A National Need for Broadly-Trained Plant Pathologists

Background: The practice of plant pathology has been and will continue to be crucial to our nation's food production and safety. The US network of agricultural experiment stations, cooperative extension units, USDA-ARS research stations, and diagnostic laboratories has been the backbone upon which knowledge of plant diseases has been discovered, developed into management strategies, and transferred to wide scale practice. Increasingly, this network also has become a vital element in our nation's efforts to ensure agricultural biosecurity. And while the impact of state- and Federally-funded units has been profound, so too has been the impact of private industry where significant research, germplasm resources, and disease response capability is developed and moved into the nation's agricultural sector. The ability of government- and private-sector units to carry out their vital agricultural missions has been enabled by the ability of Land Grant Colleges of Agriculture to educate a steady stream of students who are given a broad education and trained to conduct high quality, applied research. However, the historic strength of this critical "feeder system" is at risk and is faltering already. This is evidenced by the fact that positions for broadly-trained plant pathologists in industry and within the USDA-ARS are currently going unfilled due to a lack of qualified candidates. APS views this situation as an emerging crisis.

The Problem: The reasons for this growing crisis stem largely from decreased investment in agricultural research nationwide. This has impacted Land Grant Colleges of Agriculture in terms of reduced faculty numbers, breadth of faculty expertise base, focus of faculty research, and the areas available for student study. Students have been drawn to more narrowly-focused specializations, at least in part, because they rely upon grant funds for their support, and increasingly those grant funds come from agencies with relatively narrow research agendas. Coupled with this shift in student support, we face a looming crisis in educational capacity as faculty across the country approach retirement and their replacements are not assured. The ability of some universities to offer robust curricula may be lost forever. We face a looming crisis and must act now to assure the future health of our nation's food, fiber, and forest resources.

Solutions: The problem we describe is not unique to plant pathology. However we propose an effort targeting plant pathology that would function as a national pilot program, ultimately having broad impact in the agricultural sciences. We propose:

1) Support for the President's 2007 budget that would provide $5 million for a USDA-CSREES Higher Education Agrosecurity Program as a component of the Food and Agriculture Defense Initiative. These funds would provide capacity building grants to universities for interdisciplinary degree programs targeted toward supplying educational and professional development for food defense personnel.
2) Establishment of a fellowship program for highly qualified students seeking to undertake a broad program of study, including applied research.
3) Establishment of a mechanism to provide at least partial student loan forgiveness for those students who undertake a broad program of study, including applied research.
4) Establishment of a competitive funding source that would support efforts to create "regional" graduate education programs that will help universities leverage each others teaching strengths and sustain strong graduate curricula.

The Result: The future of plant pathology, and the health of our nation's food, fiber and forest resources, depends upon our ability to attract outstanding graduate students to the field. This program would ensure that end by through the provision of critically-needed graduate student support and the development of new paradigms for offering top-quality M.S. and Ph.D. degree programs.

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