Transforming Agriculture Webinar Series: Soil and Health

Speaker Bios

Dr. Yakov Pachepsky is a Soil Scientist in the Environmental, Microbial, and Food Safety Laboratory at the Beltsville Agricultural Research Center. He has utilized his expertise as physicist to advance soil physics and hydrology and, more recently, integrate that work with environmental microbiology to address food safety issues. He has proposed and is currently developing a cutting-edge systems-based approach to assess and improve microbial quality of irrigation waters. The research aims to improve food safety by improving detection, monitoring, and management of irrigation waters using remote sensing technologies and artificial intelligence.

For 20 years, Dr. Pachepsky was affiliated with the USSR Academy of Sciences where he conducted and coordinated research programs on soil physics, mechanics, erosion, and land reclamation. Dr. Pachepsky joined ARS in 1999. He became an ARS staff scientist in 2001 and started research on fate and transport of manure-borne pathogenic and indicator microorganisms, and on hydrologic modelling. In 2019, he became a Supergrade scientist. Since joining ARS, Dr. Pachepsky has been invited to lead joint projects with USDA client agencies U.S. EPA and U.S. Nuclear Regulatory Commission, and to participate in collaborative work with U.S. FDA, USDA-NRCS, and with international groups in Spain, UK, Germany, and Korea. He has presented 249 papers at professional meetings, received 138 invitations, and edited 15 books and special journal issues. He has published more than 370 peer-reviewed articles and has run workshops in 25 countries.

Dr. Cristine Morgan is responsible for establishing research priorities to advance soil health and developing the scientific direction, strategy and implementation for soil health research programs. Her duties include leading scientific research that advances soil health science and results in impactful outcomes.

Prior to joining the Institute, Dr. Morgan was a tenured professor of Soil Science at Texas A&M University in College Station, Texas, where she was recognized for outstanding collaboration, teaching, research, and mentoring. Her emphasis was in soil hydrology, pedometrics, and global soil security. Among her many accomplishments, Dr. Morgan conducted ground-breaking research on how management practices influence soil-plant-water relations. She also developed methods that were adopted by the U.S. Department of Agriculture for easily measuring soil carbon. She has a history of applying her knowledge to address real-world problems experienced by farmers and ranchers and is passionate about educating others.

Dr. Morgan is a Fellow of the Soil Science Society of America, she served as a member of the Soil Science Society of America board of directors, and currently serves on the board of the

North American Plant Phenotyping Network. Dr. Morgan is an editor-in-chief at the global soil science journal, Geoderma, and founding editor-in-chief of the journal Soil Security.

Dr. Morgan earned her M.S. and Ph.D. in Soil Science from the University of Wisconsin-Madison, Soil Science Department (2000 and 2003, respectively). Her B.S. degree is in Plant and Environmental Soil Sciences from Texas A&M University, magna cum laude (1998).