

SCIENCE AND TECHNOLOGY COOPERATION PROGRAMS

The International Science and Technology Center (ISTC) in Moscow, the similar center in Kiev, and a variety of lab-to-lab programs are already employing thousands of former Soviet weapons scientists in useful civilian work.³⁰ As its name implies, the ISTC

³⁰ For a discussion of U.S. programs intended to employ former weapons scientists in general, see Parrish and Robinson, "An Assessment of U.S. Nonproliferation Assistance to the NIS," op. cit.; for the nuclear portion considered in this paper, see also Sharon Weiner, *Nuclear Cities News*, Vol. 1, Princeton, NJ: Princeton University Center for Energy and Environmental Studies and Russian-American Nuclear Security Advisory Council, December 1999 (available at www.princeton.edu/~ransac). For information on the ISTC in particular, see the Center's web site (www.istc.ru) and the website for the similar center in Ukraine (www.stcu.kiev.ua). See also National Research Council, Committee to Assess the International Science and Technology Center, *An Assessment of the International Science and Technology Center: Redirecting Expertise in Weapons of Mass Destruction in the Former Soviet Union*, Washington DC: National Academy Press, 1996; Glenn E. Schweitzer (first director of the Moscow ISTC), *Moscow DMZ: The Story*

is a broad international effort, with funding from the United States, the European Union, Japan, and other countries, and staff drawn from both donor and recipient states. The ISTC has provided grants to some 24,000 former weapons scientists (many of them for only a small fraction of their time, however), for 835 projects, with international funding of \$231 million—\$92.8 million of which was from the United States.³¹ Of these, Russia's nuclear cities accounted for 280 projects funded at roughly \$39 million.³² After allocating \$59 million to the U.S. contribution to the ISTC and its sister center in Ukraine in FY2000, the Administration is requesting a further \$45 million in FY2001.³³

In recent years, in addition to its core mission of providing grants for research, the ISTC has been financing training programs in key aspects of commercializing technology (ranging from protecting intellectual property rights in technological innovations to drawing up business plans), and, though a new "ISTC Partners" program, seeking to draw in private firms interested in funding R&D by former weapons scientists through the ISTC mechanism. Recently, for example, Mobil Oil agreed to fund researchers from Sarov (formerly Arzamas-16, one of Russia's two main weapons design laboratories) to do mathematical modeling of oil flow in porous media.³⁴

Similarly, DOE's Initiatives for Proliferation Prevention program (IPP, formerly the Industrial Partnering Program), which seeks to provide initial funds to link Russian and U.S. laboratory technical experts with businesses willing to invest in commercializing their technologies, is also providing temporary employment for thousands of former weapons scientists, and attempting to partner Russian institutes with U.S. labs and industry to bring promising technologies to market.³⁵ The concept has been to begin with basic R&D involving only Russian and U.S. labs ("Thrust I" projects), then bring in U.S. industry on a cost-shared basis as the projects progressed toward commercialization ("Thrust II"), and finally to have industry pay the entire cost of the final phase, when the projects became ready for commercialization ("Thrust III"). As of November 1999, IPP had allocated \$106 million to fund 456 projects in the former Soviet states; of these, 81 projects, with proposed funding of \$21 million, were in Russia's closed nuclear cities. IPP's budget in FY2000 was \$22.5 million, and a further \$22.5 million is requested for FY2001. So far, however, only a few IPP projects have graduated to being commercially self-supporting, much of the money has historically gone to fund the U.S. laboratory participation, and some of the remainder has historically gone to Russian taxes and overhead (from which the ISTC funds are exempted). Nevertheless, a

of the International Effort to Convert Russian Weapons Science to Peaceful Purposes, Armonk, NY: M.E. Sharpe, 1996; Victor Alessi and Ronald F. Lehman II, "Science in the Pursuit of Peace: The Success and Future of the ISTC," *Arms Control Today*, June/July 1998; and R. Adam Moody, "The International Science Center Initiative," in Potter and Shields, *Dismantling the Cold War*, op. cit.

³¹ Data from the ISTC web page, January, 2000.

³² Weiner, *Nuclear Cities News*, op. cit.

³³ *International Affairs (Function 150) Fiscal Year 2001 Budget Request: Summary and Highlights of Accounts by Appropriations Subcommittees*, U.S. Department of State, February 7, 2000 (available at http://www.state.gov/www/budget/fy2001/fn150/fn150_fy2001_cmtes.html#forops).

³⁴ Weiner, *Nuclear Cities News*, op. cit.

³⁵ For brief overviews of IPP, see *Program Strategy: Initiatives for Proliferation Prevention*, Washington DC: U.S. Department of Energy, November 1999, and the IPP home page, at <http://www-citr.ornl.gov/ippover.html>. For data on specific projects, see Weiner, *Nuclear Cities News*, op. cit.

significant number of IPP projects are now nearing the commercialization stage, and DOE has been undertaking substantial reforms.³⁶

The United States (as well as George Soros and other sources) has also provided funding to the Civilian Research and Development Foundation (CRDF), a private organization (much smaller than the ISTC) which also provides funding for scientists in the former Soviet Union (who need not be former weapons scientists, in the case of CRDF) to do civilian work. CRDF has a small program focused on the nuclear cities, which helps arrange funding for U.S. collaborators to work with nuclear city researchers on joint R&D projects with commercial potential, and also helps fund joint projects between Russian labs, Russian industry, and U.S. industry.³⁷

³⁶ For a General Accounting Office review of IPP that was critical on these and other grounds, see General Accounting Office, *Nuclear Nonproliferation: Concerns With DOE's Efforts to Reduce the Risks Posed by Russia's Unemployed Weapons Scientists*, GAO/RCED-99-54, Washington DC: February 1999. While this report has been portrayed in the press as concluding that the IPP program is useless, in fact it concludes that "DOE's effort to supplement the salaries of former weapons scientists so that they do not sell their services to terrorists, criminal organizations, or countries of proliferation concern is laudable and, we believe, in our national security interests," and acknowledges that the program is successfully involving thousands of former Soviet weapons scientists in civilian projects. GAO expressed a number of valid concerns over "implementation and oversight," of the program, and made a range of recommendations, nearly all of which DOE has accepted. For a useful response to the GAO report and defense of IPP and the Nuclear Cities Initiative, see Biden, "Maintaining the Proliferation Fight in the Former Soviet Union," op. cit.

³⁷ Weiner, *Nuclear Cities News*, op. cit; see also the CRDF website, at www.crdf.org.