The Schroth Faces of the Future Symposium, established through an endowment from Milt and Nancy Schroth and organized by the Early Career Professionals Committee with support from the APS Foundation, acknowledges early career scientists whose research and forward thinking have positioned them to be the “up and comers” in their field. This year’s symposium, “Forging New Frontiers in Plant Bacteriology” will feature presentations from Lindsay R. Triplett, Leonardo De La Fuente, Wenbo Ma, and Dawn R. D. Bignell. Speakers were selected through a formal competition by a panel composed of distinguished members of the Bacteriology Committee and each speaker will receive a $500 travel award. The symposium is scheduled for Wednesday, August 8, 2012, from 1:00 to 4:00 p.m. at the APS Annual Meeting in Providence, RI.

Triplett is a post-doctoral fellow with Jan Leach in the Department of Bioagricultural Sciences and Pest Management at Colorado State University in Fort Collins, CO. She obtained a B.A. degree in biology with a minor in chemistry in 2004 from Earlham College in Richmond, IN. Leaving the Hoosier state for a more northern climate, Triplett joined the lab of George Sundin at Michigan State University (MSU), where she earned her Ph.D. degree studying the role of the Erwinia amylovora type III secreted chaperone DspF and its interaction with the effector DspE in conferring virulence. In 2010, Triplett did a brief tour of duty as a research associate in bioinformatics and programming in Perl. At present, Triplett employs her knowledge of phytopathobiology and bioinformatics to study genomic diversity and mechanisms of pathogenicity and improve diagnostics of the rice pathogens Xanthomonas and Pseudomonas. She is the recipient of an APS Education Fellowship and was selected for the 2011 Short Course in Rice Research and Production at the International Rice Research Institute in the Philippines. Triplett is also the recipient of a USDA NIFA AFRI fellowship grant entitled “Plant-based detection of food safety pathogens,” which is allowing her to research the utility of “phytodetectors” as an efficient, cost-effective method for detecting human pathogens on produce. She is actively involved in APS and a member of the Bacteriology Committee, Biotechnology Committee, and the adhoc committee on innovation and entrepreneurship.

Leonardo De La Fuente is an assistant professor in the Department of Entomology and Plant Pathology at Auburn University in Auburn, AL. He obtained his undergraduate degree in biochemistry and his master’s degree in biology with a minor in microbiology from the University of the Republic in Montevideo, Uruguay. During his tenure in Uruguay, he participated in a number of projects involving the biological control of legume pathogens, the acquisition of iron by select strains of Rhizobium, and the reduction of chemical inputs through the use of beneficial root microorganisms. For his Ph.D. studies, De La Fuente joined the Department of Plant Pathology at Washington State University in Pullman, WA, where he explored rhizosphere colonization by 2,4-diacetylphloroglucinol (DAPG)-producing strains of Pseudomonas fluorescens under the guidance of Dave Weller and Linda Thomashow. In 2005, De La Fuente took a post-doctoral research position with Thomas Burr and Harvey Hoch at Cornell University, where he studied the biology of Xylella fastidiosa, the cause of Pierce’s disease. Today, he continues to study X. fastidiosa and is leading research to determine whether or not infection by this bacterium influences the plant’s mineral composition and how this could affect disease development. In addition, he is also adapting nanotechnology techniques used to develop microfluidic chambers to study the species of Candidatus Liberibacter that are associated with huanglongbing (citrus greening disease). De La Fuente has authored/coauthored 27 peer-reviewed articles and is the recipient of a number of honors, including the Storkan-Hanes-McCaslin Foundation Research Fellowship. He serves as associate editor for Agrocincia and is a member of the American Society for Microbiology. In 2012, he celebrated his tenth year as a member of APS and currently serves as the vice chair of the Bacteriology Committee.

Wenbo Ma is an assistant professor in the Department of Plant Pathology and Microbiology at the University of California-Riverside in Riverside, CA. She received a B.Sc. degree from Beijing Normal University and an M.Sc. degree in microbial genetics from the Institute of Microbiology, Chinese Academy of Science. For her Ph.D. degree, Ma studied the process of nodulation by Rhizobium spp. under the tutelage of Bernard Glick at the University of Waterloo in Ontario, Canada, which garnered her five peer-reviewed manuscripts, one review, and one book chapter. Following her Ph.D. degree, she joined the Department of Cell and Systems Biology at the University of Toronto as a post-doctoral fellow, where she commenced her research on the evolution and function of type III effectors of Pseudomonas syringae. Today, Ma’s research focuses on the role of the P. syringae effector HopZ1 in disease development, as well as those effectors secreted by Xylella fastidiosa and Phytoplasma, which do not use the type III system. In addition, Ma is actively developing detection tools for citrus stubborn disease and huanglongbing, two diseases that severely impact the U.S. citrus industry. She is the recipient of several awards and grants, including one from NSF to study recognition specificity of HopZ1. Ma is a member of the International Society for Molecular Plant-Microbe Interactions and has served as a panelist for USDA CSREES, NSF, and USDA-NIFA proposals. She currently is serving as an associate editor for Acta Microbiology Sinica and Phytopathology.

Dawn R. D. Bignell is an assistant professor in the Department of Biology at Memorial University in Newfoundland, Canada. She obtained her undergraduate degree in biotechnology from the University of Manitoba, where she studied the use of a lux-based bioreporter for measuring mercury.
levels in aquatic systems. She joined the lab of Brenda Leskiw in the Department of Biological Sciences at the University of Alberta, where she earned her Ph.D. degree studying the function of the blbG locus in Streptomyces coelicolor. Following her Ph.D. degree and spurred on by her fascination with Streptomyces spp., Bignell initiated a collaborative project with Susan Jensen at the University of Alberta that led to the identification and characterization of the first global regulator of antibiotic production in S. clavuligerus. Before settling into her current position, Bignell also spent time at the University of Leicester (United Kingdom) in the Department of Biochemistry studying tylosin production in S. fradiae with Eric Cundliffe and at Cornell University in Ithaca, NY, researching the function and evolution of pathogenicity in S. scabies, S. turgidiscabies, and S. acidiscabies with Rosemary Loria. Today, she continues to explore the mechanisms of virulence in species of Streptomyces. Bignell is a member of the Canadian Society of Microbiologists and serves as an ad-hoc reviewer for nine journals, including MPMI. She has authored/coauthored 11 peer-reviewed manuscripts and is the recipient of numerous awards and grants, including a USDA-AFRI grant (Co-PI) to study virulence gene regulation in S. scabies-potato interaction.

OSU Dedicates Phytotron at OARDC

This spring, the Department of Plant Pathology of The Ohio State University dedicated a fully renovated phytotron at the Ohio Agricultural Research and Development Center in Wooster, OH. The $2 million facility, housed in Selby Hall, includes 16 new Conviron growth chambers with a total of 610 square feet of growing space and online monitoring capabilities. Additionally, the upgrade includes an insect transfer room, fixed and mobile mist benches, and a central chiller system. The phytotron will support the department research in all areas of plant pathology.

People

Student Degrees and Awards

Nathan Bestor successfully completed requirements for an M.Sc. degree in plant pathology from Iowa State University (ISU). His thesis, “The effect of fungicides on soybean in Iowa applied alone and in combination with insecticides in disease severity and yield,” was conducted under the direction of Alison Robertson, associate professor of plant pathology. Bestor is currently working as an extension specialist in the ISU IPM program with Daren Mueller, an assistant professor in the Department of Plant Pathology and Microbiology.

The Department of Crop Sciences at the University of Illinois, Urbana-Champaign, had several graduate students graduate from the Plant Pathology Program in the last year. Bernarda Calla received a Ph.D. degree in May 2012. Bernard’s dissertation was “Host and pathogen genomics: The molecular repertoire of soybean and Sclerotinia interactions.” She was advised by Steven Clough. Sushma Jossey received a Ph.D. degree in May 2012. Jossey’s dissertation was entitled “Role of virus genes in seed and aphid transmission and development of a virus-induced gene silencing system to study seed development in soybean.” She was advised by Les Domier. Shin-Yi Lee Marzano received a Ph.D. degree in May 2012. Marzano’s dissertation was entitled “Assessment of disease suppression in organic transitional systems.” She was advised by Darin Eastburn. Ramya Vittal received a Ph.D. degree in May 2012. Vittal’s dissertation was “Detection of viable urediospores, morphological characterization in resistant and susceptible genotypes, and germ tube anastomosis of Phakopsora pachyrhizi.” She was advised by Glen Hartman. Guirong Zhang received a Ph.D. degree in May 2012. Zhang’s dissertation was entitled “Cercospora sojina: Over-winter survival and fungicide resistance.” She was advised by Carl Bradley.

Jafe Weems received an M.S. degree in August 2011. Weems’ thesis was entitled “Effect of fungicide seed treatments on Fusarium virguliforme and development of sudden death syndrome in soybean.” He was advised by Bradley. Ren Zhang received an M.S. degree in December 2011. Zhang’s thesis was “Interactions of post emergence herbicides, strebultin fungicides and Rhizoctonia root rot of soybean.” He was advised by Eastburn.

The Ohio Agricultural Research and Development Center (OARDC) at The Ohio State University announced the winners of its annual research poster competition, held on April 26 as part of the center’s 2012 Annual Research Conference in Wooster. From the Department of Plant Pathology, Jinnan Hu was awarded second place in the Ph.D. student category for her poster “Genomic characterization of the conditionally dispensable chromosome in Alternaria arborescens provides evidence for horizontal gene transfer” (Thomas K. Mitchell, advisor). In the post-doctoral researchers category, awardees included Sourav Chakraborty, first place, “Evaluation of the fluorometric probes dichlorofluorescein (DCFH) and amplex red for quantitation of reactive oxygen species (ROS) in plants,” (Pierluigi Bonello, advisor), and Sunjeong Park, second place, “Bacteria and algal cell ratio modification in algae based biofertilizer and enhanced effect on wheat growth promotion,” (Brian McSpadden Gardener, advisor), OARDC Director Steve Slack also spoke at the conference.

Rachel Koch, a Ph.D. student in the Department of Plant Pathology and Crop Physiology, Louisiana State University (LSU), recently won two highly competitive student grants. The first was the Forest Fungal Ecology Grant from the Mycological Society of America. This award is given to one student each year and supports ecological studies of fungal interactions in old growth forests. The second is a student grant from the Explorers Club, a professional society that focuses on linking field research and exploration. This award supports doctoral students pursuing field research in remote locations. With these awards, Koch will be able to cover the cost of her research trip to the remote forests of the Guiana Shield. During her research trip and for her dissertation, she will be studying a novel fungal/insect interaction. A newly described fungus that is endemic to the Guiana Shield was found to have termites feeding on it—an occurrence thought not to exist outside of Africa. Koch is advised by Catherine Aime and is finishing her first year at LSU.