

Is China Cutting Back on Overseas Students?

Chinese students in the United States protest Education Commission document, but Academy of Sciences president says a final decision has not been made

LAST month, Chinese students in the United States obtained a document issued by a Chinese state agency that would, in effect, reduce the number of students abroad, particularly in the United States, by thousands.

In a rare show of organized protest, more than 2300 overseas Chinese students, most of whom are in the United States, subsequently signed a petition opposing the commission's plan outlined in the document. Most overseas Chinese students study science and technology.

There are indications, however, that the policy has not yet been implemented, according to China watchers. President of the Chinese Academy of Sciences Zhou Guangzhao said in a recent wide-ranging interview with *Science* that "no final decision has been made" by the Chinese government to cut back the number of Chinese students now studying abroad.

In the past few years, China has been sending an average of 40,000 students overseas, of whom more than 20,000 come to the United States, according to Chinese and American estimates. Most are supported by more than \$100 million in scholarship aid provided by American universities, foundations, and private donations, according to Leo Orleans, who is conducting a study for a committee of the U.S. National Academy of Sciences on Chinese students who have studied here.

The document that raised student alarm was circulated last November by the State Education Commission. It announced restrictions on the length of time students are allowed to remain abroad and directed all levels of government, including consulates, to enforce the new regulations.

The education commission document says that a majority of students supported by foreign funds should go abroad for generally less than 1 year as visiting scholars. It also places severe restrictions on the length of time Chinese students can take to earn master's degrees and doctorates at foreign universities.

The new directive will lead to substantial cuts in the number of students allowed to study overseas, assert two Chinese Harvard

students, who requested anonymity. One of them said, "There is a saying in China, 'Prematurely picked fruit is not sweet.' China is forcing us to return early before we have finished our studies."

China authorities in the United States disagree over the importance of the directive. Merle Goldman, a Boston University professor who studies the Chinese intelligentsia, said that the new policy has been put into effect. "It's a rigid policy," she contends. She and Chinese students interviewed contend that party conservatives are responsible for the change because they believe that students are ideologically "polluted" by exposure to Western democratic values. They speculate that Li Peng, China's new prime minister and a conservative, is probably the primary force behind the policy shift.

A U.S. State Department official said, however, that the number of visa applications for Chinese students and scholars has remained the same since the commission directive was circulated, which suggests that the policy has not been enforced. And Goldman acknowledged that, as yet, only a few students have had to return home because their passports were not renewed.

The State Department official says the situation is particularly confusing because the Chinese government itself has officially disavowed that the education policy has been modified. An article in the 18 April issue of *Beijing Review*, a state publication, said that a top official in the Education Commission, Huang Xinbai, "denied rumors that China plans to drastically cut the number of students sent abroad and limit the proportion to the United States to 20% of the total." Huang did say, however, that "it is necessary to limit the time state-financed graduate students spend pursuing a degree in foreign countries. . . . Such limit will not be applied to self-funded students." (This last statement, however, does not square with the directive, the students say.)

Academy president Zhou, who is a party member, said during the interview in the presence of three aides, "Some people may have concerns about a brain drain. I don't worry about that. The students who come



Zhou Guangzhao. He also discussed scientific reforms and the elevated status of particle physics in an interview.

back are the seed of development of modern science and technology" in China. "But those who stay abroad also contribute to the Chinese revolution, which began with Sun Yet-Sen. Each group will make its own contribution to China."

Zhou, who became president of the Chinese science academy last year, commented on the status of overseas students during a 2-hour interview while recently in Washington to attend the annual meeting of the U.S. National Academy of Sciences. He is a theoretical physicist and is the first academy president in many years to be relatively young (he turns 59 on 15 May) and a bona fide scientist.

Zhou, who is fluent in English, also responded to a broad range of questions about the status of science and scientific reforms in China:

■ **Scientific reforms.** Zhou reiterated the goals of scientific reforms in China that were first outlined 3 years ago (*Science*, 3 May 1985, p. 559). At the time, top Chinese officials announced plans for sweeping changes aimed at ultimately strengthening the country's economy. The plans include relaxing central control over the direction of scientific research, decentralizing funding, and stressing applied rather than basic research.

Zhou said that the academy is still trying to decentralize decision making and give more power to the directors of the academy's 9000 institutes to determine how they spend their budget, for example. The institutes are beginning to conduct research on contract with local government and indus-

tries, which have been encouraged by the academy to foster commercially relevant research.

So far 6000 researchers have left their labs to carry out developmental research and formed 217 technology corporations, Zhou said in a speech at the U.S. Academy meeting. In fact, so many researchers have begun moonlighting to earn more money that the quality of teaching has been seriously impaired, a professor of Qinghua University, Mei Zuyan, said last month in *Beijing Review*.

The allure of earning extra money is not surprising. Scientists and academics are still near the bottom of the pay scale in China. Zhou said that academics receive about the same pay as government workers whereas farmers and factory laborers under the new economic reforms are making much more money. "Scientists who work for industry earn a lot more than others. It creates problems," Zhou said in the interview.

He noted that 40 "open" laboratories have been established with a special fund to revitalize Chinese research and provide modern equipment. Unlike the institutes, which have not been open to outsiders, half of the researchers of the open labs are visiting scholars from other Chinese institutes and abroad. The labs are governed by a board of directors of which two-thirds of the members are outsiders. To conduct research at the labs, individual scientists must submit a grant proposal to a peer-review committee. "Peer review has been emphasized in the past 3 to 4 years," Zhou said.

To invigorate Chinese research, the government has set a mandatory retirement age of 60 for researchers and academicians who hold rank below full professor. The mandatory retirement age for a full professor is 65. If the researcher is an academy member, however, "he can stay on," Zhou said.

The academy's plans for reforms are handicapped by a lack of funds. The budget of the academy, which is the chief source of research funds in China, has been decreasing in constant dollars over the past few years and this year is \$25 million, Zhou said. Most of the money is spent on applied research. Grants for basic research, excluding salaries, accounts for only a quarter of the academy's research budget. "The first priority of China's science and technology must be to serve the national economy," although "basic research cannot be ignored," Zhou said in his speech.

■ **Particle accelerator.** Despite the academy's tight budget and limitations on basic research, particle physics has been treated well. Completion of a new electron-positron collider in Beijing is expected by the end of the year. T. D. Lee of Columbia University

and Wolfgang Panofsky of Stanford University participated heavily in the design of the collider. The two beams of the collider are each 2.8 gigaelectron volts.

Similar to the debate among American scientists over the proposed superconducting supercollider, the Chinese project has been very controversial among Chinese researchers because of its expense and apprehension that the collider will not do anything different from machines in other countries.

The collider was ultimately paid for by a special fund separate from the academy's annual budget. It cost the equivalent of one quarter of the annual budget, Zhou said. "High energy physicists have wanted to build something since the 1950s. They have many powerful friends. This was the main driving force." Lee said that the collider will fill a narrow, but significant niche in physics research.

■ **Fang Lizhi.** Fang, an astrophysicist, became a cause celebre last year in China when he was fired from his post as vice president of the University of Science and Technology in Hefei and stripped of his

party membership for proclaiming the need for democratic reforms. Massive student demonstrations in China ensued to support him.

Zhou said that "there are no limitations on Fang Lizhi. He is allowed to travel abroad and he is still working at a laboratory."

Goldman of Boston University said, however, that the state has imposed restrictions on Fang, pointing out that he was allowed to travel to Italy last summer for a scientific conference, but was not allowed to go to Britain. Since then Fang has received many invitations to go abroad, but he has not been allowed to accept them, Goldman says.

Zhou said in his speech at the Academy meeting, "Reform in China is just beginning. It is a course full of difficulties and complexities. . . . The traditional concepts of living and working habits of millions of people have to be changed." The Chinese people "are accustomed to their slow paced life, a life that is not of high standard, but which ensures social security. . . . We cannot expect the reform to be completed overnight." ■ **MARJORIE SUN**

Big Flap Over a Small Space Station

Last week, in a step that muddled an already murky agenda, Congress withdrew its blessing for a small, private space station known as the Industrial Space Facility. A start-up grant of \$25 million has been withdrawn, and the Senate now says the idea must be analyzed by the National Research Council for at least 9 months—well into the next administration—before any commitment can be made.

Only 4 months ago, Congress forced this lab into the 1989 budget against the wishes of the National Aeronautics and Space Administration (NASA). Advocates said it could be leased for just \$700 million, a piddling amount as compared with the \$16-billion to \$30-billion price tag of NASA's big station. They said the automated lab could serve as a form of insurance, a way to keep up with Soviet, European, and Japanese microgravity research while NASA struggles to get its big, manned station under way. It could also serve as a test bed for equipment to be used on the big station, they said.

But the project set off a furor out of proportion to its size. As one expert on Capitol Hill says, it became the focus of a symbolic battle, more volatile than a battle over substance. The larger issues it stirred up were (i) questions about the wisdom of NASA's commitment to a big manned sta-

tion and (ii) a contest between NASA and those who want to liberate and "privatize" parts of NASA's turf.

While NASA had no use for the lab, it found itself confronted by some allies of opportunity who did. These were the space station skeptics and promoters of space commerce. Working through the appropriations committees, they overrode NASA's objections and added a clause to the omnibus budget bill last December, promising \$25 million for a "workable leased [Industrial Space Facility] vehicle." At the time, only one company, Space Industries Inc. of Houston, wanted to build such a vehicle.

NASA continued to resist. At this point, the appropriations committees threatened to withhold money for NASA's own space station if it would not cooperate.

In February, the President went along. He added the ministration to his own agenda, bowing to pressure from space business advocates in the departments of Commerce and Transportation (*Science*, 19 February, p. 856). Then NASA bowed, too, promising to issue a contract for the little station within 150 days.

In March, the other side retaliated. In this camp are NASA's old congressional friends and backers of the manned space station. Members of the authorization committees led by Senator Ernest Hollings (D-SC) and