In a report on the survey addressed to the university administration, AUT makes thirteen recommendations, most of which entail effectively putting contract workers on the staff.

According to AUT, the contract researchers should be given academic status, salary scales and a career structure. The university should have a contingency fund to support contract researchers between contracts, and it should "exert pressure" on the research councils to develop "a more positive approach" to the employment conditions associated with their contracts (which support 60 per cent of the researchers concerned). AUT also recommended that the universities should abolish waivers in contracts, which absolve them from paying redundancy pay and remove the right of appeal against unfair dismissal.

● In a survey of the employment prospects for postgraduate astronomers in Britain, the Royal Astronomical Society (RAS) has come to conclusions which broadly confirm the AUT study at Bristol (see above). Some 42 per cent of respondents were in the fourth or later year of a postdoctoral appointment. And 40 per cent of non-tenured astronomers are over the age of 30. RAS respondents were also asked if their degrees and research enhanced their employment prospects. The proportion saying yes fell with increasing qualification, from 79 per cent for the first degree to only 56 per cent for postdoctoral research.

Robert Walgate

British Aerospace

Looking good

A new mood of optimism prevails at the space and communications division of British Aerospace. Not surprisingly, the company is delighted at last month's news that the Hughes Aircraft company is to build up to 16 Intelsat-VI telecommunications satellites: as principal subcontractor British Aerospace stands to win orders worth up to £50 million over the next seven years. And having also won the contract to build the European Space Agency's next generation telecommunications satellite, L-sat, the company is now said to be working to capacity.

The arrangement with Hughes over Intelsat VI, however, is just one step towards what is hoped will develop into wider cooperation. British Aerospace, through its participation in the programmes of the European Space Agency, believes that its credibility is now well established in Europe but that it will never enter the US market alone. Thus the link with Hughes is cherished.

The Intelsat VI contract could be worth $1,600 million to Hughes if options on all 16 spacecraft are taken. The plan is to build five spacecraft initially for launch aboard Ariane or the space shuttle from 1986 onwards. Hughes has taken many of the prizes in the Intelsat developments — only contracts for Intelsat III and V were awarded to other companies, TRW and Ford Aerospace.

The capital for the Intelsat VI development will be raised by the 106 member organizations which consist mainly of national telecommunications services. The largest shareholders are the United States, with 20 per cent of the shares, and British Telecom which holds a 13 per cent share. Intelsat VI will carry 33,000 voice and four television channels, more than twice the capacity of Intelsat V. The design, which incorporates a satellite-switched time division multiple access capability for digital transmission, may be up-graded to 100,000 voice channels later.

Judy Redfearn

UK cancer research

Marking time

Britain's leading cancer research laboratory, the charitably supported Imperial Cancer Research Fund (ICRF), claims it is running short of cash — despite last year's income being the largest ever. New fund-raising mechanisms are being sought, including high-street shops and — in the long term — biotechnology.

Where has all the money gone? ICRF was criticized a few years ago for being overcautious, salting away charitable pennies in an endowment fund while spending too little on current research (only 32 per cent of its income in 1971). Now ICRF claims the balance has gone too far the other way: 58 per cent (£10 million out of £17 million raised) was spent on research in 1981, and savings have fallen correspondingly from 44 per cent in 1981 to 20 per cent last year. This year there is talk at ICRF of cuts: perhaps a loss of six staff, whereas over the past three years staffing levels have risen by 50 per cent.

The recent expansion has been the work of Dr Walter Bodmer, present research director, and his deputy Dr Michael Crumpton, but the spending seems to have overshot the mark. Government spending cuts are blamed. Not that the government supports ICRF, but cuts in the Health Service and in universities have meant that research councils, and bodies such as ICRF, have found themselves spending more than expected to provide basic services when they collaborate with hospital clinics or university laboratories.

ICRF commitments to support a new cyclotron for neutron therapy at Clatterbridge Hospital near Liverpool (the ICRF contribution is £3 million), and the building of a new £12-million laboratory site at South Mimms in north London, to replace the Mill Hill site (whose lease runs out in a few years' time), have also eaten into the budget.

The remedy will be to halt the expansion of the research budget and to attempt to raise more money by appeal — difficult in the present economic climate — and by other means. One plan is to open shops selling second-hand clothes and bric-a-brac along the lines of the operation run by Oxfam, the famine relief organization.

ICRF is also making its entry into biotechnology. The prime objective is not to make money, says Dr Bodmer, although money would clearly be welcome if it came along. Rather, the principle will be to make commercial agreements which will speed the distribution of clinically or experimentally useful products (such as monoclonal antibodies) but to avoid "inappropriate" exploitation of the products outside ICRF control. The fund has engaged patent and commercial agents to help in this activity.

To speed this work, the South Mimms site (which should have opened in 1986) will have what is described as a "pilot plant" for large-scale cultures, which will have the double function of supplying the ICRF laboratories with materials and of testing cultures for potential industrial scale-up.

In the rest of its space, South Mimms will house the research services presently at Mill Hill and at the main ICRF laboratory in Lincoln's Inn Fields. After all the shuffling, space would be left at Lincoln's Inn Fields in 1985–86 for perhaps two new groups. Oncogenes and growth factors are among the research areas that are under consideration.

Robert Walgate

Biotechnology

Endorphin now

University College London last week announced a new joint venture in biotechnology that is more significant as a sign of the times than for the sum of money involved. Nevertheless, for Professor Brian Rabin and Dr Peter Butterworth of the college's biochemistry department, the $240,000 contract to clone pancreatic endorphin is a godsend when the British government's economies in higher education are beginning to bite.

The contract with University College comes from Endorphin Inc., a company founded in Seattle in February. The company is equipped with venture capital, a patent and a president, Professor John Houck, who uses the money he has raised to support his own laboratories at the Virginia Mason Research Center in Seattle and now to support the University College project.

Professor Houck founded the company on the basis of his discovery that pancreatic tissue contains a hormone of potential therapeutic value. The hormone, not yet completely characterized, is related to the endorphins which also have therapeutic potential, particularly as analgesics. According to Professor Houck, however, whereas intravenously administered endorphins cannot readily reach the brain in an active form, the pancreatic endorphin can do so.

0028-0836/82/150595-02$01.00

To prove the point and to prepare the way for clinical trials, Endorphin Inc. now needs a quantity of pancreatic endorphin that would be difficult to purify from pig pancreas but should be well within the production capacity of bacteria into which the relevant gene has been cloned.

The choice of University College for this task seems in large part to have been based on the fact that Professor Houck has been a visiting fellow there for several years. It may also have been cheaper to contract for the work in the United Kingdom than in the United States. But for the department of biochemistry, whose annual support from the university for overheads has been cut from £80,000 to £60,000 (an even more drastic cut in real terms), the contract allows at least one project to be carried out in style.

Dr Butterworth claims that the normal funds available to university departments are now simply insufficient to buy the radioisotopes and restriction enzymes necessary for most gene cloning projects. Nor is there a wealth of British venture capital waiting to help out. Since matters are likely to get worse rather than better he and Professor Rabin hope that the contract from Endorphin Inc. will be followed by others.

They hope also that the gene cloning for Endorphin Inc. is successful enough for the contract to be renewed in two years' time and that pancreatic endorphin eventually reaches the market. If it does University College stands to gain a one per cent royalty on all sales. **Peter Newmark**

Europe leads on sequences

Europe appears, for a change, to have beaten the United States to the mark. The European Molecular Biology Laboratory (EMBL) at Heidelberg has announced the formation of a nucleotide sequence library, while the National Institutes of Health (NIH) in Washington are still deliberating the question.

Not that there is any sense of competition. Greg Hamm, manager of the Heidelberg library, is "still talking" to NIH, and wishes to cooperate with any system that NIH may set up. But EMBL was under pressure from European scientists to start now, before sequence data were irretrievably lost. EMBL is not attempting to become the sole manager of world sequence data, Hamm insists.

The question now is how to collect the data efficiently. The 600,000 nucleotides already logged at Heidelberg (they are freely available on magnetic tape) have taken an immense effort to collect. This is largely because journals do not use the clearest of systems for displaying the sequences, say Hamm and Professor Ken Murray in a letter recently sent to journal editors.

Hamm and Murray are recommending that journals should insist on the separate submission of sequence data to the EMBL library, preferably in a format specified by EMBL, and if possible in computer-readable form. Some of these requirements, however, conflict with common format in journals. For example, codons should be presented in tens or fifteens of nucleotides rather than the triplets which correspond to the translation of the code into amino acids, says EMBL, to reduce counting errors; and the marking of reading frames and alignment of comparable sequences should be avoided.

According to Hamm, however, such requirements are only important for the easy transferral of the data into the EMBL computer: the printed format in a journal, which is intended to present the data heuristically, emphasizing the significance of regions of a sequence, could be quite different — provided EMBL were sent the uncluttered sequence according to their own guidelines.

So far, only the *Journal of Molecular Biology*, edited by Sir John Kendrew, has said it will implement the EMBL proposals in full. *Nucleic Acids Research* is said to be "basically positive", but discussing details. *Nature* is considering the matter. **Robert Walgate**

EMBL

```
ID   MMIG20    MUS.MUSCUL.IG.MOPC41; DNA; 350BP.
XX
DT   82.01.01  (first entry)
XX
DE   First two exons in immunoglobulin light chain genes from
DE   cell line MOPC41.
XX
KW   differentiated gene; immunoglobulin.
XX
OS   Mus musculus (house mouse, souris domestique, Hausmaus)
OC   Eukaryota; Metazoa; Chordata; Vertebrata; Tetrapoda;
OC   Mammalia; Eutheria; Rodentia.
XX
RN   [1]   (bases 1-350)
RA   Altenburger W., Steinmetz M., Zachau H.G.;
RT   "Functional and non-functional joining in immunoglobulin light
RT   chain genes of a mouse myeloma";
RL   Nature 287:603-607(1980).
XX
FT   Key        From     To       Description
FT
FT   CDS         126     176      first exon (leader peptide)
FT   CDS         303    >350      second exon (variable part)
XX
SQ   Sequence    350bp:    80 A; 82 C; 122 T; 66 G.
     CGTGACCAAT CCTAACTGCT TCTTAATAAT TTGCATACCC TCACTGCATC GCCTTGGGGA
     CTTCTTTATA TAACAGTCAA ACATATCCTG TGCCATTGTC ATTGCAGTCA GGACTCAGCA
     TGGACATGAG GGCTCCTGCA CAGATTTTTG GCTTCTTGTT GCTCTTGTTT CAAGGTTAAA
     ATGAAACTTA AAATTGGGAA TTTTCCACTG TTTCCAACTG TGGTTAGTGT TGACTGGCAT
     TTGGGGGATG TCCTCTTTTA TCATGCTTAT CTATGTGGAT ATTCATTATG TCTCCACTCC
     TAGGTACCAG ATGTGACATC CAGATGACCC AGTCTCCATC CTCCTTATCT
//
```

A sample entry from the EMBL sequence data library, specifying the source of the DNA as closely as possible, giving a reference and listing special features of the sequence in a table (in this case showing the exons). The original is approximately 6 inches wide.

Polish universities

Trial by proxy

New York

The International Council for the Future of the University (ICFU), a New York based organization of some 300 academics from 21 countries, committed to the defence of Western university traditions, has launched a study of the current situation in Polish universities. This marks a major change in ICFU policy. Previous studies have dealt with Western European countries (Sweden, Italy, West Germany) to which it was possible to send working parties and in which the ICFU already possessed members who could contribute first-hand knowledge of recent events. But with no Polish members of ICFU, and with the continuation of martial law the possibility of an ICFU commission visiting Poland in the near future seems remote.

The inaugural meeting for the new study, which was held in New York earlier this month, had to do the best it could with the testimonies of visitors, including Andrzej Kaminski, a mediaeval historian who left Poland before the foundation of Solidarity, two representatives of the banned Independent Students' Union (NZS) and Wojciech Karpinski, a political scientist and former activist now at Yale. Inevitably, their accounts of Polish university history did not cover the period of martial law. The most up-to-date material, including the martial law regulations governing the universities (see *Nature* 31 January, p.181), came from the floor. A detailed discussion of the events which followed the military take-over was deferred to a meeting to be held in Paris later this year.

More incongruously, the reforms urged and in part initiated in Polish universities during the 16 months of "renewal" (between 30 August 1980 and 12 December 1981), had been largely directed towards greater democracy ranging from student representation on the academic councils of universities to the possible election of a Minister of Higher Education by the university rectors — a proposal put forward only a few days before the imposition of martial law, and one which was later described by Deputy Prime Minister Mieczyslaw Rakowski as "the academics running amok". This trend contrasts sharply with the attitude of ICFU, which has tended to see too much democracy as a potential threat. But this divergence of views may make it easier for the Polish authorities to accept the impartiality of the proposed ICFU study. If the Polish propagandists look at the track record of ICFU it might find it difficult to make out a plausible case that ICFU is manipulated by Solidarity extremists abroad, when for the past ten years it has systematically deplored many of the reforms since advocated by Solidarity. **Vera Rich**

0028-0836/82/150596-01$01.00