The Future of Russian Science

In May, Russian Prime Minister Vladimir Putin addressed the general meeting of the Russian Academy of Sciences (RAS), describing plans to overhaul the country’s science and innovation agenda and structure, with the goal of bolstering Russia’s economy and global competitiveness. A major question is what role the RAS—the largest and most prestigious scientific institution in Russia—will have in these projects.

The RAS’s prestige is grounded in a rich history of major discoveries by its scientists, in the thousands of Ph.D.’s it has trained, in the Russian Nobel Prize winners who did their seminal work there, and in its many outstanding scientists and scholars who became professors at various universities. Although recently the RAS has been attacked in both the Western and Russian press for low efficiency, it is hard to imagine how other organizations could assume these multifaceted functions in the foreseeable future. Currently, there are plans to expand universities and research centers and to integrate research, education, and production activities through mechanisms that fail to include any increased investment in the RAS, which received less funding in 2010 than in 2009. Yet a major reason for RAS’s low efficiency is the disposable level of funding it has received for several decades, and it is difficult to see how its more than 50,000 scientists can help to drive the nation’s transformation agenda without serious new support.

Consider the situation with respect to molecular biology. In Soviet times, the RAS maintained a rather strong effort in molecular biology research. But this almost perished after a sharp decrease in financial support in 1990 that triggered a massive emigration of well-educated experienced specialists. However, a number of strong groups managed to survive, largely by acquiring outside grants and establishing collaborations with Western research groups. After the funding of science in Russia began to increase again, the Presidium of the RAS created the program Molecular and Cellular Biology in 2003. This program supported about 100 of the best Russian research groups with awards of up to $150,000 per year. The competition was open to scientists who had emigrated, and many young researchers preferred to stay in Russia or even return to join this effort. The recipients of these awards were selected mainly on the basis of publications in highly rated international journals; as a result, between 2003 and 2009, the program produced about 2000 papers in peer-reviewed international journals, including the most reputable ones. Such results demonstrate that providing sufficient funding for strong groups can revive effective scientific activity at RAS institutions throughout Russia. It is therefore disappointing that support for the program was reduced because of inflation over the years, and then suddenly cut by about a third in 2010, which could nullify all previous efforts.

Producing outstanding basic experimental science requires three pillars: talented scientists, adequate equipment, and favorable conditions for a researcher’s work and life. Many talented scientists still remain in Russia. However, the outmoded equipment in many institutes, low salaries, and housing problems have been forcing many of the most talented to leave the country. Admittedly, the RAS has suffered in the past from many shortcomings, such as a low percentage of competitively distributed funding and the lack of an efficient mechanism for selecting those research groups that are most worthy of support. But these shortcomings can be fixed through rather simple reforms. At the same time, the RAS can serve as an interface between science and industry to further drive the development of Russian society. In his talk, the prime minister emphasized several key points relevant to the role of the RAS in his plans for improving the nation’s innovation capacity. Among them: “The Academy has always been and must remain a key institution of national and social development … the field of science … is based on a principle of … competition … scientists should have the opportunity to work at state-of-the-art research centers.” These are the right strategic ideas, and they should be implemented by building on RAS capacities.

Georgii Georgiev and Eugene Sverdlov

10.1126/science.1196665
Editor's Summary

The Future of Russian Science
Georgii Georgiev and Eugene Sverdlov (September 30, 2010)
Science 330 (6000), 11. [doi: 10.1126/science.1196665]

This copy is for your personal, non-commercial use only.

Article Tools
Visit the online version of this article to access the personalization and article tools:
http://science.sciencemag.org/content/330/6000/11

Permissions
Obtain information about reproducing this article:
http://www.sciencemag.org/about/permissions.dtl