

Dr. Gloria C. Duffy, President & CEO

TEETH WHITENING AND TERRORISM

Peter the Great began the long and distinguished history of Russian science in 1724, creating the Russian Academy of Sciences in St. Petersburg to ensure that Russia kept pace with the rest of Europe in contributing to the scientific discoveries of the age. During the Cold War, the Soviet Union continued to pour funds into science. But under the Soviets, much of Russia's superb scientific training and research was turned to military purposes, to create nuclear, chemical and biological weapons. The majority of scientists worked for the government.

When the Soviet Union disintegrated in 1991, the cash-strapped governments of the former Soviet states had little money to continue supporting the work of their chemists, physicists, geologists, mathematicians and biologists. So they abruptly cut the scientists' funding. This personal disaster for the scientists was also tragic for their societies, which could benefit so greatly from their contributions to medicine, industry and the quality of life.

Of particular concern to the international community: because of their work during the Cold War, hundreds of thousands of these scientists had critical knowledge of how to build weapons of mass destruction. In an era when terrorists and rogue countries are seeking nuclear, chemical and biological weapons, these legions of unemployed or underemployed scientists present a very real threat. One story from the early 1990s, perhaps apocryphal, tells of a planeload of Russian scientists stopped by authorities on the runway at Moscow's Sheremetyevo Airport, bound for Iran, or North Korea or Iraq.

Enter a Riverside, California, Congressman, George Brown, with a bright idea. An industrial physicist and chairman of the House Science Committee, in 1992 Brown wrote legislation creating the U.S. Civilian Research and Development Foundation (CRDF). Set up as a non-

profit, non-governmental organization by the U.S. National Science Foundation, CRDF would fund collaboration between the U.S. and former Soviet scientific communities, the two greatest scientific groups in the world, which had been cut off from one another during the Cold War. CRDF would help scientists in the FSU to continue their contributions to world scientific knowledge, and to create more prosperous economies in their region. The Foundation would employ former Soviet weapons scientists on civilian research projects, giving them an alternative to selling their knowledge to other countries or terrorist groups.

Congressman Brown died in 1999, but CRDF was born in 1995 and will celebrate its 10th anniversary in Washington, D.C. in October. In the past decade, the Foundation has raised and channeled \$249 million, in taxpayer dollars, private foundation and corporate funding, for joint scientific research. CRDF has run research competitions and given hundreds of grants for American-FSU research. It has provided travel grants for scientists from the 12 former Soviet states to attend conferences or visit colleagues in the United States, in many cases for the first time in their lives. CRDF has provided major scientific research equipment – spectrometers, lasers, electron microscopes – to consortia of researchers across Eurasia, who share use of the equipment.

CRDF has funded fellowships for young scientists at Russian universities and built a geodynamic research facility in Kyrgyzstan. It has refitted an oceanographic vessel, the Professor Kaganovskiy, so teams of U.S. and Russian researchers can measure the health of the Arctic Ocean's pollock fish population. CRDF has launched a collaborative research project on treatment of HIV/AIDS. It has funded joint research by an Ohio start-up company and a Russian institute on advanced cancer detection

technology, and funded training of Russian

hospital staffs in infection control to prevent the spread of tuberculosis. After 9/11, CRDF established a joint U.S.-Russian research project on defense against bioterrorism, tapping the considerable Russian knowledge growing from their longtime biological weapons program.

CRDF has done all of this with low overhead, and with matching funds from the governments in the former Soviet countries. And the Foundation has paired scientists with companies and investors to explore the commercial potential of the joint research, so that it will eventually help the economies of that region and beyond. Some CRDF research projects have produced commercially viable products, including an energy-saving cryogenic process for refrigerating produce during transport that is already in use in the United States. My personal favorite among these success stories is teeth whitening strips. Every time you see a TV ad for these, think about how the method for making these strips adhere to the teeth came from one of CRDF's U.S.-Russian research projects.

And with terrorists on the hunt for nuclear weapons, CRDF has recently broadened its geographical range to provide former weapons scientists in Iraq and Libya with productive civilian alternatives for their skills.

On October 18, Marta Brown, widow of the late congressman, will be in Washington to help CRDF mark its 10th birthday. Kudos to Congressman Brown for a great idea, and to the U.S. and foreign officials, CRDF's dedicated staff, the participating scientists, funders and investors, and the volunteers who serve on its board for building this unique institution. Ω



Moldovan scientist at Virginia Tech.

Photo courtesy of CRDF