



THE UNIQUE U.S.-RUSSIAN RELATIONSHIP IN BIOLOGICAL SCIENCE AND BIOTECHNOLOGY RECENT EXPERIENCE AND FUTURE DIRECTIONS (2013)

Since the late 1990s, U.S. and Russian organizations have invested more than \$1 billion in bilateral engagement activities covering a wide range of scientific collaborations in various fields of biology (referred to as bioengagement). The U.S. government has paid most of the direct costs, and the Russian side has covered many indirect costs while providing the largest share of the scientific expertise for collaborative projects. These activities have had a profound beneficial effect during times of severe economic difficulties in Russia, preserving important segments of the research infrastructure while providing professional opportunities for tens of thousands of underemployed Russian scientists. At the same time, hundreds of American scientists have benefited from collaborations with Russian colleagues whose expertise, publications, and access to territories with unique biological resources had been little known outside Russia.

But in recent years the support for joint efforts in the life sciences has declined by more than 80 percent. The United States has shifted most of its financial resources from programs centered in Russia to projects sited in other countries. At the same time, Russian leaders no longer consider “assistance” programs as appropriate for today’s Russia; however, they have only slowly followed through on their long-standing commitments to share more fully the direct costs of bioengagement activities that benefit both countries.

Past investments by the two governments in collaborative activities have paid off in many ways. Communications between Russian and American researchers and sharing of broad professional interests have become commonplace. Working together has been particularly important as scientists from both countries contribute to improved disease surveillance capabilities, better control of agricultural pests and pathogens, enhanced assessment and mitigation of environmental problems, and strengthened laboratory biosafety practices.

Most important, shared biological interests are spread over the vast ecological landscapes of the two countries that together cover 34 percent of the land surface of the northern hemisphere. Russia and the United States have two of the world’s largest technical work forces with cutting edge skills in the biological sciences. Specialists from the two countries have repeatedly demonstrated how bioengagement can advance science, contribute to economic and social progress, and promote international security.

Against this background, the American and Russian members of the committee that authored a 2013 joint report of the National Academies and the Russian Academy of Sciences concluded that bioengagement activities are undervalued in Washington and Moscow. This decline in interest of the governments has evolved despite an impressive record of successful collaboration over many years. In the committee's view, it is clearly in the interests of the two countries to support a more robust bioengagement program involving both government and private sector institutions in the two countries. At the same time, exceptionally well qualified researchers now in the early years of their careers should be given greater opportunities to participate in important bioengagement activities sponsored by the two governments.

The first major recommendation of the committee is that the two governments should support and expand when appropriate ongoing bioengagement activities that have clearly demonstrated significant benefits for both countries.

Second, the committee urges the two governments to continue their efforts to reduce impediments to cooperation. At the top of the list is the difficulty that scientists in both countries often encounter in obtaining in a timely manner visas that are required for cooperation.

Third, the two governments should establish a new, jointly financed research fund, under the direction of an independent board of directors. The fund should be embedded in an existing institution in each country, thereby avoiding the complications of establishing new legal entities. The fund should support American and Russian scientists in designing and carrying out joint projects that enhance important components of research and development cycles, with special emphasis on basic research activities. The projects should be selected on the basis of carefully structured peer reviews by qualified scientists from each country, should be relatively large (e.g., up to \$2 million for three years), and should each involve scientists from several institutions of the two countries.

Examples of topics that are suitable for joint investigations are the following:

- Development of novel therapeutics, diagnostics, drugs, and vaccines
 - Improvements in disease surveillance and monitoring techniques
 - Collaborations in synthetic biology
 - Studies of animal health and latent zoonotic diseases
 - Improved techniques for control of plant diseases
 - Understanding and preservation of biodiversity
 - Research on dangerous pathogens that require highly specialized biocontainment facilities and experienced staff that are available in both countries.
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Copies of *The Unique U.S.–Russian Relationship in Biological Science and Biotechnology: Recent Experience and Future Directions* are available from the National Academies Press, 500 Fifth Street, NW, Washington, D.C. 20001; (800) 624-6242; www.nap.edu.