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How 2022 Wiped Out a Decade of Progress in Russian Science

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Arthur Novosiltsev / Moskva News Agency

The story of Russian science in the 21st century is in many ways my own story too. When I entered the field as a student intern in 2005, science in Russia was seen more as an exotic hobby than a profession. Only professors and senior researchers earned enough to live from science; everyone else had to work part-time elsewhere, as the once well-funded Soviet science complex continued to come to terms with economic reality.

A decade later, however, the reverse was true — funded by the country's vast petrodollar receipts, Russian science had become so well-paid that those with scientific qualifications began to return to the sector in large numbers. Supported by ample research grants, young scientists not only worked on modern equipment and published papers in the world's leading scientific journals, but they could also afford luxuries that would have been unthinkable a decade earlier, such as buying an apartment.

Driving that change was a simple formula that had been repeated successfully the world over: namely increased funding coupled with the modernization of management processes such as competitive grant funding schemes and university excellence programs.

These ideas were all imported, of course, and were imposed in a top-down manner following the mantra of best practice, international standards and expertise. Russian researchers actively sought to expand international collaboration and openly lobbied for Russian science to ditch its reflexive Soviet-era secrecy.

Of course, science can only be a global enterprise — there is no such thing as national science, and history shows us that all successful scientists and scientific schools were the product of global interaction.

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China, for example, whose now-modernized scientific establishment is seen by Russia as something to aspire to, effectively used Western-trained scientists to build its own Western-style science sector in just two decades.

The country's 2008 "Thousand Talents" project proved so successful that it actually led to tension between the U.S. and China, as Washington began to fear its status as a scientific superpower could soon be eclipsed. While ostensibly aimed at attracting international researchers to China, the program in actual fact managed to entice a wave of Chinese researchers to return home after spending years soaking up know-how in some of the world's leading universities and institutions.

The Chinese example is far from unique. Due to a special arrangement, Iranian scientists can be found working at The European Organization for Nuclear Research (CERN), while at the SESAME synchrotron in Jordan, Iranians can be found working side by side with colleagues from Israel. There is no room for isolationism in science.

When I asked my friends recently what changes they'd seen in Russian science since the war began, all of them mentioned that international cooperation had suffered greatly, attending conferences had become impossible due to visa issues and institutional bans on Russian participation, and contact with researchers in the West continued only on an individual basis. Some noted Russia's so-called "pivot to Asia," but complained that it severely limited the scope of collaboration.

These issues may soon pale in comparison to the severe equipment shortages already faced by many Russian researchers, which are only set to intensify in the coming year as domestic stockpiles are depleted. The shipping of reagents has slowed down while also becoming pricier as additional intermediaries are required to evade sanctions.

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Like a timebomb, the lack of new deliveries to replace existing equipment is not yet particularly noticeable, but in just a few years it will force entire fields of Russian scientific

research to cease activity. However much the government claims the contrary, not everything can be produced domestically.

For now, researchers affiliated with Russian institutions can still publish papers, but many report hostile reactions from editors, reviewers, and even erstwhile co-authors on a personal level.

The war has also caused the few foreign experts still working in Russia to leave the country, even from institutions that were once the most successful in attracting them, such as Skoltech outside Moscow, which was founded in collaboration with MIT in 2011.

The foreign researchers who have stayed in Russia say they are now either viewed with suspicion as potential spies or with scorn as scientists incapable of finding employment anywhere else. Multiple recent espionage and treason cases opened against Russian researchers have destroyed once and for all any remaining image Russia may have had as a country where international collaboration is welcome.

Even a generous level of state funding cannot mitigate these circumstances. In the past decade, Russian science saw at best modest growth even when money flowed freely and international collaboration was the norm. The pivot to isolationism will be its death knell — a recent campaign to promote "our" (i.e. Russian) science confirms without a doubt that Russia's vast scientific complex is viewed by the Kremlin as little more than a bauble to be used for propaganda and prestige rather than a public service for the advancement of humankind.

It should come as no surprise therefore that, unlike IT specialists, Russia's scientists weren't granted exemptions during the recent mobilization drive. Russian science has in the space of a year been reduced to little more than a soft power theatre piece, and it's not surprising that the actors are now leaving the stage in droves.

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