

Strategic Planning for the Florida Citrus Industry: Addressing Citrus Greening Disease

Committee

George Bruening

Chair

Dr. Bruening's research interests are in the area of replication mechanisms of plant viruses and how these mechanisms may be interdicted by plant genes, subviral agents, or engineered genes. He specializes in plant resistance against viruses and bacteria, biotechnology in plant pathology and agriculture. He has held several editorial positions including: Associate Editor and Editor of Virology and founding Editor-in-Chief of Molecular Plant-Microbe Interactions. Dr. Bruening is a member of the California Department of Food and Agriculture Pierce's Disease Advisory Task Force (2007-present). He was the director of the Center for Engineering Plants for Resistance Against Pathogens (CEPRAP), a National Science Foundation Science and Technology Center at the University of California, Davis (1991-2002); and is currently the director of the University of California Pierce's Disease Grants Program (2006-present). He teaches general undergraduate courses in agricultural biotechnology and graduate courses in plant virology and general virology. Dr. Bruening has been widely recognized through honors such as the NSF Postdoctoral Fellowship (1965-1966); the John Simon Guggenheim Memorial Foundation fellowship, (1974-1975); and the Award of Distinction, College of Agricultural and Environmental Sciences, University of California at Davis, 2008. He was elected as an NAS Member in 1992. He served as the Chair of the Parent Committee on the Review of Citrus Greening Proposals in 2008. Dr. Bruening received his Ph.D. in Biochemistry from the University of Wisconsin, Madison.

Joseph-Marie Bove

Member

Dr. Bové has been an Emeritus Professor of microbiology at the University of Bordeaux 2 since 1999. Prior to this, Dr. Bové was President of the National Institute for Agricultural Research (INRA) at Bordeaux from 1984–1994. He served from 1981–1992 and 2004–2007 as part-time consultant for the Food and Agriculture Organization (FAO) to survey for citrus diseases in the Near East and the Middle East. During these surveys, he discovered huanglongbing (HLB) in Saudi Arabia, Yemen, Somalia, Laos, Myanmar, Cambodia, Vietnam and Bhutan. He is a member of the French Academy of Agriculture, a corresponding member of the French Academy of Science, a member of the Brazilian Academy of Science, an elected fellow of the American Phytopathological Society, the American Academy of Microbiology, and the International Organization of Citrus Virologists (IOCV). He served as president of IOCV from 1969–1972 and president of the International Organization for Mycoplasma, from 1992–1994. Since 2004, when HLB was identified in Brazil, this destructive disease of citrus has become Bové's major occupation in Brazil and other affected countries. Dr. Bové has over 250 publications in international and refereed journals and holds a Ph.D. from the University of Paris, France.

Paul Citron

Member

Mr. Paul Citron is currently an adjunct faculty member at the University of California, San Diego and Riverside, Department of Bioengineering. He served for 32 years at Medtronic, where he was named Vice President of Technology Policy and Academic Relations in May, 2002 till his retirement in December, 2003. He was responsible for identifying and addressing public policy matters that affect medical technology innovation and for working with leading biomedical engineering institutions. Citron was elected as an NAE member in 2003. He was elected as a Founding Fellow of the American Institute of Medical and Biological Engineering in 1993, received the American College of Cardiology Governor's Award for Excellence twice and was inducted as a Fellow of the Medtronic Bakken Society in 1980. He was voted the Institute of Electrical and Electronics Engineers (IEEE) Young Electrical Engineer of the Year in 1979. He has authored numerous publications including refereed articles in the IEEE Transactions on Rehabilitation Engineering journal, and holds several medical device pacing-related patents. In 1980 he was given Medtronic's "Invention of Distinction" award for his role as co-inventor of the timed pacing lead. Mr. Citron has served on many management committees and advisory boards, including the NRC Biomedical Engineering Materials and Applications Roundtable (2001–present). Mr. Citron holds a M.S. in electrical engineering from the University of Minnesota.

Philip W. Miller

Member

Dr. Miller currently serves as Vice President of U.S. Product Management in the Monsanto U. S. Organization. He is responsible for product portfolio planning and execution throughout the product life cycle, including: gathering and prioritizing product and customer requirements, defining the product vision, and working closely with research and development, corporate strategy, sales, marketing and support groups. Dr. Miller joined Monsanto in 1994 and has held numerous roles in the Monsanto Technology organization, spanning Chemical Discovery, and Biotechnology Research and Development. Key roles include director of Biotechnology Crop Yield Enhancement and Crop Genomics research, and Monsanto/Ceres Research Collaboration Lead. Prior to his current appointment, he served as the institute director of the Monsanto Mystic Connecticut Research Center and Biotechnology Corn Pipeline Strategy Lead. Dr. Miller served on the U.S. Department of Agriculture, National Institute of Health, and National Science Foundation sponsored review panels, and as a scientific reviewer for numerous journals. He is the inventor on numerous patents and an author on seventeen scientific papers and book chapters. Dr. Miller earned his Ph.D. in Biochemistry and Molecular Biology from the University of Florida.

Lowell R. Nault

Member

Dr. Nault has extensive research experience in the transmission of plant pathogens by arthropods and in the evolutionary biology of vectors and plant pathogens. He has worked in collaboration with U.S. Department of Agriculture entomologists on a spectrum of problems ranging from molecular to landscape ecology, especially maize vectors and pathogens. Dr. Nault has authored over 100 peer-reviewed articles and co-edited the text *The Leafhoppers and Planthoppers*. Nault is a fellow of several professional societies, including the American Phytopathological Society, the Entomological Society of America, and the American Association for the Advancement of Science. He served as president of the Entomological Society of America from 1990-1991. He was one of six Ohio State University faculty selected in 1999 as a "Distinguished Scholar." In 1982, and again in 1985, he served as Program Manager for the U.S. Department of Agriculture Competitive Research Grants Office (entomology, plant pathology, nematology, and weed science programs). From 1995 until he retired (2002), he served as Associate Director of the Ohio Agricultural Research and Development Center and as Interim Director in 1999. Dr. Nault received his Ph.D., with a major in Entomology and minor in Plant Pathology, from Cornell University.

MaryLou L. Polek

Member

Dr. Polek is responsible for implementing the industry-funded action program against the Asian citrus psyllid and Huanglongbing disease. A plant pathologist who has specialized in citrus, she brings to the job more than 30 years' experience in plant disease diagnostics and laboratory management. Polek serves on the executive committee of the California Huanglongbing Task Force and chairs the science and technology advisory committee of the Task Force. Prior to CRB, Dr. Polek completed a 14-year tenure at the California Department of Food and Agriculture (CDFA) where she served in both the Integrated Pest Control and Emergency Projects branches. Most recently she served as program manager and plant pathologist for the Central California Tristeza Eradication Agency. Prior to her work with CDFA, Dr. Polek was a researcher at UC/Riverside in the Plant Pathology and Botany, and Plant Sciences departments, and earlier in her career she was an instructor for biology laboratory classes at Saddleback College. She has published in refereed professional journals including *Phytopathology* and *Plant Diseases*, and is a member of the American Phytopathological Society, and the International Organization of Citrus Virologists, among others. Dr. Polek earned her doctorate in plant pathology from the University of California, Riverside.

Howard-Yana Shapiro

Member

Dr. Howard-Yana Shapiro is the Global Director of Plant Science and External Research for Mars Incorporated and Adjunct Professor in the College of Agriculture and Environmental Sciences at the University of California, Davis where he chairs the Advisory Board for the Agricultural Sustainability Institute. He leads the Mars global effort on the sequencing, annotation and assembly of the *Theobroma cacao* genome. Dr. Shapiro has been involved with sustainable agricultural and agroforestry systems, plant genetics and food production systems for over 40 years with projects in the U.S., the EU, Mexico and Latin America, South America, and West Africa. A two-time Fulbright Scholar, twice a Ford Foundation Fellow and winner of the National Endowment for the Humanities Award, Dr. Shapiro is formerly a university professor and for the last eleven years has been Vice President for Agriculture for Seeds of Change. During 2006 he was one of the founding members of the Sustainable Agriculture Roundtable for the Keystone Center involving representatives from all sectors of the agriculture production cycle through manufacturing. He also chaired the organizing committee for the NAS international cacao science symposium "Theobroma cacao: The Tree of Change". He is now serving as Co-Chairman for the Second World Congress of Agroforestry to be held in Nairobi in 2009. In 2007 he was awarded the Organic Leadership Award from the Organic Trade Association. In 2008 he was named a World Agroforestry Centre Fellow, for his outstanding contribution to multifunctional agroforestry and global land-use issues.

Anthony M. Shelton

Member

Dr. Shelton is responsible for developing sound insect pest management strategies for vegetables, with spin-offs for other crops. Components of his program stress insect population ecology, biological control, plant resistance, agricultural biotechnology, insecticide resistance, insect movement, trap cropping, and plant productivity and marketability as a function of insect infestations. His program works with presently available strategies and helps incorporate them into pest management programs, and develops new strategies for the future. Most of Dr. Shelton's teaching responsibilities involve guest lectures on biotechnology, integrated pest management, and international agriculture. His international activities are focused primarily in India, China, and Latin America. He is a member of the Entomological Society of America, the Society for Invertebrate Pathology, and the National Agricultural Biotechnology Council. Dr. Shelton has served on numerous panels, including as presenter to the 2002 NRC Committee on the Biological Containment of Genetically Modified Organisms and the 2007 U.S. Agency for International Development Plant Biosafety Systems Review Panel. He has received several national awards for his work, including the Entomological Society of America's Award for Integrated Pest Management and the Recognition Award for Agricultural Research. Dr. Shelton has a Ph.D. in Entomology from the University of California, Riverside.

Lavern W. Timmer

Member

Dr. L. W. Timmer is considered the leading citrus pathologist in the Americas and is known worldwide for his pathology and citricultural expertise. He has contributed substantially to the field of the etiology, epidemiology, and control of fungal and bacterial diseases of citrus fruits and foliage, and has investigated problems such as blight, viral, and soil-borne diseases. Dr. Timmer held a position with University of Florida-CREC where he served from 1978 until he retired in 2006. Dr. Timmer is fluent in Spanish and has given numerous invited presentations worldwide and collaborated on many international research projects. Dr. Timmer has been Associate and Senior Editor of *Phytopathology* and *Plant Disease*, and was Senior Editor of the *Compendium of Citrus Diseases* and *Citrus Health Management*. He has numerous publications of refereed articles in journals including *Plant Disease* and *Phytopathology*, and has authored or edited several books on citrus health. He received the International Organization of Citrus Virologists Special Award for Exceptional Research in 1989, the Citrus Research and Educational Scientist of the Year Award in 1995, the Lee Hutchins Award for excellence in research on fruit crops in 1996, and is a Fellow of the American Phytopathological Society. He received his B.S. in Botany and Plant Pathology from Michigan State University and his Ph.D. from the University of California at Riverside.

James H. Tumlinson, III

Member

Dr. Tumlinson has done pioneering work on chemical communications between plants and insects, including volatile signals that attract natural enemies of insect pests of plants. He is a world leader in characterizing pheromones from diverse insect species and turning basic discoveries on chemical communications into novel insect management strategies. Dr. Tumlinson currently collaborates with scientists in Brazil, Japan, and South Africa to investigate plant-insect interactions and plant defenses. He focuses on the development of fundamental knowledge and principles that can be applied in environmentally safe pest management programs. Dr. Tumlinson's recognition includes the J.E. Bussart Memorial Award from the Entomological Society of America, 1990; The U.S. Department of Agriculture (USDA) Secretary of Agriculture's Award for Personal and Professional Excellence, 1995; and the Presidential Rank Award as a Meritorious Senior Professional in USDA, 2003. He was elected to the NAS in 1997. He has published hundreds of refereed articles, conference papers, and reviews in journals including the Journal of Chemical Ecology and the Proceedings of the NAS. Dr. Tumlinson earned his Ph.D. in Organic Chemistry from Mississippi State University.

Raymond K. Yokomi

Member

Dr. Ray Yokomi has over 30 years of research experience in both applied and basic aspects of entomology, insect vectors, and plant pathology. He is recognized for his contributions in aphid transmission and characterizations of Citrus tristeza virus (CTV), detection and epidemiology of *Spiroplasma citri*, biological control of aphids, and plant-whitefly interactions and associated phytotoxemias. Dr. Yokomi joined U.S. Department of Agriculture (USDA), ARS in 1982 as an entomologist. Since 1997, his research has expanded to plant pathology, in particular the biological and molecular characterization of CTV and *S. citri*, the causal agent of citrus stubborn disease. Dr. Yokomi has served on various task forces in Florida and California on CTV and *Toxoptera citricida*, the brown citrus aphid. He is a member of the team that developed the Recovery Plan for Huanglongbing (Citrus Greening) for the USDA Animal and Plant Health Inspection Service National Plant Recovery System. He was a member of the parent Committee on the Review of Citrus Greening Proposals in 2008. Dr. Yokomi has a Ph.D. in Entomology from the University of California, Davis.