

More commercial genetic manipulation

Harvard and Biogen establish Cambridge labs

Washington

Not to be outdone by West Coast colleagues, scientists from Harvard University and the Massachusetts Institute of Technology (MIT) are busy with their own plans for the commercial exploitation of research using recombinant DNA techniques.

The president of Harvard, Dr Derek Bok, is expected to announce shortly the university's decision to become a shareholder (although not an investor) in a company being set up to develop gene cloning techniques evolved in the university's laboratories. One candidate technique is Dr Mark Ptashne's methods of cloning human fibroblast interferon genes in *Escherichia coli*, reported in the latest issue of *Proc. natn. Acad. Sci. USA* (77, 5230; 1980).

At the same time, Biogen, the Swiss-based genetic engineering company whose board of directors includes Dr Walter Gilbert of Harvard and Dr Philip Sharp of MIT, is seeking permission to construct a \$5.5 million research and manufacturing facility in East Cambridge.

Both schemes would make it easier for senior research scientists to maintain their university positions while working as consultants for the companies. In the case of Harvard — which 2 years ago agreed to license the rights to Dr Gilbert's insulin research to Biogen — the university would be able to invest its share of the profits from the new company in further research.

Inevitably, both plans have caused controversy. Harvard faculty members have been concerned about the potential conflict of interests between the goals of the proposed company and the university's commitment to basic research; Biogen's plans were the subject of a public meeting held on Tuesday before the Cambridge Biohazard Committee to discuss whether any conditions should be placed on the company's activities.

The Harvard plan was the brain-child of Dr Mark Ptashne, professor of biochemistry and molecular biology. Initially it had been proposed that the company would, at least temporarily, rent space in the university's biology laboratories; that postgraduate students might be able to work for the company while retaining university appointments; and that finance would be largely provided by the pharmaceutical company Eli Lilly, which had earlier bid unsuccessfully for the licence to Dr Gilbert's research.

Following an intense debate over the

summer, various steps have been taken to keep the company, as one university official describes it, "very much at arm's length". For example, it has been agreed that, even if the university's involvement is approved, the company will seek separate premises.

In addition, although some Harvard scientists would be shareholders in the company and could be employed on a one-day-a-week basis as consultants — the generally accepted limit to outside commitments — direct overlap with university research staff would be minimal.

Financial support would probably come from outside sources of venture capital under a scheme being worked on by the Harvard Management Company, which manages the university's endowment.

The proposed organization of the company and its relationship to the university was discussed last week at a meeting of the faculty of arts and sciences. Although no formal decision was taken, Mr Daniel Steiner, Harvard's general counsel, said after the meeting that he saw "no overwhelming obstacles" to the plan being approved by Dr Bok, adding that the university "would not have gone as far as we have" if it had not been seriously interested in the project.

Ironically, the faculty meeting took place the day after Biogen had told the city council in Cambridge that it wished to build a research and manufacturing facility in the city. At present, Biogen's main research facilities are in Geneva; and it is rumoured that one of the reasons for

planning to build the new facility in Cambridge is the difficulty that has been experienced in obtaining Swiss work permits for US postdoctoral students.

Biogen's proposal was due to be presented on Tuesday to the Cambridge City Biohazard Committee, a subcommittee of the City Health Policy Council set up in 1976 after an intense local debate to monitor recombinant DNA research in the area.

More criticism was expected at the meeting. Ex-mayor Alfred E. Vellucci, who previously led an unsuccessful fight to ban all recombinant DNA research in Cambridge, was equally opposed to a "DNA factory" coming to Cambridge now.

Others thought that — particularly in the light of the investment fever that swept Wall Street two weeks ago over the public offer of shares in the San Francisco company Genentech — Biogen is unlikely to encounter substantial opposition.

If the Biogen facility gets the go-ahead, it is likely to be partly financed from a \$20 million equity investment which the chemical company Monsanto is to make in the company. Also, the two other major equity holders — Shering Plough and International Nickel — have increased their equity by \$8.8 million.

In a separate development, the Dow Chemical Company announced that it was making a \$5 million investment in another small Massachusetts biotechnology company, Collaborative Research, of which Dr David Baltimore is chairman.

David Dickson

Few complaints on education

Washington

US science and engineering efforts are basically on an even keel, even if there are a few selective vacancies among the crew, the officers do not understand too much about how the engines work and the passengers occasionally question the course that is being followed.

This seems to be the main message of a long-awaited report on the state of US science and engineering education, requested by President Carter in February from the National Science Foundation and the Department of Education, and published in Washington last week.

The request, largely prompted by the President's Science Advisor, Dr Frank Press, responded to certain concerns expressed about aspects of educational policy in these two fields. These include a well documented decline in performance by US school-children in science-related subjects, difficulties faced by the armed forces in retaining technically trained recruits (much talked about after the failure of the attempt to rescue the hostages from Iran) and warnings of the dire consequences of apparent Soviet educa-

tional supremacy.

But whereas in the mid-1950s the launching of the Russian Sputnik was seen as a challenge which led to a massive injection of new funds to revitalize US efforts to improve scientific and technical skills, the new report implies that there is little need for general alarm — or any major investment of resources.

This time, the emphasis is on quality rather than quantity. The report concludes that the number of science and engineering graduates is likely to be adequate for the next couple of decades, apart from possible shortages in fields such as computer science.

Two main problems are identified: first, the increasing cost of providing a good engineering education, both in terms of employing good teachers and purchasing up-to-date equipment, and, second, evidence of a spreading "scientific illiteracy" which could have serious consequences in a world of increasing technical complexity.

It is the latter problem which provokes some of the strongest language in the report, with the claim that there is a