edited by CONSTANCE HOLDEN

Rechanneling Soviet Scientific Talent

Ever since the Soviet Union began to break apart, people in the West have been worrying that "outlaw states" like Libya might buy up some of its surplus military expertise. Last week, a partial response to these worries took shape in Moscow. On 17 February the United States, Germany, and Russia agreed to create a new institute in Russia "that would support scientists and engineers of the former Soviet Union during the present critical period," according to a statement issued by the U.S. State Department.

A focus of the new "international science and technology center" will be to give weapons experts "opportunities to redirect their talents to nonmilitary endeavors, and, in particular, to minimize any incentives to engage in activities that would result in proliferation of nuclear, biological, and chemical weapons, and missile delivery systems." The researchers hired by the institute will work on converting military technology to peaceful uses, cleaning up contaminated weapons research areas, and establishing a clearinghouse to identify R&D projects deserving of foreign financing.

The initial U.S. pledge to the effort, according to Barry Daniel of the Arms Control and Disarmament Agency, amounts to $25 million—from a $400 million fund in the president's 1993 budget earmarked for U.S.-Soviet disarmament projects. Germany has agreed to help raise an additional $75 million from the European Community. The backers of the proposal also want to persuade academic and business leaders to fund joint projects with the Russians. For example, scientists at a nuclear lab that Secretary of State James Baker visited last month touted a variety of products, from industrial diamonds to computer software, that they said could be produced with help from Western investors.

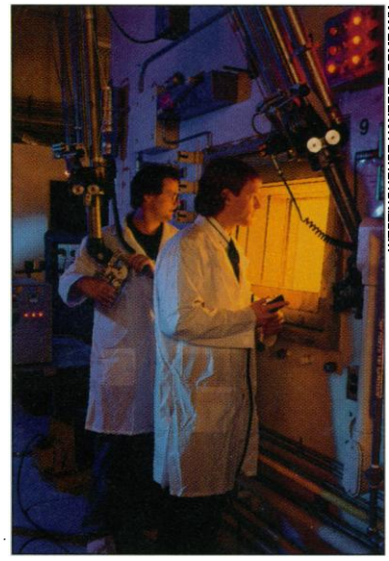
According to a German government official, a meeting in Europe is planned for "early March" on the details of financing the project. German leaders are worried that the West may not be moving fast enough.

Medical Use for Bomb Waste

On 12 February a shipment of radioactive cesium 137 left the Department of Energy's (DOE) Hanford site in Washington—formerly its Hanford Nuclear Reservation—for hospitals and labs around North America. The transaction, part of DOE's massive program for combining the cleanup of high-level radioactive waste with its commercialization, marked the first sales of nuclear isotopes produced at Hanford, and is expected to help ease a world shortage of radioactive cesium.

The powdered cesium chloride, double-sealed in stainless steel capsules, is being distributed as part of a $2.3 million DOE contract with Nordion International Inc., a Canadian company that makes blood irradiators used in procedures such as bone-marrow transplants.

A Nordion spokeswoman says the company usually uses cobalt 60, but cesium makes for lighter weight irradiators. The capsules were manufactured by Westinghouse Hanford Co. and Battelle's Pacific Northwest Laboratory, which run the Hanford site, once a major source of materials for bomb production. Battelle claims to have some of the world's few "hotcells," specially shielded rooms with remote manipulators, where the cesium is purified, powdered, and pelletized.



WESTINGHOUSE HANFORD COMPANY

Looking into a hotcell at Battelle.

Hanford scientists are also working on processing techniques and commercial applications for strontium 90 and yttrium 90, two other high-level wastes from its weapons production days. Though the swords of the cold war are now in surplus, it seems there is a hot market for plowshares forged from their wastes.

Experts Slam Olympic Gene Test

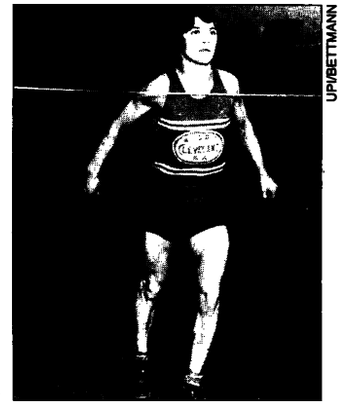
How do Olympic officials decide who's a woman so they can limit entry into women's events? Controversy was considerable at this month's Winter Olympic Games in Albertville, France, following criticism by scientists who say genetic tests are inappropriate for determining the sex of athletes. In Albertville, more than 500 female athletes had to let doctors stick swabs in their mouths to scrape off cheek cells, which were analyzed to ensure that each athlete had the proper pair of XX chromosomes.

Just before the games began, however, 22 French geneticists signed a letter to the International Olympic Committee (IOC) demanding that genetic sex tests be dropped as both unethical and scientifically questionable. That was followed by a critical commentary in the *Journal of the American Medical Association* by the International Amateur Athletics Federation (IAAF), backed by an editorial, agreeing with the French geneticists that physical exams are more appropriate for determining an athlete's sex.

This reasoning is based on the fact that the XY genotype alone doesn't make the man. Says Johns Hopkins University endocrinologist Claude Migeon: "The chromosome isn't what makes you a man or a woman. What you need is a specific gene on the Y." When that gene isn't working, a person, although unable to conceive normally, develops female sexual characteristics.

But despite scientists' eleventh-hour objections, the IOC's medical commission this year has replaced its old buccal smear test, used since 1966, with one based on gene amplification through polymerase chain reaction (PCR) technology to identify the Y chromosome. The commission's medical chief officer Patrick Schamasch says the PCR test "is much more reliable" and is backed up in questionable cases with a physical exam. "Nobody has been disqualified just on the lab test," says Schamasch.

The issue is sure to be raised again at the Summer Olympics in Spain this year when Maria Patino, a Spanish hurdler, takes the test. She was prevented from entering the 1985 World Student games in Tokyo because she had an XY karyotype, even though she has androgen insensitivity syndrome—which prevents the masculinizing effects of male hormones. After she went public with her case, the IAAF dropped the use of genetic sex tests for its games.



UPI/BETTMANN

Stella Walsh, '30s Olympic sprinter, had XY chromosome.