WSU Plant Pathology Seminar Series

Pathogens and Endophytes: An Evolutionary Model for Emergence of Plant Pathogenicity in *Fusarium oxysporum*

**Professor Maria del Mar Jimenez-Gasco**
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Knowledge on population biology and ecology of soilborne fungal plant pathogens has been derived largely from research on fungal-plant interactions that result in plant diseases. The ecology and diversity of these fungi, when not causing disease, has virtually been ignored in plant pathology. Dr. Jimenez-Gasco will discuss the vascular wilt fungus *Fusarium oxysporum*, a well-known plant pathogen with cryptic endophytic biology. Using a population biology approach, she will present ecological and evolutionary scenarios that explain the emergence of plant pathogenicity. The dual lifestyle of these fungi, pathogenic on certain plants and endophytic on others, raises interesting questions about the biology, ecology, persistence, and spread of these fungi, which have very important potential implications in disease management in agroecosystems.

Maria del Mar Jimenez-Gasco is a professor in the Department of Plant Pathology and Environmental Microbiology at The Pennsylvania State University. Her undergraduate degree and Ph.D. are from the University of Córdoba, Spain. After a postdoc at Penn State with David Geiser, she joined Penn State plant pathology faculty in 2005. Dr. Jimenez-Gasco received the North American Colleges and Teachers in Agriculture (NACTA) Educator Award (2020), and the APS Excellence in Teaching Award (2021). Her research program focuses on microbial ecology and population biology of plant-associated microbes, with emphasis on vascular wilt fungi. She is particularly interested in the emergence and evolution of pathogenicity and virulence in fungal populations, using *Fusarium oxysporum* and *Verticillium dahliae* as research systems. Dr. Jimenez-Gasco is a member of the International *Verticillium* Steering Committee.