

China pledges 12 per cent science boost

London. China has promised to increase its spending on research and development by 12 per cent in the current (1996) financial year, two percentage points more than the planned overall increase in government spending. It has also renewed a pledge to treble spending on science and technology as a proportion of gross domestic product (GDP) by the end of the century.

In a speech last month to the People's Congress, Liu Zhongli, the finance minister, said "greater efforts must be made beginning this year" to reduce expenditure and to pursue a "tight financial policy" aimed at addressing the country's budget deficit.

But he emphasized that the budget for science and technology — currently 0.5 per

cent of GDP — would continue to increase. In particular, spending on science and education, will grow by 12 per cent to 10.7 billion yuan (US\$1.28 billion) and 99.4 billion yuan respectively. Both these increases are 2 per cent higher than the overall increase in government spending, which is planned to be 1.2 per cent lower than the increase in revenue. China's budget deficit, which last year climbed by 31 per cent, is projected to increase by a further 26 per cent this year.

Liu acknowledged that the increases in science expenditure came at a time when many departments had "already exerted themselves" to reduce spending. But he emphasized that the extra funds for science, technology and education would

be spent more efficiently. "More spending for education and science and technology", he said, "should be used to improve and upgrade existing education and research facilities, instead of increasing projects or new institutes".

In 1994, China spent a total of 22.2 billion yuan on research and development, approximately one quarter of which came from the private sector. The government is aiming to increase industry's share of research and development to at least 50 per cent by 2000 (see *Nature* 378, 542; 1995). In 1992, China spent 0.7 per cent of GDP on research and development. The country's rapid economic growth has contributed to the decline in this figure. Hsan Masood

Prospects of power prompt rethink for German Greens

Munich. As the German Green party — arguably the most powerful environmentalist force in Europe — seeks to establish its credibility as a potential coalition partner in a future federal government, it remains split over its opposition to biotechnology and genetic engineering, just as it is over attempts to move closer to the centre-stage of German politics.

Those seeking more moderate policies include Manuel Kiper, spokesman for the party's parliamentary group on research policy. Kiper argues that a blanket ban on biotechnology is inappropriate, both because, he claims, its many benefits — particularly in health and environment — outweigh any environmental threats, and because biotechnology products are already being marketed with the approval of grassroots environmental groups.

But Kiper's position, which he estimates to have significant support in the party, continues to encounter stiff resistance from the fundamentalist wing, which is arguing against any change of policy. Marina Steindor, the parliamentary group's spokeswoman on health, energetically argues that the party should insist on the withdrawal of all biotechnological products from the market, and accuses Kiper of political opportunism.

Kiper, a molecular biologist by training, says that he is particularly concerned that 'fundamentalism' in the party has been blocking for more than a year a planned party conference on the use of genetically engineered enzymes in washing powder. During this period, other environmental and consumer organizations have reached agreement with the washing powder industry on safety issues and labelling.

Indeed, the parliamentary group appears to agree with Kiper that the party should at least review its position, and a debate on this issue is now likely to take place at the annual

conference in spring next year. The party has already agreed, at its 1996 annual conference last month, to lift a ten-year boycott of computers. The boycott was so out of touch with society that it raised smiles rather than serious support, says Kiper, arguing that the ban on biotechnology will be seen as similarly ridiculous in future.

Another critic is Jens Reich, a molecular biologist at the Max Delbrück Centre for Molecular Medicine in Berlin, who, although not himself a member of the party, was picked as its candidate for the presidential elections two years ago. Reich argues that the fundamentalists' uncompromising attitude to biotechnology has cost the party votes. But he claims that their influence is on the wane. "There is a growing readiness to accept that ecological goals can be reached without having to get rid of all technology," he says.



Kiper: argues against ban on biotechnology.

Both of the main political parties, the ruling Christian Democrats and the opposition Social Democrats, are keen to reverse popular opposition to biotechnology and genetic engineering as part of their efforts to boost economic growth. Scientists notice that pressure groups are now much more prepared to discuss controversial issues rather than dismiss them dogmatically.

At a meeting held last month by Dachema, a company that promotes the interests of Germany's chemical industries, politicians from both the Christian Democrat and Social Democrat parties showed

themselves quick to exploit the more tolerant environment. In particular, there was widespread support for the view that attempts to establish a consensus — Germany's traditional political approach — on biotechnology should be abandoned. "In a pluralistic society it is acceptable to live with a bit of dissent," said Wolf-Michael Catenhusen, the Social Democrats' spokesman on research.

Meanwhile, the Greens are preparing themselves for possible power-sharing in a future federal government. They already share government with the Social Democrats in three of Germany's 16 Länder, and after last week's regional elections are likely to join them in a fourth coalition, in Schleswig-Holstein. Conflicts within these coalitions about biotechnology have so far been avoided by an unspoken agreement not to raise the issue; internal arguments have tended to focus on more immediate issues such as transport.

There have long been talks at the federal level between the Social Democrats and the Greens about a possible coalition after the 1998 federal elections. Now the Social Democrats might have a competitor. Two weeks ago, sensitive to the uncertain fortunes of the Free Democrats, the Christian Democrats' current coalition partner, despite their reasonable success in the recent regional elections, Chancellor Helmut Kohl stated that he would also "not rule out" a future coalition with the Greens.

Joschka Fischer, head of the Greens' parliamentary group, is actively trying to make his party attractive to both suitors. But he is aware that, in order to do so, the party will have to shed its extremist image, and that includes abandoning a blanket ban on genetic engineering which, according to recent opinion polls, no longer has public sympathy. Alison Abbott

Engineering academy moves to oust president

Washington. The US National Academy of Engineering (NAE) is trying to oust from office Harold Liebowitz, its recently elected president, in a move that opens the way for a public — and potentially damaging — battle for the soul of the organization.

At a meeting on 29 March, the 20-member council of the academy passed a vote of no confidence in Liebowitz as the organization's president, and submitted to the members an amendment to the NAE's by-laws which, if passed, would enable them to vote Liebowitz out of office.

Liebowitz immediately promised to fight the proposed amendment. In a strongly worded ten-page statement, he accused the council of having stifled his work as soon as

he was elected last July, and promised to rescue the NAE from alleged domination by the National Academy of Sciences (NAS), its larger and older sister organization.

Both academies share the same operating body, the National Research Council. But the NAS has ultimate responsibility for the entire complex. Last month, the NRC stripped Liebowitz from his position as its vice-chair, opening the way for his removal from the NAE (see *Nature* 379, 761; 1996).

"I do not accept that the NAE should be subservient to the National Academy of Sciences," Liebowitz says in his statement. He claims that the two academies had "failed effectively to oppose cuts in engineering" and that science "had sold out engineering

in recent budget debates".

Liebowitz, who was elected by a narrow margin as NAE president on a 'write-in' vote last year, after being excluded from the ballot, also argues that other officers of the academy "have been unwilling, from the outset, to work with me because I am an outsider".

But Morris Tanenbaum, vice president of the NAE and a former senior manager at AT&T, says that he and other officials have done everything possible to cooperate with Liebowitz. "I don't know anything more that we could have done," he says. "My conscience is clear."

Tanenbaum concedes that NAE's operations have been "negatively affected" by the Liebowitz row. Bill Colglazier, executive officer of the NRC, says that the flow of study requests to the academy complex has not yet slowed down as a result. But "there is certainly a potential worry that this might damage the credibility of the academies", he says.

Staff and officials of the academy complex attribute the conflict to Liebowitz's personal behaviour. But the embattled president prefers to blame it on the political relationship between the NAE and the NAS.

Indeed, the subservience of engineering to science — real or imagined — is an emotive issue for the 1,800 senior professors and industrialists who make up the NAE's elite membership. But having flirted with rebellion last July, it seems inconceivable that they will back Liebowitz this time round.

NAE members are due to receive their ballot forms on the proposed amendments to the by-laws this week. If these are passed, a resolution to remove Liebowitz could be voted on as early as next month.

Colin Macilwain

\$60 million for genome sequencing

Washington. The US National Institutes of Health (NIH) announced this week the long-anticipated launch of a \$60-million pilot project to explore the technical and economic feasibility of large-scale genome sequencing technology. If successful, this could lead to the sequencing of the entire human genome by the year 2005.

Six research groups are to share a total of \$18 million in the current financial year, which ends in September, to investigate a range of sequencing and related technologies. In line with proposals first put forward last year (see *Nature* 375, 93; 1995) these will be aiming for an accuracy of one error in 10,000 bases.

"The pilot project will help us determine whether it will be necessary to strive for 99.99 per cent accuracy when we scale up, and whether it can be done cost-effectively with the sequencing strategies emerging during the next three years," says Mark Guyer, assistant director of the National Center for Human Genome Research (NCHGR).

The centre says that it is "encouraging" those receiving sequencing grants to release preliminary DNA sequence information "within a few days or weeks of its discovery". This is longer than a preliminary, controversial release time of about one day, endorsed at an informal meeting of sequencing team leaders held in Bermuda last month, but criticized as being insufficient to study the potential intellectual property implications (see *Nature* 380, 279; 1996).

Nevertheless, the NCHGR points out that this is considerably faster than research information is usually released. "The tremendous value of this data for disease research justifies this aggressive policy," says the centre, adding that the "finished" sequence, with all data "double-and-triple checked", is to be placed in

databases shortly after.

In line with its previous policy, the centre says that those receiving the pilot project grants — while free to apply for patents on work involving additional biological experiments that reveals "convincing evidence for utility" of particular sequences (which may include full-length genes) — are also being "discouraged" from applying for patents on the raw genomic sequence themselves.

The NCHGR endorses the principle of patent protection as being necessary for the development by private companies of diagnostic and therapeutic products. But, it says, "patent applications on large blocks of primary human genomic DNA sequence could have a chilling effect on the development of future inventions of useful products". □

Nobel laureate charged with sexual abuse

Washington. Daniel Carleton Gajdusek, a Nobel prizewinner for his work on infectious diseases and a prominent researcher at the National Institutes of Health (NIH), has been charged with sexually abusing a fifteen-year-old boy whom he had brought to the United States from one of his many anthropological research missions to the South Pacific.

Gajdusek, 72, who was arrested on 4 April after an investigation by the Federal Bureau of Investigations, denies the charges. He has brought up to fifty young people back to the United States from New Guinea and Micronesia, caring for them in his home outside Washington DC, and paying for their education.

Several colleagues of Gajdusek expressed shock and disbelief at the charges, and some are said to have helped raise the \$350,000 bail on which

he was released from custody on 6 April.

Gajdusek, who heads a central nervous system laboratory at NIH, won the Nobel prize for medicine in 1976 for his research on mechanisms concerning the origin and dissemination of infectious diseases, including kuru, which afflicts islanders in New Guinea. Much of his work is anthropological, and he has published descriptions of sexual relations between adults and children in primitive societies.

It is understood that these descriptions attracted the interest of the US authorities, who had previously investigated Gajdusek's relationship with the children he had brought back. But charges were filed only with the cooperation of a Micronesian man, now aged 23 and a college student, who claims to have been abused in 1987. **C.M.**