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In Russia, 'Lots of Scientists, Little Science'

By Ivan Nechepurenko

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American scientists Eric Betzig (L) and William Moerner (R) and Germany's Stefan Hell won the 2014 Nobel prize for chemistry for the development of super-resolved fluorescence microscopy, the award-giving body said on Wednesday.

Since the fall of the Soviet Union, five Russian scientists have been awarded the Nobel Prize in physics.

All five received their educations and launched their careers during the Soviet era, when science — particularly in connection with the military-industrial complex — ranked among the state's top priorities.

Today Russia's odds of receiving a Nobel Prize "are approaching zero," several prominent scientists told The Moscow Times.

While some Soviet-educated physicists — such as Alexei Starobinsky, one of the originators

of the cosmic inflation theory — may still be rewarded for their achievements in the future, the post-Soviet generation is suffering from grave difficulties: a lack of independence, strategic planning and honest competition among scientists.

Russia's most recent Nobel laureate, Konstantin Novoselov, who earned the 2010 prize in physics together with Soviet-born Andre Geim, said the government isn't entirely to blame: Russian society as a whole has failed to recognize the necessity of science to the country's development.

"Society no longer realizes how much it owes to scientists, to engineers, and this has devalued the status of scientists, demotivating them," Novoselov, who was educated in the Soviet Union and Russia but currently works at the University of Manchester, said during a recent lecture in Russia.

On Tuesday the Nobel Prize in Physics was awarded to a group of Japanese physicists for "the invention of efficient blue light-emitting diodes, which has enabled bright and energy-saving white light sources," or LED lights, as they are more broadly known.

Starobinsky, who still works at the Landau Institute for Theoretical Physics in Moscow, along with Soviet-born Andrei Linde, who now works at Stanford University, and American Allan Guth are among the candidates favored to become Nobel laureates in the coming years.

"There are Scientists [in Russia] but there is no science," said Sergei Popov, a leading researcher at Moscow State University's Sternberg Astronomical Institute and popular scientist in his own right, who consistently sells out lecture halls.

Alexei Bobrovsky, a senior researcher at Moscow State University, and a recipient of the 2009 presidential young scientists award, echoed Popov's aphorism.

"My view is that 90 percent of scientists [in Russia] imitate their research. They defend dissertations that nobody needs and publish articles in obscure journals that nobody reads. Our science, obviously, is becoming increasingly provincial," he said.

Post-Soviet Exodus

In the late 1940s the atomic bomb project launched science to the forefront of Soviet interests, while scientists themselves were propelled to society's upper echelons. Many top scientists were showered with honors and material benefits, such as personal cars with drivers and luxurious apartments in the poshest neighborhoods of Moscow, Leningrad and Kiev.

"The state was bribing the scientists on a colossal scale. The standard of living and benefits bestowed on scientists were unprecedented around the world," said Andrei Tsaturyan, one of Russia's leading biomechanists.

After the collapse of the Soviet Union in 1991, the funding windfall evaporated. The state lacked both the resources and the imperative of investing in expanding or even maintaining its expensive scientific infrastructure. As a result, many of the most active scientists left Russia to work in the West. According to the Association of Russian-Speaking Scientists, there are about 100,000 Russian-speaking researchers currently working outside Russia. Russia's

Education and Science Ministry puts the figure at 25,000.

Lack of Long-Term Vision

In 2009, after nearly two decades of benign declarations, the Russian government spearheaded efforts to improve the situation drastically. Several signature projects were announced in the field of science: mega-grants to fund cutting edge laboratories, the establishment of the Skolkovo innovation center and the creation of national research universities.

Vladimir Spokoiny, a member of the leading group of Soviet mathematical statisticians in the 1980s, left Russia in 1992 for France and later Germany. He quickly rose to the helm of a research group and became a professor at Berlin's Humboldt University. In the ensuing years, the field of mathematical statistics had all but disappeared from Russian academia.

In 2011, the Russian government awarded Spokoiny a mega-grant of 150 million rubles ($3.75 million) to re-establish this field of research in Russia. Spokoiny created a laboratory at the renowned Moscow Institute of Physics and Technology.

The problem, according to Spokoiny, was that the maximum term of the mega-grant was 4 years, while the project will at least 12 years' worth of funding to get off the ground. After the four-year mark, Spokoiny and his peers will be left to their own devices to gather funds.

"Russia, as usual, is following its own path of development, learning — and sometimes failing to learn — from its own mistakes," Spokoiny said.

Last year, the government decided to reform the Russian Academy of Sciences, a mammoth organization that runs 500 research institutes and employs more than 55,000 scientists.

In the past, the academy managed its own property, a practice that led at times to abuses such as property damage, or personal enrichment schemes.

The new reforms will place the property — and in turn, some of the academy's affairs — under government control, a move criticized by many scientists who fear the institution will lose its independence.

Scientists interviewed by The Moscow Times said the reform has yet to be implemented.

Geopolitics Everywhere

The ongoing conflict between Russia and the West over the fate of Ukraine has also dealt a blow to Russia's science scene. Most recent achievements in physics, chemistry or biology were attained in multinational groups, which makes the revival of Russian science even more difficult in the atmosphere of increasing isolation from the outside world.

According to Tsaturyan, even today Moscow State University lacks an online subscription to major international journals, such as Nature and Science. Two of his fellow scientists said they want to leave Russia after the country clashed with the U.S. over Crimea. One American medical scientist refused to come to Russia for a conference citing political concerns.

Isolation can mean that more resources will be poured into science domestically, but it does not mean that there will be great achievements, other scientists said.

"Concentration of resources in several fields of research can bring some success. At the same time, there is no doubt that science has become international in recent decades. Any attempt to develop it in isolation has no future," said Valery Adzhiev, a Russian-born senior researcher at the National Center for Computer Animation at Bournemouth University.

Kim Kardashian Effect?

According to Mikhail Gelfand, vice director for science at the Institute for Information Transmission Problems in Moscow, a Nobel Prize could have a negative impact on Russian science.

"This will be similar to the effect of Sochi Winter Olympics — an outburst of meaningless patriotism will hide grave problems," he said.

Gelfand said he is against "glamorous" awards as science is a collective endeavor, where it is difficult to distinguish a handful of individual scientists from among their peers.

"This will be negative due to the 'Kim Kardashian effect,' when one laureate obtains an incommensurate ability to express his views on basically all issues," he told The Moscow Times.

"Scientific ability is not always accompanied by basic human decency. Among Russia's potential Noble Prize winners, there are people with quite crude attitudes. We could end up with a jingoistic patriot, who will then feel entitled to speak with authority," he said.

Staff writer Alexey Eremenko contributed to this report.

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