

## Japanese students protest at plans for graduate school

### Tokyo

"CRUSH the graduate school reform scheme" screamed a poster at Tokyo University's main gate as 13,000 students from Japan's leading university went on strike earlier this month for the first time in eight years. The students, who boycotted classes on 7 June, are protesting at plans to strengthen the university's graduate school, suspecting that it is a grand strategy to tighten links with industry and increase the 'elitism' of the university. But reformers in the Faculty of Science, where the plan originated, say the changes are intended to create a more open and international university.

The main changes proposed are to establish a new campus for the graduate school in Chiba Prefecture, on the outskirts of Tokyo, and to fuse the undergraduate and graduate systems by establishing a 6-year course for a master's degree (which entails the elimination of the entrance examination to the graduate school for Tokyo's own students).

But each faculty has its own ideas about how the new graduate school should operate. Professor Akiyoshi Wada, who was appointed chairman of the science faculty's committee for reform in April, says that supporters of reform have been putting "the cart before the horse" by demanding more money and facilities for the graduate school without first defining their objectives. Under the science faculty's plan, the new campus in Chiba would, if established carry out 5-7 year projects in new fields, such as space and

life science, while research in more traditional areas would continue at the main campus in Tokyo. The faculty also hopes to establish a new post for young researchers to replace that of 'research assistant' (*joshu*).

The *joshu* system came under public scrutiny last year when a research assistant at Hiroshima University murdered his professor for passing him over for promotion after 17 years of service. A few months later, Nobel prizewinner Susumu Tonegawa criticized the system, which he says stifles young researchers under the control of autocratic professors.

Wada says the "Tonegawa typhoon" is helping the push for the new post, which he sees as being a non-tenured research position somewhere between a postdoctoral fellow and an assistant professor. Wada also hopes to establish more positions for foreign students, postdoctoral fellows, visiting professors and permanent faculty. But entrance examinations to the graduate school for non-Tokyo University students will have to be retained, at least until other universities in Japan adopt the same system, Wada says.

The Faculty of Engineering, on the other hand, which also has advanced plans for reform, seems to have its eyes on more domestic matters. The faculty hopes to strengthen links with industry through graduate school reform and plans to set up research institutes in collaboration with industry. It is these plans which have provoked vehement student protest.

David Swinbanks

## Caltech graduate course will change thinking on computers

### Pasadena

AN exciting new graduate course linking computation and brain function seems to have made a mark on intending students at the California Institute of Technology (Caltech) after only its first year.

Formally known as Computation and Neural Systems, the course, leading to PhD by thesis, recruits both engineers and biologists. Christoph Koch, one of the directors of the course, argues that understanding the design principles on which the brain works can contribute to the design of intelligent computers. Carver Mead, an engineer building analogue chips based on structures such as the mammalian retina, says that there may be much to be learned about component interconnection from the compromises reached during natural evolution.

Reciprocally, neuroscientists appear

rapidly to have appreciated the power of parallel computing techniques for modelling experimental systems, for which reason the words neural networks are on every tongue.

The new course is a joint initiative of the three divisions of Biology, Engineering and applied sciences and Physics, mathematics and astronomy. One major goal is the encouragement of interdisciplinary research projects, although the immediate incentive for founding a formal course seems to have been the large numbers of engineering students enrolling in biology graduate programmes.

Now, student demand seems to have taken Caltech by surprise. James Bower, joint director of the programme, says that he had planned to take only five students in the past academic year, but that "we could not choose between the top ten". By

## Australia's Labor party looks right

### Sydney

AUSTRALIA'S Labor party, in power since 1984, last week moved to sever several ties to its more socialist past. Speaking in Hobart, at the party's biannual conference, Prime Minister Bob Hawke backed changes in policy that would relax constraints on uranium sales. And in a historic decision, the party voted to abandon the commitment to free tertiary education.

The Labor party's policy has been to try for an eventual end to all uranium mining in Australia. Its aim has been to try to restrict the spread of nuclear weapons by banning the export of uranium from Australia. All shipments of yellow cake (unprocessed uranium) to France were banned as a protest against France's nuclear tests in the South Pacific. The policy took its first hard blows in 1986 when for economic reasons the government decided to resume uranium sales. At the Hobart conference, Senator John Button, the Minister for Industry, Trade, and Commerce, suggested that uranium might be enriched in Australia. France makes A\$250 million a year by enriching Australian uranium.

Hawke claimed that the Labor party never had an anti-uranium position, but simply a position of "accommodation to changing realities". The party's left wing does not agree and is certain to fight hard. But right and centre-left factions of the party joined forces to pass a motion that would deflect opposition by referring a decision to a postal ballot of conference delegates.

The decision to abandon free tertiary education represents a complete reversal of policies implemented by a previous Labor government in 1974. The new policy clears the way for the Minister for Employment, Education and Training, John Dawkins, to proceed with the implementation of the "learn now, pay later" tax recommended by the Wran committee (see *Nature* 333, 103: 1988).

Charles Morgan

contrast, there seems to have been a marked decline in applicants for graduate programmes with a molecular orientation in the past two years.

Caltech's new course also seems to have attracted an unusual (for Caltech) proportion of women, as well as support from industry. Much the same trends have appeared at the University of Pennsylvania, where Edward Pugh, professor in the psychology department, says that students are asking what molecular neurobiology has to say about processes such as perception and cognition. Pugh believes this trend may signal a switch in neurobiology towards the systems rather than the molecular approach to problems.

Jennifer Altman