

Ruth Allen Award

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

Harvey C. Hoch



Harvey C. Hoch was born in San Antonio, TX. He received his B.S. degree in botany and his M.S. degree in plant pathology from Colorado State University. He received his Ph.D. degree in plant pathology from the University of Wisconsin. He joined the Department of Plant Pathology of Cornell University at the New York State Agricultural Experiment Station in Geneva as a research associate in 1974. He was promoted to assistant professor in 1977, associate professor in 1982, and professor in 1991.

Richard C. Staples



Richard C. Staples was born in Hinsdale, IL. He received his B.S. degree in botany and plant pathology from Colorado State University and his M.A. and Ph.D. degrees in plant biochemistry from Columbia University. Since 1957 he has been a member of the Boyce Thompson Institute for Plant Research at Cornell University and since 1992 has been the G. L. McNew Scientist Emeritus. Dr. Staples has been an adjunct member of the faculty of the Department of Plant Pathology at Cornell University since 1961. He was named a fellow of APS in 1984.

Drs. Hoch and Staples are recognized for their pioneering, creative research on thigmotropism and cellular differentiation in rust fungi. In a series of elegant, classic experiments using precisely microfabricated ridges, Hoch, Staples and coworkers characterized the topographic signals for oriented growth toward stomata and appressorium formation over stomata by *Uromyces appendiculatus*. Subsequent research demonstrated that the response to topographic signaling was uniform among 40 races of *U. appendiculatus* and that topographic signals induced appressorium formation in 26 species of rust fungi. Cultivars possessing noninductive or nonorienting topographies have not yet been identified but may provide a useful form of resistance to *U. appendiculatus* and other rust fungi.

Drs. Hoch and Staples were among the first biologists to use the facilities of the National Nanofabrication Facility. Through the use of the specific inductive topography, Hoch and Staples have procured detailed information about the cellular events associated with the initial stages of the infection process. Their research has received worldwide recognition.

Staples, Hoch, and colleagues have made significant progress toward understanding transmembrane signaling during differentiation. They demonstrated that ionic potassium and cyclic GMP can initiate cellular differentiation in *Uromyces* germlings and have contributed much of what is known of the biochemical and molecular mechanism of fungal differentiation. They were the first to document mechano-sensitive ion channels in the plasma membrane of filamentous fungi and to suggest that these channels are a signal receptor for appressorium initiation.

Drs. Hoch and Staples continue to develop and employ innovative methods to dissect the processes leading to parasitic growth. Their leadership in this field is widely recognized. Their laboratories are recognized worldwide for excellence and are sought as sites for graduate, postgraduate, and sabbatical research. Their contributions to the science of plant pathology have been substantial. They are initiators and leaders in studying the cell and molecular biology of infection structures.