

Scientists Pushed Into Deep End of Market Economics

BEIJING—For four decades a 3-meter-high brownstone wall has sealed off the square-kilometer campus of Beijing University from the hubbub of the city streets. Over the years it has grown shabby, with chain-link fencing shoring up gaps and shacks and shops concealing parts of it. But in March of this year the entire south wall disappeared altogether, brought down by the trumpet blast of economic reform. Going up in its place is a business park intended to house dozens of high-

tech firms started by university researchers.

The breaching of Beijing University's wall dramatizes the changes sweeping China's research community as the nation evolves toward "socialist market economics." The pace has quickened since the winter of 1992, when Deng Xiaoping urged faster economic reform, breaking the deadlock between reformists and hardliners that had paralyzed the country since the prodemocracy movement was crushed in June 1989. "Everyone is

trying to make money somehow," remarks a third-year biology major. "That's just the way China is these days. Why should Beida [as the university is called] be any different?" (Chairman Mao, meanwhile, has attained folk godhood: His image adorns taxi dashboards as a charm against traffic accidents.)

With science and technology seen as the twin engines of economic growth, Chinese scientists face an era of great opportunity—and great anxiety. In an attempt to force scientists into the marketplace, the government has slashed by 70% the operating budgets of the 117 institutes of the Chinese Academy of Science (CAS), China's foremost centers for basic research. This move is intended to shrink staffs bloated with party appointees. At the same time, the government is strengthening a competitive, investigator-initiated grant system run by the Natural Science Foundation of China (NSFC). When grants are not enough, the institutes must earn money by selling products and services. "Leaping into the sea" is what the Chinese call this plunge into the brave new world of market economics.

Science for sale. The changes are already obvious in the once-quiet neighborhood around Beida. Shop windows are splashed with red and blue lettering advertising brand-name computers and software. Splaying their tripod feet across sidewalks are bone-white satellite dishes, sold in the tens of thousands by some 150 companies operated by the Ministry of Machinery and Electronics Industry. The dishes allow people to tune into Star TV, the Hong Kong satellite broadcast company that brings "The Simpsons" and MTV to Asia. The Ministry of Radio, Film, and Television tried to ban them, to no avail: They were simply too profitable.

"A director's first responsibility is to make money," explains Wang Zhiqin, president of the Shanghai Branch of the CAS. "It's not easy. Scientists don't know how to run a business." But some are learning fast. The Shanghai Institute of Biochemistry, famed for synthesizing insulin in the 1960s, owns a scientific equipment maker and has converted its

Song Jian: Pushing Hard

PROFILE



"Everybody's grandfather." Song Jian.

As chairman of China's State Science and Technology Commission (SSTC), Song Jian wields ultimate power over the nation's scientific activity. The policies that are shaking up Chinese science today—including "socialist market economics" and "xia hai" (plunging into the sea, that is, to go into business for oneself)—can be found in statements he made during the mid-1980s.

As chairman of the SSTC since 1985, Song has urged scientific institutes to become more competitive and less dependent on the central government for funding and guidance. In 1987 he announced a plan to beef up China's research establishment by pushing scientists to think like entrepreneurs and by promoting the economic value of science.

Part of Song's success lies in his ability to avoid the fierce ideological bickering and political maneuvering that dominate the upper reaches of the Chinese government. "Song

Jian is not the type to take off the gloves and publicly slug it out with other leaders, but he does play a key role behind the scenes," says one Western diplomat.

Most recently, Song won out over the State Education Commission (SEC) on the question of whether students and researchers should be free to travel abroad and return without hindrance. The SEC, one of the most ideologically hidebound organizations in the Chinese government, harbors deep suspicions about the political reliability of scholars who travel abroad. "The freedom to come and go is a policy we proposed, and we discussed it in detail with the SEC," said Song in an interview with *Science*. "We had to argue with them, actually, and everyone finally accepted it."

Song himself is intimately familiar with the benefits of a foreign education. In the 1950s, he trained for 8 years in Moscow in the fields of cybernetics and automation engineering, before returning to China to lead the team that developed China's first generation of land-to-air missiles. He rose steadily through the ranks of the Chinese Academy of Sciences and various government ministries before becoming a member of the 13-person China State Council, which sits at the pinnacle of power.

Despite that clout, Song comes across as cheerful, open-minded, and unpretentious. In the words of a scientist in frequent contact with the 62-year-old science czar, Song is "everybody's grandfather." And like any grandfather, he worries about his descendants. "When I see these scientists who 'plunge into the sea,' the first thing I ask them is, 'Can you earn enough money to feed and clothe yourselves?'" says Song.

Their answers make him proud, he says. "They all tell me that's no longer a problem, that they now want to enter the world market and compete with foreign companies," he says. "They brag quite a lot," he adds, "but they also make much more money than I do."

—Ted Plafker



Sign of the times. Business park being built where Beijing University's wall once stood.