aspect of that problem. The Western observers at Warsaw Pact manoeuvres, present under the terms of the Helsinki accords, had, he said, been virtually incapacitated by maps drawn to an inappropriate scale and binoculars which somehow failed to work.

Vera Rich

Biotechnology

Products work

Another hurdle has been cleared in the pursuit of profitable products from genetically manipulated bacteria. Evidence presented to the Food and Drug Administration in Washington at the beginning of June makes it clear that at least one bacterially produced human hormone has the biological activity of the natural product.

It was no coincidence that the evidence emerged when and where it did, for the aim was for the FDA to decide whether there is a need for special requirements before the licensing of bacterially derived hormones and other peptides or proteins, particularly for clinical use. Clearly the more evidence there is for the identity, not only in structure but also in activity, of bacterial and natural products, the less necessary will be additional requirements for bacterial products.

Not surprisingly, it was the San Francisco company Genetech Inc., one of the first and most voluble of the biotechnology companies, which produced the crucial evidence. Genetech's evidence centred on human growth hormone (hGH), which has been produced by Genetech bacteria for at least the past year.

When Genetech published its first account of expression of the gene for hGH in *Escherichia coli* (*Nature*, 281, 544; 1979) there was no evidence that the hormone had the biological activity of natural hGH. Now Genetech has at least a solid foundation for that evidence.

The mainstay of their new claim is a comparative study of the stimulation of the growth of rats without pituitary glands by hGH from bacteria and from human pituitaries. The overall weight gains and the tibia growth with either hormone or with a mixture of them were virtually indistinguishable. In a further test, the bacterial hGH appeared, if anything, more potent than the pituitary hGH — an observation which Genetech attempted to relate to analytical evidence that the bacterial hGH is the purer of the two.

Genetech has also explored the possibility that its hGH-producing bacteria would stimulate the growth of rats without pituitary glands when simply present in the gut. A positive result might have rekindled the debate about the hazards of recombinant DNA. In the event, the result was negative. The rats put on no weight even though some of the bacteria survived for several days within the intestinal tract.

Genetech also revealed to the FDA that, in collaboration with Hoffman-La Roche Inc., it had successfully carried out a preliminary test of the biological activity of bacterially produced interferon. Because of the limited quantities of bacterial interferon available, the test was confined to showing that three animals survived infection by a potentially fatal virus when given the drug.

The importance of this test, if confirmed, is that it would establish the activity of bacterially produced interferon even though the carbohydrate groups of the natural product are missing.

Workers from the European company Biogen, in their own paper on the construction of interferon-producing bacteria earlier this year (*Nature*, 284, 316; 1980) expressed concern about the possible inactivity of the bacterial interferon. "If a lack of appropriate glycosylation diminishes the activity of the molecule, we shall have a problem on our hands". Their rivals at Genetech seem now to have provided a measure of reassurance on that score.

Peter Newmark

Soft money jobs

Policy rebels

The UK Science Research Council Astronomy II committee decided last week to ignore the SRC's six-year limit on short-term contracts in its future consideration of grant applications. The 25 members of the committee, which deals with infra-red, optical and ultra-violet astronomy, decided that they would advise senior researchers to "appoint the best person for the job" even if the potential researcher has been supported for more than six years on soft money.

The committee intends to consider applications for projects employing researchers whose time would run out before completion as well as applications involving the employment of a researcher who has already exceeded the SRC's upper limit of two three-year contracts.

The committee is taking its action "as a temporary measure" until a formal policy is evolved. Applications will be dealt with case by case, and the committee will fight for its recommendations, expected to be positive in all but borderline cases, on the Astronomy, Space and Radio Board, the next step up in the SRC hierarchy. The committee also empowered the Royal Astronomical Society to act on its behalf in a "big" meeting with the council to take place some time in November.

The committee's action comes at a time when the lack of university openings and requirements of modern astronomical research for specialized technology are placing a premium on retaining experienced researchers in temporary jobs. The SRC's policy, enacted in 1975, had been loosely applied until last November when

the SRC circulated a memorandum instructing its research directors to apply "rigidly" all rules on postdoctoral employment (*Nature*, 7 February). Since then, senior researchers have had their research programmes disrupted and a number of physicists have been forced out of work or have left the country. "It is a major cock-up all along the line. We are sure it is going to be reversed eventually" said committee member Professor Mike Disney of University College, Cardiff.

The case of Paul Gough, a physicist at the University of Sussex, is cited as one example of how the restriction is preventing good experiments from being carried out. Gough, whose final contract will expire in 1982, responded to an emergency call for experiments issued by the SRC on 16 April to fill vacant space created by US withdrawal from the Swedish Viking satellite. Gough proposed a novel experimental technique to study magnetospheric particle bunching by on-board data analysis of information collected from other magnetosphere experiments. Data on particle correlations, normally lost because of telemetric limitations, can be sent in analysed form through existing telemetering systems. The experiment is intended to provide information on links in the magnetosphere. Gough has been told by the SRC that the project was acceptable and would be proposed to the Swedish experimenters but that he would not be permitted to work on it because the work would carry him past his 1982 limit. The SRC has no alternative candidate to do the work. Other proposals that have received similar treatment recently include a cometary probe, a study of moon rocks and a proposal to study incoherent radio scattering from the aurora.

The SRC admits that the policy is presenting difficulties. Brian Oakley, Secretary of the SRC, says "it is a choice of evils, but we believe the restriction is best for science as a whole. The young man is important because of his freshness in comparison to the experience of the older man." Oakley also points out that SRC has created a small number of advanced fellowships (60) to assist the estimated 3,000 researchers affected by its decision and has begun to investigate the situation in an attempt to "free the log jam" caused by the lack of university openings.

Underlying the SRC's policy is the widespread assumption that the major contributions are made by younger physicists. The glamorous figures of quantum physics — Pauli, Heisenberg, Dirac — add fuel to the belief that the newcomer just around the corner is somehow going to change the course of an investigation overnight. As Brian Oakley says, "it stands to reason doesn't it? Once mental images get fixed they are extremely difficult to break."

The problems of people on short-term contracts are increasingly recognized to be