



### Plant Pathology's Role in the Safety of the American Food Supply

- ▶ **Background:** The FDA reports that microbiological hazards are significant and reoccurring risks for the production of safe fruits and vegetables. Recalls and litigation cost the produce industry millions and impact every industry sector. Increasing pressure is being placed on the government, produce associations, food retailers, and growers to institute improved, science-based food safety standards and audit compliance programs. After the passage of the Food Safety and Modernization Act (FSMA), the FDA began publishing preventive controls and produce safety rules. *The lack of research in many areas of human pathogen association with fresh produce, however, hinders science-based rule development.* Questions remain as to best management practices, origins, survival, and distribution of pathogens in the farm environment, transfer of pathogens to produce, survival and growth of pathogens on produce, and prevalence and levels of pathogens in produce. *More effective solutions to reduce human illness will require the application of emerging research tools and strategies, as well as creative cross-disciplinary research efforts.*

The more than 5,000 APS members with extensive knowledge of the complex relationships between microbes and plants are valuable scientific resources that can drive discovery and design of effective solutions to microbial contamination of food plants. Plant pathologists study how microbes colonize plants and are dispersed in the environment as well as how plants respond to defend themselves. Plant pathologists have made great strides toward understanding the fundamental biology of human pathogens in association with plants. These are crucial elements for the development of intervention strategies and a balanced program to minimize foodborne illnesses. Armed with this research, extension pathologists, who are the first contact for growers, can provide accurate advice for how to reduce agricultural crop contamination.

- ▶ **Solution:** We request increased opportunities for research funding for fundamental and practical knowledge of human pathogen-plant interactions. The funding should be applied to:
  - interagency initiatives (such as the “Ecology and Evolution of Infectious Diseases, a partnership between NSF, NIH, and USDA-NIFA) that focus on human pathogens in association with plants;
  - the fundamental and applied research related to human pathogens on plants, including focus areas of plant-pathogen interactions, pathogen-environment interactions, and pathways to transmission;
  - projects that will enhance our understanding of the origins, survival, and distribution of human pathogens on the farm, transfer of pathogens to plants, and survival and growth of pathogens on plants; and
  - Opportunities for a multi-disciplinary, multi-perspective research coordination network for human pathogens on plants.
- ▶ **Contacts:** APS PPB members **Jan Leach** (jan.leach@colostate.edu) and PPB Member **Jeri Barak** (barak@plantpath.wisc.edu) and APS's Washington liaison **Kellye Eversole** (eversole@eversoleassociates.com) are available to answer any additional questions.