. syringae*. Another aspect of this research has led to the development of a computer-directed video-image analysis system for quantitative measurement of plant disease severity.

In 1985, Dr. Lindow was awarded the National Academy of Sciences Initiatives in Science Award, and the CIBA-Geigy Award.

Christen D. Upper



Christen D. Upper was born on March 19, 1936, in Seattle, WA. He received his B.S. degree from Washington State University in 1958 and his Ph.D. degree in biochemistry in 1964 from the University of Illinois. He completed a postdoctoral fellowship studying the biosynthesis of gibberellins at the University of California, Los Angeles. In 1966, he accepted a joint position with the USDA and University of Wisconsin as a research chemist in the USDA Pioneering Research Laboratory. He was promoted to professor of plant pathology in 1977.

His research has progressed from physiological and biochemical studies of plant growth and disease to ecological and epidemiological aspects of bacterial diseases. He was involved in identification and quantitation of cytokinins in plant tissues, and in studies of the growth kinetics of tobacco callus tissue in response to phytohormones and nutrients. He helped to demonstrate that a gene for disease resistance was expressed in tobacco callus tissue. He participated in development of methods for identification and quantitation of cyclic hydroxamates in maize, and characterized these materials as inhibitors of soft-rotting *Erwinia* spp. pathogenic to maize and other plants. Most recently, his research has been directed toward achieving an understanding of the population biology of *Pseudomonas syringae* and of other leaf-associated bacteria, and the epidemiology of diseases caused by these bacteria.