



Healthy Plants • Healthy World

The American Phytopathological Society (APS), founded in 1909, is the premiere educational, professional and scientific society dedicated to the promotion of plant health and plant disease management for the common good. The Society, representing the interest of five thousand scientists whose pivotal research advances the understanding of the science of plant pathology and its application to plant health, appreciates the opportunity to participate at this stakeholder meeting and respectfully submits comment on research areas which we feel should be given priority. The science of plant pathology plays a central role in assuring an abundant, diverse, safe, affordable supply of food that is produced in an economically viable sustainable manner to provide for the current and future population of the world. In addressing this challenge, we realize that our research must be conducted in a context of a holistic perspective for the preservation and enhancement of our natural resources, including soil, water and air quality because agriculture is part of the sustainable biosphere. Crop production systems in the United States have provided our citizens a safe and reliable source of food, feed and fiber, and are a recurring mainstay of our economy, currently accounting for 16% of the GDP and 27% of total export value. However, our crops are vulnerable to diseases that may originate from intentional or unintentional release of plant pathogens of foreign or domestic origin. The likely result of such a release is not famine, but rather a loss of public confidence in the country's ability to supply and safeguard our food and fiber. A concomitant loss in the economic viability of our production systems could severely affect the economic well being of the devastated areas of the country. It is widely known that funding for agricultural research has long been woefully underfunded, but it will not do agricultural research any favor if funds are merely moved from one research priority area to fund another area. The APS is willing to provide science based information to facilitate an increase in funding to support research that is vital to provide our nation a secure and productive source of food and other agricultural plant products.

The APS has identified three areas where appropriate levels of funding have not materialized to date that need to be made available.

Genomics and Food and Fiber Production: Genomics of Plant-Associated Microorganisms: Plant-associated microorganisms are critical to agricultural and food security and are key components in maintaining the balance of our ecosystems. Some of these diverse microbes cause plant diseases, while others prevent diseases or enhance plant growth. Despite their importance, we know little about them on a genomic level. To intervene in disease and understand the basis of biological control or symbiotic relationships, a concerted and coordinated genomic analysis of these microbes is essential. This analysis should include the structural and functional analysis of the microbe DNA including the genes, the proteins encoded by those genes, as well as noncoding sequences involved in genome dynamics and function. The ultimate emphasis is on understanding genomic functions involved in plant-associations. *(Additional information can be found at www.apsnet.org/members/ppb/plantassocinitiative.asp)*

Agricultural and Environmental Quality: Component Analysis for Understanding the Sustainable Environment (CAUSE): Sustainable agriculture is a widely embraced, but inadequately understood, umbrella under which the economic, biological and social aspects of the agricultural enterprise can be viewed at a systems level. Making strides to understanding the dynamics and controls of the complex systems in a sustainable environment requires fundamental investigation into the components of the systems. An enhanced understanding of the components of sustainable agriculture will culminate in environmental stewardship, enterprise profitability, and rural development that is paramount for the wide utilization and adaptability of sustainable environmental practices in the myriad of agricultural production operations in the United States. *(Additional information can be found at www.apsnet.org/members/ppb/priorities/top.asp)*

Agricultural Security: Biosecurity Issues Affecting Agricultural Crops & Communities: Genomics, Biotechnology, & Infrastructure: Research on plant diseases and their control is and should be for peaceful purposes, to improve the lives of people by providing affordable, quality food in a sustainable manner. With U.S. and global vulnerability to agricultural bioterrorism, the nation's research and education must now protect our production systems and maintain consumer confidence in the safety of our food. Investments in basic research are needed to open new directions for applied research, including greater use of plant biotechnology and plant and microbial genomics for detection, forensics, prevention, or recovery from a bioterrorist attack on a U.S. crop or food produced from crops. *(Additional information can be found at www.apsnet.org/media/biosecurity.asp)*

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