Unusual Partners Launch a Biotechnology Venture

The federal government is joining forces with industry, the University of Maryland, and a state county to create an organization devoted to basic research in biotechnology. The arrangement, which was officially announced last week, is believed to be the first of its kind.

According to the plans, which are still somewhat sketchy, the research will focus on the development of tools to aid in the study and the synthesis of proteins, including computer applications to design new macromolecules.

The proposed organization arises from converging interests. The University of Maryland is pushing to become a major resource of biotechnology research. Maryland's Montgomery County, where the center will be located, is aggressively pursuing economic development and is the home of the National Institutes of Health, several biotechnology companies, and other high technology corporations. The third partner, the National Bureau of Standards, has a strong base in physical sciences that are now being applied to biotechnology.

Bureau director Donald R. Johnson says that the bureau will focus, for example, on new methods for chemical analysis, chemical separation, and enzyme stabilization.

Headquarters for the organization—to be called the Center for Advanced Research in Biotechnology—will be located in Rockville, Maryland, where computer modeling and other tools will be developed. Other research will be conducted at the various campuses of the University of Maryland and the National Bureau of Standards, which is 2 miles from the center's future location.

Money for the center will come from a variety of sources. Not much start-up cash or overhead is needed because the land for the center's future building has been donated and researchers at the center are expected to be supported by their home institutions, companies, or agencies. Organizers plan to ask the Maryland state government for $300,000 for seed money.

One potentially prickly problem is how to determine patent rights to inventions which arise from the collaborative research. Michael G. Hanna, Jr., director of the Litton Institute of Applied Biotechnology, who was active in the development of the center proposal, says that as yet no formulas have been nailed down to assign patent rights.—**MARJORIE SUN**

Is Shortage of Engineers a Matter of Definition?

Asked the apparently simple question of whether there is a shortage of engineers, experts on engineering manpower are likely to respond, "What do you mean by shortage? What do you mean by engineers?" At a 2 February symposium at the National Academy of Sciences titled "Labor Market Conditions for Engineers: Is There a Shortage?" the experts suggested, in effect, that a shortage is in the eye of the beholder.

In round numbers, 1.2 million people are currently counted as engineers in the American work force. The studies discussed at the Academy symposium were in general accord in projecting a 5 percent average annual growth rate in demand over the next 10 years, indicating that some 500,000 new jobs will open up for engineers. There will, however, be only about half enough newly graduated engineers to fill these jobs. Does this mean a 50 percent shortfall? Not if the engineering marketplace continues to operate as it has.

A key element in the ebb and flow of manpower in engineering has been what the studies tag "occupational mobility"—people not classified as engineers who take positions with engineering job descriptions. They may be from such disciplines as math and physics, or may have been trained as engineers and transferred back from other pursuits, or may be technicians upgraded to fill engineering slots. To a remarkable degree, employers have effectively balanced supply and demand by orchestrating occupational mobility. Therefore, said Williams College economist Michael McPherson, who chaired the meeting, the consensus was that there is not likely to be a shortage in the sense of jobs going begging. Half the additional jobs in prospect would be filled by newly graduated engineers and the rest by occupational mobility.

That this mobility raises important qualitative questions was a view strongly reflected in the discussion throughout the symposium. An obvious concern is the effect on productivity and, ultimately, on U.S. competitiveness. Companies also have to pay higher search costs and job vacancy rates are higher since hiring the occupationally mobile is, typically, more trouble than signing on the newly qualified engineering graduate.

Should industry shift away from its reliance on "in mobility"? Some participants at the symposium thought that employers would take advantage of technological advances that would make it possible, in effect, to substitute capital for labor. Some suggested that a rising demand for engineers with highly specialized training would shut out outsiders increasingly in the future. Others saw occupational mobility as a public policy issue. Noting that it is impossible to predict the demand for particular skills 10 years in advance, Ronald Kutscher of the Bureau of Labor Statistics asked, "Are we relegating those in surplus areas to the scrap heap at an early age? What happens to those who made the wrong choice?"

Much the same question can be asked about the fate of experienced engineers. Salaries of new graduates in engineering have continued to rise, but engineers well into their careers are less in demand and are losing ground financially.

Aside from academic employment, immigration of engineers from overseas was discounted as a major factor in projections of engineering manpower. However, some participants at the symposium indicated that they thought the estimate that immigrants in the engineer workforce here would not much exceed 5 percent suffered the same unreliability as statistics on immigrant employment.

Even with large numbers of immigrants teaching in U.S. universities, a shortage of engineering faculty is seen as continuing. In part, at least, this is attributed to restraints on universities in paying premium salaries in shortage categories. Universities do pay differentials, however, and some perspective on the larger academic marketplace was provided by the participant who noted that at one Big Ten