

**The Academy Responds**

1997–2008

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«...» [1]

To begin with, the attempt of the authors of the article 'Six Myths ...' [1] to separate modern Russian Academy of Sciences, on the one hand, and the name of Peter I and the St.-Petersburg Academy of Sciences set up by him, on the other, is surprising, since from the very start the Academy of Sciences was not a scientific club (as the authors argue) but the most 'state-run' of the then existing academies, which efficiently complied with the most important orders of the state. Peter I not only created the Academy of Sciences by his decree but devised autographically the first state order – an instruction for the First Kamchatka expedition (1725-1729). The First and, afterwards, the Second Kamchatka expedition (1733-1743) were among the biggest state project of the 18<sup>th</sup> century executed by RAS. Expeditionary activities of the Academy of Sciences in Siberia and the East of the country went on until mid-20<sup>th</sup> century. Without RAS expeditions it would have been impossible not only to open up vast territories behind the Urals but to own them.

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Academic commissions set up also by state order grew very important like, for instance, the permanent commission on the study of natural production forces (CNPF) set up in late-19<sup>th</sup> century and headed by V.I.Vernadsky, the commission on the study of the Baikal Sea set up in 1916 under Academician N.V.Nasonov and others – 21 in total. CNPF and several other commissions turned into testing fields to elaborate new approaches to organize scientific studies in the country and gave a push to the state to create a network of state scientific research institutes as the most promising form of research. By the time of the 1917 revolution a scientific lobby oriented at raising the role and place of academic institutions in the country's economic life had been formed in RAS. These ideas were realized in post-revolutionary Russia.

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During soviet power, beginning with the 30s, when the Academy really gained a new status, it proved its efficiency, played a decisive role in big projects (missile, nuclear projects), in the discovery and development of oil and gas fields of Siberia, in setting up the RAS Siberian Branch, etc. At all stages, the Academy of Sciences and its members did not give up their responsibility in the heated atmosphere of those times connected with life risk. A part of the academicians did lose their lives.

The comparison of RAS Presidium with a 'ministry of science' turned into a customary cliché. But RAS Presidium is an elected body integrated by renowned researchers, RAS members representing various scientific disciplines, who gained the majority of votes at the general meeting of the Academy. Hardly can we find another more democratic and tough procedure for selecting the leadership of a state organization in the Russian Federation. Therefore, the decisions of RAS Presidium, as of no other group of experts, are legitimate and, in the majority of cases, most competent.

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When discussing so-called RAS myths surprising is the ability of the authors of the article 'Six Myths ...' to manipulate numbers. For example, the age of today's academicians is compared with that of foreign researchers invited by Peter I at the dawn of the Academy. One can also compare it with the age of those researchers who created the RAS Siberian Branch, among them academicians of 32-33 years of age. Everybody ages sooner or later, the founders of Peter I Academy aged as well. But we haven't heard they were fired because of their age.

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The authors of the article 'Six Myths ...' compare RAS productivity by the quantity of publications per cost unit with Russia's sector of higher learning, and in citations with the Academy of Sciences of China, the Max Planck Society (Germany) and the National Center for Scientific Researches (SNRS, France). The question arises: Why different comparison criteria are chosen for our researchers engaged in institutions of higher

(SNRS, )

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learning, and foreign researchers? The answer is simple. The abundance of higher learning publications does not, regrettably, prove their quality. With a few exception of those higher learning institutions, which intensively cooperate with RAS - Moscow, St.-Petersburg, Novosibirsk universities and some other, – the citation of researchers' works from other higher learning institutions is close to zero. But the authors of the article 'Six Myths ...' regard precisely citations as the principal criterion of researcher's quality. We can speak of modern fundamental science existing only in those Russian higher learning institutions which cooperate with RAS institutes.

Touching on references to compare RAS productivity per cost unit with that of foreign scientific organizations one cannot fail to take into consideration the structure of our national budget funding of RAS, which, over the last 10 to 15 years, is like unemployment relief: the share of compensation of employees accounts for about 80 percent, the rest falls on housing and utilities as well as other services payments. RAS has taken this decision intentionally to raise the payroll level of researchers at least up to the average statistical one. Funds meant for researches as such (chemicals, materials, academic trips, expeditions, etc.) are procured by chasing after grants and contracts. Hardly will this situation strongly contribute to raise productivity of researchers' labor.

Notwithstanding, the results achieved by our researchers are, in our view, quite worthy. According to the citation criterion as well. On the basis of Web of Science the list ('Shtern list') of Russian researchers with more than hundred citations to their works over the last seven years is published. For example, in the RAS Siberian Branch Academician in mathematics S.K.Godunov is active (3,711 citations), physicist V.L.Chernyak (4,615), Academicians in chemistry M.G.Voronkov (14,059) and V.V.Boldyrev (4,314), Academician in geology N.V.Sobolev (4,874) and other occupying the upper lines of ISI most cited Russian researchers (more than 1,000 of them). These are worthy indicators for world-standard researchers.

Meanwhile, a publication translated into articles cost RAS Siberian Branch on the average 718,500 rubles, i.e. about \$24,000 at today's exchange rate, - even compared to Max Planck Society RAS Siberian Branch looks not bad.

The lion's share of magnets of the international Large Hadron Collider launched in 2009 in CERN (Switzerland) is fabricated at the experimental factory of the Institute for Nuclear Physics, RAS Siberian Branch. In the same year the first thousands of tons of crude oil were extracted at the Vankor field in the north of Krasnoyarsk Kray. Recoverable reserves of this field are assessed at 520 mln t of crude oil and 95 bln cubic meters of natural gas. Twenty years ago this field was contoured by Academician A.E.Kontorovich. The same production will be developed next year in East Siberia in Yurubcheno-Takhomskaya zone, whose gigantic resources are formed by Pre-Cambrian hydrocarbons deposits, the oldest on the Earth. East Siberian oil and gas, for whose transportation sake a pipeline to the East, the Pacific Ocean, has been laid, was predicted in the 60-70s of the past century by Academician A.A.Trofimuk and his colleagues. He also discovered gas hydrates – the quality of natural gas in solid state. Today the prospected deposits of these raws in sea and ocean offshore zones exceed all reserves of traditional hydrocarbons available in the world. Development of diamonds has started in the Arkhangelsk Region and in the biggest Snap Lake diamond mine in Canada discovered by RAS Corresponding Member N.P.Pokhilenko and Academician N.V.Sobolev.

To objectively assess the results of RAS activities suffice it to recall the sad fate of the practically annihilated mighty industrial branch of Russian science. Among the results are numerous technogenic accidents and catastrophes with the human factor as its basic cause: either lack of high-class specialists, or lack of their sufficient competences.

Russian fundamental science with all its problems has retained basic principles of its organization and, on the whole, its scientific schools. The causes of the downfall of scientific productivity are to be seen not in the Academy of Sciences but in the general situation in the country with neither demand for scientific results, nor a single science-intensive economic sector achieving at least the indicators of past years, not to speak of outpacing them. During all the years past the Russian Academy of Sciences has been developing not as much 'thanks to', but 'despite of', with, actually, lacking state order; and its indicators are not so bad against the general background.

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[1] /printissues/expert/2009/48/6mifov\_akademii\_nauk/

In the 90s, the most difficult years, with the help of the Ministry of Foreign Affairs and the State Committee for Science and Technology of Russia, 16 international scientific centers attached to Siberian institutes with high international ranking were set up on the basis of research plants of national scale, new technologies available in RAS Siberian Branch, or unique natural objects (like Baikal Sea, boreal forests of Siberia, permafrost, etc). Thus, in numerous joint projects 'international audit' (the authors of the article 'Six Myths ...' so much care for) is taking place in reality.

Meanwhile, the Academy constantly faces contradictory and badly thought-through indications and decisions of state authorities, which significantly complicate conditions of researchers' work. For example, five years ago the RF Ministry of Finance in the person of the then First Deputy Minister T.A.Golikova (letter No. 12.04.02/413 as of 05.03.2004) informed us that '...the main goal of RAS and its regional branches' activities, determined in accordance with the Federal Law on Science and Scientific-Technical Policy and RAS Siberian Branch Statute, is to organize and carry out researches aimed at tackling most important scientific problems.' And since '... innovative activities are directed not at acquiring new knowledge but at implementing results of scientific work, they do not, accordingly, respond to RAS and its regional branches' activity goals.' At the same time, another governmental institution, RF Ministry of Education and Science, on the contrary, reproaches the Academy for low practical output - like many representatives of the public opinion, including the authors of the article 'Six Myths of the Academy of Sciences.'

#### References:

[1] /printissues/expert/2009/48/6mifov\_akademii\_nauk/