



Healthy Plants • Healthy World

The American Phytopathological Society (APS), founded in 1908, is the premier educational, professional, and scientific society dedicated to the promotion of plant health and plant disease management for the global good. The Society represents the interests of nearly 5,000 scientists whose work advances the understanding of the science of plant diseases and its application to plant health.

We appreciate the opportunity to propose areas of national interest that should be given priority. The APS will provide science-based information to stimulate an increase in funding to support research, extension and education objectives.

Education. The U.S. scientific workforce is the backbone of an agricultural system that has provided a bountiful and affordable food supply. However, the historic strength of this workforce is at risk as documented in recent publications from APS (Plant Disease 93: 1238-1251; Plant Disease 93: 1228-1237). APS supports a new paradigm for graduate education in the agricultural sciences. This initiative targets education of plant pathologists and related plant pest disciplines to ensure protection of U.S. domestic food production, and support food production in developing countries to facilitate domestic tranquility. Hence, APS endorses recommendations of the NAS and APLU reports that focus on undergraduates to ensure a pipeline of motivated students is available for graduate programs to provide a sustainable workforce for future scientific advancements. Thus, APS requests that NIFA make development of broadly educated plant scientists a priority by providing project-unrestricted competitive grant program funding.

Food Safety. Since 2008, fresh produce has surpassed meats and other animal products as the food most likely contaminated with human pathogens and causing foodborne illness. Recalls and litigation cost the produce industry millions and impact every industry sector. Fundamental and practical research is needed to identify best management practices and to determine the contamination routes, environmental survival, and interactions between human pathogens and plants. Plant pathologists study how microbes colonize plants and are dispersed in the environment as well as how plants respond to defend themselves. These elements are crucial for the development of intervention strategies to minimize foodborne illnesses. We request that funding to elucidate fundamental and practical knowledge of human pathogen-plant interactions be a priority in the AFRI research agenda.

Plant Associated Microbial Germplasm. Culture collections of plant-associated microbes represent an essential and foundational resource for U.S. science. Microbial collections are used to solve a myriad of practical challenges to our agricultural and environmental systems and play diverse and critical roles in understanding plant resistance to diseases. These public and privately held resources provide a critical link between past and present disease epidemics, facilitate identification of emerging diseases, provide data essential for forensic investigations, and are useful in developing strategies to control plant diseases that impact U.S. agriculture. However, there is little knowledge on the conditions for viable long term curation of the microbes that are in, on or around plants. Support for research on curation of the variety of microbes found in our agroecosystems is needed for us to be truly prepared to respond to emerging diseases or to understand the dynamics of sustainable agroecosystems.

Biofuels and the Changing Environment. Some of the most dramatic plant disease epidemics have resulted from introduction of plants into a new environment or by modifying crop production methods. We lack fundamental knowledge on the maladies that impact novel plants that are candidates for biofuels or new foods, or what anticipated changes in climate will have on the productivity of our current plant production systems. Support for investigations on basic fundamentals of plant health is needed (1) to ensure that production of plants for biobased energy can be accomplished cheaply and effectively with minimal inputs for disease mitigation, and (2) that cropping systems remain economically viable and productive in the world's changing climate.