

Fellows

Eleven members of the American Phytopathological Society were elected Fellows of the Society at the 1984 Annual Meeting in Guelph, Ontario, Canada. Election as a Fellow of the Society is a reflection of the high esteem in which a member is held by his colleagues. The award is given in recognition of outstanding contributions in extension, research, teaching, or other activity related to the science of plant pathology, to the profession, or to the Society.

William R. Bushnell



William R. Bushnell was born in Wooster, OH, on August 19, 1931. He received a B.A. degree from the University of Chicago in 1951 and B.S. and M.S. degrees from Ohio State University with a major in botany in 1953 and 1955, respectively. His Ph.D. degree was obtained in 1960 at the University of Wisconsin with a major in botany and a minor in biochemistry. Upon completion of that degree, he began employment with the Agricultural Research Service of the USDA at what is now

the Cereal Rust Laboratory, affiliated with the Department of Plant Pathology of the University of Minnesota. He is currently plant physiologist and member of the Graduate Faculties in Plant Pathology and Plant Physiology of the University of Minnesota.

Dr. Bushnell has made significant contributions to our understanding of the physiology of the interaction of the rust and powdery mildew fungi and their hosts. He is known for his research on "green islands," artificial culture of rust fungi, physiology and structure of fungal haustoria, reactions of the host cytoplasm to infections, and cytological study of nonhost resistance. His experimental approach to physiological problems, utilizing microsurgery and microinjection, so as to study host-parasite interaction in living systems, is achieving much recognition as a unique and valuable means of studying these systems.

Specific research contributions of Dr. Bushnell, often working with students and collaborators, include the determination that green islands extend into tissues in advance of powdery mildew colonies, that extracts of powdery mildew spores induce green islands, and that a relationship exists between delay of senescence and accumulation of nitrogen in mildewed tissues. Dr. Bushnell developed a method for using epidermal tissues partially isolated from barley coleoptiles to observe fungal development and host response in living specimens. This technique is one of the best available for viewing infection processes in leaf tissues and for experimental manipulation and chemical treatment of cells of host and parasites. Using these sorts of techniques, Dr. Bushnell showed that host cytoplasm consistently gathers at sites of attack. By time-lapse photography, he showed that papillae are rapidly deposited by the aggregated cytoplasm. The papilla was shown to be a nonspecific resistance response. In addition, host cytoplasm was found to stop streaming 2 hours before hypersensitive host cell collapse in race-specific resistance, but streaming was found to be essential for the earlier events that lead up to the hypersensitive response. He also showed that mildew haustorial function depends on an associated layer of host cytoplasm that has osmotic properties. He has recently shown that plasmolytic properties of host plasma membranes are altered soon after infection in powdery mildew.

Dr. Bushnell has presented invitational talks at the Inaugural

John Charles Walker Conference in Plant Pathology on Pathogenesis and Metabolism in Plants (1965), the U.S.-Japan Conference on the Dynamic Role of Molecular Constituents in Plant-Parasite Interaction (1966), the U.S.-Japan Conference on Morphological and Biochemical Events in Plant-Parasite Interaction (1970), the NATO Advanced Study Institute of Specificity in Plant Diseases (1975), the Second International Mycology Congress (1977), the U.S.-Japan Conference on the Biochemical and Physiological Basis of Plant Infection (1981), the 4th International Congress of Plant Pathology Symposium on Nature and Action of Pathogenicity and Host Reaction Genes (1983), and a symposium on encounter and response sponsored by the British Society of Plant Pathology (1984).

Dr. Bushnell has recently been the coeditor of two treatises on plant pathology: *Plant Infection*, the *Physiological and Biochemical Basis*, prepared as a result of the U.S.-Japan Conference, of similar title, of which he was co-organizer, held in 1981; and *The Cereal Rusts*, Volume I of a 2-volume set, subtitled *Origins, Specificity, Structure, and Physiology*. In these books and elsewhere, Dr. Bushnell has written several reviews on physiological aspects of plant disease, including chapters on haustoria, hypersensitivity in rusts and powdery mildews, rusted host tissues, basic compatibility, reactions of host cytoplasm, and models of gene action in host-parasite specificity.

Dr. Bushnell has been active in APS, serving as an associate editor for *PHYTOPATHOLOGY*, a member of the local organizing committee for the 1980 Annual Meeting, and a chairman of the Disease and Pathogen Physiology Committee during 1981-1982, developing a symposium for the 1984 meeting entitled "Genetic Basis of Biochemical Mechanisms of Disease."

Dr. Bushnell is the recent recipient of an Alexander von Humboldt Foundation Senior U.S. Scientist Award to conduct research for a 6-month period at the University of Konstanz in Germany. He is a member of the American Society of Plant Physiologists and the American Association for the Advancement of Science.

P. Paul F. M. deNeergaard



P. Paul F. M. deNeergaard was born February 19, 1907, in Denmark. He received his B.Sc. degree in horticulture in 1932, his Ph.D. degree (Lic. agro.) in 1935 and his Sc.D. degree (agronomy) in 1945 from The Royal Veterinary and Agricultural University in Copenhagen. He began his career in 1935 as seed pathologist at J. E. Ohlsens Enke Seed Company in Copenhagen, and was appointed in 1952 to head the Danish Government plant protection service and as professor of plant pathology and seed technology at the American University of Beirut, Lebanon. In 1965

Dr. Neergaard was asked by the Danish Ministry of Foreign Affairs to set up an Institute of Seed Pathology for Developing Countries. The institute opened in 1967 and has since welcomed plant pathologists or seed technologists from many developing countries. The institute has organized four regional workshops of seed pathology: Asia in 1969, Africa in 1970, the Middle East in 1972, and Latin America in 1973. Dr. Neergaard retired as director of the institute in 1983.

During the past 25 years, Dr. Neergaard has directed his efforts to the organization of international cooperative testing of laboratory procedures for detection of seedborne pathogens with the aim of attaining uniformity and international standardization. He has been chairman of the Plant Disease Committee of the International Seed Testing Association from 1956 to 1974. In the past 18 years comparative testing schemes were completed under his leadership, and 14 international workshops were held, in which more than 40 countries have cooperated.

Dr. Neergaard's scholarly and research contributions concern seedborne diseases. His chief work, "Seed Pathology," has been translated into Chinese and Hindi. His comprehensive monograph on the genera *Alternaria* and *Stemphylium* is a standard resource on these genera. Dr. Neergaard has established the seedborne nature of hundreds of pathogens and, in his work, he has proposed a number of new species and new genera of fungi.

Much of his research has been devoted to the improvement of seed health testing procedures. In work with colleagues at the Seed Pathology Institute for Developing Countries, he has established diagnostic characters for quick identification of fungi that occur on seed in routine seed testing. Among such procedures is the 2,4-D blotter method for detection of seedborne fungi. He made the first detailed studies on seed health testing techniques for rice. Dr. Neergaard has been a major force in the establishment and worldwide recognition of the importance of seed pathology in our discipline. Following their training programs taken under Dr. Neergaard's organization, scholars have on return to their countries taken up assignments related to problems of seedborne pathogens, including posts in regular routine seed health testing, research, and university teaching. According to a recently completed survey, courses in seed pathology have been introduced into the regular curricula of at least 50 universities in 22 developing countries. Further, many universities are known to have included seed pathology in their research programs.

Dr. Neergaard is recognized internationally for his contribution to agriculture and has been sought for his expertise by many governments. He is a member of numerous national professional and scientific societies, and is the recipient of Rasch's Prize for research in botany, the Japanese UMEA Prize 1981, and the Honorary Plaquette of the International Seed Testing Association. He maintains an active life-long interest in the international language Esperanto.

Richard D. Durbin



Richard D. Durbin was born in Santa Ana, CA, in 1930. He attended San Diego State College, UCLA, and the University of California-Berkeley, where he earned his B.S. degree in 1952. In 1957 he completed his Ph.D. degree in plant pathology under the direction of Dr. K. F. Baker. His thesis was on factors influencing the ecology of isolates of *Rhizoctonia solani*. In 1957-1958, he was a NSF Postdoctoral Fellow in the Department of Biochemistry, University of California-Berkeley, where he studied the

biochemical pathways of carbon metabolism in microorganisms. Dr. Durbin's professional employment began as an assistant professor of plant pathology at the University of Minnesota. In 1962, he joined the Department of Plant Pathology at the

University of Wisconsin-Madison as an associate professor and research plant pathologist. He is now research leader of the Plant Disease Resistance Research Unit, USDA, and professor of plant pathology, University of Wisconsin-Madison. In 1974-1975, Durbin spent a study leave in the Laboratorio di Tossinae, Bari, Italy.

His productive research career has ranged from early studies on the hosts of broom rape, *Orbanche ramosa*, in California to the molecular characterization of the mode of action of toxins. Dr. Durbin's specific contributions to disease physiology include: studies on the translocation of photosynthates by rust diseases, examination of the water relations of diseased plants, investigations on the role of secondary plant metabolites, particularly tomatine, in determining pathogen specificity, research on the characterization and mode of action of chlorosis-inducing toxins produced by pathovars and species of *Pseudomonas*, especially studies on mode of action of tabtoxin, and studies on the molecular basis of the selective action of tentoxin produced by *Alternaria tenuis*. Currently, his research focuses on chemical, biological, and molecular aspects of tagetitoxin produced by *Pseudomonas syringae* pv. *tagetis*. He has recently edited a treatise on "Toxins in Plant Disease."

Dr. Durbin has participated in many international symposia on numerous aspects of physiological plant pathology, including three U.S.-Japan conferences on Plant Pathology, several NATO Advanced Study institutes, and two Gordon Research conferences.

In addition, he has served the profession of plant pathology as a member of the APS committees Pathogen and Disease Physiology and Phytopathological Monographs, as associate editor for PHYTOPATHOLOGY and senior editor for *Physiological Plant Pathology*.

His excellence as a research scientist has been recognized by his colleagues. He is the recipient of the ARS Director's Award, the ARS Superior Service Award, and the ARS Scientist of the Year Award.

Guillermo E. Galvez-Enriquez



Guillermo E. Galvez-Enriquez was born in Pasto, Colombia, on July 18. He received his Ingeniero Agronomo degree from the National University of Colombia, Medellin campus, in 1956. He worked as research assistant for the Rockefeller Foundation under Dr. Robert Skiles, and then as assistant plant pathologist for the joint project between the Colombian Ministry of Agriculture and the Rockefeller Foundation at the Agricultural Research Division under Dr. Skiles and then under Dr. H. David

Thurston. In August 1960, as a Rockefeller Foundation (RF) fellow, he studied at the University of Nebraska, specializing in plant virology under the guidance of Drs. William B. Allington and Myron K. Brakke. After receiving his Ph.D. degree in 1964, he returned to Colombia to organize the virology section of the Colombian Agricultural Institute (Instituto Colombiano Agropecuario, ICA).

In 1965, he replaced Dr. Thurston as the director of the National Plant Pathology Program of ICA. In April 1969, he was the first staff member to be appointed in the newly established International Tropical Agriculture Center (Centro Internacional de Agricultura Tropical, CIAT). He headed the Plant Protection Program and was responsible for its organization and operation. While at ICA, he served as a consultant for the Rockefeller Foundation to help solve several virus disease problems in Bolivia, Peru, and Ecuador. He also was a visiting scientist at IRRI in the Philippines and a consultant on rice viruses in Bangladesh in 1966 and 1968. At present, Dr. Galvez is the coordinator for the CIAT Bean Program for Central America and the Caribbean, and is also in charge of the

Bean Golden Mosaic Virus (BG-MV) and Web-Blight research projects.

Dr. Galvez has had a distinguished career as a research scientist, mainly in rice and bean diseases. He is considered the world authority in the rice hoja blanca virus. In cooperation with Dr. Peter R. Jennings, he helped in the development of resistant varieties to the virus vector. Later he isolated and characterized the rice tungro virus, and together with Rufus Walker, developed a resistant variety to this virus. This helped in increasing the production of this basic grain for Bangladesh. In collaboration with CIAT and ICTA (Instituto de Ciencias y Tecnologia Agricola, Guatemala) scientists, he developed the bean varieties ICTA-Quetzal, ICTA-Jutiapan, ICTA-Tamazulapa and Negro Huasteco 81, all of which are resistant to BGMV, and the bean chlorotic mottle virus. Increased dry bean yields resulted from the release of these virus resistant varieties in Guatemala, El Salvador, and Mexico. He was the first to isolate a whitefly-transmitted virus, with a twin particle, the BGMV.

Dr. Galvez has had many students from different tropical countries. He has been active in the founding of the Latin American Phytopathological Society (ALF) and of the Colombian Phytopathological Society (ASCOLFI). Since 1960, Dr. Galvez has been active in the American Phytopathological Society, where he has served on the Membership, International Cooperation, Necrology, and the Tropical Plant Pathology committees. Since its founding, he has been an active participant in the Caribbean Division of APS. Offices held in the division include vice-president and, since 1971, secretary-treasurer. Three times, 1966, 1968, and 1969, he has received the "Alejandro Angel Escobar" scientific prize, the most valuable scientific Colombian award, for his contributions to the solution of plant pathological problems in Colombia. He also received the Colombian Rice Federation award in 1970, and the Central American (PCCMCA) scientific prize in 1980 for his contribution to the development of virus-resistant rice and bean varieties.

Curtis W. Roane



Curtis W. Roane was born on April 19, 1921, in Norfolk, VA. He attended Virginia Polytechnic Institute and State University (Virginia Tech) where he earned a B.S. degree in biology in 1943 and an M.S. degree in plant pathology in 1944. He continued graduate study at the University of Minnesota and received his Ph.D. degree in plant pathology in 1953. While completing his Ph.D. research, he joined the faculty in plant pathology and physiology, Virginia Tech, where he is now professor.

Dr. Roane's major contributions to our knowledge of plant diseases have been in the areas of the genetics of host-parasite interactions, in fungus and virus etiology, and in breeding for disease resistance. His research has also included the investigations of the impact of viruses on soybean and corn. He has studied extensively the inheritance of resistance and susceptibility in barley to *Puccinia hordei*. The results of this research, carried out in cooperation with an agronomist at Virginia Tech, are widely applicable in Europe and the Middle East. Although barley leaf rust rarely causes damage in North America, this work has greatly facilitated the management of barley leaf rust resistance genes by European researchers for preventing leaf losses in barley. In inheritance studies of the reactions to pathogens, Dr. Roane was the first to recognize and suggest that the number of genes segregating was most easily determined by noting the number of completely susceptible plants. He has recently published, with co-workers, information on the genetics of reactions to viruses in corn and soybean.

At Virginia Polytechnic Institute and State University and throughout the State of Virginia, Dr. Roane is highly respected for

his devotion to his research, which has led to the production of high yielding, healthy small grain, corn, and soybean cultivars. As a result of his cooperative work, improved and disease-resistant germ plasm has been released by Virginia Tech, including one oat, eight barley, and five wheat cultivars, seven corn hybrids, 15 corn inbreds and four corn germ plasm.

Dr. Roane has served as a member of the Task Force on Wheat and Other Small-Grains Research Needs in the Southern Region. He is the first plant pathologist to serve as chairman of the Southern Small Grain Workers Conference (1971-1973) and as chairman of the Eastern Wheat Workers Conference (1978-1981) and was a member of the National Wheat Improvement Committee (1978-1981). Dr. Roane has served on the International Committee for Redesignation of Barley Gene Symbols, as co-chairman of the Subcommittee on Genes for Reaction to Pests for the North American Barley Researchers Workshop, and as chairman of the workshop, 1981-1984. He has been coordinator for the Uniform Barley Nursery of Semi-Hardy Varieties (Southern Region and Maryland).

Dr. Roane has a deep and continuing interest in the affairs of the American Phytopathological Society. He served on the editorial board of *PHYTOPATHOLOGY* and as an associate editor of *PLANT DISEASE*. He has served as chairman of the Constitution Advisory Committee, the Genetics Committee, the Monographs and Review Committee, and the Ad Hoc Committee on the Status of the American Type Culture Collection, and as vice-chairman of the Society's Membership Committee and the Committee on Disease Compendia. He has been a member of the Committee on Environmental Quality, the Advisory Committee on Plant Rusts for the American Type Culture Collection, and the Program Committee. He has served as vice-president and president of the Potomac Division and, in this capacity, chaired the Student Awards Committee as well as numerous other division committees.

August Frederick Schmitthenner



August Frederick (Fritz) Schmitthenner was born to missionary parents in southern India on April 16, 1926. He came to the U.S. in 1944 and served in the U.S. Army for 2 years. He then entered Gettysburg College where he received a B.A. degree in biology in 1949. He did graduate work at The Ohio State University and received his M.Sc. and Ph.D. degrees in botany and plant pathology in 1951 and 1953, respectively. He became an assistant professor at the Ohio Agricultural Experiment Station

upon graduation, was promoted to associate professor in 1960, and professor in 1966. He took a sabbatical leave in 1965-1966 at Imperial College, London, England. Dr. Schmitthenner has served APS on committees and as an associate editor of *PLANT DISEASE*. Dr. Schmitthenner is recognized internationally as a leader in soybean pathology.

Dr. Schmitthenner's initial research problem was on the then new and serious disease of soybeans in the Midwest. Through his research and the efforts of his students, the pathogen *Phytophthora megasperma* f. sp. *glycinea* (Pmg) was isolated and its etiology described. He found the first sources of resistance, and in cooperation with plant breeders, released several resistant varieties. This source of resistance lasted for about a decade, when new races of the pathogen appeared. The first new race in the Midwest, and subsequently others, were isolated by Dr. Schmitthenner. As a consequence, he became involved in the development of multi-race resistant varieties. The constant appearance of new races led him to the development of an integrated control procedure. This involved the use of his tolerant varieties with a *Phytophthora*-specific fungicide seed treatment to prevent damping-off, combined with optimized tillage, drainage, and crop rotation.

Early in his career, Dr. Schmitthenner participated in an extensive study on the interaction of crop rotation, soilborne field crop diseases, and changes in soil fungal populations. In this work he developed the widely used selective OAES medium for the isolation of fungi from soil. Another effective medium for quantitative isolation of *Pythium* spp. from soil was developed by Dr. Schmitthenner to study problems associated with alfalfa stand establishment. This research revealed that, in addition to *Pythium* spp., *Aphanomyces* and *Phytophthora* were also involved in the disease complex.

While a visiting research professor at Imperial College, London, England, he studied *Pythium* physiology and taxonomy with Dr. Grace M. Waterhouse, Commonwealth Mycological Institute, Kew, Surrey, England. Dr. Schmitthenner is regarded as a world authority on *Phytophthora* and *Pythium* diseases. Working in cooperation with colleagues and graduate students, he has established the importance of various *Phytophthora* spp. in apple, potato, and rhododendron, and of *Pythium* spp. in bedding plants, corn, lettuce, soybean, and turf. During the past 10 years, Dr. Schmitthenner has also directed investigations on *Phomopsis* and *Diaporthe* soybean seed rot.

Throughout his career, Dr. Schmitthenner has made an unselfish commitment, not only to his research, but also to the teaching and advising of graduate students.

Marr D. Simons



Marr D. Simons was born in Utah in 1925, and received his B.S. and M.S. degrees in 1949–1950 from Utah State University. He continued his studies at Iowa State University, and received his Ph.D. degree in 1952. Although his entire career has been centered in Iowa, his duties have involved research, teaching, and administration, and he has lectured and consulted internationally. He has had a highly productive career with the USDA-ARS and as a professor at ISU.

Dr. Simons' major responsibility has been research on oat crown rust (*Puccinia coronata avenae*), an area of research for which he has had virtually sole responsibility, in the United States for the past quarter century. He is considered the expert and leading authority on matters relating to races of crown rust, epidemiology of the causal organism, genetics of resistance in the host, and virulence in the pathogen. Because of his acknowledged expertise, he is considered to be the leading international source of advice and counsel on this subject. Most of the information now available on physiologic specialization of *P. coronata avenae* has been provided by Dr. Simons' studies. His work established the basis for present-day keys to race identification. Early in his career, he worked on patterns of inheritance of resistance genes in the World Oat Collection. Later, he discovered the numerous crown rust resistance genes possessed by *Avena sterilis*. Most crown rust resistance genes currently used in U.S. oat varieties were discovered and isolated by Dr. Simons. His work on relationships of date-of-planting and date-of-maturity to damage from crown rust on oat varieties gave researchers a better understanding of host-parasite relations as influenced by genotypes of both components of the system, age of host, and environment. This work also broadened the view of plant pathologists on the nature of virulence and aggressiveness of cereal rust fungi and their evolution. This work created the means for international communication and cooperation in studies of *P. coronata avenae*.

Dr. Simons' long-term studies on disease tolerance are considered by many to be the definitive work in the subject. Tolerance as a phenomenon was only an ill-defined term used for discussion purposes until his detailed investigations. Dr. Simons perfected the field research, laboratory evaluation of results, and statistical methods of analysis to measure and determine tolerance.

Tolerance was investigated from many perspectives including heritability, sources of tolerance, production of tolerant lines, and routine testing for tolerance as part of an on-going breeding program. His lucid explanation of the inheritance of tolerance to crown rust made it possible for oat breeders to use this type of protection in oat varieties grown in the U.S. and Canada.

Dr. Simons' work on the influence of induced mutations on resistance of plants against disease (specifically, mutation breeding for crown rust tolerance) is unique. He demonstrated that mutations for tolerance to crown rust were induced by chemical and physical mutagens at a high frequency and that these were useful in practical oat breeding.

Dr. Simons has been an active participating member in APS affairs, having served as chairman of the Genetics Committee and two terms as an associate editor of *PHYTOPATHOLOGY*. He has chaired, addressed, and helped organize several APS symposia.

Richard C. Staples



Richard C. Staples was born in Hinsdale, IL, on January 29, 1926. He received his B.S. degree from Colorado State University in June 1950 and the M.A. and Ph.D. degrees from Columbia University in New York City in June 1954 and June 1957, respectively. After Naval service during the Korean War, Dr. Staples was appointed to the staff of Boyce Thompson Institute for Plant Research at Cornell University as an assistant plant biochemist in 1957, associate plant biochemist in 1961, and plant

biochemist in 1963. He became program director of Plant Stress in 1967. This group of five scientists is currently studying several bacterial and fungus diseases of plants in addition to the rust fungi. At Cornell University, he is an adjunct professor of plant pathology and a member of the Graduate Field of Plant Pathology. Dr. Staples has devoted most of his career to the study of the physiology and biochemistry of the rusts and to the biochemistry of resistance of plants to fungi. He completed a year as visiting scientist at the University of Wisconsin in the Biochemistry Department in June 1963, where he was associated with Professor Mark A. Stahmann. In July 1982 he completed a year at Institute for Biologie III, RWTH Aachen, FRG, where he was associated with Professor Hans J. Reisener.

Dr. Staples spent 1975 and 1976 in the National Science Foundation, first in the Science and Technology Policy Office, then in the Policy Research Analysis Division, where he was involved with development of agricultural policy issues, budget development, and international agricultural issues. He was program manager for NSF of the National Academy of Sciences "World Food and Nutrition Study" and served as a consultant to the Office of Science and Technology Policy in the Executive Office of the President from 1976 to 1978.

Dr. Staples' contributions have been pioneering in the area of rust biochemistry and molecular biology. Always at the forefront of technology, his work on the physiology of fungal germling differentiation and development are classic.

Dr. Staples is a member of Sigma Xi, Beta Beta Beta, and Phi Kappa Phi. In 1980, he was awarded the Humboldt Senior U.S. Scientist Award by the Alexander von Humboldt Foundation for meritorious achievement. Dr. Staples is a member of the American Society of Plant Physiology, American Society for Cell Biology, and the American Phytopathological Society. He is presently chairman of the APS Committee on Pathogen and Disease Physiology. He is past president of the Torrey Botanical Club, and past president of the APS Northeastern Division. He has been an associate editor of *PHYTOPATHOLOGY*.

James F. Tammen



James F. Tammen was born February 27, 1925, in Sacramento, CA, and his early education was in that city. He entered the U.S. Army Air Corps and served as navigator-bombardier with the 8th Air Force in England. Dr. Tammen attended Sacramento College in 1945–1946 and then transferred to the University of California at Davis and Berkeley, where he majored in plant science with a minor in plant pathology. He graduated with honors in 1949. In 1949–1950, he was junior plant

pathologist with the California Bureau of Plant Pathology. He returned to the University of California at Berkeley in 1950 and completed the Ph.D. degree in plant pathology in 1954. He joined the Florida State Plant Board in 1954 and was promoted to chief of plant pathology in 1955.

Dr. Tammen became a member of the faculty of The Pennsylvania State University in 1956 with responsibility for teaching and research on the diseases of ornamental and floricultural crops. He was promoted to associate professor in 1961 and to professor in 1965. He was appointed department head in 1965, the position he held until he left The Pennsylvania State University in 1976. Dr. Tammen became dean of the College of Agriculture of the University of Minnesota in 1976, the position he held until 1981 when he became president of Oglevee Associates, Connellsville, PA, an international producer of pathogen-free propagating stock of several horticultural crops.

Dr. Tammen has had a distinguished career in research, academic administration, and in the internal and external affairs of the American Phytopathological Society.

Based upon his experiences in California, he became convinced that the most effective means for the control of the diseases of vegetatively propagated floricultural crops was the commercial development of "pathogen-free" propagating material and of growing systems which would preclude reinfection of such. Beginning in 1956, several years of research were devoted to testing methods of identifying and growing healthy plants, with emphasis on the florists' geranium, *Pelargonium* × *hortorum*. By the early 1960s he had developed nuclear stock of a number of cultivars which indexed free of systemic bacterial and fungal pathogens over several generations. He was the first, subsequently, to cooperate directly with growers for the successful establishment of nucleus blocks and growing systems for the commercial production of pathogen-free pelargoniums. From that small beginning has emerged an industry of international proportions.

Dr. Tammen's contributions to the American Phytopathological Society and to the profession are many. As councilor, and subsequently as president, he recognized the importance of strong leadership and a strengthened central staff with greater responsibilities. His efforts helped in the creation of the Plant Disease Management Coordinating Committee, which brought together pathologists with diverse interests to meet common goals. He originated the Public Responsibilities Committee, initiated the Past Presidents' Committee, and was active in creating the Long-Range Planning Committee. He visualized the role the Society could play as a leader among sister societies when he served as co-founder of the Intersociety Consortium for Plant Protection.

George Earl Templeton



George Earl Templeton was born in Little Rock, AR, on June 27, 1931. He received his B.S.A. and M.S. degrees in 1953 and 1954 from the University of Arkansas, Fayetteville, majoring in agriculture and plant pathology. He served two years at Fort Detrick Biological Warfare Center during active duty in the U.S. Chemical Corps from 1954 to 1956. He then entered the University of Wisconsin, Madison, and working under the supervision of J. G. Dickson, he received the Ph.D. degree in 1958 with

a thesis on the effect of *Fusarium moniliforme* on germination of barley. His professional career began as an assistant professor in the Department of Plant Pathology, University of Arkansas, Fayetteville, in 1958. He rose to the rank of associate professor in 1962 and professor in 1967. His major activities include research on rice diseases, fungal toxins, and biocontrol of weeds with plant pathogens. He teaches a course on Identification of Plant Pathogens. From 1961 to 1969 he directed a NSF Undergraduate Research Participation Program in Plant Pathology. Dr. Templeton, with his colleagues and students, was one of the first to recognize the potential of indigenous endemic pathogens for biological control of weeds in annual crops and to coin the term mycoherbicide.

In 1967, Dr. Templeton and co-workers discovered and purified tentoxin, a chlorosis-inducing toxin produced by *Alternaria tenuis*. The toxin was later characterized, with colleagues in chemistry, to be a cyclic-tetrapeptide and its structure was determined. The mode of action of this toxin has been the subject of many recent studies by several workers interested in chloroplast formation and as a tool to identify cytoplasmic parents after somatic hybridization of plant cells.

In 1972, a Canadian patent for herbicidal use of this toxin was issued. The biological and technical feasibility of the mycoherbicide concept culminated in 1982 with the EPA registration and commercial sale of Collego™, a dry formulation of conidia of *Colletotrichum gloeosporioides* f. sp. *aeschynomene*, establishing a number of firsts in plant pathology. Dr. Templeton is now recognized as a leader and a pioneer in the use of indigenous fungal pathogens as mycoherbicides. He is author of more than 100 publications, one of which was judged to be the outstanding contribution to *Weed Science* in 1973. In 1979, he was awarded the John W. White Award for Excellence in Agricultural Research by the University of Arkansas.

In 1980, he served for six months on the program planning staff of USDA Science and Education Administration as program coordinator for biological control. He has served on two NSF advisory panels on agricultural productivity in Taiwan. In 1983 he was a visiting scientist at the South African universities of Stellenbosch, Fort Hare and Natal; also in England at the Weed Research Organization at Oxford and at other universities and research stations in England and Scotland. He is currently serving as a collaborator with the Egyptian Ministry of Agriculture on a USAID project to establish a rice research and training center in the Nile Delta.

Dr. Templeton was instrumental in establishing the American Phytopathological Society Committee on Biological Control and served as its first chairman. He has also served on various other committees of the Society. He was active in the development of Southern Regional Project S-136 on biocontrol of weeds with plant pathogens and was chairman of the first technical committee. He was the secretary and later the president of the Arkansas Academy of Science between 1964 and 1972. He served as the president of the Fayetteville chapter of Sigma Xi in 1979–1980. He is also a member of Gamma Sigma Delta, the American Institute of Biological Sciences, Mycological Society of America, Rice Technical Working Group, Weed Science Society of America, the

International Weed Science Society, and the Weed Science Society of Thailand.

Sue Ann Tolin



Sue Ann Tolin was born on November 29, 1938, near Montezuma, IN, and grew up on a farm in Parke County in that state. She obtained her B.S. degree in agricultural science in 1960 from Purdue University. The M.S. and Ph.D. degrees in botany were earned from the University of Nebraska in 1962 and 1965, respectively, where she began work on plant viruses.

She returned to Purdue for a year as a research associate. In 1966 she joined the Department of Plant

Pathology and Physiology at Virginia Polytechnic Institute, Blacksburg, became associate professor in 1971, and professor in 1983. In 1978 she began an association with the Cooperative State Research Service of the U.S. Department of Agriculture while maintaining her research and teaching responsibilities at Virginia Tech.

Dr. Tolin has established an internationally recognized virus research program in Virginia, identifying and characterizing several viruses in peanuts, soybeans, corn, tobacco, and other field crops. She has interests in virus purification and characterization, serological methods for rapid virus identification and diagnosis, and electron microscopy. Through cooperative programs with plant breeders and geneticists, she has been instrumental in developing virus resistant cultivars and studying the genes of host plants that impart resistance to certain viruses, and in recognizing and characterizing virus strains that overcome the resistance genes. In these areas, she has made significant contributions to the study of several viruses, including peanut stunt, cucumber mosaic,

tobacco mosaic, maize dwarf mosaic, tobacco vein mottling, soybean mosaic, and peanut mottle viruses.

Dr. Tolin has been active in several regional, national, and international projects and working groups on plant virus diseases. She teaches plant virology and has collaborated in teaching general and advanced molecular virology courses at Virginia Tech, in which plant and animal viruses are fully integrated, and she has supervised the training of several graduate students. She is widely sought for lectures and seminars and has been an invited speaker at national meetings of other professional organizations and at several universities.

Through her work with the Department of Agriculture in Washington, DC, Dr. Tolin has provided unique service to plant pathology. Since 1978 she has been speaking for agriculture, basic plant science research, and plant molecular biology, as well as plant pathology, in various agencies and forums at the national level. The Department of Agriculture appointed her as their representative to the NIH Recombinant DNA Advisory Committee in 1979, a position which she continues to hold. She has been instrumental in relaxing the containment levels for research with recombinant DNA molecules of importance to plant pathology, including the Ti plasmid of *Agrobacterium tumefaciens*, and in gaining federal approval for growing plants containing recombinant DNA in field tests and for releasing the ice nucleation negative bacteria for increasing resistance to frost damage. Dr. Tolin has also served on several special committees, panels, and review groups for the National Science Foundation, the NIH Office of Recombinant DNA Activities, the Agency for International Development, and the Environmental Protection Agency, as well as the Department of Agriculture.

Her service to the American Phytopathological Society began through membership on the Plant Virology Committee for an extended term, and included activities of chairing the committee and co-editing the first two Virus Slide Set series. She was a member of the first editorial board of the *Plant Disease Reporter* and the organizing committee of the Diamond Jubilee Meeting, as well as the first committee on the Status of Women in Plant Pathology. She is also active in the Potomac Division of APS.