



Perspectives on Global Plant Breeding

1st Annual Graduate Student Plant Breeding Symposium

Friday, January 27, 2012

View the [symposium presentations](#) online!

Featured Speakers

Exploring the Taxonomy for Plant Breeders

Dr. David Spooner, University of Wisconsin-Madison/USDA-ARS

Dr. David Spooner is a research scientist with the USDA Agricultural Research Service and professor in the Department of Horticulture, University of Wisconsin-Madison. He has spent the last 24 years studying the species boundaries and phylogenetic relationships of wild and cultivated potatoes (*Solanum* sect. *Petota*), tomatoes (*Solanum*sect. *Lycopersicon*), and recently carrots (*Daucus*) using morphological and molecular data, and serves as a germplasm collector of these species throughout the natural ranges of these species. Since 1984, he has completed 18 expeditions collecting wild germplasm in as many countries, primarily in Central and South America. Dr. Spooner earned three degrees in botany: a Ph.D. from Ohio State University, an M.S. from Ohio University, and a B.A. from Miami University (Ohio).



Adapting Maize and Sorghum to Stressful Environments

Dr. Mitch Tuinstra, Purdue University

Dr. Mitch Tuinstra is an alumnus of Purdue University with graduate degrees in Molecular Genetics and Plant Breeding. He began his professional career as a sorghum breeder working on the faculty at Kansas State University. His program at K-State focused on developing new hybrid cultivars adapted to the drought-prone environments of the Central Plains of the U.S. and in West Africa. In 2007, he joined the faculty at Purdue University as Professor of Plant Breeding and Genetics and Wickersham Chair of Excellence in Agricultural Research. His research and teaching programs focus on corn and sorghum crop improvement with projects in crop genetic resources and technology development for a number of biotic and abiotic stress tolerance traits.



Capturing Positive Transgressive Variation in Rice from Wild and Exotic Germplasm Resources

Dr. Susan McCouch, Cornell University

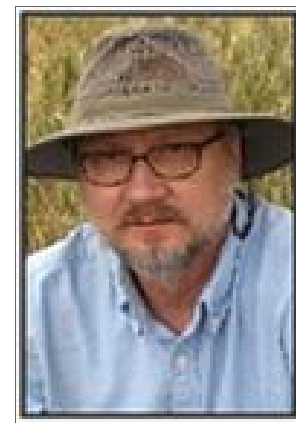
Dr. Susan McCouch is a Professor of Plant Breeding and Genetics and of Plant Biology at Cornell University. She received her PhD from Cornell in 1990 and spent 5 years with the International Rice Research Institute (IRRI) in the Philippines before joining the Cornell faculty in 1995. Her research focuses on rice and includes publication of the first molecular map of the rice genome in 1988, early QTL studies on disease resistance, drought tolerance, maturity and yield, development of the essential repertoire of SSR markers now used globally as a genomic resource in rice genetics and breeding, and cloning of genes underlying critical traits for rice improvement. Her current work focuses on rice domestication and the identification and characterization of genes and quantitative trait loci (QTL) from low-yielding wild and exotic *Oryza* species that enhance the performance of modern rice cultivars. She has trained scores of young scientists throughout the world, was recently elected a fellow of the AAAS and has received numerous research, teaching and faculty awards.



National and International Efforts to Breed Wheat for Resistance to Stem Rust Ug99

Dr. David Marshall, North Carolina State University/USDA-ARS

Dr. David Marshall has developed international, multidisciplinary, problem-solving programs on the genetic improvement of cereals (wheat, oat, barley, and triticale) and the epidemiology of cereal diseases in private industry (North American Plant Breeders, Inc; became AgriPro, Inc in 1984) from 1982-1985; at Texas A&M University from 1985-2002; and with the USDA-ARS from 2002-present. The cultivars he has developed have enhanced grain and forage yield, disease and insect resistance, environmental stress resistance, and superior end-use quality. He developed the first two specialty hard wheats for the humid areas of the eastern U.S. In his current assignment with USDA/ARS, Dr. Marshall has developed a wide array of wheat germplasm that incorporates disease resistance from wheat progenitors into germplasm adapted throughout the world. Dr. Marshall has identified many sources of resistance (especially to powdery mildew, stripe rust, leaf rust, and stem rust of wheat) that are available for breeders to incorporate into their specific germplasm and lines. Dr. Marshall serves as a key leader in the organization of global research into Ug99 wheat stem rust and has developed Ug99 resistant wheat varieties and germplasm, and distributed these throughout the world. He is presently serving ARS as the National Program Leader for Grain Crops. He earned his M.S. from Louisiana State University in 1979 and his Ph.D. from Purdue University in 1982. He has served as the Scientific Quality Review Officer for ARS and has received many honors and awards.



National and International Efforts to Breed Wheat for Resistance to Stem Rust Ug99

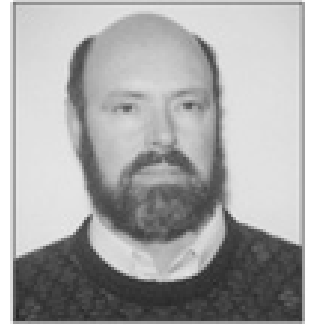
Dr. Lynn Senior, Syngenta Biotechnology, Inc

Dr. Lynn Senior leads the Functional Genomics Team in the Omics group at Syngenta Biotechnology, Inc. located in Research Triangle Park, NC. Her current team is responsible for the functional validation of candidate genes in all crops and the identification of new alleles for trait optimization. Dr. Senior earned her Ph.D. from NCSU in Genetics in 1997 during a ten year career with USDA-ARS as a maize geneticist and manager of a molecular marker laboratory. Prior to that, she received a B.S. in Plant Science from Cook College, Rutgers University, NJ and an M.S. in Agronomy from Virginia Tech and worked as an agronomic technician for 5 years. Dr. Senior joined Syngenta, (then Novartis), in 1998. While at Syngenta, she has contributed to several projects aimed at utilizing genomic information and genetic diversity for crop improvement in maize, including the development of Syngenta's allelic diversity platform and the improvement of grain protein content. She managed the maize yield program from 2005 – 2009.



New Opportunities in Vegetable Breeding through Breeding Technologies

Marlin Edwards, Seminis (Monsanto Company)



Dr. Marlin Edwards joined Seminis in 2005 as the vice president of company's global research organization. Most recently he led Breeding Technology at Monsanto where he developed the world's foremost high-throughput genotyping lab. This allowed as much as 35% of Monsanto's plant breeding programs to be based on genetic marker-enabled selection. He has been involved in multiple aspects of agricultural research plant breeding and biotechnology since he completed his post-doctoral research at North Carolina State University where he conducted pioneering research into the application of molecular markers in plant breeding in the mid-1980s. He has experience in breeding field corn sweet corn peppers and cucumbers. He earned a Ph.D. in Plant Breeding and Genetics a M.S. in Horticulture from the University of Wisconsin at Madison and a B.S. in the Agriculture Honors Program from Kansas State University.

Please direct any questions or concerns regarding the symposium to Dr Charlie Stuber.

Hosted by the North Carolina State University Plant Breeding Graduate Student Association, affiliated with [The Center for Plant Breeding and Applied Plant Genomics](#).

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