Mixed Signals on Stanford Biotech Patent

Over the past few years, Stanford and the University of California have gotten $3.5 million from licensing fees for two key biotechnology patents. But now in a move that could lead to litigation over the validity of the patents, Cetus Corporation has decided not to renew its licensing agreement with the universities.

The patents are important in the basic transfer of genetic material and the development of recombinant DNA products. The research was conducted by Stanley Cohen of Stanford and Herbert Boyer of the University of California.

To license the patents, companies pay royalities and an annual fee of $10,000. But ever since the patents were issued, there have been lingering questions about their validity. Though Cetus cited economic reasons for its decision, the action has been interpreted as a challenge to the patents' validity. Cetus' chief patent counsel Albert Halluin has openly asserted for the past few years that in his opinion the patents have major weaknesses. Halluin has questioned, for example, whether one of the patents contained the proper information to make an important plasmid, which is used to shuttle genetic material between organisms.

For the time being, other major biotechnology companies have not followed suit. Stanford official Katherine Ku says, "We don't expect other companies to drop out." In February, almost all of the companies on board renewed their licenses for this year. On Monday, in fact, Stanford announced that in the past year it had signed up an additional 11 companies, bringing the total number of licensees to 73. But Ku acknowledged that most of the additional companies had signed up before Cetus dropped out.

Other licensees are watching the situation carefully. The decision by a company to challenge the patent will be an economic one, says Genex president Leslie Glick. "As a practical matter, it costs quite a bit to challenge the patent." A company will have to weigh this against the potential royalties it may have to pay as more products are readied for market, he says.

Robert H. Benson, patent attorney for G. D. Searle & Company, says that for now it is easier for most companies to go ahead and pay the $10,000 license fee and "see if somebody else is willing to challenge the patent." He says that "sooner or later, Cohen-Boyer will be litigated."

—MARJORIE SUN

U.S. Tops Soviets in Key Weapons Technology

The fourth edition of *Soviet Military Power,* a glossy magazine released by the Defense Department with great fanfare on 2 April, paints a dark picture of the U.S.-Soviet strategic balance. Emphasizing the existence of an aggressive, large-scale Soviet research program on ballistic missile defense technologies, it suggests a need for the United States to redress "critical deficiencies" essential to the maintenance of an adequate deterrent, in the words of Defense Secretary Caspar Weinberger.

A much more cheerful view was presented in the little-noticed annual report of the Under Secretary of Defense for Research and Engineering, however. The report, which was completed in March, states that the United States leads the Soviet Union in virtually every basic technology "critical to defense" over the next 10 to 20 years, including many that may be crucial to the success of a sophisticated ballistic missile defense. U.S. technology is superior, for example, in computers and software, electro-optical sensors, guidance and navigation, materials, microelectronics, optics, propulsion, radar, robotics, signal processing, telecommunications, and signature reduction, or stealth, the report says.

The United States is also superior in life sciences, production/manufacturing, and submarine detection, according to the report. The Soviets, in contrast, lead in no areas, and match the United States only in aerodynamics, conventional and nuclear warheads, and power sources. In addition, deployed U.S. weapons systems are equal or superior to those of the Soviet Union in 25 out of 30 categories, including submarines, bombers, ballistic and cruise missiles, helicopters, tanks, aircraft, ships, torpedoes, communications, electronic countermeasures, and early-warning systems. The only exceptions lie in categories where the United States has chosen not to deploy any weapon system, or is on the verge of deploying what most experts consider a vastly superior weapon system. These include deployed antiaircraft missiles, a deployed ballistic missile defense, deployed chemical weapons, and deployed antisatellite weapons.

The report says that the Soviets devote a higher proportion of their overall scientific research to military purposes than the United States does, apparently to little avail, and adds that "the strengthening of the U.S. military R&D commitment will make it more difficult for the U.S.S.R. to close existing technology gaps." In a particularly significant passage, the report notes that weaknesses in the Soviet research and development effort "stem from three inter-related factors: the Soviets are constrained from taking advantage of the competitive processes and commercial incentives available to free-enterprise economies; they depend frequently on free-world accomplishments to point the way for high-technology advances; and their priorities and penchant for secrecy hinder application of scientific advances resulting in a relatively weak civil technology base."

—R. JEFFREY SMITH

Comings and Goings

Frederick Khedouri has resigned as associate director of the Office of Management and Budget for natural resources, energy, and science. He will become deputy chief of staff for Vice President **George Bush**, with responsibility for domestic policy and international economic matters.

Members of the National Academy of Engineering have elected two new members of their governing council: **Holt Ashley** of Stanford University, and **Daniel Berg** of Rensselaer Polytechnic Institute. Two current members, **Donald Atwood** of the General Motors Corporation and **William Ballhaus** of International Numatics, Inc., were reelected to additional 3-year terms.