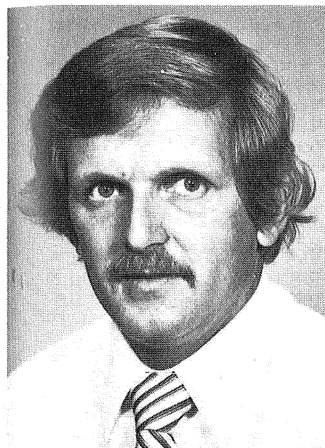


APS-Industry Relationships: Current Status

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It must be amusing to God, who created the continuums in nature, to watch the people of science divide the continuum into arbitrary segments and then spend much of their time arguing about the position of the borders between the arbitrary segments.

—Horsfall and Cowling*

The American Phytopathological Society may be considered a continuum (though one made by man) that includes scientists from private and public segments concerned with the nature,

cause, and control of plant diseases. Progress in plant pathology has been a direct result of cooperative efforts among pathologists from both segments. However, the resolution of many problems continues to be stymied by the attitudes of some scientists.

By nature, man tends to categorize his fellow human beings into artificial groups, and private industry, as a group within APS, seems to have been so categorized. Some may view industry only as a source of some financial support for APS operations and university research projects and of employment for graduates, overlooking the expertise and general knowledge of agriculture that industry can contribute to APS. Industrial APS members include research plant pathologists, field biologists, private practitioners, consultants, and a mixture of other scientists from agriculture-related companies, many with a world view of agriculture. An example of this diversity is found among members from the 59 Sustaining Associates, which include 35 crop protection chemical companies, 11 seed companies, 6 food industry companies, and 7 firms from other ag-related disciplines. This wide range of expertise should be invaluable to the vitality of APS operations, yet industry is poorly represented on most committees and does not have a single position among officers, councilors, and editors.

Why does this inequity exist? The major reason is probably industry's lack of interest in committees that are not directly relevant to business needs. Also, many companies transfer employees between disciplines, which discourages total involvement in one society. However, if we took more active interest, perhaps university and USDA members would give more encouragement and opportunity to participate. I'm not advocating a program to integrate every APS committee with industry members. I am promoting a genuine effort to make use of industry participation. For example, the private sector is currently represented on the Placement, Registry of Plant Pathologists, Industry, Chemical Control, Seed Pathology, and Long-Range Planning committees. But there is not a single industry representative on 33 other committees, including ones that could benefit from industry participation, eg, Extension, International Cooperation, New Fungicide and Nematicide Data, and Regulatory Work and Foreign Plant Diseases.

To improve this situation, both industry and APS should take a sincere look at each committee's functions and decide where more industry involvement would be beneficial. I believe industry members would take a more active role if given the chance on such committees as Biological Control, Integrated

Pest Management, and Epidemiology. Industry needs to be included because crop protection today requires prescription recommendations formulated from our resource bank, which includes chemical, biological, and agronomic measures. Furthermore, industry is moving rapidly toward applying advances in genetic engineering to agriculture. Therefore, the committees that were of only academic interest 5 years ago are of economic interest today. So, to my fellow industrialists, let's get involved! To our colleagues in academia, give us a chance, even some encouragement!

Whereas committee activities can be beneficial, cooperative ventures among public and private scientists apart from formal APS meetings are essential. APS committees help to set policy and coordinate efforts; progress, however, is based on developments in research, extension, and teaching. For the sake of discussion, I will categorize industry/academia interaction into applied and basic research. Applied research on fungicides, bactericides, and nematocides includes discovery of chemicals, bioefficacy in greenhouse and field, effects of chemicals on the environment, mode-of-action studies, and fungicide resistance. Cooperation is generally strong between the research/extension specialists and the company field biologists, technical representatives, and development managers. The benefits of these cooperative efforts include monetary support for public research, product registration, educational opportunities, and, of course, availability of crop protection materials for the grower. Some of the major areas that will require joint effort are 1) fungicide resistance, 2) effects of fungicides on nontarget organisms, 3) judicious use of fungicides in IPM programs, 4) improved product label and application recommendations, and 5) better application systems for crop protection materials.

The opportunities for industry/academia cooperation in basic research areas include epidemiology, etiology, host-parasite interaction, and virology. Cooperation appears more limited here for several reasons. From the industrial view, there is reluctance to share new research for proprietary reasons, especially if the data will provide a competitive advantage. In academia, researchers seem quite sensitive to their ideas being "scooped" by someone who may publish the idea and, therefore, receive the credit. A plea for better future cooperation among basic scientists must be cognizant of the competitive nature of the crop protection business and the long-standing professional competition. However, there must be some mutually beneficial areas. The problem is defining those areas and encouraging an atmosphere of cooperation.

The Society provides a common setting where a movement toward more joint ventures may be started through seminars, symposia, committees, or individual efforts. Also, APS should encourage a more open-door policy to include *all* interested members in symposia and seminars outside structured regional and national meetings. Sessions promote this openness now on applied topics but are more likely to be exclusive on basic topics. Plant pathology seems to be behind other disciplines in supporting projects that invite strong interaction among scientists in industry and academia. I encourage industry to make a sincere effort to support the basic arenas of plant pathology with financial backing and participation. The opportunities for joint efforts are many, but I'd like to suggest just one: the development of sound curricula and training for candidates for the doctorate in plant medicine. This effort could serve as a springboard for other programs that will benefit from an industrial/academic solution.

The need for a team effort to resolve plant health problems is urgent. We are running a race against a biological clock. Our world could have more than 6 billion people to feed by the year 2000. Let's tear down some of the fences in our Society and create a boundless atmosphere of cooperative action to provide healthy plants for mankind.

*From Chapter 23, "Epilogue: Anent a Philosophy of Plant Pathology," of *Plant Disease: An Advanced Treatise. Volume V: How Plants Defend Themselves*, edited by James G. Horsfall and Ellis B. Cowling, 1980, Academic Press, New York.