Editorial

Where Are the Jobs?

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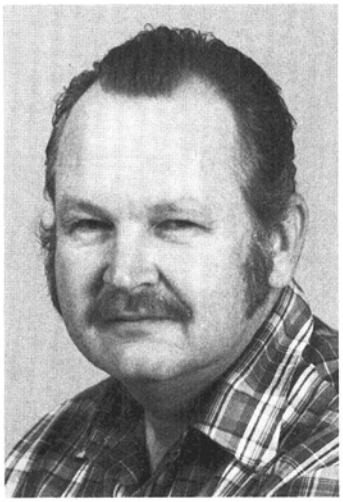

The faculty of the Department of Plant Pathology at North Dakota State University is in the throes of reevaluating the entire teaching program. We asked ourselves the question we often hear from graduate students: "Where are the jobs?" We discovered no ready answer but did find a data base. Positions for plant pathologists traditionally are advertised through the APS Placement Service, so we obtained copies of the listings for June 1981 through October 1984 and compiled our findings. We thank Dotty Ginsburg at APS headquarters for providing the listings. The summary presented here is intended as an index to the types of education and training that are useful and appropriate to graduate students and is not a measure of the size of the job market.

Of the 409 separate listings, 33 were for administrative positions (e.g., department heads, deans), 33 were for part-time assistantships, and 16 were for positions in disciplines other than plant pathology (e.g., weed science, soil science). Since our purpose was to find out about the job market for recent graduates in plant pathology, we did not analyze these 82 listings further. Of the remaining 327 listings, 227 required Ph.D. degrees, 60 required M.S. degrees, and 40 required B.S. degrees.

Of the 100 listings for holders of M.S. or B.S. degrees, 44 required a degree in plant pathology. The training specified was not concentrated in any particular area, but among those commonly mentioned were biochemistry, diagnostic skills, field plot experience, and plant pathology laboratory procedures.

Of the 227 listings for Ph.D. holders, 76 were for postdoctoral appointments and 151 for permanent positions (117 academic faculty, 25 in industry, and 9 in other research agencies). We categorized the major areas of expertise or training specified in the listings; the categories, though necessarily broad, are mutually exclusive. For the 151 permanent positions, the number of listings per category were: 31, biochemistry/physiology/molecular biology (including molecular genetics and recombinant DNA research); 17, broad background; 16, specific crop diseases (e.g., field crops, orchard crops, vegetables, ornamentals); 12, epidemiology (both ecological and quantitative); 12, plant breeding/host-parasite genetics; 11, virology (about evenly divided between biochemical and applied); 9, broad background plus a specific crop; 7, soil microbiology; 5, nematology; 4, prokaryote biology (including phytobacteriology); 3, mycology; 2, microbiology; 2, field research; 1, teaching; 16, international service; and 3, undetermined or unclear.

Of the 76 postdoctoral positions listed, 32 were in the biochemistry/physiology/molecular biology category, 11 were in virology, and the remainder were in epidemiology, plant breeding/host-parasite genetics, soil microbiology, mycology, nematology, prokaryote biology, or teaching.

Many of the listings included secondary areas desired or required. The most common, in descending order, were communications skills, physiology/biochemistry, epidemiology, virology, broad general background in plant pathology, nematology, plant breeding or host-parasite genetics, field crop diseases, prokaryote biology/phytobacteriology, mycology, field plot experience, soilborne plant pathogens, and fruit crop diseases. Less frequently mentioned, also in descending order, were integrated pest management, microbiology, ornamental crop diseases, computer programming, statistics, teaching, biocontrol technology, ecology, and disease diagnosis.

The greatest disparities between postdoctoral requirements and permanent position requirements were in the area of biochemistry/physiology/molecular biology (42% of the postdoctoral positions but only 17% of the permanent positions) and in the broad background and/or specific crops group (28% of the permanent positions but none of the postdoctoral positions). Given this disparity, one might ask if students in certain specializations are destined to be postdocs forever?

Of the 117 faculty positions listed, 21 specified more than 50% extension responsibilities and 69 required one or more courses to be taught. Teaching was the major (more than 25% of the time) responsibility in 13 positions. Basic research (often combined with 10–20% teaching responsibilities) was specified in about one-third of the 117 listings, with three-fourths of the positions in prokaryote biology, biochemistry/physiology/molecular biology, host-parasite genetics, or virology. Another one-third specified applied research and tended to be positions in nematology or specific crop diseases, or with large extension components, or requiring a broad general background. In the remaining one-third, either the appointee could choose between basic and applied research or the type of research was not clearly defined. Basic research was specified in about one-third of the 25 industry positions listed and in about one-half of the 76 postdoctoral positions.

Admittedly, these job announcements are now history, and there is no way to project next year's job market from last year's job market. But the traditional functions of plant pathologists will continue to be required by our clientele, colleagues, and superiors. Material obtained by genetic engineering will need to be tested in the field. Agronomists and horticulturists will continue to need information and recommendations about crop production. The market for plant pathologists trained in biotechnology may be growing, but the need for traditional training has not diminished.